(file oth$daten:[socean.text] KURDEL22.note)

CORRECTION OF THE CRUISE/SHIP TABLES

Cruise Number	Old_Ship	New_Ship	Old_Country	New Country
-163	Explorer	Explorer	Scotland	U.K.
55018	unknown	Dana	Denmark	Denmark

ADDITION OF NEW CRUISES

Cruise_Num	Ship	Country
59001	Polarstern	FRG
59002	Polarstern	FRG
59003	Polarstern	FRG
59004	Polarstern	FRG
59005	Polarstern	FRG
59006	Polarstern	FRG

V.Gouretski, 30 march 1992

Eingang	06.04.92	**Abschluß**	06.04.92	
Bearbeitungsschritt		**Datum**	**Beginn** **Uhrzeit** **Ende**	**Signatur**
Dateiname				
SCRIPT	->script&log-126	06.04	10^{30}	
UPDATESHIPCRUISE060492.SCRIPT			11^{30}	

(file oth$daten:[socean.text] KURDEL21.note)

CORRECTION OF THE CRUISE/SHIP TABLES

Cruise Number	Ship	Old_Country	New Country
-987	Staten Island	Australia	USA
-927	Argo	Canada	USA

Cruise_Num	Old_Ship	Old_Country	New_Ship	New_Country
60001	unknown	unknown	Melville	USA
60002	unknown	unknown	Hakuho-Maru	Japan
60003	unknown	unknown	Hudson	Canada
12219	J.G.Thompson	USA	T.G.Thompson	USA
12220	Th. Thompson	USA	T.G.Thompson	USA

V.Gouretski, 17 march 1992

Eingang	17.03.92	**Abschluß**	27.03.92

Bearbeitungsschritt **Dateiname**		**Datum**	**Beginn** **Uhrzeit** **Ende**	**Signatur**
Script 124 UPDATESHIPCRUISE-270392-SCRIPT		27.03.92		
Script 125 CHANGECOUNTRYOFSHIP.SCRIPT		27.03.92		

(file oth$daten:[socean.text] KURDEL19.note)

ADDITION TO THE CRUISE/SHIP TABLES

Cruise	Ship	Country
60001	unknown	unknown
60002	unknown	unknown
60003	unknown	unknown
60004	unknown	unknown
58806	unknown	Argentina
999	Lena	USSR

V.Gouretski, 13 march 1992

Eingang 130392 **Abschluß** 13.03.92

Bearbeitungsschritt Dateiname		Datum	Beginn Uhrzeit Ende	Signatur
SCRIPT 123		13.03	15^{00}	
insertcruise 130392-script			15^{11}	

(file oth$daten:[socean.text] KURDEL18.note)

Changes within the Ship/Cruise tables

Cruise	Old_Ship	New_Ship	Old_Country	New_Country	
10522	unknown	Foton	unknown	USSR	
4576	unknown	Priliv	unknown	USSR	
2970	unknown	Priboy NPS	unknown	USSR	*****
9689	unknown	Salehard	unknown	USSR	
11319	unknown	Spektrum	unknown	USSR	
896	unknown	Prof. Zubov	unknown	USSR	
6468	unknown	Hudson	unknown	Canada	
2968	unknown	Okean	unknown	USSR	*****
2501	unknown	Argus	unknown	USSR	
4813	unknown	Evrica	unknown	USSR	
4375	unknown	Lesnoi	unknown	USSR	
4395	unknown	Prognoz	unknown	USSR	
4597	unknown	Salehard	unknown	USSR	
4564	unknown	Acad. Kurchatov	unknown	USSR	
3070	unknown	Vema	unknown	USA	
13968	unknown	Yelcho	unknown	Chile	
202	unknown	Prognoz	unknown	USSR	
266	unknown	Belogorsk	unknown	USSR	
4859	unknown	Walther Herwig	unknown	FRG	
3997	unknown	Dana	unknown	Denmark	
891	unknown	Davydov	unknown	USSR	
890	unknown	Bellinsgausen	unknown	USSR	
9890	unknown	Quantum	unknown	USSR	

***** these ship_names do not exist in Ship/Cruise tables !!!!!

V.Gouretski, 24 February 1992

Change Ship Name And Country in Cru

old Ship
old Countr
new Ship
new Countr
cru 1
cru 2

cru
0

Eingang 24.01.92

Abschluß 05.03 92

Bearbeitungsschritt Dateiname		Datum	Beginn Uhrzeit Ende	Signatur
script	script-/log-122	05.03.92	10:00	
changeCruise050392.script			14:45	

ew information for Ship/Cruise tables!

seq	NODC PLATF CODE	Cruise Number	Ship Name	Country
1	GA09	70133	Gascoyne	Australia
2	GA09	70059	Gascoyne	Australia
3	GA26	70014	Galathea	Denmark
4	CN31	70002	Carnegie	USA
5	GL31	70591	Glacier	USA
6	BI31	70592	Burton Island	USA
7	SI31	70613	Staten Island	USA
8	SB31	70802	S.F. Baird	USA ****!! Plese check wether the existing name is correct!! (It must be like the name given here)
9	BI31	71214	Burton Island	USA
10	AR31	72046	Argo	USA
11	ET31	72701	Eltanin	USA
12	OC31	72994	Oceanographer	USA
13	CO35	78348	Coriolis	France
14	CO35	78351	Coriolis	France
15	SY49	70709	Albatross	Japan
16	CY49	70865	Koyo-Maru	Japan
17	K649	71003	Kaiyo-Maru	Japan
18	CY49	71481	Koyo-Maru	Japan
19	TI61	70004	Tui	New Zealand
20	TU61	70005	Taranui	New Zealand
21	TU61	70010	Taranui	New Zealand
22	TI61	70012	Tui	New Zealand
23	TU61	70032	Taranui	New Zealand
24	TU61	70033	Taranui	New Zealand
25	TU61	70041	Taranui	New Zealand
26	VT61	70044	Viti	New Zealand
27	TI61	70951	Tui	New Zealand
28	TI61	70952	Tui	New Zealand
29	PD90	70247	Prof. Deryugin	USSR
30	AM90	70303	Acad. Korolev	USSR
31	VK90	70345	Vojeikov	USSR
32	VK90	70434	Vojeikov	USSR
33	AB90	70499	Alba	USSR
34	VI90	70862	Vityaz	USSR
35	PY90	77090	Priboy	USSR

.Gouretski, 17 February 1992

ile oth$daten:[socean.dhi]bshcru3.dat

Eingang 19.02.92 **Abschluß**

Bearbeitungsschritt		**Datum**	**Beginn Uhrzeit Ende**	**Signatur**
Dateiname				
Procedur	script-/log-119	20.02.90	11:30	
update NODC.script			12:00	
script	-120	20.02.90	12:00	
update NODC200292.script				
		02.03.92	17.03.	
Drop trigger Delete_Cruise				by hand
script	-121	01.03.92	17:23	
Reset NODC200292.script				
		02.03.92	17.30	
Trigger Delete_Cruise				by hand

DESCRIPTION OF THE SOURCE DATA FOR THE SOUTHERN
OCEAN DATA BASE

Data Set obtained from BSH (Hamburg)

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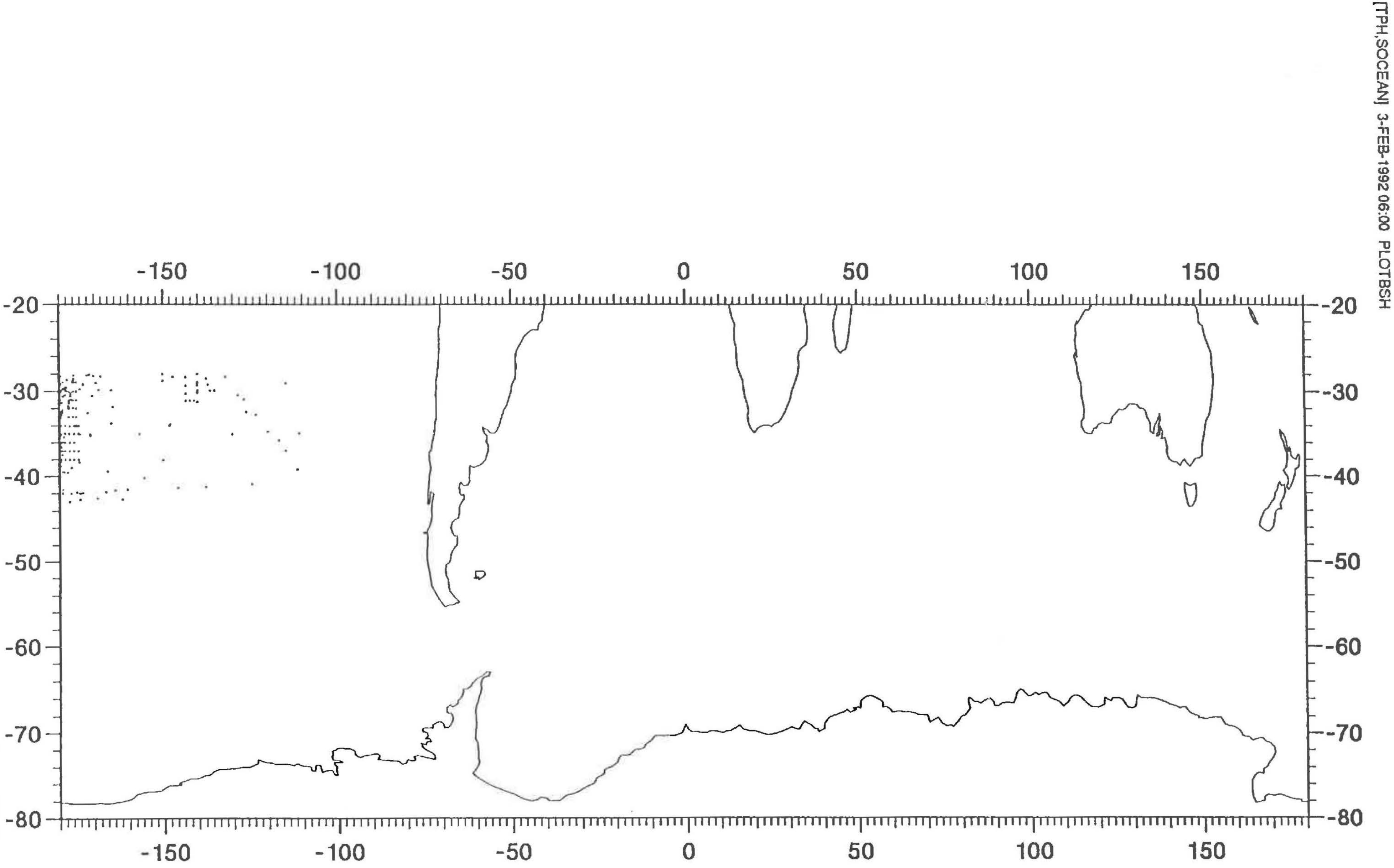
1. Data Set was obtained from BSH (Bundesamt fuer Seeschiffahrt und Hydrographie, Hamburg)
2. Forwarded to AWI on January 22 1992
3. Original data were available on the tape (1600 bpi)
4. Sender:
   Dr. Kh. Motamedi, BSH, POSTFACH 30 12 20, 2000 HAMBURG 36
5. Contact persons: Dr. Kh. Motamedi
6. Raw data are the hydrographic data at observed levels (Temp., Sal., Oxyg. and nutrients)
7. Total number of station 179
8. Program to read the interpolated data: oth$daten:[socean.dhi] BSHR
9. File of interpolated data: OTH$DATEN:[SOCEAN.DHI] INTBSH.DAT

V.Gouretski

AWI, 2 FEBRUARY 1992



BSH DATA SET 179 stations

Eingang 03.02.92 **Abschluß**

Bearbeitungsschritt		Datum	Beginn Uhrzeit Ende	Signatur
Dateiname				
Tabellen	script+log - 116	04.02.92	16.00	
BSHLoad.script			16:30	
Laden	for - 17 ~~[illegible]~~	05.02.92	10:00	
BSHLoad.for				
Update	-117	05.02.92		
BSHload_UPD.SCRIPT			10:55	
copy	-118			
BSHload_copy.SCRIPT				

(file oth$daten:[socean.text] KURDEL17.note)

Changes within the Ship/Cruise tables

Cruise	Old_Ship	New_Ship	Old_Country	New_Country
11319	unknown	Spectrum	unknown	USSR
9890	unknown	Quantum	unknown	USSR
9230	unknown	Skif	unknown	USSR

NB: Ship Names "Spectrum" and "Quantum" do not exist in the Data Base (in the Aari_Cruise2)!!!

V.Gouretski, 29 January 1992

Eingang 29.01.92 **Abschluß** 03.02.92

Bearbeitungsschritt		**Datum**	**Beginn Uhrzeit Ende**	**Signatur**
Dateiname				
update		03.02.92	14:00	
UPDATESHIPCRUISE'030292 ,SCRIPT			14:40	
└ update by hand, script ok				

Script -114

Eingang	07.01.92	**Abschluß**	07.01.92

Bearbeitungsschritt		**Datum**	**Beginn** **Uhrzeit** **Ende**	**Signatur**
Dateiname				

reload AWL_X script

(file oth$daten:[socean.text] KURDEL16.note)

Changes within the Ship/Cruise tables

Cruise	Old_Ship	New_Ship	Old_Country	New_Country
10350	unknown	Chatyr-Dag	unknown	USSR
10097	unknown	Gizhiga	unknown	USSR
-22012	unknown	Prof. Zubov	unknown	USSR
4231	unknown	Evrica	unknown	USSR

V.Gouretski, 25 November 1991

Eingang 26.11.91 **Abschluß** 05.12.91

Bearbeitungsschritt Dateiname	Datum	Beginn Uhrzeit Ende	Signatur
laden SHIP_UPD_05121991_2.SCRIPT	05.12.91	15:10 15:15'	

Script-& log-113

Changes within the Ship/Cruise tables

Cruise	Old_Ship	New_Ship	Old_Country	New_Country
-25000	unknown	Fuji-Maru	unknown	Japan
-25001	unknown	Fuji-Maru	unknown	Japan
-25002	unknown	Fuji-Maru	unknown	Japan

V.Gouretski, 13 November 1991

Eingang 14.11.91 **Abschluß** 05.12.91

Bearbeitungsschritt Dateiname	Datum	Beginn Uhrzeit Ende	Signatur
Laden SHIP_UPD_05121991.SCRIPT	05.12.91	15:00 15:10	Uen

& log
Script - 112

4 November 1991

Changes in Ship_Cruise tables

1. Change Ship_Name for all Cruise_Numbers

Old name	New name
"Dege"	"Degei"
"Diagnita"	"Diaguita"

2. Change Ship_Name and Country:

Cruise Number	Old Ship_Name	New Ship_Name	Old_Country	New Country
12220	"unknown"	"Th. Thompson"	"unknown"	"USA"
2157	"unknown"	"Degei"	"unknown"	"Australia"
1078	"unknown"	"Saga"	"unknown"	"Australia"
5052	"Boa"	"Cap. Canepa"	"Argentina"	"Argentina"
-1809	"Cap. Canepa"	"Gen. San-Martin"	"Argentina"	"Argentina"
5054	"Boa"	"Cap. Canepa"	"Argentina"	"Argentina"
6525	"unknown"	"Cap. Canepa"	"unknown"	"Argentina"

3. Insert New Cruise_Numbers, Ship_Codes, Ship_Name for the Argentine data set (file oth$daten:[socean.argent]CEADOSHIP.DAT and oth$daten:[socean.argent] argdistship.dat)

Code

1		SM	Gen. San-Martin ✓
2	0	BB	Bahia Blanca
3	0	MD	Madryn
4		CC	Cap. Canepa
5		YN	Yamana
6		RP	Republica
7		RQ	Ranquel
8		DG	Diaguita
9	0	CL	Comodoro Augusto Lasserre
10		ZP	Gen. Zapiola
11		GY	Goyena
12		IO	Islas Orcadas
13	0	ST	San Juan
14	0	SL	San Luis
15	0	AM	Alferez Mackinlay
16		GZ	Gen. Zapiola
17		IS	Islas Orcadas
18		SH	unknown
19	0	DH	Doctor Holmberg
20		OA	unknown
21	0	AU	Austral
22	0	PD	Puerto Deseado
23		AV	unknown
24	0	WH	Walther Herwig

file oth$daten:[socean.argent] argdistship.dat)

P.S. 0 - this Ship-Names do not exist in our DBase

1	58001	SM	Gen. San-Martin	Argentina
2	58002	BB	Bahia Blanca	Argentina
3	58003	MD	Madryn	Argentina
4	58803	CC	Cap. Canepa	Argentina
5	58804	YN	Yamana	Argentina
6	58805	RP	Republica	Argentina
7	58805	RQ	Ranquel	Argentina
8	58807	DG	Diaguita	Argentina
9	58004	CC	Cap. Canepa	Argentina
10	58005	SM	Gen. San-Martin	Argentina
11	58006	CC	Cap. Canepa	Argentina
12	58008	CC	Cap. Canepa	Argentina
13	58009	SM	Gen. San-Martin	Argentina
14	58010	CC	Cap. Canepa	Argentina
15	58011	CC	Cap. Canepa	Argentina
16	58012	CC	Cap. Canepa	Argentina
17	58013	SM	Gen. San-Martin	Argentina
18	58014	CC	Cap. Canepa	Argentina
19	58015	CC	Cap. Canepa	Argentina
20	58016	SM	Gen. San-Martin	Argentina
21	58017	CC	Cap. Canepa	Argentina
22	58018	CC	Cap. Canepa	Argentina
23	58019	SM	Gen. San-Martin	Argentina
24	58020	CC	Cap. Canepa	Argentina
25	58021	CC	Cap. Canepa	Argentina
26	58022	CC	Cap. Canepa	Argentina
27	58024	CC	Cap. Canepa	Argentina
28	58026	ZP	Gen. Zapiola	Argentina
29	58027	CC	Cap. Canepa	Argentina
30	58028	CL	Comodoro Augusto Lasserre	Argentina
31	58029	SM	Gen. San-Martin	Argentina
32	58030	ZP	Gen. Zapiola	Argentina
33	58031	CC	Cap. Canepa	Argentina
34	58032	CC	Cap. Canepa	Argentina
35	58033	CC	Cap. Canepa	Argentina
36	58034	SM	Gen. San-Martin	Argentina
37	58035	CC	Cap. Canepa	Argentina
38	58036	CC	Cap. Canepa	Argentina
39	58037	CC	Cap. Canepa	Argentina
40	58038	SM	Gen. San-Martin	Argentina
41	58039	ZP	Gen. Zapiola	Argentina
42	58040	CC	Cap. Canepa	Argentina
43	58041	CC	Cap. Canepa	Argentina
44	58042	CC	Cap. Canepa	Argentina
45	58044	CC	Cap. Canepa	Argentina
46	58045	CC	Cap. Canepa	Argentina
47	58046	CC	Cap. Canepa	Argentina
48	58047	CC	Cap. Canepa	Argentina
49	58048	CC	Cap. Canepa	Argentina
50	58049	SM	Gen. San-Martin	Argentina
51	58050	CC	Cap. Canepa	Argentina
52	58051	CC	Cap. Canepa	Argentina
53	58052	CC	Cap. Canepa	Argentina
54	58053	CC	Cap. Canepa	Argentina
55	58054	SM	Gen. San-Martin	Argentina
56	58055	CC	Cap. Canepa	Argentina
57	58056	CC	Cap. Canepa	Argentina
58	58057	CC	Cap. Canepa	Argentina
59	58058	CC	Cap. Canepa	Argentina
60	58059	GY	Goyena	Argentina
61	58060	CC	Cap. Canepa	Argentina
62	58061	CC	Cap. Canepa	Argentina
63	58063	CC	Cap. Canepa	Argentina
64	58064	GY	Goyena	Argentina
65	58065	SM	Gen. San-Martin	Argentina
66	58066	CC	Cap. Canepa	Argentina

151 New Cruise-Numbers for the Argentine Data Set

67	58067	CC	Cap. Canepa	Argentina
68	58068	SM	Gen. San-Martin	Argentina
69	58069	GY	Goyena	Argentina
70	58070	CC	Cap. Canepa	Argentina
71	58071	SM	Gen. San-Martin	Argentina
72	58073	GY	Goyena	Argentina
73	58074	GY	Goyena	Argentina
74	58075	GY	Goyena	Argentina
75	58076	GY	Goyena	Argentina
76	58078	IO	Islas Orcadas	Argentina
77	58079	IO	Islas Orcadas	Argentina
78	58080	IO	Islas Orcadas	Argentina
79	58081	IO	Islas Orcadas	Argentina
80	58084	IO	Islas Orcadas	Argentina
81	58085	IO	Islas Orcadas	Argentina
82	58089	IO	Islas Orcadas	Argentina
83	58100	SM	Gen. San-Martin	Argentina
84	58101	ST	San Juan	Argentina
85	58808	SL	San Luis	Argentina
86	58809	AM	Alferez Mackinlay	Argentina
87	58102	GZ	Gen. Zapiola	Argentina
88	58103	GY	Goyena	Argentina
89	58104	IO	Islas Orcadas	Argentina
90	58105	IO	Islas Orcadas	Argentina
91	58106	IO	Islas Orcadas	Argentina
92	58107	CC	Cap. Canepa	Argentina
93	58108	ST	San Juan	Argentina
94	58109	IS	Islas Orcadas	Argentina
95	58300	WH	Walther Herwig	FRG
96	58301	WH	Walther Herwig	FRG
97	58302	WH	Walther Herwig	FRG
98	58306	SH	unknown	Argentina
99	58307	SH	unknown	Argentina
100	58308	SH	unknown	Argentina
101	58309	SH	unknown	Argentina
102	58310	SH	unknown	Argentina
103	58311	SH	unknown	Argentina
104	58312	SH	unknown	Argentina
105	58313	SH	unknown	Argentina
106	58314	SH	unknown	Argentina
107	58315	SM	Gen. San-Martin	Argentina
108	58316	SM	Gen. San-Martin	Argentina
109	58317	SM	Gen. San-Martin	Argentina
110	58318	DH	Doctor Holmberg	Argentina
111	58319	DH	Doctor Holmberg	Argentina
112	58320	DH	Doctor Holmberg	Argentina
113	58321	DH	Doctor Holmberg	Argentina
114	58322	DH	Doctor Holmberg	Argentina
115	58323	DH	Doctor Holmberg	Argentina
116	58324	DH	Doctor Holmberg	Argentina
117	58325	DH	Doctor Holmberg	Argentina
118	58326	DH	Doctor Holmberg	Argentina
119	58327	DH	Doctor Holmberg	Argentina
120	58328	DH	Doctor Holmberg	Argentina
121	58329	DH	Doctor Holmberg	Argentina
122	58330	CC	Cap. Canepa	Argentina
123	58331	CC	Cap. Canepa	Argentina
124	58332	CC	Cap. Canepa	Argentina
125	58333	CC	Cap. Canepa	Argentina
126	58334	CC	Cap. Canepa	Argentina
127	58335	CC	Cap. Canepa	Argentina
128	58336	CC	Cap. Canepa	Argentina
129	58337	CC	Cap. Canepa	Argentina
130	58338	CC	Cap. Canepa	Argentina
131	58339	CC	Cap. Canepa	Argentina
132	58340	CC	Cap. Canepa	Argentina

133	58341	CC	Cap. Canepa	Argentina
134	58342	CC	Cap. Canepa	Argentina
135	58343	CC	Cap. Canepa	Argentina
136	58344	CC	Cap. Canepa	Argentina
137	58345	CC	Cap. Canepa	Argentina
138	58346	OA	unknown	Argentina
139	58347	OA	unknown	Argentina
140	58432	AU	Austral	Argentina
141	58433	AU	Austral	Argentina
142	58435	AU	Austral	Argentina
143	58438	AU	Austral	Argentina
144	58440	AU	Austral	Argentina
145	58441	PD	Puerto Deseado	Argentina
146	58600	AU	Austral	Argentina
147	58601	AU	Austral	Argentina
148	58602	AU	Austral	Argentina
149	58603	AU	Austral	Argentina
150	58604	AV	unknown	Argentina
151	58605	AV	unknown	Argentina

file oth$daten:[socean.argent] CEADOSHIP.DAT)

Eingang	04.11.91	**Abschluß**	04.12.1991

Bearbeitungsschritt		**Datum**	**Beginn** **Uhrzeit** **Ende**	**Signatur**
Dateiname				
Laden		04.12.91	11:00	
SHIP_UPD_04121991.SCRIPT			15:00	

Script-& log-111

(file oth$daten:[socean.text]schlitzerdescription.text

DESCRIPTION OF THE SOURCE DATA FOR THE SOUTHERN OCEAN DATA BASE

Data set from Bremen University (courtesy of R.Schlitzer)

---

1. Data Set obtained from Bremen University

2. Forwarded to AWI in December 1991

3. Original data are stored on the TAPE for the IBM computer

4. Sender: University of Bremen

Post: University of Bremen FB-1, Postfach 330440, 2800 Bremen 33

Telegraf:

Telefon:

5. Contact persons: Ronald Schlitzer

6. Data include information of oceanographic stations for the whole World Ocean obtained from different sources. Present data set is an extraction from this data set, made by G. Seiss, AWI.

Total number of station is 156
Time period from 1969 - 1990

7. Raw data are the conventional hydrographic stations or CTD stations with Temperature, Salinity, oxygen and nutrients values given at the observed levels measured in meters.

The raw data are written into the files:
oth$daten:[socean.schlitzer]8m59001.dat
oth$daten:[socean.schlitzer]hh59002.dat
oth$daten:[socean.schlitzer]hu59003.dat
oth$daten:[socean.schlitzer]me59004.dat

Before the inclusion into the Data Base the following steps have been done:

1) Headers of the stations have been changed to suit the Southern Ocean Data Base requirement. Cruise numbers for the cruises presented in the data set were inserted (59001,59002,59003,59004 correspondingly).
Program: oth$daten:[socean.schlitzer]crhead2

2) Data were interpolated to the standard levels of the Data Base by the in the same way as the data from other sources.

Program: oth$daten:[socean.schlitzer]interschl1.for

3) Oxygen values given as mkmol/kg were converted to ml/l values.

```
                         Program: oth$daten:[socean.schlitzer]interschl2.for
                         Program: oth$daten:[socean.schlitzer]convert.for
                         Program: oth$daten:[socean.schlitzer]alpha.for
---------------------------------------------------------
      The file handed to the computer centre is :

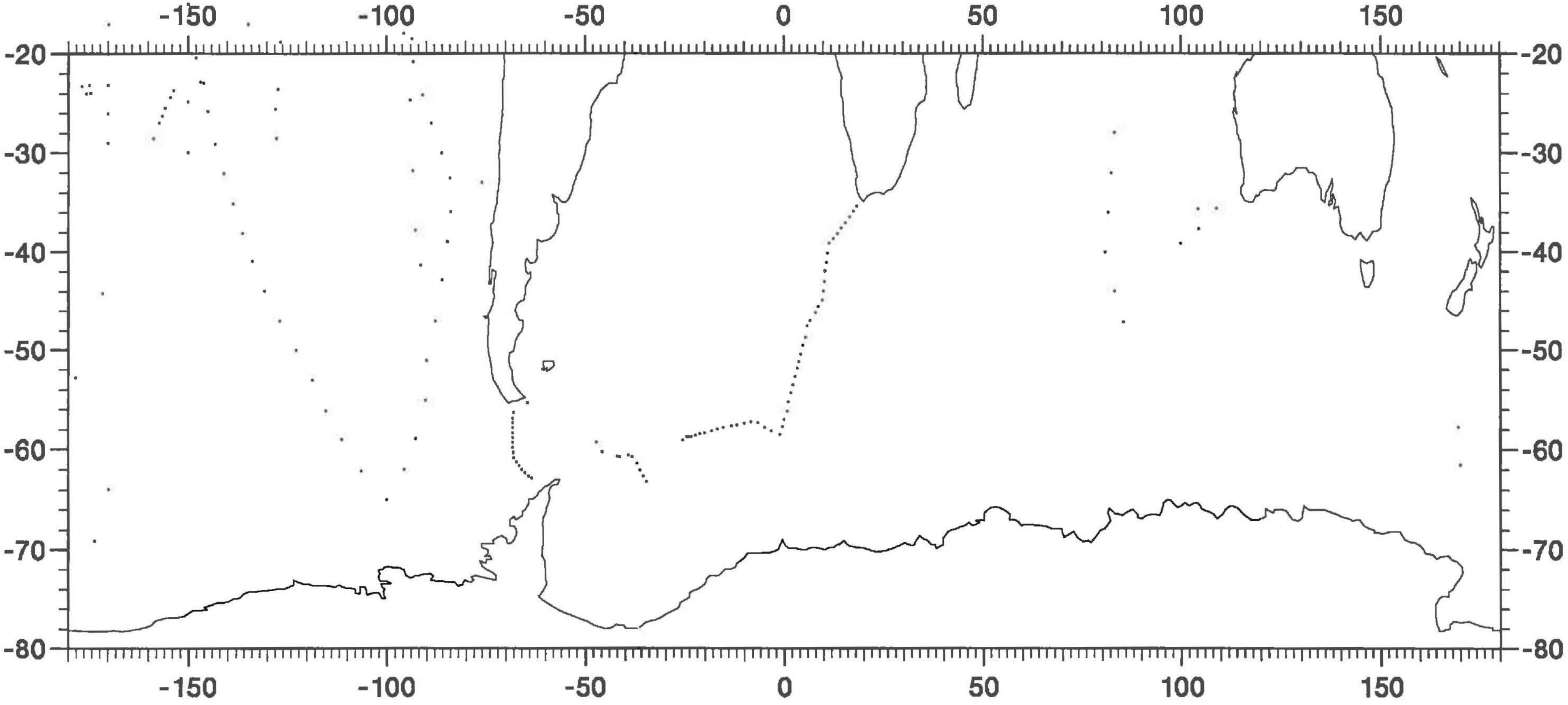
                       oth$daten:[socean.schlitzer]schlitzerint.dat

      This file comprise 156 stations.

      The program to read the file is
oth$daten:[socean.schlitzer]readschlitzer.for
--------------------------------------------------------
```

V.Gouretski

AWI, 19 december 1991



Bremen University Data Set (courtesy of R.Schlitzer) 156 stations

Eingang 20.12.91 **Abschluß** 21.12.91

Bearbeitungsschritt Dateiname	Datum	Beginn Uhrzeit Ende	Signatur
Tabellen	20.12.91	11.06	
SCHLITZER.SCRIPT	20.12.91	12.00	
laden	20.12.91	13.00	
SCHLITZERLOAD.FOR	21.12.91	15.00	
updaten	21.12.91	15.00	
SCHLITZERLOAD.UPD.SCRIPT		15.16	
kopieren	21.12.91	15.16	
SCHLITZERLOAD.COPY.SCRIPT		15.20	

& log

Script-108-110

For-16

Corrections within the Data Base

After insertion of the new Argentine data into the Data Base an error was found which could lead to the inconsistency of the Ship/Cruise tables.

During the preparation of the Argentine data for the inclusion into the Data Base the Cruise_Numbers, specified by the headers of the initial data have been changed to the values like (Cruise_Number + 58000) in order to garantee a new range of Cruise_Numbers for the Argentine data.

After inclusion of the Argentine data it was found that in some cases the same Cruise_Number value was used for several Ship_Names.

To avoid this we replaced old values of Cruise_Numbers for the new ones, namely 58803, 58804, 58805, 58806, 58807, 58808 and 58809 for the corresponding stations.

These corrections took place in the file oth$daten:[socean.argent] interarg2.dat which was included in to the data base.
The corrected analog of this file is oth$daten:[socean.argent] interarg4.dat.
The latter has the same structure as file interarg2.dat and should be used in the process of the data reloading.

V.Gouretski, 4 November 1991.

Eingang 05.11.91 **Abschluß** 08.11.91

Bearbeitungsschritt Dateiname	Datum	Beginn Uhrzeit Ende	Signatur
truncate table Argentina_Statistic Argentina_StandardData	08.11	 15.00	
run Argentineload.			
run Argentineload_upd.script			
Argentineload_copy_script			

rebuild 06-11-91 -> script-106

argentineload_copy.script -> script-104

ACTER DATABASE

(file oth$daten:[socean.text]awidescript.text

DESCRIPTION OF THE SOURCE DATA FOR THE SOUTHERN OCEAN DATA BASE

Data from Alfred Wegener Institute

---

1. Data Set obtained from Alfred Wegener Institute for Polar and Marine Research (AWI)

2. Forwarded to the computer centre on the 17-th of October 1991

3. Original data are on the scr$disk1:[rohardt.ctd.*] where * corresponds to ANT2, ANT3, ANT5, ANT5-1, ANT7, ANT8.

4. Contact persons: Gerd Rohardt, AWI, Exper. Physics, tel. 4831-491.

5. Data include information of oceanographic stations obtained by AWI research vessel "Polarstern" (Cruises ANT II, ANT III, ANTV, ANTV-I, ANTVII, ANTVIII.

   Total number of station is 536.

   Time period from 1983 to 1989.

7. Raw data were obtained by means of CTD devices giving Pressure,Temperature and Salinity.

   The raw data are written in the directory scr$disk1:[rohardt.ctd.*], where * corresponds to subdirectories: ant2, ant3, ant5-1, ant5, ant7 or ant8. Every station comprise one file with file-name equal to the station number and with the extension "DAT" (e.g. 1102.dat for the station #1102).

   Before the inclusion into the Data Base the following steps have been done:

   1) New Cruise Numbers beginning from 59001 were prescribed to the "Polarstern" cruises:
      59001 to ANT II
      59002 to ANT III
      59003 to ANT V-1
      59004 to ANT V
      59005 to ANT VII
      59006 to ANT VIII

   2) (Degrees + minutes) were converted to (degrees)

   3) Pressure in Dbar was converted into geometrical Depths in meters

   4) Data were interpolated to the standard levels of the Data Base in the same way as the data from other sources.

   Program: oth$daten:[socean.awi]awidmi.for

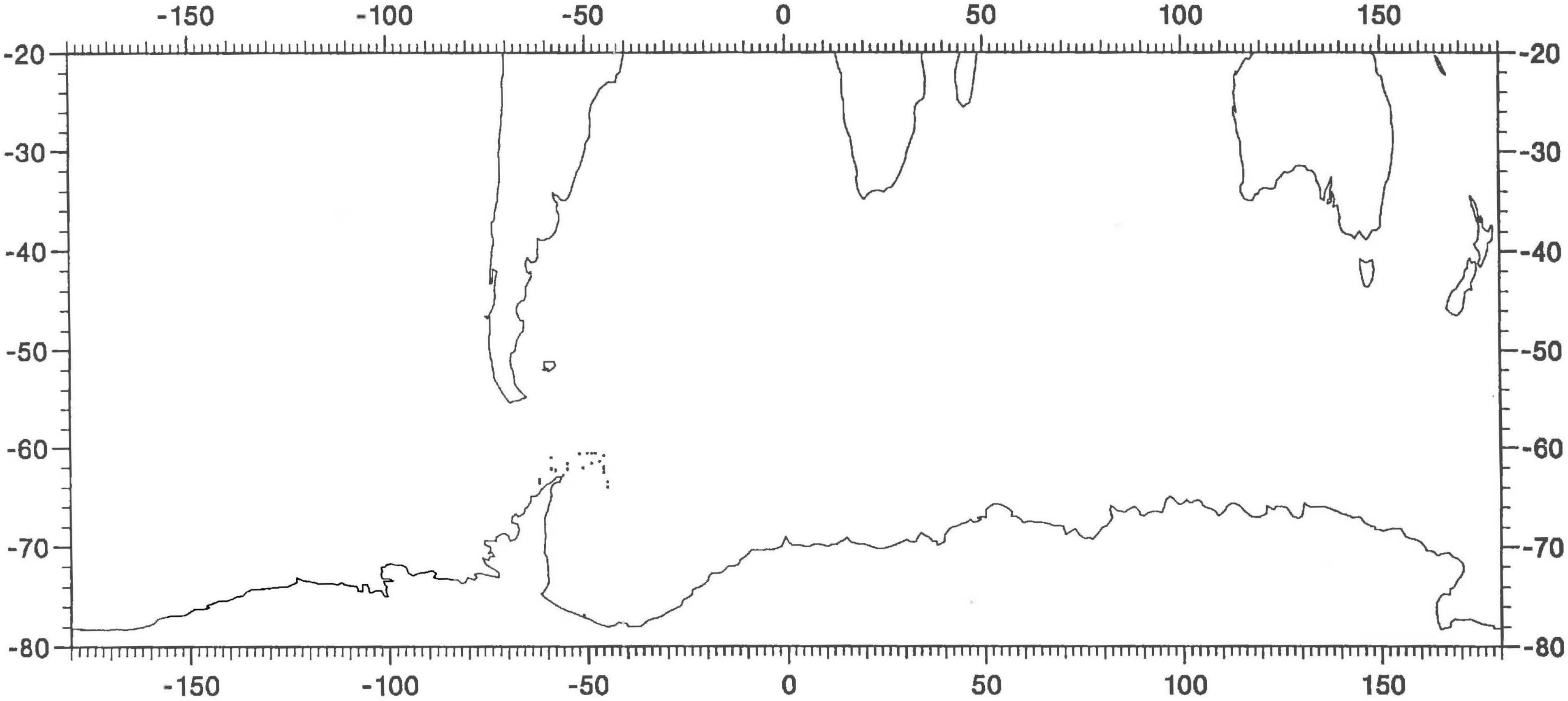
Files forwarded to the computer centre for the inclusion into the S_O_DB are :

oth$daten:[socean.awi]ant2i	(48 stations)
oth$daten:[socean.awi]ant3i	(118 stations)
oth$daten:[socean.awi]ant5i	(99 stations)
oth$daten:[socean.awi]ant51i	(101 stations)
oth$daten:[socean.awi]ant7i	(55 stations)
oth$daten:[socean.awi]ant8i	(115 stations)

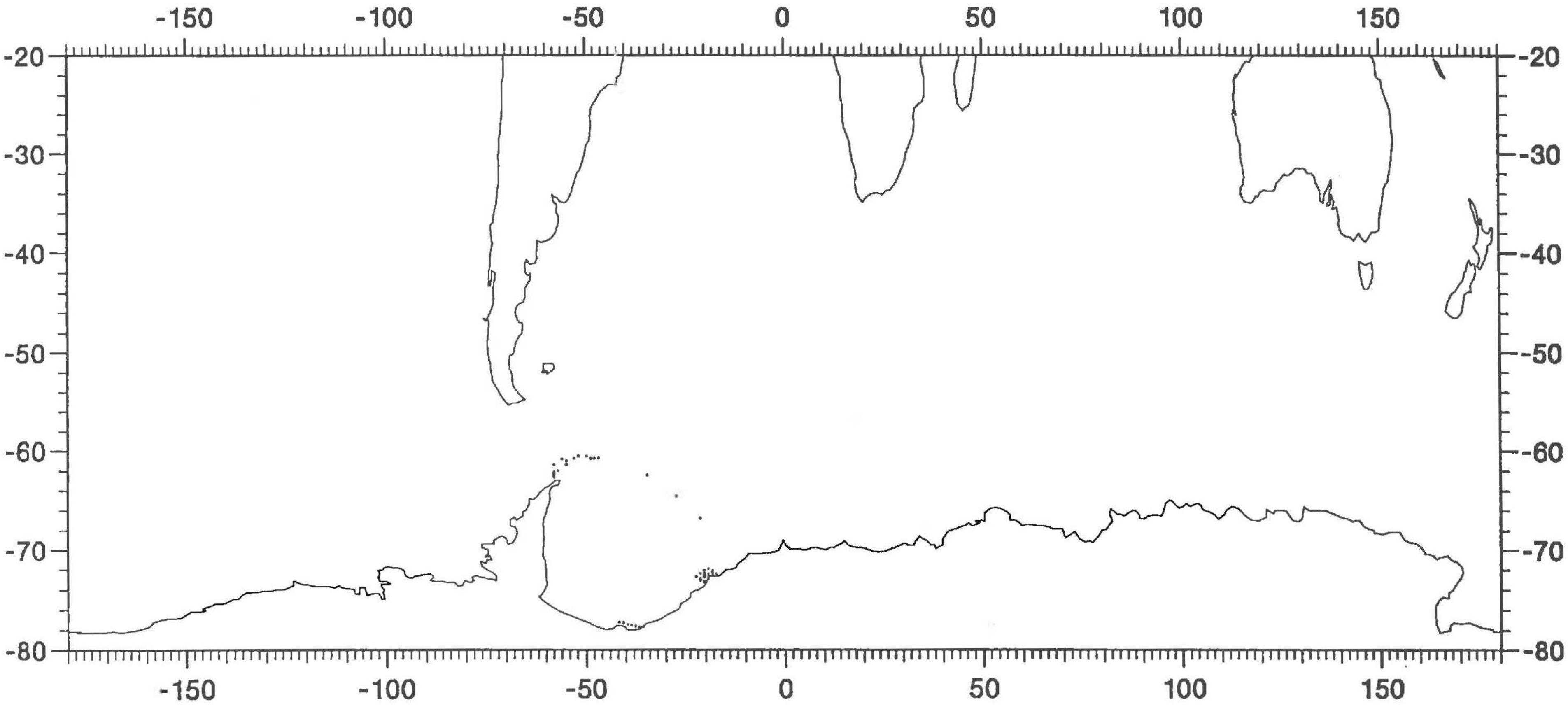
The program to read the file is oth$daten:[socean.awi] readawi.for

V.Gouretski

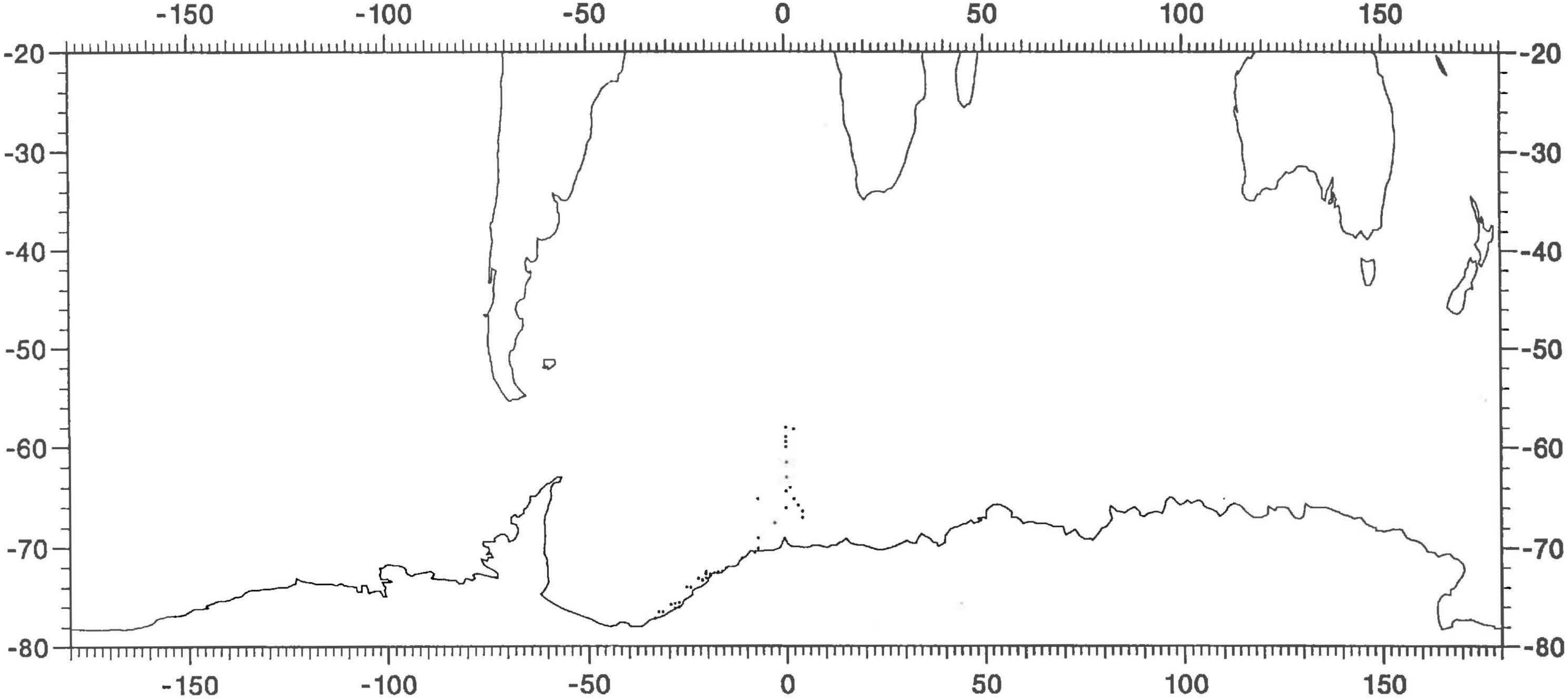
AWI, 16 October 1991



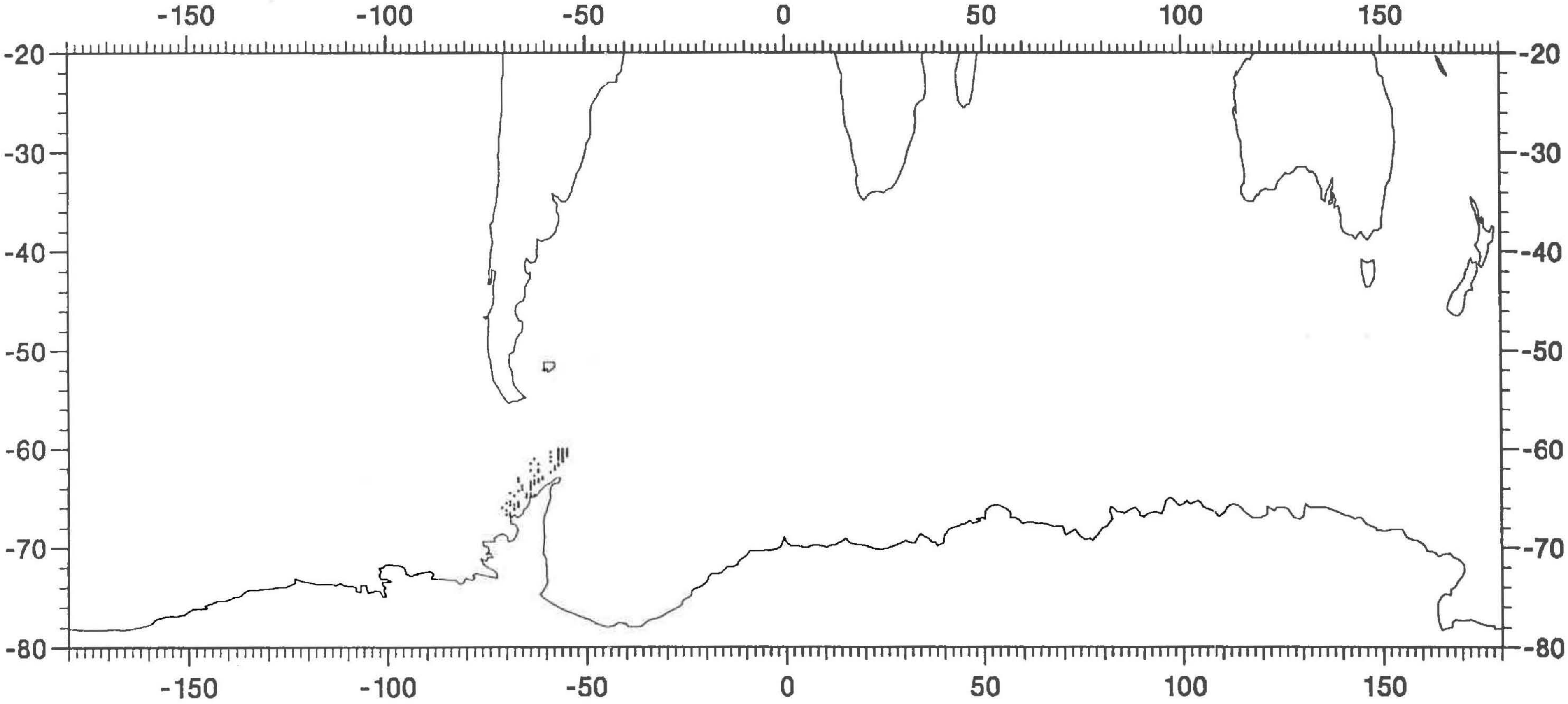
"Polarstern" cruise ANT2 48 stations Cruise_Number=58001



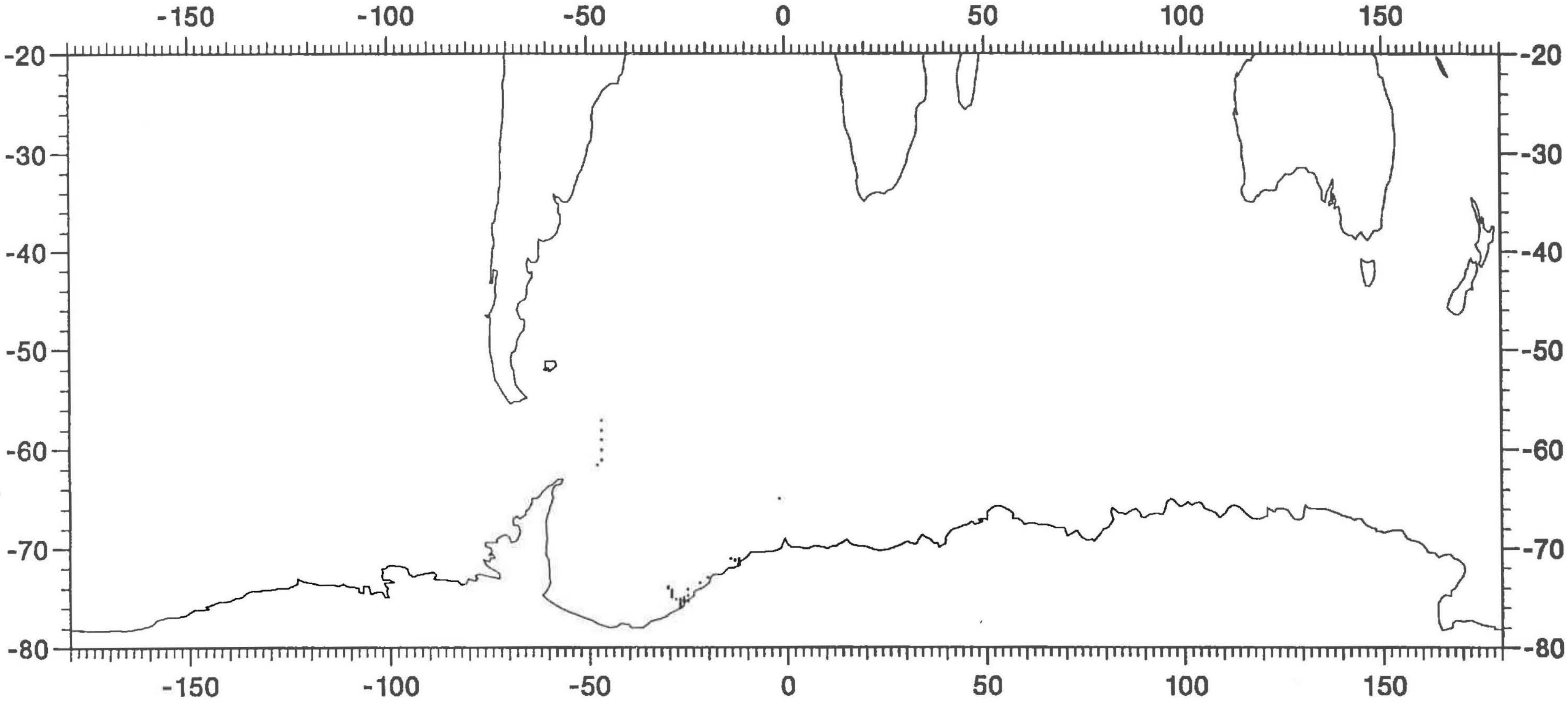
"Polarstern" cruise ANT3   118 stations   Cruise_Number=58002



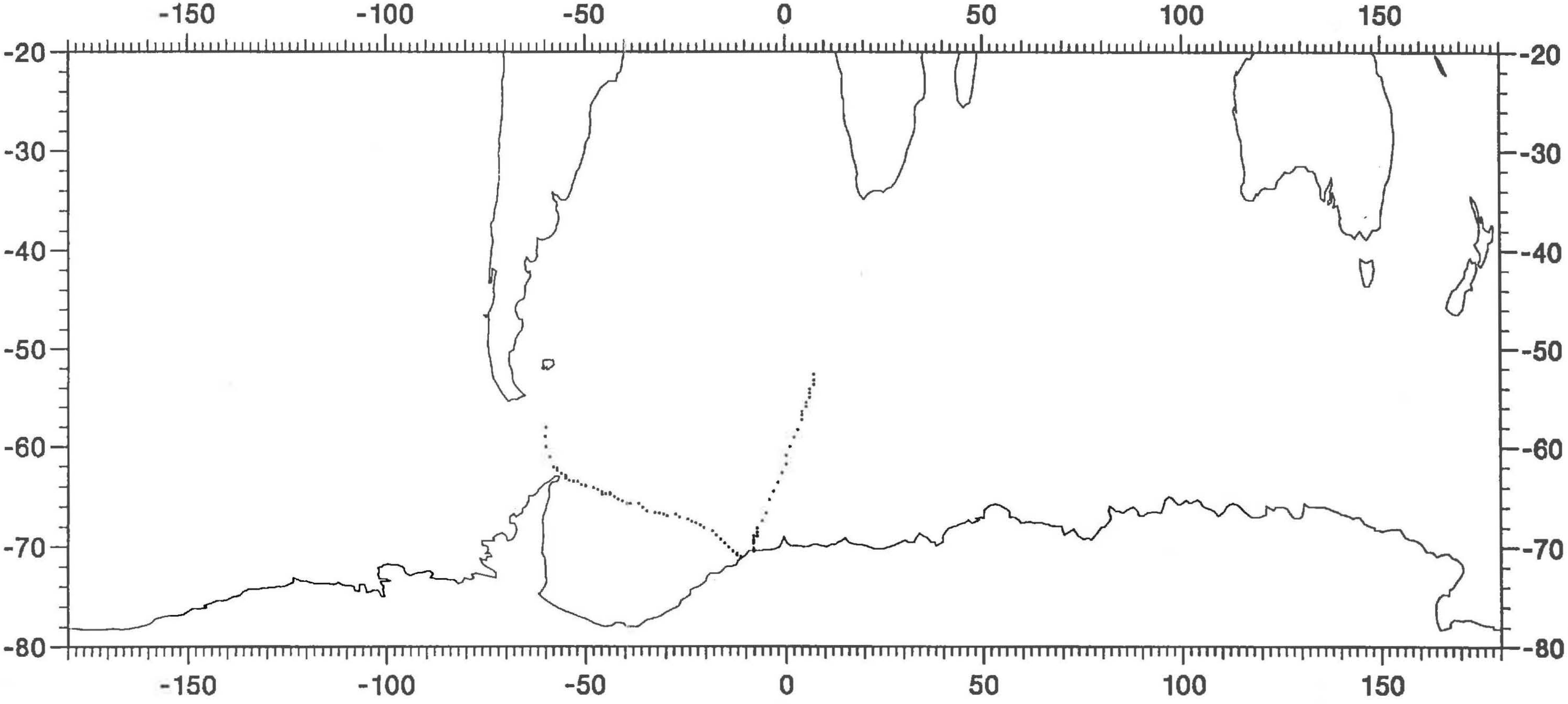
"Polarstern" cruise ANT5 99 stations Cruise_Number 58004



"Polarstern" cruise ANT5_1 101 stations Cruise_Number=58003



"Polarstern" cruise ANT7 55 stations Cruise_Number=58005



"Polarstern" cruise ANT8 115 stations Cruise_Number 58006

Eingang	17.10.91	**Abschluß**	

Bearbeitungsschritt		**Datum**	**Beginn Uhrzeit Ende**	**Signatur**
Dateiname				
Tabellen erzeugen		11.11.91	16.11	Uen
AWI.SCRIPT				
Datenladen	INPUT: AWI1.FIL		16.11	
AWILOAD				

Station_min 20.000.001 ~~10 000 000~~

Standard_Data_mi ~~1.000.000~~ 200.000.001

Programm readawi -> Programme von Victor

Awi.Script -> Script-105

Awi.Log -> Log-105

(file oth$daten:[socean.text]argentdescription.text

DESCRIPTION OF THE SOURCE DATA FOR THE SOUTHERN OCEAN DATA BASE

Argentine oceanographic Data Center

---

1. Data Set obtained from Argentine Oceanographic Data Center (Centro Argentino de datos oceanograficos, CEADO)

2. Forwarded to AWI on the 27-th of August 1991

3. Original data are on 6250 bpi magnetic tape (tape name CEADO CEIAA1, # 030139 20 02 044)

4. Sender: Centro Argentino de Datos Oceanograficos, Servicio de Hidrografia Naval - Consejo Nacional de Investigaciones Cientificas y Tecnicas

   Post: Avda. Montes de Oca 2124 (1271) Buenos Aires

   Telegraf: 21338 RACEL AR ATTN: SIHN

   Telefon: (01)21 - 0061/69 (ext.59)

5. Contact persons: ADOLFO J. GIL VILLANUEVA, Director of CEADO

6. Data include information of oceanographic stations carried out by Argentine ships in all the cruises reported to the CEADO from the South Atlantic Zone. Total number of station is 4915. Time period from 1955 to 1983.

7. Raw data are the conventional hydrographic stations with Temperature, Salinity, oxygen and nutrients values given at the observed and interpolated levels measured in meters.

   The raw data are written into the file oth$daten:[socean.argent]ARGENT1.DAT. Record descriptions are given in the Appendix.

Before the inclusion into the Data Base the following steps have been done:

1) Headers of the stations have been changed to suit the Southern Ocean Data Base requirements. Only temperature, salinity and oxygen data at the observed levels were extracted for the further inclusion into the Data Base

   Program: oth$daten:[soceanargent]READARGENT1.FOR

2) Cruise numbers, given in the station headers, have been increased by 58000 to exclude misleading repetition of the cruise numbers already existing in the Southern Ocean Data Base

   Program: oth$daten:[socean.argent]ARGNEWCRNUM.FOR

3) Data were interpolated to the standard levels of the Data Base

[redacted] in the same way as the data from other sources.

Program: oth$daten:[socean.argent]INTERARG.FOR

4) Stations made north of 20S were excluded and total number of stations reduced to 4744

Program: oth$daten:[socean.argent]checklat.for

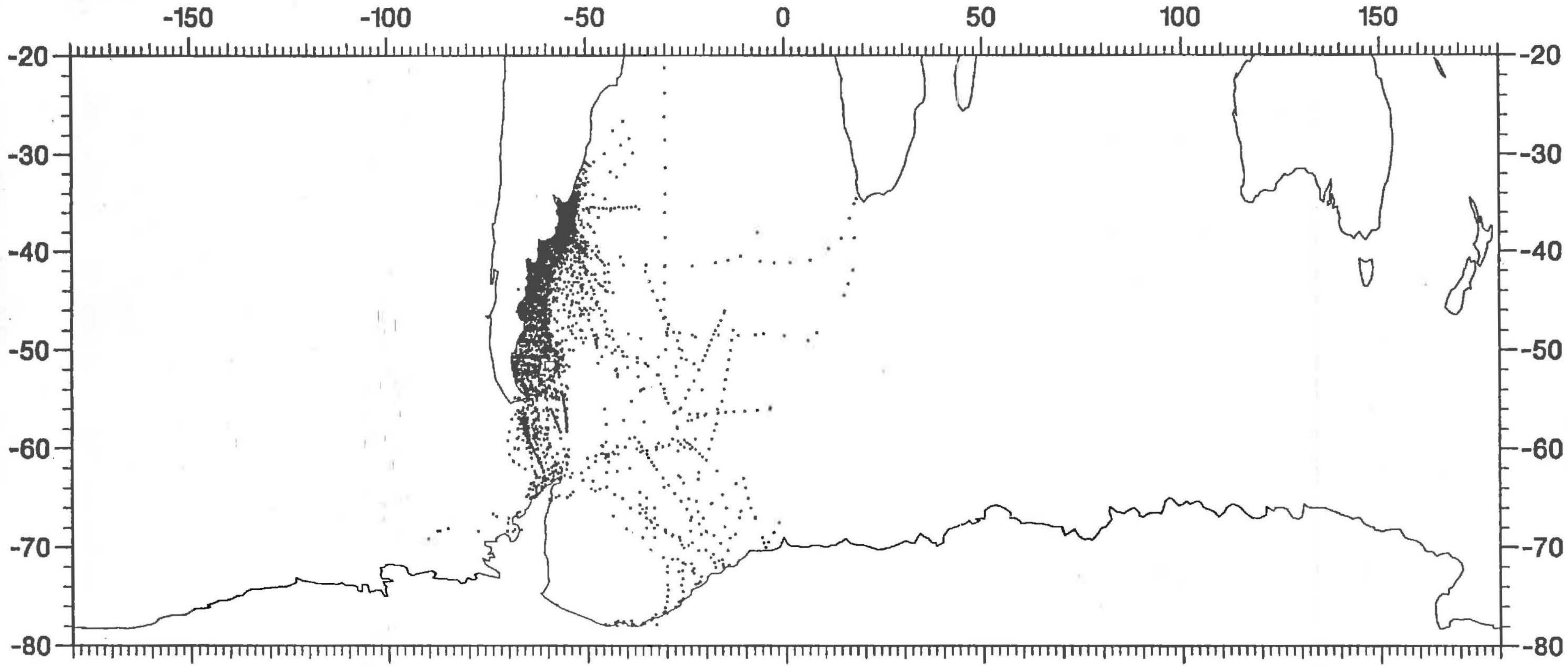
The final file forwarded to the computer centre is :

oth$daten:[socean.argent]interarg2.dat
This file comprise 4744 stations.

The program to read the file is oth$daten:[socean.argent]RARG

V.Gouretski

AWI, 2 September 1991



CEADO DATA SET SOUTH OF 20 S

4744 stations

```
      program RARG
C  text of the program in: oth$daten:[socean.argent]rarg.for
c
C  read the oceanographic data from the Argentine oceanographic
C  data center
C
      Integer*4 NCRUISE
C
      REAL*4    tst(42), sst(42), oxst(42), zst(42)
      real*8 Lat,Lon
C
      open(23,file='interarg2.dat',status='old')
  222 continue
      read(23,202,end=333) nseq,NCRUISE,nstat,Lon,Lat !! seq_number,
C                                                     !! Cr_number,
C                                                     !! Stat_Number,
C                                                     !! Longitude,
C                                                     !! Latitude
C
      read(23,212)nyear,month,nday  !!! year,month,day
     *,nhour,nmin,ndepth,modepth,NOBSLEV,msq10 !!hour,minutes,depth,
C                                              !! max_obs_depth, number_
C                                              !! of_obs_levels, Marsden_
C                                              !! square#
C
      read(23,102) mmax  !! Number_of_interpolated_levels
C
      if(nseq.lt.10)type202,nseq,ncruise,nstat,Lon,Lat
      if(nseq.lt.10)type212,nyear,month,nday,nhour,nmin,ndepth,modepth,
     *nobslev,msq10
C
  212 format(2x,9i7)
  202 format(2x,3i7,2f8.2)
  102 format(2x,i3)

      do 11 k=1, mmax
      read(23,103) zst(k), tst(k), sst(k), oxst(k)
      if(nseq.ge.10)go to 11
      type103,zst(k),tst(k),sst(k),oxst(k)
   11 continue
  103 format(2x,f5.0,6f8.3)
C+++++++++++++++++

      go to 222
  333 continue
      close(23)
      stop
      end
```

Appendix

CEADO	RECORD DESCRIPTION Application Code C 18	Page ..1.. of .4.. Form. CEADO 90

FILE NAME: Oceanographic Station Data File

RECORD NAME: Master Record 1

MAGNETIC TAPE SPECIFICATIONS:

RECORD LENGTH:

BLOCK LENGTH:

Element No.	Position		Number of Bytes	(*) Type	Meaning and conditions of elements
	From	To			
1	1	1	1	N	RECORD TYPE (Always '1')
2	2	5	4	N	CRUISE NUMBER
3	6	9	4	N	STATION NUMBER
4	10	12	3	-	BLANK
5	13	15	3	N	MARSDEN SQUARE 10°
6	16	16	1	N	MARSDEN SQUARE 5°
7	17	18	2	N	MARSDEN SQUARE 2°
8	19	20	2	N	MARSDEN SQUARE 1°
9	21	22	2	AN	ORIGIN COUNTRY (Code 0600)
10	23	24	2	AN	SHIP (Code)
11	25	27	3	AN	CRUISE NAME
12	28	32	5	AN	STATION NAME
13	33	34	2	N	YEAR
14	35	36	2	N	MONTH
15	37	38	2	N	DAY (GMT)
16	39	41	3	N	HOUR (GMT) (Hours to tenths)
17	42	47	6	AN	LATITUDE (Degrees, minutes to tenths and sign -N/S-)
18	48	54	7	AN	LONGITUDE (Degrees, minutes to tenths and sign -E/W-)
19	55	58	4	N	DEEPEST DEPTH (Whole meters)
20	59	60	2	N	CAST DEPTH (Hundredth meters)
21	61	62	2	N	WIND DIRECTION (Code WMO 877)
22	63	64	2	N	WIND SPEED (Knots)
23	65	66	2	N	WIND FORCE (Beaufort Scale)
24	67	70	4	N	BAROMETRIC PRES. (Millibars to tenths)
25	71	80	10	-	BLANK

(*) TYPE: A= Alphabetic N= Numeric AN= Alphanumeric

CEADO	RECORD DESCRIPTION Application Code C18	Page .2.. of .4.. Form. CEADO 90

FILE NAME: Oceanographic Station Data File
RECORD NAME: Master Record 2
MAGNETIC TAPE SPECIFICATIONS:
RECORD LENGTH:
BLOCK LENGTH:

Element No.	Position		Number of Bytes	(*) Type	Meaning and conditions of elements
	From	To			
1	1	1	1	N	RECORD TYPE (Always '2')
2/8	2	20	19	AN	IDEM RECORD TYPE '1'
9	21	24	4	N	DRY BULB TEMP (Deg. C in whole degrees or to thenths)
10	25	28	4	N	WET BULB TEMP (Idem)
11	29	30	2	AN	WEATHER (Code WMO 4677)
12	31	31	1	AN	CLOUD TYPE (Code WMO 0500)
13	32	32	1	N	CLOUD AMOUNT (Code WMO 2700)
14	33	34	2	N	WAVE DIRECTION (Code WMO 0885)
15	35	35	1	AN	WAVE HEIGHT (Code WMO 1555)
16	36	36	1	AN	WAVE PERIOD (Code WMO 3155)
17	37	37	1	N	WEATHER STATE (Code WMO 4501)
18	38	38	1	N	VISIBILITY (Code WMO 4300)
19	39	40	2	N	WATER COLOR (Forel Scale 00-21)
20	41	42	2	N	TRANSPARENCY (Secchi disk - whole meters)
21	43	43	1	A	DRIFT (Blank)
22	44	45	2	N	OBSERVATIONS NUMBER
23	46	80	35	-	BLANKS

(*) TYPE: A= Alphabetic N= Numeric AN= Alphanumeric

CEADO	RECORD DESCRIPTION	Page .3.. of ..4.
	Application Code C18	Form. CEADO 90

FILE NAME: Oceanographic Station Data File
RECORD NAME: Observed Depth Detail Record
MAGNETIC TAPE SPECIFICATIONS:

RECORD LENGTH:
BLOCK LENGTH: -

Element No.	Position		Number of Bytes	(*) Type	Meaning and conditions of elements
	From	To			
1	1	1	1	N	RECORD TYPE (Always '3')
2	2	5	4	N	CRUISE NUMBER
3	6	9	4	N	STATION NUMBER
4	10	10	1	N	CAST NUMBER
5	11	12	2	N	OBSERVATION NUMBER
6	13	15	3	N	MARSDEN SQUARE 10°
7	16	16	1	N	MARSDEN SQUARE 5°
8	17	18	2	N	MARSDEN SQUARE 2°
9	19	20	2	N	MARSDEN SQUARE 1°
10	21	23	3	N	MESSAGE HOUR (GMT) (Hours to tenths)
11	24	29	6	AN	DEPTH (Meters, followed by blank, or a Q or a T, as appropriate)
12	30	35	6	AN	TEMPERATURE (Deg. C to hundredth and after Q or blank)
13	36	40	5	AN	SALINITY (Parts per thousand and after Q or blank)
14	41	45	5	AN	OXIGEN (Milliliters/liter to hundredth and after Q or blank)
15	46	48	3	N	PHOSPHATE (Microg.-Atoms/liter to hundredth)
16	49	51	3	N	TOTAL PHOSPHORUS (Idem)
17	52	54	3	N	NITRITES (Idem)
18	55	57	3	N	NITRATES (Microg.-Atoms/liter to tenths)
19	58	60	3	N	SILICATES (Microg.-Atoms/liter)
20	61	63	3	N	PH (Dimensionless to hundredth)
21	64	66	3	N	ALCALINITY (Milieq./liter to hundredth)
22	67	69	3	N	AMMONIA (Microg.-Atoms/liter to hundredth)
23	70	73	4	N	SIGMA-T (Dimensionless to hundredth)
24	74	78	5	N	SOUND SPEED (Meters/second)
25	79	80	2	N	SEQUENCE NUMBER

(*) TYPE: A= Alphabetic N= Numeric AN= Alphanumeric

CEADO

RECORD DESCRIPTION

Page .4.. of .4..

Application Code C18

Form. CEADO 90

FILE NAME: Oceanographic Station Data File

RECORD NAME: Standard Depth Detail Record

MAGNETIC TAPE SPECIFICATIONS:

RECORD LENGTH:

BLOCK LENGTH:

Element No.	Position		Number of Bytes	(*) Type	Meaning and conditions of elements
	From	To			
1	1	20	20	N	RECORD TYPE (Always '4')
10	21	23	3	-	BLANK
11	24	29	6	AN	STANDARD DEPTH (Whole Meters, and after Q, T or blank)
12	30	35	6	AN	TEMPERATURE (Preceded by the sign, deg. C to hundredth and after Q or a blank)
13	36	40	5	AN	SALINITY (Parts per thousand and after Q or a blank)
14	41	45	5	AN	OXYGEN (Mililiters/liter to hundredth and after Q or a blank)
15	46	52	7	N	SPECIFIC VOL. ANOM.
16	53	56	4	N	DYNAMIC DEPTH ANOM. (Dynamic meters)
17	57	69	13	-	BLANK
18	70	73	4	N	SIGMA-T (Dimensionless to hundredth)
19	74	78	5	N	SOUND SPEED (Meters/second)
20	79	80	2	N	SEQUENCE NUMBER

(*) TYPE: A= Alphabetic N= Numeric AN= Alphanumeric

Eingang	02.09.91	**Abschluß**	28.10.91	
Bearbeitungsschritt **Dateiname**		**Datum**	**Beginn** **Uhrzeit** **Ende**	**Signatur**
SCRIPT	-> Script-103	08.10.91	15^{35}	
Argentine.script		neu 28.10.91	16^{00}/16	
SCRIPT	neu	28.10.91	16^{30}	
Argentine_upd.log	~~Argentineload_copy.~~		17^{00}	
Programm	-> FOR-15	neu 28.10.91	16:15	
Argentine.FOR			16:30	
Script	-> Script-104	28.10.91	17^{00}	
Argentineload_copy.script			17^{30}	

Lieber Lutz-Peter!

Wohin soll die "Description of the Source Data for the Southern Ocean Data Base" abgelegt werden? Bitte erledige es selbst.

Gruß, Dörte

file: oth$daten:[socean.text] unknownchanges.text

Change Ship Name in Cruise
old
new
cnt1 = cnt
cnt2 = 0

Changes in the Ship-Cruise tables

Cr_Numb	Old_Sh	Old_Cou	New_Ship	New_Country
7660	unknown	unknown	Prof. Viese	USSR
10186	unknown	unknown	Prof. Zubov	USSR
3494	unknown	unknown	Prof. Zubov	USSR
55071	unknown	unknown	Discovery	Australia
5367	unknown	unknown	Yelcho	Chile
3482	unknown	unknown	Edisto	USA
426	unknown	unknown	Investigator	Australia
634	unknown	unknown	Investigator	Australia
635	unknown	unknown	Investigator	Australia
636	unknown	unknown	Investigator	Australia
637	unknown	unknown	Investigator	Australia
638	unknown	unknown	Investigator	Australia
639	unknown	unknown	Investigator	Australia
643	unknown	unknown	Investigator	Australia
678	unknown	unknown	Investigator	Australia
410	unknown	unknown	Gascoyne	Australia
5371	unknown	unknown	Yelcho	Chile
5369	unknown	unknown	Chipana	Chile
14539	unknown	unknown	Prof. Zubov	USSR
10341	unknown	unknown	Myslitel	USSR
4244	unknown	unknown	Prof. Viese	USSR
11669	unknown	unknown	Melville	USA
-1192	unknown	unknown	Myslitel	USSR
9366	Investigator	India	Investigator	Australia
9368	Investigator	India	-"-	-"-
-629	Investigator	Canada	-"-	-"-

UK

New Ship

Called by Viete 20.10.91

21.10.1991

Eingang 23.10.91 **Abschluß** 31.10.91

Bearbeitungsschritt **Dateiname**	**Datum**	**Beginn** **Uhrzeit** **Ende**	**Signatur**
Script UNKNOWNCHANGES291091.SCRIPT (1)	29.10.91	10:30 11:06	Clen
RUN UNKNOWNCHANGES291091-LOG (2)	29.10.91	11:08 11:14	Clen
Ablage (1)->Script-47	7.11.91		li
Ablage (2) -> log47	7.11.91		li

Eingang 08.10.91 **Abschluß** 08.10.91

Bearbeitungsschritt		**Datum**	**Beginn Uhrzeit Ende**	**Signatur**
Dateiname				
script		08.10.91	15^{15}	
updateunknownskip.script				
Run			1	
updateunknownskip.log			15^{20}	

Script-102
Log-102

Changes within Ship-Cruise tables

Old Cruise_Number	New Cruise_Number	Old Ship_Name	New_Ship_Name
-22013	-22013	Prof. Zubov	Prof. Vieze

It is necessary to insert new Cruise_Number:

Cruise_Number	Ship	Country
55071	unknown	unknown

Discovery Cruise by Carlon
error

V.Gouretski, 8 Oktober 1991

16 Station changed in
Station

Eingang	08.10.91	**Abschluß**	08.10.91

	Bearbeitungsschritt **Dateiname**	**Datum**	**Beginn** **Uhrzeit** **Ende**	**Signatur**
	Script	08.10.91	15^{00}	Uen
Script-100	ShipCruiseCorrection081091.script		15^{20}	
	Run		↓	Uen
Log-100	SCC081091.log			
	Script			Uen
Script-101	InsertCruise081091.script			
	Run			Uen
Log-101	insertcruise081091.log			

CORRECTIONS OF SHIP NAMES IN SHIP-CRUISE TABLES

Cruise_Number	Old name	New name	Old Country	New Country
9890	Salehard	unknown	USSR	unknown
9768	Slava	Ushakov	USSR	USSR
11669	Melville	unknown	USA	unknown
10589	Prof. Viese	Prof. Zubov	USSR	USSR
-22011	Prof. Viese	Prof. Zubov	USSR	USSR
890	Bellinsgausen	unknown	USSR	unknown
619	Burton Island	Glacier	USA	USA
891	Davydov	unknown	USSR	unknown
-667	Eltanin	Lesnoi	USA	USSR
4231	Evrica	unknown	USSR	unknown
10097	Gizhiga	unknown	USSR	unknown
608	Glacier	unknown	USA	unknown
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

V.Gouretski, AWI, 26 August 1991

file: OTH$DATEN:[soceantext]KURDEL9.NOTE

Eingang 28.08.91 **Abschluß** 08.10.91

Bearbeitungsschritt Dateiname		Datum	Beginn Uhrzeit Ende	Signatur
Script		08.10.91	11^{00}	Uen
SHIPCRUISECORRECTION260891.SCRIPT			12^{00}	
RUN		08.10.91	13^{00}	Uen
SBC.LOG			13^{30}	

Script - 99
Log - 99

10.06.91
CD4

SCRIPT - updateShipCruise100691.script

Corrections in Ship-Cruise tables

1. Ship "Kokar" must be chaged to "Ob" , Country "USSR"
for all Cruise_Numbers

2. Ship "Lesnoi" must be changed to "Eltanin", country "USA"
where Cruise_Number=-667

3. Ship "Walther Herwig" must be changed to "Discovery II", Country "U.K."
where Cruise_Number=-1123

4. Ship "Dolphin" must be chaged to "Cap. Canepa", Country "Argentina"
where Cruise_Number=-1809

5. Ship "Prof. Zubov" must be changed to "Investigator", Country "Australia"
where Cruise_Number=643

6. Ship "Prof. Zubov" must be changed to "Gascoyne", Country "~~France~~ France"
where Cruise_Number=424

7. Ship "Prof. Zubov" must be changed to "Melville", Country "USA"
where Cruise_Number in (12031, -21814)

8. Ship "Atlantis" must be changed to "Atlantis II"
where Cruise_Number=-180

9. Ship "Schwabenland" must be changed to "Discovery II", Country "U.K."
where Cruise_Number=-12

10. Ship "Kvant" must be changed to "Salehard"
where Cruise_Number=-1117

11. Ship "unknown" must be changed to "Gen. San-Martin", country "Argentina"
where Cruise_Number=-1929

12. Ship "Kiwi" must be changed to "Tui"
where Cruise_Number=-21649

13. Ship "Prof. Zubov" must be chaged to "Edisto", Country "USA"
where Cruise_Number=3482

14. Ship "Burton Island" must be changed to "Anton Bruun"
where Cruise_Number=-816

? ← 15. Ship "Africana" II must be changed to "Natal"
where Cruise_Number=5406

16. Ship "Poceidon" must be changed to "Umitaka-Maru", Country "Japan"
where Cruise_Number= -1934

17. Ship "Mito~~ru~~yu Maru" must be changed to "Eltanin, Country "USA"
where Cruise_Number=-1677

18. Ship "Atlantis" must be changed to "Atka"
where Cruise_Number=-180 >

19. Ship "Prof. Zubov" must be changed to "Hudson", Country "USA"
where Cruise_Number=6468

20. Ship "Discovery II" must be changed to "Discovery"
where Cruise_Number=-21137

21. Ship "Prof Zubov" must be changed to "Carnegie", Country "USA"
where Cruise_Number=1393

22. Ship "Glacier" must be changed to "Burton Is~~d~~land"
where Cruise_Number=619

23. Ship "Adm. Moucheg" must be changed to "Norvegia", Country "Norway"
where Cruise_Number=-97

24. Ship "Olonets" must be changed to "Diamantina", Country "Australia"
where Cruise_Number=430

25. Ship "Evrica" must be changed to "Vityaz"
where Cruise_Number=42

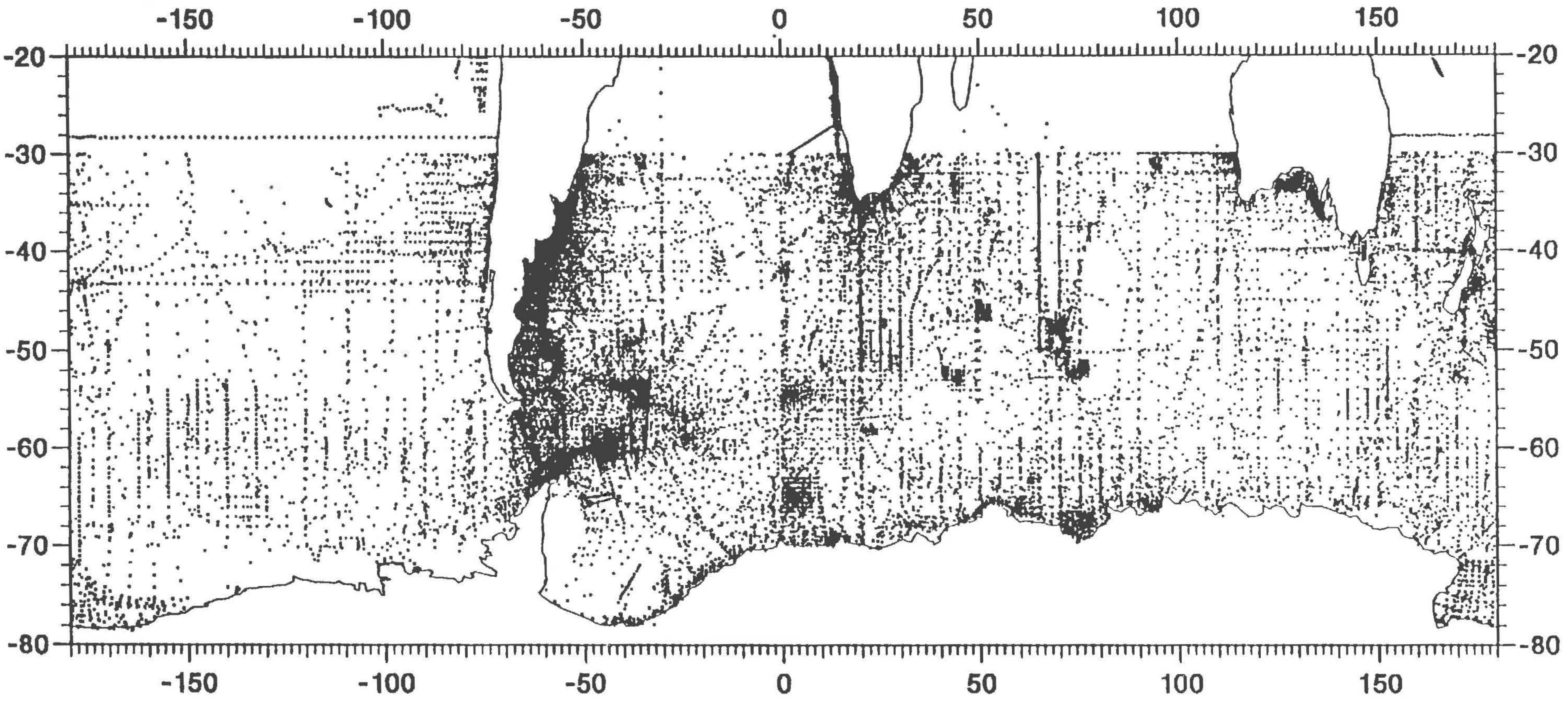
26. Ship "Prof. Zubov" must be changed to "Hakuho_Maru", Country "Japan"
where Cruise_Number=5547

27. Ship "Ushakov" must be changed to "Slava"
where Cruise_Number=9768.

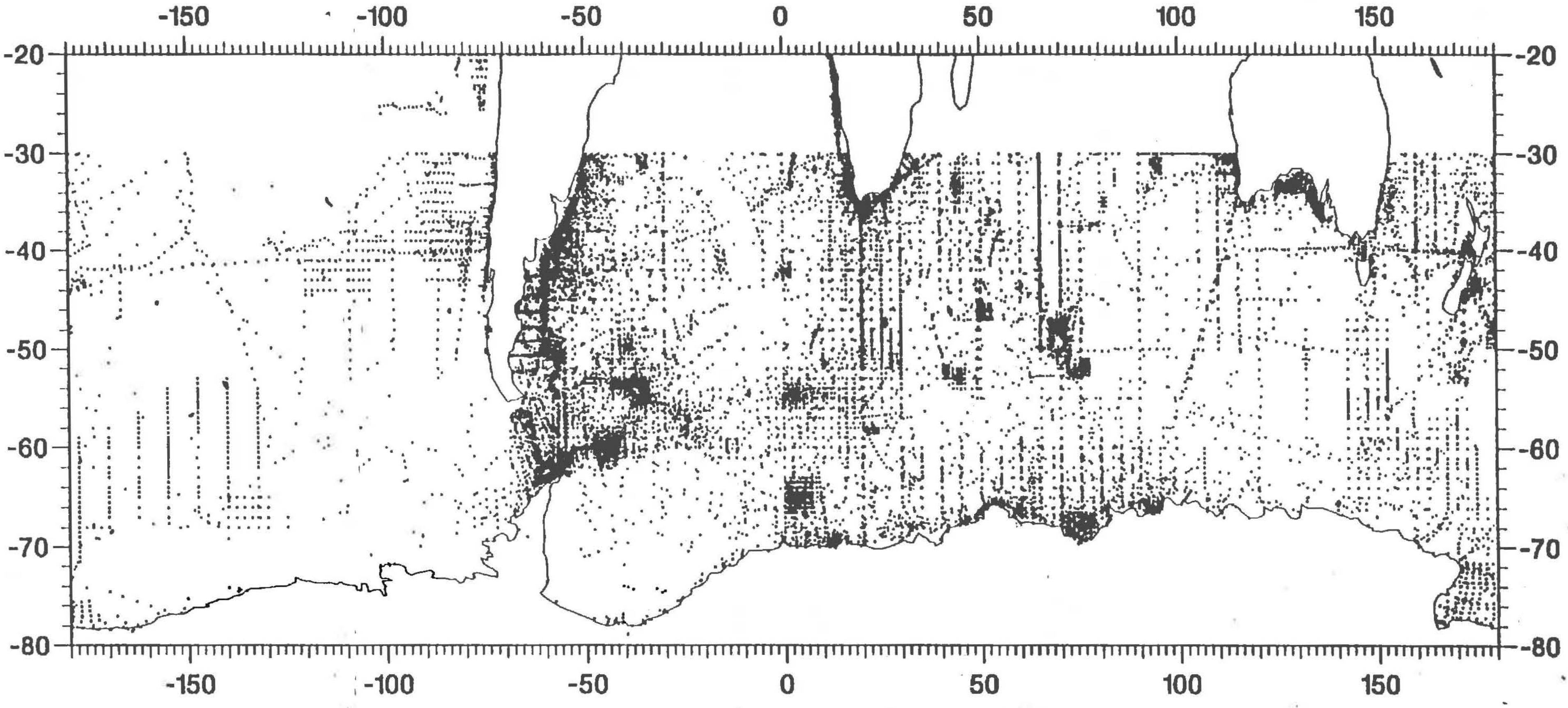
27. Ship "Billie" must be changed to "Discovery", Country "U.K."
where Cruise_Number= 54007 .

Adl tis errors have been found by comparison of both duplicates between Gordon a♦
Aari data sets and duplicates within the Aari_Data set

V.Gouretski, 30 May 1991

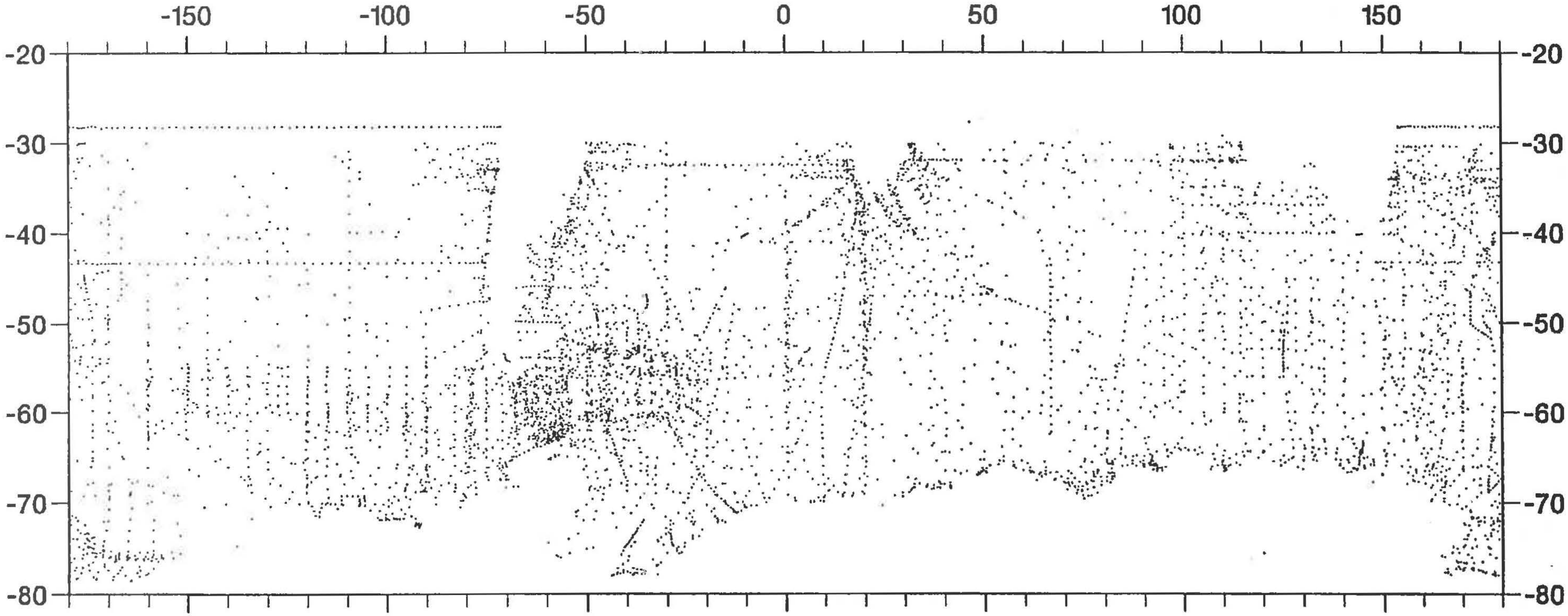


Southern Ocean Data Base: 38562 hydrographic stations (28.11.91)

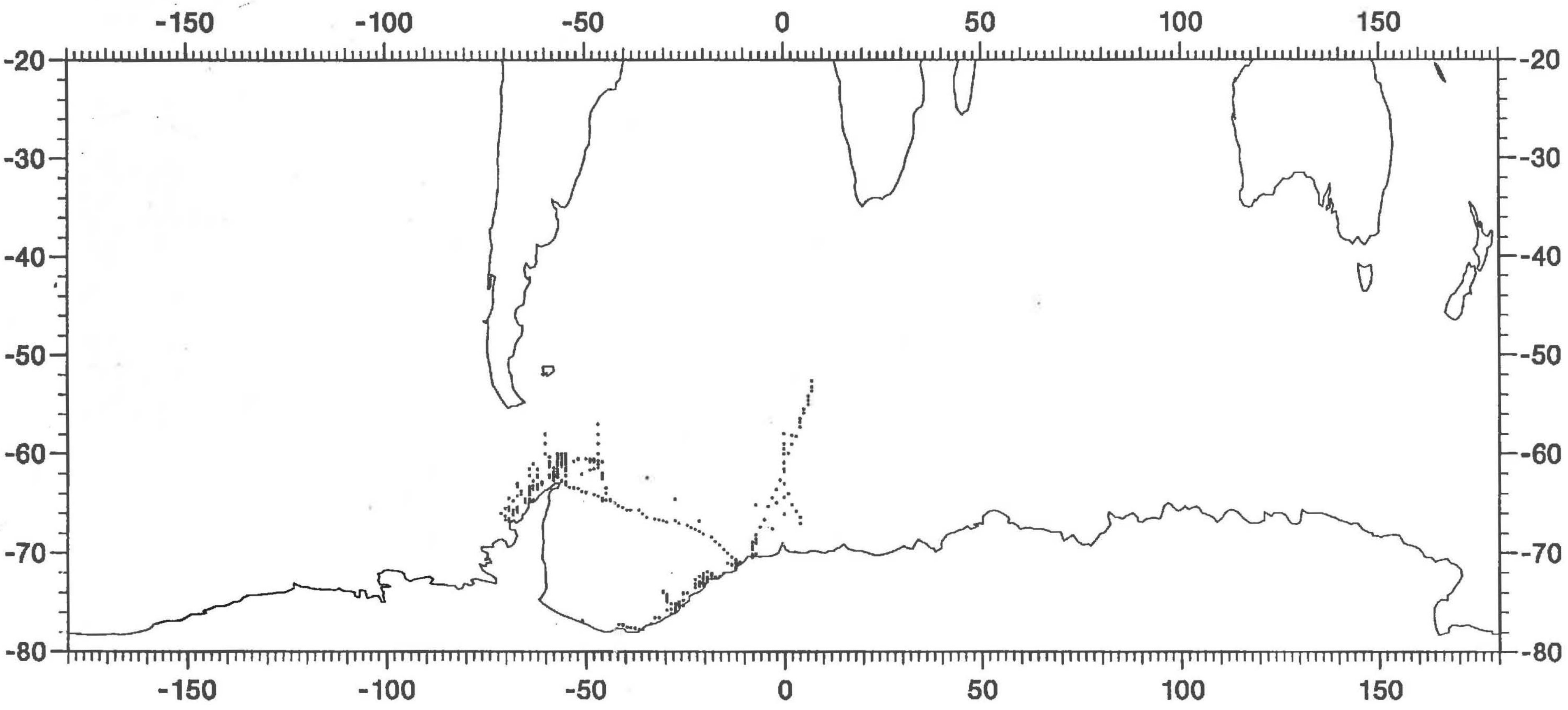


AARI DATA SET

27218 stations



SOUTHERN OCEAN ATLAS DATA SET 6313 STATIONS /GORDON,MOLINELLI,BAKER/



AWI DATA SET 536 hydrographic stations

PROJEKTBOGEN

Projektname: Southern Ocean DB
Projektbeginn:

Abteilung: Physik 1 (Prof. Olbers)
Ansprechpartner: V. Guretzky
Ansprechpartner: J. Schröter
Ansprechpartner:

Nr	Meilenstein	Bearbeiter	Datum	Kommentar

Projektname: Southern Ocean DB

Seite 2

Nr	Modulname	Typ	Bearbeiter	Bearbeitungsbeginn Datum Uhrzeit	Barbeitungsende Datum Uhrzeit	Pro	Do	Kommentar
15	Gazella	F/L	LPH	17.12.90 11:00	17.12.90 13:00			Marion Dufresne Daten laden update
16	Rauschen Separ	F	LPH	18.12.90 15:00	18.12.90 17:00			check des Algorithmus Programmvorbereitung
17	Southern Ocean		LPH	07.01.91 15:30			✓	
18	— " —	B	LPH	05.02.91 15:45	05.02.91 15:55			Fehler in Station Gordon Cruise-ID#
19	— " —	SP	LPH	07.02.91 16:00	07.02.91 19:15	✓		Ship, Cruise, Aari_Cruise Script Cruise-UPD070291.script
20	— " —	SP	LPH	11.02.91 18:00	—	✓		RUN Cruise_UPD070291.script
21	— " —	SP	LPH	11.02.91 18:15	—	✓		RUN 070291 GSBACKFILL-UPD.Script
22	— " —	SP	LPH	12.02.91 08:30	12:02.91 09:00	✓		RUN GSBACKFILL_UPD070291.SCRIPT
23	— " —	P/C/L	LPH	12.02.91 09:00	12:02:91 09:30	✓		RUN Gordon_Station.Backfill Gordon_Cruise Berichtigung
24	— " —	SP	LPH	12.02.91 12:00	12:02:91 12:15	✓		Vollständige Namen in Ship fertigestellt
25	— " —	SP/C/L	LPH	12.02.91 14:00	12:02:91		✓	Fortsetzung ㉓ RUN update_Backfill.proc sp RUN Update_Backfill
26	— " —	SP/F/L	LPH	13.02.91 16:00	13.02.91 19:00	✓		Tokyo Daten Tokyo.Table.script TOKYOINT.DAT Tokyo_load
27	— " —	— " —	LPH	14.02.91 10:00	14.02.91 11:00	—		— " —
28			LPH	08.03.91 09:00	08.03.91 09:02	✓		Tokyo_Fisheries.Station update Bottom_Depth > 8500 -> NULL

Typ: **sp** stored procedure, **APT** APT-Prozedur, **fs** APT-forms, **C** C-Programm, **F** Fortran Programm, **L** Datenladen, **B** Beratung

Projektname: SouthernOcean DB

Seite 1

Nr	Modulname	Typ	Bearbeiter	Bearbeitungsbeginn Datum Uhrzeit	Barbeitungsende Datum Uhrzeit	Pro	Do	Kommentar
1	Gordon_Cruise	C	LPK	22.11.90 09:00	10:50	✓		Laden der Daten aus den Dateien HEADERS.FIL u. SHIPCOORD3.DAT
2	Kuroplin	L	LPK	26.11.90 17:15	18:00			Laden von Aari Daten aus KUROP.DAT / Fehler !!!
3	Kuroplin		LPK	27.11.90 08:30	17:00			Fehler beheben
4	SouthenOcean		LPK	27.11.90 14:00	17:30		✓	Umladen auf TeX Teil I
5	UMLAUT INDEX		LPK	27.11.90 17:30	17:55			UMLAUT INDEX Aari Station / Standard Daten
6	Aari → Station	L	LPK	28.11.90 09:00	09:50			
7	HAINES-DATA	F	LPK	28.11.90 10:00	12:15			Program HAINESLOAD.FOR Script HAINESLOAD.SCRIPT
8	Southen Ocean		LPK	28.11.90 13:45			✓	
9	Gordon-Statistic	B	MR	-"- 15:30	16:15			Vorrechnen der Gordon_Statistik Tabelle mit Nutzer Verwalter H. ROSS
10	Aari/Station	L	LPK	-"- 20:30	21:00			update Aari Station / Station bzw.
11	HAINES_DATA	L	LPK	11.12.90 12:30	15:40	✓		Laden der Haines_Daten
12	Cruise_Table	C/L	LPK	11.12.90 15:45	20:00	✓		Doppelte Schiffsnamen / Eingabe v. falsche Schreibweisen Schiffsdaten
13	Southen Ocean		LPK	12.12.90 08:45	12:00		✓	Einfügen der Kurolin, Haines usw.
14	Southen Ocean	C/L	LPK	12.12.90 14:00	18:00			Doppelte Schiffsnamen

Typ: **sp** stored procedure, **APT** APT-Prozedur, **fs** APT-forms, **C** C-Programm, **F** Fortran Programm, **L** Datenladen, **B** Beratung

Projektname: SouthernOceanDB

Seite 3

Nr	Modulname	Typ	Bearbeiter	Bearbeitungsbeginn Datum Uhrzeit	Barbeitungsende Datum Uhrzeit	Pro	Do	Kommentar
29	SouthernOceanDB		LPK	08.03.1991 09:45	08.03.1991 10:15			Ship update aus Daten mit Sam'_Update-Ships.script
30	— " —		— " —	21.05.1991 17:00	21.05.1991 15:30			Jore_Load Daten laden
31	SouthernOceanDB		LPK	03.06.1991 10:0	17.06.1991 14:00			Biomass Daten Mark Thorley
32	Biomass		LPK	11.06.1991 16^{00} – 18^{00} 12.06.1991 08^{00} – 10^{00}		P		Update Ship / Cruise Fehleranalyse mit Victor
33	Münch							
34	Biomass		LPK	02.07.91	15.07.91	P		Aufbereiten der Biomass Dat für Graphik (Brandini)
35	Biomass		LPK	15.07.91	15.07.91	P		Biomass Update BIOMASS-UPD-SCRIPT
36	Biomass	C	LPK	02.08.91 9^{00}	02.08.91 17^{00}	P		Biomass rebuild Biomass.c
37	Biomass	sp	LPK	02.08.91 13^{00}	05.08.91 09^{30}	P		Biomass_UPD-SCRIPT (Nachlauf)
38								

Typ: **sp** stored procedure, **APT** APT-Prozedur, **fs** APT-forms, **C** C-Programm, **F** Fortran Programm, **L** Datenladen, **B** Beratung

Lamont-Doherty Geological Observatory
of Columbia University
Palisades, NY 10964-0190
914 359-2900

January 22, 1991

Dear Victor,

Enclosed you will find pages copied from the 'NODC Users Guide' describing the methods used for geographic indexing, including marsden squares. I hope you will find it useful.

I have looked into the platform codes you listed, and have resolved all but one:

5N31	BILLIE	USA
EL31	ELDORADO	USA
GO-8	GOYENA	ARGENTINA (assuming -8 is 08)
HZ49	FUJI	JAPAN
IS31	?	?
(IS32	IDAHO STANDARD	USA)
SB90	MIKHAIL SOMOV	USSR
(MS90	MIKHAIL SOMOV	USSR)

With best regards,

Bruce

Bruce Huber

DESCRIPTION OF THE SOURCE DATA FOR THE SOUTHERN OCEAN DATA BASE

I AARI 1 subset

---

1. Data set from Arctic and Antarctic Research Institute (AARI), Leningrad, USSR

2. Forwarded to AWI in January 1988

3. Data on 9 track tapes, 1600 b/i

4. Sender: Arctic and Antarctic Research Institute, Leningrad,
   199226 Leningrad, Beringa 38 Telex: 321669 NILAS
   Tel: 352-12-23

5. Contact persons: Dr. PRIAMIKOV Sergey, Tel.: 352-33-39
   Dr. DANILOV Alexander, Tel.: 352-02-26
   Dr. KLEPIKOV Alexander, Tel.: 352-02-26
   Dr. GOURETSKI Victor, Tel.:352-33-39

6. Data set has been collected in AARI.

   Total number of stations 34112 for the area south of 30 S.

   Data came from different oceanographic institutions, which have their own collections of the oceanographic data:

   1) National Centre of Oceanographic Data, Obninsk, USSR
   2) Scientific Research Oceanographic Centre of the Defence Ministry, Leningrad, USSR.
   3) Institute of Oceanology of the Academy of Sciences of the USSR, Moscow, USSR.
   4) Scientific Research and Fishery Institutions of the Fishery Ministry of the USSR in Kaliningrad, Kerch, Murmansk, Moscow.

   Most of the data have been obtained by the soviet ships, but a large number of oceanographic stations within this data set were obtained from other countries.

   Raw data were for the observed levels.

7. Data have been read by the program READ (Appendix I)
   Before the inclusion to the data base data on the observed levels have been interpolated to 42 levels accepted as standard levels for the Southern Ocean Data Base (Program Prob5) (Appendix II)
   Program READING reads interpolated data (Appendix III)

ИНТЕРПОЛЯЦИЯ НА СТАНДАРТНЫЕ ГОР-ТЫ

APP II.

```
      program       prob5
c         this programm create the file of interpolated values
c         the output file will be of sequential access
      byte          byte(666), hilf
      integer*2 array(333)
      equivalence (byte(1),array(1))
      integer*2     a(13),z(80),t(80),s(80),ox(80)
      equivalence (array(1),a(1)),(array(14),z(1)),
     * (array(94),t(1)),(array(174),s(1)),(array(254),ox(1))
      dimension     zz(80),tt(80),ss(80),oxx(80) ,zst(42),
     * tst(42),sst(42),oxst(42)
     * ,tt1(42),ss1(42),oxx1(42)
     * ,zzt(80),zzs(80),zzox(80)
     * ,itst(42),isst(42),ioxst(42)
c
c     these are standard level depths used for this analisis :
      data zst/0.,10.,20.,30.,50.,75.,100.,125.,150.,200.,
     * 250.,300.,350.,400.,500.,600.,700.,750.,800.,900.,
     * 1000.,1100.,1200.,1300.,1400.,1500.,1750.,2000.,2250.,
     * 2500.,2750.,3000.,3250.,3500.,3750.,4000.,4500.,
     * 5000.,5500.,6000.,6500.,7000./
c                     input information on the tape ::
c                   head of hydrological station:
c                  a(1) - archiv number of cruise,
c                  a(2) - cruise number of station,
c                  a(3) - latitude (degr.,minut.),
c                  a(4) - longitude (degr.,minut.),
c                  a(5) - year,
c                  a(6) - month,
c                  a(7) - day,
c                  a(8) - hour,
c                  a(9) - ocean depth,
c                  a(10) - depth of the deepest observ. level,
c                  a(11) - number of parameters measured
c                  a(12) - total number of observation levels,
c                  a(13) - Marsden square.
c
c                  z(80) - array of depth of observations (in meters),
c                  t(80) - array of temperatures (degr.C*1000),
c                  s(80) - array of salinities (S - 30)*1000,
c                  ox(80) - array of oxigen contents (ml/l*100).
c
c                  itst, isst,ioxst - arrays of integer*2 values of
c                           temperature,salinity and oxygen respectively,
c                           interpolated on the standard levels
c
c           note!  -9999 means the lack of corresponding data
c        ntot - number of stations which will be read from the
c              beginning of the input file
      ntot=14466
      open (10,file='tape',status='old',recl=666,blocksize=666)
c
      open (11,file='disk',status='new',access='sequential',recl=276,
     *     form='formatted',recordtype='fixed',blocksize=666)
      i=0
      ij=0
 1    continue
      if(i.eq.ntot)goto4
      read(10,333,err=2,end=3)byte
333   format(666a1)
c
c     bytes swappen
c
      do j=1,666,2
         hilf=byte(j)
         byte(j)=byte(j+1)
```

(продолжение)

```
         byte(j+1)=hilf
      end do
c
      i=i+1
c         conversion : degr.+min.  to degr.
      alat=conver(a(3))
      alon=conver(a(4))
          ij = ij +1
          if(ij.ne.500)goto61
      print 305,i
  305 format(2x,'sequencial station number =',i7)
c
      print 205
      print 209,(a(l),l=1,2),alat,alon,(a(l),l=5,7)
      print 206
      print 204,(a(l),l=8,13)
      print 207
   61 nlev=a(12)
      do 22 l=1,nlev
      zz(l)=float(z(l))
      tt(l)=float(t(l))/1000.
      ss(l)=float(s(l))/1000.+30.
   22 oxx(l)=float(ox(l))/100.
         if(ij.ne.500)goto62
      do 771=1,nlev,2
      l1=l
      l2=l+1
      if(l.eq.nlev)l2=l1
   77 print 208,(zz(j),tt(j),ss(j),oxx(j),j=l1,l2)
   62 continue
c
c          i n t e r p o l a t i o n
c
      fmin=-2.3
      fmax=29.
      mt=inter(nlev,zz,tt,fmin,fmax,tst,zst,nlevt,tt1,zzt)
      fmin=20.
      fmax=38.
      ms=inter(nlev,zz,ss,fmin,fmax,sst,zst,nlevs,ss1,zzs)
      fmin=0.
      fmax=10.
      mox=inter(nlev,zz,oxx,fmin,fmax,oxst,zst,nlevox,oxx1,zzox)
      mmax=max0(mt,ms,mox,nlev)
c        if(ij.ne.1000)goto90
c
      if(mt.le.1.and.ms.le.1.and.mox.le.1) goto 93
      go to 94
   93 print 310
  310 format(2x,'no interpolation on this station')
c
   94 continue
c      do 88 k=1,mmax
c      print 89,zzt(k),tt1(k),zzs(k),ss1(k),zzox(k),oxx1(k),zst(k),
c    * tst(k),sst(k),oxst(k)
   88 continue
c
   90 continue
       if(ij.eq.500)ij=0
c
c           cleaning of the arrays for input data:
      do 99 k=1,80
      zz(k)=0.
      tt(k)=0.
      ss(k)=0.
      oxx(k)=0.
      zzt(k)=0.
```

(продолжение 2)

```
        tt1(k)=0.
        zzs(k)=0.
        ss1(k)=0.
        zzox(k)=0.
        oxx1(k)=0.
  99     continue
c
c          conversion of interpolated data to the integer form:
        lat=icon2(alat)
        lon=icon2(alon)
        do 95 k=1,42
        if(tst(k)+80.)31,31,32
  31    itst(k)=-9999
        goto33
  32    itst(k)=icon1(tst(k))
  33    if(sst(k)+80.)34,34,35
  34    isst(k)=-9999
        goto36
  35    e=sst(k)-30.
        isst(k)=icon1(e)
  36    if(oxst(k)+80.)37,37,38
  37    ioxst(k)=-9999
        goto39
  38    ioxst(k)=icon2(oxst(k))
  39    tst(k)=0.
        sst(k)=0.
        oxst(k)=0.
  95    continue
c
  89     format(2x,f5.0,1x,f7.3,1x,f5.0,1x,f7.3,1x,f5.0,1x,f6.2,
     *  3x,f5.0,1x,f7.3,1x,f7.3,1x,f6.2)
 203    format(a1)
 204    format(2x,7i8)
 205    format(2x,'cr num: st num: latit:  longit:   year:  month:
     *   day:')
 206    format(2x,'  hour:  depth:  deeple:  numpar:  numlev:
     *  marsden:')
 207    format(2x,'        Z       T       S       Ox         Z      T
     *      S       Ox')
 208    format(2x,f8.0,3f8.3,3x,f8.0,3f8.3)
 2[illegible]   format(2x,2i8,2f8.2,3i8)
   5    continue

              writing the output data:

        write(11,444) a(1),a(2),lat,lon,a(5),a(6),a(7),
     *  a(8),a(9),a(10),a(12),a(13),itst,isst,ioxst
 444    format(138a2)

        goto 1
   2    j=i+1
        type 100,j
 100    format(2x,'error during reading', i5)
 101    format(2x,13i6)
        goto 4
   3    type 102, i
        goto 4
 445    type*,' error during writing'
 102    format(2x,'there are ',i5,' stations in this file')
   4    continue
        close(10)
        close(11)
        end
        include 'inter.for/list'
        include 'icon1.for/list'
        include 'possib.for/list'           include 'icon2.for/list'
```

```
        function inter(nob,zob,fob,fmin,fmax,fst,zst,nob2,fob1,zob1)
        dimension zst(42),fst(42),zob(80),fob(80),fob1(80),zob1(80)
c            input information:
c       nob - initial number ob observed levels
c       zst - array of standard levels (in meters)
c       fst - array of values interpolated to standard levels
c       zob - array of initial observed levels (in meters)
c       fob - array of initial observed values
c       fmin, fmax - crude estimates of min. and max. observed values
c            output information:
c       nob2 - final number of observed levels with godd data
c       fob1 - array of observed values considered to be good
c       zob1 - array of observed levels with good data
c       mst - number of standard levels for which interpolation was done
c
c       note! we use 42 standard depth levels from 0 to 7000 meters
c             as in the Southern Ocean Atlas Data Set
c       the maximum possible number of observed levels for this
c       data set is 80
c
      enter(x,x1,x2,y1,y2)=y1+(x-x1)*(y2-y1)/(x2-x1)
      nst1=41
      k=0
      nst=42
c        selection of observation levels considered to be good
      do 4 l=1,nob
      if(fob(l).gt.fmax.or.fob(l).lt.fmin)goto4
      if(l.eq.nob)goto44
      if(zob(l+1).le.zob(l))goto4
   44 k=k+1
      fob1(k)=fob(l)
      zob1(k)=zob(l)
    4 continue
c
      nob2=k
c                    nob2-number of observed levels with good data
      nob1=nob2-1
      if(nob2.eq.0)goto99
      do 1 k = 1,nst
        if(zst(k).gt.zob1(nob2))goto222
        do2 l=1,nob2
        if(l.eq.nob2)goto75
        if(zst(k).eq.zob1(l))goto65
        if(zst(k).gt.zob1(l).and.zst(k).lt.zob1(l+1))goto3
        goto2
    3   continue
                      checking of the possibility to interpolate between
                      the l-th and (l+1)-th observed levels

                      interpolation is considered to be possible only
                      if the spacing between l-th and (l+1)-th observed
                      levels is not larger, than some critical value,
                      which depends on the depth of standard level

                      the possibility to interpolate between the l-th
                      and (l+1)-th observed levels is determined by the
                      subroutine  p o s s i b
        call possib(zst,zob1(l),zob1(l+1),ip)
        if(ip)55,55,111

               ****  linear interpolation  *****
  111   fst(k)=enter(zst(k),zob1(l),zob1(l+1),fob1(l),fob1(l+1))
        mst=k
        goto1
   65   fst(k)=fob1(l)
        mst=k
```

(продолжение ENTER)

```
        goto1
 75     if(zst(k)-zob1(nob2))55,65,55
 55     fst(k)=-99.99
        goto1
  2     continue
        goto1
222     fst(k)=-99.99
  1   continue
      goto79
 99   continue
      do k=1,42
      fst(k)=-99.
      end do
      mst=0
 79   inter=mst
      return
      end
```

```
      subroutine possib(zs,z1,z2,ip)
      dz=z2-z1
      ip=0
      if(zs.ge.0..and.zs.lt.30..and.dz.lt.75.)goto1
      if(zs.ge.30..and.zs.lt.50..and.dz.lt.100.)goto1
      if(zs.ge.50..and.zs.lt.150..and.dz.lt.150.)goto1
      if(zs.ge.150..and.zs.lt.400..and.dz.lt.300.)goto1
      if(zs.ge.400..and.zs.lt.1500..and.dz.lt.600.)goto1
      if(zs.ge.1500..and.dz.lt.1500.)goto1
      goto2
    1 ip=1
    2 return
      end
```

```
      function conver(ia)
      integer*2 ia
      a=float(ia)
      b=a/100.
      c=aint(b)
      d=b-c
      e=d*5./3.
      conver=c+e
      return
      end
```

(a z)
p = float(a [illegible]
z = p/100.
s = aint(z)
t = z - s
u = t * 5./3.
conver = s + u

```
        function icon1(a)
c       conversion in to integer*2 values of temp. and sal.
      b=abs(a*1000.)
      c=aint(b)
      d=b-c
      if(d.gt.0.5)c=c+1.
      if(a.lt.0.)si=-1.
      if(a.ge.0.)si=1.
      c=c*si
      icon1=ifix(c)
      return
```

```
        function icon2(a)
:       conversion in to integer*2 values of coordinates and oxigen
      integer*2 icon2
      b=abs(a*100.)
      c=aint(b)
      d=b-c
      if(d.gt.0.5)c=c+1.
      if(a.lt.0.)si=-1.
      if(a.ge.0.)si=1.
      c=c*si
      icon2=ifix(c)
      return
      end
```

ЧТЕНИЕ ИНТЕРПОЛИРОВАННЫХ СТАНЦИЙ

App. III

```
       program reading
c         this program readsthe interpolated data from the disk
      integer*2 a(12),t(42),s(42),ox(42),z(42)
      open(12,file='disk',status='old',access='sequential',
     *recl=276,form='formatted',recordtype='fixed')
c
      type *,' how many stations would you like to read ? '
      accept*, nst
        do 33 n = 1, nst
      read(12,100,end=3)a,t,s,ox
      m = n
  100 format(138a2)
c              these are the standard levels depths:
         data z / 0, 10, 20, 30, 50, 75, 100, 125, 150, 200, 250,
     *            300, 350, 400, 500, 600, 700, 750, 800, 900,
     *            1000, 1100, 1200, 1300, 1400, 1500, 1750, 2000,
     *            2250, 2500, 2750, 3000, 3250, 3500, 3750, 4000,
     *            4500, 5000, 5500, 6000, 6500, 7000 /
c
c        a(1) - archiv number of cruise
c        a(2) - cruise number of station
c        a(3) - latitude (in degrees * 100)
c        a(4) - longitude (in degrees * 100)
c        a(5) - year
c        a(6) - month
c        a(7) - day
c        a(8) - hour    a(9) - depth of the ocean
c        a(10) - depth of the deepest observed level
c        a(11) - total number of observed levels
c        a(12) - Marsden square
c
c        t - array of interpolated temperature values ( * 1000 )
c        s - array of interpolated salinity values ( ( S - 30 ) * 1000 )
c        ox - array of interpolated oxygen values ( * 100 )
c
      type 101,a
      do k=1,42
      type 102, z(k),t(k),s(k),ox(k)
        end do
c
   33 continue
      goto4
    3 continue
      type*,'end of file'
      type*,' there are ', i6, ' stations in the file'
    4 close( 12)
  101 format(1x,12i6)
  102 format(1x,4(i7))
       end
```

device : OTH$DATEN:[VGURETS] DISK2.DAT

DISK1.DAT

```
     PROGRAM READ

     BYTE BYTE (666), HILF
     INTEGER*2 ARRAY (333)
     EQUIVALENCE (BYTE(1), ARRAY (1))

     OPEN (10,FILE='TAPE',STATUS='OLD',RECL=666,BLOCKSIZE=666)
     IBLOCK = 1
1    READ (10,100,ERR=999,END=11111) BYTE
100  FORMAT (666A1)

 BYTES SWAPPEN

     DO I=1,666,2
        HILF = BYTE (I)
        BYTE (I) = BYTE (I+1)
        BYTE (I+1) = HILF
     END DO

     WRITE (6,200) IBLOCK
200  FORMAT (' BLOCKNUMMER: ',I6)
     IREST = MOD (333,8)
     IGANZ = 333/8
     DO J=1,IGANZ*8,8
        WRITE (6,300) (ARRAY(I), I=J,J+7)
     END DO

     WRITE (6,300) (ARRAY(I), I=IGANZ*8,(IGANZ*8)+IREST-1)
00   FORMAT (1X,8I8)
     IBLOCK = IBLOCK + 1
     GOTO 1

111 TYPE *, 'EOF FOUND.'
     CLOSE (10)
     STOP

99   TYPE *, 'ERROR DURING READ.'
     CLOSE (10)
     STOP
     END
```

При помощи этой программы
прочитали данные TAPE1.DAT
TAPE2.DAT

5 March 1991

V.Gouretsky

ADDITION TO THE SOUTHERN OCEAN DATA BASE

There are 2177 hydrographic stations to be added to the Southern_Ocean_DB. All stations have been obtained by the soviet ships.

Data are in the file OTH$DATEN:[socean.aari]A1111.dat

Program READAARI reads the data and types them on the screen.
Description of the data is given in the program text.

A1111_Station 600000

A1111_Standard_Data
6000000

14.03.91

26-11-92

SOCEAN -> LPR

ADDITION TO THE DATA BASE

There are 97 stations, made south off Africa by the Soviet ship "N. Kuropatkin".

Aari_Table

Stations are written in the file sys$user:[socean]KUROP.DAT

Data are interpolated to the standard levels.

The file can be read by the program oth$daten:[socean.for]READ1

The ship is specified by the new Cruise_Number=-23011.

Additional row to the Aari_Cruise table:

max (Ship_Id#)
∧ Ship_Id# < 10000 ✓

Cruise_Number	Ship	Country
-23011	N.Kuropatkin	USSR ✓

Daten geladen mit Aariload

doppelte Station_Id# in Aari_Station
Aari_Standard_Data

Schiff mit add_kuropatkin_ships.script

DESCRIPTION OF THE SOURCE DATA FOR THE SOUTHERN OCEAN DATA BASE

Texas Agriculture & Mechanics University Data Set

---

1. Data Set obtained from Texas Agriculture and Mechanics University, College Station, Texas, USA.

2. Forwarded to AWI in October, 1990.

3. Original data are stored on the 8-track magnetic VAX tape #5-4014 of
   10/1/1990, 1600 BPI, Label=SOCEAN,
   File=S_OCEAN.DAT

4. Sender: Steven B. Rutz
   Department of Oceanography
   Texas A&M University
   College Station, TX 77843

5. Contact persons: Mr. Steven B. Rutz

6. Data were collected in TA&M University and comprise only the observation which are the extension of the data set, used for the construction of the Southern Ocean Atlas (Gordon, Molinelli, Baker, 1984).

   Total number of the original stations,obtained from TA&MU, is 1108 (Fig.1)

7. Raw data are presented as Temperature, Salinity and Oxygen values given at the observed levels, measured in meters.

   Before the inclusion into the Data Base the data were interpolated to the standard levels of the Data Base by the program INTERNOWL.FOR.

   The final file, forwarded to the computer centre, is
   oth$daten:[socean] NOWLINT.DAT.

   The program to read the file is oth$daten:[socean] READNOWLIN.FOR

8. Information about Cruise_Number, Ship and Country is stored in the file NOWLINCODE3.DAT (total of 21 Cruises). This file was also forwarded to the computer center together with file NOWLINT.DAT.

9. Within the Station and Statndard_Data tables Stations from TA&MU occupy the ID# range between 200001 and 201108.

V.Gouretski

AWI, 22 August 1991

This is : OTH$ DATEN : [SOCEAN. TEXT] NOWLINDESCRIPT. DAT

→ Guretsky

Muséum National d'Histoire Naturelle
LABORATOIRE d'OCEANOGRAPHIE PHYSIQUE
43, rue Cuvier 75231 Paris Cedex 05

Téléphone: (33.1.) 40.79.31.58

Le Professeur Titulaire
Directeur du Laboratoire

Paris, 8th April 1991

EINGEGANGEN
16. APR. 1991

Professor D. OLBERS
Alfred-Wegener-Institut für
Polar und Meeresforschung
Postfach 120161
Columbusstrasse
D-2850 Bremerhaven
Allemagne

Dear colleague,

It pleasures me to see from your last letter (21/03/91) that your Southern Ocean hydrographic data bank and atlas project is being undertaken with success collecting already an unprecedented huge volume of data. I am glad also to be informed from Dr.Guretsky's Telemail that our data have been of great importance covering the region where your data set is sparse. It is just a beginning of the data exchange cooperation between AWI and LOP/MNHN; my laboratory is going to conduct a CTD cruise in the Crozet Basin from 11th April to 23th May of this year (Dr. Park as a chief scientist) and this may yield a high-quality data set of about 80 stations which can be communicated to you after validation and publication.

I have included here a copy of Park and his team's recent work on the ACC structure in the Crozet Basin (in press in Marine Chemistry) and you can find in it a map showing the location of the planned CTD stations during the April-May cruise. We have noticed that your colored map for temperature field at 350m reflects some important regional hydrographic phenomena that have been described in the upper-mentioned paper; i.e., the strong concentration of the ACC just north of Kerguelen and the steering of the current by the Crozet and Kerguelen plateaus; the profound influence of the Agulhas Current water deeply southward into the Crozet Basin and its gradual northward recirculation west of the Amsterdam Island.

As I wrote you in my letter of 20th September 1990 we are conducting the program SUZAN as part of WOCE/France. So if your data validation procedure is completed we would be very appreciated to receive your station data in the Indian Ocean sector as specified in inclosed Annex.

Best regards, Yours sincerely,

Joseph GONELLA

Enclosures

Copy: Muséum: Le Directeur
LOP: Y.H. PARK, B. SAINT-GUILY

YHP/YHP/12

Muséum National d'Histoire Naturelle
LABORATOIRE d'OCEANOGRAPHIE PHYSIQUE
43, rue Cuvier 75231 Paris Cedex 05

Paris, 8th April 1991

ANNEX HYDROGRAPHIC DATA OF INTEREST

1. *AREA*

- South off **30°S**
- Between **20°E** and **120°E**

2. *STATION DATA*

- Validated data only
- Data linearly interpolated to the 42 standard levels

3. *DATA TAPE*

- Data written in ASCII
- Tape of 1600 or 6250 bpi

DESCRIPTION OF THE SOURCE DATA FOR THE SOUTHERN OCEAN DATA BASE

Data Set obtained from Tokyo University of Fisheries

---

1. Data Set was obtained from Tokyo University of Fisheries (TUF), Tokyo, Japan

2. Forwarded to AWI in October 1990.

3. Original data were available only in the form of printed data reports (Titles are given in the Appendix)

4. Sender: Dr. Dr. Jiro Yoshida, Tokyo University of Fisheries,
   Department of Technology
   5-7, KONAN 4-CHOME, MINATO-KU, TOKYO 108 JAPAN.

5. Contact persons: Dr. J. Yoshida, tel.: (03)-471-1251, ext 447.

6. Data were collected during 1966-1984 by R/V "Umitaka-Maru"

7. Raw data are the hydrographic data at observed levels (Temp., Sal., Oxyg.)

December 1964 - February 1965	70 stn. (Bottles)
November 1966 - February 1967	42 stn. (Bottles)
December 1977 - February 1978	13 stn. (STD)
January 1980 - February 1981	42 stn. (CTD)
January 1984 - February 1984	23 stn. (STD)

Total = 190

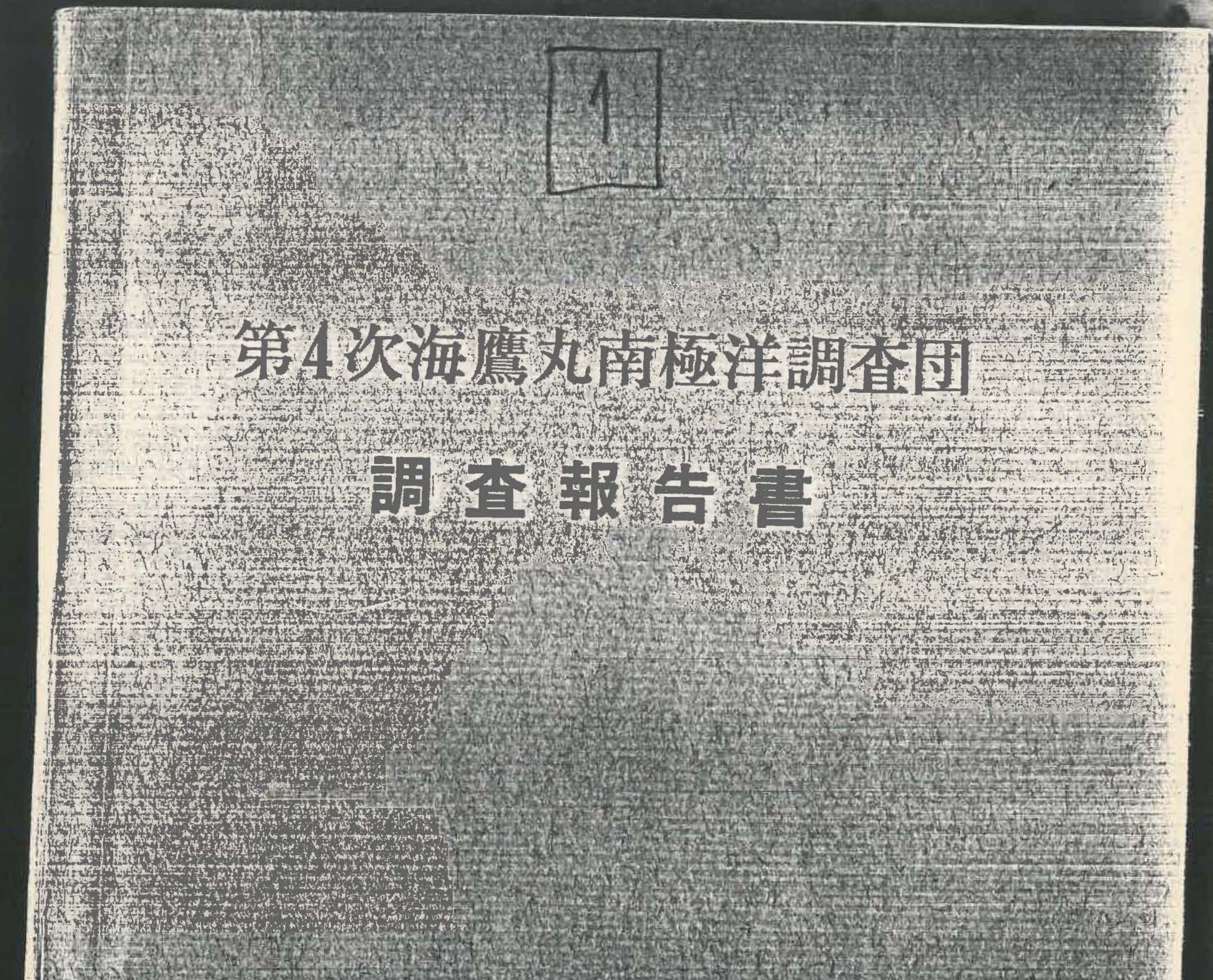
Before the inclusion into the Data Base the following steps have been done:

1) Data were typed in to the VAX-computer and checked for typing errors. (file TUNFI1.DAT)
2) Data were interpolated to the standard levels of the Data Base (program interjapl.for). Interpolated data are in the file TOKYOINT.DAT
3) File TOKYOINT.DAT was forwarded to the computer centre for the inclusion to the Data Base

---

V.Gouretski

AWI, 22 August 1991



1

第4次海鷹丸南極洋調査団

調査報告書

東京水産大学

2 150 2

東京水産大学特別研究報告

第9巻 第1号

JOURNAL
OF THE
TOKYO UNIVERSITY OF FISHERIES

(Special Edition)

Vol. IX, No. 1

TOKYO UNIVERSITY OF FISHERIES
1968
TOKYO JAPAN

③

3

TRANSACTIONS
OF THE
TOKYO UNIVERSITY OF FISHERIES

(TOKYO SUISAN DAIGAKU TOKUBETSU KENKYU HOKOKU)

No. 3 November 1979

FISHERIES INVESTIGATION ON ANTARCTIC KRILL POPULATION PART II.

CONTENTS

Continued on inside backcover

THE TOKYO UNIVERSITY OF FISHERIES
TOKYO

Trans. Tokyo Univ. Fish (*Tokyo Suisandai Toku Kempo*)	Number 3	pp. 1-164	Tokyo November 1979

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東京水産大学特別研究報告

第 9 巻　第 2 号

JOURNAL
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Vol. IX, No. 2

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1968
TOKYO JAPAN

5

ISSN 0388-0966

TRANSACTIONS
OF THE
TOKYO UNIVERSITY OF FISHERIES

(TOKYO SUISAN DAIGAKU TOKUBETSU KENKYU HOKOKU)

No. 5 March 1982

BIOLOGICAL INVESTIGATIONS OF MARINE ANTARCTIC SYSTEMS AND STOCKS (FIBEX) BY UMITAKA MARU 1980–1981

CONTENTS

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THE TOKYO UNIVERSITY OF FISHERIES
TOKYO

Trans. Tokyo Univ. Fish. *(Tokyo Suisandai Toku Kempo)*	Number 5	pp. 1-224	Tokyo March 1982

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ISSN 0388-0966

TRANSACTIONS
OF THE
TOKYO UNIVERSITY OF FISHERIES

(TOKYO SUISAN DAIGAKU TOKUBETSU KENKYU HOKOKU)

No. 6　　March 1985

BIOLOGICAL INVESTIGATIONS OF MARINE ANTARCTIC SYSTEMS AND STOCKS (SIBEX) BY UMITAKA MARU 1983-1984

CONTENTS

Continued on inside backcover

THE TOKYO UNIVERSITY OF FISHERIES

TOKYO

Trans. Tokyo Univ. Fish. *(Tokyo Suisandai Toku Kempo)*	Number 6	pp. 1-217	Tokyo March 1985

07.02.91

Data from Tokyo University of Fisheries

Data are in the file oth$daten:[socean.japan]tokyoint.dat

These are data interpolated to the standard levels by the program INTERJAP1 from the observed data which are in the file TOUNFI1.dat.

Total number of stations is 188.

There are 5 different cruises of "Umitaka-Maru". They were given Cruise_Numbers from -26001 to -26005.

The table Aari_Cruise should be therefore extended as follows:

Cruise_Number	Ship	Country
-26001	Umitaka-Maru	Japan
-26002	Umitaka-Maru	Japan
-26003	Umitaka-Maru	Japan
-26004	Umitaka-Maru	Japan
-26005	Umitaka-Maru	Japan

V.Gouretski

7 February 1991

ADD_TOKYO_SHIPS.SCRIPT

14.04.91

DATA OF THE JAPANESE ANTARCTIC RESEARCH EXPEDITION
(JARE)

This data have been obtained from Lamont Geological Laboratory.

6 stations for December 1983 and 14 stations for 1987-1988 have been typed in AWI from the expedition reports.

Most stations contain both temperature,salinity,oxygen and nutrients data.

Raw data have been interpolated on to the standard levels (program INTERJAP1.FOR, INTERJAP2.FOR)

All data to be included in to the Data Base are kept in the file OTH$DATEN:[SOCEAN.JARE]JAREALL.DAT

The program which reads this data is OTH$DATEN:[SOCEAN.JARE]READJARE.EXE (FOR)

New Ship?Cruise data should be added in to the Data Base in accoedance with JARE data set as follows:

Cruise_Number	Ship name
-25026	Fuji
-25027	Fuji
-25028	Shirase
-25029	Shirase
-25030	Shirase
-25031	Shirase
-25032	Shirase
-25033	Shirase

by hand
21.05.91

geändert
05.09.91

V.Gouretsky, 14 April 1991, AWI

Schiffe geladen mit
add_ships_jare140491.script

Natural Environment Research Council

British Antarctic Survey
Director: Dr D. J. Drewry
High Cross Madingley Road Cambridge CB3 0ET
Telephone: Cambridge (0223) 61188 Fax: (0223) 62616 Telex: 817725 BASCAM G

BASFAX/ 358/5/91

FAX TRANSMISSION

TO: Alfred-Wegener-Institut für
Polar Und Merresforschung,
Bremerhaven.

FAX NO.: 010 49 471 4831-149

ATTN:Dr Manfred Reinke.

REF:

FROM:Mark Thorley
BIOMASS Data Centre.

DATE: May 21, 1991

NUMBER OF SHEETS TO FOLLOW: 3

(PLEASE NOTIFY US IMMEDIATELY IF THE TRANSMISSION IS IN ANY WAY UNSATISFACTORY)

Dear Manfred,

As promised here is the description for the oceanography data I sent over with Dr Julian Priddle, from BAS, for Dr Maciej Lipski. The data are on 5¼ inch high density (1.2Mbyte) floppy disks, with one file per cruise. The disks only contain data for the Atlantic Sector/Bransfield Strait, and are as follows:

Disk	Experiment	Cruises [File Size (Kbytes)]
BIO_01	FIBEX	HEFX [177], HOFX [108], ITFX [180], ODFX [338] SIFX [333].
BIO_02	SIBEX 1	ACS1 [265], BES1 [246], PSS1 [672].
BIO_03	SIBEX 1	SIS1 [531].
	SIBEX 2	CHS2 [849].
BIO_04	SIBEX 2	HES2 [1101].
BIO_05	SIBEX 2	BES2 [270], JBS2 [930].
BIO_06	SIBEX 2	ACS2 [160], KMS2 [382], PSS2 [380].

I am enclosing a copy of the fax Dr Lipski sent to me with his original queries in. He is interested in phytoplankton and ocean-chemistry data. The BIOMASS Data Centre does not have any phytoplankton data, but I hope Dr Lipski will find the oceanography data of some use. If Dr Lipski requires the cruise track data, I can put copies of the cruise tracks into the express post, or send the track data file (it is very large).

I have been advised by the systems people here at BAS that sending large data files by electronic male might cause problems. Do you have an area on the AWI VAX where I can transfer files to using FTP procedures ? I believe there is an FTP "mail-box" on the BAS VAX from which you should be able to transfer files that have been placed in it.

The format of the oceanography files are as follows:

> CRUISE, STATION, DATE/TIME (as YYMMDD hhmiss), STATION_LATITUDE, STATION_LONGITUDE, DEPTH (m), PRDEPTH (water pressure depth), OBSTYPE (observation type code), DEPTHTYPE (depth type measurement code), TEMP (deg C), SALINITY (ppt), OXYGEN (ml/l), INPHOS (inorganic phosphate mi-atm/l), NITRITE (mi-atm/l N), NITRATE (mi-atm/l N), AMMONIUM (mi-atm/l N), SILICATE (mi-atm/l Si), PH, CHLORIDE, CHLOROPHYLL_A (mg/m3), SIGMAT (calculated Sigma T), SIGT (observed Sigma T), SOUND_VELOCITY, DYNAMIC_HEIGHT (j/m **2), SIGMA_THETA (potential density), POTENTIAL_TEMPERATURE (deg C), SPECIFIC_VOLUME_ANOMALY, DELTA_D.

Records are 290 bytes long.

I have attached a summary of the cruises. I hope this is enough information for Dr Lipski to be able to start his analysis. If you require any more information, please let me know - I imagine the telephone is quickest !

Yours sincerely,

Mark.

Mark Thorley,
Manager, BIOMASS Data Centre.

Enclosed : (1) Copy of data request from M.Lipski to BIOMASS Data Centre.
(2) Summary of cruise details.

```
UA55![U_BIOMAS]MRT.LIS;3             22-MAY-1991 10:16:06.20



BIOMASS. Bransfield Strait Cruise Details.

CRUI CRUISE TITLE      CRUISE-START   CRUISE-END           LATN    LATS    LONE    LONW
---- ---------------- --------------- --------------- ------- ------- ------- -------
FIBEX.

HEFX Herwig     FRG FX 810126 000000  810301 000000       -67     -64     -49     -57
HOFX Holmberg   Arg FX 810119 000000  810216 000000       -57     -62     -42     -48
ITFX Itzu Mi    Chi FX 810126 000000  810223 000000       -60     -64     -53     -63
ODFX Odissey    URS FX 810201 000000  810320 000000       -52     -62     -30     -56
SIFX Siedlecki  Pol FX 810214 000000  810313 000000       -59     -56     -56     -67


SIBEX 1
      ACS 1
A    Alcazar    Chi S1 840127 000000  840211 235959       -62     -65     -54     -66
BES1 W.Besnard  Bra S1 840121 000000  840209 235959       -60     -65     -54     -67
PSS1 Polarstrn  FRG S1 831023 000000  831116 235959       -60     -64     -54     -61
SIS1 Siedlecki  Pol S1 831221 030200  840108 232000       -60     -65     -43     -66


SIBEX 2

ACS2 Alcazar    Chi S2 850124 000000  850212 235959       -62     -65     -54     -66
BES2 W.Besnard  Bra S2 850127 000000  850215 235959       -62     -65     -54     -67
CHS2 Sing Yang  Chn S2 850120 042500  850212 172500       -61     -67     -55     -69
HES2 Herwig     FRG S2 850310 000000  850408 235959       -60     -69     -54     -73
JBS2 J Biscoe   UK  S2 850116 000000  850206 235959       -60     -63     -54     -67
KMS2 Kaiyo Mru  Jap S2 841127 082500  850127 061000       -45     -45     -18     -90
PSS2 Polarstrn  FRG S2 841121 000000  841204 235959       -60     -64     -54     -60


Values of OBSTYPE code.

   TYPE    TEXT
 -------   --------------------------------------------------------------
    O      VALUES AT OBSERVED DEPTH
    S      VALUES AT INTERPOLATED STANDARD DEPTHS
    I      VALUES INTERPOLATED AT DATA CENTRE
    V      VALUES RE-VALIDATED AT DATA CENTRE
    X      USING XBT


Values of DEPTHTYPE code.

DEPTHTYPE      TEXT
---------      ------------------------------------------------------------
    Q          DEPTH INACCURATE
    T          DEPTH FROM UNPROTECTED THERMOMETERS
    Z          DEPTH FROM WIRE OUT
```

18th.Febr.1991

Dr.J.Priddle/Mark Thorley
British Antarctic Survey

Dear Julian,

Thank you for your fax of 25 Jan. 1991.There was no reason to wait so long with it, all the time I was working at my Institute, only the stationary I have used, belongs to Arctowski Station. Now Prof. El-Sayed have clarified me the problem of authorship of the paper. It's a pitty that we cannot do it together. In this case I will need a substantial help of someone of BIOMASS Data Centre and Prof. El-Sayed encouraged me to write to Mark Thorley. In future I will contact him directly, but the first time I am asking you to transfer to Mark Thorley my first needs of information on BIOMASS Phytoplankton Data (and not only phytoplankton). I would like to know how this data look like for individual station for every cruise when the chlorophyll was determined. So, off the list of chlorophyll records please select the cruises carried out on Antarctic Peninsula/Atlantic Region.Then I need the following information about each cruise:
sampling area (geographical coordinates).sampling time (from..to..), number of stations occupied, additional informations important to my subject (if any available) and a full printout for one station of every cruise including oceanographic parametrs like T and S, hydrochemistry (nutrients) and chlorophyll.
Having this information about every cruise I will be able to evaluate the possibilities of further interpretation and elaboration of the existing data.This information schould be possible to send to me by fax.Meanwhile I will try to find the possibility to contact with BAS by TELNET , but now my Institute does not have connection to international computer system.

Obviously I would like to have the paper on utility of phytoplankton biomass data for indicating environmental changes, please send it to me when it will be ready.

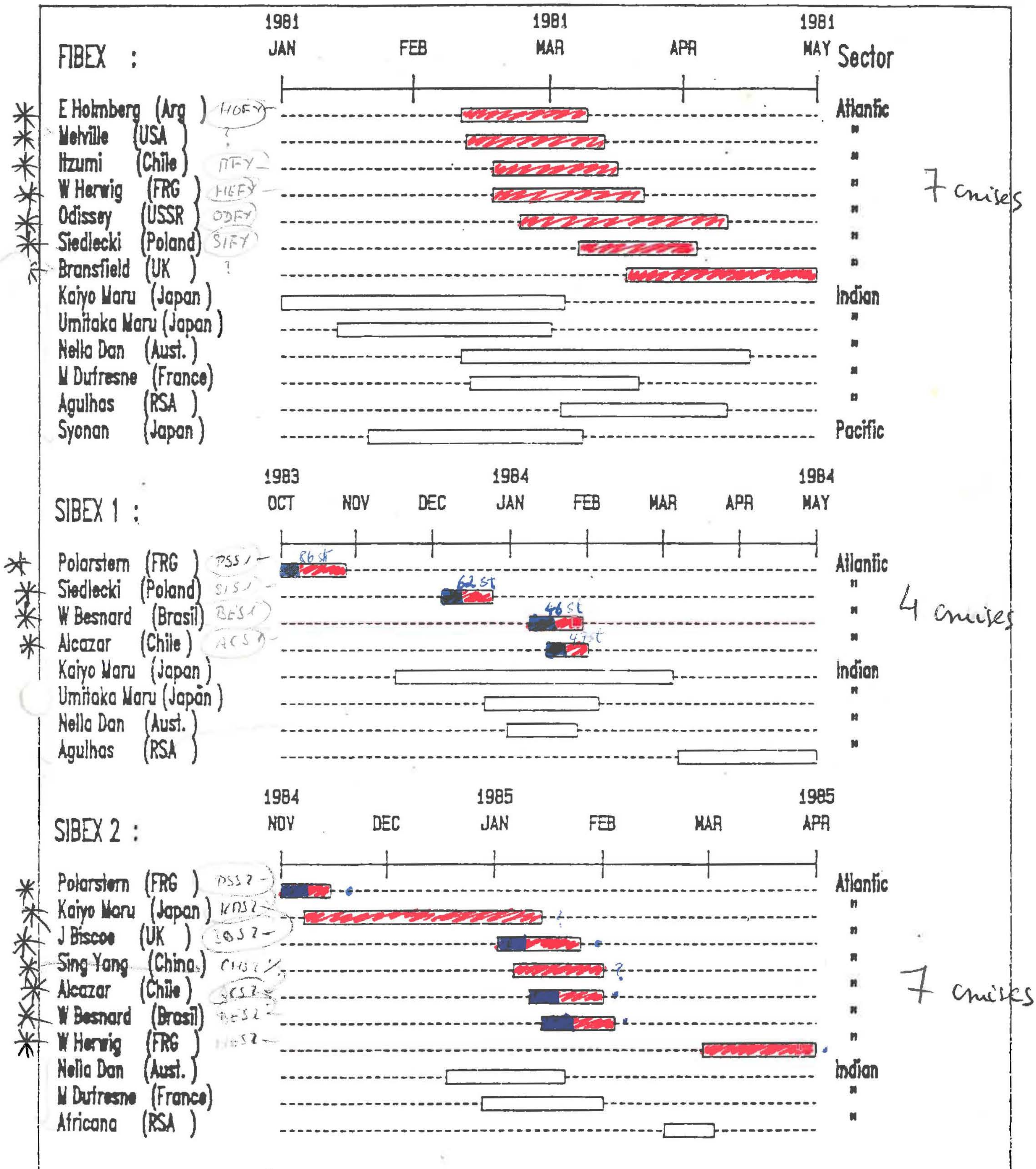
That is all for the first message in our cooperation. Thank you in advance. Sincerely yours-

Maciek Lipski

FAX TO: British Antarctic Survey
Mr.Mark Thorley
fax no. 0223-62616

FROM: Dr.F.Brandini/Dr.Lipski
AWI-Bremerhaven

BIOMASS Cruises: We need tables: STATION and TRACK for following cruises marked by *



if possible to transmit it via OMNET
post box V. SMETACEK

Addendum to the BIOMASS data set by Mark Thorley
25. Juni 1991

- CHS2 got no Latitude nor Longitude in the original data set. There are some postion corresponding to the dta set but they can not be validated. So the data must be dropped.
- The problem arising with the Salinity data is based on the misinterpretation of the observation flag. If this flag is *S* the data are correct and validated by an interpolation process. If this flag is *O* the data are original, observed data. Therefore they should be multiplied by ten. Mr. Thorley is unable to validate the data in the ITFX file.
- The SIBEX data of cruise PSS1, ACS2, SCS1, HEFX2, ACS1, PSS1, JBS2 are not validated in the data set. There is a report where validated data of this cruises are shown. This is done at the *SIBEX Oceanographic Workshop* in 1987 which is available as Biomass Report no. 62

15.07.1991 script Biomass-UPD.script

Set illegal values to NULL

i.e. $p < 0$ Salinity
Oxygen
Nitrite
Nitrate
InPhos

$p = -9999$ all

$p < -9$ Temperature
pot-Temp

$0 < p < 30$ Salinity $S := S \cdot 10$

Müench Data

Errors found in the data forwarded to the
Data_Base manager for the inclusion into
the Southern Ocean Data Base

Data set obtained from R.Muench was included into the Southern Ocean Data Base on the -th of August, 1991.

When the gridded fields of parameters and maps for the region covered by the Muench's data were obtained, the obvious errors were found.

The whole procedure of the converting the raw data into the form forwarded to the computer center was checked and the error was found in the program which reads initial files of Muench's data (program readmu1.for).

This error was corrected and all steps of the data conversion procedure were than repeated (i.g. reading, dbar to meter conversion, interpolation to the standard dpeths).

**** New file of R.Muench's data is: OTH$DATEN:[socean.MUENCH]MUENCHN.DAT

**** The program to read the file is READMUIN.

V.Gouretski, 26 August 1991

(file oth$daten:[socean.text]KURDEL10.NOTE)

gelöscht	28.08.91	09:20
neu	28,08.91	09:21
upd	28,08,91	09:37
kopiert	28.08.91	

LPh

Muench Data

Errors found in the data forwarded to the Data_Base manager for the inclusion into the Southern Ocean Data Base

Data set obtained from R.Muench was included into the Southern Ocean Data Base on the -th of August, 1991.

When the gridded fields of parameters and maps for the region covered by the Muench's data were obtained, the obvious errors were found.

The whole procedure of the converting the raw data into the form forwarded to the computer center was checked and the error was found in the program which reads initial files of Muench's data (program readmu1.for).

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**** New file of R.Muench's data is: OTH$DATEN:[socean.MUENCH]MUENCHN.DAT

**** The program to read the file is READMUIN.

V.Gouretski, 26 August 1991

(file oth$daten:[socean.text]KURDEL10.NOTE)

gelöscht	28.08.91	09:20
neu	28,08.91	09:21
upd	28,08,91	09:33
Kopiert	28.08.91	

CPh

```
ZZZZZZZZZZ     999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999     7777777777
ZZZZZZZZZZ     9999999999999999999999999 Digital Equipment Corporation - VAX/VMS Version V5.4-2 000000000000000000000000000000     7777777777
ZZZZZZZZZZ     999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999     7777777777


                                        SSSS   OOO    CCCC  EEEEE   AAA   N   N
                                       S      O   O  C      E      A   A  N   N
                                       S      O   O  C      E      A   A  NN  N
                                        SSS   O   O  C      EEEE   A   A  N N N
                                           S  O   O  C      E      AAAAA  N  NN
                                           S  O   O  C      E      A   A  N   N
                                       SSSS    OOO    CCCC  EEEEE  A   A  N   N


      MM      MM UU      UU EEEEEEEEEE NN      NN   CCCCCCCC HH      HH DDDDDDDD     AAAAAA   TTTTTTTTTT   AAAAAA
      MM      MM UU      UU EEEEEEEEEE NN      NN   CCCCCCCC HH      HH DDDDDDDD     AAAAAA   TTTTTTTTTT   AAAAAA
      MMMM  MMMM UU      UU EE         NN      NN CC         HH      HH DD      DD AA      AA     TT     AA      AA
      MMMM  MMMM UU      UU EE         NN      NN CC         HH      HH DD      DD AA      AA     TT     AA      AA
      MM  MM  MM UU      UU EE         NNNN    NN CC         HH      HH DD      DD AA      AA     TT     AA      AA
      MM  MM  MM UU      UU EE         NNNN    NN CC         HH      HH DD      DD AA      AA     TT     AA      AA
      MM      MM UU      UU EEEEEEEE   NN  NN  NN CC         HHHHHHHHHH DD      DD AA      AA     TT     AA      AA
      MM      MM UU      UU EEEEEEEE   NN  NN  NN CC         HHHHHHHHHH DD      DD AA      AA     TT     AA      AA
      MM      MM UU      UU EE         NN    NNNN CC         HH      HH DD      DD AAAAAAAAAA     TT     AAAAAAAAAA
      MM      MM UU      UU EE         NN    NNNN CC         HH      HH DD      DD AAAAAAAAAA     TT     AAAAAAAAAA
      MM      MM UU      UU EE         NN      NN CC         HH      HH DD      DD AA      AA     TT     AA      AA
      MM      MM UU      UU EE         NN      NN CC         HH      HH DD      DD AA      AA     TT     AA      AA
      MM      MM UUUUUUUUUU EEEEEEEEEE NN      NN   CCCCCCCC HH      HH DDDDDDDD   AA      AA     TT     AA      AA
      MM      MM UUUUUUUUUU EEEEEEEEEE NN      NN   CCCCCCCC HH      HH DDDDDDDD   AA      AA     TT     AA      AA


                              TTTTTTTTTT EEEEEEEEEE XX      XX TTTTTTTTTT     ;;;;      11
                              TTTTTTTTTT EEEEEEEEEE XX      XX TTTTTTTTTT     ;;;;      11
                                  TT     EE         XX      XX     TT         ;;;;    1111
                                  TT     EE         XX      XX     TT         ;;;;    1111
                                  TT     EE           XX  XX       TT                   11
                                  TT     EE           XX  XX       TT                   11
                                  TT     EEEEEEEE       XX         TT         ;;;;      11
                                  TT     EEEEEEEE       XX         TT         ;;;;      11
                                  TT     EE           XX  XX       TT         ;;;;      11
                                  TT     EE           XX  XX       TT         ;;;;      11
                        ....      TT     EE         XX      XX     TT           ;;      11
                        ....      TT     EE         XX      XX     TT           ;;      11
                        ....      TT     EEEEEEEEEE XX      XX     TT         ;;      111111
                        ....      TT     EEEEEEEEEE XX      XX     TT         ;;      111111



File _$1$DUA15:[OTHDISK1.SOCEAN.TEXT]MUENCHDATA.TEXT;1 (6112,9,1), last revised on 19-JUN-1991 14:52, is a 4 block sequential file
owned by UIC [TPH.SOCEAN].  The records are variable length with implied (CR) carriage control.  The longest record is 80 bytes.

Job MUENCHDATA (744) queued to SYS$PRINT on 19-JUN-1991 15:25 by user SOCEAN, UIC [TPH.SOCEAN], under account PH2 at priority 100,
started on printer _AWI7$LTA0: on 19-JUN-1991 15:25 from queue AWI7$LTA0.

ZZZZZZZZZZ     999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999     7777777777
ZZZZZZZZZZ     9999999999999999999999999 Digital Equipment Corporation - VAX/VMS Version V5.4-2 000000000000000000000000000000     7777777777
ZZZZZZZZZZ     999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999999     7777777777
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DESCRIPTION OF THE SOURCE DATA FOR THE SOUTHERN OCEAN DATA BASE

Science Applications International Corporation
Data Set

1. Data Set obtained from Sciences Applications International Corporation (SAIC)

2. Forwarded to AWI in April 23 1991.

3. Original data are on six 5.25 floppy disks

4. Sender: Science Applications International Corporation, 1 008 Na hun
Way, Suite 36, Bellevue, Washington 98005

5. Contact persons: Dr. Robin D. Muench, Tel: (206) 747-7152

6. Data were collected during 1983, 1986 and 1988 cruises carried out under the AMERIEZ (Antarctic Marine Ecosystem Research in the Ice Edge Zone) program, which was funded by the U.S. National Science Foundation.

Total number of the original stations,obtained from SAIC, is 268. 50 stations for the year 1983 have been already included into the Data Base. Therefore only 208 stations out of this data set are included into the Data Base.

7. Raw data are the CTD stations with Temperature and Salinity values given at the observed levels, measured in decibars.

Before the inclusion into the Data Base the following steps have been done:

1) Decibars were converted in to meters by the program
oth$daten:[socean.muench]MUDBARMETER

2) Data were interpolated to the standard levels of the Data Base
by the program oth$daten:[socean.muench]MUINTER

The final file, forwarded to the computer centre, is
oth$daten:[socean.muench] MUENCH.DAT
The program to read the file is oth$daten:[socean.muench]READMUEN

V.Gouretski

AWI, 19 June 1991

Guretsky

Jari_Cruise

CRUISE_NUMBER CODE —	SHIP CRUISE	COUNTRY
2	Acad.Knipovich	USSR
17	Ob´,5	USSR
18	Ob´,6	USSR
19	Ob´,7	USSR
20	Ob´,4	USSR
42	Evrica	USSR
65	Belogorsk	USSR
102	Blesk	USSR
108	Onekhovo	USSR
116	Ranonel	Argentina
123	Almirante	Portugal
134	Vyandra	USSR
137	Vyandra, 2	USSR
152	unknown	unknown
154	Acad.Knipovich,1	USSR
155	unknown	unknown
165	Vyandra, 4	USSR
167	Gizhiga, 2	USSR
176	Langust, 2	USSR
183	Nauka, 1	USSR
185	Obdorsk	USSR
186	Ob´,10	USSR
187	Ob´,11	USSR
195	Orekhovo, 10	USSR
202	unknown	unknown
215	Acad.Knipovich	USSR
230	Gizhiga	USSR
232	unknown	unknown
240	Lyra	unknown
241	unknown	unknown
252	Raduga	USSR
266	unknown	unknown
271	Vojeikov	USSR
286	Olonyets	USSR
288	Ob´, 12	USSR
292	Lesnoy	USSR
295	Shokalskiy	USSR
302	Acad.Shirshov	USSR

319	Jubileyniy, 1	USSR
323	Langust, 4	USSR
328	unknown	unknown
343	Korifey	USSR
369	Ob´, 13	USSR
388	Langust	unknown
406	Gascoyne	Australia
408	Gascoyne	Australia
410	Gascoyne	Australia
414	Diamantina	Australia
415	Diamantina	Australia
416	Diamantina	Australia
417	Diamantina	Australia
418	Diamantina	Australia
419	Volna	USSR
420	Diamantina	Australia
421	Diamantina	Australia
422	Diamantina	Australia
423	Diamantina	Australia
424	unknown	unknown
426	unknown	unknown
429	Anton Brown	USA
430	Olonets	USSR
431	Diamantina	Australia
432	unknown	unknown
553	Ariel	USSR
555	Anton Brown	USA
557	Anton Brown	USA
560	Acad. Kuschatov	USSR
590	Anton Brown	USA
593	Vema	USA
596	Gen.San-Martin	Argentina
597	Gen.San-Martin	Argentina
598	Cap.Canepa	Argentina
599	Gen.San-Martin	Argentina
600	Cap.Canepa	Argentina
601	Cap.Canepa	Argentina
602	Umitaka-Maru	Japan
604	Slava, 15	USSR
606	Atka	USA
608	Glacier	USA
610	Staten Island	USA

613	Atka	USA
615	Burton island	USA
616	Westwind	USA
619	Glacier	USA
622	unknown	unknown
623	Prof. Vieze, 10	USSR
624	Prof.Zubov	USSR
634	unknown	unknown
635	unknown	unknown
636	unknown	unknown
637	unknown	unknown
638	unknown	unknown
639	unknown	unknown
643	unknown	unknown
678	unknown	unknown
776	Atlantis	USA
885	Vojeikov	USSR
890	unknown	unknown
891	unknown	unknown
895	Acad.Kurchatov	USSR
896	unknown	unknown
910	unknown	unknown
966	unknown	unknown
1056	John Gilhrist	RSA
1057	John Gilhirst	RSA
1058	John Gilhirst	RSA
1059	John Gilhirst	RSA
1060	John Gilhirst	RSA
1061	John Gilhirst	RSA
1062	John Gilhirst	RSA
1063	John Gilhirst	RSA
1064	John Gilhirst	RSA
1078	unknown	unknown
1219	Orekhovo	USSR
1393	unknown	unknown
2058	Slava, 15	USSR
2102	unknown	unknown
2109	Africana II	RSA
2112	Africana II	RSA
2137	Galathea	Denmark
2144	Argo	USA
2152	Diamantina	Australia

2157	unknown	unknown
2158	Dege	Australia
2159	Dege	Australia
2160	Dege	Australia
2161	Dege	Australia
2162	unknown	unknown
2163	Dege	Australia
2164	Dege	Australia
2177	Vitjaz	USSR
2188	Commandant Robert Giraud	France
2193	Kagoshima-Maru	Japan
2200	Langust	USSR
2201	Skif	USSR
2208	Diamantina	Australia
2242	Atlantis II	USA
2296	Antares	USSR
2309	Atlant	USSR
2325	Acad.Shirshov	USSR
2326	unknown	unknown
2335	Knipovich	USSR
2337	unknown	unknown
2342	Bahchisaray	USSR
2500	Bahchisaray	USSR
2502	Bahchisaray	USSR
2535	Albatross	USSR
2854	Diamantina	Australia
2891	Skif	USSR
2968	unknown	unknown
2969	Vojeikov	USSR
2970	unknown	unknown
2971	Volna	USSR
3014	Cascoyne	Australia
3020	unknown	unknown
3070	unknown	unknown
3251	Atlant	USSR
3310	Skif	USSR
3344	Eltaniw	USA
3359	unknown	unknown
3472	Priliv	USSR
3473	unknown	unknown
3482	unknown	unknown

3494	unknown	unknown
3776	Coriolis	France
3858	Kara-Dag	USSR
3859	Marlin	USSR
3874	Mowe	un.
3927	unknown	unknown
3943	Laperouse	France
3958	unknown	unknown
3995	unknown	unknown
3996	unknown	unknown
3997	unknown	unknown
4031	unknown	unknown
4032	unknown	unknown
4063	unknown	unknown
4142	Poseidon	USSR
4146	Ekvator	USSR
4152	Langust	USSR
4178	Salekhard, 1	USSR
4231	unknown	unknown
4235	Kara-Dag	USSR
4244	unknown	unknown
4245	Prof. Viese	USSR
4298	Ob´	USSR
4348	Glacier	USA
4354	Edisto	USA
4375	unknown	unknown
4395	unknown	unknown
4460	Glacier	USA
4530	Poisk	USSR
4564	unknown	unknown
4576	unknown	unknown
4597	unknown	unknown
4784	unknown	unknown
4813	unknown	unknown
4835	unknown	unknown
4859	unknown	unknown
5020	Gizhiga	USSR
5027	unknown	unknown
5048	Cap.Canepa	Argentina
5049	Cap Canepa	Argentina
5051	Cap.Canepa	Argentina
5052	Boa	Argentina

206	5054	Boa	Argentina
	5056	Cap Canepa	Argentina
	5057	Cap.Canepa	Argentina
	5058	Cap. Canepa	Argentina
210	5059	Cap.Canepa	Argentina
	5060	Cap.Canepa	Argentina
	5061	Cap.Canepa	Argentina
	5062	Cap.Canepa	Argentina
	5063	Cap.Canepa	Argentina
	5065	Cap.Canepa	Argentina
2	5066	Cap.Canepa	Argentina
	5068	Gen.San-Martin	Argentina
	5083	Fiolent	USSR
	5085	Baependi	Brazil
220	5086	Alm.Saldanha	Brazil
	5087	Dana	Denmark
	5088	Alm.Saldanha	Brazil
	5089	Alm.Saldanha	Brazil
	5091	Alm.Saldanha	Brazil
	5092	Alm.Saldanha	Brazil
	5094	Alm.Saldanha	Brazil
	5188	Skif	USSR
	5192	Cap.Canepa	Argentina
	5193	Cap.Canepa	Argentina
230	5195	Cap.Canepa	Argentina
	5196	Cap.Canepa	Argentina
	5197	Gen.San-Martin	Argentina
	5198	Cap. Canepa	Argentina
	5223	unknown	unknown
	5367	unknown	unknown
	5369	unknown	unknown
	5371	unknown	unknown
	5373	unknown	unknown
	5380	Africana II	RSA
240	5381	Natal	RSA
	5382	Africana II	RSA
	5406	Africana II	RSA
	5407	Africana II	RSA
	5408	Africana II	RSA
	5409	Africana II	RSA
	5435	unknown	unknown
247	5437	Atlantis II	USA

5455	unknown	unknown
5513	unknown	unknown
5514	unknown	unknown
5516	unknown	unknown
5547	unknown	unknown
5552	unknown	unknown
5559	unknown	unknown
5581	unknown	unknown
5596	unknown	unknown
5605	Fiolent	USSR
5610	unknown	unknown
5620	Fuji-Maru	Japan
5621	Fuji-Maru	Japan
5690	Africana II	RSA
5692	Africana II	RSA
5735	Prognoz	USSR
5740	Estelle Star	Australia
5751	Cap.Canepa	Argentina
5772	Cap.Canepa	Argentina
6273	unknown	unknown
6421	unknown	unknown
6468	unknown	unknown
6525	Cap.Canepa	Argentina
6526	Yamaha	Argentina
6527	Yamaha	Argentina
6528	Rambuel	Argentina
6529	Diagnita	Argentina
6530	Republica	Argentina
6776	Matin	Argentina
7016	Chatyr-Dag	USSR
7193	Bahchisaray	USSR
7327	Marlin	USSR
7495	unknown	unknown
7625	Alm.Lacercha	Portugal
7641	Fiolent	USSR
7642	Skif	USSR
7649	Alm.Saldanha	Brazil
7660	unknown	unknown
7683	unknown	unknown
7692	Vyandra	USSR
8039	Discovery II	Great Britain
8040	Discovery II	Great Britain

8041	Discovery II	Great Britain
8042	Discovery II	Great Britain
8098	Fiolent	USSR
8109	Marlin	USSR
8131	Shokalskiy	USSR
8660	Marlin	USSR
8671	Langust	USSR
8672	Atlant	USSR
8673	Foton	USSR
8681	Prof. Zubov	USSR
8683	unknown	unknown
8752	Prof. Mesiatsev	USSR
8755	unknown	unknown
8918	Shokalsky	USSR
9067	Acad.Knipovich	USSR
9171	Gizhiga	USSR
9262	Fiolent	USSR
9263	Chatyr-Dag	USSR
9276	Skif	USSR
9301	Acad.Vernadskiy 10	USSR
9326	Gizhiga, 15	USSR
9355	Skif	USSR
9366	Investigator	India
9368	Investigator	India
9370	Discovery II	Great Britain
9372	Diamantina	Australia
9374	Evrica	USSR
9406	Gen.San-Martin	Argentina
9422	unknown	USSR
9443	unknown	unknown
9445	Blesk	USSR
9447	Stvor	USSR
9449	Bahchisarai	USSR
9480	Andrus Iohann	USSR
4635	Bougenville	France
9638	Comm.Rober Giraud	France
9642	Discovery II	Great Britain
9643	Discovery II	Great Britain
9645	Laperouse	France
9646	Mowe	unknown

9647	William Scoresby	U.K.
9648	William Scoresby	U.K.
9649	William Scoresby	U.K.
9680	Lesnoi	USSR
9689	Lesnoi	USSR
9756	Skokalsky	USSR
9763	Marlin	USSR
9765	Marlin	USSR
9768	Ushakov	USSR
9778	Skif	USSR
9779	Skif	USSR
9780	Zvezda Kryma	USSR
9802	Chernomor	USSR
9805	Dvina	USSR
9822	Chernomor	USSR
9851	Salkhard	USSR
9890	Salkhard	USSR
9891	Gizhiga, 16	USSR
9893	Prof. Zubov	USSR
9940	Mihail Somov, 2	USSR
9978	Alm. Saldanha	Brazil
10048	Marlin	USSR
10063	Ob´	USSR
10097	Gizhiga	USSR
10109	unknown	unknown
10122	Evrica	USSR
10141	Salekhard	USSR
10163	Ariel	USSR
10164	Zvezda Kryma	USSR
10167	unknown	unknown
10181	Shokalskiy	USSR
10186	Prof. Zubov	USSR
10272	Chatyr-Dag	USSR
10272	unknown	unknown
10282	unknown	unknown
10284	unknown	unknown
10285	Mihail Somov	USSR
10291	unknown	unknown
10295	Gizhiga	USSR
10313	Atlant	USSR
10324	Evrica	USSR
10329	Cayena	Argentina

10341	un.known	unknown
10350	unknown	unknown
10422	unknown	unknown
10522	Foton	USSR
10530	Argus	USSR
10548	Atlant	USSR
10589	Prof. Zubov	USSR
10596	Poisk	USSR
10597	Gizhiga	USSR
10735	Volzhanin	USSR
11082	unknown	unknown
11089	Knipovich	USSR
11136	Salekhard	USSR
11291	60 Let VLKSM	USSR
11319	unknown	unknown
11321	Novocheboksarsk	USSR
11342	Acad. Shirshov	USSR
11485	Antares	USSR
11601	Acad. Krylov	USSR
11648	Prof. Mesyatsev	USSR
11649	Salekhard	USSR
11654	Vozrozhdeniye	USSR
11669	Melville	USA
11670	Melville	USA
11684	Cayena	Argentina
11700	Kara-Dag	USSR
12126	Melville	USA
12127	Melville	USA
12168	Glacier	USA
12219	J.G.Thompson	USA
12220	unknown	unknown
12300	Novoukrainka	USSR
12308	Alm.Saldanha	Brazil
12309	Alm.Saldanha	Brazil
12310	Alm.Saldanha	Brazil
12311	Alm.Saldanha	Brazil
12314	Alm.Saldanha	Brazil
12315	Alm.Saldanha	Brazil
12316	Alm.Saldanha	Brazil
12319	Alm.Saldanha	Brazil
12320	Alm.Saldanha	Brazil
12325	Alm.Saldanha	Brazil

414	12525	Argo	USA
	12526	unknown	unknown
	12724	Gizhiga	USSR
	12864	unknown	unknown
	12868	Priliv	USSR
	12880	Evrika	USSR
420	12884	Alex.Humbold	DDR
	12898	Atlant	USSR
	12900	Cap.Canepa	Argentina
	12906	Cap.Canepa	Argentina
	12907	Cap.Canepa	Argentina
	12928	Alm. Saldanha	Brazil
	13508	Knipovich	USSR
	13596	Novocheboksarsk	USSR
	13541	Argus	USSR
	13657	Novoukrainka	USSR
430	13968	unknown	unknown
	14054	Argus	USSR
	14066	Salekhard	USSR
	14072	Novocheboksarsk	USSR
	14073	Malta	USSR
	14083	Acad. Kurchatov	USSR
	14173	Acad. Shirskov	USSR
	14186	Zvezda Chernomorya	USSR
	14236	Novoukrainka	USSR
	14238	Malta	USSR
440	14350	Evrica	USSR
	14385	Acad.Mstislav Keldysh	USSR
	14539	Prof. Zubov	USSR
	14549	Salekhard	USSR
	15000	unknown	unknown
	30002	Acad. Berg	USSR
	30005	Acad.Knipovich	USSR
	30009	Researcher	un.
	30012	Schwabenland	Germany
	30014	Prof. Mesyatsev	USSR
450	30017	Alise Freymann	FRG
	30028	Meteor	Germany
	30029	Mow	unknown
453	30031	Panther	FRG

30037	Planet	Germany
30035	Musson	USSR
30042	Makrelle	FRG
30059	Dm.Mendeleyev	USSR
30070	Berceous	France
30093	Tanche	France
30071	Cap. Armand	France
30076	Excellent	France
30081	La Rochelle	France
30097	Adm. Moucheg	France
30100	Pyrrhus	France
30101	unknown	Portugal
30102	Albacora	Portugal
30103	Alm. Lobo	Portugal
30107	Laya	Spain
30123	Discovery	U.K.
30148	Sula	U.K.
30151	William Scoresby	U.K.
30163	Explorer	Scotland
30171	unknown	Ireland
30180	Atlantis	USA
30190	Mavel Taylor	USA
30192	Marion	USA
30193	Mendota	USA
30197	Northland	USA
30308	Sevastopol	USSR
30313	Mikhail Lomonosov	USSR
30318	Ob´	USSR
30329	Helland Hansen	Norway
30332	SRT 4177	USSR
30333	Zvezda	USSR
30342	Mikhail Kalinin	USSR
30349	Prof. Somov	USSR
30365	Orekhovo	USSR
30366	Muksun	USSR
30376	Slava	USSR
30388	Acad.Kovalevskiy	USSR
30448	Aranda	Finland
30463	Raduga	USSR
30464	Olonets	USSR
30471	Prof. Deryugin	USSR

496	30511	Nausin	Japan
	30518	William Scoresby	U.K.
	30529	Vityaz	USSR
	30540	Discovery II	U.K.
500	30553	Oshoro-Maru	Japan
	30597	Warrior	U.K.
	30599	Glacier	USA
	30600	Burton Island	USA
	30606	unknown	unknown
	30609	Gerda	Mexico
	30624	Fuji-Maru	Japan
	30629	Investigator	Canada
	30632	Vema	USA
	30633	Bear Brown	USA
510	30653	Barcoo	USA
	30656	Eastwind	USA
	30659	Toyama-Maru	Japan
	30667	Lesnoi	USSR
	30670	Africana II	RSA
	30677	Eltanin	USA
	30680	New Liscard	Canada
	30685	Semen Dezhnev	USSR
	30686	Vasiliy Golovnin	USSR
	30688	Chernomor	USSR
520	30695	John Gilhrist	RSA
	30698	Natal	RSA
	30711	Gascoyne	Australia
	30712	Seskar	USSR
	30731	unknown	USSR
	30734	Krym	USSR
	30745	Lyra	USSR
	30746	Iskatel	USSR
	30749	Antares	USSR
	30751	Antares	USSR
530	30752	Prof. Zubov	USSR
	30759	unknown	unknown
	30778	Priliv	USSR
	30784	R.D.Conrad	USA
	30788	Suchan	USSR
	30792	Priboy	USSR
	30794	Chumikan	USSR
537	30798	Okean	USSR

30809	Cap. Canepa	Argentina
30813	John Gilhrist	RSA
30814	Edisto	USA
30816	Burton Island	USA
30817	Kiara	Nigeria
30818	Bertioga	Brazil
30819	Baependi	Brazil
30826	Bellinsgausen	Brazil
30827	Davydov	USSR
30833	Langust	USSR
30834	Ekliptika	USSR
30838	Acad.Shirshov	USSR
30841	P.Lebedev	USSR
30843	Laperouse	France
30850	Belogorsk	USSR
30860	Voyeikov	USSR
30869	Atlant	USSR
30870	Shokalskiy	USSR
30871	Vnushitelniy	USSR
30872	Retiviy	USSR
30875	SRTM-8417	USSR
30898	SRTR V.Vorobyev	USSR
30903	Mermot	France
30909	France I	France
30911	Marelda	Australia
30915	Gizhiga	USSR
30918	Gedarwood	USA
30925	Gidrolog	USSR
30927	Argo	Canada
30929	Gen. San-Martin	Argentina
30932	Marlin	USSR
30933	Diamantina	Australia
30934	Marlin	USSR
30937	Acad. Kurchatov	USSR
30940	Prognoz	USSR
30948	Nauka	USSR
30963	Shoyo-Maru	Japan
30967	Comm.R.Giroud	France
30969	Jan Wellen	Germany
30970	Galathea	Denmark
30973	Norvegia	Norway
30983	Korifey	USSR

30982	Vauban	Malagasi
30985	Acad.Knipovich	USSR
30987	Staten Island	Australia
30988	Cape Torrell	Australia
30992	Ariel	USSR
30994	Meteor	FRG
30999	Acad. Koroloev	USSR
31002	Hewaibarragi-Maru	Japan
31028	unknown	unknown
31035	Prof. Viese	USSR
31042	Volna	USSR
31053	N. Uritskiy	USSR
31092	Koyo-Maru	Japan
31097	Wychma	USSR
31100	Argus	USSR
31102	Estonia	USSR
31117	Kvant	USSR
31122	Volzhanin	USSR
31123	Walter Herwig	FRG
31129	Bahchisarai	USSR
31133	Hackel	DDR
31145	Acad. Vernadskiy	USSR
31147	Evrica	USSR
31148	M.Ulyanova	USSR
31155	Blesk	USSR
31156	Salekhard	USSR
31157	Aelita	USSR
31188	E. Krenkel	USSR
31189	Antrus Iohann	USSR
31190	Fiolent	USSR
31192	Myslitel	USSR
31193	Skif	USSR
31195	Foton	USSR
31197	Karadag	USSR
31199	Altair	USSR
31202	Chatyrdag	USSR
31204	Gemma	USSR
31208	Nekton	USSR
31209	Chatyrdag	USSR
31221	Turkmenia	USSR
31229	Abkhazia	USSR

621	31234	Poisk	USSR
	31238	Oceanographer	USA
	31309	V. Beryozkin	USSR
	31318	Kokar	Finland
	31331	Adm. Vladimirskiy	USSR
	31332	Ernest Gakkel	USSR
	31338	Zvezda Kryma	USSR
	31340	Prof. Vodyanitskiy	USSR
	31455	Sevastopolsky Rybak	USSR
630	31508	Mys Ostrovskogo	USSR
	31540	Strelets	USSR
	31590	Otto Smidt	USSR
	31635	SRTM-8072	USSR
	31652	unknown	Poland
	31677	Mitory-Maru	Japan
	31692	Geroyevka	USSR
	31693	Vozrozhdeniye	USSR
	31694	Novocheboksarsk	USSR
	31718	Novoukrainka	USSR
640	31719	M. Krupsky	USSR
	31720	E.Krivosheyev	USSR
	31722	Volniy Veter	USSR
	31792	Patriot	USSR
	31793	Polarnoye Siyaniye	USSR
	31795	Polarnoye Siyaniye	USSR
	31807	Zvezda Chernomorya	USSR
	31809	Dolphin	unknown
	31810	unknown	unknown
	31850	Pavel Kaikov	USSR
650	31929	unknown	USSR
	31934	Poceidon	unknown
	31935	unknown	unknown
	51001	unknown	Denmark
	51002	unknown	New Zealand
	51004	Canisteo	USA
	51038	Africana II	RSA
657	51043	Atka	USA

658	51046	Atlantis II	USA
	51047	Anton	USA
660	51050	Argo	USA
	51051	Alm.Saltania	Brazil
	51052	Atlantis I	USA
	51065	Baependi	Brazil
	51071	Brategg	Norway
	51073	Burton Island	USA
	51099	Cap. Canepa	Argentina
	51100	C.H. Davis	USA
	51103	Comm.R.Giroud	France
	51104	Chipana	Chile
670	51105	Chellenger	U.K.
	51110	Carnegie	USA
	51132	Deutschland	Germany
	51137	Discovery II	U.K.
	51141	Diamantina	Australia
	51147	Discovery II	U.K.
	51164	Edisto	USA
	51172	Eltanin	USA
	51183	Eastwind	USA
	51209	Glennon	USA
680	51225	Gascoyne	Australia
	51226	Galathea	Denmark
	51236	Glacier	USA
	51250	Gen.Zapiola	Argentina
	51264	Hakuho-Maru	Japan
	51277	Hudson	Canada
	51303	Islas Orcadas	Argentina
	51304	Islas Orcadas	Argentina
	51343	Jan Wellen	FRG
	51366	Knipovich	USSR
690	51420	Marion Dufresne	France
	51421	Meteor	FRG
	51427	Muksun	USSR
	51428	M.Lomonosov	USSR
	51449	Natal	RSA
	51463	Norvegia	Norway
	51471	Northwind	USA
	51482	Ob′	USSR
	51483	Oceanographer	USA
699	51498	Orlik	USSR

760	51524	Planet	Germany
	51609	Sartinops	RSA
	51610	S.E.Baird	USA
	51617	Staten Island	USA
	51621	Gen.San-Martin	Argentina
	51623	Solimoes	Brazil
	51647	Tangaroa	New Zealand
	51648	Thorshaven	Norway
	51649	Kiwi	New Zealand
	51650	Tiberiades	Chile
710	51692	Umitaka-Maru	Japan
	51709	Vema	USA
	51713	Vityaz	USSR
	51715	Voyeikov	USSR
	51737	Warreen	Australia
	51741	Westwind	USA
	51744	Walther Herwig	FRG
	51751	Knorr	USA
	51755	William Scoresby	U.K.
	51756	Thomas Washington	USA
720	51805	Yelcho	Chile
	51814	unknown	unknown
722	51826	unknown	New Zealand

↳ NOWLIN_SHIPS

1	54000	Atlantis II	USA
2	54001	Knorr	USA
3	54002	AGO 8	Argentina
4	54003	Atka	USA
5	54004	Discovery II	U.K.
6	54005	AHZ49	Japan
7	54006	Melville	USA
8	54007	A5N31	USA
9	54008	Hudson	Canada
10	54009	Islas Orcadas	Argentina
11	54010	Eltanin	USA
12	54011	Thomas Washigton	USA
13	54012	Glacier	USA
14	54013	Discovery II	U.K.
15	54014	AEL31	USA
16	54015	R.D.Conrad	USA
17	54016	AVZ90	USSR
18	54017	ASB90	USSR
19	54018	AIS31	USA
20	54019	AAQ06	FRG
21	54020	AMT06	FRG

file: NOWLCODE3.DAT of 16th Oct. 1990

It was forwarted to Manfred in November (?) 1991

_correction
Aari_update_ship.script

(This is file OTH$DATEN:[socean.text]CHANGECRU1.TEXT)

✓ IDG 19.08.01

CORRECTIONS WITHIN Aari_Cruise view:

Cruise_Number	Old Ship	Corrected Ship	Old Country	Corrected Country
-25000	unknown	Fuji	unknown	Japan
-22012	unknown	Professor Zubov	unknown	USSR
-25001	unknown	Fuji	unknown	Japan
-25002	unknown	Fuji	unknown	Japan
-25007	unknown	Novoukrainka	unknown	USSR
-22013	Prof. Zubov	Prof. Viese	USSR	USSR

ADDITION TO THE AARI_Cruise view

✓ IDG 19.08.01

AARI_SHIPS.SCRIPT

Cruise_Number	Ship	Country
-21017	Krusenstern	USSR
-21018	Krusenstern	USSR
-22015	Prof. Viese	USSR
-22016	Prof. Zubov	USSR
-22019	Pioner Latvii	USSR
-22020	Titanit	USSR
-22021	Atlantniro	USSR
-22022	Maltsevo	USSR
-22023	Volniy Veter	USSR
-22025	Pioner Latvii	USSR
-22026	Ocher	USSR
-22027	Patriot	USSR
-22030	Ekliptika	USSR
-22031	Salehard	USSR
-22034	Anchar	USSR
-22035	Novocheboksarsk	USSR
-22036	Afeliy	USSR

-22038	Ekliptika	USSR
-22040	Atlantniro	USSR
-22042	Titanit	USSR
-22044	Monokristall	USSR
-22045	Saulkrasty	USSR
-22046	Andrus Iohann	USSR
-22050	Torok	USSR
-22054	Salehard	USSR
-22062	Tava	USSR
-22063	Anchar	USSR
-22065	Charoit	USSR

Eingang : 05.02.91

NEW PLATFORM CODES RECIEVED FROM LAMONT:

	Old name		New name	Country
1.	A5N31	=	Billie	USA
2.	AEL31	=	Eldorado	USA
3.	AGO 8	=	Goyena	Argentina
4.	AIS31	=	Idaho Standard	USA
5.	ASB90	=	Mihail Somov	USSR

It's also necessary to change erroneous Ship_Name for the right one:

Cruise_Number	Old (erroneous) Ship	New Ship
10329	Cayena	Goyena
11684	Cayena	Goyena

SCRIPT

Ships. Upd050291 !

Doppel siehe Seiten

CHECK

26-11-90

SOCEAN -> LPK

```
      GSBID#   StID#   GSBLon   StLon     GSBLat   StLat    GSBY StY    BM SM   BD SD     Date
    ------------------------------------------------------------------------------------
1        442 100442 -78.500  -79.418   -55.184 -55.333   1933 1932   12 10   18 25   n.d. Header
  {     1411 101411  32.599   32.598   -31.250 -31.250      0 1963    0  1    0 12   ebenso
3 {     1464 101464  28.449   28.448   -35.850 -35.850      0 1963    0  1    0 22   ebenso
  {     4092 104092  51.883   51.882   -56.374 -56.373      0 1974    0  3    0 26   ebenso
2       5731 105731 -40.450********   -67.242 -67.242   1975 1975    2  2   14 14   Out change
     This are results of comparison for the corresponding stations within
    ordon_Station_Backfill and Station.
     Stations are considered to be identical IF:
                             | Lat1-Lat2 | < 0.01,
                             | Lon1-Lon2 | < 0.01
                             Date1 = Date2
    tation with Id#=442 is absent in the Gordon_Station_Backfill
    tation_Id#=105731 has dummy Longitude
    he other pairs differ becuse the NULL values for the Dates
```

✓

① nach Änderung der Datei Header.fil wurde das Progr. mit der Datei Header.new.fil neu gestartet.
(Gordon_cruise.exe)

② By Hand, script erforderlich

③ nicht kompiliert

Script fehlt

Daten aus Gordon_Station

1411	Jan	12	1963	12:00AM
1464	Jan	22	1963	12:00AM
4092	Feb	14	1975	12:00AM

Cruise table for the Heines's subset

NN		Cruise_Number		Ship	Country	Idtt
1	10	54001	55100	Westwind	USA	100060
2	69	54002	55101	Melville	USA	65
3	69	54003	55102	Melville	USA	65
4	120	54004	55103	Atlantis II	USA	35
5	217	54005	55104	Thomas Washington	USA	43
6	244	54006	55105	Meiring Naude	RSA	71
7	160	54007	55106	Discovery II	UK	1
8	10	54008	55107 ~~54001~~	Knorr	USA	64

inserted CPG

add 1099 to Cruise_Number in Heines_Station CPG

DBTEX1.DAT

Heines_Ship020991.SCRIPT

06.02.91

ON THE ERROR DURING THE PROCEDURE OF THE IDENTIFICATION OF THE GORDON STATIONS

For the identification of Gordon stations we used 2 files:

SHIPGORD2.DAT having 71 lines with NODC identification codes and corresponding Ship names and Cruise_Numbers ;

HEADERS.FIL - file obtained from Lamont and having 6313 lines. Each line has NODC identification code and sequaential number of station within the Gordon Data set.

Using program GORDCR3 I have created another file SHIPGORD3.DAT, having 6313 lines. Each line had: (1) Station_Id# for the Gordon part of the Station table, (2) NODC code, (3) Ship name and (4) Cruise_Number

By means of the program GORDCR4 Station table was updated and all 6313 stations of the Gordon Data set got the Cruise Numbers according to the file SHIPGORD3.DAT. This was done on the 17 th of October 1991.

As was found later original file HEADERS.FIL had an error, namely line number 442 was absent (the same with original file headers.shp). Program GORDCR3 was unable to find the absence of a line in the file HEADERS.FIL, therefore file SHIPGORD3.DAT has become a subject to the error: after the line 441 there was an offset by one line which was the cause for the identification of Gordon Stations.

CORRECTION

1. Station with Station_Id#=100412 was checked and identified as a "Discovery II" station.
2. Line with sequential number=442 was inserted into the original file HEADERS.FIL. New file was given a name HEADERSNEW.DAT (6313 lines).
3. By using the program GORDCR31 new file SHIPGORDNEW.DAT (6313 lines) was created.
4. By means of the program GORDCR41 Station table was updated: according to the file SHIPGORDNEW.DAT Stations with Id#s between 100001 and 106313 were gioven new values of Cruise_Numbers (5.02.1991).

Explanation of the errors within Aari_Cruise_Bsk table

The former Aari_Cruise table was a subject for several corrections. This corrections were performed whenever it was possible to identify any Cruise_Number, known as 'unknown' with new Ship_Name and Country. For a few cases (e.g. Cruise_Numbers) it was found that initial Aari Data subset (e.g before any addition to it) contained pairs of Cruise_Numbers which had been related as

CrNum1 = 30000 - CrNum2   (*)

and which actually pointed to the cruises of the same (!) Ship.

Having this in mind I have made another correction of the Aari_Cruise table, replacing unknown Ship and Country columns for the known values when Ship and Country for one of the cruise pair (*) were known. This was made by the program CORRCRU5 on the 10 of December 1990.

Unfortunately till that moment Aari_Cruise table had been already extended by the Cruise_Numbers (55000 - 55070) from the Gordon Subset and from the additional Aari Subset (Station_Id# >34112). By simple coincidence it so happened that 17 Cruise_Numbers of Gordon subset and 17 Cruise_Numbers of the addition to the Aari_Subset were related by equality (*). As a result 17 Cruise_Numbers from the addition to the Aari_Subset being in fact unknown in terms of Ship and Country have been given corresponding Ship and Country values from the Gordon cruises. This erraneous identification was performed for the Cruise_Numbers from -25000 to -25007 (8 Cruises) and from -25016 to -25024 (9 Cruises)

historical data ok i.e. Aari_Cruise_Bsk

SCRIPT

CRUISE.UPD_070291

Wie wurde das ✓
Laden verarbeitet?

Wie wurden Duplicate ✓
gelöscht (DD) (File)?
validationflag
— Anzahl dazu

D A T A

Data sources: AARI, LDGO, TAMU, NMHN, AWI, TUF, JARE and others

Data types: Serial oceanographic stations (>90%)
CTD stations

Time range: from 1 January 1900 till 23 April 1989

Area: South off 30 S (196 stations are to the North from 30S)

Data organization
within the Data Base: Data linearly interpolated to the 42 standard levels

AARI

Hardware: VAX/MS, PC

Software: SYBASE programs running on the VAX/MS
PC programms for the data processing

Graphics: UNIRAS graphics subroutines

PROJECT: SOUTHERN OCEAN ATLAS
AND
HYDROGRAPHIC DATA BANK

END PRODUCT:

1. HYDROGRAPHIC STATION DATA SET.

   Each station will have several flags indicating the tests it has passed.
   Each cruise will be documented in the Cruise Book.

2. GRIDDED DATA SET.
   Grid-Gitter

   Entschluß

   We are aiming at seasonal resolution at least in parts of the circumpolar belt (Weddell Gyre, Scotia Sea, Drake Passage, African sector).

3. PRINTED ATLAS of Temperature, Salinity, (Oxygen?) and derived quantities (Density, Dynamic topography).
   Atlas will include both maps and vertical sections.

DATA VALIDATION

1. Removal of the duplicates within the AARI subset and between AARI and Gordon subsets by comparing the headers and data at the corresponding levels. Entfernen doppelter Datensätze
Initial number of 34112 stations for the AARI subset reduced to 27134. difference 6978 original first file 36059 stations incl. additional file from Aari

2. Range checking: performed on all AARI data as a first error check. 18527 values has been eliminated (4%). Aari Daten
Ranges allowed for temperature, salinity and oxygen are functions of depth, ranging from -2.4 - 30.0 C, 0.0% - 36.9%, 0.0 - 14.0 ml/l at the surface to -1.5 - 2.5 C, 34.40 - 34.90%, 0.0 - 14.0 ml/l at 4000 m.

3. Static stability check: for the data at any standard level (k) the computation of the density difference ($\sigma_k - \sigma_{k+1}$) was performed by displacing parcels at the next deeper standard level (k+1) to level (k). Assuming generally weak stability of the water column only inversions greater than 3 x 10^{-5} ? g/cm were considered to be unrealistic. 889 pairs of levels with negative density gradients less than 3 x 10^{-5} g/cm have been found. In most cases the cause of the error were found to be salinity data. ? Program ?

4. Statistical check. All data for each parameter were averaged by squares 10 x 10 degree to produce the number of observations, mean and standard deviation. To eliminate gross errors different criteria were used: below 100 a three-stand.-deviation criterion, between 100 and 50 m a four-stand.-deviation criterion, for the upper most levels a five-stand.-deviation criterion. After the first screen 10629, 843 and 996 data were eliminated correspondingly for the criteria given above(2.5%). The second application of the standard deviation check gave 6155, 432 and 351 data for the elimination (1.5%). Abweichung program ?

5. Further analysis.
 a) Scattering of the Theta-S points: [illegible]
Using the assumption of the stability of the theta-S relation for the deeper part of the water column the following check was made. All points on the ,S-diagram for the levels deeper than 300 m were grouped into the temperature bins less than 0.1 c to give mean, standard deviation and band width (S - S for each bin). The comparison of results obtained for different cruises showed that bad quality salinity data often give very large scattering of Theta-S points. program!

 b) Systematic errors resulting in the shift of the Theta-S points even if the scattering is not very large compared with good data.

SEARCHING AND DELETION OF AARI-GORDON DUPLICATES

We searched for the duplicates using a number of filters. During each filtering procedure those stations were extracted as possible pairs of duplicates which satisfied to some conditions. (Programs COMPAR*** and programs CPAR***):

1. Test COMPAR32.

   Search pairs which have more than 60% levels which differ not more than 0.005 C and 0.005 % for Temperature and Salinity correspondingly.

2. Test COMPAR32.

   Search pairs which are left after exclusion according to Test 1. Comparison is made and a pair of possible duplicates is selected when at least 5 conditions out of 7 are satisfied:

   |Lat1 - Lat2| <= 0.02 Degr.
   |Long1 - long2| <= 0.02 Degr.
   B_Depth1 = B_Depth2
   M_O_Depth1 = M_O_Depth2
   Year1 = Year2
   Month1 = Month2
   Day1 = Day2

3. Test Compar33.

   Search pairs which are left after exclusion according to test 2. Comparison is made and possible duplicates are extracted when the following condition is satisfied:

   | Temp1 - Temp2 | <= 0.01 C

   or

   | Sal1 - Sal2 | <= 0.01 %

   This check is made for T or S only when not less than 50 % of points on the T or S profile have non-dummy values of T or S.

   All statioin pairs have been check on the screen and real duplicates were selected and than deleted (Protocol file COMPAR331D1.prot)

4. Test Compar22.

   Comparison is made and possible duplicates are extracted when only Year, Month and Day of the same cruise for Aari and Gordon subset are equal. Then all such pirs have been looked through on the screen an real duplicates have been extracted into the file COM22del.dat and than deleted (Protocol COM22DEL.PROT)

Duplicates have been deleted by the program COMPARDEL1, which gives also protocols of deletion named as PROT****.PROT (where **** represent abbreviation of the Ship_Name).

We deleted stations from AARI subset having in mind the fact that GORDON subset was validated (unlike AARI subset).

NODC	SHIP	Gordon Cruise	Number of deleted stations

	NAME		Number	Test 1	Test2	Test 3	Test 4
1	ADS74	Discovery II	55000	1208	9	0	1
2	AOB90	Ob	55001	471	51	8	1
3	AME06	Meteor	55002	96	7	0	
4	ANO58	Norvegia	55003	4	0	0	
5	AUT49	Umitaka-Maru	55004	18	0	0	
6	ASI31	Staten Island	55005	90	6	0	
7	ASM08	Gen. San-Martin	55006	80	13	3	
8	AWS74	William Scoresb	55007	115	1	0	
9	ADI74	Discovery	55008	4	1	0	
10	AVE31	Vema	55009	38	5	0	
11	AGL31	Glacier	55010	235	11	0	
12	AYE20	Yelcho	55011	21	2	0	
13	ACC08	Cap. Canepa	55012	219	3	0	
14	AHH49	Hakuho-Maru	55013	30	0	0	
15	AAF91	Africana II	55014	128	4	0	
16	ACH20	Chipana	55015	36	2	0	
17	ACN31	Carnegie	55016	10	0	0	
18	ASB31	S.E. Baird	55017	12	0	0	
19	A9926	unknown	55018	23	0	0	
20	A9961	unknown	55019*	29	1	0	
21	A9935	unknown	55026*	133	23	3	
22	A9931	unknown	55039*	1	0	0	
23	ACD31	unknown	55045*	1	0	0	
24	AVI90	Vityaz	55020	22	5	0	3
25	AGA09	Gascoyne	55021	136	3	0	
26	AGA26	Galathea	55022	8	0	0	
27	ATI61	Tui	55023	0	0	0	
28	AAR31	Argo	55024	19	0	0	
29	ADM09	Diamantina	55025	133	23	2	
30	ANA91	Natal	55027	87	5	0	
31	ASA91	Sardinops	55028	14	0	0	
32	AAT31	Atka	55029	0	0	0	
33	AAK31	Atka	55037*	65	5	0	
34	AAS14	Alm. Saldanha	55030	29	5	0	
35	AAO31	Anton Bruun	55031	13	0	0	
36	ABI31	Burton Island	55032	67	2	0	
37	AOC31	Oceanographer	55033	5	0	0	
38	AAN31	Atlantis II	55034	22	0	0	
39	AEW31	Eastwind	55035	19	0	0	
40	ACG35	Comm. RobertGiraud	55036	14	1	0	
41	AED31	Edisto	55038	9	1	0	
42	ATH58	Thorshaven	55040	13	0	0	
43	AHU18	Hudson	55041	46	3	0	
44	AWT31	Thomas Washington	55042	122	1	0	
45	ANW31	Northwind	55043	28	0	0	
46	AML90	Mihail Lomonosov	55044	1	0	0	
47	ARD31	R.D. Conrad	55046	163	2	0	
48	AET31	Eltanin	55047	1456	34	6	
49	ADE06	Deutschland	55048	9	4	0	
50	AVK90	Vojeikov	55049	0	2	0	
51	AGZ08	Gen. Zapiola	55050	12	0	0	
52	AG131	Glennon	55051	2	0	0	
53	AWA09	Warreen	55052	1	0	0	
54	ABA14	Baependi	55053	1	0	0	
55	ASO14	Solimoes	55054	1	0	0	
56	ATI20	Tiberiades	55055	1	0	0	
57	ACH74	Challenger	55056	1	0	0	
58	AOR90	Orlik	55057	6	0	0	
59	APL06	Planet	55058	0	1	0	
60	AWE31	Westwind	55059	16	3	0	
61	AJW06	Jan Wellem	55060	3	0	0	
62	AMK90	Muksun	55061	2	0	0	
63	AKN90	Acad. Knipovich	55062	19	0	0	
64	A6N31	Knorr	55063	120	3	0	

65	A8M31	Melville	55064	34	2	1
66	AMD35	Marion Dufresne	55065	52	0	0
67	AWH06	Walther Herwig	55066	17	1	0
68	ABG58	Brategg	55067	11	0	0
69	AIO31	Islas Orcadas	55070	143	5	0
70	AIO08	Islas Orcadas	55068*	146	2	0
71	ATG61	Tangaroa	55069	24	0	0

As can be seen from the table total number of stations deleted from AARI subset is greater than total number of stations within the Gordon subset. This could happen only when some duplicates within the AARI subset existed before the comparison between AARI and GORDON subset was done.

Further deletion

1. Ship name "R.D.Conrad":

82 — 82 stations deleted from Aari_subset (program DELCONRAD.FOR) Protocol DELCONRAD.PROT

2. Ship name "Atka" :

38 — It was found that "Atka" cruise during period from 9 Apr 1959 till 3 June 1959 was present in the Aari subset under the wrong ship name "Atlantis" 37 stations have been deleted by program DELATKATL. (protocol DELATKATL1.PROT) 1 station was deleted later interactively (ID#=15096). For the rest 5 stations of this cruise within Aari_Data set which are not the duplicates of Gordon's stations the Cruise_Number has been changed to Cr-Num=55029, that is for the "Atka" Cruise_Number

3. Ship name "Anton":

41 — All 41 stations within the Aari_Subset represented the stations obtained by the "Anton Bruun" and are the duplicates for the Gordon's stations. 41 stations were deleted by the program DELANTON (Protocol DELANTON.PROT). (Duplicate mit Gordon)

4. Ship name "Discovery" :

12 — 35 stations within the Aari_Subset had this Ship_Name. This Ship_Name was erroneously used instead of wright name "Discovery II". All "Discovery II" and "Discovery" stations have been checked by programs COMPAR32A, COMPAR21A, COMPAR21B. 9 duplicates to Gordon's stations were found and deleted by program COMPARDEL12 (Protocol DELDISC.PROT). Cruise_Number of the rest 26 stations has been changed for the Cruise_Number= which correspond to the ship name "Discovery II".

12 stations of "discovery" had NULL for Date_Time. Among this stations 3 were duplicates for Gordon's stations:

20861 = 101360
20890 = 104559
34049 = 104820

Aari Data duplicates

Anfänglich

Initial AARI subset contained many stations which had been duplicates in fact. Careful examination of the data and comparison of each station within the AARI subset with other stations was done by the application of successive tests. This tests compared headers of stations or/and data on the standard levels. Pairs of duplicates then were examined and the best station out of the pair under consideration was chosen.

Below summary of all files containing duplicates is given.

FILE NAME	Number of pairs	Remarks
WDSTDE1.DAT	429	Identical duplicates (Western hemisphere) Program DUPLIC91***
EDSTDE1.DAT	536	(Eastern hemisphere) seperated
WDSTDE2.DAT	244	Coordinates differ not more the 0.1 degree dT, dS <= 0.004 for > 50% of levels (WH)
EDSTDE2.DAT	570	Program DUPLIC92 *** (EH)
WDSTDE3.DAT	51	dT, dS <= 0.004 (WH) Program DUPLIC93***
EDSTDE3.DAT	47	(EH)
WDSTDE4.DAT	106	Coordinates differ not more than 0.1 (WH) Program DUPLIC94***
EDSTDE4.DAT	136	(EH)
WDSTDE6.DAT	31	dT, dS <= 0.004 for > 50% of levels (WH) Program DUPLIC96 ***
EDSTDE6.DAT	61	(EH)
WDSTDE7.DAT	104	Program DUPLIC97 *** ?
EDSTDE7.DAT	29	
WDSTDE8.DAT	5	Program DUPLIC97 *** ?
EDSTDE8.DAT	4	=====Was done on 7 June 1990
TOT =	2353	
DEDUP1.DAT	98	Program DUPLIC91
DEDUP3.DAT	1	Program DUPLIC93
DEDUP2.DAT	129	Program DUPLIC92
DEDUP4.DAT	18	Program DUPLIC94
DEDUP6.DAT	3	Program DUPLIC96
DEDUP7.DAT	3	Program DUPLIC97
DEDUREST.DAT	15	Program DUPLIC97 ======Was done on 11 June 1990
TOT =	267	

programs

```
DEDU1.DAT    | 234    |

DEDU3.DAT    |   2    |

DEDU2.DAT    | 228    |

DEDU4.DAT    |   6    |

DEDU6.DAT    |   8    |

DEDU7.DAT    |   1    |
                       =====Was done on 11 June 1990
       TOT = 479


DED1.DAT     | 149    | Program DUPLIC91Identical duplicates

DED3.DAT     |   7    | Program DUPLIC93

DED4.DAT     | 611    | Program DUPLIC94

DED2.DAT     |   2    | Program DUPLIC92

DED6.DAT     |  74    | Program DUPLIC96

DED7.DAT     |   2    | Program DUPLIC97

DED72.DAT    |   3    | Program DUPLIC97
                      =====Was done on 18 June 1990
       Tot = 848


DE3.DAT      |  10    | Program DUPLIC93

DE2.DAT      |   1    | Program DUPLIC93

DE4.DAT      |   1    | Program DUPLIC94

DE6.DAT      |  11    | Program DUPLIC96

DE61.DAT     |  32    | Program DUPLIC97

DE62.DAT     |   3    |    "

DE7.DAT      |   1    | Program DUPLIC97

DE73.DAT     |   9    |     "
                      ****Was done on 19 June 1990
       TOT = 68


DD2.DAT      |   1     | Program DUPLIC92

DD7.DAT      |  23     | Program DUPLIC97
                      **** Was done on 20 June 1990
       TOT = 24
```

CHANGES OF STATION COORDINATES

There are stations which have erroneous coordinates. Sometimes it is possible to find out that this errors are just typing errors and that they can be corrected after looking carefully on the space-time distribution of stations of the same ship and cruise.

Such corrections will be marked by Validation_Flag = 8.

Most changes are made interactively.

SHIP NAME	ID#	Description
1."Prof. Viese"	22434	Long. changed to 20.10
	32694	Long. changed to 19.86
2."Glacier"	30020	Long. changed to 166.60
3."Ob"	32919	Long. changed to -Long.
	34062	-"-
4."Lesnoi"	22263	Lat. changed to -35.40
	23873	Lat. changed to -35.70
5.		

SouthernOceanDB

SYS$USER:[KURDELSKI.SOUTHERNOCEAN]

OTH$DATEN:[OZEDB]

[.CLIB]

▽ [.C] C-Sourcen der Lib OZELIB

[.LIB] CDBLIB

[.OBJ] obj der LIB

▽ [.LIB] aktuelle CDBLIB

▽ [.EXE] OcedB Ladeprogramm

Logical OCE aus OCEDB_LOAD.COM
zeigt auf dieses Verzeichnis

Steps in developing the SouthernOceanDB I

Date	Short Description	Name of the Program	Signature
June 89	Creation of the database Creation of Aaritables: (Aari_Station, Aari_Standard_Data, Aari_Station_Backup, Aari_Update_Backup, Aari_Garbage_Station, Aari_Garbage_Data)	AARI.SCRIPT;42	Script-1
June 89	Creation of Gordontables: Station, Standard_Data, Statistic	GORDON.SCRIPT;17	Script-2
10.7.89	Loading of AariData into AariTables	OZEDB_SYBASE.FOR;35	For-1
17.7.89	Loading of GordonData into Gordontables	GORDON.FOR;43	For-2
7.12.89	Creation of Aari_Statistic, Marsden_Square, Aari_Statistic_View	AARI_STAT.SCRIP	Script-3
7.12.89	Creation of Aari_Indices on AariTables	INDEX.SCRIPT	Script-62
13.12.89	Update AariTables + GordonTables Set missing values = 0	UPDATE_DEFAUlt_NULL.SCRIPT	Script-63
1.6.90	Creation of indices on Standard_Tables	STATION_INDEX.SCRIPT	Script-66
28.6.90	Creation of tables Station, Standard_Data, Statistic, DeleteTables, UpdateTables, InsertTables, Validation	StATION.SCRIPT	Script-64
28.6.90	Procedure to fill StandardTables with Aari and GordonData	MAKESTATION.SCRIPT	Script-65
28.6.90	Copy of GordonData into Standardtables Sql-Procedure	GORDON_COPY.SCRIPT;2	Script-4
25.7.90	Loading of further Aari_Data into AariTables	OZEDB_SYBASE1.FOR;3	For-3
?	Procedure to copy AariData into StandardTables	AARI_COPY.SCRIPT	Script-61
10.9.90	Creation of Gordon_Interpolated_DataTable	GORDON_INTERPOlated_DATA.SCRIPT	Script-5
10.9.90	Loading of interpolated GordonData from file INTERGOR.DAT into Gordon_Interpolated_Data-table	OZEDB_SYBASE2.FOR	For-4
12.9.90	Creation of indices on Gordon_Interpolated_Data	GORDON_INTER_DATA.SCRIPT	Script-68
16.10.90	Drop Triggers for Station, Standard_Data	TRIGGER_DROP.SCRIPT	Script-7
16.10.90	Calculate marsden square number	MARS.FOR	For-5
11 90	Creation of Gordon_Statistic, Gordon_Statistic_View	GORDON_STAT.SCRIPT	Script-8
12.11.90	Creation of Nowlintables	NOWLIN.SCRIPT	Script-10
12.11.90	Set missing values = 0 for NowlinData	NOWLIN.UPD.SCRIPT;2	Script-9
16.11.90	Create proc garbageCollectStandardData for Aari	GC.SCRIPT	Script-11
19.11.90	Selects Station_Id# from Standard_Data which is not in table Station	CHECKGCSD.Script	Script-12
19.11.90	Execute CHECKGCSD.SCRIPT	GARBAGECOLLECT.SCRIPT	Script-13

Steps in developing the SouthernOceanDB II			
Date	Short Description	Name of the program	Signature
20.11.90	Creation of tables Gordon_Cruise and Gordon_Ship	GORDON_CRUISE .SCRIPT;3	Script-6
22.11.90	Creation of Gordon_Station_Backfill	GSBACKFILL.SCRIPT	Script-14
26.11.90	Loading of NowlinData into Nowlin_Station and Nowlin_Standard_Data	NOWLIN.FOR;2	For-6
27.11.90	Creation of KuropatkinTables	KUROPATKIN.SCRIPT	Script-17
27.11.90	Loading of KuropatkinData into AariTables	AARILOAD.FOR	
27.11.90	Loading of KuropatkinData into Kurop.tables	KUROPATKIN.FOR;8	For-7
27.11 90	Creation of AariIndices	AARIINDEX.SCRIPT	Script-16
28.11.90	Update Gordon_Interpolated_Data	UPDATE_NULL_GORDON INTER_DATA.SCRIPT	Script-67
28.11.90	Creation of Update-,Delete-,Insert-Triggers	TRIGGER.SCRIPT	Script-15
28.11.90	Update of some Kuropatkinvalues on Aaritable	KUROPATKIN_UPD .SCRIPT;3	Script-18
28.11.90	Update Aari_Station		
28.11.90	Correction of Gordon_Statistic		
28.11.90	advising the user H.Ross		
28.11.90	Creation of Hainestables	HAINESLOAD.SCRIPT	Script-19
28.11.90	Loading of HainesData into HainesTables	HAINESLOAD.FOR;13	For-8
29.11.90	Set missing values = 0 For HainesData	HAINESLOAD_UPD. SCRIPT	Script-20
11.12.90	Test for Cruise.script	CRUISE_TEST.SCRIPT	Script-27
11.12.90	Creation of tables Ship and Cruise	CRUISE.SCRIPT	Script-26
11.12.90	Copy of HainesData into StandardTables	HAINESLOAD_COPY .SCRIPT	Script-25
11.12.90	Copy data from Aari_Cruise-Table to table Ship	AARI_TO_SHIP.C;1	C-1
12.12.90	Rename Aari_Cruise in Aari_Cruise_Bck, Cruise_View in AARI_CRUISE	UPDATE_SODB.SCRIPT	Script-28
15.12.90	Creation of GonellaTables	GONELLA.SCRIPT;2	Script-21
17.12.90	Loading of GonellaData into Gonella_Station and Gonella_Standard_Data	GONELLA.FOR;10	For-9
18.12.90	Set missing values = 0	GONELLA_UPD.SCRIPT;5	Script-22
18.12.90	Copy GonellaData into StandardTables	GONELLA_COPY_ ALL.SCRIPT	Script-24
18.12.90	Execute Gonella_Copy_All.SCRIPT	GONELLA_COPY.SCRIPT	Script-23
18.12.90	Marsden_Square	MARSPROB.FOR	For-10
19.12.90	Grant select on AARI_CRUISE to PHYSIK1	CRUISE_TABLE.SCRIPT	Script-29

Steps in developing the SouthernOceanDB III

Date	Short Description	Name of the program	Signature
11.2.91	Changes of Cruise_Id# in Cruise, which were recognized as erroneus in Aari_Cruise_Bck	CRUISE_UPD070291.SCRIPT	Script-30
12.2.91	Procedure, created to update GS_Backfill: set Date_Time = 0 were Jan 1 1900 12:00AM	UPDATE_BACKFILL_PROC.SCRIPT	Script-31
12.2.91	Rename Gordon_Station_Backfill in Gordon_Station_Backfill_Bck Backup of Backfill	GSBACKFILL_UPD070291.SCRIPT	Script-32
12.2.91	Loading of GordonData into Gordon_Cruise, Gordon_Ship, Gordon_Station and Gordon_Station_Backfill from files Headers.fil, Shipgord3.dat	GORDON_CRUISE.C;152	C-2
12.2.91	Correction of Gordon_Cruise	LPK	
13.2.91	Selects Min and Max Ship_Id# and calculates the sum	MAX_MIN_FROM_SHIP.SCRIPT	Script-33
13.2.91	Creation of TokyoTables	TOKYOTABLE.SCRIPT;12	Script-34
	Loading TokyoData into TokyoTables	TOKYOLOAD.FOR;14	For-12
13.2.91	Insert new Ships and Cruises to Ship and Cruise from TokyoData	ADD_TOKYO_SHIPS.SCRIPT	Script-35
14.2.91	Set missing values = 0 for TokyoData	TOKYO_UPD.SCRIPT;3	Script-36
8.3.91	Update of ships in Aari_Cruise	AARI_UPDATE_SHIPS.SCRIPT	Script-39
8.3.91	Update_Bottom_Depth in Tokyo_Fisheries_Station	TOKYO_FISH_BOTTOM_DEPTH_UPDATE.SCRIPT	Script-37
8.3.91	Correction of some erroneus values in Tokyo_Fisheries_Station	TOKYO_FISHERIES_STATION_UPDATE.SCRIPT	Script-38
?13.3.91	Creation of A1111Tables	A1111.SCRIPT;5	Script-41
22.3.91	Loading new AariData from A1111Data into A1111Tables	A1111LOAD.FOR;4	For-11
22.3.91	Set missing values = 0 for A1111Data	A1111LOAD_UPD.SCRIPT;2	Script-42
22.3.91	Copy A1111Data into StandardTables	A1111_COPY.SCRIPT;4	Script-59
27.3.91	Insert of new Ships from A1111	A1111_SHIPS_UPD.SCRIPT	Script-44
27.3.91	(Update Cruise)	A1111_SHIPS.SCRIPT	Script-43
9.4.91	Copy of TokyoData into StandardTables	TOKYO_COPY.SCRIPT;5	Script-45
17.5.91	Creation of JareTables	JARELOAD.SCRIPT;3	Script-46
21.5.91	Loading of JareData into JareTables	JARELOAD.FOR;9	For-13
28.5.91	Creation of Gordon_Cruise_LPK Ship_Code removed, replaced by Ship_Id#	GORDON_CRUISE_DELETE_SHIP_CODE.SCRIPT	Script-47

Steps in developing the SouthernOceanDB IV

Date	Short Description	Name of the program	Signature
5.6.91	Set missing values = 0 fore JareData	`JARE_UPD.SCRIPT;2`	Script-48
10.6.91	Creation of BiomassTables	`BIOMASS.SCRIPT`	Script-49
12.6.91	Change some Ship names in table Cruise according to table Ship	`UPDATESHIP-CRUISE100691.SCRIPT`	Script-56
12.6.91	Discussion with Victor to analyze mistakes		
12.6.91	Loading of BiomassData into BiomassTables	`BIOMASS.C`	C-4
25.6.90	Script to change table Cruise: For some Cruises Ships are set to unknown, Id# = 1000000	`UPDATECRU24 .SCRIPT`	Script-57
25.6.91	Script to change table Cruise	`UPDATECRU24S.SCRTIPT`	Script-74
26.6.91	Changes of ship names in table Ship	`SHIPS_UPD050291 .SCRIPT`	Script-50
26.6.91	Procedure to insert new ships	`INSERT_NEW_SHIPS .SCRIPT`	Script-54
26.6.91	Procedure to update table Ship	`UPDATE_SHIP_ID .SCRIPT`	Script-52
26.6.91	Procedure to insert a new ship into Cruise	`INSERT_INTO_CRUISE`	
26.6.91		`.SCRIPT`	Script-53
27.6.91	Procedure to execute UPDATE_CRUISE.SCRIPT	`UPDATE_CRUISE .SCRIPT`	Script-55
2.7.91	Preparation of BiomassData for Graphics (Brandini)		
15.7.91	Set missing values = 0 for BiomassData	`BIOMASS_UPD.SCRIPT`	Script-75
16.7.91	Group added: BIOMASS_GRP Login added: BIOMASS User added to SODB Grant select to Biomass_ERP on Biomass_Station and Biomass_Standard_Data		
23.7.90	Inserting chlorophyll values for Biomass given by Brandini: no change of existing data, duplicates are made, which consists on Biomass data + Chlorophyll_A because of the same station_Id for Biomass and Brandini For identification a value was added to the Station_Id# of duplicates	`BIOMASS_BRANDINI. SCRIPT`	Script-58
24.7.91	Program to select special values for graphics from Biomass for F.Brandini	`BRANDINI.C`	C-5
24.7.91	Routines to evaluate specific values from measured oceanographic data	`ALPHA.C`	C-6
1.8.91	Modification of Biomass.C, writing a Biomass-Table Script and finally a new loading of BiomassData because of a mistake in an Update-Program		

Steps in developing the SouthernOceanDB V

Date	Short Description	Name of the program	Signature
1.8.91	Creation of the table Programs (not run)	PROGRAMTABLE.SCRIPT	Script-69
7.8.91	Procedure to compare position and time of Biomass_Station with the StationTable, the Station_Number is then written out	BIOSELPOSDAT.SCRIPT	Script-60
9.8.91	Creation of Muench_Standard_Data and Station	MUENCHLOAD.SCRIPT	Script-70
9.8.91	Loading of MuenchData into Muenchtables	MUENCHLOAD.FOR	For-14
12.8.91	Copy MuenchData into StandardTables	MUENCH_COPY_ALL .SCRIPT	Script-71
12.8.91	Update MuenchTables: Set missing values = 0	MUENCHLOAD_UPD .SCRIPT	Script-72
12.8.91	Copy BiomassData into StandardTables	BIOMASS_COPY_ALL.SCRIPT	Script-73
19.8.91	Inserting of two ships and eight cruises	Add_Ships_Jare140491.SCRIPT	Script-76
20.8.91	New creation of tables Cruise and Ship, additional the tables Cruise_Deleted and Cruise_Updated, Ship_Deleted and Ship_Updated, the indices for Ship and Cruise, and the triggers Delete_Cruise, Update_Cruise, Delete_Ship,	erneuertes Script:	
20.8.91	Update_Ship	CRUISE.SCRIPT	Script-26

The Design of an Information System to be used for Objective Analysis of Climatic Data from the Southern Hemisphere

May 12, 1994

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Contents

- **BSHData**: Data from the *Bundesamt für Seeschiffahrt und Hydrographie* in Hamburg

The atlas is built from these data sets which are merged into one set. It contains the most important and validated data to get a significantly well done analysis. New data later than April 1992 will not be used in the printed version but may later extend the database to a pool on oceanographic data of the whole southern polar region.

4.2 The Selecting and Collecting

The first issue to build this information system was to provide the physicists of the Alfred–Wegener–Institute with validated data. Therefore the decision which data sets have to be selected was made by the scientists of the AWI. The requested data sets were presented on tapes and in one case as a print out. Some special reading programs were used to transfer the data sets into a readable format. This transfer included the interpolation to standard depth levels.

Such an interpolated data set is called the *original data set* within this documentation. Each original data set is first transferred to the data base. Any other step of data processing is based on data stored in the database. The scientist only deals with two tables containing geographical and descriptive information (position, time, etc.) and the oceanographic data. There are some reasons why the original data sets are also saved in the database.

One reason is to document the original data sets that have been directly provided by the institutes and to save any processing step on changing the data set. If for any reason there is a mistake in any processing step one can revert or redo the processing using approved procedures.

The scientific meta information is stored in two tables containing ship and cruise data for data sets. Other tables are used to hold meta information for validation purposes.

4.3 Validation of the Data Sets

It is a fact that measured physical values have some errors. There is a probably very narrow range which describes the real value. Sometimes there may be a systematical error due to the sensor or the procedure of measuring. These errors should be known because they have to be documented. Then it is possible to correct data. If there are any missing values they will be interpolated. In order to do this the inserted data sets must pass many tests.

This process of checking the data is called *validation*. Each of these tests uses the data presented by an institute and the previously stored data in the database, i.e. represented by the *Station* and *Standard_Data* entity types. Each record which was validated and changed is marked by a validation flag. A separate entity type is used to find the correspondence between the validation method and a validated data record. In some cases a data record may pass several validation methods. The validation flag then represents all methods which had been run.

There is one important remark on validation. Each validation process covers the actions of elimination of duplicates and corrections of faulty data for measured records and station data. The Gordon data set, which is based on the atlas of Gordon & Mollinelli is taken as validated. It need not to be changed or checked. In contrast to this purpose it is used as a base to which the data from other institutes have to be compared to, especially the AARI data set.

preliminary control::

- The first step of validation consisted of the deletion of duplicate stations because there are different sources from which the data are collected. There differences occured as a result of different dataprocessing.
- This data set will then be compared to the Gordon data set in order to look for duplicates as well. Especially the AARI data set contains a lot of records from Gordon. If one record from AARI corresponds to one record from Gordon, the AARI record must be deleted because of the quality of the Gordon data set.

data intercomparison checks::

The next step is to proof the correctness of the data set against *Standard_Data* and *Station_Data*. The data sets will pass several tests. *Station_Data* are validated concerning their positions, if

time position checks::

- the positions harmonize according to the marsden_square (a grid defined by longitude and latitude),
- position and time have true distances, if it is assumed, that the speed of the ship is 15 knotes maximum between two stations,
- the positions do not collide with a coastline.

In the comments to the programs the conditions data have to fulfill are listed.

range checks::

Data of the ships will also be checked, i.e. name, country, cruise.

statistical, static stability, scatter–diagramm and vertical profile check::

The consistency of the database requires some trigger mechanisms due to deleting data records. If faulty station data or duplicates will be deleted, the whole measured records must be deleted, too. But if only measured data will be deleted, nothing happens to *Station_Data*. All methods and programs used for validation are recognizable by the *Validation_Flag*. They have to be stored in the database.

In this documentation all programs and methods used for validation are listed with name, date, and a short description. Additionally the origin of each dataset, e.g. the name of the institute, with a reference to the appendix of the description is noted. In the appendix all method and program scripts are listed completeley.

Within the validation process the modification of data is a very fundamental process. Modification means to change data, to delete faulty or duplicate data or to insert new data. In the database the entity types *InsertData, InsertStation, DeleteData, DeleteStation, UpdateData* and *UpdateStation* are built for these actions. These entity types contain the identifiers of the records that have been modified, the identifier of the user and the date, when the process had been run.

This description is very brief. For more precise information see [**?**].

5 Preconditions

5.1 Hardware

There were some restrictions to be followed when the project started. They were given by the infrastructure of the Alfred–Wegener–Institute.

The database system is running on a Digital Equipment **VAX**. Here the operating system **VMS** is used. For saving all data of the **SouthernOceanDB** approximately 1 GByte is reserved. This may be expanded by any need.

Retrieving data will be possible by using simple ASCII–terminal or more sophisticated workstations with a window environment. A client–server architecture is used for the connection to the database. An access through an graphical user interface based on Internet protocol is planned.

5.2 Software

This section ~~is~~ gives a short discussion of the underlying database system. It is placed here to give a short introduction into the used system and how to work with.

5.2.1 The Database System

The information system **SouthernOceanDB** is implemented using the *Relational DataBase Management System* (RDBMS) **Sybase**. The main components of the information system are supported by the *SQL Toolset* and the *SQL Server*.

The *SQL Toolset* provides tools for the development and the execution of certain applications like programmable masks. The tool *Data Workbench* is a menu–oriented interface to the *SQL Server*.

The *SQL Server* is the heart of the system and uses the client/server architecture. The client software is responsible for running an application for the user. The programmable server software is responsible for the database management and transactions. Both are implemented in the system as separate processes.

In contrast to other systems **Sybase** provides a concept of certain rules for managing the database. Rules extend the capability of implied integrity constraints given by a column's data type. Each modifying command, i.e. *INSERT* and *UPDATE*, is checked against the rules binded to the specified column. Also user defined data types can have rules binded to them.

The concept of transaction helps to avoid mistakeable operations on the data set. A transaction ~~is~~ a set of actions the user executes. If any action fails the transaction is cancel and the previous state is restored. In the case of successfull actions the user has the chance to reject what he has done or to commit the transaction.

(A is treated as unseparable ~~act~~ ~~se~~ "Folge" of actions user by the dBS.

The consistency of the database may be checked by using *stored procedures* and *Triggers*. *Stored procedures* can be used to calculate values, check constraints not defined by rules, and perform large tasks of seraching and evaluati~~on~~ing ~~of~~ data. *Triggers* are special stored procedures which are executed if an *INSERT*, *DELETE* or *UPDATE* of a column is wanted and the trigger condition is met. They are used to keep the referential integrity of the database

5.2.2 Consistency and Administration

A centralized control of data by the database administration is possible while the user makes his applications. ad!

In summary the *SQL Server* ensures the consistency and integrity of data within the columns by functionality. These functionality is implemented according to the model by Codd and is based on

relational

1. **Datatypes:** Datatypes determine the kind of information that is stored in the tables. Five types are used for the **SouthernOceanDB** from fourteen provided by the system:
    (a) `int` holds numeric values in the range from -2^{31} to $2^{31}-1$,
    (b) `varchar(n)` stores character strings of variable length (up to 255 characters),
    (c) `float` holds eight byte numbers in floating point format,
    (d) `datetime` is for fields which hold only date and time, and
    (e) `text` is a field which can hold long text (more than 255 characters).
2. **Userdefined datatypes:** The administrator can define his own datatypes additional to the system datatypes.
3. **Null value:** The field is specified to get a value or not. If the field is declared not null it must get a value. Otherwise **Null** defines an illegal or nonexisting value.
4. **Defaults:** The developer of the database allows the database system to put a predefined value into the field, if nothing is entered in by the user.
5. **Rules::** Rules define the possible range of values for the specified field.

These specifications prevent wrong inputs of data. In the documentation of tables the information of datatypes and *null/notnull* specifications are given. ? *Defaults* and *Rules* are not used. More complex rules for columns and tables, which have to be noticed by users, are provided by triggers.

An important part of an information system are the access rights of users. The server provides several security mechanisms to data. The database administrator is able to set permissions and restrictions to users or usergroups on tables, views, columns, stored procedures, and commands. He has the central control of data by giving passwords to users. In the **SouthernOceanDB** the competence of one user is decisive for the access.

5.2.3 The Database Query Language

The query language, which is used in **Sybase**, is **SQL** (Structured Query Language), a standard for relational database systems. It provides a lot of possibilities to retrieve data from the database. By joining tables the user can retrieve data which are linked by keys. In the *select*-statement tables and columns are adressed as the user needs to. He also can set several conditions for his output by using bool's operati~~ons or~~ ors some provided aggregate functions like *avg* (average), *sum*, *count*, and others. An example would be a join of two tables Station and Standard_Data with a join condition and a conditional statement:

boolean

```
Select Latitude, Longitude, Depth, Salinity
from Standard_Data a, Station b
where a.Station_Id# = b.Station_Id#
and b.Date_Time between "Jan 1 1980" and "Jan 4 1980"
and Depth = 200
```

The **SQL** used within **Sybase** is a derivate of the ANSI–standard. Beside the normal functions of the language it provides some reasonable extensions like *if...else–* and *while*–statements.

The user can have different possibilities to access the data. The simpliest way is to enter a *select*–statement as shown above. A less sophisticated user must not deal with the complex syntax of SQL. That's why ~~a~~ **view**s ~~is used.~~ are supplied.

has ?

A **view** is a shortcut of a complex selection. It's behaviour is like a table but it is virtual.

The concept of **stored procedures** is a specific feature which helps to minimize ~~ing~~ the users input as well as access times. A **stored procedure** is a group of SQL–statements, which may be stored as compiled program in the data dictionary. If a question is not changed for a long time the procedure garantees fast access because of precompiled access paths.

6 The Structure of the Database

6.1 The Relational Datamodel

A relational database is based on the model of relations between entities which are sometimes also called objects. An entity is a structure which represents a real or abstract thing in the world. Each entity has attributes which define its characteristic. In the model the abstract structure of entities is represented by an entity type.

Entities may be related to other entities using relations. A relation may have some special attributes which define special characteristics of the relation. In the model the abstract structure of relations is represented by a relation type.

In relational database systems entities are represented as table. Relations may ~~be~~ defined using an identifier or a special table. Tables consists of coulumns whihh are the previously defines attributes. Tables and columns must have a name, and they must be defined exactly in there type ~~before~~ creating the database.

the rows of a

Data, which are kept in one table, belong to the same technical area. For example, the table *Ship* consists on all important information concerning to the object *Ship* like *Ship_Name*, *Country* and *Ship_Code*. These are the attributes of the table *Ship*. The attributes build the columns, in which data are to be read in. The object *Ship* builds an entity type (of the real world object).

of

Before creating a database it is necessary for the creator to decide which one of the information or data should be kept in one table and which data should be read into other tables for best retrieval. This process depends not only on the decision of the designer but also on some scientific appraoches. This process is called normalization and will be briefly described.

For the division of data into tables several principles must be kept by the creator. The most important principle is to keep information uniquely, to prevent storing the same information in several tables. Restrictions of values to be read into tables are determined by the definition of **datatypes** for the single columns (look at chapter *Sybase*).

redundancy

The advantage of a relational database system consists on the abillity to set connections at run time. This is done by select–statements in SQL or by creating views, a predefined select–statement. For doing these connections, the connected tables need a common field. By this field the relation between a record in one table to the record in another table, which belongs to it, can be found. The common field is the key. For simplicity a unique identifier is added to each record in the table, which mostly is a current number (id). Three kinds of key are to distinguisch:

?

1. **Primary Key:** This key is the primary identifier of records in one table. Every table has a column with a primary key for the identification of records. The values of the attributes depend functionally on the primary key.
2. **Foreign Key:** If there is a connection between two tables, then is the primary key of table1 the common key of the two tables, and the primary key of table1 is the foreign key in table2. Records in table2 depend not functionally of the foreign key. an
3. **Composite Key:** The composite keys consists on two or more fields. These fields in combination identify one record.

Vermischung allgem. Kriterien und speziell in S.O.DB realis. Entwurfsentscheidungen ?

All keys in the **SouthernOceanDB** are interger numbers adapted to each record in a table. They are listed in the appendix of this documentation.

Primary

6.2 The Database of the *Hydrographic Atlas of the Southern Ocean*

The tables with original data and the tables with standard data, where the original data are combined, are of the same construct. Both contain measured data in the standard_data tables and station data in the station table.

have the same scheme

All tables are specified by the names of the original data set. For example the data tables of Aari are called Aari_Station and Aari_Standard_Data, that a viewer can see, from which institute data come from. There are the basic tables *Ship*, *Cruise*, *Station*, *Standard_Data*, *Statistic* and *Marsden_Square*. Beside the standard data the cruise tables *Gordon_Ship* and *Gordon_Cruise* exist only for GordonData. All cruise data are provided in the tables *Ship* and *Cruise*. For the data sets there exist the tables *Standard_Data*, *Station* and *Statistic*. The table *Marsden_Square* is provided for all station–tables, original and standard, to transform station–data into calculated squares on the earth called marsden_squares.

by

Because of the congruency only the basic data tables and their connections will be described. The tables contining measured data, *Standard_Data*, differ only in the parameters, which were measured, that caused that some standard_data tables to have some more columns than others.

The central point in this database is built around the tables *Ship*, *Cruise*, *Station*, and *Standard_Data*. Among these tables connections are set within the database like in reality. The connections between these objects are:

1. A number of ships do some expeditions during one and more years, across the ocean in order to measure data from the sea. These expeditions are called cruises.
2. On one cruise several stations are made. On one station a big number of standard_data is measured. The hierarchical structure between Ship, Cruise, Station and Standard_Data is as follows:
    - One Ship makes many cruises
    - One Cruise contains many stations
    - One Station contains many standard_data–records
    - Each record is identified by a number in the tables:
        - Table *Ship*: Ship_Id#
        - Table *Cruise*: Cruise_Number_Id#
        - Table *Station*: Station_Id#
        - Table *Standard_Data*: Standard_Data_Id#

Every standard_data record is characterized by the position and the time, when it was sampled, and in addition by the level of depth. Therefore the Station_Id#, which is a short cut of a key, must be one of the columns of the table *Standard_Data* to identify the right Station for one Standard_Data–record.

The position and time data of a station depend on the ship and its cruise. The table *Cruise* is used as a the connection between ship and cruises.

The number of a cruise can be used to make a connection between a ship and the data which are collected at a specified cruies.

- The table **Ship** contains all ships with ship_Id# and the relevant information belonging to them. The Ship_Id# is the primary key.
- The table **Cruise** sets a relation between ship and cruise, identified by the Ship_id# and the Cruise_Number#. Cruise_Number# is the primary key, Ship_Id# is the foreign key.
- The table **Station** has the column Cruise_Number as a foreign key to set a relation about table Cruise to the ship: A ship can be identified, that has made a special station. The Station_Id# is the primary key for one station–record, the Cruise_Number# is the foreign key
- The table **Standard_Data** has the Standard_Data_Id# as a primary key, to identify one record. Here the Station_Id# is the foreign key for identification the station–record, that belongs to one standard_data–record

In addition for calculations there are the tables *Statistic* and *Marsden_Square*:

- The table **Statistic** is described for historical reasons. Due to some changes in the database system this table is now obsolete. It provides some finished calculated values for statistical applications like the sum of values or square values and the number of observations for calculating the mean and the standard deviation. Only the most frequent parameters like temperature, salinity and oxygen have been calculated. The values that have been put into the calculations depend on the level of depth, where the values are taken, and on the marsden_square. Both columns together build a composite key, which identifies the statistical results.

  The column Depth# is a field from the standard_data–table, that shows the level of depth for one measured data–record.

  The column Marsden_Square# is a field from the station–table. This field identifies the position, Longitude and Latitude, for one record.
- The table **Marsden_Square** is described for historical reasons. Because there is a algorithm to calculate the Marsden_Square for a given position this table is now obsolete. It provides the longitude- and latitude–values for calculating the Marsden_square. The Marsden_Square_Id# is the primary key.

7 Contents of the Database

7.1 The StandardData

7.1.1 Tables

Cruise

Column	Type	Null	Indices
Cruise_Number_Id#	int	no	a
Ship_Id#	int	no	b

!

Ship

column	Type	Null	Indices
Ship_Id#	int	no	a
Ship_Name	varchar(80)		
Country	varchar(80)		
Ship_Code	varchar(8)		

Station

Column	Type	Null	Indices
Station_Id#	int	no	a
Cruise_Number	int	no	
Station_Number	int	no	
Date_Time	datetime	yes	b
Longitude	float	no	b
Latitude	float	no	b
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square	int	no	
Validation_Flag	int	no	
Update_Flag	int	no	

Standard_Data

Column	Type	Null	Indices
Standard_Data_Id#	int	no	a
Station_Id#	int	no	b
Depth	int	no	b
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	
Phosphate	float	yes	
Silicate	float	yes	
Nitrat	float	yes	
Validation_Flag	bit	no	
Update_Flag	bit	no	

?

Observed_Data

Column	Type	Null	Indices
Standard_Data_Id#	int	no	a
Station_Id#	int	no	b
Depth	int	no	b
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	
Phosphate	float	yes	
Silicate	float	yes	
Nitrat	float	yes	
Validation_Flag	bit	no	
Update_Flag	bit	no	

} ?

Statistic

Column	Type	Null	Indices
Depth#	int	no	
Marsden_Square#	int	no	
Temperature_SXX	float	yes	
Temperature_SX	float	yes	
Temperature_Number_Observ	float	yes	
Salinity_SXX	float	yes	
Salinity_SX	float	yes	
Salinity_Number_Observ	float	yes	
Oxygen_SXX	float	yes	
Oxygen_SX	float	yes	
Oxygen_Number_Observ	float	yes	
Validation_Method_Id#	int	yes	

Marsden_Square

Column	Type	Null	Indices
Marsden_Square_Id#	int	no	
Latitude_Min	float	yes	
Latitude_Max	float	yes	
Longitude_Min	float	yes	
Longitude_Max	float	yes	

The Management of StandardTables

The Processing of StandardTables

Date	Short Description	Name of the Program	Signature
28.6.90	Creation of tables Station, Standard_Data, Statistic, UpdateTables, InsertTables, DeleteTables, Validation	STATION.SCRIPT	Script–64
1.6.90	Creation of indices on Station and Standard_Data	STATION_INDEX.SCRIPT	Script–66
16.10.90	Drop Triggers for Station, Standard_Data	TRIGGER_DROP.SCRIPT	Script–7
16.10.90	Calculate marsden square number	MARS.FOR	For–5
19.11.90	Selects Station_Id# from Standard_Data which is not in table Station	CHECKGCSD..SCRIPT	Script–12
19.11.90	Execute CHECKGCSD.SCRIPT	GARBAGECOLLECT.SCRIPT	Script–13
28.11.90	Creation of Update, Insert and DeleteTriggers	TRIGGER.SCRIPT	Script–15
11.12.90 11.12.90	Test for Cruise.script Test for Cruise.script	CRUISE_TEST.SCRIPT	Script–27
11.12.90	Creation of tables Ship and Cruise	CRUISE.SCRIPT	Script–26
18.12.90	Marsden_Square	MARSPROB.FOR	For–10
11.2.91	Changes of Cruise_Id# in Cruise, which were recognized as erroneus in Aari_Cruise_Bck	CRUISE_UPD-070291.SCRIPT	Script–30
12.6.91	Change some Ship names in table Cruise according to table Ship	UPDATESHIPCRUISE100691.SCRIPT	Script–56
25.6.91	Script to change table Cruise: For some Cruises Ships are set to unknown, Id# = 1000000	UPDATECRU24.SCRIPT	Script–57
25.6.91	Update of table Cruise	UPDATECRU24S.SCRIPT	Script–74
26.6.91	Procedure to insert new ships	INSERT_NEW_SHIPS.SCRIPT	Script–54
26.6.91	Procedure to update table Ship	UPDATE_SHIP_ID.SCRIPT	Script–52
26.6.91	Procedure to insert a new ship into Cruise	INSERT_INTO_CRUISE.SCRIPT	Script–53
26.6.91	Extension of the table Ship with the column Ship_Code	ALTER_TAB_SHIP.SCRIPT	Script–81
27.6.91	Procedure to execute UPDATE_CRUISE.SCRIPT	UPDATECRUISE.SCRIPT	Script–55
1.8.91	Creation of table Programs (not run)	PROGRAMTABLE.SCRIPT	Script–69
5.8.91	Creating a procedure for either rollback or commit a transaction according to the value of errorstatus.	ROLLBACK_COMMIT.SCRIPT	Script–96

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The Processing of StandardTables			
Date	Short Description	Name of the Program	Signature
20.8.91	New creation of tables Cruise and Ship, additional the tables Cruise_Deleted and Cruise_Updated, Ship_Deleted and Ship_Updated, the indices for Ship and Cruise, and the triggers Delete_Cruise, Update_Cruise, Delete_Ship, Update_Ship	`CRUISE.SCRIPT`	Script–77
21.8.91	Loading of Cruise_Numbers from Aari_Cruise_Bck and its Ship_Id from Ship into Cruise	`AARI_AND_SHIP_TO_CRUISE.SCRIPT`	Script–78
26.8.91	Update of cruises with the procedure UpdateCruise	`SHIPCRUISE-CORRECTION-260891.SCRIPT`	Script–99
28.8.91	Creating the procedures Copy_Gordon_Ship_To_Ship (Copy the Gordon_Ships and relations to the table Ship) and Copy_Gordon_Cruise_To_Cruise (Copy the Gordon_Ships and relations to the table Cruise)	`COPY_GORDON_SHIP_TO_SHIP_PROC.SCRIPT`	Script–85
29.8.91	Change of Ship_Ids in table Cruise due to the change of shipnames	`CHANGESHIPNAME-INCRUISE.SCRIPT`	Script–82
29.8.91	Selects Station_Id# from Standard_Data which is not in table Station Data which is not in table Station	`CHECKGARBAGE-STANDARDDATA.SCRIPT`	Script–83
29.8.91	Update of Ship and Cruise in Southern–OceanDB, data from V. Guretzky	`UPDATESHIP CRUISE290891.SCRIPT`	Script–91
30.8.91	Dropping of the trigger Insert_Cruise on table Cruise and Delete_Ship on table Ship	`DROP_CRUISE_TRIGGER.SCRIPT`	Script–86
2.9.91	Modifying the date values in the table Gordon_Station_Backfill for som Station	`GSB_UPD.SCRIPT`	Script–77
3.9.91	Executing the procedures Copy_Gordon_Ship_To_Ship and Copy_Gordon_Cruise_To_Cruise	`COPY_GORDON_SHIP_TO_SHIP.SCRIPT`	Script–84
5.9.91	Insert triggers for table Station and StandardData. Special solution for updating the validation flags.	`UPDATESTATION-TRG.SCRIPT`	Script–93
6.9.91	Spelling corrections in table Ship	`UPDATE_SHIPS-060991.SCRIPT`	Script–92
9.9.91	Creation of view Aari_Cruise2	`AARI_CRUISE_VIEW.SCRIPT`	Script–79
12.9.91	Creating the procedure Copy_Aari_To_Cruise (Copy the Cruise_Number from Aari_Cruise_Bck and the Ship_Id# from Ship to table Cruise	`COPY_AARI_TO_CRUISE.SCRIPT`	Script–97

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The Processing of StandardTables

Date	Short Description	Name of the Program	Signature
8.10.91	Update of cruises with the procedure UpdateCruise	`SHIPCRUISE-CORRECTION-081091.SCRIPT`	Script–100
8.10.91	Inserting a new Ship into Cruise	`INSERTCRUISE-081091.SCRIPT`	Script–101
8.10.91	Updating unknown Ships in the table Cruise	`UPDATEUNKNOWN-SHIP.SCRIPT`	Script–102
4.12.91	Change the ship ids in the table Cruise due to the change of name from old ship to new ship	`CHANGESHIPNAME-ANDCOUNTRYIN-CRUISE.SCRIPT`	Script–107
4.12.91	Updating Ships	`SHIP_UPD-041291.SCRIPT`	Script–111
5.12.91	Updating Ships	`SHIP_UPD-051291.SCRIPT`	Script–112
5.12.91	Updating the Ship Cruise relation	`SHIP_UPD-051291_2.SCRIPT`	Script–113
3.2.92	Update of Ship and Cruise in Southern–OceanDB, data from V. Guretzky	`UPDATESHIP-CRUISE030291.SCRIPT`	Script–114
3.2.92	Inserting new Ship by presenting the Shipname and the Country	`INSERTONE-SHIP.SCRIPT`	Script–115
20.2.92	Creating the procedure UpdateNODC for updating of an existing or non existing NODC code. This code is the Ship_Code in table Ship and view Aari_Cruise2	`UPDATENODC.SCRIPT`	Script–119
20.2.92	Changes in the table Ship_And_Cruise. Source:`OTH$DATEN:[SOCEAN.DHI]BSHCRU3.DAT`	`UPDATENODC-200292.SCRIPT`	Script–120
20.2.92	Reset Changes in the table Ship_And_Cruise. Source:`OTH$DATEN:[SOCEAN.DHI]BSHCRU3.DAT`	`RESETNODC-200292.SCRIPT`	Script–121
5.3.92	Updating of the table Cruise using the procedure ChangeShipNameAndCountryInCruise. Source:`OTH$DATEN:[SOCEAN.TEXT]KURDEL18.NOTE`	`CHANGECRUISE-050392.SCRIPT`	Script–122

7.1.2 Trigger

Triggers are a special kind of stored procedures, which run automatically, if a value in a record has changed. The adressed records will then be written into temporary tables to be deleted, when the database administrator logs out of the System. In this database special tables for changed records are created reporting every step. When a trigger is started all information of updating like the identifier of the changed record, the date of update and the user_id# will be written from the temporary tables into the triggertables. All triggers are written by Manfred Reinke, may 10th, 1990. ~~Here~~ The following are the triggers, which are implemented in the database:

1. **InsertStationTgr**: Insert information into the table InsertStation if a new Station–record has been inserted
2. **InsertStandard_DataTgr**: The same as above but for Standard_Data. Insert information into the table Delete_Data, if a Standard_Data–record has been inserted.
3. **DeleteStationTgr**: Insert information into the table DeleteStation if a Station–record has been deleted. If a Station–record is deleted, the Standard_Data–records concerning to this station will be deleted too.
4. **DeleteStandard_DataTgr**: The same as above but for Standard_Data–records.
5. **UpdateStationTgr**: Insert information into the table UpdateStation and take the record–id# from temporary tables inserted and deleted. Several securities are implemented into the update triggers.

Because so many cruises have been changed, ~~these~~ the following triggers are written by Lutz–Peter Kurdelski for security:

1. **UpdateStandard_DataTgr**: The same as above but for standard_data–records.
2. **Insert_Cruise**: Print: "Insert the Ship first into Ship"
3. **Delete_Cruise**: Insert into Cruise_Deleted
4. **Update_Cruise**: Insert into Cruise_Updated
5. **Delete_Ship**: Print: "Delete the cruises first from Cruise"
6. **Update_Ship**: Insert into Ship_Updated

Signature: Script–15

The Tables

InsertData		
Column	Type	Null
Standard_Data_Id#	int	no
InsertDate	datetime	no
User_Id#	int	no

InsertStation		
Column	Type	Null
Station_Id#	int	no
InsertDate	datetime	no
User_Id#	int	no

DeleteData		
Column	Type	Null
Standard_Data_Id#	int	no
DeleteDate	datetime	no
User_Id#	int	no

DeleteStation		
Column	Type	Null
Station_Id#	int	no
DeleteDate	datetime	no
User_Id#	int	no

Aari_Cruise			
Column	Type	Null	Indices
Cruise_Number	int	no	a
Ship	varchar(50)	no	
Country	varchar(50)	no	
Code	varchar(4)	yes	

Aari_Statistic_View			
Column	Type	Null	Indices
Depth#	int	no	
Marsden_Square#	int	no	
Temperature_Mean	float	yes	
Temperature_Var	float	yes	
Temperature_Number_Observ	float	yes	
Salinity_Mean	float	yes	
Salinity_Var	float	yes	
Salinity_Number_Observ	float	yes	
Oxygen_Mean	float	yes	
Oxygen_Var	float	yes	
Oxygen_Number_Observ	float	yes	
Validation_Method_Id#	int	yes	

Gordon_Statistic_View			
Column	Type	Null	Indices
Depth#	int	no	
Marsden_Square#	int	no	
Temperature_Mean	float	yes	
Temperature_Var	float	yes	
Temperature_Number_Observ	float	yes	
Salinity_Mean	float	yes	
Salinity_Var	float	yes	
Salinity_Number_Observ	float	yes	
Oxygen_Mean	float	yes	
Oxygen_Var	float	yes	
Oxygen_Number_Observ	float	yes	
Validation_Method_Id#	int	yes	

UpdateData

Column	Type	Null
Standard_Data_Id#	int	no
Old_Station_Id#	int	no
New_Station_Id#	int	no
Validation_Flag	int	no
UpdateDate	datetime	no
User_Id#	int	no

UpdateStation

Column	Type	Null
Station_Id#	int	no
Validation_Flag	int	no
UpdateDate	datetime	no
User_Id#	int	no

Cruise_Deleted

Column	Type	Null
Cruise_Number#	int	no
Ship_Id#	int	no
User_Id#	int	no
Date	datetime	no

Cruise_Updated

Column	Type	Null
Cruise_Number#	int	no
Ship_Id#	int	no
Old_Cruise_Number	int	no
Old_Ship_Id#	int	no
User_Id#	int	no
Date	datetime	no

Ship_Deleted

Column	Type	Null
Ship_Id#	int	no
Ship_Name	varchar(80)	no
Country	varchar(80)	no
Ship_Code	varchar(8)	yes
User_Id#	int	no
Date	datetime	no

Ship_Updated

Column	Type	Null
Ship_Id#	int	no
Ship_Name	varchar(80)	no
Country	varchar(80)	no
Ship_Code	varchar(8)	yes
Old_Ship_Name	varchar(80)	no
Old_Country	varchar(80)	no
Old_Ship_Code	varchar(8)	yes
User_Id#	int	no
Date	datetime	no

Validation

Column	Type	Null
Validation_Id#	int	no
Method_Name	varchar(254)	no
Short_Remarks	varchar(80)	
Program_Name	varchar(80)	
Date_of_Program	datetime	no
Version_of_Program	int	

7.1.3 Views

- Aari_Cruise
- Aari_Cruise2
  Aufbau des Views wie bei Aari_Cruise
- Aari_Statistic_View
- Gordon_Statistic_View

7.2 AariData

7.2.1 The Origin

- Name: Hydrographic data obtained from different sources and collected in the AARI
- Address: Arctic & Antarctic Research Institute
  Beringa 38
  199226 St. Petersburg
  Country: Russia
- Contact person: Dr. Alexander Klepikow
  Phone: 352–02–26/352–33–39

- Name of the tape:
- Name of the file(s) : `OTH$DATEN:[OZEDB.DATA]DISK1.DAT`
  `OTH$DATEN:[OZEDB.DATA]DISK2.DAT`
- Name of the loading program: `OTH$DATEN:[OZEDB.DATALOAD]OZEDB_SYBASE.FOR/ Sign.:For--1`
- Date of loading: 10.7.1989

1. **Station_Data**
   - Time: 1.1.1900–23.4.1989
   - Number of stations: 36059—-contains 97 stations of Kuropatkin
   - Range of Station_Id#: 1–36059
2. **Standard_Data**
   - Number of Standard_Data: 1470905
   - Range of Standard_Data_Id#: 1–1470905
   - Physical units of measured data:

Data	Unit
Depth	m
Temperature	° C
Salinity	NSU (PSS–78)
Oxygen	ml/l

7.2.2 The Tables

Aari_Standard_Data

Column	Type	Null	Indices
Aari_Standard_Data_Id#	int	no	a
Aari_Station_Id#	int	no	b
Depth	int	no	b
Temperature	float	yes	c
Salinity	float	yes	
Oxygen	float	yes	
ValidationFlag	bit	no	
UpdateFlag	bit	no	

Aari_Station

Column	Type	Null	Indices
Aari_Station_Id#	int	no	a
Cruise_Number	int	no	
Station_Number	int	no	
Date_Time	datetime	yes	
Longitude	float	no	b
Latitude	float	no	b
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	no	c
Validation_Flag	bit	no	
Update_Flag	bit	no	

Aari_Statistic

Column	Type	Null	Indices
Depth#	int	no	
Marsden_Square#	int	no	
Temperature_SXX	float	yes	
Temperature_SX	float	yes	
Temperature_Number_Observ	float	yes	
Salinity_SXX	float	yes	
Salinity_SX	float	yes	
Salinity_Number_Observ	float	yes	
Oxygen_SXX	float	yes	
Oxygen_SX	float	yes	
Oxygen_Number_Observ	float	yes	
Validation_Method_Id#	int	yes	

Aari_Cruise_Bck

Column	Type	Null	Indices
Cruise_Number	int(4)	yes	a
Ship	varchar(50)	yes	
Country	varchar(50)	yes	

7.2.3 The Preparation of AariData

The data set, which was provided to the AWI in January 1988 by the Arctic and Antarctic Research Institute in St. Petersburg, has been collected from different research institutes in the USSR:

- National Centre of Oceanographic Data, Obninsk
- Scientific Research Oceanographic Centre of the Defense Ministry, St. Petersburg
- Institute of Oceanology of the Academie of Sciences of the USSR, Moscow
- Scientific Research and Fishery Institutions of the Fishery Ministry of the USSR in Kaliningrad, Kerch, Murmansk and Moscow.

The original data from Aari, provided to the AWI were already interpolated on these levels of depth as follows:
0, 10, 20, 30, 50, 75, 100, 125, 150, 200, 250,
300, 350, 400, 500, 600, 700, 750, 800, 900,
1000, 1100, 1200, 1300, 1400, 1500, 1750, 2000,
2250, 2500, 2750, 3000, 3250, 3500, 3750, 4000,
4500, 5000, 5500, 6000, 7000

To make data visible on screen, special read programs were written by Victor Guretzky.

Directory: OTH$DATEN:[SOCEAN]			
Date	Function of the program	Name	Signature
	Reading data before interpolation	`READ.FOR`	
	Interpolation to 42 standard levels	`PROB5.FOR`	
	Reading interpolated data Dir.: OTH$DATEN:[OZEDB.DATALOAD]	`READING.FOR`	Read–12

Preliminary control of the AariData

Removal within the Aari subset and between Aari and Gordon

- Deletion of duplicates within the Aari data set on standard_data and station, only on station, only on standard_data in june 90 by V.Guretzki
- Duplicates between AariData and GordonData: Deletion only of AariData

Tests to find and delete duplicates

Most of the data have been obtained by the soviet ships, but a large number of oceanographic stations within this data set were obtained from other countries. A lot of duplicates were found within the Aari data set and between Aari and Gordon data. For searching duplicates within the Aari data set several tests have been used. These compare headers and/or data of each station with other stations. Pairs of duplicates were then examined and the best station out of the pair under the consideration was chosen. These are the tests for finding duplicate pairs within the Aari subset:

The Deletion of Duplicates within the Aari–Subset

Directory: OTH$DATEN:[SOCEAN.FOR]			
Date	Description	Name of the Program	Signature
7.,11., 18. and 20.6.90	Search for identical duplicates Coordinates differ not more than 0.1 degree	`DUPLIC91.FOR`	Dup–1
	dT, dS ≤ 0.004 for $> 50\%$ of levels	`DUPLIC--92.FOR`	Dup–2
	dT, dS ≤ 0.004	`DUPLIC93.FOR`	Dup–3
	Coordinates differ not more than 0.1 degree	`DUPLIC94.FOR`	Dup–4
	dT, dS ≤ 0.004 for $> 50\%$ of levels	`DUPLIC96.FOR`	Dup–5
	Pairs with identical duplicate numbers	`DUPLIC97.FOR`	Dup–6

After the selection of duplicates within the Aari subset AariData were then compared with GordonData in order to select and delete duplicate records again by comparing headers and data. Several filters were used and those stations were extracted as possible duplicates, which satisfied to some conditions. The duplicates were then deleted by the program COMPARDEL.FOR.

Tests to select Aari–Gordon–Duplicates

Directory: OTH$DATEN:[SOCEAN.AGDUP]			
Date	Function	Name of the Program	Signature
	Searching for pairs, which have more than 60 % levels which differ not more than 0.005 C for temperature and 0.005 % for salinity After test 1: Searching for possible duplicate pairs when five conditions out of seven are fulfilled: Lat1–Lat2 $\leq$ 0.02 Degree Long1–Long2 $\leq$ 0.02 Degree B_Depth1 = B_Depth2 M_O_Depth1 = M_O_Depth2 Year1 = Year2 Month1 = Month2 Day1 = Day2	COMPAR32.FOR	Com–1
	Next: Test only on temperature and salinity: Temp1–Temp2 $\leq$ 0.01 C or Sal1–Sal2 $\leq$ 0.01 %	COMPAR33.FOR	Com–2
	Possible duplicates have been extracted when only Year, Month and day of the same cruise for Aari and Gordon Subset are equal. Real duplicates were then deleted.	COMPAR22.FOR	Com–3
	Deletion of duplicates (com22del.prot)	COMPARDEL1.FOR	Com–4

7.2.4 The Processing of AariData

Processing of AariData			
Date	Short Description	Name of the Program	Signature
June 89	Creation of the database Creation of Aaritables (Aari_Station, Aari_Standard_Data, Aari_Station_Backup, Aari_Update_Backup, Aari_Garbage_Station, Aari_Garbage_Data)	AARI.SCRIPT	Script–1
10.7.89	Loading of AariData into Aari-Tables	OZEDB_SYBASE.FOR	For–1
7.12.89	Creation of Aari_Statistic, Marsden_Square, Aari_Statistic_View	AARI_STAT.SCRIPT	Script–3
7.12.89	Creation of Aari–Indices on AariTables	INDEX.SCRIPT	Script–62
13.12.89	Update Aari and GordonStandardTables Set missing values = 0	UPDATE_DEFAULT_NULL.SCRIPT	Script–63
28.6.90	Procedure to load StandardTables with Aari and GordonData	MAKESTATION.SCRIPT	Script–65
28.6.90	Procedure to copy AariData into StandardTables	AARI_COPY.SCRIPT	Script–61
25.7.90	Loading of further Aari_Data into Aari_Tables	OZEDB_SYBASE1.FOR	For–3
16.11.90	Create proc GarbageCollectStandardData for Aari	GC.SCRIPT	Script–11
19.11.90	Selects Station_Id# from Standard_Data which is not in table Station	CHECKGCSD.SCRIPT	Script–12

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Processing of AariData

Date	Short Description	Name of the Program	Signature
19.11.90	Execute CHECKGCSD.SCRIPT	`GARBAGECOLLECT.` `SCRIPT`	Script–13
26./27. _11.90	Loading of KuropatkinData into Aari	`AARILOAD.SCRIPT`	*missing*
27.11 90	Creation of AariIndices	`AARIINDEX.SCRIPT`	Script–16
28.11.90	Update of Aari_Station	*missing*	*missing*
11.12.90	Copy data from Aari_Cruise–Table to table Ship	`AARI_TO_SHIP.C`	C–1
12.12.90	Rename Aari_Cruise in Aari_Cruise_Bck, Cruise_View in AARI_CRUISE	`UPDATE_SODB.` `SCRIPT`	Script–28
19.12.90	Grant select on AARI_CRUISE to PHYSIK1	`CRUISE_TABLE.` `SCRIPT`	Script–29
8.3.91	Update in Aari_Cruise	`AARI_UPDATE_` `SHIPS.SCRIPT`	Script–39

8.3.91	Update of ships in Aari_Cruise	`AARI_UPDATE_`
		`SHIPS_CORRECTION.`
		`SCRIPT`
			Script–40?
			missing

21.8.91	Loading of Cruise_Numbers from Aari_Cruise_Bck and its Ship_Id from Ship into Cruise	`AARI_AND_SHIP_`
		`TO_CRUISE.`
		`SCRIPT`
			Script–78

9.9.91	Creation of view Aari_Cruise2	`AARI_CRUISE_` `VIEW.SCRIPT`	Script–79
12.9.91	Creating the procedure Copy_Aari_To_Cruise (Copy the Cruise_Number from Aari_Cruise_Bck and the Ship_Id# from Ship to table Cruise	`COPY_AARI_TO_` `CRUISE.SCRIPT`	Script–97

7.3 GordonData

7.3.1 The Origin

- Name: Atlas of Gordon & Molinelli (1976)
- Address: Lamont–Doherty Earth Observatory of Columbia University
  Palisades
  N.Y. 10964–01090
  Country: USA
- Contact person: Bruce Huber
  Phone: 914/359–2900

- Name of the tape: `GORDON`
- Name of the file(s) : `OTH$DATEN:[OZEDB.GORDON]GORDON.DAT`
- Name of the loading program: `OTH$DATEN:[OZEDB]GORDON.FOR;43/`
  `Signature:For--2`
- Date of loading: 17.7.1989

1. **Station_Data**
   - Time: 17.4.1906–1.11.1978
   - Number of stations: 6313
   - Range of Station_Id#: 100001–106313
2. **Standard_Data**
   - Number of Standard_Data: 131691
   - Range of Standard_Data_Id#: 10000001–10131691
   - Physical units of measured data:

Data	Unit
Depth	m
Temperature	°C
Salinity	NSU (IPSS–78)
Oxygen	ml/l
Silicate	mkg.at/l
Phosphate	mkg.at/l
Nitrate	mkg.at/l

7.3.2 The Tables

Gordon_Ship

Column	Type	Null	Indices
Ship_Id#	int	no	
Ship_Code	varchar(10)	no	
Ship_Name	varchar(80)	yes	
Country	varchar(80)	yes	

Gordon_Cruise

Column	Type	Null	Indices
Gordon_Cruise_Id#	int	no	
Ship_Code	varchar(10)	no	
Gordon_Cruise_Name	varchar(10)	yes	
Comment	varchar(255)	yes	

Gordon_Station

Column	Type	Null	Indices
Gorden_Station_Id#	int	no	a
Station_Name	int	no	
Date_Time	datetime	yes	
Longitude	float	no	b
Latitude	float	no	b
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	no	
Validation_Flag	bit	no	
Update_Flag	bit	no	
Gorden_Cruise_Id#	int	yes	
Ship_Code	varchar(10)	yes	

Gordon_Standard_Data

Column	Type	Null	Indices
Gordon_Standard_Data_Id#	int	no	
Gordon_Station_Id#	int	no	a
Depth	int	no	a
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	
Phosphate	float	yes	
Silicate	float	yes	
Nitrate	float	yes	
Validation_Flag	bit	no	
Update_Flag	bit	no	

Gordon_Interpolated_Data

Column	Type	Null	Indices
Gordon_Interpolated_Data_Id#	int	no	a
Gordon_Station_Id#	int	no	b, c
Depth	int	no	b
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	
Validation_Flag	int	no	
Update_Flag	int	no	

Gordon_Statistic

Column	Type	Null	Indices
Depth#	int	no	
Marsden_Square#	int	no	
Temperature_SXX	float	yes	
Temperature_SX	float	yes	
Temperature_Number_Observ	float	yes	
Salinity_SXX	float	yes	
Salinity_SX	float	yes	
Salinity_Number_Observ	float	yes	
Oxygen_SXX	float	yes	
Oxygen_SX	float	yes	
Oxygen_Number_Observ	float	yes	
Validation_Method_	int	yes	

Gordon_Station_Backfill

Column	Type	Null	Indices
Gordon_Station_Id#	int	no	
Ship_Code	varchar	no	
Longitude	float	no	
Latitude	float	no	
Date_Time	datetime	yes	
Day_Of_Year	int	no	

7.3.3 The Preparation of GordonData

The GordonData, that are adopted from the oceanographical atlas from Gordon & Molinelli are designed as to be validated and in this case to be a standard for other data sets. All data sets must be compared with GordonData in order to correct them.
Special Readprograms were written for the GordonData to read the format of the data.
The GordonData were interpolated to the standard levels of depth. The interpolated data were read into a special file.

Directory: OTH$DATEN:[SOCEAN.FOR]

Date	Description	Name of the Program	Signature
June 90	Interpolation of GordonData to the standard levels of depth	`INTERGOR.FOR`	Inter–8
Sept. 90	Read interpolated Data from INTERGOR.DAT	`READ2.FOR`	
17.10.90	Reading of GordonCruises	`READGOCR.FOR`	Read–11
17.10.90	From the two files SHIPGORD2.DAT and HEADERS.FIL the file SHIPGORD3.DAT was created, which contains Station_Id#, NOCD_Code, Ship_Name, and Cruise_Number	`GORDCR3.FOR`	Read–18
17.10.90	Updating of Gordon_Station by inserting Cruise numbers	`GORDCR4.FOR`	Read–16
5.2.91	Creation of file Shipgordnew.DAT	`GORDCR31.FOR`	Read–15
5.2.91	Updating of table Gordon_Station: Stations between 1000001 and 106313 got new values of Cruise_Numbers	`GORDCR41.FOR`	Read–17

Two files for the headers of cruise and ship were available:

Shipgord2.dat with NODC_Code, Ship names and Cruise_Numbers

Headers.fil with NODC_Code and sequential number of station within Gordon Data set.

For the classification of the ships for the gordon stations a new file was created:

Shipgord3.dat: Station_Id#, NODC_Code, Ship name and Cruise_Number by program GORDCR3.For.

According to the file Shipgord3.dat the station–table was updated and got Cruise_Numbers for 6313 stations by program GORDCR4.FOR. Later an error has been found: A line (number 442) was missing in the original file *Headers.fil* and the new created file *SHIPGORD3.DAT* was also wrong. Reason: There was an offset after line 441.

This line was inserted and the file Headers.fil was renamed into Headersnew.Dat.

The file *SHIPGORDNEW.DAT* was created by program GORDCR31. According to the new file *SHIPGORDNEW.DAT* the station–table was updated by program GORDCR41.FOR.

Stations with Id#s got new Cruise_Numbers (5.2.1991).

7.3.4 The Processing of GordonData

1. obtained in the file: OTH$DATEN:[SOZEDB]GORDON.DAT
2. written into files SHIPGORD2.DAT and HEADERS.FIL for identification of GordonStations: a new file was created: SHIPGORD3.DAT ⟶ GORDCR3 PROGRAM (Gordon_Station_Backfill) updating of Station, Stations got Cruise_Numbers → GORDCR4.PROGRAM
   done 17.10.1990 by Victor Gouretzki
3. several corrections on stationtable, 5.2.91
4. comparison for corresponding stations within Gordon_Station_Backfill and Station done 26.11.90 by Victor Gouretzki

Processing of GordonData

Date	Short Description	Name of the Program	Signature
June 89	Creation of GordonTables: Station, Standard_Data, Statistic	`GORDON.SCRIPT`	Script–2
17.7.89	Loading of GordonData into Gordon_Station and Gordon_Standard_Data	`GORDON.FOR`	For–2
13.12.89	Update Aari_ and Gordon_Station, Standard_Data: Set missing values = 0	`UPDATE_DEFAULT_NULL.SCRIPT`	Script–63
28.6.90	Procedure to insert Gordon and AariData into StandardTables	`MAKESTATION.SCRIPT`	Script–65
28.6.90	Copy of GordonData into tables Station and Standard_Data	`GORDON_COPY.SCRIPT`	Script–4
10.9.90	Creation of the table Gordon_Interpolated_Data	`GORDON_INTERPOLATED_DATA.SCRIPT`	Script–5
10.9.90	Loading of interpolated data from file INTERGOR.DAT into the table Gordon_Interpolated_Data	`OZEDB_SYBASE2.FOR`	For–4
12.9.90	Creation of indices for Gordon_Interpolated_Data	`GORDON_INTER_DATA.SCRIPT`	Script–68
Nov. 90	Creation of Gordon_Statistic, Gordon_Statistic_View	`GORDON_STAT.SCRIPT`	Script–8
20.11.90	Creation of tables Gordon_Cruise and Gordon_Ship	`GORDON_CRUISE.SCRIPT`	Script–6
22.11.90	Creation of Gordon_Station_Backfill	`GSBACKFILL.SCRIPT`	Script–14
28.11.90	Update Gordon_Interpolated_Data: Set missing values = 0	`UPDATE_NULL_GORDON_INTER_DATA.SCRIPT`	Script–67
28.11.90	Correction of Gordon_Statistic, advising the user H.Ross	M. Reinke by hand	
12.2.91	Procedure, created to update GS_Backfill: set Date_Time = 0 where Date_Time = Jan, 1 1900 12:00AM	`UPDATE_BACKFILL_PROC.SCRIPT`	Script–31

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Processing of GordonData

Date	Short Description	Name of the Program	Signature
12.2.91	Rename Gordon_Station_Backfill in Gordon_Station_Backfill_Bck Backup of Backfill	`GSBACKFILL_UPD 070291.SCRIPT`	Script–32
12.2.91	Loading of GordonData into Gordon_Ship, Gordon_Cruise, Gordon_Station_Backfill from Headers.fil, Shipgord3.dat	`GORDON_CRUISE.C`	C–2
12.2.91	Correction of Gordon_Cruise	L.-P. Kurdelski by hand	
28.5.91	Creation of table Gordon_Cruise_LPK: Ship_Code removed, replaced by Ship_Id#: Gordon_Cruise_LPK created	`GORDON_CRUISE_DELETE_SHIP_CODE.SCRIPT`	Script–47
28.8.91	Creating the procedures Copy_Gordon_Ship_To_Ship (Copy the Gordon_Ships and relations to the table Ship) and Copy_Gordon_Cruise_To_Cruise (Copy the Gordon_Ships and relations to the table Cruise)	`COPY_GORDON_SHIP_TO_SHIP_PROC.SCRIPT`	Script–85
2.9.91	Modifying the date values in the table Gordon_Station_Backfill for some Station	`GSB_UPD.SCRIPT`	Script–77
3.9.91	Executing the procedures Copy_Gordon_Ship_To_Ship and Copy_Gordon_Cruise_To_Cruise	`COPY_GORDON_SHIP_TO_SHIP.SCRIPT`	Script–84

7.4 NowlinData

7.4.1 The Origin

- Name: Extension of the data for Gordon& Molinelli Southern Ocean Atlas as produced in TA&M
- Address: Texas Agriculture & Mechanics University
  Department of Oceanography
  Texas A&M University
  College Station, TX 77843
  Country: USA
- Contact person: Mr. Steven B. Rutz

- Name of the tape: `SOCEAN N 5--4014`
- Name of the file(s) : `OTH$DATEN:[SOCEAN]NOWLINT.DAT`
- Name of the loading program: `OTH$DATEN:[OZEDB]NOWLIN.FOR;2/`
  `Sign.:  For--6`
- Date of loading: 26.11.1990

1. **Station_Data**
   - Time: 13.12.1933–13.4.1987
   - Number of stations: 1313
   - Range of Station_Id#: 200001–201313
2. **Standard_Data**
   - Number of Standard_Data: 33615
   - Range of Standard_Data_Id#: 20000001–20033615
   - Physical units of measured data:

Data	Unit
Depth	m
Temperature	° C
Salinity	NSU (IPSS–78)
Oxygen	ml/l

7.4.2 The Tables

Nowlin_Standard_Data			
Column	Type	null	Indices
Nowlin_Standard_Data	int	no	
Nowlin_Station_Id#	int	no	
Depth	int	no	
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	

Nowlin_Station

Column	Type	Null	Indices
Nowlin_Station_Id#	int	no	
Cruise_Number	int	no	
Station_Number	int	no	
Longitude	float	no	
Latitude	float	no	
Date_Time	datetime	yes	
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	no	

7.4.3 The Preparation of NowlinData

The Nowlin Data were provided by the TA&M University to the AWI in October 1990
The data set comprise only the observation which are the extension of the data set used for the construction of the Southern Ocean Atlas (Gordon, Molinelli, Baker 1984)
The NowlinData have been interpolated to the standard levels of depth.

Directory: OTH$DATEN:[SOCEAN.FOR]

Date	Description	Name of the Program	Signature
Aug. 90	Interpolation of NowlinData to the standard levels of depth	`INTERNOWL.FOR`	Inter–5
Oct. 90	Read interpolated Data	`READNOWLIN.FOR`	Read–5
Oct. 90	Converts the file S_Ocean.Dat into the form suitable for the data set	`READNOWL.FOR`	Read–6

7.4.4 The Processing of NowlinData

Processing of NowlinData

Date	Description	Name of the Program	Signature
12.11.90	Creation of Nowlintables	`NOWLIN.SCRIPT`	Script–10
12.11.90	Set missing values = 0 for NowlinData	`NOWLIN_UPD. SCRIPT`	Script–9
26.11.90	Loading of NowlinData into Nowlin_Station and Nowlin_Standard_Data	`NOWLIN.FOR`	For–6

7.5 KuropatkinData

7.5.1 The Origin

- Name: Data from the soviet ship N.Kuropatkin
- Address: Arctic & Antarctic Research Institute
  Beringa 38
  199226 St. Petersburg
  Country: Russia
- Contact person: Dr. Alexander Klepikow
  Phone: 352–02–26/352–33–39

- Name of the tape: `(typed from the original ship log)`
- Name of the file(s) : `SYS$USER:[SOCEAN]KUROP.DAT`
- Name of the loading program: `OTH$DATEN:[OZEDB]KURPATKIN.FOR;8/Sign.: For--7`
- Date of loading: 27.11.1990

1. **Station_Data**
   - Time: 1.1.1900–1.4.1988
   - Number of stations: 97
   - Range of Station_Id#: 1–97, in AARI: 35952—-36059
2. **Standard_Data**
   - Number of Standard_Data: 1142
   - Range of Standard_Data_Id#: 1–1142
   - Physical units of measured data:

Data	Unit
Depth	m
Temperature	° C
Salinity	NSU (PSS–78)
Oxygen	ml/l

7.5.2 The Tables

Kuropatkin_Station			
Column	Type	Null	Indices
Kuropatkin_Station_Id#	int	no	
Cruise_Number	int	no	
Station_Number	int	no	
Date_Time	datetime	yes	
Longitude	float	no	
Latitude	float	no	
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	no	

Kuropatkin_Standard_Data			
Column	Type	Null	Indices
Kuropatkin_Standard_Data_Id#	int	no	
Kuropatkin_Station_Id#	int	no	
Depth	int	no	
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	

7.5.3 The Preparation of KuropatkinData

The data from the soviet ship N. Kuropatkin, which are provided by the Aari, have already been interpolated when they were provided to the AWI.

Directory: OTH$DATEN:[SOCEAN.FOR]			
Date	Description	Name of the Program	Signature
	Reading data	`READ.FOR`	
Aug. 90	Converting the file KUROP1.DAT into the form suitable for the data set	`KUROP.FOR`	Read–9

After interpolation these stations were added to the AariData set. The ship got the Cruise_Number –23011. The Id#'s for Station and Standard_Data have been added to the Id#' of the AariData set.

7.5.4 The Processing of KuropatkinData

Processing of KuropatkinData			
Date	Short Description	Name of the Program	Signature
26./27. _11.90	Loading of KuropatkinData into AariTables	`AARILOAD.SCRIPT`	*missing*
27.11.90	Creation of KuropatkinTables	`KUROPATKIN. SCRIPT`	Script–17
27.11.90	Loading of KuropatkinData into Kuropatkin_Station and Kuropatkin_Standard_Data for modification of multiple defined stations and station data	`KUROPATKIN.FOR`	For–7
28.11.90	Update of some KuropatkinValues on AariTable	`KUROPATKIN_UPD. SCRIPT`	Script–18
28.8.91	Inserting new Cruises to Cruise and Ship from Kuropatkin Data	`ADD_KUROPATKIN_ SHIPS.SCRIPT`	Script–80

7.6 HainesData

7.6.1 The Origin

Name:	Extension of the data for Gordon& Molinelli Southern Ocean Atlas
Address:	Lamont–Doherty Geological Observatory of Columbia University Palisades N.Y. 10964–0190 Country: USA
Contact person:	Bruce Huber Phone: 914/359–2900

- Name of the tape: `HAINE *259 N777`
- Name of the file(s) : `OTH$DATEN:[SOCEAN.HEINZ]HEINZINT1.DAT`
- Name of the loading program: `OTH$DATEN:[OZEDB]Hainesload.FOR;13/`
  `Sign.:  For--8`
- Date of loading: 28.11.1990

1. **Station_Data**
   - Time: 11.12.1979–5.5.1987
   - Number of stations: 617
   - Range of Station_Id#: 300001–300617
2. **Standard_Data**
   - Number of Standard_Data: 14592
   - Range of Standard_Data_Id#: 3000001–3014592
   - Physical units of measured data:

Data	Unit
Depth	m
Temperature	° C
Salinity	NSU (PSS–78)
Oxygen	ml/l

7.6.2 The Tables

Haines_Standard_Data			
Column	Type	Null	Indices
Haines_Standard_Data	int	no	
Haines_Station_Id#	int	no	
Depth	int	no	
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	

Haines_Station			
Column	Type	Null	Indices
Haines_Station_Id#	int	no	
Cruise_Number	int	no	
Station_Number	int	no	
Longitude	float	no	
Latitude	float	no	
Date_Time	datetime	yes	
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	no	

7.6.3 The Preparation of HainesData

Directory: OTH$DATEN:[SOCEAN.FOR]			
Date	Short Description	Name of the Program	Signature
Nov. 90	Interpolation of HainesData to the standard levels of depth	`INTERHEINZ.FOR`	Inter–6
Nov. 90	Read the interpolated Data	`READHEINZ.FOR.`	Read–7

7.6.4 The Processing of HainesData

The Processing of HainesData			
Date	Short Description	Name of the Program	Signature
28.11.90	Creation of HainesTables	`HAINESLOAD.SCRIPT`	Script–19
28.11.90	Loading of HainesData into HainesTables	`HAINESLOAD.FOR`	For–8
29.11.90	Set missing values = 0 for HainesData	`HAINESLOAD_UPD. SCRIPT`	Script–20
11.12.90	Loading of HainesData into StandardTables	`HAINESLOAD_COPY. SCRIPT`	Script–25

7.7 GonellaData

7.7.1 The Origin

Name:	Hydropraphic data from the French research vessels operated in the Indian sector of the Southern Ocean
Address:	Museum National d'Histoire Naturell Laboratoire d'Oceanographie Physique 43, Rue Cuvier 75231 Paris Cedex 05 Country: France
Contact person:	Joseph Gonella Phone: (33.1) 40.79.31.58

- Name of the tape: `S10925203`
- Name of the file(s) : `OTH$DATEN:[SOCEAN.GONELLA]GONELLA 7.DAT`
- Name of the loading program: `GONELLA.FOR;10 /Sign.:  For--9`
- Date of loading: 17.12.1990

1. **Station_Data**
   - Time: 12.2.81–28.4.87
   - Number of stations: 277
   - Range of Station_Id#: 400001–400277
2. **Standard_Data**
   - Number of Standard_Data: 2071
   - Range of Standard_Data_Id#: 4000001–4002071
   - Physical units of measured data:

Data	Unit
Depth	m
Temperature	° C
Salinity	NSU (IPSS–78)
Oxygen	ml/l

7.7.2 The Tables

Gonella_Standard_Data			
Column	Type	Null	Indices
Gonella_Standard_Data	int	no	
Gonella_Station_Id#	int	no	
Depth	int	no	
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	

Gonella_Station			
Column	Type	Null	Indices
Gonella_Station_Id#	int	no	
Cruise_Number	int	no	
Station_Number	int	no	
Longitude	float	no	
Latitude	float	no	
Date_Time	datetime	yes	
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	no	

7.7.3 The Preparation of GonellaData

The data of Gonella have been interpolated to the standard levels.

Directory: OTH$DATEN:[SOCEAN.FOR]			
Date	Short Description	Name of the Program	Signature
13.12.90	Interpolation of GonellaData to the standard levels of depth	`INTERGON.FOR`	Inter–7
13.12.90	Read interpolated Data from GONELLA7.DAT	`READFRANCE.FOR`	Read–10

7.7.4 The Processing of GonellaData

Processing of GonellaData			
Date	Short Description	Name of the Program	Signature
15.12.90	Creation of GonellaTables	`GONELLA.SCRIPT`	Script–21
17.12.90	Loading of GonellaData into GonellaTables	`GONELLA.FOR`	For–9
18.12.90	Set missing values = 0 for GonellaData	`GONELLA_UPD.SCRIPT`	Script–22
18.12.90	Procedure to copy GonellaData into StandardTables	`GONELLA_COPY_ALL.SCRIPT`	Script–24
18.12.90	Execute GONELLA_COPY_ALL.SCRIPT	`GONELLA_COPY.SCRIPT`	Script–23

7.8 TokyoData

7.8.1 The Origin

- Name: Hydrographic data obtained in the Southern Ocean by the research vessels of the Tokyo University of Fisheries
- Address: Tokyo University of Fisheries
  5–7, Konan 4–Chome, Minato–Ku
  Tokyo 108
  Country: Japan
- Contact person: Dr. Jiro Yoshida
  Phone: (03)–471–1251, ext 447

- Name of the tape: `(typed from the original data reports)`
- Name of the file(s) : `OTH$DATEN:[SOCEAN.JAPAN]TOKYOINT.DAT`
- Name of the loading program: `OTH$DATEN:[OZEDB]TOKYOLOAD.FOR/Sign.: For--12`

- Date of loading: 13.2.1991

1. **Station_Data**
   - Time: 2.12.1964–13.2.1984
   - Number of stations: 188
   - Range of Station_Id#: 500001–500188
2. **Standard_Data**
   - Number of Standard_Data: 4770
   - Range of Standard_Data_Id#: 5000001–5004770
   - Physical units of measured data:

Data	Unit
Depth	m
Temperature	° C
Salinity	NSU (IPss–78)
Oxygen	ml/l

7.8.2 The Tables

Tokyo_Fisheries_Station

Column	Type	Null	Indices
Tokyo_Fisheries_Station_Id#	int	no	
Cruise_Number	int	no	
Station_Number	int	no	
Longitude	float	no	
Latitude	float	no	
Date_Time	datetime	yes	
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	no	

Tokyo_Fisheries_Standard_Data			
Column	Type	null	Indices
Tokyo_Fisheries_Standard_Data_Id#	int	no	
Tokyo_Fisheries_Station_Id#	int	no	
Depth	int	no	
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	

7.8.3 The Preparation of TokyoData

The data set from the Tokyo University was provided to the AWI in 1990. Data were collected during 1966 – 1984 by the ship R/V Umitaka–Maru. The original data were only available in the form of printed data reports. Data were interpolated to the standard levels.

Directory: OTH$DATEN:[SOCEAN]			
Date	Short Description	Name of the Program	Signature
Aug. 90	Interpolated to the standard levels	`INTERJAP1.FOR`	Inter–3
Feb. 91	Reading Data from R/V Umita -ka–Maru	`READJAP.FOR`	Read–4
Feb. 91	Converting file JAPAN5.DAT into a form suitable to the data set	`READJAP2.FOR`	Read–3
Feb. 91	Converting file JAPANUMIT.DAT into a form suitable to the data set	`READJAP1.FOR`	Read–2

7.8.4 The Processing of TokyoData

Processing of TokyoFisheriesData			
Date	Short Description	Name of the Program	Signature
13.2.91	Creation of TokyoTables	`TOKYO_TABLE.SCRIPT`	Script–34
13.2.91	Insert new Ships and Cruises from TokyoData to Ship and Cruise	`ADD_TOKYO_SHIPS. SCRIPT`	Script–35
13.2.91	Loading TokyoData into TokyoTables	`TOKYOLOAD.FOR`	For–12
14.2.91	Set missing values = 0 for TokyoData	`TOKYO_UPD.SCRIPT`	Script–36
8.3.91	Update Bottom_Depth: erroneus values in column Bottom_Depth = 0	`TOKYOFISH_BOTTOM_ DEPTH_UPDATE. SCRIPT`	Script–37
8.3.91	Correction of some erroneus values in Tokyo_Fishe– ries_Station	`TOKYO_FISHERIES_ STATION_UPDATE. SCRIPT`	Script–38
9.4.91	Copy of TokyoData into StandardTables	`TOKYO_COPY.SCRIPT`	Script–45

7.9 A1111Data

7.9.1 The Origin

- Name: Extension of the AARI data set
- Address: Arctic & Antarctic Research Institute
  Beringa 38
  199226 St. Petersburg
  Country: Russia
- Contact person: Dr. Alexander Klepikow
  Phone: 352–02–26/352–33–39

- Name of the tape: `OPE N0585415112`
- Name of the file(s) : `OTH$DATEN:[SOCEAN.AARI]A1111.DAT`
- Name of the loading program: `OTH$DATEN:[OZEDB]A1111LOAD.FOR;4/Sign.: For--11`
- Date of loading: 22.3.91

1. **Station_Data**
    - Time: 23.12.85–25.3.90
    - Number of stations: 2177
    - Range of Station_Id#: 600001–602177
2. **Standard_Data**
    - Number of Standard_Data: 35336
    - Range of Standard_Data_Id#: 6000001–6035336
    - Physical units of measured data:

Data	Unit
Depth	m
Temperature	° C
Salinity	NSU (IPSS–78)
Oxygen	ml/l

7.9.2 The Tables

A1111_Station			
Column	Type	Null	Indices
Station_Id#	int	no	
Cruise_Number	int	no	
Station_Number	int	no	
Date_Time	datetime	yes	
Longitude	float	no	
Latitude	float	no	
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	no	

A1111_Standard_Data			
Column	Type	Null	Indices
Standard_Data_Id#	int	no	
Station_Id#	int	no	
Depth	int	no	
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	

7.9.3 The Preparation of A1111Data

All stations of A1111Data have been obtained by Soviet ships. They can be read and type on the screen by the program:

Directory: OTH$DATEN:[SOCEAN.AARI]			
Date	Short Description	Name of the Program	Signature
5.3.91	Reading data from A1111	READAARI.FOR	Read–8

7.9.4 The Processing of A1111Data

Processing of A1111Data			
Date	Short Description	Name of the Program	Signature
13.3.91	Creation A1111Tables	`A1111.SCRIPT`	Script–41
13.3.91	Loading new Aaridata from A1111_ Data into A1111_Station and A1111_Standard_Data–tables	`A1111LOAD.FOR`	For–11
22.3.91	Set missing values = 0	`A1111LOAD_UPD.SCRIPT`	Script–42
22.3.91 22.3.91	Copy A1111Data into Standard–Tables	`A1111_COPY.SCRIPT`	Script–59
27.3.91	Insert of new Ships from A1111	`A1111_SHIPS.SCRIPT`	Script–43
27.3.91	Insert of new Ships from A1111 (Update Cruise)	`A1111_SHIPS_UPD.SCRIPT`	Script–44

7.10 JareData

7.10.1 The Origin

- Name: Data of the Japanese Antarctic Research Expedition
- Address: Lamont–Doherty Geological Observatory of Columbia University
  Palisades
  N.Y. 10964–0190
  Country: USA
- Contact person: Bruce Huber
  Phone: 914/359–2900

- Name of the tape: `(from floppy disk and data reports)`
- Name of the file(s) : `OTH$DATEN:[SOCEAN.JARE]JAREALL.DAT`
- Name of the loading program: `OTH$DATEN:[OZEDB]JARELOAD.FOR;9/Sign.: For--13`

- Date of loading: 21.5.1991

1. **Station_Data**
   - Time: 21.1.1980–10.3.1988
   - Number of stations: 119
   - Range of Station_Id#: 700001–700119
2. **Standard_Data**
   - Number of Standard_Data: 2332
   - Range of Standard_Data_Id#: 7000001–7002332
   - Physical units of measured data:

Data	Unit
Depth	m
Temperature	° C
Salinity	NSU (IPSS–78)
Oxygen	ml/l
Phosphate	mg/l
Silicate	mg/l
Nitrate	mg/l

7.10.2 The Tables

Jare_Station			
Column	Type	Null	Indices
Jare_Station_Id#	int	no	
Cruise_Number	int	no	
Station_Number	int	no	
Longitude	float	no	
Latitude	float	no	
Date_Time	datetime	yes	
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	no	

Jare_Standard_Data			
Column	Type	Null	Indices
Jare_Standard_Data	int	no	
Jare_Station_Id#	int	no	
Depth	int	no	
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	
Phosphate	float	yes	
Silicate	float	yes	
Nitrate	float	yes	

7.10.3 The Preparation of JareData

Directory: OTH$DATEN:[SOCEAN.JARE]			
Date	Short Description	Name of the Program	Signature
Aug. 90	Interpolation of JareData	`INTERJARE.FOR`	Inter–1
Nov. 90	Interpolation of JareData	`INTERJAP2.FOR`	Inter–2
15.4.91	Reading interpolated data	`READJARE.FOR`	Read–1

7.10.4 The Processing of JareData

The Processing of JareData			
Date	Short Description	Name of the Program	Signature
17.5.91	Creation of JareTables	`JARELOAD.SCRIPT`	Script–46
21.5.91	Loading of JareData into Jare_Station and Jare_Standard_Data	`JARELOAD.FOR`	For–13
5.6.91	Set missing values = 0 for JareData	`JARE_UPD.SCRIPT`	Script–48
19.8.91	Inserting two ships and eight cruises in Jare	`ADD_SHIPS_JARE 140491.SCRIPT`	Script–76

7.11 BiomassData

7.11.1 The Origin

- Name: Retrieved from Biomass Data Centre in 21.5.1991
- Address: British Antarctic Survey
  High Cross Madingley Road
  Cambridge CB3 QET
  Country: England
- Contact person: Mark Thorley
  Phone: Cambridge (0223) 61188

- Name of the tape: `Floppies (Format: MS--DOS)`
- Name of the file(s) : `SYS$USER:[KURDELSKI.SOUTHERNOCEAN.BIOMASS.DATA]*.*`

Tapes and Files		
Tape	Experiment	Cruises (Filenames)
BIO_01	FIBEX	HEFX, HOFX, ITFX, ODFX, SIFX
BIO_02	SIBEX1	ACS1, BES1, PSS1
BIO_03	SIBEX1	SIS1
	SIBEX2	CHS2
BIO_04	SIBEX2	HES2
BIO_05	SIBEX2	BES2, JBS2
BIO_06	SIBEX2	ACS2, KMS2, PSS2

- Name of the loading program: `OTH$DATEN:[OZEDB]BIOMASS.C`
  `/Sign.: C--4`

- Date of loading: 12.6.91

1. **Station_Data**
   - Time: 19.1.1981–8.4.1985
   - Number of stations: 841
   - Range of Station_Id#: 800001–800841
2. **Standard_Data**
   - Number of Standard_Data: 20087
   - Range of Standard_Data_Id#: 8000000–8020087
   - Physical units of measured data:

Data	Unit
Depth	m
PrDepth	m
Depthtype	
Temperature	° C
Salinity	NSU (IPSS–78)
Oxygen	ml/l
Inphos	mi–atm/l
Nitrite	mi–atm/l
Nitrate	mi–atm/l
Ammonium	mi–atm/l
Silicate	mi–atm/l
PH	mg/m^3
Chloride	mg/m^3
Chlorophyll	mg/m^3
Sigma_T	° C
Sigma_T_Obse	° C
Sound_Velocity	j/m^2
Dynamic_Height	j/m^2
Sigma_Theta	ls/m^3
Pot_Temp	° C
Spec_Vol_Anomaly	–
DeltaD	m

7.11.2 The Tables

Biomass_Station			
Column	Type	Null	Indices
Biomass_Station_Id#	int	no	
Cruise_Number	int	no	
Station_Number	int	yes	
Latitude	float	no	
Longitude	float	no	
Date_Time	datetime	yes	
Marsden_Square#	int	yes	
Cruise_Name	varchar	yes	

Biomass_Standard_Data			
Column	Type	Null	Indices
Biomass_Standard_Data_Id#	int	no	
Biomass_Station_Id#	int	no	
Depth	int	no	
PrDepth	int	no	
Obstype	char	no	
Depthtype	char	no	
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	
Inphos	float	yes	
Nitrite	float	yes	
Nitrate	float	yes	
Ammonium	float	yes	
Silicate	float	yes	
PH	float	yes	
Chloride	float	yes	
Chlorophyll_A	float	yes	
Sigma_T	float	yes	
Sigma_T_Obs	float	yes	
Sound_Velocity	float	yes	
Dynamic_Height	float	yes	
Sigma_Theta	float	yes	
Pot_Temp	float	yes	
Spec_Vol_Anomaly	float	yes	
Delta_D	float	yes	

7.11.3 The Preparation of BiomassData

- The data from Biomass, which are provided in May 1991 contain data only for the Atlantic Sector/Brainsfield Strait
- They are provided on 6 Hd–Floppy Disks($5\frac{1}{4}$")
- One file of the data, CHS2, was not readable. Message: Because it doesn't contain any Latitude and Longitude it was dropped from original dataset.
- The two files for the cruises BES1 and BES2 didn't contain any Chlorophyll_A–data. For these stations Frederico Brandini brought the Chlorophyll data later, and they were then load into the database.
- The BiomassData are load into the BiomassTables in their original form, in which their are provided by the Biomass Data Centre. Up to now it was not known, whether data has been interpolated to the standard levels or not.

7.11.4 The Processing of BiomassData

Work with BiomassData			
Date	Short Description	Name of the Program	Signature
12.6.91	Creation of BiomassTables	`BIOMASS.SCRIPT`	Script–49
12.6.91	Discussion with Victor to analyze mistakes		
12.6.91	Loading of BiomassData in BiomassTables	`BIOMASS.C`	C–4
2.7.91	Preparation of BiomassData for Graphics (Brandini)		

continued on next page

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Work with BiomassData

Date	Short Description	Name of the Program	Signature
15.7.91	Set missing values = 0 for BiomassData	`BIOMASS_UPD.SCRIPT`	Script–75
16.7.91	Group added: BIOMASS_GRP Login added: BIOMASS User added to SODB Grant select to Biomass_ERP on Biomass_Station and Biomass_Standard_Data		
23.7.91	Inserting chlorophyll values for Biomass given by Brandini: no change of existing data, duplicates are made, which consists on Biomass data + Chlorophyll_A because of the same Station_Id for Biomass and Brandini For identification a value was added to the Station_Id# of duplicates	`BIOMASS_BRANDINI.SCRIPT`	Script–58
24.7.91	Program to select special values for graphics from Biomass for F. Brandini	`BRANDINI.C`	C–5
24.7.91	Routines to evaluate specific values from measured oceanographic data	`ALPHA.C`	C–6
1.8.91	Modification of Biomass.C, writing a Biomass–Table Script and finally a new loading of BiomassData because of a mistake in an Update–Program		
5.8.91	Creating a procedure for inserting the Chlorophyll values for Biomass Data.	`BIOMASS_BRANDINI_UPD.SCRIPT`	Script–95
5.8.91	Insert Chlorophyll_a Data into Biomass_Standard_Data.	`BIOMASS_BRANDINI_2.SCRIPT`	Script–94
12.8.91	Copy BiomassData into StandardTables	`BIOMASS_COPY_ALL.SCRIPT`	Script–73
13.9.91	Insert Chlorophyll_a Data into Biomass_Standard_Data.	`BIOMASS_BRANDINI_UPD2.SCRIPT`	Script–98

7.12 MuenchData

7.12.1 The Origin

- Name: Science Applications International Corporation Data Set (SAIC)
- Address: Science Applications International Coorporation
  1 008 No...Wav.Suite 36, Bellevue
  Washington 98005
  Country: USA
- Contact person: Dr. Robin D. Muench
  Phone: (206) 747–7152

- Name of the tape: `(from 6 floppies)`
- Name of the file(s) : `OTH$DATEN:[SOCEAN.MUENCH]MUENCH.DAT`
- Name of the loading program: `OTH$DATEN:[OZEDB]MUENCHLOAD.FOR/Sign.: For--14`
- Date of loading: 9.8.91

1. **Station_Data**
   - Time: 20.3.82–12.8.88
   - Number of stations: 208
   - Range of Station_Id#: 900001–900208
2. **Standard_Data**
   - Number of Standard_Data: 4181
   - Range of Standard_Data_Id#: 9000001–9004181
   - Physical units of measured data:

Data	Unit
Depth	m
Temperature	°C
Salinity	NSU (IPSS–78)

7.12.2 The Tables

Muench_Station			
Column	Type	null	Indices
Muench_Station_Id#	int	no	
Cruise_Number	int	no	
Station_Number	int	no	
Longitude	float	no	
Latitude	float	no	
Date_Time	datetime	yes	
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	no	

Muench_Standard_Data			
Column	Type	null	Indices
Muench_Standard_Data_Id#	int	no	
Muench_Station_Id#	int	no	a
Depth	int	no	a
Temperature	float	yes	
Salinity	float	yes	

7.12.3 The Preparation of MuenchData

The data were forwarded to the AWI on April,23 1991.

Directory: OTH$DATEN:[SOCEAN.MUENCH]			
Date	Short Description	Name of the Program	Signature
June 91	Converting of data into meters	MUDBARMETER	Read–13
June 91	Interpolated to the standard levels	MUINTER	Inter–9
June 91	Reading interpolated data	READMUIN.FOR	Read–14

An error has happened. All steps in preparation had been repeated after correction.

7.12.4 The Processing of MuenchData

The Processing of MuenchData			
Date	Short Description	Name of the Program	Signature
9.8.91	Creation of Muench_Standard_Data and Station	MUENCHLOAD.SCRIPT	Script–70
9.8.91	Loading of MuenchData into MuenchTables	MUENCHLOAD.FOR	For–14
12.8.91	Copy the MuenchData into the tables Station and Standard_Data	MUENCH_COPY_ALL. SCRIPT	Script–71
12.8.91	Update of MuenchTables: Set missing values = 0	MUENCHLOAD_UPD. SCRIPT	Script–72
28.8.91	All data are deleted from Muench–Tables, because an error was found and all steps in preparation are repeated. All data are loaded again by same programs.		

7.13 ArgentineData

7.13.1 The Origin

- Name: Hydrographic data obtained by the Argentine vessels in the Atlantic sector of the Southern Ocean
- Address: Argentine Oceanographic Data Center (CEADO)
  Avda. Montes de Oca 2124
  (1271) Buenos Aires
  Country: ARG
- Contact person: Adolfo J. Gil Villanueva, Director of CEADO
  Phone: (01)21 – 0061/69 ext. 59

- Name of the tape: `CEADO CEIAA1, # 030139 20 02 044`
- Name of the file(s) : `ARGENT1.DAT`
- Name of the loading program: `OTH$DATEN:[SOCEAN.ARGENT]READARGENT.FOR/`
  `Sign.:For--19`
  `OTH$DATEN:[SOCEAN.ARGENT]ARGNEWCRNUM.FOR/`
  `Sign.:For--20`
- Date of loading:

1. **Station_Data**
    - Time: 20.8.1928–25.3.1986
    - Number of stations: 4744
    - Range of Station_Id#: 3000001–3004744
2. **Standard_Data**
    - Number of Standard_Data: 51924
    - Range of Standard_Data_Id#: 30000001–30051924
    - Physical units of measured data:

Data	Unit
Depth	m
Temperature	° C
Salinity	NSU (PSS–78)
Oxygen	ml/l

7.13.2 The Tables

Argentine_Station			
Column	Type	Null	Indices
Argentine_Station_Id#	int	no	
Cruise_Number	int	no	
Station_Number	int	yes	
Latitude	float	no	
Longitude	float	no	
Date_Time	datetime	yes	
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	yes	

Argentine_Standard_Data			
Column	Type	Null	Indices
Argentine_Standard_Data_Id#	int	no	
Argentine_Station_Id#	int	no	
Depth	int	no	
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	

7.13.3 The Preparation of ArgentineData

The Argentine data have been interpolated to the standard levels.

Directory: OTH$DATEN:[SOCEAN.ARGENT]			
Date	Short Description	Name of the Program	Signature
29.08.91	Interpolation of ArgentineData to the standard levels of depth	`INTERARG.FOR`	Inter–10
29.08.91	Read interpolated Data from INTERARG4.DAT	`READARGENT.FOR`	Read–19

7.13.4 The Processing of ArgentineData

Processing of ArgentineData			
Date	Short Description	Name of the Program	Signature
8.10.91	Creating new tables Argentine_Station and Argentine_Standard_Data	`ARGENTINE.SCRIPT`	Script–103
29.10.91	Update of ArgentineTables: Set missing values = 0	`ARGENTINELOAD_UPD.SCRIPT`	Script–127
29.10.91	Fill Station and Standard_Data with Argentine Data	`ARGENTINELOAD_COPY.SCRIPT`	Script–104
6.11.91	Deleting Argentine Data from Station and Standard_Data and preparing the tables Argentine_Station andData and preparing the tables Argentine_Station and Argentine_ Standard_Data for reload	`REBUILD_ARGENTINE.SCRIPT`	Script–106

7.14 AWIData

7.14.1 The Origin

- Name: Data collected by the R/V 'Polarstern'
- Address: Alfred Wegener Institute for Polar and Marine Research
  Am Alten Hafen 26
  27568 Bremerhaven
  Country: D
- Contact person: Gerd Rohardt
  Phone: 0471/ 4831–491

- Name of the tape: `SCR$DISK1:[ROHARDT.CTD.*]`
  `where * corresponds to ANT2, ANT3, ANT5,`
  `ANT5--1, ANT7, ANT8`
- Name of the file(s) : `OTH$DATEN:[SOCEAN.AWI]*I`
- Name of the loading program: `OTH$DATEN:[SOCEAN.AWI]READAWI.FOR/`
  `Sign.:For--?`

- Date of loading:

1. **Station_Data**
   - Time: 25.11.1983–25.10.1989
   - Number of stations: 536
   - Range of Station_Id#: 20,000,001–20,000,536
2. **Standard_Data**
   - Number of Standard_Data: 10,917
   - Range of Standard_Data_Id#: 200,000,001–200,010,917
   - Physical units of measured data:

Data	Unit
Depth	m
Temperature	°C
Salinity	NSU (PSS–78)
Oxygen	ml/l

7.14.2 The Tables

AWI_Station			
Column	Type	Null	Indices
AWI_Station_Id#	int	no	
Cruise_Number	int	no	
Station_Number	int	yes	
Longitude	float	no	
Latitude	float	no	
Date_Time	datetime	yes	
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	yes	

AWI_Standard_Data			
Column	Type	Null	Indices
AWI_Standard_Data_Id#	int	no	
AWI_Station_Id#	int	no	
Depth	int	no	
Temperature	float	yes	
Salinity	float	yes	

7.14.3 The Preparation of AWIData

The AWI data have been interpolated to the standard levels.

Directory: OTH$DATEN:[SOCEAN.AWI]			
Date	Short Description	Name of the Program	Signature
28.04.92	Read observed data	`READAWI1.FOR`	Read–20
28.04.92	Interpolation of AWIData to the standard levels of depth	`AWIDMI.FOR`	Inter–11
28.04.92	Read interpolated Data from files ANT2I.DAT, ANT3I.DAT, ANT5I.DAT, ANT51I.DAT, ANT7I.DAT and ANT8I.DAT	`READAWI.FOR`	Read–21

7.14.4 The Processing of AWIData

Processing of AWIData			
Date	Short Description	Name of the Program	Signature
11.11.91	Creating new tables AWI_Station and AWI_Standard_Data	`AWI.SCRIPT`	Script–105
11.11.91	Update of AWITables: Set missing values = 0	`AWILOAD_UPD.SCRIPT`	Script–129
11.11.91	Filling Station and Standard_Data with AWI Data	`AWILOAD_COPY.SCRIPT`	Script–128

7.15 SchlitzerData

7.15.1 The Origin

- Name: Historical data for the Southern Ocean collected by the University of Bremen
- Address: University of Bremen
  FB–1
  Postfach 33 04 40
  2800 Bremen
  Country: D–W
- Contact person: Dr. Ronald Schlitzer

- Name of the tape:
- Name of the file(s) : `OTH$DATEN:[SOCEAN.SCHLITZER]SCHLITZERINT.DAT`
- Name of the loading program: `OTH$DATEN:[SOCEAN.SCHLITZER]READSCHLITZER.FOR/Sign.:  For--???`
- Date of loading: 21.12.91

1. **Station_Data**
    - Time: 15.12.1968–6.3.1990
    - Number of stations: 78
    - Range of Station_Id#: 4000001–4000209
2. **Standard_Data**
    - Number of Standard_Data: 2820
    - Range of Standard_Data_Id#: 40000001–40007437
    - Physical units of measured data:

Data	Unit
Depth	m
Temperature	° C
Salinity	NSU (PSS–78)
Oxygen	ml/l

7.15.2 The Tables

Schlitzer_Station			
Column	Type	Null	Indices
Schlitzer_Station_Id#	int	no	
Cruise_Number	int	no	
Station_Number	int	yes	
Latitude	float	no	
Longitude	float	no	
Date_Time	datetime	yes	
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	yes	

Schlitzer_Standard_Data			
Column	Type	Null	Indices
Schlitzer_Standard_Data_Id#	int	no	
Schlitzer_Station_Id#	int	no	
Depth	int	no	
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	
Phosphate	float	yes	
Silicate	float	yes	
Nitrate	float	yes	

7.15.3 The Preparation of SchlitzerData

Filenames before validation were:
OTH$DATEN:[SOCEAN.SCHLITZER]8M59001.DAT
OTH$DATEN:[SOCEAN.SCHLITZER]HH59002.DAT
OTH$DATEN:[SOCEAN.SCHLITZER]HU59003.DAT
OTH$DATEN:[SOCEAN.SCHLITZER]ME59004.DAT

Directory: OTH$DATEN:[SOCEAN.SCHLITZER]			
Date	Short Description	Name of the Program	Signature
18.12.91	Headers of the stations have been changed to suit the Southern Ocean Data Base requirement. Cruise numbers for the cruises presented in the data set were inserted.	`CRHEAD2.FOR`	???
18.12.91	Interpolation of SchlitzerData to the standard levels of depth	`INTERSCHL.FOR`	Inter–13
20.12.91	Oxygen values given as mkmol/kg were converted to ml/l values.	`INTERSCHL2.FOR`	Inter–14
26.04.92	Looking for duplicates. ???	`COMSCH.FOR`	Dup–7

7.15.4 The Processing of SchlitzerData

Processing of SchlitzerData			
Date	Short Description	Name of the Program	Signature
8.10.91	Creating new tables Schlitzer_Station and Schlitzer_Standard_Data	SCHLITZER.SCRIPT	Script–108
9.10.91	Setting missing values in the tables Schlitzer_Station and Schlitzer_Standard_Data to zero	SCHLITZERLOAD_UPD.SCRIPT	Script–109
29.10.91	Creating the procedure Schlitzer_Copy_All to fill Station and Standard_Data with Schlitzer Data	SCHLITZERLOAD_COPY.SCRIPT	Script–110

7.16 BSHData

7.16.1 The Origin

Name:	Historical data for the subtropical areas of the South Indian and South Pacific Ocean collected by NODC
Address:	German Hydrographic Service Postfach 30 12 20 2000 Hamburg 36 Country: D–W
Contact person:	Dr. K. Motamedy

- Name of the tape: `BSH`
- Name of the file(s) : `OTH$DATEN:[SOCEAN.DHI]INT BSH.DAT`
- Name of the loading program: `OTH$DATEN:[SOCEAN.DHI]BSHR`
- Date of loading: 10.7.1989

1. **Station_Data**
   - Time: 1.12.28–22.12.79
   - Number of stations: 179
   - Range of Station_Id#: 1000001–1000179
2. **Standard_Data**
   - Number of Standard_Data: 4259
   - Range of Standard_Data_Id#: 11000001–11004259
   - Physical units of measured data:

Data	Unit
Depth	m
Temperature	° C
Salinity	NSU (PSS–78)
Oxygen	ml/l

7.16.2 The Tables

BSH_Station			
Column	Type	Null	Indices
BSH_Station_Id#	int	no	
Cruise_Number	int	no	
Station_Number	int	yes	
Latitude	float	no	
Longitude	float	no	
Date_Time	datetime	yes	
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	yes	

BSH_Standard_Data			
Column	Type	Null	Indices
BSH_Standard_Data_Id#	int	no	
BSH_Station_Id#	int	no	
Depth	int	no	
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	
Phosphate	float	yes	
Silicate	float	yes	
Nitrate	float	yes	

7.16.3 The Preparation of BSHData

The BSH data have been interpolated to the standard levels.

Directory: OTH$DATEN:[SOCEAN.DHI]			
Date	Short Description	Name of the Program	Signature
03.02.92	Interpolation of BSHData to the standard levels of depth	INTBSH.FOR	Inter–12
03.02.92	Read interpolated Data from INTBSH.DAT	BSHR.FOR	Read–22

7.16.4 The Processing of BSHData

Processing of BSHData			
Date	Short Description	Name of the Program	Signature
4.2.92	Creating new tables BSH_Station and BSH_Standard_Data	BSHLOAD.SCRIPT	Script–116
4.2.92	Setting missing values in the tables BSH_Station and BSH_Standard_Data to zero	BSHLOAD_ UPD.SCRIPT	Script–117
4.2.92	Creating the procedure BSH_Copy_All to fill Station and Standard_Data with BSH Data	BSHLOAD_ COPY.SCRIPT	Script–118
20.2.92	Creating the procedure UpdateNODC for updating of an existing or non existing NODC code. This code is the Ship_Code in table Ship and view Aari_Cruise2	UPDATE-NODC.SCRIPT	Script–119
20.2.92	Changes in the table Ship_And_Cruise. Source:OTH$DATEN: [SOCEAN.DHI] BSHCRU3.DAT	UPDATENODC-200292.SCRIPT	Script–120
20.2.92	Reset Changes in the table Ship_And_Cruise. Source:OTH$DATEN: [SOCEAN.DHI] BSHCRU3.DAT	RESETNODC-200292.SCRIPT	Script–121
5.3.92	Updating of the table Cruise using the procedure ChangeShipNameAndCountryInCruise. Source:OTH$DATEN: [SOCEAN.TEXT] KURDEL18.NOTE	CHANGECRUISE-050392.SCRIPT	Script–122

7.17 AariLdgoData

7.17.1 The Origin

- Name: Aari–Data worked with at the LDGO
- Address: Lamont–Doherty Earth Observatory of Columbia University
  Palisades
  N.Y. 10964–01090
  Country: USA
- Contact person: Bruce Huber
  Phone: 914/359–2900

- Name of the tape:
- Name of the file(s) : `OTH$DATEN:[SOCEAN.AARI3]AARILDGO.DAT`
- Name of the loading program: `OTH$DATEN:[OZEDB.DATALOAD]READAARI3.FOR/`
  `Sign.:For--xxx`

- Date of loading: 10.7.1989

1. **Station_Data**
   - Time: 1.1.1900–23.4.1989
   - Number of stations: 36059—-contains 97 stations of Kuropatkin
   - Range of Station_Id#: 1–36059
2. **Standard_Data**
   - Number of Standard_Data: 1470905
   - Range of Standard_Data_Id#: 1–1470905
   - Physical units of measured data:

Data	Unit
Depth	m
Temperature	° C
Salinity	NSU (PSS–78)
Oxygen	ml/l

7.17.2 The Tables

AariLdgo_Standard_Data			
Column	Type	Null	Indices
AariLdgo_Standard_Data_Id#	int	no	a
AariLdgo_Station_Id#	int	no	b
Depth	int	no	b
Temperature	float	yes	c
Salinity	float	yes	
Oxygen	float	yes	
ValidationFlag	bit	no	
UpdateFlag	bit	no	

AariLdgo_Station			
Column	Type	Null	Indices
AariLdgo_Station_Id#	int	no	a
Cruise_Number	int	no	
Station_Number	int	no	
Longitude	float	no	b
Latitude	float	no	b
Date_Time	datetime	yes	
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	no	c
Validation_Flag	bit	no	
Update_Flag	bit	no	

7.17.3 The Preparation of AariLdgoData

7.17.4 The Processing of AariLdgoData

Processing of AariLdgoData			
Date	Short Description	Name of the Program	Signature

7.18 Appendix for the Tables

7.18.1 Table of Indices

This table lists all indices, set on different columns in the database. Indices enable to search for certain fields more faster. The symbol identifies the index. For each table same symbols are given like a,b,c. For example you look into the table Station and want to know which index is set on the column station_Id#: In the column Station_Id# you find under the column Indices the symbol "a", then you must look in the Indices–table. There you find under the table Station and under the symbol "a" the name of this index: Station_Id#_Index

Table of Indices

Table	Symbol	Indexname	Type	Index on...
Standard_Data	a	Standard_Data_Id#_Index	nc, unique	Standard_Data_Id# Standard_Data_Id#
	b	Standard_Data_Index	c	Station_Id#, Depth
Station	a	Station_Id#_Index	nc, unique	Station_Id#
	b	Station_Idx	c	Latitude, Longitude Date_Time
Gordon_Standard_Data	a	Gordon_Data_Index	c	Gordon_Station_Id#, Depth
Gordon_Station	a	Gordon_Id_Index	nc	Gordon_Station_Id#
	b	Gordon_Geo_Index	nc	Latitude, Longitude
Gordon_Interpolated_Data	a	Gordon_Interpolated_Data_Index	nc, unique	Gordon_Interpolated_Data_Id
	b	Gordon_Interpolated_Data_Index	c	Gordon_Station_Id#, Depth
	c	Station_Index	nc	Gordon_Station_Id#
Aari_Standard_Data	a	Aari_Standard_Data_Index	nc, unique	Aari_Standard_Data_Id#
	b	Aari_Data_Index	c	Aari_Station_Id#, Depth
	c	Aari_Temperature_Index	nc	Temperature
Aari_Station	a	Aari_Station_Index	nc, unique	Aari_Station_Id#
	b	Aari_Geo_Index	c	Latitude, Longitude
	c	Aari_Marsden_Index	nc	Marsden_Square#
Aari_Cruise_Bck	a	Cruise_Number_Index	nc	Cruise_Number
Cruise	a	Cruise_Index	nc, unique	Cruise_Number#
	b	Cruise_Ship_Index	c	Ship_Id#
Ship	a	Ship_Index	nc, unique	Ship_Id#

7.18.2 List of Keys

7.18.2.1 List of Keys for Standard Tables

List of Keys for Standard Tables		
Table	Keys	Type and related Tables
Ship	Ship_Id#	primary
Cruise	Cruise_Number# Ship_Id#	primary related to Ship
Station	Station_Id# Cruise_Number# Marsden_Square_Id#	primary related to Cruise related to Marsden_Square
Standard_Data	Standard_Data_Id# Station_Id#	primary related to Station
Statistic	Marsden_Square_Id#, Depth	composite
Marsden_Square	Marsden_Square_Id#	primary
Validation	Validation_Id#	primary
DeleteStation	Station_Id# User_Id#	related to Station related to System
DeleteData	Standard_Data_Id# User_Id#	related to Standard_Data related to System
InsertStation	Station_Id# User_Id#	related to Station related to System
InsertData	Standard_Data_Id# User_Id#	related to Standard_Data related to System
UpdateStation	Station_Id# User_Id# Validation_Flag	related to Station related to System related to Validation
UpdateData	Standard_Data_Id# Old_Station_Id# New_Station_Id# Validation_Flag User_Id#	related to Standard_Data related to Station related to Station related to Validation related to System

7.18.2.2 List of Keys for Origin Tables

List of Keys for Origin Tables I

Table	Keys	Type and related Tables
A1111_Station	Station_Id# Marsden_Square#	primary related to Marsden_Square
A1111_Standard_Data	Standard_Data_Id# Station_Id#	primary related to A1111_Station
Aari_Station	Aari_Station_Id# Marsden_Square#	primary related to Marsden_Square
Aari_Standard_Data	Aari_Standard_Data_Id#	primary
	Aari_Station_Id#	related to Aari_Station
Aari_Statistic	Depth#,Marsden_Square	composite
Aari_Cruise_Bck		
Biomass_Station	Biomass_Station_Id# Marsden_Square_Id#	primary related to Marsden_Square
Biomass_Standard_Data	Biomass_Standard_Data_Id# Biomass_Station_Station_ID#	primary related to Biomass_Station
Gonella_Station	Gonella_Station_Id# Marsden_Square#	primary related to Marsden_Square
Gonella_Standard_Data	Gonella_Standard_Data_Id# Gonella_Station_Id#	primary related to Gonella_Station
Gordon_Ship	Ship_id#	primary
Gordon_Cruise	Gordon_Cruise_Id# Ship_Code	primary related to Ship
Gordon_Station	Gorden_Station_Id# Marsden_Square# Gordon_Cruise_Id#	primary related to Marsden_Square related to Gordon_Cruise
Gordon_Standard_Data	Gordon_Standard_Data_Id# Gordon_Station_Id#	primary related to Gordon_Station
Gordon_Statistic	Depth#, Marsden_Square#	composite
Gordon_Interpol_Data	Gordon_Interpol_Data_Id# Gordon_Station_Id#	primary related to Gordon_Station
Gordon_Station_Backf.	Gordon_Station_Id#	related to Gordon_Station
Haines_Station	Haines_Station_Id# Marsden_Square#	primary related to Marsden_Square
Haines_Standard_Data	Haines_Standard_Data_Id# Haines_Station_Id#	primary related to Haines_Station
Jare_Station	Jare_Station_Id# Marsden_Square_Id#	primary related to Marsden_Square
Jare_Standard_Data	Jare_Standard_Data_Id# Jare_Station_Id#	primary related To Jare_Station
Kuropatkin_Station	Kuropatkin_Station_Id# Marsden_Square#	primary related to Marsden_Square
Kuropatkin_Standard_Data	Kuropatkin_Standard_Data_Id# Kuropatkin_Station_Id#	primary related to Kuropatkin_Station
Nowlin_Station	Nowlin_Station_Id# Marsden_Square#	primary related to Marsden_Square
Nowlin_Standard_Data	Nowlin_Standard_Data_Id# Nowlin_Station_Id#	primary related to Nowlin_Station
Tokyo_Fisheries_Station	Tokyo_Fisheries_Station_Id# Marsden_Square	primary related to Marsden_Square
Tokyo_Fisheries_Standard_Data	Tokyo_Fish._Standard_Data_Id# Tokyo_Fisheries_Station_Id#	primary related to Tokyo_Fisheries_Station

7.18.3 Table of Column Definitions

Table of ColumnDefinitions I

Column	Tables	Definitions
Ammonium	Biomass_Standard_Data	In mi–atm/l
Bottom_Depth	Station	In m: The depth to the bottom of the sea during one station
Chloride	Biomass_Standard_Data	Chloride (CL_2) in mg/m^3
Chlorophyll_A	Biomass_Standard_Data	Chlorophyll in mg/m^3
Comment	Gorden_Cruise	Comment to Gordon_Cruise
Country	Gordon_Ship, Ship	Home of the ship
Cruise_Name	Gorden_Cruise, Biomass_Station	Name of the cruise
Cruise_Number#	Cruise and all StationsTables	Identifier of Cruise and primary key Sets relation between Station and Ship about Cruise
Date_Time	Station	Gives the date and the time for one station e.g. Jan 15 1955 10:00 PM
Day_of_Year	Gorden_Station_Backfill	
Date_of_Program	Validation	Date of the program
Delete_Date	Delete_Data, Delete_Station	Date of deletion of one record of Standard_Data and/or Station
Delta_D	Biomass_Standard_Data	In m
Depth	Standard_Data, Statistic	In m The level of depth for one measured record
Depthtype	Biomass_Standard_Data	Specification of depth Q = Depth Inaccurate T = Depth from unprotected Thermometers Z = Depth from wire out
Dynamic_Height	Biomass_Standard_Data	In j/m^2
Gordon_Cruise_Id#	Gorden_Cruise	Identifier of GordonCruise
Inphos	Biomass_Standard_Data	Inorganic phsphate in mi–atm/l
InsertDate	InsertStation, InsertData	Date of inserting records Standard_Data and Station
Gordon_Interpolated_Data_Id#	Gorden_Interpolated_Data	Only Gordon_Data which are interpolated
Latitude	All StationTables	In °: Latitude for one station: + = North; – = South
Longitude	All StationTables	In °: Longitude for one station : + = East; – = West
Marsden_Square#	Marsden_Square, Station	Calculated square for the position of one station Primary key of Marsden_Square Formula
Max_Obse_Depth	All StationTables	Maximum of depth for one observation
Method_Name	Validation	Name of the validation method
New_Station_Id#	UpdateData	New stationnumber after updating: If data get new station they get new Statiuon_Id#
Nitrate	Standard_Data	Nitrate (NO_4) in mg/l
Nitrite	Biomass_Standard_Data	Nitrite (NO_3) in mi–atm/l
Number_Observ	Station	Number of observations on one station

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Table of ColumnDefinitions

Column	Tables	Definitions
Old_Station_Id#	UpdateData	Old stationnumber of data before updating If data get new station
Obstype	Biomass_Standard_Data	Observation type: O = Values at observed Depth S = Values at interpolated standard depth I = Values at interpolated Data Centre V = Values Re–validated X = Using XBT
Oxygen	Standard_Data	In ml/l
Oxygen_Number_ Observ	All StatisticTables	Number of oxygen observations On one level of depth
Oxygen_SX	Statistic	Sum of results for oxygen
Oxygen_SXX	Statistic	Sum of the squares for oxygenresults
PH	Biomass_Standard_Data	In mg/m^3
Phosphate	Gordon_Standard_Data	Phosphate (PO_4) in mg/l
Pot_Temp	Biomass_Standard_Data	In °C
PrDepth	Biomass_Standard_Data	In m
Program_Name	Validation	Name of validation program
Salinity	Standard_Data	In parts per million Contents of salinity on one level
Salinity_Number_ Observ	Statistic	Number of salinity observations on one level odf depth
Salinity_SX	Statistic	Sum of results of salinity observations
Salinity_SXX	Statistic	Sum of the squares of salinityresults
Ship_Code	Gordon_Ship, Ship	Code of the ship according to NOCD
Ship_Id#	Ship, Cruise	Number identifier of the ship Primary key of Ship, foreign key of Cruise
Ship_Name	Ship	Name of the ship
Short_Remarks	Validation	Short description of a valida–tion program
Sigma_T	Biomass_Standard_Data	Calculated SigmaT in °C
Sigma_T_Obs	Biomass_Standard_Data	Observed SigmaT in °C
Sigma_Theta	Biomass_Standard_Data	Potential Density in ls/m^3
Silicate	Gordon_Standard_Data Biomass_Standard_Data	Silicate (SiO_4) in mg/l Contents of silicate on one level
Sound_Velocity	Biomass_Standard_Data	In j/m^2
Spec_Col_Anomaly	Biomass_Standard_Data	Specific_Volume_Anomaly
Standard_Data_ Id#	Standard_Data, InsertData, DeleteData, UpdateData	Number identifier of data: Primary key of Standard_Data, foreign key in Update_, Insert_ and Delete_Data
Station_Id#	Station, Standard_Data, Insert, Update, Delete_Data	Identifier of StationData Primkary key of Station, foreign key in Standard_Data, Update_,Insert and DeleteData: Ranges of Station_Id# : see table below
Station_Name	Gordon_Station	Name of the station
Temperature	All Standard_DataTables Gordon_Interpol_Data	In ^{o} C Temperature on the respective level of depth
Temperature_ Number_Observ	Statistic	Number of temperature on one level
Temperature_SX	Statistic	Sum of results of temperature
Temperature_SXX	Statistic	Sum of squares of temperature results

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Table of ColumnDefinitions

Column	Tables	Definitions
Update_Flag	Standard_Data, Station	Marks a dataset, which has been updated
Update_Date	UpdateData, UpdateStation	Date of updating
User_Id#	Update, Insert, Delete Station and Data	Identifier of the user
Validation_Flag	Standard_Data, Station, UpdateData, UpdateStation	Marks a dataset, which has been validated
Validation_Id#	Validation	Identifier of the validation program
Validation_	Aari_Statistic, Statistic	Identifier of the validation method
Method_Id#	Gordon_Statistic	in all StatisticTables
Version_of_ Program	Validation	Version of program

List of all Scripts in alphabetical order III

Name of the Program	Signature	Directory	.log ?
`SO_USER.SCRIPT` ✓	Script-137	KSS	Log-137
`STATION.SCRIPT` ?	Script-64	OOS	
`STATION_INDEX.SCRIPT` ?	Script-66	OOS	
`TOKYO_COPY.SCRIPT` ✓	Script-45	KSS	
`TOKYO_FISHERIES_STATION_UPDATE.SCRIPT` ✓	Script-38	KSS	
`TOKYO_FISH_BOTTOM_DEPTH_UPDATE.SCRIPT` ✓	Script-37	KSS	
`TOKYO_TABLE.SCRIPT` ✓	Script-34	KSS	
`TOKYO_UPD.SCRIPT` ✓	Script-36	KSS	
`TRIGGER.SCRIPT` ✓	Script-15	KSS	
`TRIGGER_DROP.SCRIPT` ✓	Script-7	KSS	
`TRIGGER_UPDATE_LOST_STATIONS.SCRIPT` ✓	Script-87	KSS	
`TRUNCATESHIP.SCRIPT` ✓	Script-40	KSS	Log-40
`UNKNOWNCHANGES291091.SCRIPT` ✓	Script-47	KSS	Log-47
`UNKNOWN_SHIP.SCRIPT` ✓	Script-90	KSS	Log-90
`UPDATECRU24.SCRIPT` ✓	Script-57	KSS	Log-57
`UPDATECRU24S.SCRIPT` ✓	Script-74	KSS	Log-74
`UPDATECRUISE.SCRIPT` ✓	Script-55	KSS	Log-55
`UPDATENODC.SCRIPT` ✓	Script-119	KSS	Log-119
`UPDATENODC200292.SCRIPT` ✓	Script-120	KSS	Log-120
`UPDATESHIPCRUISE030292.SCRIPT` ✓	Script-114	KSS	Log-114
`UPDATESHIPCRUISE060492.SCRIPT` ✓	Script-126	KSS	Log-126
`UPDATESHIPCRUISE100691.SCRIPT` ✓	Script-56	KSS	
`UPDATESHIPCRUISE270392.SCRIPT` ✓	Script-124	KSS	Log-124
`UPDATESHIPCRUISE290891.SCRIPT` ✓	Script-91	KSS	Log-91
`UPDATESTATIONTRG.SCRIPT` ?	Script-93	OOS	Log-93
`UPDATEUNKNOWNSHIP.SCRIPT` ✓	Script-102	KSS	Log-102
`UPDATE_BACKFILL_PROC.SCRIPT` ✓	Script-31	KSS	
`UPDATE_DEFAULT_NULL.SCRIPT` ?	Script-63	OOS	
`UPDATE_NULL_GORDON_INTER_DATA.SCRIPT` ?	Script-67	OOS	
`UPDATE_SHIPS060991.SCRIPT` ✓	Script-92	KSS	Log-92
`UPDATE_SHIP_ID.SCRIPT` ✓	Script-52	KSS	
`UPDATE_SHIP_ID_IN_CRUISE.SCRIPT` ✓	Script-51	KSS	
`UPDATE_SODB.SCRIPT` ✓	Script-28	KSS	
`VALIDATION_FLAG_DEFAULT.SCRIPT` ✓	Script-135	KSS	Log-135

List of all Scripts in numerical order I			
Name of the Program	Signature	Directory	.log ?
`AARI.SCRIPT`	Script-1	OOS	
`GORDON.SCRIPT`	Script-2	OOS	
`AARI_STAT.SCRIPT`	Script-3	OOS	
`GORDON_COPY.SCRIPT`	Script-4	OOS	
`GORDON_INTERPOLATED_DATA.SCRIPT`	Script-5	OOS	
`GORDON_CRUISE.SCRIPT`	Script-6	KSS	
`TRIGGER_DROP.SCRIPT`	Script-7	KSS	
`GORDON_STAT.SCRIPT`	Script-8	OOS	
`NOWLIN_UPD.SCRIPT`	Script-9	KSS	
`NOWLIN.SCRIPT`	Script-10	KSS	
`GC.SCRIPT`	Script-11	KSS	
`CHECKGCSD.SCRIPT`	Script-12	KSS	
`GARBAGECOLLECT.SCRIPT`	Script-13	KSS	
`GSBACKFILL.SCRIPT`	Script-14	KSS	
`TRIGGER.SCRIPT`	Script-15	KSS	
`AARIINDEX.SCRIPT`	Script-16	KSS	
`KUROPATKIN.SCRIPT`	Script-17	KSS	
`KUROPATKIN_UPD.SCRIPT`	Script-18	KSS	
`HAINESLOAD.SCRIPT`	Script-19	KSS	
`HAINESLOAD_UPDATE.SCRIPT`	Script-20	KSS	
`GONELLA.SCRIPT`	Script-21	KSS	
`GONELLA_UPD.SCRIPT`	Script-22	KSS	
`GONELLA_COPY.SCRIPT`	Script-23	KSS	
`GONELLA_COPY_ALL.SCRIPT`	Script-24	KSS	
`HAINESLOAD_COPY.SCRIPT`	Script-25	KSS	
`CRUISE.SCRIPT`	Script-26	KSS	Log-26
`CRUISE_TEST.SCRIPT`	Script-27	KSS	
`UPDATE_SODB.SCRIPT`	Script-28	KSS	
`CRUISE_TABLE.SCRIPT`	Script-29	KSS	
`CRUISE_UPD070291.SCRIPT`	Script-30	KSS	Log-30
`UPDATE_BACKFILL_PROC.SCRIPT`	Script-31	KSS	
`GSBACKFILL_UPD070291.SCRIPT`	Script-32	KSS	
`MAX_MIN_FROM_SHIP.SCRIPT`	Script-33	KSS	
`TOKYOTABLE.SCRIPT`	Script-34	KSS	
`ADD_TOKYO_SHIPS.SCRIPT`	Script-35	KSS	Log-35
`TOKYO_UPD.SCRIPT`	Script-36	KSS	
`TOKYO_FISH_BOTTOM_DEPTH_UPDATE.SCRIPT`	Script-37	KSS	
`TOKYO_FISHERIES_STATION_UPDATE.SCRIPT`	Script-38	KSS	
`AARI_UPDATE_SHIPS.SCRIPT`	Script-39	KSS	Log-39
`TRUNCATESHIP.SCRIPT`	Script-40	KSS	Log-40
`A1111.SCRIPT`	Script-41	KSS	
`A1111LOAD_UPD.SCRIPT`	Script-42	KSS	
`A1111_SHIPS.SCRIPT`	Script-43	KSS	Log-43
`A1111_SHIPS_UPD.SCRIPT`	Script-44	KSS	Log-44
`TOKYO_COPY.SCRIPT`	Script-45	KSS	
`JARELOAD.SCRIPT`	Script-46	KSS	
`UNKNOWNCHANGES291091.SCRIPT`	Script-47		Log-47
`JARE_UPD.SCRIPT`	Script-48	KSS	
`BIOMASS.SCRIPT`	Script-49	KSBS	Log-49
`SHIPS_UPD050291.SCRIPT`	Script-50	KSS	Log-50

List of all Scripts in numerical order II			
Name of the Program	Signature	Directory	.log ?
`UPDATE_SHIP_ID_IN_CRUISE.SCRIPT`	Script-51	KSS	
`UPDATE_SHIP_ID.SCRIPT`	Script-52	KSS	
`INSERTSHIP.SCRIPT`	Script-53	KSS	Log-53
`INSERTSHIPCRUISE.SCRIPT`	Script-54	KSS	Log-54
`UPDATECRUISE.SCRIPT`	Script-55	KSS	Log-55
`UPDATESHIPCRUISE100691.SCRIPT`	Script-56	KSS	
`UPDATECRU24.SCRIPT`	Script-57	KSS	Log-57
`BIOMASS_BRANDINI.SCRIPT`	Script-58	KSBS	Log-58
`A1111_COPY.SCRIPT`	Script-59	KSS	
`BIOSELPOSDAT.SCRIPT`	Script-60	KSBS	
`AARI_COPY.SCRIPT`	Script-61	OOS	
`INDEX.SCRIPT`	Script-62	OOS	
`UPDATE_DEFAULT_NULL.SCRIPT`	Script-63	OOS	
`STATION.SCRIPT`	Script-64	OOS	
`MAKESTATION.SCRIPT`	Script-65	OOS	
`STATION_INDEX.SCRIPT`	Script-66	OOS	
`UPDATE_NULL_GORDON_INTER_DATA.SCRIPT`	Script-67	OOS	
`GORDON_INTER_DATA.SCRIPT`	Script-68	OOS	
`PROGRAMTABLE.SCRIPT`	Script-69	KSS	
`MUENCHLOAD.SCRIPT`	Script-70	KSS	
`MUENCH_COPY_ALL.SCRIPT`	Script-71	KSS	Log-71
`MUENCHLOAD_UPD.SCRIPT`	Script-72	KSS	Log-72
`BIOMASS_COPY_ALL.SCRIPT`	Script-73	KSBS	Log-73
`UPDATECRU24S.SCRIPT`	Script-74	KSS	Log-74
`BIOMASS_UPD.SCRIPT`	Script-75	KSBS	Log-75
`ADD_SHIPS_JARE140491.SCRIPT`	Script-76	KSS	Log-76
`GSB_UPD.SCRIPT`	Script-77	KSS	
`AARI_AND_SHIP_TO_CRUISE.SCRIPT`	Script-78	KSS	Log-78
`AARI_CRUISE_VIEW.SCRIPT`	Script-79	KSS	Log-79
`ADD_KUROPATKIN_SHIPS.SCRIPT`	Script-80	KSS	Log-80
`ALTER_TAB_SHIP.SCRIPT`	Script-81	KSS	
`CHANGESHIPNAMEINCRUISE.SCRIPT`	Script-82	KSS	Log-82
`CHECKGARBAGESTANDARDDATA.SCRIPT`	Script-83	KSS	
`COPY_GORDON_SHIP_TO_SHIP.SCRIPT`	Script-84	KSS	Log-84
`COPY_GORDON_SHIP_TO_SHIP_PROC.SCRIPT`	Script-85	KSS	Log-85
`DROP_CRUISE_TRIGGER.SCRIPT`	Script-86	KSS	
`TRIGGER_UPDATE_LOST_STATIONS.SCRIPT`	Script-87	KSS	
`HAINES_SHIPS020991.SCRIPT`	Script-88	KSS	Log-88
`NOWLIN_SHIPS.SCRIPT`	Script-89	KSS	Log-89
`UNKNOWN_SHIP.SCRIPT`	Script-90	KSS	Log-90
`UPDATESHIPCRUISE290891.SCRIPT`	Script-91	KSS	Log-91
`UPDATE_SHIPS060991.SCRIPT`	Script-92	KSS	Log-92
`UPDATESTATIONTRG.SCRIPT`	Script-93	OOS	Log-93
`BIOMASS_BRANDINI_2.SCRIPT`	Script-94	KSBS	Log-94
`BIOMASS_BRANDINI_UPD.SCRIPT`	Script-95	KSBS	Log-95
`ROLLBACK_COMMIT.SCRIPT`	Script-96	KSBS	
`COPY_AARI_TO_CRUISE.SCRIPT`	Script-97	KSS	Log-97
`BIOMASS_BRANDINI_UPD2.SCRIPT`	Script-98	KSBS	Log-98
`SHIPCRUISECORRECTION260891.SCRIPT`	Script-99	KSS	Log-99
`SHIPCRUISECORRECTION081091.SCRIPT`	Script-100	KSS	Log-100

List of all Scripts in numerical order III			
Name of the Program	Signature	Directory	.log ?
`INSERTCRUISE081091.SCRIPT`	Script-101	KSS	Log-101
`UPDATEUNKNOWNSHIP.SCRIPT`	Script-102	KSS	Log-102
`ARGENTINE.SCRIPT`	Script-103	KSS	Log-103
`ARGENTINELOAD_COPY.SCRIPT`	Script-104	KSS	Log-104
`AWI.SCRIPT`	Script-105	KSS	Log-105
`REBUILD_ARGENTINE.SCRIPT`	Script-106	KSS	Log-106
`CHANGESHIPNAMEANDCOUNTRYINCRUISE.SCRIPT`	Script-107	KSS	Log-107
`SCHLITZER.SCRIPT`	Script-108	KSS	Log-108
`SCHLITZERLOAD_UPD.SCRIPT`	Script-109	KSS	Log-109
`SCHLITZERLOAD_COPY.SCRIPT`	Script-110	KSS	Log-110
`SHIP_UPD_041291.SCRIPT`	Script-111	KSS	Log-111
`SHIP_UPD_051291.SCRIPT`	Script-112	KSS	Log-112
`SHIP_UPD_051291_2.SCRIPT`	Script-113	KSS	Log-113
`UPDATESHIPCRUISE030292.SCRIPT`	Script-114	KSS	Log-114
`INSERTONESHIP.SCRIPT`	Script-115	KSS	Log-115
`BSHLOAD.SCRIPT`	Script-116	KSS	Log-116
`BSHLOAD_UPD.SCRIPT`	Script-117	KSS	Log-117
`BSHLOAD_COPY.SCRIPT`	Script-118	KSS	Log-118
`UPDATENODC.SCRIPT`	Script-119	KSS	Log-119
`UPDATENODC200292.SCRIPT`	Script-120	KSS	Log-120
`RESETNODC200292.SCRIPT`	Script-121	KSS	Log-121
`CHANGECRUISE050392.SCRIPT`	Script-122	KSS	Log-122
`INSERTCRUISE130392.SCRIPT`	Script-123	KSS	Log-123
`UPDATESHIPCRUISE270392.SCRIPT`	Script-124	KSS	Log-124
`CHANGECOUNTRYOFSHIP.SCRIPT`	Script-125	KSS	Log-125
`UPDATESHIPCRUISE060492.SCRIPT`	Script-126	KSS	Log-126
`ARGENTINELOAD_UPD.SCRIPT`	Script-127	KSS	Log-127
`AWILOAD_COPY.SCRIPT`	Script-128	KSS	Log-128
`AWILOAD_UPD.SCRIPT`	Script-129	KSS	Log-129
`CHANGE_VALIDATION_FLAGS.SCRIPT`	Script-130	KSS	Log-130
`CRUISE_TRIGGER.SCRIPT`	Script-131	KSS	Log-131
`CVF1250001.SCRIPT`	Script-132	KSS	
`DUMPTRANSNOLOG.SCRIPT`	Script-133	KSS	
`MARION_DUFRESNE_CRUISE.SCRIPT`	Script-134	KSS	Log-134
`VALIDATION_FLAG_DEFAULT.SCRIPT`	Script-135	KSS	Log-135
`C_V_F.SCRIPT`	Script-136	KSS	Log-136
`SO_USER.SCRIPT`	Script-137	KSS	Log-137
`CREATEBIBLIOTHEK.SCRIPT`	Script-138	KSS	Log-138

List of all Scripts in alphabetical order I

Name of the Program	Signature	Directory	.log ?
A1111.SCRIPT ✓	Script-41	KSS	
A1111LOAD_UPD.SCRIPT ✓	Script-42	KSS	
A1111_COPY.SCRIPT ✓	Script-59	KSS	
A1111_SHIPS.SCRIPT ✓	Script-43	KSS	Log-43
A1111_SHIPS_UPD.SCRIPT ✓	Script-44	KSS	Log-44
AARI.SCRIPT ?	Script-1	OOS	
AARIINDEX.SCRIPT ✓	Script-16	KSS	
AARI_AND_SHIP_TO_CRUISE.SCRIPT ✓	Script-78	KSS	Log-78
AARI_COPY.SCRIPT ?	Script-61	OOS	
AARI_CRUISE_VIEW.SCRIPT ✓	Script-79	KSS	Log-79
AARI_STAT.SCRIPT ?	Script-3	OOS	
AARI_UPDATE_SHIPS.SCRIPT ✓	Script-39	KSS	Log-39
ADD_KUROPATKIN_SHIPS.SCRIPT ✓	Script-80	KSS	Log-80
ADD_SHIPS_JARE140491.SCRIPT ✓	Script-76	KSS	Log-76
ADD_TOKYO_SHIPS.SCRIPT ✓	Script-35	KSS	Log-35
ALTER_TAB_SHIP.SCRIPT ✓	Script-81	KSS	
ARGENTINE.SCRIPT ✓	Script-103	KSS	Log-103
ARGENTINELOAD_COPY.SCRIPT ✓	Script-104	KSS	Log-104
ARGENTINELOAD_UPD.SCRIPT ✓	Script-127	KSS	Log-127
AWI.SCRIPT ✓	Script-105	KSS	Log-105
AWILOAD_COPY.SCRIPT ✓	Script-128	KSS	Log-128
AWILOAD_UPD.SCRIPT ✓	Script-129	KSS	Log-129
BIOMASS.SCRIPT	Script-49	KSBS	Log-49
BIOMASS_BRANDINI.SCRIPT	Script-58	KSBS	Log-58
BIOMASS_BRANDINI_2.SCRIPT	Script-94	KSBS	Log-94
BIOMASS_BRANDINI_UPD.SCRIPT	Script-95	KSBS	Log-95
BIOMASS_BRANDINI_UPD2.SCRIPT	Script-98	KSBS	Log-98
BIOMASS_COPY_ALL.SCRIPT	Script-73	KSBS	Log-73
BIOMASS_UPD.SCRIPT	Script-75	KSBS	Log-75
BIOSELPOSDAT.SCRIPT	Script-60	KSBS	
BSHLOAD.SCRIPT ?	Script-116	KSS	Log-116
BSHLOAD_COPY.SCRIPT ✓	Script-118	KSS	Log-118
BSHLOAD_UPD.SCRIPT ✓	Script-117	KSS	Log-117
CHANGECOUNTRYOFSHIP.SCRIPT ✓	Script-125	KSS	Log-125
CHANGECRUISE050392.SCRIPT ✓	Script-122	KSS	Log-122
CHANGESHIPNAMEANDCOUNTRYINCRUISE.SCRIPT ✓	Script-107	KSS	Log-107
CHANGESHIPNAMEINCRUISE.SCRIPT ✓	Script-82	KSS	Log-82
CHANGE_VALIDATION_FLAGS.SCRIPT ✓	Script-130	KSS	Log-130
C_V_F.SCRIPT ? ✓	Script-136	KSS	Log-136
CVF1250001.SCRIPT ? ✓	Script-132	KSS	
CHECKGARBAGESTANDARDDATA.SCRIPT ✓	Script-83	KSS	
CHECKGCSD.SCRIPT ✓	Script-12	KSS	
COPY_AARI_TO_CRUISE.SCRIPT ✓	Script-97	KSS	Log-97
COPY_GORDON_SHIP_TO_SHIP.SCRIPT ✓	Script-84	KSS	Log-84
COPY_GORDON_SHIP_TO_SHIP_PROC.SCRIPT ✓	Script-85	KSS	Log-85
CREATEBIBLIOTHEK.SCRIPT	Script-138	KSS	LOG-138
CRUISE.SCRIPT ✓	Script-26	KSS	Log-26
CRUISE_TABLE.SCRIPT ✓	Script-29	KSS	
CRUISE_TEST.SCRIPT ✓	Script-27	KSS	
CRUISE_TRIGGER.SCRIPT ✓	Script-131	KSS	Log-131
CRUISE_UPD070291.SCRIPT ✓	Script-30	KSS	Log-30
DROP_CRUISE_TRIGGER.SCRIPT ✓	Script-86	KSS	
DUMPTRANSNOLOG.SCRIPT ✓	Script-133	KSS	

List of all Scripts in alphabetical order II

Name of the Program	Signature	Directory	.log ?
GARBAGECOLLECT.SCRIPT ✓	Script-13	KSS	
GC.SCRIPT ✓	Script-11	KSS	
GONELLA.SCRIPT ✓	Script-21	KSS	
GONELLA_COPY.SCRIPT ✓	Script-23	KSS	
GONELLA_COPY_ALL.SCRIPT ✓	Script-24	KSS	
GONELLA_UPD.SCRIPT ✓	Script-22	KSS	
GORDON.SCRIPT ?	Script-2	OOS	
GORDON_COPY.SCRIPT ?	Script-4	OOS	
GORDON_CRUISE.SCRIPT ✓	Script-6	KSS	
GORDON_INTERPOLATED_DATA.SCRIPT ?	Script-5	OOS	
GORDON_INTER_DATA.SCRIPT ?	Script-68	OOS	
GORDON_STAT.SCRIPT ?	Script-8	OOS	
GSBACKFILL.SCRIPT ✓	Script-14	KSS	
GSBACKFILL_UPD070291.SCRIPT ✓	Script-32	KSS	
GSB_UPD.SCRIPT ✓	Script-77	KSS	
HAINESLOAD.SCRIPT ✓	Script-19	KSS	
HAINESLOAD_COPY.SCRIPT ✓	Script-25	KSS	
HAINESLOAD_UPD.SCRIPT ✓	Script-20	KSS	
HAINES_SHIPS020991.SCRIPT ✓	Script-88	KSS	Log-88
INDEX.SCRIPT ?	Script-62	OOS	
INSERTCRUISE081091.SCRIPT ✓	Script-101	KSS	Log-101
INSERTCRUISE130392.SCRIPT ✓	Script-123	KSS	Log-123
INSERTONESHIP.SCRIPT ✓	Script-115	KSS	Log-115
INSERTSHIP.SCRIPT ✓	Script-53	KSS	Log-53
INSERTSHIPCRUISE.SCRIPT ✓	Script-54	KSS	Log-54
JARELOAD.SCRIPT ✓	Script-46	KSS	
JARE_UPD.SCRIPT ✓	Script-48	KSS	
KUROPATKIN.SCRIPT ✓	Script-17	KSS	
KUROPATKIN_UPD.SCRIPT ✓	Script-18	KSS	
MAKESTATION.SCRIPT ?	Script-65	OOS	
MARION_DUFRESNE_CRUISE.SCRIPT ✓	Script-134	KSS	Log-134
MAX_MIN_FROM_SHIP.SCRIPT ✓	Script-33	KSS	
MUENCHLOAD.SCRIPT ✓	Script-70	KSS	
MUENCHLOAD_UPD.SCRIPT ✓	Script-72	KSS	Log-72
MUENCH_COPY_ALL.SCRIPT ✓	Script-71	KSS	Log-71
NOWLIN.SCRIPT ✓	Script-10	KSS	
NOWLIN_SHIPS.SCRIPT ✓	Script-89	KSS	Log-89
NOWLIN_UPD.SCRIPT ✓	Script-9	KSS	
PROGRAMTABLE.SCRIPT ✓	Script-69	KSS	
REBUILD_ARGENTINE.SCRIPT ✓	Script-106	KSS	Log-106
RESETNODC200292.SCRIPT ✓	Script-121	KSS	Log-121
ROLLBACK_COMMIT.SCRIPT ?	Script-96	KSBS	
SCHLITZER.SCRIPT ✓	Script-108	KSS	Log-108
SCHLITZERLOAD_COPY.SCRIPT ✓	Script-110	KSS	Log-110
SCHLITZERLOAD_UPD.SCRIPT ✓	Script-109	KSS	Log-109
SHIPCRUISECORRECTION260891.SCRIPT ✓	Script-99	KSS	Log-99
SHIPCRUISECORRECTION081091.SCRIPT ✓	Script-100	KSS	Log-100
SHIPS_UPD050291.SCRIPT ✓	Script-50	KSS	Log-50
SHIP_UPD_041291.SCRIPT ✓	Script-111	KSS	Log-111
SHIP_UPD_051291.SCRIPT ✓	Script-112	KSS	Log-112
SHIP_UPD_051291_2.SCRIPT ✓	Script-113	KSS	Log-113

19 ?

5.8.93

```
Directory SYS$USER:[KURDELSKI.SOUTHERNOCEAN.FOR]

  A1111LOAD.FOR;4 ✓            14  13-03-91 10:57  [EDV,KURDE  (RWED,RWED,RWE,R)
? AARILOAD.FOR;3               13  27-11-90 17:26  [EDV,KURDE  (RWED,RWED,RWE,R)
  ARGENTINE.FOR;1 ✓             4  08-10-91 16:12  [EDV,KURDE  (RWED,RWED,RWE,)
? ARGENTINELOAD.FOR;8
                               14  06-11-91 17:42  [EDV,KURDE  (RWED,RWED,RWE,)
  ASK_FOR_PW.FOR;3              3  02-10-90 14:45  [EDV,KURDE  (RWED,RWED,RWE,R)
  AWILOAD.FOR;15 ✓             16  27-11-91 14:34  [EDV,KURDE  (RWED,RWED,RWE,)
  BSHLOAD.FOR;14 ✓             15  05-02-92 10:32  [EDV,KURDE  (RWED,RWED,RWE,)
  GONELLA.FOR;10 ✓             15  17-12-90 12:52  [EDV,KURDE  (RWED,RWED,RWE,R)
  HAINESLOAD.FOR;13 ✓          14  13-03-91 10:43  [EDV,KURDE  (RWED,RWED,RWE,R)
  JARELOAD.FOR;9 ✓             15  21-05-91 15:38  [EDV,KURDE  (RWED,RWED,RWE,R)
  KUROPATKIN.FOR;8 ✓           13  10-06-91 15:47  [EDV,KURDE  (RWED,RWED,RWE,R)
  MARS.FOR;7 ✓                  2  16-10-90 11:50  [EDV,KURDE  (RWED,RWED,RWE,R)
  MARSPROB.FOR;7 ✓              7  18-12-90 16:24  [EDV,KURDE  (RWED,RWED,RWE,R)
  MUENCHLOAD.FOR;1 ✓           14  09-08-91 12:12  [EDV,KURDE  (RWED,RWED,RWE,)
? MUNCHLOAD.FOR;1               1  09-08-91 11:41  [EDV,KURDE  (RWED,RWED,RWE,)
  NOWLIN.FOR;2 ✓               14  26-11-90 14:19  [EDV,KURDE  (RWED,RWED,RWE,R)
? READJARE.FOR;6                3  15-04-91 15:46  [EDV,KURDE  (RWED,RWED,RWE,R)
? READMUIN.FOR;1                3  09-08-91 11:07  [EDV,KURDE  (RWED,RWED,RWE,)
  SCHLITZERLOAD.FOR;13 ✓
                               15  21-12-91 15:26  [EDV,KURDE  (RWED,RWED,RWE,)
  TOKYOLOAD.FOR;14 ✓           14  14-02-91 14:21  [EDV,KURDE  (RWED,RWED,RWE,R)

Total of 20 files, 209 blocks.
```

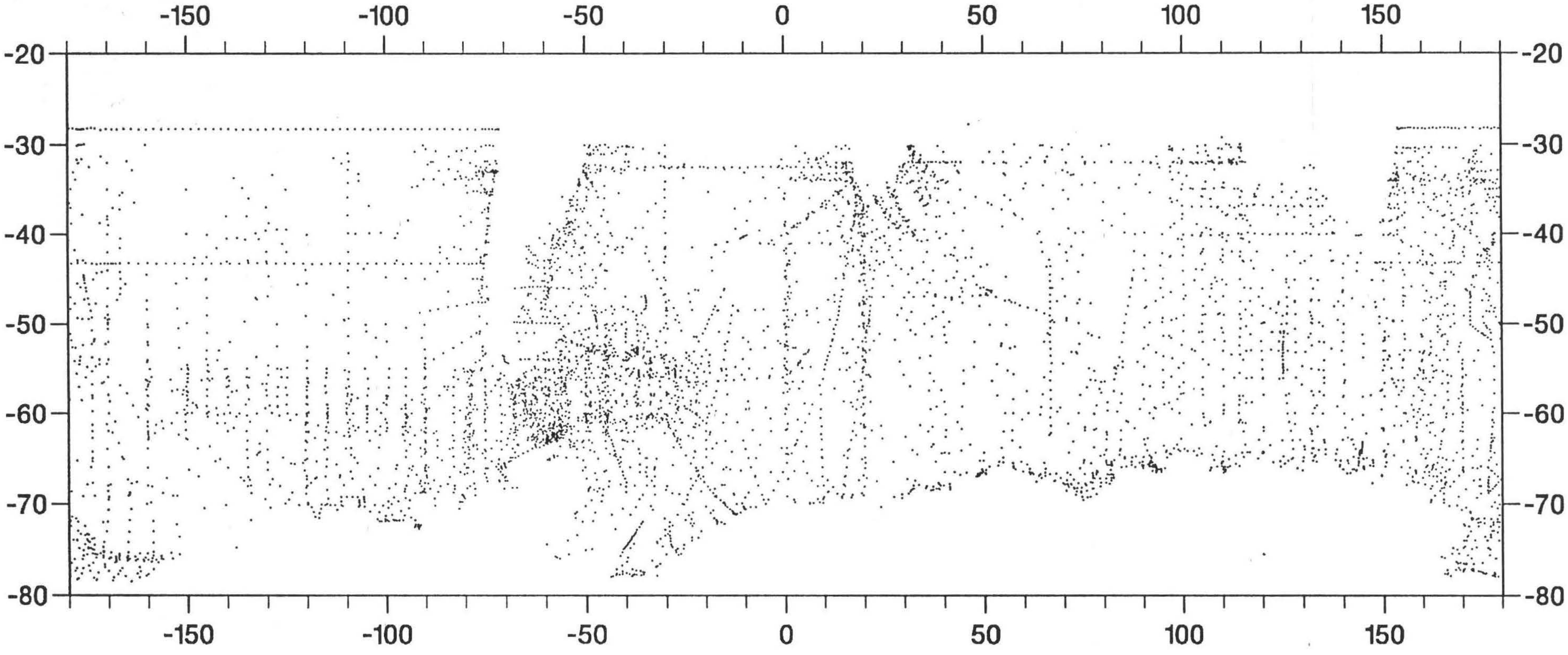
5.8.93

List of all Fortran-Programs in alphabetical order

Name of the Program	Signature
ARGENTINE.FOR ✓	For-15
A1111LOAD.FOR ✓	For-11
AWILOAD.FOR ✓	For-18
BSHLOAD.FOR ✓	For-17
GONELLA.FOR ✓	For-9
? GORDON.FOR	For-2
HAINESLOAD.FOR ✓	For-8
KUROPATKIN.FOR ✓	For-7
JARELOAD.FOR ✓	For-13
MARS.FOR ✓	For-5
MARSPROB.FOR ✓	For-10
MUENCHLOAD.FOR ✓	For-14
NOWLIN.FOR ✓	For-6
? OZEDB_SYBASE.FOR	For-1
? OZEDB_SYBASE1.FOR	For-3
? OZEDB_SYBASE2.FOR	For-4
SCHLITZERLOAD.FOR ✓	For-16
TOKYOLOAD.FOR ✓	For-12

List of all Fortran-Programs in numerical order

Name of the Program	Signature
OZEDB_SYBASE.FOR	For-1
GORDON.FOR	For-2
OZEDB_SYBASE1.FOR	For-3
OZEDB_SYBASE2.FOR	For-4
MARS.FOR	For-5
NOWLIN.FOR	For-6
KUROPATKIN.FOR	For-7
HAINESLOAD.FOR	For-8
GONELLA.FOR	For-9
MARSPROB.FOR	For-10
A1111LOAD.FOR	For-11
TOKYOLOAD.FOR	For-12
JARELOAD.FOR	For-13
MUENCHLOAD.FOR	For-14
ARGENTINE.FOR	For-15
SCHLITZERLOAD.FOR	For-16
BSHLOAD.FOR	For-17
AWILOAD.FOR???	For-18



SOUTHERN OCEAN ATLAS DATA SET 6313 STATIONS /GORDON,MOLINELLI,BAKER/

No.	Data set	Range of			Comment
		Station numbers	Data numbers in original tables	Data numbers in Standard_Data	
1	Aari	1– 36,059	1– 1,470,905	1– 1,470,905	including (2)
2	Kuropatkin	35,952– 36,059	1– 1,142	1– 1,142	included in (1
3	Gordon	100,001– 106,313	10,000,001–10,131,691	100,000,001–100,131,691	
4	Nowlin	200,001– 201,108	20,000,001–20,033,615	20,000,001– 20,033,615	
5	Haines	300,001– 300,617	3,000,001– 3,014,592	3,000,001– 3,014,592	
6	Gonella	400,001– 400,277	4,000,001– 4,002,071	4,000,001– 4,002,071	
7	TokyoFisheries	500,001– 500,188	5,000,001– 5,004,770	5,000,001– 5,004,770	
8	A1111	600,001– 602,177	6,000,001– 6,035,336	6,000,001– 6,035,336	
9	Jare	700,001– 700,119	7,000,001– 7,002,332	7,000,001– 7,002,332	
10	Biomass	800,001– 800,841	8,000,001– 8,020,087	8,000,001– 8,020,087	
11	Muench	900,001– 900,208	9,000,001– 9,004,181	9,000,001– 9,004,181	
12	Argentine	3,000,001–3,004,744	30,000,001–30,051,924	30,000,001– 30,051,924	consistency
13	AWI-Daten	20,000,001–	200,000,001–	200,000,001–	

8 Project Management

8.1 Steps in Developing SouthernOceanDB

Steps in developing the SouthernOceanDB

Date	Short Description	Name of the Program	Signature
June 89	Creation of the database Creation of Aaritables (Aari_Station, Aari_Standard_Data, Aari_Station_Backup, Aari_Update_Backup, Aari_Garbage_Station, Aari_Garbage_Data)	AARI.SCRIPT	Script–1
June 89	Creation of Gordontables: Station, Standard_Data, Statistic	GORDON.SCRIPT	Script–2
10.7.89	Loading of AariData into AariTables	OZEDB_SYBASE.FOR	For–1
17.7.89	Loading of GordonData into Gordontables	GORDON.FOR	For–2
7.12.89	Creation of Aari_Statistic, Marsden_Square, Aari_Statistic_View	AARI_STAT.SCRIPT	Script–3
7.12.89	Creation of Aari–Indices on AariTables	INDEX.SCRIPT	Script–62
13.12.89	Update Aari and GordonStandardTables Set missing values = 0	UPDATE_DEFAULT_NULL.SCRIPT	Script–63
1.6.90	Creation of indices on Standard_Tables	STATION_INDEX.SCRIPT	Script–66
28.6.90	Creation of tables Station, Standard_Data, Statistic, DeleteTables, UpdateTables, InsertTables, Validation	STATION.SCRIPT	Script–64
28.6.90	Procedure to load StandardTables with Aari and GordonData	MAKESTATION.SCRIPT	Script–65
28.6.90	Procedure to copy AariData into StandardTables	AARI_COPY.SCRIPT	Script–61
28.6.90	Copy of GordonData into Standard_Tables (Sql–Procedure)	GORDON_COPY.SCRIPT	Script–4
25.7.90	Loading of further Aari_Data into Aari_Tables	OZEDB_SYBASE1.FOR	For–3
10.9.90	Creation of Gordon_Interpolated_Data_Table	GORDON_INTERPOLATED_DATA.SCRIPT	Script–5
10.9.90	Loading of interpolated GordonData from file INTERGOR.DAT into Gordon_Interpolated_Data–table	OZEDB_SYBASE2.FOR	For–4
12.9.90	Creation of indices on Gordon_Interpolated_Data	GORDON_INTER_DATA.SCRIPT	Script–68
16.10.90	Drop Triggers for Station, Standard_Data	TRIGGER_DROP.SCRIPT	Script–7
16.10.90	Calculate marsden square number	MARS.FOR	For–5
11.90	Creation of Gordon_Statistic, Gordon_Statistic_View	GORDON_STAT.SCRIPT	Script–8
12.11.90	Creation of Nowlintables	NOWLIN.SCRIPT	Script–10
12.11.90	Set missing values = 0 for NowlinData	NOWLIN_UPD.SCRIPT	Script–9
16.11.90	Create proc GarbageCollectStandardData for Aari	GC.SCRIPT	Script–11
19.11.90	Selects Station_Id# from Standard_Data which is not in table Station	CHECKGCSD.SCRIPT	Script–12
19.11.90	Execute CHECKGCSD.SCRIPT	GARBAGECOLLECT.SCRIPT	Script–13
20.11.90	Creation of tables Gordon_Cruise and Gordon_Ship	GORDON_CRUISE.SCRIPT	Script–6
22.11.90	Creation of Gordon_Station_Backfill	GSBACKFILL.SCRIPT	Script–14

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Steps in developing the SouthernOceanDB

Date	Short Description	Name of the Program	Signature
26.11.90	Loading of NowlinData into Nowlin_Station and Nowlin_Standard_Data	`NOWLIN.FOR`	For–6
26./27._11.90	Loading of KuropatkinData into Aari	`AARILOAD.SCRIPT`	*missing*
27.11.90	Creation of KuropatkinTables	`KUROPATKIN.SCRIPT`	Script–17
27.11.90	Loading of KuropatkinData into Kuropatkin_Station and Kuropatkin_Standard_Data for modification of multiple defined stations and station data	`KUROPATKIN.FOR`	For–7
27.11 90	Creation of AariIndices	`AARIINDEX.SCRIPT`	Script–16
28.11.90	Update Gordon_Interpolated_Data	`UPDATE_NULL_GORDON_INTER_DATA.SCRIPT`	Script–67
28.11.90	Creation of Update–,Delete–, Insert–Triggers	`TRIGGER.SCRIPT`	Script–15
28.11.90	Update of some KuropatkinValues on AariTable	`KUROPATKIN_UPD.SCRIPT`	Script–18
28.11.90	Update of Aari_Station	*missing*	*missing*
28.11.90	Correction of Gordon_Statistic	*missing*	*missing*
28.11.90	advising the user H.Ross		
28.11.90	Creation of HainesTables	`HAINESLOAD.SCRIPT`	Script–19
28.11.90	Loading of HainesData into HainesTables	`HAINESLOAD.FOR`	For–8
29.11.90	Set missing values = 0 for HainesData	`HAINESLOAD_UPD.SCRIPT`	Script–20
11.12.90	Test for Cruise.script	`CRUISE_TEST.SCRIPT`	Script–27
11.12.90	Creation of tables Ship and Cruise	`CRUISE.SCRIPT`	Script–26
11.12.90	Loading of HainesData into StandardTables	`HAINESLOAD_COPY.SCRIPT`	Script–25
11.12.90	Copy data from Aari_Cruise–Table to table Ship	`AARI_TO_SHIP.C`	C–1
12.12.90	Rename Aari_Cruise in Aari_Cruise_Bck, Cruise_View in AARI_CRUISE	`UPDATE_SODB.SCRIPT`	Script–28
Dec. 90	Setting triggers on delete, insert and update to control changes	`CRUISE_TRIGGER.SCRIPT`	Script–131
15.12.90	Creation of GonellaTables	`GONELLA.SCRIPT`	Script–21
17.12.90	Loading of GonellaData into GonellaTables	`GONELLA.FOR`	For–9
18.12.90	Set missing values = 0 for GonellaData	`GONELLA_UPD.SCRIPT`	Script–22
18.12.90	Procedure to copy GonellaData into StandardTables	`GONELLA_COPY_ALL.SCRIPT`	Script–24
18.12.90	Execute GONELLA_COPY_ALL.SCRIPT	`GONELLA_COPY.SCRIPT`	Script–23
18.12.90	Marsden_Square	`MARSPROB.FOR`	For–10
19.12.90	Grant select on AARI_CRUISE to PHYSIK1	`CRUISE_TABLE.SCRIPT`	Script–29
11.2.91	Changes of Cruise_Id# in Cruise, which were recognized as erroneus in Aari_Cruise_Bck	`CRUISE_UPD070291.SCRIPT`	Script–30
12.2.91	Procedure, created to update GS_Backfill: set Date_Time = 0 were Jan 1 1900 12:00AM	`UPDATE_BACKFILL_PROC.SCRIPT`	Script–31
12.2.91	Rename Gordon_Station_Backfill in Gordon_Station_Backfill_Bck Backup of Backfill	`GSBACKFILL_UPD070291.SCRIPT`	Script–32
12.2.91	Correction of Gordon_Cruise	L.-P. Kurdelski by hand	

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Steps in developing the SouthernOceanDB

Date	Short Description	Name of the Program	Signature
12.2.91	Loading of GordonData into Gordon_Ship, Gordon_Cruise, Gordon_Station_Backfill from Headers.fil, Shipgord3.dat	GORDON_CRUISE.C	C–2
13.2.91	Selects Min and Max Ship_Id# and calculates the sum	MAX_MIN_FROM_SHIP.SCRIPT	Script–33
13.2.91	Creation of TokyoTables	TOKYO_TABLE.SCRIPT	Script–34
13.2.91	Insert new Ships and Cruises from TokyoData to Ship and Cruise	ADD_TOKYO_SHIPS.SCRIPT	Script–35
13.2.91	Loading TokyoData into TokyoTables	TOKYOLOAD.FOR	For–12
14.2.91	Set missing values = 0 for TokyoData	TOKYO_UPD.SCRIPT	Script–36
8.3.91	Update in Aari_Cruise	AARI_UPDATE_SHIPS.SCRIPT	Script–39
8.3.91	Update of ships in Aari_Cruise	AARI_UPDATE_SHIPS_CORRECTION.SCRIPT	Script–40? *missing*
8.3.91	Update Bottom_Depth: erroneus values in column Bottom_Depth = 0	TOKYOFISH_BOTTOM_DEPTH_UPDATE.SCRIPT	Script–37
8.3.91	Correction of some erroneus values in Tokyo_Fisheries_Station	TOKYO_FISHERIES_STATION_UPDATE.SCRIPT	Script–38
13.3.91	Creation A1111Tables	A1111.SCRIPT	Script–41
13.3.91	Loading new Aaridata from A1111_Data into A1111_Station and A1111_Standard_Data–tables	A1111LOAD.FOR	For–11
22.3.91	Set missing values = 0	A1111LOAD_UPD.SCRIPT	Script–42
22.3.91 22.3.91	Copy A1111Data into StandardTables	A1111_COPY.SCRIPT	Script–59
27.3.91	Insert of new Ships from A1111	A1111_SHIPS.SCRIPT	Script–43
27.3.91	Insert of new Ships from A1111 (Update Cruise)	A1111_SHIPS_UPD.SCRIPT	Script–44
9.4.91	Copy of TokyoData into StandardTables	TOKYO_COPY.SCRIPT	Script–45
17.5.91	Creation of JareTables	JARELOAD.SCRIPT	Script–46
21.5.91	Loading of JareData into Jare_Station and Jare_Standard_Data	JARELOAD.FOR	For–13
28.5.91	Creation of table Gordon_Cruise_LPK: Ship_Code removed, replaced by Ship_Id#: Gordon_Cruise_LPK created	GORDON_CRUISE_DELETE_SHIP_CODE.SCRIPT	Script–47
5.6.91	Set missing values = 0 for JareData	JARE_UPD.SCRIPT	Script–48
10.6.91	Creation of BiomassTables	BIOMASS.SCRIPT	Script–49
12.6.91	Change some Ship names in table Cruise according to table Ship	UPDATESHIPCRUISE100691.SCRIPT	Script–56
12.6.91	Creation of BiomassTables	BIOMASS.SCRIPT	Script–49
12.6.91	Discussion with Victor to analyze mistakes		
12.6.91	Loading of BiomassData in BiomassTables	BIOMASS.C	C–4
25.6.91	Script to change table Cruise: For some Cruises Ships are set to unknown, Id# = 1000000	UPDATECRU24.SCRIPT	Script–57
25.6.91	Script to change table Cruise	UPDATECRU24S.SCRIPT	Script–74

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Steps in developing the SouthernOceanDB

Date	Short Description	Name of the Program	Signature
26.6.91	Changes of ship names in table Ship	`SHIPS_UPD050291.SCRIPT`	Script–50
26.6.91	Procedure to update table Ship	`UPDATE_SHIP_ID.SCRIPT`	Script–52
26.6.91	Procedure to insert new ships	`INSERT_NEW_SHIPS.SCRIPT`	Script–54
26.6.91	Procedure to insert a new ship into Cruise	`INSERT_INTO_CRUISE.SCRIPT`	Script–53
26.6.91	Extension of the table Ship with the column Ship_Code	`ALTER_TAB_SHIP.SCRIPT`	Script–81
27.6.91	Procedure to execute UPDATE_CRUISE.SCRIPT	`UPDATE_CRUISE.SCRIPT`	Script–55
2.7.91	Preparation of BiomassData for Graphics (Brandini)		
15.7.91	Set missing values = 0 for BiomassData	`BIOMASS_UPD.SCRIPT`	Script–75
16.7.91	Group added: BIOMASS_GRP Login added: BIOMASS User added to SODB Grant select to Biomass_ERP on Biomass_Station and Biomass_Standard_Data		
23.7.91	Inserting chlorophyll values for Biomass given by Brandini: no change of existing data, duplicates are made, which consists on Biomass data + Chlorophyll_A because of the same Station_Id for Biomass and Brandini For identification a value was added to the Station_Id# of duplicates	`BIOMASS_BRANDINI.SCRIPT`	Script–58
24.7.91	Program to select special values for graphics from Biomass for F. Brandini	`BRANDINI.C`	C–5
24.7.91	Routines to evaluate specific values from measured oceanographic data	`ALPHA.C`	C–6
1.8.91	Modification of Biomass.C, writing a Biomass–Table Script and finally a new loading of BiomassData because of a mistake in an Update–Program		
1.8.91	Creation of the table Programs (not run)	`PROGRAMTABLE.SCRIPT`	Script–69
5.8.91	Creating a procedure for inserting the Chlorophyll values for Biomass Data	`BIOMASS_BRANDINI_UPD.SCRIPT`	Script–95
5.8.91	Insert Chlorophyll_a Data into Biomass_Standard_Data.	`BIOMASS_BRANDINI_2.SCRIPT`	Script–94
5.8.91	Creating a procedure for either rollback or commit a transaction according to the value of errorstatus	`ROLLBACK_COMMIT.SCRIPT`	Script–96
7.8.91	Procedure to compare position and time of Biomass_Station with the StationTable, the Station_Number is then written out	`BIOSELPOSDAT.SCRIPT`	Script–60
9.8.91	Creation of Muench_Standard_Data and Station	`MUENCHLOAD.SCRIPT`	Script–70
9.8.91	Loading of MuenchData into MuenchTables	`MUENCHLOAD.FOR`	For–14
12.8.91	Copy the MuenchData into the tables Station and Standard_Data	`MUENCH_COPY_ALL.SCRIPT`	Script–71
12.8.91	Update of MuenchTables: Set missing values = 0	`MUENCHLOAD_UPD.SCRIPT`	Script–72
12.8.91	Copy BiomassData into StandardTables	`BIOMASS_COPY_ALL.SCRIPT`	Script–73

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Steps in developing the SouthernOceanDB

Date	Short Description	Name of the Program	Signature
19.8.91	Inserting two ships and eight cruises in Jare	ADD_SHIPS_JARE 140491.SCRIPT	Script–76
20.8.91	New creation of tables Cruise and Ship, additional the tables Cruise_Deleted and Cruise_Updated, Ship_Deleted and Ship_Updated, the indices for Ship and Cruise, and the triggers Delete_Cruise, Update_Cruise, Delete_Ship, Update_Ship	erneuertes Script: CRUISE.SCRIPT	Script–26
21.8.91	Loading of Cruise_Numbers from Aari_Cruise_Bck and its Ship_Id from Ship into Cruise	AARI_AND_SHIP_TO_CRUISE.SCRIPT	Script–78
26.8.91	Update of cruises with the procedure UpdateCruise	SHIPCRUISECORRECTION260891.SCRIPT	Script–99
28.8.91	Inserting new Cruises to Cruise and Ship from Kuropatkin Data	ADD_KUROPATKIN_SHIPS.SCRIPT	Script–80
28.8.91	Creating the procedures Copy_Gordon_Ship_To_Ship (Copy the Gordon_Ships and relations to the table Ship) and Copy_Gordon_Cruise_To_Cruise (Copy the Gordon_Ships and relations to the table Cruise)	COPY_GORDON_SHIP_TO_SHIP_PROC.SCRIPT	Script–85
28.8.91	All data are deleted from Muench–Tables, because an error was found and all steps in preparation are repeated. All data are loaded again by same programs.		
29.8.91	Change of Ship_Ids in table Cruise due to the change of shipnames	CHANGESHIPNAME INCRUISE.SCRIPT	Script–82
29.8.91	Selects Station_Id# from Standard_Data which is not in table Station	CHECKGARBAGESTANDARDDATA.SCRIPT	Script–83
29.8.91	Update of Ship and Cruise in SouthernOceanDB, data from V. Guretzky	UPDATESHIPCRUISE 290891.SCRIPT	Script–91
30.8.91	Dropping of the trigger Insert_Cruise on table Cruise and Delete_Ship on table Ship	DROP_CRUISE_TRIGGER.SCRIPT	Script–86
2.9.91	Modifying the date values in the table Gordon_Station_Backfill for some Station	GSB_UPD.SCRIPT	Script–77
3.9.91	Executing the procedures Copy_Gordon_Ship_To_Ship and Copy_Gordon_Cruise_To_Cruise	COPY_GORDON_SHIP_TO_SHIP.SCRIPT	Script–84
5.9.91	Insert triggers for table Station and StandardData. Special solution for updating the validation flags	UPDATESTATIONTRG.SCRIPT	Script–93
6.9.91	Spelling corrections in table Ship	UPDATE_SHIPS 060991.SCRIPT	Script–92
9.9.91	Creation of view Aari_Cruise2	AARI_CRUISE_VIEW.SCRIPT	Script–79
12.9.91	Creating the procedure Copy_Aari_To_Cruise (Copy the Cruise_Number from Aari_Cruise_Bck and the Ship_Id# from Ship to table Cruise	COPY_AARI_TO_CRUISE.SCRIPT	Script–97
13.9.91	Insert Chlorophyll_a Data into Biomass_Standard_Data.	BIOMASS_BRANDINI_UPD2.SCRIPT	Script–98
13.9.91	Inserting ship Marion Dufresne´	MARION_DUFRESNE_CRUISE.SCRIPT	Script–134
8.10.91	Update of cruises with the procedure UpdateCruise	SHIPCRUISECORRECTION081091.SCRIPT	Script–100
8.10.91	Inserting a new Ship into Cruise	INSERTCRUISE 081091.SCRIPT	Script–101

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Steps in developing the SouthernOceanDB

Date	Short Description	Name of the Program	Signature
8.10.91	Updating unknown Ships in the table Cruise	UPDATEUNKNOWNSHIP.SCRIPT	Script–102
8.10.91	Creating the default for Validation_Flag	VALIDATION_FLAG_DEFAULT.SCRIPT	Script–135
8.10.91	Creating new tables Argentine_Station and Argentine_Standard_Data	ARGENTINE.SCRIPT	Script–103
8.10.91	Creating new tables Schlitzer_Station and Schlitzer_Standard_Data	SCHLITZER.SCRIPT	Script–108
9.10.91	Setting missing values in the tables Schlitzer_Station and Schlitzer_Standard_Data to zero	SCHLITZERLOAD_UPD.SCRIPT	Script–109
9.10.91	Creating a procedure to set validation flags to 0 where validation flags are NULL	CHANGE_VALIDATION_FLAGS.SCRIPT	Script–130
9.10.91	Setting validation flags to 0 where validation flags are NULL	CVF1250001.SCRIPT	Script–132
10.10.91	Dumping with *no_log* to clear transaction log and dumping database to save data	DUMPTRANSNOLOG.SCRIPT	Script–133
23.10.91	Updating Validation Flags	C_V_F.SCRIPT	Script–136
29.10.91	Update of ArgentineTables: Set missing values = 0	ARGENTINELOAD_UPD.SCRIPT	Script–127
29.10.91	Fill Station and Standard_Data with Argentine Data	ARGENTINELOAD_COPY.SCRIPT	Script–104
29.10.91	Creating the procedure Schlitzer_Copy_All to fill Station and Standard_Data with Schlitzer Data	SCHLITZERLOAD_COPY.SCRIPT	Script–110
6.11.91	Deleting Argentine Data from Station and Standard_Data and preparing the tables Argentine_Station andData and preparing the tables Argentine_Station and Argentine_Standard_Data for reload	REBUILD_ARGENTINE.SCRIPT	Script–106
11.11.91	Creating new tables AWI_Station and AWI_Standard_Data	AWI.SCRIPT	Script–105
11.11.91	Update of AWITables: Set missing values = 0	AWILOAD_UPD.SCRIPT	Script–129
11.11.91	Filling Station and Standard_Data with AWI Data	AWILOAD_COPY.SCRIPT	Script–128
4.12.91	Change the ship ids in the table Cruise due to the change of name from old ship to new ship	CHANGESHIPNAMEANDCOUNTRYINCRUISE.SCRIPT	Script–107
4.12.91	Updating Ships	SHIP_UPD041291.SCRIPT	Script–111
5.12.91	Updating Ships	SHIP_UPD051291.SCRIPT	Script–112
5.12.91	Updating the Ship Cruise relation	SHIP_UPD051291_2.SCRIPT	Script–113
3.2.92	Update of Ship and Cruise in SouthernOceanDB, data from V. Guretzky	UPDATESHIPCRUISE030291.SCRIPT	Script–114
3.2.92	Inserting new Ship by presenting the Shipname and the Country	INSERTONESHIP.SCRIPT	Script–115
4.2.92	Creating new tables BSH_Station and BSH_Standard_Data	BSHLOAD.SCRIPT	Script–116
4.2.92	Setting missing values in the tables BSH_Station and BSH_Standard_Data to zero	BSHLOAD_UPD.SCRIPT	Script–117
4.2.92	Creating the procedure BSH_Copy_All to fill Station and Standard_Data with BSH Data	BSHLOAD_COPY.SCRIPT	Script–118

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Steps in developing the SouthernOceanDB			
Date	Short Description	Name of the Program	Signature
20.2.92	Creating the procedure UpdateNODC for updating of an existing or non existingNODC code. This code is the Ship_Codein table Ship and view Aari_Cruise2	`UPDATE-NODC.SCRIPT`	Script–119
20.2.92	Changes in the table Ship_And_Cruise. Source:`OTH$DATEN:[SOCEAN.DHI] BSHCRU3.DAT`	`UPDATENODC-200292.SCRIPT`	Script–120
20.2.92	Reset Changes in the table Ship_And_Cruise. Source:`OTH$DATEN: [SOCEAN.DHI]BSHCRU3.DAT`	`RESETNODC-200292.SCRIPT`	Script–121
5.3.92	Updating of the table Cruise using the procedure ChangeShipNameAndCountryInCruise. Source:`OTH$DATEN:[SOCEAN.TEXT] KURDEL18.NOTE`	`CHANGECRUISE-050392.SCRIPT`	Script–122
13.3.92	Inserting a new Ship into Cruise	`INSERTCRUISE 130391.SCRIPT`	Script–123
27.3.92	Update of Ship and Cruise in SouthernOceanDB, data from V. Guretzky	`UPDATESHIPCRUISE 270391.SCRIPT`	Script–124
27.3.92	Creating the procedure ChangeCountryOfShip for changing a country of a ship	`CHANGECOUNTRYOF SHIP.SCRIPT`	Script–125
6.4.92	Update of Ship and Cruise in SouthernOceanDB, data from V. Guretzky	`UPDATESHIPCRUISE 060492.SCRIPT`	Script–126
23.6.92	User SO_USER added	`SO_USER.SCRIPT`	Script–137
19.1.93	Script to update table Ship	`UPDATESHIP 190193.SCRIPT`	Script–139
June 93	Supporting Internet accessability		

8.2 Provided Procedures

Steps in developing the SouthernOceanDB			
Date	Short Description	Name of the Program	Signature
19.11.90	Selects Station_Id# from Standard_Data which is not in table station	`CHECKGSCD.SCRIPT`	Script–12
26.6.91	Procedure to insert new ships	`INSERT_NEW_SHIPS .SCRIPT`	Script–54
26.6.91	Procedure to update table Ship	`UPDATE_SHIP_ID.SCRIPT`	Script–52
26.6.91	Procedure to insert a new ship into Cruise	`INSERT_INTO_CRUISE. SCRIPT`	Script–53
27.6.91	Procedure to execute UPDATE_CRUISE.SCRIPT	`UPDATE_CRUISE. SCRIPT`	Script–55
24.7.91	Program to select special values for graphics from Biomass for F.Brandini	`BRANDINI.C`	C–5
24.7.91	Routines to evaluate specific values from measured oceanographic data	`ALPHA.C`	C–6

9 Finish

To bring the documentation to a close a short description of the present state of the **SouthernOceanDB** follows.

Since the beginning of concepting the **SouthernOceanDB** in 1989 the database became more and more complex. So far the conception and structure of the database is finished. It is clear, how data are kept in the database, origin and standard, and which tables are needed for documentation.

Also the contents of the database, the data sets to be read in, is nearly complete. Most important data sets are available in the database.

But the work with data, the validation, is still going on. During the work with data for example the experience was made, that for controling the processing of data, previous tables for documentating were not sufficient. Because Dr. Guretzky, who is working with data, has found out, that so many ships do not correspond to the right cruise_numbers, that the names have to be changed, Lutz–Peter Kurdelski has created new tables for triggers to be run on Cruise and Ship. Then it is possible, to control the changed ship_names and cruises, to prevent possibly mistakes.

Also the programs, written by Dr. Guretzky have still to be read into the database. They must be load into an own table, where they are implemented with a signature.

So the further development of the database only means a completion of the existing database. But in this case a lot of ideas are possible, to improve the functions of the database. For example one of the last ideas was, to change the function of the Update_Flag in that way, that a user can see by this flag, which parameters of data have been changed of one record during the validation process.

It is also an aim to make the database more user–friendly by storing several finished applications, based on the user's wishes, in form of stored procedures.

For the future the development of the database is heavily determined by the user and his applications.

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Chief of Division: Dr Graeme Pearman

10th April 1996.

Dr M. Reinke.
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Dear Dr Reinke,

A colleague of mine Dr Matt England signed a copy of the licence agreement earlier but as he left last year I thought it would be wiser to re-sign it to cover the group here rather than any individual. I plan to use a couple of sections in a paper I am about to submit and AWI will be duely acknowledged. I will send Dirk Olbers a copy when it is finally accepted.

yours sincerely

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(Institutional Representative) ______________________

(Sign) James H. Swift

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(Sign) Sydney Levitus

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William E. McKeon
Director,
Office of Commercial Affairs

Woods Hole Oceanographic Institution
Woods Hole, Massachusetts 02543
Phone (508) 457-2010
Fax (508) 457-2108

23 June 1993

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Regards,

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The Design of an Information System to be used for Objective Analysis of Climatic Data from the Southern Hemisphere

July 20, 1993

Lutz–Peter Kurdelski, Manfred Reinke
Alfred–Wegener–Institute for Polar and Marine Research
Am Handelshafen 12
D–2850 Bremerhaven

Contents

R D

5.8.93

```
Directory SYS$USER:[KURDELSKI.SOUTHERNOCEAN.SCRIPT]

A1111.SCRIPT;7 ✓                  5   30-08-91 10:49   [EDV,KURDE   (RWED,RWED,RWE,R)
A1111LOAD_UPD.SCRIPT;3 ✓
                                  3   28-08-91 17:07   [EDV,KURDE   (RWED,RWED,RWE,R)
A1111_COPY.SCRIPT;8 ✓
                                  3   29-08-91 15:35   [EDV,KURDE   (RWED,RWED,RWE,)
A1111_SHIPS.SCRIPT;18 ✓
                                  9   11-09-91 14:37   [EDV,KURDE   (RWED,RWED,RWE,R)
A1111_SHIPS_UPD.SCRIPT;6 ✓
                                  2   04-09-91 09:26   [EDV,KURDE   (RWED,RWED,RWE,R)
AARIINDEX.SCRIPT;3 ✓              2   28-08-91 17:15   [EDV,KURDE   (RWED,RWED,RWE,R)
AARI_AND_SHIP_TO_CRUISE.SCRIPT;11 ✓
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AARI_CRUISE_VIEW.SCRIPT;6 ✓
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AARI_UPDATE_SHIPS.SCRIPT;11 ✓
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                                  5   10-09-91 17:27   [EDV,KURDE   (RWED,RWED,RWE,)
ADD_TOKYO_SHIPS.SCRIPT;9 ✓
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ALTER_TAB_SHIP.SCRIPT;3 ✓
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ARGENTINE.SCRIPT;4 ✓              5   28-10-91 09:35   [EDV,KURDE   (RWED,RWED,RWE,)
ARGENTINELOAD_COPY.SCRIPT;6 ✓
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ARGENTINELOAD_UPD.SCRIPT;3 ✓
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AWI.SCRIPT;6 ✓                    5   27-11-91 14:06   [EDV,KURDE   (RWED,RWED,RWE,)
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BSHLOAD_UPD.SCRIPT;3 ✓
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CHANGECRUISE050392.SCRIPT;11 ✓
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CHANGESHIPINCRUISE.SCRIPT;1 ?
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CHANGE_VALIDATION_FLAGS.SCRIPT;17 ✓
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CHECKGARBAGESTANDARDDATA.SCRIPT;3 ✓
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CHECKGCSD.SCRIPT;4 ✓              1   12-09-91 13:22   [EDV,KURDE   (RWED,RWED,RWE,)
COPY_AARI_TO_CRUISE.SCRIPT;6 ✓
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COPY_GORDON_SHIP_TO_SHIP.SCRIPT;2 ✓
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CRUISE.SCRIPT;24 ✓               14   11-09-91 17:05   [EDV,KURDE   (RWED,RWED,RWE,R)
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CRUISE_TRIGGER.SCRIPT;4 ✓
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CVF.COM;4 ?                    3  16-10-91 10:16  [EDV,KURDE   (RWED,RWED,RE,R)
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GONELLA_COPY.SCRIPT;3 ✓
                               1  29-08-91 17:07  [EDV,KURDE   (RWED,RWED,RWE,R)
GONELLA_COPY_ALL.SCRIPT;4 ✓
                               2  29-08-91 17:07  [EDV,KURDE   (RWED,RWED,RWE,R)
GONELLA_UPD.SCRIPT;7 ✓
                               3  12-09-91 13:30  [EDV,KURDE   (RWED,RWED,RWE,R)
GORDON_CRUISE.SCRIPT;13 ✓
                               5  30-08-91 10:48  [EDV,KURDE   (RWED,RWED,RWE,R)
GSBACKFILL.SCRIPT;4 ✓
                               3  30-08-91 10:44  [EDV,KURDE   (RWED,RWED,RWE,R)
GSBACKFILL_UPD070291.SCRIPT;6 ✓
                               3  30-08-91 10:45  [EDV,KURDE   (RWED,RWED,RWE,R)
GSB_UPD.SCRIPT;2 ✓             3  02-09-91 14:41  [EDV,KURDE   (RWED,RWED,RWE,)
HAINESLOAD.SCRIPT;7 ✓
                               5  30-08-91 10:42  [EDV,KURDE   (RWED,RWED,RWE,R)
HAINESLOAD_COPY.SCRIPT;3 ✓
                               1  29-08-91 17:11  [EDV,KURDE   (RWED,RWED,RWE,R)
HAINESLOAD_UPD.SCRIPT;4 ✓
                               3  29-08-91 17:13  [EDV,KURDE   (RWED,RWED,RWE,R)
HAINES_SHIPS020991.SCRIPT;3 ✓
                               5  04-09-91 09:40  [EDV,KURDE   (RWED,RWED,RWE,)
INSERTCRUISE081091.SCRIPT;1 ✓
                               1  08-10-91 14:47  [EDV,KURDE   (RWED,RWED,RWE,)
INSERTCRUISE130392.SCRIPT;3 ✓
                               2  13-03-92 14:11  [EDV,KURDE   (RWED,RWED,RWE,)
INSERTONESHIP.SCRIPT;2 ✓
                               3  03-02-92 14:35  [EDV,KURDE   (RWED,RWED,RWE,)
INSERTSHIP.SCRIPT;8 ✓
                               4  04-09-91 09:22  [EDV,KURDE   (RWED,RWED,RWE,)
INSERTSHIPCRUISE.SCRIPT;10 ✓
                               6  12-09-91 13:31  [EDV,KURDE   (RWED,RWED,RWE,)
JARELOAD.SCRIPT;4 ✓            5  30-08-91 10:38  [EDV,KURDE   (RWED,RWED,RWE,R)
JARE_UPD.SCRIPT;3 ✓            3  29-08-91 17:21  [EDV,KURDE   (RWED,RWED,RWE,R)
KUROPATKIN.SCRIPT;3 ✓
                               5  30-08-91 10:37  [EDV,KURDE   (RWED,RWED,RWE,R)
KUROPATKIN_UPD.SCRIPT;4 ✓
                               5  12-09-91 13:33  [EDV,KURDE   (RWED,RWED,RWE,R)
MARION_DUFRESNE_CRUISE.SCRIPT;3 ✓
                               2  13-09-91 11:37  [EDV,KURDE   (RWED,RWED,RWE,)
MAX_MIN_FROM_SHIP.SCRIPT;3 ✓
                               1  30-08-91 10:52  [EDV,KURDE   (RWED,RWED,RWE,R)
MUENCHLOAD.SCRIPT;4 ✓
                               5  12-09-91 13:34  [EDV,KURDE   (RWED,RWED,RWE,)
MUENCHLOAD_UPD.SCRIPT;5 ✓
                               2  28-08-91 09:29  [EDV,KURDE   (RWED,RWED,RWE,)
MUENCH_COPY_ALL.SCRIPT;4 ✓
```

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```
                                             2  12-08-91 16:23  [EDV,KURDE   (RWED,RWED,RWE,)
NOWLIN.SCRIPT;3 ✓                            5  30-08-91 10:36  [EDV,KURDE   (RWED,RWED,RWE,R)
NOWLIN_SHIPS.SCRIPT;5 ✓
                                             7  11-09-91 14:39  [EDV,KURDE   (RWED,RWED,RWE,)
NOWLIN_UPD.SCRIPT;3 ✓
                                             2  30-08-91 10:53  [EDV,KURDE   (RWED,RWED,RWE,R)
PROGRAMTABLE.SCRIPT;3 ✓
                                             3  04-09-91 17:46  [EDV,KURDE   (RWED,RWED,RWE,)
REBUILD_ARGENTINE.SCRIPT;3 ✓
                                             2  06-11-91 17:47  [EDV,KURDE   (RWED,RWED,RWE,)
RESETNODC200292.SCRIPT;2 ✓
                                             7  02-03-92 13:39  [EDV,KURDE   (RWED,RWED,RWE,)
SCHLITZER.SCRIPT;3 ✓                         6  20-12-91 11:45  [EDV,KURDE   (RWED,RWED,RWE,)
SCHLITZERLOAD_COPY.SCRIPT;2 ✓
                                             3  20-12-91 11:37  [EDV,KURDE   (RWED,RWED,RWE,)
SCHLITZERLOAD_UPD.SCRIPT;3 ✓
                                             3  20-12-91 11:38  [EDV,KURDE   (RWED,RWED,RWE,)
SCRIPT.LIS;1 ?                               0  05-08-93 16:51  [EDV,KURDE   (RWED,RWED,RWE,)
SHIP.COM;7 ?                                 5  12-09-91 12:14  [EDV,KURDE   (RWED,RWED,RWE,)
SHIPCRUISECORRECTION081091.SCRIPT;2 ✓
                                             1  08-10-91 14:41  [EDV,KURDE   (RWED,RWED,RWE,)
SHIPCRUISECORRECTION260891.SCRIPT;4 ✓
                                             2  08-10-91 12:16  [EDV,KURDE   (RWED,RWED,RWE,)
SHIPS_UPD050291.SCRIPT;7 ✓
                                             4  29-08-91 16:06  [EDV,KURDE   (RWED,RWED,RWE,R)
SHIP_NEU.COM;22 ?                           11  13-09-91 12:37  [EDV,KURDE   (RWED,RWED,RWE,)
SHIP_UPD_04121991.SCRIPT;9 ✓
                                            31  05-12-91 11:46  [EDV,KURDE   (RWED,RWED,RWE,)
SHIP_UPD_05121991.SCRIPT;1 ✓
                                             2  05-12-91 14:50  [EDV,KURDE   (RWED,RWED,RWE,)
SHIP_UPD_05121991_2.SCRIPT;1 ✓
                                             2  05-12-91 15:01  [EDV,KURDE   (RWED,RWED,RWE,)
SO_USER.SCRIPT;3 ✓                           2  23-06-92 09:31  [EDV,KURDE   (RWED,RWED,RWE,)
TEST.C;1 ?                                   2  06-04-92 14:21  [EDV,KURDE   (RWED,RWED,RWE,)
TEXTABLES.SCRIPT;1 ?                         5  15-04-92 18:26  [EDV,KURDE   (RWED,RWED,RWE,)
TOKYO_COPY.SCRIPT;6 ✓
                                             3  30-08-91 10:56  [EDV,KURDE   (RWED,RWED,RWE,R)
TOKYO_FISHERIES_STATION_UPDATE.SCRIPT;2 ✓
                                             2  12-09-91 14:42  [EDV,KURDE   (RWED,RWED,RWE,R)
TOKYO_FISH_BOTTOM_DEPTH_UPDATE.SCRIPT;2 ✓
                                             2  30-08-91 10:58  [EDV,KURDE   (RWED,RWED,RWE,R)
TOKYO_TABLE.SCRIPT;13 ✓
                                             5  30-08-91 10:35  [EDV,KURDE   (RWED,RWED,RWE,R)
TOKYO_UPD.SCRIPT;4 ✓                         3  30-08-91 10:56  [EDV,KURDE   (RWED,RWED,RWE,R)
TRIGGER.SCRIPT;5 ✓                           8  30-08-91 10:35  [EDV,KURDE   (RWED,RWED,RWE,R)
TRIGGER_DROP.SCRIPT;2 ✓
                                             1  30-08-91 10:34  [EDV,KURDE   (RWED,RWED,RWE,R)
TRIGGER_UPDATE_LOST_STATIONS.SCRIPT;11 ✓
                                             4  12-09-91 14:44  [EDV,KURDE   (RWED,RWED,RWE,R)
TRUNCATESHIP.SCRIPT;2 ✓
                                             1  11-09-91 17:49  [EDV,KURDE   (RWED,RWED,RWE,)
TTT.;1 ?                                     2  28-10-91 14:57  [EDV,KURDE   (RWED,RWED,RWE,)
TYPESHIP.COM;5 ?                             2  10-09-91 16:44  [EDV,KURDE   (RWED,RWED,RWE,)
TYPESHIPLOG.COM;3 ?                          2  10-09-91 16:46  [EDV,KURDE   (RWED,RWED,RWE,)
UNKNOWNCHANGES291091.SCRIPT;8 ✓
                                             7  31-10-91 19:34  [EDV,KURDE   (RWED,RWED,RWE,)
UNKNOWN_SHIP.SCRIPT;3 ✓
                                             1  12-09-91 14:46  [EDV,KURDE   (RWED,RWED,RWE,)
UPDATECRU24.SCRIPT;12 ✓
                                            13  10-09-91 17:33  [EDV,KURDE   (RWED,RWED,RWE,)
UPDATECRU24S.SCRIPT;7 ✓
                                             3  10-09-91 17:36  [EDV,KURDE   (RWED,RWED,RWE,)
UPDATECRUISE.SCRIPT;7 ✓
                                             2  12-09-91 14:47  [EDV,KURDE   (RWED,RWED,RWE,)
UPDATENODC.SCRIPT;8 ✓
                                             3  20-02-92 11:52  [EDV,KURDE   (RWED,RWED,RWE,)
```

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```
UPDATENODC200292.SCRIPT;4 ✓
                                 8  21-02-92 08:46  [EDV,KURDE   (RWED,RWED,RWE,)
UPDATESHIP190193.SCRIPT;2 ?
                                 1  19-01-93 10:45  [EDV,KURDE   (RWED,RWED,RWE,)
UPDATESHIPCRUISE030292.SCRIPT;5 ✓
                                 2  08-05-92 17:41  [EDV,KURDE   (RWED,RWED,RWE,)
UPDATESHIPCRUISE060492.SCRIPT;5 ✓
                                 2  06-04-92 15:56  [EDV,KURDE   (RWED,RWED,RWE,)
UPDATESHIPCRUISE100691.SCRIPT;4 ✓
                                25  12-09-91 14:49  [EDV,KURDE   (RWED,RWED,RWE,R)
UPDATESHIPCRUISE270392.SCRIPT;9 ✓
                                 3  19-08-92 17:50  [EDV,KURDE   (RWED,RWED,RWE,)
UPDATESHIPCRUISE290891.SCRIPT;3 ✓
                                 6  29-08-91 15:47  [EDV,KURDE   (RWED,RWED,RWE,)
UPDATEUNKNOWNSHIP.SCRIPT;1 ✓
                                 2  08-10-91 14:02  [EDV,KURDE   (RWED,RWED,RWE,)
UPDATE_BACKFILL_PROC.SCRIPT;4 ✓
                                 1  27-06-91 10:16  [EDV,KURDE   (RWED,RWED,RWE,R)
UPDATE_SHIPS060991.SCRIPT;4 ✓
                                 4  11-09-91 14:38  [EDV,KURDE   (RWED,RWED,RWE,)
UPDATE_SHIP_ID.SCRIPT;3 ✓
                                 1  26-06-91 12:12  [EDV,KURDE   (RWED,RWED,RWE,R)
UPDATE_SHIP_ID_IN_CRUISE.SCRIPT;3 ✓
                                 1  26-06-91 12:12  [EDV,KURDE   (RWED,RWED,RWE,R)
UPDATE_SODB.SCRIPT;6 ✓
                                 3  12-09-91 14:50  [EDV,KURDE   (RWED,RWED,RWE,R)
UPDATE_STATION.SCRIPT;3 ? = UPDATESTATIONTRG.SCRIPT?
                                 2  17-05-93 12:01  [EDV,KURDE   (RWED,RWED,RWE,)
VALIDATION_FLAG_DEFAULT.SCRIPT;4 ✓
                                 2  25-10-91 15:19  [EDV,KURDE   (RWED,RWED,RWE,)
VFD.COM;2 ?                      3  25-10-91 15:03  [EDV,KURDE   (RWED,RWED,RWE,)

Total of 128 files, 511 blocks.
```

① Programme stehen z.Zt alle unter

SYS$USER:[KURDELSKI.SOUTHERNOCEAN~~DB~~.FOR]

und werden nach

OTH$DATEN:[SOCEAN.FOR] ko

kopiert

---

② Daten stehen z.Zt alle unter

SYS$USER:[SOCEAN]

in einem zugehörigen Verzeichnis

z.B. [.AARI]

---

③ Nach Anfang '92 werden ALLE Programme wie folgt gekennzeichnet

<DatenName>LOAD.FOR	Laden	AAMLOAD.FOR
<DatenName>.script	kreiere Tabellen	AMM.SCRIPT
<DatenName>_COPY.SCRIPT	Transfer in Standard Tabellen	AMM_COPY.SCRIPT
<DatenName>LOAD_UPD.SCRIPT	update Risiken illegal values	AMMLOAD_UPD.SCR

---

④ Andere Scripte werden je nach Aufgabe gekennzeichnet, meist durch Angabe dessen, was getan wird, und des Datums

z.B. CHANGECRUISE240492.SCRIPT

Leider gibt es bei der Benennung kleinen Fehler.
So wurde bei ③ manchmal der '_' weggelassen
wird aber geändert

Bitte alle
... ELIVAT
... VALIDAT
kontrollieren bzgl. Programme!

Documentation Of The SouthernOceanDB-Project

Jens Begemann
Student of Documentation at the college in Hannover
Practical training in the Alfred-Wegener-Institute for Polar and Marine Research
in Bremerhaven

September 5, 1991

Contents

The Processing of StandardTables

Date	Short Description	Name of the Program	Signature
28.6.90	Creation of tables Station, Standard_Data, Statistic, UpdateTables, InsertTables, DeleteTables, Validation	STATION.SCRIPT	Script-64
1.6.90	Creation of indices on Station and Standard_Data	STATION_INDEX.SCRIPT	Script-66
16.10.90	Drop Triggers for Station, Standard_Data	TRIGGER_DROP.SCRIPT	Script-7
16.10.90	Calculate marsden square number	MARS.FOR	For-5
19.11.90	Selects Station_Id# from Standard_Data which is not in table Station	CHECKGCSD.Script	Script-12
19.11.90	Execute CHECKGCSD.SCRIPT	GARBAGECOLLECT .SCRIPT	Script-13
28.11.90	Creation of Update, Insert and DeleteTriggers	TRIGGER.SCRIPT	Script-15
11.12.90	Test for Cruise.script	CRUISE_TEST.SCRIPT	Script-27
11.12.90	Creation of tables Ship and Cruise	CRUISE.SCRIPT	Script-26
18.12.90	Marsden_Square	MARSPROB.FOR	For-10
11.2.91	Changes of Cruise_Id# in Cruise, which were recognized as erroneus in Aari_Cruise_Bck	CRUISE_UPD070291.SCRIPT	Script-30
12.6.91	Change some Ship names in table Cruise according to table Ship	UPDATESHIP_ CRUISE100691.SCRIPT	Script-56
25.6.90	Script to change table Cruise: For some Cruises Ships are set to unknown, Id# = 1000000	UPDATECRU24.SCRIPT	Script-57
25.6.91	Update of table Cruise	UPDATECRU24S.SCRIPT	Script-74
26.6.91	Procedure to insert new ships	INSERT_NEW_SHIPS .SCRIPT	Script-54
26.6.91	Procedure to update table Ship	UPDATE_SHIP_ID.SCRIPT	Script-52
26.6.91	Procedure to insert a new ship into Cruise	INSERT_INTO_CRUISE .SCRIPT	Script-53
27.6.91	Procedure to execute UPDATE_CRUISE.SCRIPT	UPDATE_CRUISE.SCRIPT	Script-55
1.8.91	Creation of table Programs (not run)	PROGRAMTABLE.SCRIPT	Script-69
20.8.91	New creation of tables Cruise and Ship, additional the tables Cruise_Deleted and Cruise_Updated, Ship_Deleted and Ship_Updated, the indices for Ship and Cruise, and the triggers Delete_Cruise, Update_Cruise, Delete_Ship,		

1 Introduction

In 1989 the physics group in the Alfred-Wegener-Institute, conducted by Prof. Dr. Dirk Olbers, decided to create a new oceanographical atlas in form of a datatbase, which include many physical data sets from different national research institutes for the southern ocean.

Already in 1976 a numeric, oceanographical atlas, written by Gordon & Molinelli, has appeared. But in view of the big amount of new data since this year and because of so many datasets, which have not been included in the Gordon atlas in those days, it seemed to be necessary to make a completely new conception of such atlas, where the priorities lay in the implementation of data and representation to the user. The new southern ocean atlas should provide as many well-prepared data sets as possible to scientists, mainly from the physics, and it should be as complete as possible.

This project, the *SouthernOceanDB*, which has not been finished up to now, was realized in the computer centre of the AWI, which is conducted by Dr. Wolfgang Hiller.

The first conception, the structure of the database, and the first implementation of data was done by Dr. Manfred Reinke, who leads the database group within thew computer centre.

The responsibility for this database and the management of working is now taken on by the physicist Mr Lutz-Peter Kurdelski.

The preparation and standardization of all data sets, which belongs to the important aims of this project, is done by the sovjetish scientist Dr. Victor Guretzki, who is a russian guest scientist in the AWI.

This documentation of the database is made to accompany the project during the work and give help to the database administrators and to the users.

It contains two functions:

First of all it is a description of the database itself, the aims and the background, that led to this conception, then how ,and in which form it is realized. The demands are explained and the realization of this functions by the implementation of data and the structure of the database. And also the contents of the *SouthernOceanDB*, which consists on different data sets and the tables are described.

A second function is the description of the chronology of working programs. to show the present state of the database and the data.

One the one hand the programs, written by the database management, are listed in tables with date and program description, on the other hand the programs, written by Dr Guretzki, in order to prepare the data for user's representation, are described.

All programs, that are listed in the documentation, are available in extern files and can be found by signatures.

At the end of the project, when the work with data has been finished, an advantageous information system of data in the southern ocean in best quality should be represent to scientists.

2 The Goal of the Project

The main objective consists on the intention to rebuild the Gordon atlas perfectly new in order of getting an extended, new concepted database.

There were several problems scientists were confronted with during their data recherche, which have to be solved by reaching the main goal.

The retrieval of data was rather difficult for scientists up to now because of the distribution of these data over the world. The solution for this problem was to store the data for the southern ocean on one place. In special these were the problems, that in the end led to this conception as it is described :

- Relevant data are lying on tapes on tapes and databases in different research institutes divided over the world.
- Data are lying in nonuniform formates on tapes that they must be compiled to the formate of the used system.
- Data are often prepared by partial unknown, different or mistakeable methods. These methods are not documented.
- Any further information concerning to data like as well their origin as the kind of methods for preparation are missing.
- Methods for frequent applications like analysis, statistics and graphics are not available in consisting information systems.

The main aspects in the conception of the database lay in the implementation and representation of data in the database.

Some questions have to be answered:

Which kind of data should be load into the database? How should these data be implemented into tables? How should these data devided on tables?

The focus for this conception was to store the original data, provided by the institutes in own tables and to combine them in a next step in common tables, where some work should be done with data. The advantage lay in the idea to store the original data for documentation, to keep the original data for additional information while the data in the standard data tables will be standardized and corrected.

Another point was to devide data on tables within this conception, that the hierarchical structure of connections would be clear and correct (see chapter 5.2), and in addition to that point, where to set connections among tables.

For the fixed aim the quality of data was decisive. This problem of working with data caused another set of questions:

How should programs, that work on data be implement in the database system? How can the data and running programs be document within the database? In which way records, which have been changed by programs, could be marked?

One of the main functions of the database is, that all steps in preparation of data is documented very well, that the change of data is understandable for the database administators. (see chapter 3.2)

The solution for the database system lay in the relational model (see chapter 5.1), which is distinguish from other models (hierarchical and network) by its flexibility in setting relations. This system has the best preconditions, to fulfill all demands.

By storing all available data on one place, only one unique formate is needed and the retrieval is more simplier then it ever was.

By the demands as mentioned above, to document all steps in preparation of data, the quality of data will be obvious. The judgement of the quality of data is important for scientists, who wants to make their calculations possibly exact.

Additional it exists the possibility, to remove the database to an information system, that provides several programs for frequent applications like graphics and analysis to the scientists. Tables for statistics already exists.

newpage

3 Functions of the Database SouthernOcean

3.1 Combination of Data from different institutes

These are the institutes from which data have been read into the database up to now:

- **GordonData**: Data, which are based on the atlas of Gordon & Mollinelli from the year of 1976.
- **AariData**: Data from the Arctical & Antarctical Research Institute in Leningrad
- **KuropatkinData**: Data of the russian ship N.Kuropatkin, provided by the AARI.
- **A1111Data**: Data also provided by the AARI
- **GonellaData**: Data of the Musee National de Histoire Naturelle in Paris from the Gordon atlas
- **HainesData**: Data provided by the Geological Observatory Lamont-Doherty in New York
- **NowlinData**: Data of the A&M Texas University
- **TokyoFisheriesData**: Data of the Tokyo University of Fisheries, Japan
- **JareData**: Data of the Japanese Antarctic Research Expedition in Japan also provided by Lamont-Doherty
- **BiomassData**: Data from the Biomass Data Centre in England
- **MuenchData**: Data obtained from the Science Applications International Corporation, NewYork

Up to now these are all data sets being put into the database, but it is possible, that the Alfred Wegener Institute get new data from other expeditions to read into the database. This documentation will be then updated.

Mainly this database is provided to the Physics in the Awi. Scientists of oceanographie suggest, which datasets are relevant to put into the database. Then the concerning institute will be called to send the tapes with the data to the AWI in Bremerhaven. Before reading into the database records will be interpolated to the standard levels of depth, if they are not interpolated. The Datasets will be then directly read into the database by written programs.

The conceptionell idea in creating the database was to keep the original data seperated from eachother in own tables and to read them in a next step into common tables, where several procedures and operations are made with data. The tables with original data are the same as the common tables (Station, Standard_Data). Only for the GordonData additional there exist the tables Gordon_Ship and Gordon_Cruise.

Therefore here are several reasons, why the conception of seperate storing of original data and data in common tables was done.

- The first reason lay in the purpose to document the original data sets, that have been directly provided by the institutes. Several records have to be changed within the datasets, because sometimes they contain errors or they are duplicates. A number of records might be deleted. It might be important to look at the tables with original data. If someone wants to proof, what has really happened to some data, he is able to look at the original values of data and to repeat the operations on data again.
- Another point, that stands for this conception, is the information about the expeditions of one single institute. For datasets of every institute statistic-tables were created, and it is possible to get information about the activities about each institute.

After datasets have been loaded into the original tables, they will be then copy into common tables, where several methods for deletion of duplicates and correction of wrong values are used on data. As mentioned these methods don't touch the original data sets. In the common tables the origin of data, from which institute they come, can be recognized by the identifiers of station and standard_data. Every dataset get its own range for these identifiers. The origin of data, the name and adress of the institute, the contasct person and the characteristics of the data set itself has been included into this documentation under the names of the data (look above).

3.2 The Process of Validation

All records, which are provided to scientists in the standard tables, have to be standardized, and they must contain correct values. Therefore these records have to pass several tests and operations in order to find duplicate or erroneus values.

These operations are called "validation". The validation process is made only on the common tables Station and Standard_Data. Every record which was validated or changed is marked by a Validation_Flag. The Validation flag then appears in the table *Validation*, to find the corresponding method to a changed record. In this validation table Sometimes one record has to pass several methods. For documenting this the tables Validation and Validation_Method_Description exist in the database.

The validation process covers the actions of elimination of duplicates and correction of faulty data for measured records and stationdata. GordonData, which are based on the atlas of Gordon & Molinelli are designed as to be validated. They needen't be changed. But datasets from other institutes have to be compared with the GordonDataset, especially the data from Aari.

- The first step in doing the validation is to look for duplicates within one dataset. One record of the duplicate pair must be deleted.

- Then this dataset will be compared with GordonData in order to look for duplicates as well. Especially the AariDataset contains a lot of records from Gordon. If one record from AARI correspond to a Gordon record, the AARI-record must be deleted because of the quality of GordonData.

- For next data have to be proofed on their correctness for standard_data and station. Therefore standard_data and stationdata will be treated differently. Several tests happen to data. Stationdata are validated concerning their position, if the positions

  - harmonize according to the marsden_square (a square calculated by longitudes and latitudes)
  - and time have realistic distances, if it is assumed, that the speed of the ship is 15 knotes from one station to the next
  - not collide with a coast of land

  Standard_Data are compared with Gordon_Data, where special values are assumed. In the descriptions of programs the conditions data have to fulfill are listed.

- data of the ships will also be proofed.

If wrong stationdata or duplicates will be deleted, the whole measured records will be deleted too. But if only measured data will be deleted, nothing happens to stationdata. All for validation used methods and programs are remarked by the Validation_Flag and stored in the database. For each record the used validation method can be recognized. The quality of data depend on these methods. Another work with data is the work with depth levels. When data are lying on tapes frequently they have different levels on depth. So they have to be interpolated on depth to get a standard. The standard of depth levels is formed by the AariData.

In this documentation all programs and methods used for validation are listed with name and date and a short description beneath the description of the origin of each dataset with a rebuke to the appendix of the description. In the appendix all method- and program-scripts are listed completeley scientist, who work with data in order to prepare and validate them, The oceanograph Dr. Guretzki, has the permission to write on the tables Station and Standard_Data for corrections. The administration of the users is centrally managed by the database administrators of the computer centre in the Alfred-Wegener-Institute.

4 Preconditions

4.1 Hardware

The database **SouthernOcean** is implemented on the **VAX**. Here the operating system **VMS** is used. The capacity of the hard disk from the cluster in the AWI is about 33 GB.

4.2 Software

4.2.1 Sybase

The software, where the database **Southernocean** is implemented, is **Sybase**. **Sybase** is designed as the leading relational database management system (RDBMS). Based on its structure it offers a lot of advantages against other relational database systems. for users and system manager. The components are the *SQL Toolset* and the *SQL Server*. The *SQL Toolset* provides some profitable tools for the development and the run of certain online applications like programmable masks in the data workbench.

The *SQL Server* is the heart of the server. It bases on the client/server architecture. The client software, which is responsible for several functions and applications for the user, and the programmable server software, which is responsible for the database management and transactions, are implemented seperated from eachother in the system. In contrast to other systems it is possible to program certain rules for managing the database and several transactions for cosistency of the database by *stored procedures* and *trigger* only one time. These rules are then stored in the database forever and for each application available. A central control of data by the database administration is possible then while the user makes his applications.

Another advantage is the multiuser function of the server. Many users can have access on many databases at the same time.
The *SQL Server* ensure the consistency and integrity of data within the columns by several functions:

1. **Datatypes** Datatypes determine the kind of information that is stored in the tables. Five types are used for the **SouthernOceanDB** from fourteen, provided by the system:
   (a) int = numeric values; $-2^{3}1$ - $2^{3}1$-1
   (b) varchar(n) = character strings of variable length (-255 characters)
   (c) float = eight byte numbers with floating point
   (d) datetime = fields only for date and time
   (e) text = For this field it is possible to insert whole text (more than 255 characters) about the texteditor.
2. **userdefined datatypes** The administrator can define his own datatypes additional to the system provided datatypes
3. **Null and Not Null** The field is specified to get a value or not. If the field is not null it must get a value.
4. **Defaults**: The developer of the database is allowed to put a value into the field, if nothing is put in by the user.
5. **Rules**: Rules give the possible range of values for the specified field

3.3 Updating

The modification of data is a very fundamental process for managing a database and to keep the information actuell. Modification means to change date, to delete wrong or duplicate data or to insert new data. These operations are very closed to the validation process. In the database the tables InsertData, InsertStation, DeleteData, DeleteStation, UpdateData and UpdateStation are created for these actions. These tables contain the identifiers of the records, that has been changed, the identifier of the user and the date, when the process was run.
These operations are implemented in the database by stored procedures, called trigger, which automatically start, when such action is called by the database administrator. The inormation about the record, the user and the date will be automatically put into the updatetables. Also the records in the common tables get an Update_Flag, that well documented records are guaranteed. A more precise description of the programs with the scripts will follow in the chapter "Trigger".

Beside the regular **backup** is decisive for the database. This process is absolute nessecary for keeping integrity and actuallity in the database. Because of frequently change within the database the changes must be stored on tapes. The backups are made periodically once a week. and stored for 3 weeks only! ✓ eli 4.12.91

3.4 Analysis and Statistics

One of the aims of the *SouthernOceanDB* is to present several routines for calculations to scientists. These routines are methods like

- tests for qualities
- methods of objective analysis for the representation of data in gatherpoints
- methods for interpolation in the chronolgical area
- statistical calculations
- inverse methods of the oceanographic circulations

For the original tables and the common tables tables for statistics have already been created. These tables contain the number of observation on one level of depth, the sum of values and the sum of squares for each parameter, temperature, salinity and oxygen, to calculate the mean and the standard variation.
These methods are characterized by their algorythms and their implementation. These methods will be available for the scientists.

3.5 The User's Access

The measured values which are load into the database **SouthernOcean** are physical data like temperature, salinity and oxygen. Therefore the most interest is found by scientists from the physics. It is a physical group in the AWI, which has access to the **SouthernOceanDB**. Other users, also users from other scientific areas, have to apply the database administrators for.
These users only get an access for reading data, not for writing or changing. They get their user password to log in. Then they are able to ask the database interractive for information and to use their applications or write programs for calculations, graphics etc. Up to now the group of physics1 has access on all tables, original and standard tables. Only the

By these specifications wrong inputs of data are prevent. In the documentation of tables information of datatypes and null/notnull specifications are given. Defaults and Rules are not used. More komplex rules for columns and tables, which have to be noticed by users, are provided by triggers, a special kind of stored procedure.
Trigger take care of more komplex rules and referential integrity of data. In contrast to a normal stored procedure, they start automatically, if a transaction is started. In the **SouthernOceanDB** for example, one of the rule for the update trigger is to be aborted, if someone tries to change the Station_Id#. But if a record has changed, the information for changing are automatically wrote into the special designed triggertables. (Look also at page...)
The server provides several security functions to data. The database administrator is able to set permissions and restrictions to users or usergroups on tables, views, columns stored procedures and commands. He has the central control of data by giving passwords to users. In the **SouthernOceanDB** the qualification of one user is decisive for the access

4.2.2 SQL

The language, which is used in Sybase, is **SQL** (Structered Query Language) This language provides a lot of possibilities to retrieve data from the database. The user has the possibility to retrieve special information of one or more columns for one or more tables by using the select-statement. In the select-statement tables and columns are adressed as the user need to. Several tables can be linked. He also can set several conditions for his output by using bool's operators or some provided functions like avg(average) sum, count, and others.
An example would be:
Select column1, column2, column3
from table1, table2
em where condition
The user should have access only on a *view.*
A **view** is a linkage between several tables, where columns are related to eachother. A view is a new table and is written like other tables with the create-statement. It is stored like a *stored procedure* in the data dictionary of Sybase.(Look at page...)
A **stored procedure** is a group of SQL-statements, which is stored as compiled program in the data dictionary. It is run whenever it is called.
The stored procedure is written in **Transact-SQL**, which is the extension of the normal standard ansi SQL. It provides beside the normal functions of the language *if...else* and *while*-statements.

5 The Structure of the Database

5.1 The Relational Database System

In a relational database all information is kept in tables. A relation is another expression for a table. A relational database system is a system consisting on several tables, in which the different data are stored. One table consists on some or many columns, in which the values are to be read in and which are relaqted to eachother.

Tables and columns must have a name, and they must be defined exactly before creating the database.

Data, which are kept in one table, belong to the same technical area. For example the table "Ship" consists on all important information concerning to the object "Ship" like "Ship_Name", "Country" and "Ship_Code". These are the attributes of the table "Ship". The attributes build the columns, in which data are to be read in. The object "Ship" build an entity (of the real world), the attributes in a table build the entity set of an object.

Before creating a database it is necessary for the creator to decide wich one of the information or data should be kept in one table and which data should be read into other tables for best retrieval.

For the division of data into tables several principles must be kept by the creator. The most important principle is to keep information uniquely, to prevent storing the same information in several tables.

Restrictions of values to be read into tables are determined by the definition of **datatypes** for the single columns (look at chapter "Sybase").

The advantage of a relational database system consists on the possibility to set connections among several tables by select-statements in SQL or by creating views, For doing these connections, the connected tables need a common field. By this field the relation between a record in one table to the record in another table, which belongs to it, can be found. The common field is the key. For identification of records every table has as additional column a key, which mostly is a current number (id). Three kinds of key are to distinguisch:

1. **Primary Key:**This key is the primary identifier of records in one table. Every table has a column with a primary key for identification of records. The values of the attributes depend functionally on the primary key.

2. **Foreighn Key:**If there is a connection between two tables, then is the primary key of table1 the common key of the two tables, and the primary key of table1 is the foreighn key in table2. Records in table2 depend not functionally of the foreighn key.

3. **Composite Key:** The composite key consists on two or more fields. These fields in combination identify one record.

All keys in the **SouthernOcean DB** are listed in the appendix of this documentation.

5.2 The Realization in the SouthernOceanDB

The tables with original data and the tables with standard data, where the original data are combined, are of the the same construct. Both contain measured data in the standard_data tables and station data in the station table.

All tables are specified by their names. Tables with original data have the specification of their origin in their title. For example the data tables of Aari are called Aari_Station and Aari_Standard_Data, that a viewer can see, from which institute data come from. There are the standard tables *Ship*, *Cruise*, *Station*, *Standard_Data*, *Statistic* and *Marsden_Square*. Beside the standard data the cruisetables *Gordon_Ship* and *Gordon_Cruise* exist only for GordonData. For all cruisedata the tables *Ship* and *Cruise* are provided. For original data there exist the tables *Standard_Data*, *Station* and *Statistic*. The table *Marsden_Square* is provided for all station-tables, original and standard, to transform station-data into calculated squares on the earth called marsden_squares.

Because of the congruency only the standard data tables and their connections will be described. The tables with measured data, *Standard_Data*, differ only in the parameters, which were measured, that caused that some standard_data tables have more columns than others.

The heart of the database is built by the tables *Ship*, *Cruise*, *Station*, and *Standard_Data*. Among these tables connections are set within the database like in reality. The connections between thes objects are like this:

A number of ships do some expeditions during one and more years, across the ocean in order to measure data from the sea. These expeditions are called cruises.
On one cruise several stations are made. On one station a big number of standard_data is measured. The hierarchical structure between Ship, Cruise, Station and Standard_Data is as follows:

- One Ship makes many cruises
- One Cruise contains many stations
- One Station contains many standard_data-records
- Each record is identified by a number in the tables:
  - Table *Ship*: Ship_Id#
  - Table *Cruise*: Cruise_Number
  - Table *Station*: Station_Id
  - Table *Standard_Data*: Standard_Data_Id#

Every standard_data record is characterized by the position and the time, when it was made and in addition by the level of depth. Therefore the Station_Id#, which identifies the values for position and time in table station, must be one of the columns of the table *Standard_Data* to identify the right Station for one Standard_Data-record.

Station-data (position and time) depend on the ship and its cruise. The table *Cruise* set the connection between Ship and Station.

- The table **Ship** contains all ships with ship_Id# and the relevant information belonging to them.

  The Ship_Id# is the primary key.

- The table **Cruise** sets a relation between Ship, identified by the ship_id# and Station Cruise_Number# is the primary key, Ship_Id# is the foreighn key.

- The table **Station** has the column Cruise_Number as a foreighn key to set a relation about table Cruise to the ship: A ship can be identified, that has made a special station.

  The Station_Id# is the primary key for one station-record, the Cruise_Number# is the foreighn key

- The table **Standard_Data** has the Standard_Data_Id# as a primary key, to identify one record. Here the Station_Id# is the foreighn key for identification the station-record, that belongs to one standard_data-record

In addition for calculations there are the tables *Statistic* and *Marsden_Square*:

- The table **Statistic** provides some finished calculated values for statistical applications like the sum of values or square values and the number of observations for calculating the mean and the standard deviation. Only the most frequent parameters like temperature, salinity and oxygen have been calculated. The values that have been put into the calculations depend on the level of depth, where the values are taken, and on the marsden_square. Both columns together build a composite key, which identifies the statistical results.

  The column Depth# is a field from the standard_data-table, that shows the level of depth for one measured data-record.

  The column Marsden_Square# is a field from the station-table. This field identifies the position, Longitude and Latitude, for one record.

- The table **Marsden_Square** provides the longitude- and latitude-values for calculating the marsden_square. The Marsden_Square_Id# is the primary key.

6 Contents of the Database

6.1 The StandardData

6.1.1 Tables

Cruise			
Column	Type	null	Indices
Cruise_Number_Id#	int	no	a
Ship_Id#	int	no	b

Ship			
column	Type	null	Indices
Ship_Id#	int	no	a
Ship_Name	varchar(80)		
Country	varchar(80)		
Ship_Code	varchar(8)		

Station			
Column	Type	null	Indices
Station_Id#	int	no	a
Cruise_Number	int	no	
Station_Number	int	no	
Date_Time	datetime	yes	b
Longitude	float	no	b
Latitude	float	no	b
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square	int	no	
Validation_Flag	int	no	
Update_Flag	int	no	

Standard_Data			
Column	Type	null	Indices
Standard_Data_Id#	int	no	a
Station_Id#	int	no	b
Depth	int	no	b
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	
Phosphate	float	yes	
Silicate	float	yes	
Nitrat	float	yes	
Validation_Flag	bit	no	
Update_Flag	bit	no	

Statistic

Column	Type	Null	Indices
Depth#	int	no	
Marsden_Square#	int	no	
Temperature_SXX	float	yes	
Temperature_SX	float	yes	
Temperature_Number_Observ	float	yes	
Salinity_SXX	float	yes	
Salinity_SX	float	yes	
Salinity_Number_Observ	float	yes	
Oxygen_SXX	float	yes	
Oxygen_SX	float	yes	
Oxygen_Number_Observ	float	yes	
Validation_Method_Id#	int	yes	

Marsden_Square

Column	Type	null	Indices
Marsden_Square_Id#	int	no	
Latitude_Min	float	yes	
Latitude_Max	float	yes	
Longitude_Min	float	yes	
Longitude_Max	float	yes	

The Management of StandardTables

6.1.2 Trigger

Trigger are a special kind of stored procedure, which run automatically, if a value in a record has changed. The adressed records will be write then into temporary tables, that will be deleted, when the database administrator log out of the System. But in this database special table for changed records are created for the documentation of all working. When a trigger is started all information of updating like the identifier of the changed record, the date of update and the user_id# will be written from the temporary tables into the triggertables. All triggers are written by Manfred Reinke, may 10th,1990. Here are the Triggers, which are implemented in the database:

1. **InsertstationTgr**:Insert information into the table InsertStation, if a new Station-record has been inserted
2. **InsertStandard_DataTgr**: The same as above but for standard_Data.Insert information into the table Delete_Data, if a Standard_Data-record has
3. **DeleteStationTgr**: Insert information into the table DeleteStation if a station-record has been deleted. If a station-record is deleted, the standard_data-records concerning to this station will be deleted too.
4. **DeleteStandard_DataTgr**: The same as above but for Standard_Data-records.
5. **UpdateStationTgr**: Insert information into the table UpdateStation and take the record-id# from temporary tables inserted and deleted. Several securities are implemented into the update triggers.

Because so many cruises have been changed, these triggers are written by Lutz-Peter Kurdelski for security:

1. **UpdateStandard_Datatgr**:The same as above but for standard_data-records.
2. **Insert_Cruise**: Print: "Insert the Ship first into Ship"
3. **Delete_Cruise**: Insert into Cruise_Deleted
4. **Update_Cruise**: Insert into Cruise_Updated
5. **Delete_Ship**: Print: "Delete the cruises first from Cruise"
6. **Update_Ship**: Insert into Ship_Updated

Signature: Script-15

The Tables)

InsertData		
Column	Type	Null
Standard_Data_Id#	int	no
InsertDate	datetime	no
User_Id#	int	no

InsertStation		
Column	Type	Null
Station_Id#	int	no
InsertDate	datetime	no
User_Id#	int	no

DeleteData		
Column	Type	Null
Standard_Data_Id#	int	no
DeleteDate	datetime	no
User_Id#	int	no

DeleteStation		
Column	Type	Null
Station_Id#	int	no
DeleteDate	datetime	no
User_Id#	int	no

UpdateData		
Column	Type	Null
Standard_Data_Id#	int	no
Old_Station_Id#	int	no
New_Station_Id#	int	no
Validation_Flag	int	no
UpdateDate	datetime	no
User_Id#	int	no

UpdateStation		
Column	Type	Null
Station_Id#	int	no
Validation_Flag	int	no
UpdateDate	datetime	no
User_Id#	int	no

Validation		
Column	Type	Null
Validation_Id#	int	no
Method_Name	varchar(254)	no
Short_Remarks	varchar(80)	
Program_Name	varchar(80)	
Date_of_Program	datetime	no
Version_of_Program	int	

Cruise_Deleted

Column	Type	Null
Cruise_Number#	int	no
Ship_Id#	int	no
User_Id#	int	no
Date	datetime	no

Cruise_Updated

Column	Type	Null
Cruise_Number#	int	no
Ship_Id#	int	no
Old_Cruise_Number	int	no
Old_Ship_Id#	int	no
User_Id#	int	no
Date	datetime	no

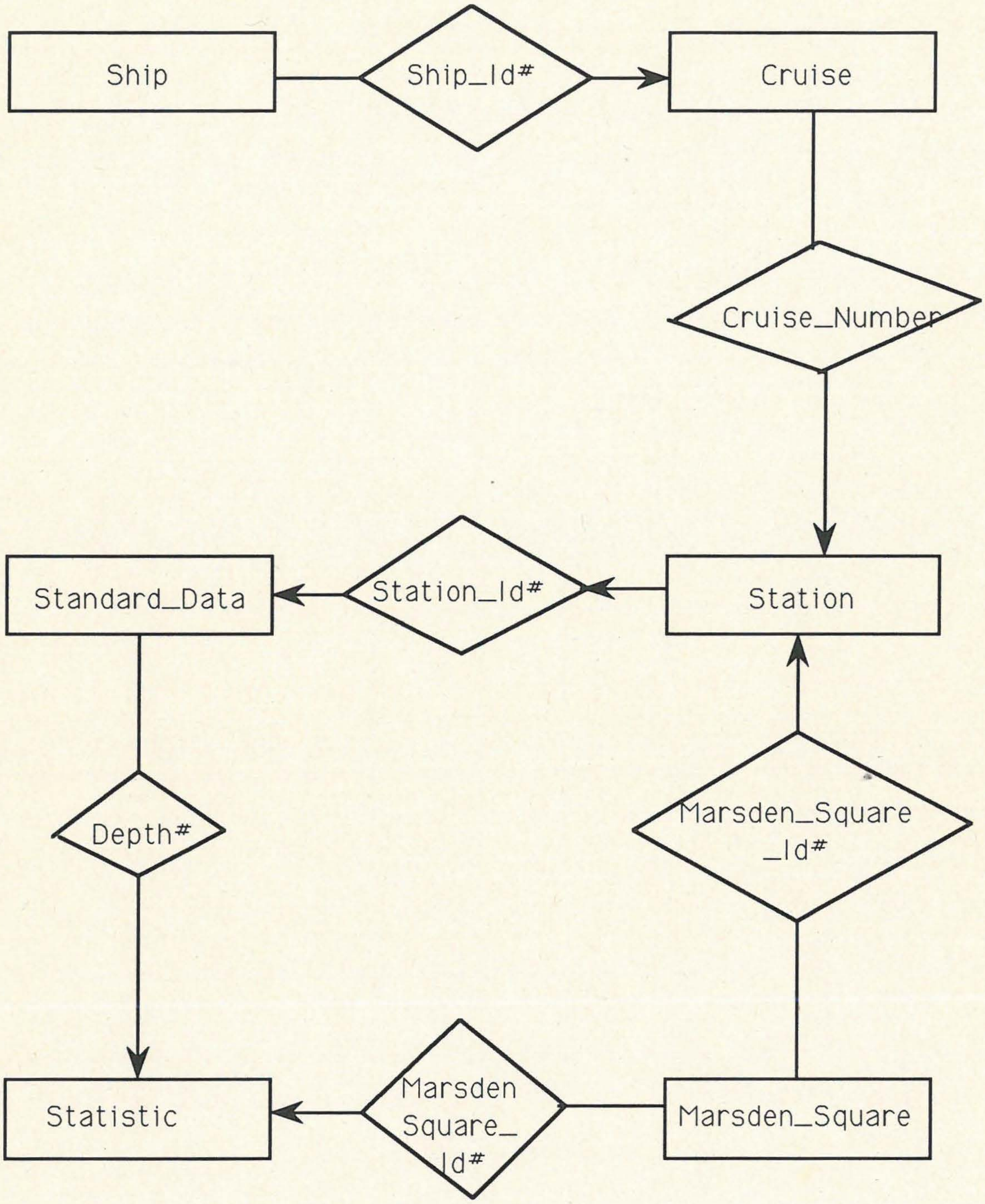
Ship_Deleted

Column	Type	Null
Ship_Id#	int	no
Ship_Name	varchar(80)	no
Country	varchar(80)	no
Ship_Code	varchar(8)	yes
User_Id#	int	no
Date	datetime	no

Ship_Updated

Column	Type	Null
Ship_Id#	int	no
Ship_Name	varchar(80)	no
Country	varchar(80)	no
Ship_Code	varchar(8)	yes
Old_Ship_Name	varchar(80)	no
Old_Country	varchar(80)	no
Old_Ship_Code	varchar(8)	yes
User_Id#	int	no
Date	datetime	no

6.1.3 Diagram of Relations


Ship
Ship_Id#
Cruise
Cruise_Number
Station
Station_Id#
Standard_Data
Depth#
Statistic
Marsden_Square_Id#
Marsden Square_Id#
Marsden_Square

6.1.4 Views

- Aari_Cruise
- Aari_Cruise_BCK
- Aari_Statistic_View
- Gordon_Statistic_View

Aari_Cruise			
Column	Type	Null	Indices
Cruise_Number	intn(4)	no	a
Ship	varchar(50)	no	
Country	varchar(50)	no	
Code	varchar	yes	

Gordon_Statistic_View			
Column	Type	Null	Indices
Depth#	int	no	
Marsden_Square#	int	no	
Temperature_Mean	float	yes	
Temperature_Var	float	yes	
Temperature_Number_Observ	float	yes	
Salinity_Mean	float	yes	
Salinity_Var	float	yes	
Salinity_Number_Observ	float	yes	
Oxygen_Mean	float	yes	
Oxygen_Var	float	yes	
Oxygen_Number_Observ	float	yes	
Validation_Method_Id#	int	yes	

Aari_Statistic_View			
Column	Type	Null	Indices
Depth#	int	no	
Marsden_Square#	int	no	
Temperature_Mean	float	yes	
Temperature_Var	float	yes	
Temperature_Number_Observ	float	yes	
Salinity_Mean	float	yes	
Salinity_Var	float	yes	
Salinity_Number_Observ	float	yes	
Oxygen_Mean	float	yes	
Oxygen_Var	float	yes	
Oxygen_Number_Observ	float	yes	
Validation_Method_Id#	int	yes	

6.2 The Original Data

6.2.1 The GordonData

a. The Origin

- **From:** **Atlas of Gordon & Molinelli (1976)**
- **Address:** **Geological Observatory of Columbia University Lamont-Doherty**
  Palisades
  N.Y. 10964-01090 **Country: USA**
- **Contact Person:** **Bruce Huber Tel.: 914359-2900**

- **Name of the tape:** `GORDON`
- **Name of the file:** `OTH$DATEN:[OZEDB.GORDON]GORDON.DAT`
- **Name of the loading program:** `OTH$DATEN:[OZEDB]GORDON.FOR;43/Signature:For-2`
- **Date of loading: 17.7.1989**

1. **Station_Data**
   - **Time: 17.4.1906 - 1.11.1978**
   - **Number of stations: 6313**
   - **Range of Station_Id#: 100001-106313**
2. **Standard_Data**
   - **Number of standard_data: 131691**
   - **Range of Standard_Data_Id#: 10000001-1013169**1 ? Vu 15.10.91
   - **Physical units of measured data:**

Data	Unit
Depth	m
Temperature	°C
Salinity	NSU (IPSS-78)
Oxygen	ml/l
Silcate	mg/l
Phosphate	mg/l
Nitrate	mg/l

b. The Tables

Gordon_Ship			
Column	Type	Null	Indices
Ship_Id#	int	no	
Ship_Code	varchar(10)	no	
Ship_Name	varchar(80)	yes	
Country	varchar(80)	yes	

Gordon_Cruise			
Column	Type	null	Ind
Gordon_Cruise_Id#	int	no	
Ship_Code	varchar(10)	no	
Gordon_Cruise_Name	varchar(10)	yes	
Comment	varchar(255)	yes	

Gordon_Station			
Column	Type	null	Indices
Gorden_Station_Id#	int	no	a
Station_Name	int	no	
Date_Time	datetime	yes	
Longitude	float	no	b
Latitude	float	no	b
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	no	
Validation_Flag	bit	no	
Update_Flag	bit	no	
Gorden_Cruise_Id#	int	yes	
Ship_Code	varchar(10)	yes	

Gordon_Standard_Data			
Column	Type	null	Indices
Gordon_Standard_Data_Id#	int	no	
Gordon_Station_Id#	int	no	a
Depth	int	no	a
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	
Phosphate	float	yes	
Silicate	float	yes	
Nitrate	float	yes	
Validation_Flag	bit	no	
Update_Flag	bit	no	

Gordon_Interpolated_Data			
Column	Type	null	Indices
Gordon_Interpolated_Data_Id#	int	no	a
Gordon_Station_Id#	int	no	b, c
Depth	int	no	b
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	
Validation_Flag	int	no	
Update_Flag	int	no	

Gordon_Statistic			
Column	Type	Null	Indices
Depth#	int	no	
Marsden_Square#	int	no	
Temperature_SXX	float	yes	
Temperature_SX	float	yes	
Temperature_Number_Observ	float	yes	
Salinity_SXX	float	yes	
Salinity_SX	float	yes	
Salinity_Number_Observ	float	yes	
Oxygen_SXX	float	yes	
Oxygen_SX	float	yes	
Oxygen_Number_Observ	float	yes	
Validation_Method_	int	yes	

Gordon_Station_Backfill			
column	Type	Null	Indices
Gordon_Station_Id#	int	no	
Ship_Code	varchar	no	
Longitude	float	no	
Latitude	float	no	
Date_Time	datetime	yes	
Day_Of_Year	int	no	

c. The Preparation of the GordonData

The GordonData, that are adopted from the oceanographical atlas from Gordon & Molinelli are designed as to be validated and in this case to be a standard for other data sets. All data sets must be compared with GordonData in order to correct them.
Special Readprograms were written for the GordonData to read the format of the data.
The GordonData were interpolated to the standard levels of depth. The interpolated data were read into a special file.

Directory: OTH$DATEN:[SOCEAN.FOR]			
Date	Description	Name of the program	Signature
June 90	Interpolation of GordonData to the standard levels of depth	`INTERGOR.FOR`	Inter-8
September 90	Read interpolated Data from INTERGOR.DAT	`READ2.FOR`	

Two files for the headers of cruise and ship were available: *Shipgord2.dat* with NODC_Code, Ship names and Cruise_Numbers *Headers.fil* with NODC_Code and sequential number of station within Gordon Data set. For the classification of the ships for the gordon stations a new file was created:
Shipgord3.dat: Station_Id#, NODC_Code, Ship name and Cruise_Number by program GORDCR3.For
According to the file Shipgord3.dat the station-table was updated and got Cruise_Numbers for 6313 stations by program GORDCR4.FOR Later an error has been found: A line (number 442) was missing in the original file *Headers.fil* and the new created file *SHIPGORD3.DAT* was also wrong. Cause: There was an offset after line 441.
This line was inserted and the file Headers.fil was renamed into Headersnew.Dat
The file *SHIPGORDNEW.DAT* was created by program GORDCR31. According to the new file *SHIPGORDNEW.DAT* the station-table was updated by program GORDCR41.FOR
Stations with Id#s got new Cruise_Numbers (5.02.1991)

d. The Management

Processing of GordonData			
Date	**Short Description**	**Name of the Program**	**Signature**
June 89	**Creation of Gordontables:** **Station, Standard_Data, Statistic**	`GORDON.SCRIPT;17`	**Script-2**
17.7.89	**Loading of GordonData into Gordon_Station and Gordon_Standard_Data**	`GORDON.FOR;43`	**For-2**
13.12.89	**Update Aari_ and Gordon_Station, Standard_Data: Set missing values = 0**	`UPDATE_DEFAULT_ NULL.SCRIPT`	**Script-63**
28.6.90	**Procedure to insert Gordon and AariData into StandardTables**	`MAKESTATION.SCRIPT`	**Script-65**
28.6.90	**Copy of GordonData into tables Station and Standard_Data**	`GORDON_COPY .SCRIPT;2`	**Script-4**
10.9.90	**Creation of the table Gordon_Interpolated_Data**	`GORDON_ INTERPOLATED_ DATA.SCRIPT`	**Script-5**
10.9.90	**Loading of interpolated data from file INTERGOR.DAT into the table Gordon_Interpolated_Data**	`OZEDB_SYBASE2.FOR`	**For-4**
12.9.90	**Creation of indices for Gordon_Interploated_Data**	`GORDON_INTER_ DATA.SCRIPT`	**Script-69**
November 90	**Creation of Gordon_Statistic, Gordon_Statistic_View**	`GORDON_STAT.SCRIPT`	**Script-8**
20.11.90	**Creation of tables Gordon_Cruise and Gordon_Ship**	`GORDON_ CRUISE.SCRIPT;3`	**Script-6**
22.11.90	**Creation of Gordon_Station_Backfill**	`GSBACKFILL.SCRIPT`	**Script-14**
28.11.90	**Update Gordon_Interpolated_Data** **Sete missing values = 0**	`UPDATE_NULL_GORDON\_ INTER_DATA.SCRIPT`	**Script-67**
28.11.90	**Correction of Gordon_Statistic, advising the user H.Ross**		
12.2.91	**Procedure, created to update GS_Backfill: set Date_Time = 0 where Date_Time = Jan, 1 1900 12:00AM**	`UPDATE_BACKFILL_ PROC.SCRIPT`	**Script-31**
12.2.91	**Rename Gordon_Station_Backfill in Gordon_Station_Backfill_Bck** **Backup of Backfill**	`GSBackfill_Upd070291. SCRIPT`	**Script-31**
12.2.91	**Loading of GordonData into Gordon_Ship,** **Gordon_Cruise,** **Gordon_Station_Backfill** **from Headers.fil, Shipgord3.dat**	`GORDON_CRUISE.C;152`	**C-2**

Directory: OTH$DATEN:[SOCEAN.FOR]

Date	Short Description	Name of the program	Signature
17.10.1990	Reading of GordonCruises	`READGOCR.FOR`	Read-11
	From the two files SHIPGORD2.DAT and HEADERS.FIL the file SHIPGORD3.DAT was created, which contains Station_Id#, NOCD_Code, Ship_Name, and Cruise_Number	`GORDCR3.FOR`	Read-18
	Updating of Gordon_Station by inserting Cruise numbers	`GORDCR4.FOR`	Read-16
5.2.91	Creation of file Shipgordnew.DAT	`GORDCR31.FOR`	Read-15
	Updating of table Gordon_Station: Stations between 1000001 and 106313 got new values of Cruise_Numbers	`GORDCR41.FOR`	Read-17

6.2.2 AariData

a. The Origin

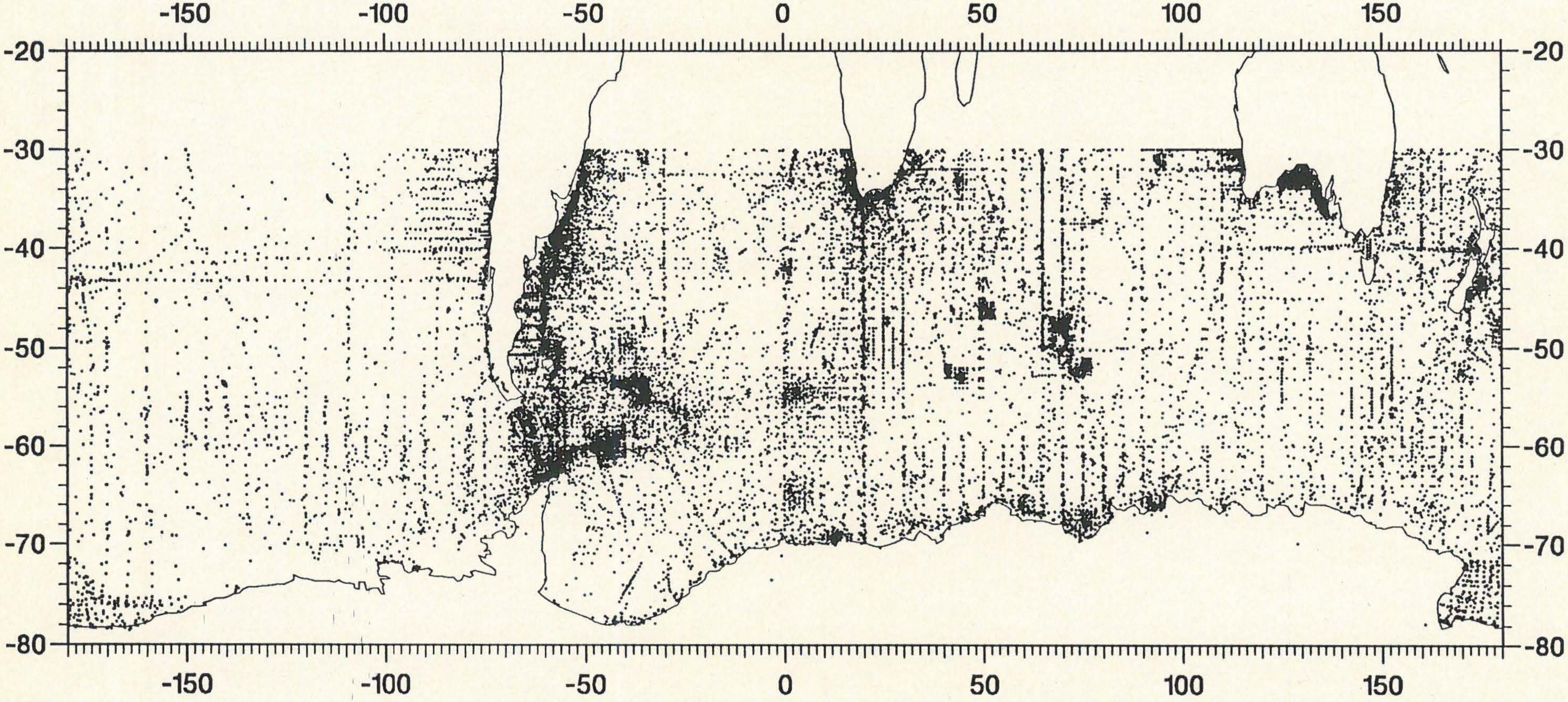
- **Name of the Institute: Arctic & Antarctic Research Institute**
- **Address: Arctic & Antarctic Research Institute**
  Beringa 38
  199226 Leningrad Country: Ussr
- **Contact Person: Dr. Alexander Klepikov, Tel.: 352-02-26/352-33-39**

- **Name of the file:**`OTH$Daten:[OZEDB.DATA]DISK1.DAT` `OTH$DATEN:[OZEDB.DATA]DISK 2.`
- **Name of the loading program:**`OTH$DATEN:[OZEDB.DATALOAD]OZEDB_SYBASE.FOR/Sign.:For-1`
- **Date of loading data into the database: 10.7.1989**

1. **Station_Data**
   - **Time: 1.1.1900 -23.4.1989**
   - **Number of stations: 36059 - contains 97 stations of Kuropatkin**
   - **Range of Station_id#: 1-36059**

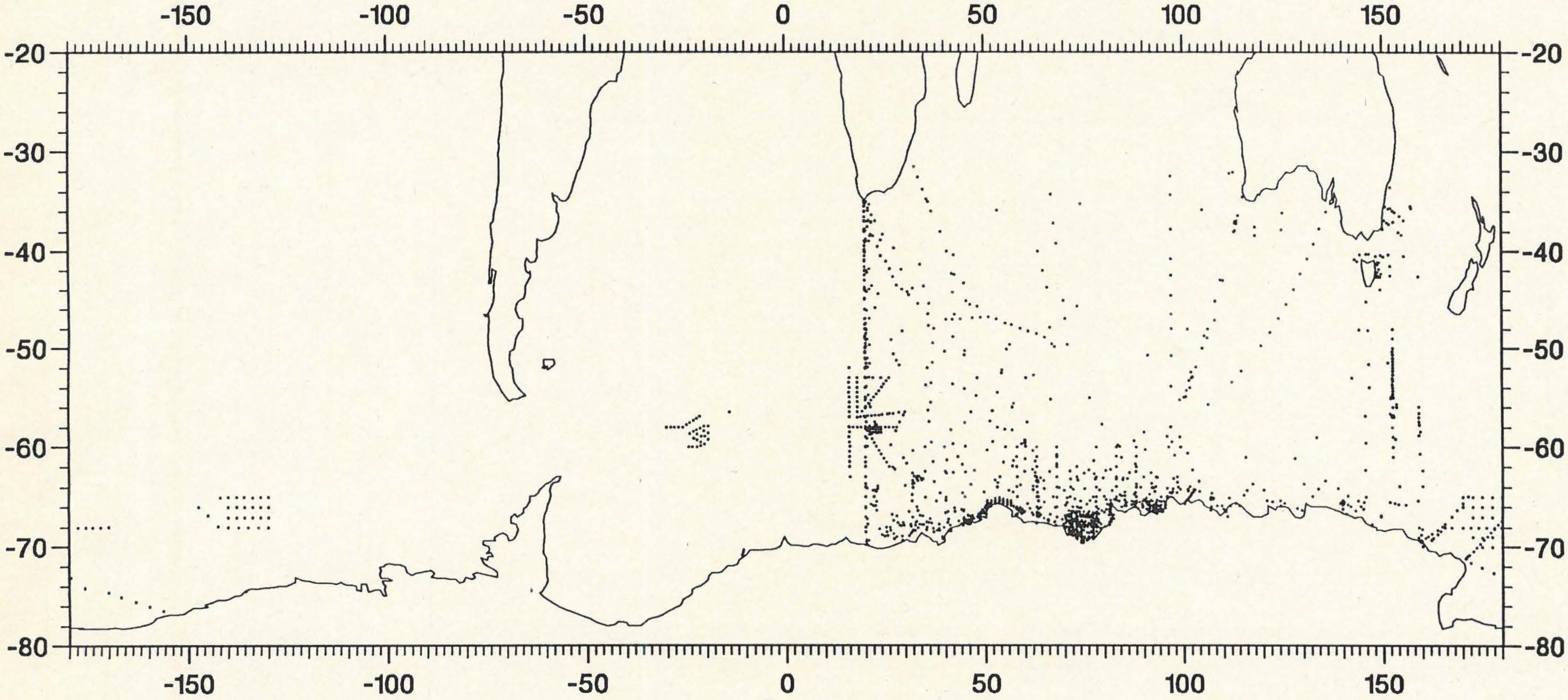
2. **Standard_Data**
   - **Number of standard_data: 1470905**
   - **Range of Standard_Data_Id#: 1-1470905**
   - **Physical units of measured data:**

Data	Unit
Depth	m
Temperature	° C
Salinity	NSU (PSS-78)
Oxygen	ml/l

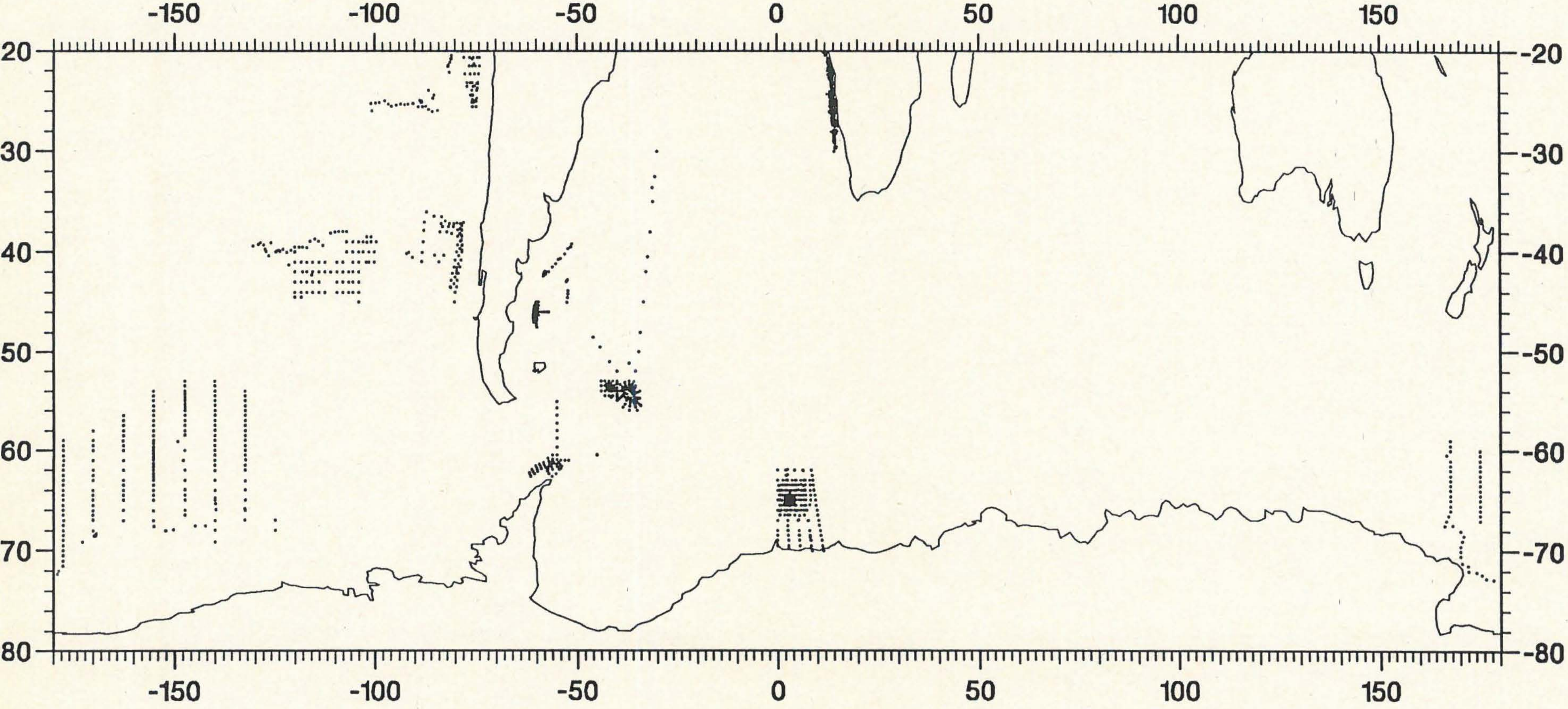


AARI1 Data Set

34112 stations



AARI_2 Data Set 1850 stations



AARI_3 Data Set

2177 stations

b. The Tables

Aari_Station			
Column	Type	Null	Indices
Aari_Station_Id#	int	no	a
Cruise_Number	int	no	
Station_Number	int	no	
Date_Time	datetime	yes	
Longitude	float	no	b
Latitude	float	no	b
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	no	c
Validation_Flag	bit	no	
Update_Flag	bit	no	

Aari_Standard_Data			
Column	Type	null	Indices
Aari_Standard_Data_Id#	int	no	a
Aari_Station_Id#	int	no	b
Depth	int	no	b
Temperature	float	yes	c
Salinity	float	yes	
Oxygen	float	yes	
ValidationFlag	bit	no	
UpdateFlag	bit	no	

Aari_Statistic			
Column	Type	Null	Indices
Depth#	int	no	
Marsden_Square#	int	no	
Temperature_SXX	float	yes	
Temperature_SX	float	yes	
Temperature_Number_Observ	float	yes	
Salinity_SXX	float	yes	
Salinity_SX	float	yes	
Salinity_Number_Observ	float	yes	
Oxygen_SXX	float	yes	
Oxygen_SX	float	yes	
Oxygen_Number_Observ	float	yes	
Validation_Method_Id#	int	yes	

Aari_Cruise_Bck			
Column	Type	Null	Indices
Cruise_Number	int(4)	yes	a
Ship	varchar(50)	yes	
Country	varchar(50)	yes	

c. The Preparation of the AariData

The data set, which was provided to the AWI in January 1988 by the Arctic and Antarctic Research Institute in Leningrad, has been collected from different research institutes in the USSR:

- National Centre of Oceanographic Data, Obninsk
- Scientific Research Oceanographic Centre of the Defense Ministry, Leningrad
- Institute of Oceanology of the Academie of Sciences of the USSR, Moscow
- Scientific Research and Fishery Institutions of the Fishery Ministry of the USSR in Kaliningrad, Kerch, Murmansk and Moscow.

The original data from Aari, provided to the Awi were already interpolated on these levels of depth as follows:
0, 10, 20, 30, 50, 75, 100, 125, 150, 200, 250,
300, 350, 400, 500, 600, 700, 750, 800, 900,
1000, 1100, 1200, 1300, 1400, 1500, 1750, 2000,
2250, 2500, 2750, 3000, 3250, 3500, 3750, 4000,
4500, 5000, 5500, 6000, 7000
To make data visible on screen special read programs were written by Victor Guretzky.

Directory: OTH$DATEN:[SOCEAN]			
Date	Function of the program	Name	Signature
	Reading data before interpolation	`READ.FOR`	
	Interpolation to 42 standard levels	`PROB5.FOR`	
	Reading interpolated data Dir.: OTH$DATEN:[OZEDB.DATALOAD]	`READING.FOR`	Read-12

The Validation of AariData

1. Removal within the Aari subset and between Aari and Gordon
    - Deletion of duplicates within the AariDataset on standard_data and station, only on station, only on standard_data in june 90 by V.Guretzki
    - Duplicates between AariData and GordonData: Deletion only of AariData
2. Range Checking
3. Static Stability Check
4. Statistical Check
5. Further analysis

1. Tests to find and delete duplicates

Most of the data have been obtained by the soviet ships, but a large number of oceanographic stations within this data set were obtained from other countries.
A lot of duplicates were found within the Aari data set and between Aari and Gordon data. For searching duplicates within Aari data several tests have been used, which compare headers and/or data of each station with other stations. Pairs of duplicates were then examined and the best station out of the pair under the consideration was chosen. These are the tests for finding duplicate pairs within the Aari subset.

The Deletion of Duplicates within the Aari subset			
Directory: OTH$DATEN:[SOCEAN.FOR]			
Date	Description	Name of Program	Signature
	Search for identical duplicates	`DUPLIC91.FOR`	Dup-1
7,11,18, 20 june 1990	Coordinates differ not more than 0.1 degree dT, dS ≤ 0.004 for $> 50\%$ of levels	`DUPLIC-92.FOR`	Dup-2
	dT, dS ≤ 0.004	`DUPLIC93.FOR`	Dup-3
	Coordinates differ not more than 0.1 degree	`DUPLIC94.FOR`	Dup-4
	dT, dS ≤ 0.004 for $> 50\%$ of levels	`DUPLIC96.FOR`	Dup-5
	Pairs with identical duplicate numbers	`DUPLIC97.FOR`	Dup-6

After the selection of duplicates within the Aari subset AariData were then compared with GordoData in order to select and delete duplicate records again by comparing headers and data. Several filters were used and those stations were extracted as possible duplicates, which satisfied to some conditions. The duplicates were then deleted by the program COMPARDEL.FOR.

Tests to select Aari-Gordon Duplicates			
Directory: OTH$DATEN:[SOCEAN.AGDUP]			
Date	Function	Name of Program	Signature
	Searching for pairs, which have more than 60 % levels which differ not more than 0.005 C for temperature and 0.005 % for salinity	COMPAR32	Com-1
	After test 1: Searching for possible duplicate pairs when five conditions out of seven are fulfilled: Lat1-Lat2 $\leq$ 0.02 Degree Long1-Long2 $\leq$ 0.02 Degree B_Depth1 = B_Depth2 M_O_Depth1 = M_O_Depth2 Year1 = Year2 Month1 = Month2 Day1 = Day2	COMPAR32	Com-1
	Next: Test only on temperature and salinity: Temp1-Temp2 $\leq$ 0.01 C or Sal1-Sal2 $\leq$ 0.01 %	COMPAR33	Com-2
	Possible duplicates have been extracted when only Year,Month and day of the same cruise for Aari and Gordon Subset are equal. Real duplicates were then deleted.	COMPAR22	Com-3
	Deletion of duplicates (com22del.prot)	COMPARDEL1	Com-4

d. The Management

Processing of AariData			
Date	Short Description	Name of the program	Signature
June 89	Creation of the database Creation of Aaritables (Aari_Station, Aari_Standard_Data, Aari_Station_Backup, Aari_Update_Backup, Aari_Garbage_Station, Aari_Garbage_Data)	AARI.SCRIPT;42	Script-1
10.7.89	Loading of AariData into AariTables	OZEDB_SYBASE.FOR;35	For-1
7.12.89	Creation of Aari_Statistic, Marsden_Square, Aari_Statistic_View	AARI_STAT.SCRIPT	Script-3
7.12.89	Creation of Aari-Indices	INDEX.SCRIPT	Script-62
13.12.89	Update Aari and GordonStandardTables Set missing values = 0	UPDATE_DEFAULT_NULL.SCRIPT	Script-63
28.6.90	Procedure to load StandardTables with Aari and GordonData	MAKESTATION.SCRIPT	Script-65
28.6.90	Procedure to copy AariData into StandardTables	AARI_COPY.SCRIPT	Script-61
25.7.90	Loading of further Aari_Data into Aari_Tables	OZEDB_SYBASE1.FOR	For-3
16.11.90	Create proc garbageCollectStandardData for Aari	GC.SCRIPT	Script-11
19.11.90	Selects Station_Id# from Standard_Data which is not in table Station	CHECKGCSD.Script	Script-12
19.11.90	Execute CHECKGCSD.SCRIPT	GARBAGECOLLECT.SCRIPT	Script-13
26/27.11.90	Loading of KuropatkinData into Aari	AARILOAD. *missing*	
28.11.90	Update of Aari_Station	{\em missing}	
27.11 90	Creation of AariIndices	AARIINDEX.SCRIPT	Script-16
11.12.90	Copy data from Aari_Cruise-Table to table Ship	AARI_TO_SHIP.C;1	C-1
12.12.90	Rename Aari_Cruise in Aari_Cruise_Bck, Cruise_View in AARI_CRUISE	UPDATE_SODB.SCRIPT	Script-28
19.12.90	grant select on AARI_CRUISE to PHYSIK1	CRUISE_TABLE.SCRIPT	Script-29
8.3.91	Update in Aari_Cruise	AARI_UPDATE_SHIPS.SCRIPT	Script-39
8.3.91	Update of ships in Aari_Cruise	AARI_UPDATE_SHIPS_CORRECTION.SCRIPT	Script-40

6.2.3 KuropatkinData

a. The Origin

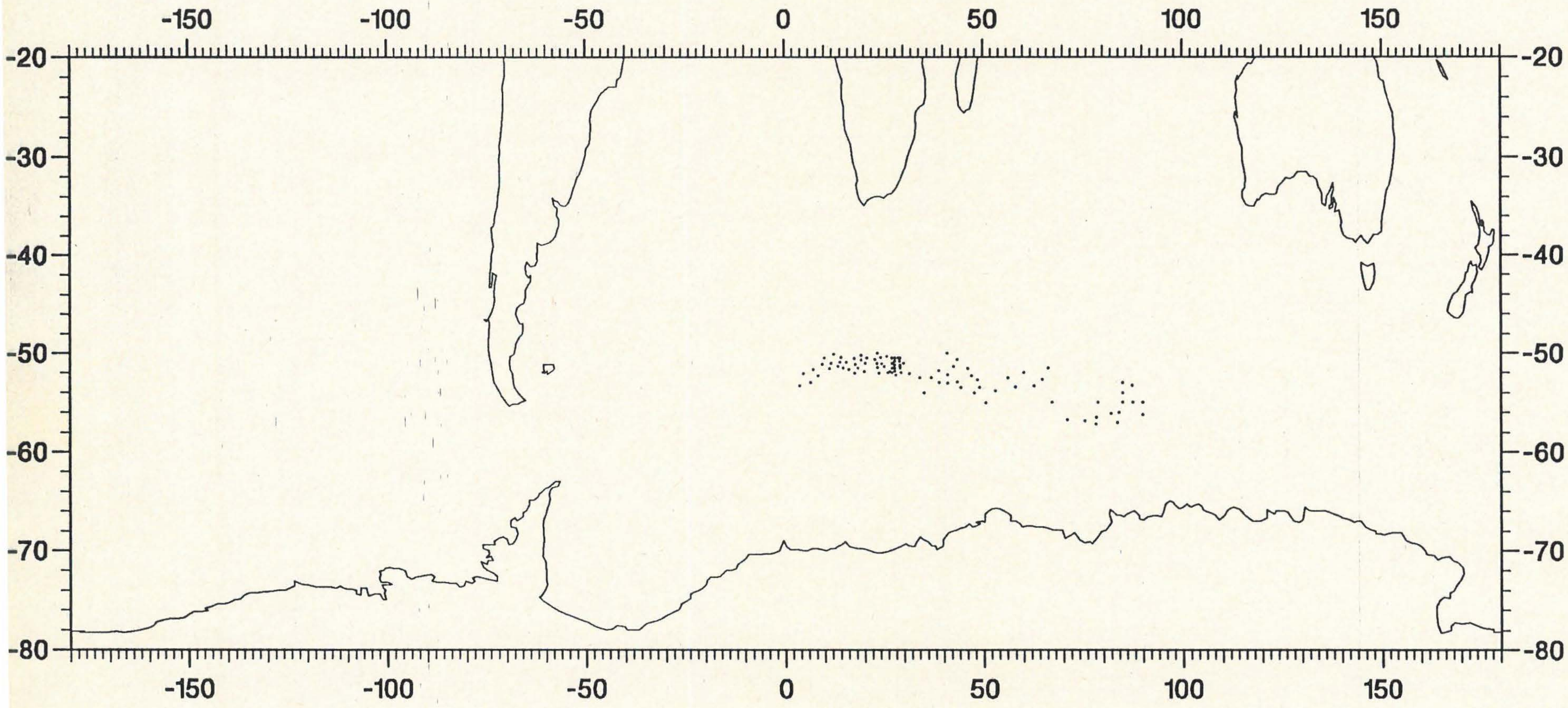
- : Data from the soviet ship N.Kuropatkin
- Address: Arctic & Antarctic Research Institute
  Beringa 38
  99226 Leningrad Country: USSR
- Contact Person: Dr. Alexander Klepikov, Tel.: 352-02-26/352-33-39

- Name of the tape:
- Name of the file: `sys$user:[socean]KUROP.DAT`
- Name of loading program: `OTH$DATEN:[OZEDB]KURPATKIN.FOR;8`/Sign.: For-7
- Date of loading into the database: 27.11.1990

1. Station_Data
   - Time: 23.12.1987 - 1.4.1988
   - Cruise_Number for the ship: -23011
   - Number of stations: 97
   - Range of Station_Id#: 1-97, in AARI: 35962-36059

2. Standard_Data
   - Number of standard_data: 1423
   - Range of Standard_Data_Id#: 1-1423
   - Physical units of measured data:

Data	Unit
Depth	m
Temperature	° C
Salinity	NSU (PSS-78)
Oxygen	ml/l



Stations obtained by "N. Kuropatkin" (97 stations)

b. The Tables

Kuropatkin_Station			
Column	Type	Null	Indices
Kuropatkin_Station_Id#	int	no	
Cruise_Number	int	no	
Station_Number	int	no	
Date_Time	datetime	yes	
Longitude	float	no	
Latitude	float	no	
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	no	

Kuropatkin_Standard_Data			
Column	Type	null	Indices
Kuropatkin_Standard_Data_Id#	int	no	
Kuropatkin_Station_Id#	int	no	
Depth	int	no	
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	

c. The Preparation of KuropatkinData

The data from the soviet ship N. Kuropatkin, which are provided by the Aari, have already been interpolated, when they were provided to the AWI.

Directory: OTH$DATEN:[SOCEAN.FOR]			
Date	Description	Name of the program	Signature
August 90	Reading data Converting the file KUROP1.DAT into the form suitable for the data set	`READ.FOR` `KUROP.FOR`	Read-9

After interpolation these stations were added to the AariData set. The ship got the Cruise_Number -23011. The Id#'s for Station and Standard_Data have been added to the Id#' of the AariData set.

d. The Management

Processing of KuropatkinData			
Date	Short Description	Name of the Program	Signature
27.11.90	Creation of KuropatkinTables	KUROPATKIN.SCRIPT	Script-17
26/27.11.90	Loading of KuropatkinData into AariTables	AARILOAD	
27.11.90	Loading of KuropatkinData into Kuropatkin_ Station and Kuropatkin_Standard_Data for modification of multiple defined stations and station data	KUROPATKIN.FOR;8	For-7
28.11.90	Update of some Kuropatkinvalues on Aaritable	KUROPATKIN_UPD.SCRIPT;1	Script-18

6.2.4 A1111Data

a. The Origin

- **Name of the Institute:** Arctic & Antarctic Research Institute
- **Address:** Arctic & Antarctic Research Institute
  Beringa 38
  199226 Leningrad Country: USSR
- **Contact Person:** Dr. Alexander Klepikow, Tel.:352-02-26/352-33-39

- **Name of the tape:**
- **Name of the file:**`OTH$DATEN:[SOCEAN.AARI]A1111.dat`
- **Name of the loading program:** `OTH$DATEN:[OZEDB]A1111LOAD.FOR;4/Sign.: For 11`
- **Date of loading: 22.3.91**

1. **Station_Data**
   - **Time: 23.12.85 - 25.3.90**
   - **Number of stations: 2177**
   - **Range of Station_Id#: 600001 - 602177**
2. **Standard_Data**
   - **Number of standard_data: 35336**
   - **Range of Standard_Data_Id#: 6000001 - 6035336**
   - **Physical units of measured data:**

Data	Unit
Depth	m
Temperature	° C
Salinity	NSU (IPSS-78)
Oxygen	ml/l

b. The Tables

A1111_Station			
Column	Type	Null	Indices
Station_Id#	int	no	
Cruise_Number	int	no	
Station_Number	int	no	
Date_Time	datetime	yes	
Longitude	float	no	
Latitude	float	no	
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	no	

A1111_Standard_Data			
Column	Type	null	Indices
Standard_Data_Id#	int	no	
Station_Id#	int	no	
Depth	int	no	
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	

c. The Preparation of A1111Data

All stations of A1111Data have been obtained by Soviet ships. They can be read and type on the screen by the program:

Directory: OTH$DATEN:[SOCEAN.AARI]			
Date	Short Description	Name of the Program	Signature
5.3.91	Reading data from A1111	READAARI.FOR	Read-8

d. The Work with A1111Data

Processing of A1111Data			
Date	Short Description	Name of the Program	Signature
13.3.91	Creation A1111Tables	`A1111.SCRIPT;5`	Script-41
13.3.91	Loading new Aaridata from A1111_Data into A1111_Station and A1111_Standard_Data-tables	`A1111LOAD.FOR;4`	For-11
22.3.91	Set missing values = 0	`A1111LOAD_UPD.SCRIPT;2`	Script-42
22.3.91	Copy A1111Data into StandardTables	`A1111_COPY.SCRIPT;4`	Script-59
27.3.91	Insert of new Ships from A1111	`A1111_SHIPS_UPD.SCRIPT`	Script-44
27.3.91	Insert of new Ships from A1111	`A1111_Ships.SCRIPT`	Script-43

6.2.5 NowlinData

a. The Origin

- **Name of the Institute:** Texas Agriculture & Mechanics University
- **Address:** Department of Oceanography
  Texas A&M University College Station, TX 77843
- **Contact Person:** Mr. Steven B. Rutz

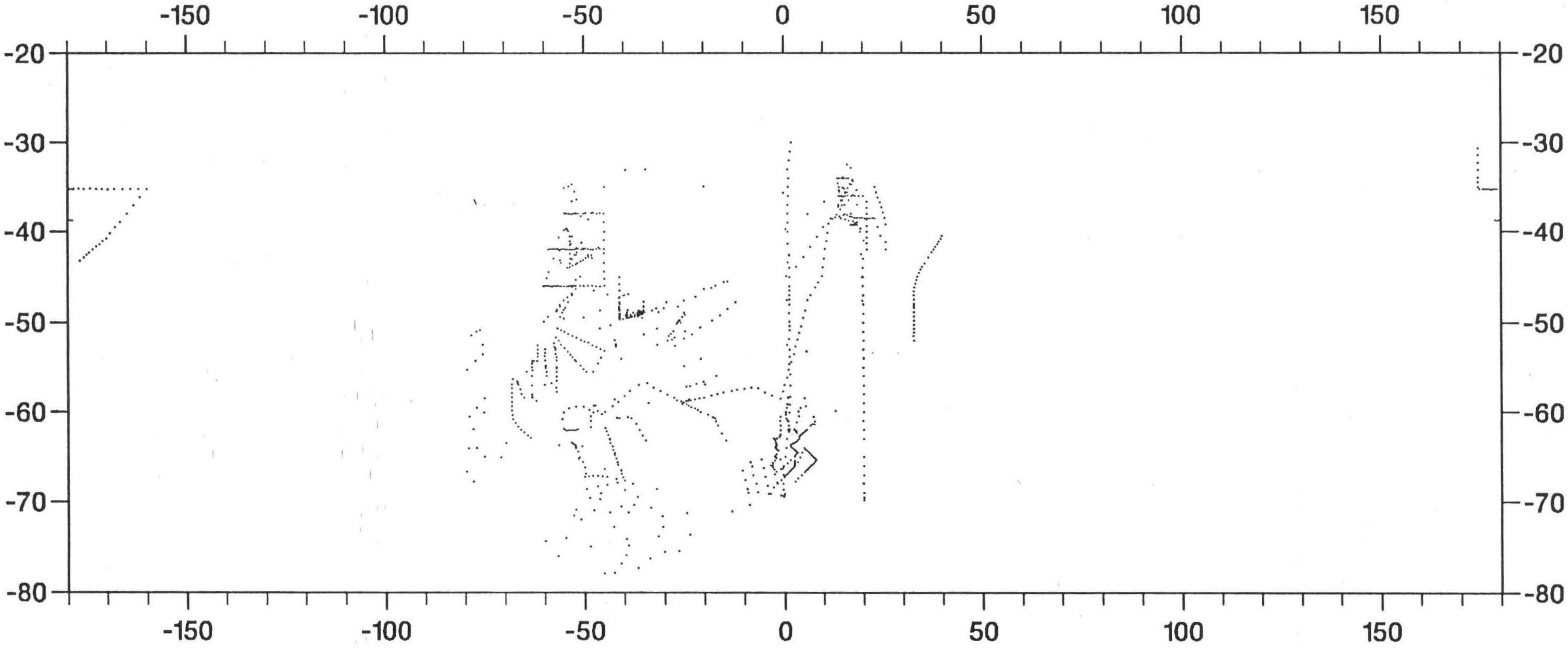
Cou

- Name of the file: `OTH$DATEN[S.OZEDB]NOWLINT.DAT`
- Name of loading program: `OTH$DATEN[OZEDB]NOWLIN.FOR;2/` Sign.: For-6
- Date of loading: 26.11.1990

1. Station_Data
   - Time: 13.12.1933 - 13.4.1987
   - Number of stations: 1108
   - Range of Station_ Id#: 200001 - 201108

2. Standard_Data
   - Number of standard_data: 33615
   - Range of Standard_Data_Id#: 20000001 - 20033615
   - Physical units of measured data:

Data	Unit
Depth	m
Temperature	° C
Salinity	NSU (IPSS-78)
Oxygen	ml/l



SOUTHERN OCEAN DATA FROM TA&MU 1108 ST. EXTENSION OF GORDON DATA SET

b. The Tables

Nowlin_Station			
Column	Type	Null	Indices
Nowlin_Station_Id#	int	no	
Cruise_Number	int	no	
Station_Number	int	no	
Longitude	float	no	
Latitude	float	no	
Date_Time	datetime	yes	
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	no	

Nowlin_Standard_Data			
Column	Type	null	Indices
Nowlin_Standard_Data	int	no	
Nowlin_Station_Id#	int	no	
Depth	int	no	
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	

c. The Preparation of NowlinData

The Nowlin Data were provided by the TA&M University to the AWI in October 1990
The data set comprise only the observation which are the extension of the data set used for the construction of the Southern Ocean Atlas (Gordon, Molinelli, Baker 1984)
The NowlinData have been interpolated to the standard levels of depth.

Directory: OTH$DATEN:[SOCEAN.FOR]			
Date	Description	Name of the program	Signature
August 90	Interpolation of NowlinData to the standard levels of depth	`INTERNOWL.FOR`	Inter-5
Oktober 90	Read interpolated Data	`READNOWLIN.FOR`	Read-5
Oktober 90	Converts the file S_Ocean.Dat into the form suitable for the data set	`READNOWL.FOR`	Read-6

d. The Management

Processing of NowlinData			
Date	Short Description	Name of the Program	Signature
12.11.90	Creation of Nowlintables	`NOWLIN.SCRIPT`	Script-10
12.11.90	Set missing values = 0	`NOWLIN.UPD.SCRIPT;2`	Script-9
26.11.90	Loading of NowlinData into Nowlin_Station and Nowlin_Standard_Data	`NOWLIN.FOR;2`	For-6

6.2.6 HainesData

a. The Origin

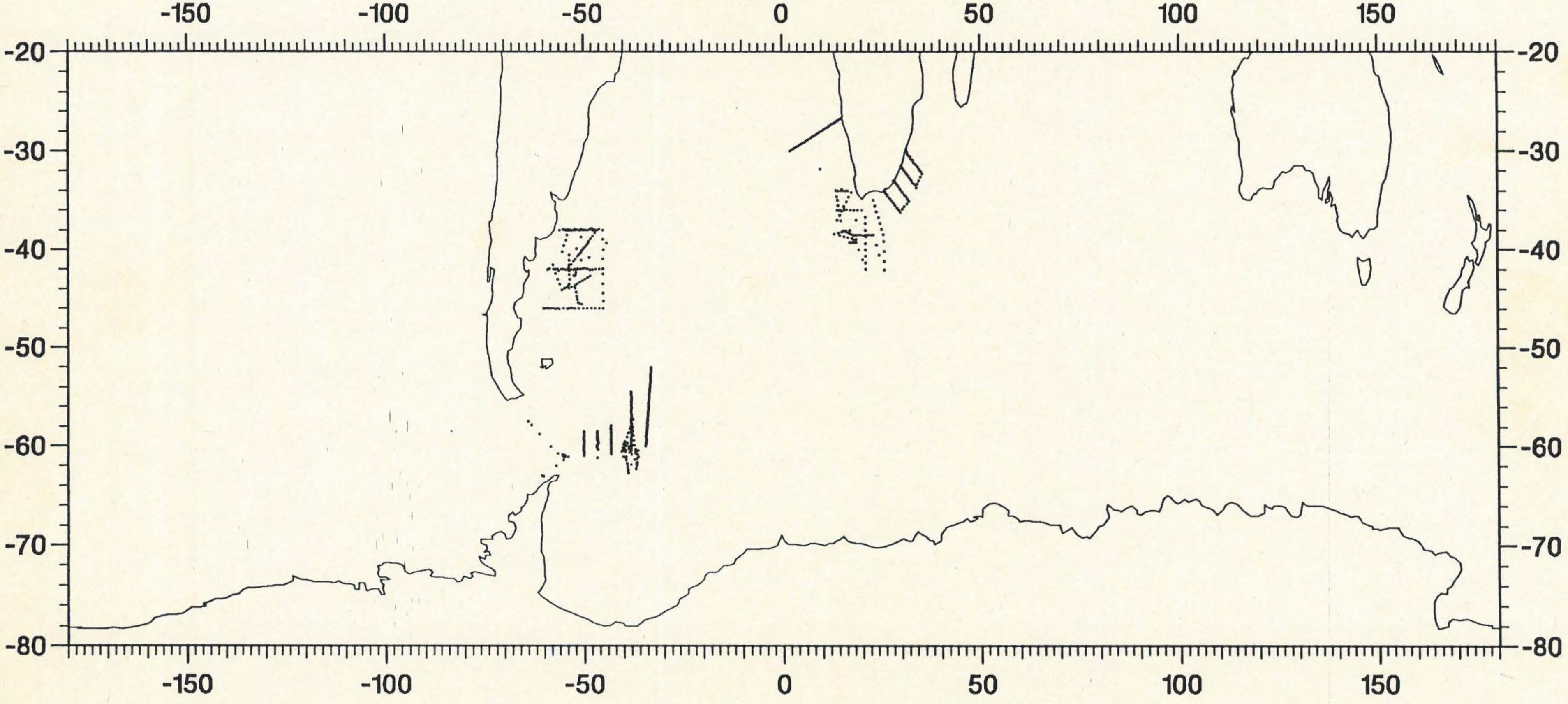
- **Name of the Institute:** Geological Observatory Lamont-Doherty
- **Address:** Geological Observatory of Columbia University Lamont-Doherty
  Palisades
  N.Y. 10964-0190 Country: USA
- **Contact Person:** : 914359-2900 Bruce Huber Tel.

- Name of the tape:
- Name of the file: `OTH$DATEN:[SOCEAN.HEINZ]HEINZINT1.DAT`
- Name of load program:`OTH$DATEN:[OZEDB]Hainesload.FOR;13/` Sign.: For-8
- Date of loading: 28.11.1990

1. Station_Data
   - Time: 11.12.1979 - 5.5.1987
   - Number of stations: 617
   - Range of Station_Id#: 300001 - 300617

2. Standard_Data
   - Number of standard_data: 14592
   - Range of Standard_Data_Id#: 3000001 - 3014592
   - Interpolated to the standard levels of depth:
   - Physical units of measured data:

Data	Unit
Depth	m
Temperature	° C
Salinity	NSU (PSS-78)
Oxygen	ml/l



LAMONT_2 (Heinz) Data Set

617 stations

b. The Tables

Haines_Station			
Column	Type	Null	Indices
Haines_Station_Id#	int	no	
Cruise_Number	int	no	
Station_Number	int	no	
Longitude	float	no	
Latitude	float	no	
Date_Time	datetime	yes	
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	no	

Haines_Standard_Data			
Column	Type	null	Indices
Haines_Standard_Data	int	no	
Haines_Station_Id#	int	no	
Depth	int	no	
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	

c.The Preparation of HainesData

<table>
<tr><th colspan="4">Directory: OTH$DATEN:[SOCEAN.FOR]</th></tr>
<tr><th>Date</th><th>Short Description</th><th>Name of the program</th><th>Signature</th></tr>
<tr><td>November 90</td><td>Interpolation of HainesData to the standard levels of depth</td><td>INTERHEINZ.FOR</td><td>Inter-6</td></tr>
<tr><td>November 90</td><td>Read the interpolated Data</td><td>READHEINZ.FOR.</td><td>Read-7</td></tr>
</table>

d. The Management

The Processing of HainesData			
Date	Short Description	Name of the Program	Signature
28.11.90	Creation of Hainestables	`HAINESLOAD.SCRIPT`	Script-19
28.11.90	Loading of HainesData into HainesTables	`HAINESLOAD.FOR;13`	For-8
29.11.90	Set missing values = 0	`HAINESLOAD_UPDATE.SCRIPT`	Script-20
11.12.90	Loading of HainesData into StandardTables	`HAINESLOAD_COPY.SCRIPT`	Script-25

6.2.7 GonellaData

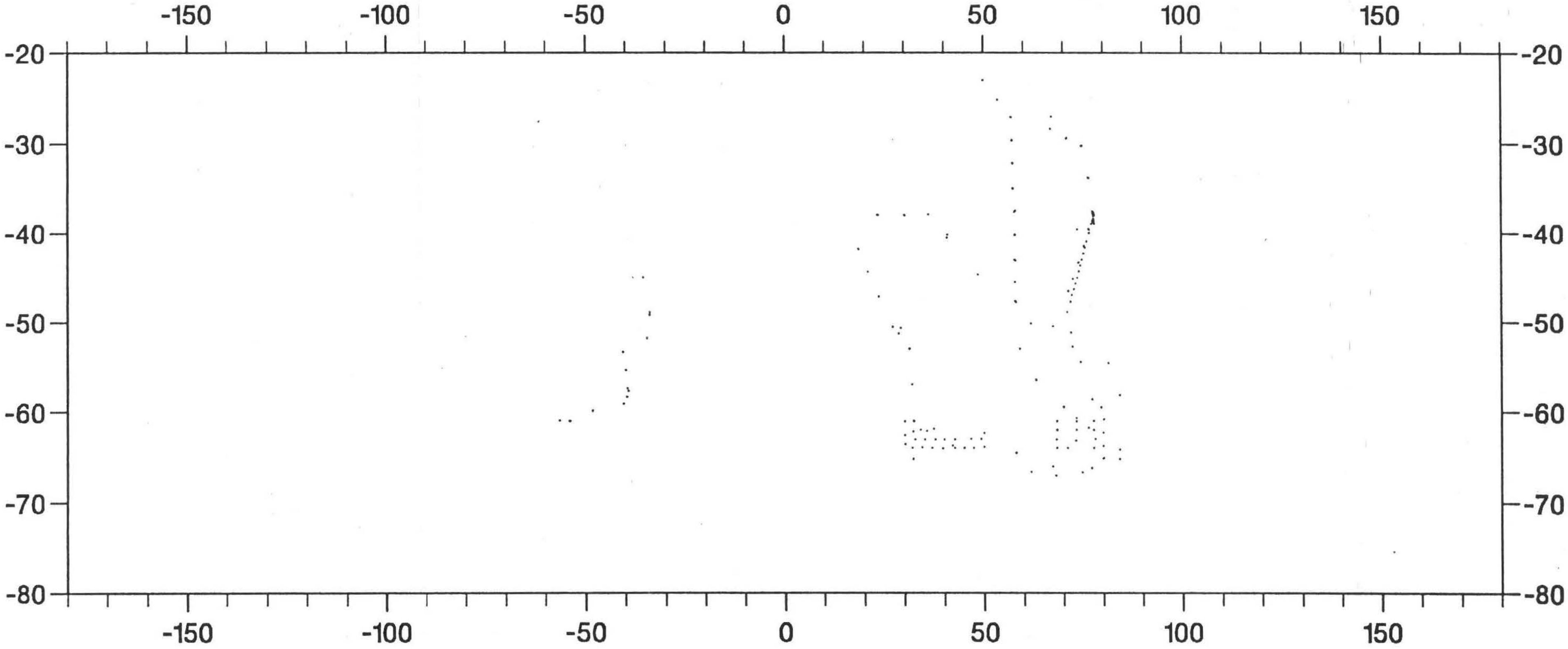
a. The Origin

- **Name of the Institute:** **Museum National dHistoire Naturell**
- **Address:** **Laboratoire dOceanographie Physique**
  43, Rue Cuvier
  75231 Paris Cedex 05 **Country: France**
- **Contact Person:** **Joseph Gonella Tel.: (33.1)40.79.31.58**

- : Name of the tape:
- Name of the file: `OTH$DATEN:[S.OCEAN.gonella]GONELLA 7.DAT`
- Name of loading program: Gonella.FOR;10
- Date of loading: 17.12.1990 Sign.: For-9

1. Station_Data
   - Time: 28.4.77 - 12.2.81
   - Number of stations: 277
   - Range of Station_Id#: 400001 - 400277
2. Standard_Data
   - Number of standard_data: 2071
   - Range of Standard_Data_Id#: 4000001 - 4002071
   - Physical units of measured data:

Data	Unit
Depth	m
Temperature	° C
Salinity	NSU (IPSS-78)
Oxygen	ml/l



SOUTHERN OCEAN DATA SET PROVIDED BY NMHN 277 STATIONS

b. The Tables

Gonella_Station			
Column	Type	Null	Indices
Gonella_Station_Id#	int	no	
Cruise_Number	int	no	
Station_Number	int	no	
Longitude	float	no	
Latitude	float	no	
Date_Time	datetime	yes	
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	no	

Gonella_Standard_Data			
Column	Type	null	Indices
Gonella_Standard_Data	int	no	
Gonella_Station_Id#	int	no	
Depth	int	no	
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	

c. The Preparation of GonellaData

The data of Gonella have been interpolated to the standard levels.

Directory: OTH$DATEN:[SOCEAN.FOR]			
Date	Short Description	Name of the program	Signatu
13.12.90	Interpolation of GonellaData to the standard levels of depth	`INTERGON.FOR`	Inter-7
13.12.90	Read interpolated Data from GONELLA7.DAT	`READFRANCE.FOR`	Read-1

d. The Management

Processing of GonellaData			
Date	**Short Description**	**Name of the Program**	**Signature**
15.12.90	**Creation of GonellaTables**	`GONELLA.SCRIPT;2`	**Script-21**
17.12.90	**Loading of GonellaData into GonellaTables**	`GONELLA.FOR;10`	**For-9**
18.12.90	**Set missing values = 0**	`GONELLA_UPD.SCRIPT;`	**Script-22**
18.12.90	**Procedure to copy GonellaData into StandardTables**	`GONELLA_COPY_ALL.SCRIPT;1`	**Script-24**
18.12.90	**Execute Gonella_Copy_All.SCRIPT**	`GONELLA_COPY.SCRIPT`	**Script-23**

6.2.8 TokyoFisheriesData

a. The Origin

- **Name of the Institute:** Tokyo University of Fisheries
- **Address:** Dr. Dr. Jiro Yoshida
  Tokyo University of Fisheries
  Department of Technologie 5-7, Konan 4-Chome, Minato-Ku
  Tokyo 108 Country: Japan
- **Contact Person:** Dr. J. Yoshida, Tel.: (03)-471-1251, ext 447

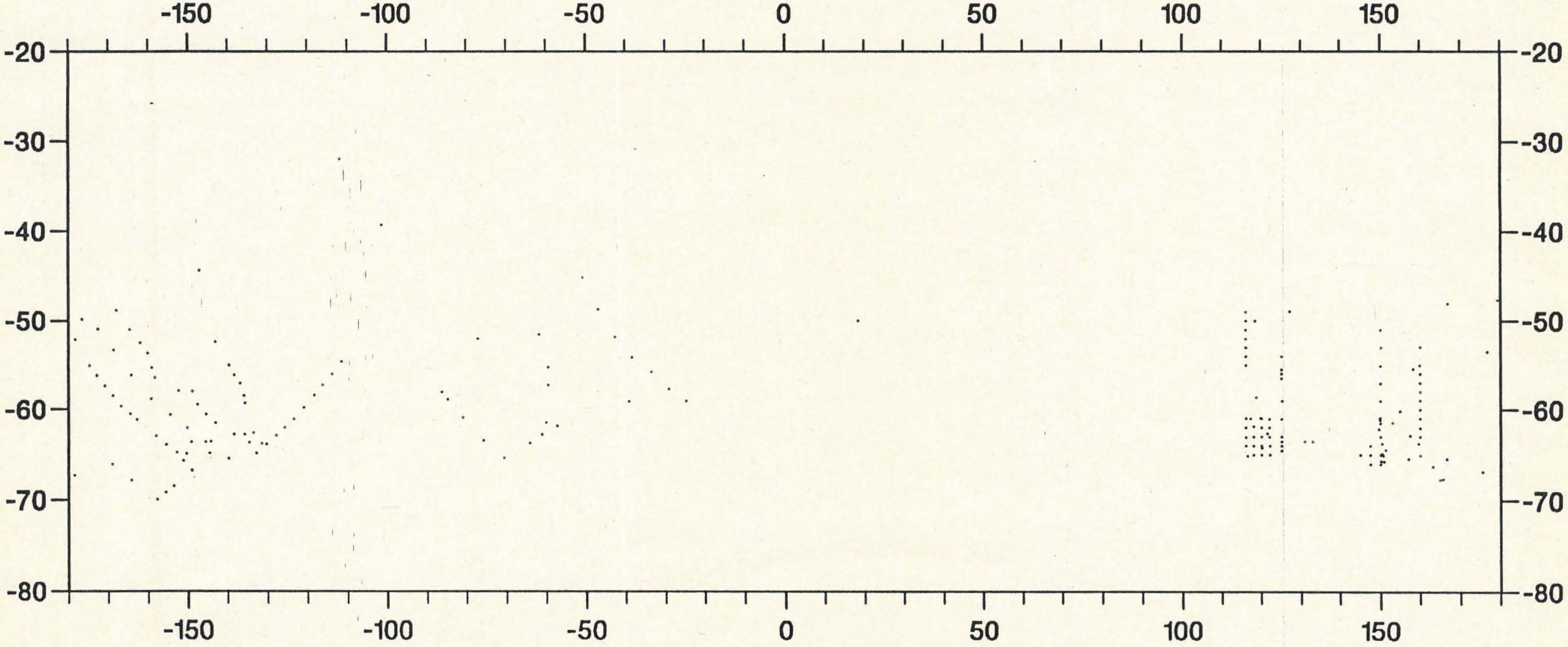
- Name of the tape:
- Name of the file: `OTH$DATEN:[SOCEAN.JAPAN]TOKYOINT.DAT`
- Name of the loading program:`OTH$DATEN:[OZEDB]TOKYOLOAD.FOR/Sign.: For-12`
- Date of loading: 13.2.1991

1. Station_Data
   - Time: 2.12.1964 - 13.2.1984
   - Number of stations: 188
   - Range of Station_Id#: 500001 - 500188

2. Standard_Data
   - Number of standard_data: 4770
   - Range of Standard_Data_Id#: 5000001 - 5004770

   - Physical units of measured data:

Data	Unit
Depth	m
Temperature	° C
Salinity	NSU (IPss-78)
Oxygen	ml/l



188 stations obtained from Tokyo University of Fisheries

b. The Tables

Tokyo_Fisheries_Station

Column	Type	Null	Indices
Tokyo_Fisheries_Station_Id#	int	no	
Cruise_Number	int	no	
Station_Number	int	no	
Longitude	float	no	
Latitude	float	no	
Date_Time	datetime	yes	
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	no	

Tokyo_Fisheries_Standard_Data

Column	Type	null	Indices
Tokyo_Fisheries_Standard_Data_Id#	int	no	
Tokyo_Fisheries_Station_Id#	int	no	
Depth	int	no	
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	

c. The Preparation of TokyoData

The data set from the Tokyo University was provided to the AWI in 1990. Data were collected during 1966 - 1984 by the ship R/V Umitaka-Maru. The original data were only available in in the form of printed data reports Data were interpolated to the standard levels.

Directory: OTH$DATEN:[SOCEAN]			
Date	Short Description	Program Name	Signat
August 90	Interpolated to the standard levels	`INTERJAP1.FOR`	Inter-3
Februar 1991	Reading Data from R/V Umitaka-Maru	`READJAP.FOR`	Read-4
Februar 1991	Converting file JAPAN5.DAT into a form suitable to the data set	`READJAP2.FOR`	Read-3
Februar 1991	Converting file JAPANUMIT.DAT into tha form suitable to the data set	`READJAP1.FOR`	Read-2

d. The Management

Processing of TokyoFisheriesData			
Date	Short Description	Name of the Program	Signature
13.2.91	Creation of TokyoTables	`TOKYOTABLE.SCRIPT;1`	Script-34
13.2.91	Insert new Ships and Cruises from TokyoData to Ship and Cruise	`ADD_TOKYO_SHIPS.SCRIPT`	Script-35
13.2.91	Loading TokyoData into TokyoTables	`TOKYOLOAD.FOR;14`	For-12
14.2.91	Set missing values = 0	`TOKYO_UPD.SCRIPT;3`	Script-36
8.3.91	Update Bottom_Depth: erroneus values in column Bottom_Depth = 0	`TOKYOFISH_BOTTOM_DEPTH_UPDATE.SCRIPT;1`	Script-37
8.3.91	Correction of some erroneus values in Tokyo_Fisheries_Station	`TOKYO_FISHERIES_STATION UPDATE.SCRIPT`	Script-38
9.4.91	Copy of TokyoData into StandardTables	`TOKYO_COPY.SCRIPT;5`	Script-45

6.2.9 JareData

a. The Origin

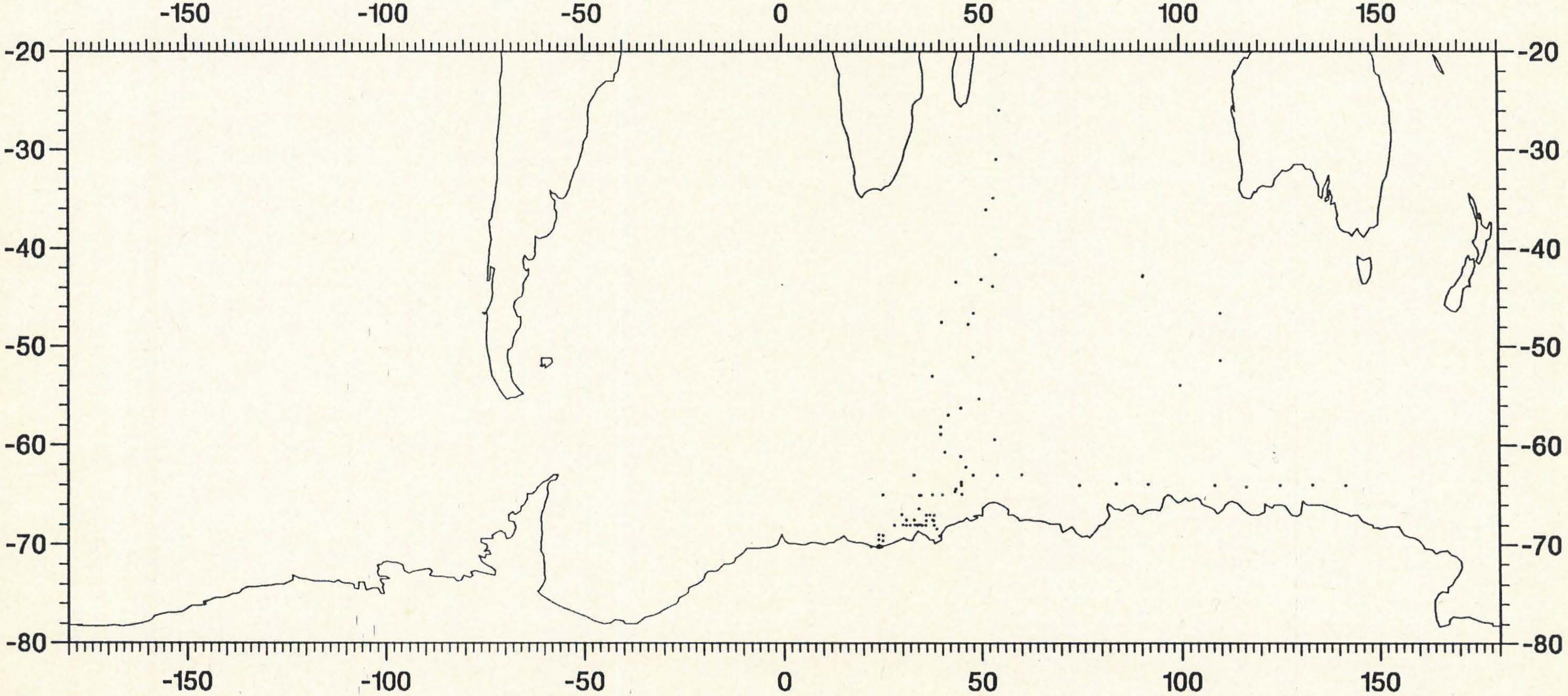
- **Name of the Institute: Data of the Japanese Antarctic Research Expedition**
- **Address: Geological Observatory of Columbia University**
  Palisades
  N.Y. 10964-0190 Country: USA
- **Contact Person: Bruce Huber**

- **Name of the tape:**
- **Name of the file:**`OTH$DATEN:[S.OCEAN.JARE]JAREALL.DAT`
- **Name of the load program:**`OTH$DATEN[OZEDB]JARELOAD.FOR;9`**/Sign.: For-13**
- **Date of loading: 21.5.1991**

1. **Station_Data**
   - **Time: 21.1.1980 - 10.3.1988**
   - **Number of stations: 119**
   - **Range of Station_Id#: 7000001 - 700119**

2. **Standard_Data**
   - **Number of standard_data: 2332**
   - **Range of Standard_Data_id#: 7000001 - 7002332**
   - **Physical units of measured data:**

Data	Unit
Depth	m
Temperature	° C
Salinity	NSU (IPSS-78)
Oxygen	ml/l
Phosphate	mg/l
Silicate	mg/l
Nitrate	mg/l



JARE DATA SET 119 stations

The Tables

Jare_Station			
Column	Type	Null	Indices
Jare_Station_Id#	int	no	
Cruise_Number	int	no	
Station_Number	int	no	
Longitude	float	no	
Latitude	float	no	
Date_Time	datetime	yes	
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	no	

Jare_Standard_Data			
Column	Type	null	Indices
Jare_Standard_Data	int	no	
Jare_Station_Id#	int	no	
Depth	int	no	
Temperature	float	yes	
Salinity	float	yes	
Oxygen	float	yes	
Phosphate	float	yes	
Silicate	float	yes	
Nitrate	float	yes	

c. The Preparation of JareData

Interpolation of JareData			
Directory: OTH$DATEN:[SOCEAN.JARE]			
Date	**Short Description**	**Program Name**	**Signature**
August 90	Interpolation of JareData	`INTERJARE.FOR`	Inter-1
November 90	Interpolation of JareData	`INTERJAP2.FOR`	Inter-2
15.4.91	Reading interpolated data	`READJARE.FOR`	Read-1

d. The Management

The Processing of JareData			
Date	Short Description	Name of the Program	Signature
17.5.91	Creation of JareTables	`JARELOAD.SCRIPT;3`	Script-46
21.5.91	Loading of JareData into Jare_Station and Jare_Standard_Data	`JARELOAD.FOR;9`	For-13
5.6.91	Set missing values = 0	`JARE_UPD.SCRIPT;2`	Script-48
19.8.91	Inserting two ships and eight cruises	`Add_Ships_Jare` 140491.SCRIPT+	Script-76

12

6.2.10 BiomassData

a. The Origin

- Name of the Institute:: Retrieved from Biomass Data Centre in 21.5.1991
- Address: British Antarctic Survey
  High Cross Madingley Road
  Cambridge CB3 QET Country: England
  Telephone: Cambridge (0223) 61188
- Contact Person: Mark Thorley

- Name of the file: `OTH$DATEN:[S.OCEAN.J].DAT`

Tapes and Files		
Tape	Experiment	Cruises (Filenames)
BIO_01	FIBEX	HEFX, HOFX, ITFX, ODFX, SIFX
BIO_02	SIBEX1	ACS1, BES1, PSS1
BIO_03	SIBEX1	SIS1
	SIBEX2	CHS2
BIO_04	SIBEX2	HES2
BIO_05	SIBEX2	BES2, JBS2
BIO_06	SIBEX2	ACS2, KMS2, PSS2

- Name of the loading program:`OTH$DATEN[OZEDB]Biomass.C /Sign.: C-4`

- Date of loading: 12.6.91

1. Station_Data
   - Time: 19.1.1981 - 8.4.1985
   - Number of stations: 841
   - Range of Station_Id#: 800001 - 800841
2. Standard_Data
   - Number of standard_data: 20087
   - Range of Standard_Data_Id#: 800000~~0~~1 - 8020087

Ken 15.10.91

- **Physical units of measured data:**

Data	Unit
Depth	m
PrDepth	m
Depthtype	
Temperature	° C
Salinity	NSU (IPSS-78)
Oxygen	ml/l
Inphos	mi-atm/l
Nitrite	mi-atm/l
Nitrate	mi-atm/l
Ammonium	mi-atm/l
Silicate	mi-atm/l
PH	mg/m^3
Chloride	mg/m^3
Chlorophyll	mg/m^3
Sigma_T	° C
Sigma_T_Obse	° C
Sound_Velocity	j/m^2
Dynamic_Height	j/m^2
Sigma_Theta	ls/m^3
Pot_Temp	° C
Spec_Vol_Anomaly	-
DeltaD	m

b. The Tables

Biomass_Station			
Column	**Type**	**null**	**Indices**
Biomass_Station_Id#	**int**	**no**	
Cruise_Number	**int**	**no**	
Station_Number	**int**	**yes**	
Latitude	**float**	**no**	
Longitude	**float**	**no**	
Date_Time	**datetime**	**yes**	
Marsden_Square#	**int**	**yes**	
Cruise_Name	**varchar**	**yes**	

Biomass_Standard_Data			
Column	**Type**	**null**	**Indices**
Biomass_Standard_Data_Id#	**int**	**no**	
Biomass_Station_Id#	**int**	**no**	
Depth	**int**	**no**	
PrDepth	**int**	**no**	
Obstype	**char**	**no**	
Depthtype	**char**	**no**	
Temperature	**float**	**yes**	
Salinity	**float**	**yes**	
Oxygen	**float**	**yes**	
Inphos	**float**	**yes**	
Nitrite	**float**	**yes**	
Nitrate	**float**	**yes**	
Ammonium	**float**	**yes**	
Silicate	**float**	**yes**	
PH	**float**	**yes**	
Chloride	**float**	**yes**	
Chlorophyll_A	**float**	**yes**	
Sigma_T	**float**	**yes**	
Sigma_T_Obs	**float**	**yes**	
Sound_Velocity	**float**	**yes**	
Dynamic_Height	**float**	**yes**	
Sigma_Theta	**float**	**yes**	
Pot_Temp	**float**	**yes**	
Spec_Vol_Anomaly	**float**	**yes**	
Delta_D	**float**	**yes**	

c. The Preparation of BiomassData

- The data from Biomass, which are provided in May 1991 contain data only for the Atlantic Sector/Brainsfield Strait
- They are provided on 6 Hd-Floppy Disks(5 ein viertel)
- One file of the data, CHS2, was not readable. Message: Because it doesn'T contain any Latitude and Longitude it was dropped from original dataset. It might be the reason.
- The two files for the cruises BES1 and BES2 didn't contain any Chlorophyll_A-data For these stations Frederico Brandini brought the Chlorophyll data later, and they were then load into the database.
- The BiomassData are load into the BiomassTables in their original form, in which their are provided by the Biomass Data Centre. Up to now it was not known, whether data has been interpolated to the standard levels or not.

d. The Management

Work with Biomassdata			
Date	Short Description	Name of the Program	Signature
12.6.91	Creation of BiomassTables	BIOMASS.SCRIPT	Script-49
12.6.91	Discussion with Victor to analyze mistakes		
12.6.91	Loading of BiomassData in BiomassTables	BIOMASS.C	C-4
(2.7.91	Preparation of BiomassData for Graphics (Brandini)		
15.7.91	Set missing values = 0	BIOMASS_UPD.SCRIPT	Script-75
16.7.91	Group added: BIOMASS_GRP, Login added: BIOMASS, User added to SODB Grant select to Biomass_ERP on Biomass_Station and Biomass_Standard_Data		
23.7.90	Inserting chlorophyll values for Biomass given by Brandini: no change of existing data, duplicates are made, which consists on Biomass data + Chlorophyll_A because of the same station_Id for Biomass and Brandini For identification a value was added to the Station_Id# of duplicates	BIOMASS_BRANDINI.SCRIPT	Script-58
hline 24.7.91	Program to select special values for graphics from Biomass for F.Brandini	BRANDINI.C	C-5
24.7.91	Routines to evaluate specific values from measured oceanographic data	ALPHA.C	C-6
1.8.91	Modification of Biomass.C, writing a Biomass-Table Script and finally a new loading of BiomassData because of a mistake in an Update-Program		
12.8.91	Copy BiomassData into StandardTables	BIOMASS_COPY_ALL.SCRIPT	Script-73

6.2.11 MuenchData

a. The Origin

- **Name of the Institute:** Science Applications International Corporation Data Set (SAI
  Forwarded to AWI in April,23 1991
- **Address:** Science Applications International Coorporation
  1 008 No...Wav.Suite 36, Bellevue
  Washington 98005 Country: USA
- **Contact Person:** Dr. Robin D. Muench, Tel.: (206) 747-7152

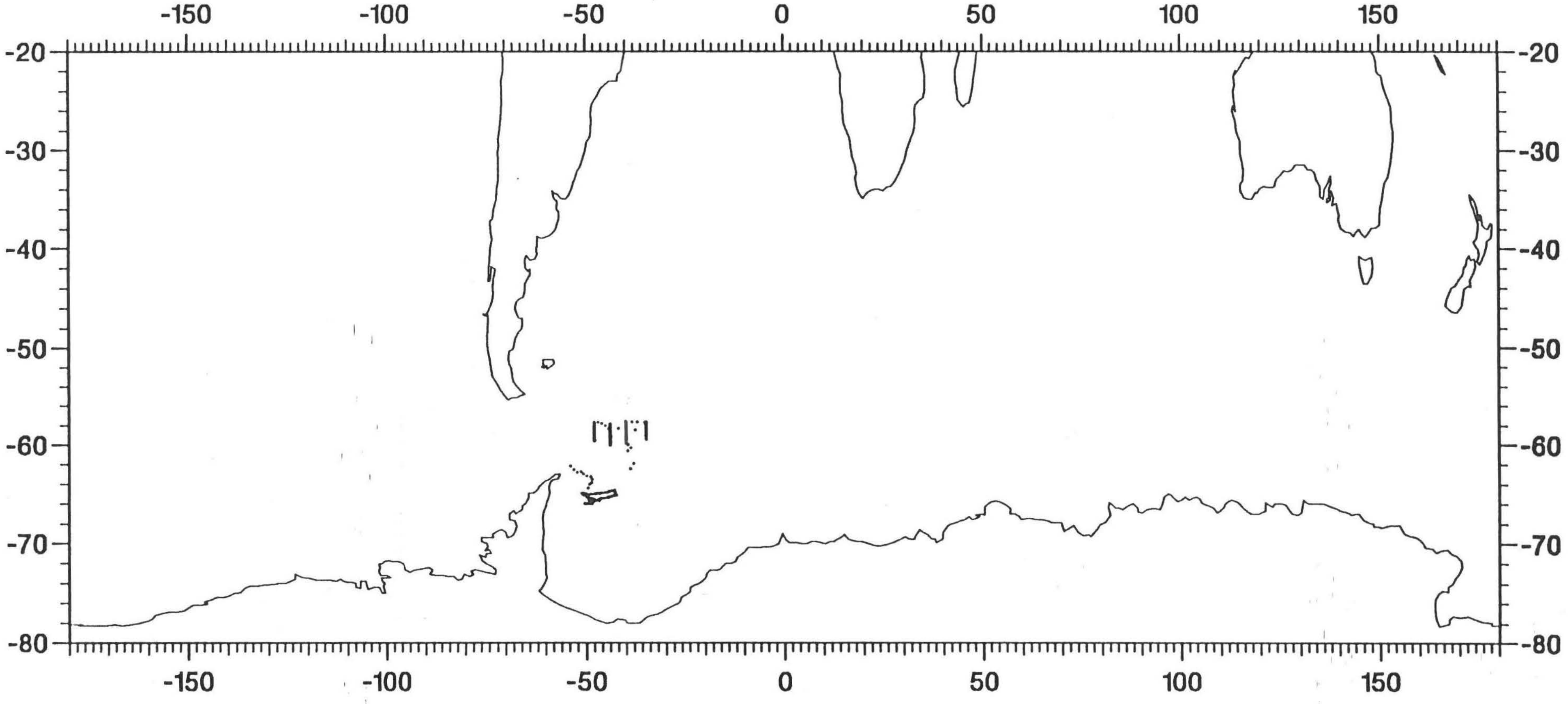
- Name of the tape:
- Name of the file: `OTH$DATEN:[SOCEAN.MUENCH]MUENCH.DAT`
- Name of the loading program: `OT$DATEN:[OZEDB]MUENCHLOAD.FOR`/Sign.: For-14+
- Date of loading: 9.8.91

1. **Station_Data**
   - Time: 20.3.82 - 12.8.88
   - Number of stations: ~~268~~ 208
   - Range of Station_Id#: ~~9000001 - 9000268~~
     900.001 - 900.208

15.10.91

2. **Standard_Data**
   - Number of standard_data: 4181
   - Range of Standard_Data_Id#: 9.000.001 – 9.004.181
   - Physical units of measured data: ~~9.0~~

Data	Unit
Depth	m
Temperature	°C
Salinity	NSU (IPSS-78)



MUENCH DATA SET 208 stns. "WW83", "ME83", "GL86", "ME86", "PD88"

b. The Tables

Muench_Station			
Column	Type	null	Indices
Muench_Station_Id#	int	no	
Cruise_Number	int	no	
Station_Number	int	no	
Longitude	float	no	
Latitude	float	no	
Date_Time	datetime	yes	
Bottom_Depth	int	no	
Max_Obse_Depth	int	no	
Number_Obse	int	no	
Marsden_Square#	int	no	

Muench_Standard_Data			
Column	Type	null	Indices
Muench_Standard_Data_Id#	int	no	
Muench_Station_Id#	int	no	a
Depth	int	no	a
Temperature	float	yes	
Salinity	float	yes	

c. The Preparation of MuenchData

Directory: OTH$DATEN:[SOCEAN.MUENCH]			
Date	Short Description	Name of the Program	Signature
June 91	Converting of data into meters	`MUDBARMETER`	Read-13
June 91	Interpolated to the standard levels	`MUINTER`	Inter-9
June 91	Reading interpolated data	`READMUIN.FOR`	Read-14

An error has happened. All steps in preparation were then repeated.

d. The Management

The Processing of MuenchData			
Date	Short Description	Name of the Program	Signature
9.8.91	Creation of Muench_Standard_Data and Station	`MUENCHLOAD.SCRIPT`	Script-70
9.8.91	Loading of MuenchData into Muenchtables	`MUENCHLOAD.FOR`	For-14
12.8.91	Copy the MuenchData into the tables Station and Standard_Data	`MUENCH_COPY_ALL.SCRIPT`	Script-71
12.8.91	Update of MuenchTables: Set missing values = 0	`MUENCHLOAD_UPD.SCRIPT`	Script-72
28.8.91	All data are deleted from Muenchtables, because an error was found and all steps in preparation are repeated. All data are load new by same programs		

6.3 Appendix for the Tables

6.3.1 Table of Indices

Table of Indices				
Table	**Symbol**	**Indexname**	**Type**	**Index on.**
Standard_Data	**a**	**standard_data_id#_idx**	**nc, unique**	**Standard**
	b	**standard_data_idx**	**c**	**Station_I**
Station	**a**	**station_id#_idx**	**nc, unique**	**Station_I**
	b	**station_idx**	**c**	**Latitude,** **Date_Ti**
Gordon_Standard_Data	**a**	**Gordon_Data_index**	**c**	**Gordon_**
Gordon_Station	**a**	**Gordon_Id_index**	**nc**	**Gordon_**
	b	**Gordon_geo_index**	**nc**	**Latitude,**
Gordon_Interpolated_Data	**a**	**Gordon_interplo_data_i**	**nc, unique**	**Gordon_I**
	b	**Gordon_interpol_data_i**	**c**	**Gordon_**
	c	**station_index**	**nc**	**Gordon_**
Aari_Standard_Data	**a**	**Aari_Standard_Data_Index**	**nc, unique**	**Aari_Sta**
	b	**Aari_data_index**	**c**	**Aari_Stat**
	c	**Aari_temperature_Index**	**nc**	**Temperat**
Aari_Station	**a**	**Aari_Station_Index**	**nc, unique**	**Aari_Stat**
	b	**Aari_geo_index**	**c**	**Latitude,**
	c	**Aari_marsden_index**	**nc**	**Marsden_**
Aari_Cruise_Bck	**a**	**Cruise_Number_idx**	**nc**	**Cruise_N**
Cruise	**a**	**Cruise_Index**	**nc, unique**	**Cruise_N**
Cruise	**b**	**Cruise_Ship_Index**	**c**	**Ship_Id#**
Ship	**a**	**Ship_Index**	**nc, unique**	**Ship_Id#**

?

6.3.2 List of Keys

List of Keys for Standard Tables

Table	Keys	Type and related Tables
Ship	**Ship_Id#**	**primary**
Cruise	**Cruise_Number#** **Ship_Id#**	**primary** **related to Ship**
Station	**Station_Id#** **Cruise_Number#** **Marsden_Square_Id#**	**primary** **related to Cruise** **related to Marsden_Square**
Standard_Data	**Standard_Data_Id#** **Station_Id#**	**primary** **related to Station**
Statistic	**Marsden_Square_Id#, Depth**	**composite**
Marsden_Square	**Marsden_Square_Id#**	**primary**
Validation	**Validation_Id#**	**primary**
UpdateStation	**Station_Id#** **User_Id#** **Validation_Flag**	**related to Station**
UpdateData	**Standard_Data_Id#** **Old_Station_Id#** **New_Station_Id#** **Validation_Flag** **User_Id#**	**related to Standard_Data** **related to Validation**
hline InsertStation	**Station_Id#** **User_Id#**	**related to Station**
InsertData	**Standard_Data_Id#** **User_Id#**	**related to Standard_Data**
DeleteStation	**Station_Id#** **User_Id#**	**related to Station**
DeleteData	**Standard_Data_Id#** **User_Id#**	**related to Standard_Data**

List of Keys for Origin Tables I

Table	Keys	Type and related Tabl
A1111_Station	Station_Id# Marsden_Square#	primary related to Marsden_Squ
A1111_Standard_Data	Standard_Data_Id# Station_Id#	primary related to A1111_Stati
Aari_Station	Aari_Station_Id# Marsden_Square#	primary related to Marsden_Squ
Aari_Standard_Data	Aari_Standard_Data_Id#	primary
	Aari_Station_Id#	related to Aari_Statio
Aari_Statistic	Depth#,Marsden_Suare	composite
Aari_Cruise_Bck		
Gordon_Ship	Ship_id#	primary
Gordon_Cruise	Gordon_Cruise_Id# Ship_Code	primary related to Ship
Gordon_Station	Gorden_Station_Id# Marsden_Square# Gordon_Cruise_Id#	primary related to Marsden_Squ related to Gordon_Crui
Gordon_Standard_Data	Gordon_Standard_Data_Id# Gordon_Station_Id#	primary related to Gordon_Stati
Gordon_Statistic	Depth#, Marsden_Square#	composite
Gordon_Interpol_Data	Gordon_Interpol_Data_Id# Gordon_Station_Id#	primary related to Gordon_Stati
Gordon_Station_Backf.	Gordon_Station_Id#	related to Gordon_Stati
Gonella_Station	Gonella_Station_Id# Marsden_Square#	primary related to Marsden_Squ
Gonella_Standard_Data	Gonella_Standard_Data_Id# Gonella_Station_Id#	primary related to Gonella_Stati
Kuropatkin_Station	Kuropatkin_Station_Id# Marsden_Square#	primary related to Marsden_Squ
Kuropatkin_Standard_Data	Kuropatkin_Standard_Data_Id# Kuropatkin_Station_Id#	primary related to Kuropatkin_St
Haines_Station	Haines_Station_Id# Marsden_Square#	primary related to Marsden_Squ
Haines_Standard_Data	Haines_Standard_Data_Id# Haines_Station_Id#	primary related to Haines_Stati
Nowlin_Station	Nowlin_Station_Id# Marsden_Square#	primary related to Marsden_Squ
Nowlin_Standard_Data	Nowlin_Standard_Data_Id# Nowlin_Station_Id#	primary related to Nowlin_Stati

List of Keys for Origin Tables II

Table	Keys	Type and related Ta
Tokyo_Fisheries_Station	Tokyo_Fisheries_Station_Id# Marsden_Square	primary related to Marsden_S
Tokyo_Fish._Standard_Data	Tokyo_Fish._Standard_Data_Id# Tokyo_Fisheries_Station_Id#	primary related to Tokyo_Fisherie
Tokyo_Fisher._Statistic		
Jare_Station	Jare_Station_Id# Marsden_Square_Id#	primary related to Marsden_S
Jare_Standard_Data	Jare_Standard_Data_Id# Jare_Station_Id#	primary related To Jare_Sta
Jare_Statistic		
Biomass_Station	Biomass_Station_Id# Marsden_Square_Id#	primary related to Marsden_S
Biomass_Standard_Data	Biomass_Standard_Data_Id# Biomass_Station_Station_ID#	primary related to Biomass_St
Biomass_Statistic		

6.3.3 Table of Column Definitions

Table of ColumnDefinitions I		
Column	Tables	Definitions
Ammonium	Biomass_Standard_Data	In mi-atm/l
Bottom_Depth	Station	In m: The depth to the bottom of the sea during one station
Chloride	Biomass_Standard_Data	Chloride (CL_2) in mg/m^3
Chlorophyll_A	Biomass_Standard_Data	Chlorophyll in mg/m^3
Comment	Gorden_Cruise	Comment to Gordon_Cruise
Country	Gordon_Ship, Ship	Home of the ship
Cruise_Name	Gorden_Cruise, Biomass_Station	Name of the cruise
Cruise_Number#	Cruise and all Stationstables	Identifier of Cruise and primary key Sets relation between Station and Ship about Cruise
Date_Time	Station	Gives the date and the time for one station e.g. Jan 15 1955 10:00 PM
Day_of_Year	Gorden_Station_backfill	
Date_of_Program	Validation	The date of the program
Delete_Date	Delete_Data, Delete_Station	Date of deletion of one record o Standard_Data and/or Station
Delta_D	Biomass_Standard_Data	In m
Depth	Standard_Data, Statistic	In m The level of depth for one measured record
Depthtype	Biomass_Standard_Data	Specification of depth Q = Depth Inaccurate T = Depth from unprotected Thermometers Z = Depth from wire out
Dynamic_Height	Biomass_Standard_Data	In j/m^2
Gordon_Cruise_Id#	Gorden_Cruise	Identifier of GordonCruise
Inphos	Biomass_Standard_Data	Inorganic phsphate in mi-atm/l
InsertDate	InsertStation, InsertData	Date of inserting records Standard_Data and Station
Gordon_Interpolated _Data_Id#	Gorden_Interpolated_Data	Only Gordon_Data which are interpolated
Latitude	All Stationtables	In °: Latitude for one station: + = North - = South
Longitude	All Stationtables as well	In °: Longitude for one station : + = Ost - = West
Marsden_Square#	Marsden_Square, Station	Calculated square for the positi of one station Primary key of Marsden_Squar Formula:

Table of ColumnDefinitions II

Column	Tables	Definitions
Max_Obse_Depth	Stationtables	Maximum of depth for one observation
Method_Name	Validation	Name of the validation method
New_Station_Id#	UpdateData	New stationnumber after updating : If data get new station they get new Statiuon_Id#
Nitrate	Standard_Data	Nitrate (NO_4) in mg/l
Nitrite	Biomass_Standard_Data	Nitrite (NO_3) in mi-atm/l
Number_Observ	Station	Number of observations on one station
Old_Station_Id#	UpdateData	Old stationnumber of data before u If data get new station
Obstype	Biomass_Standard_Data	Observation type: O = Values at observed Depth S = Values at interpolated standard depth I = Values at interpolated Data Ce V = Values Re-validated X = Using XBT
Oxygen	Standard_Data	In ml/l
Oxygen_Number_Observ	all Statistictables	Number of oxygen observations On one level of depth
Oxygen_SX	Statistic	Sum of results for oxygen
Oxygen_SXX	Statistic	Sum of the squares for oxygenresult
PH	Biomass_Standard_Data	In mg/m^3
Phosphate	Gordon_Standard_Data	Phosphate (PO_4) in mg/l
Pot_Temp	Biomass_Standard_Data	In °C
PrDepth	Biomass_Standard_Data	In m
Program_Name	Validation	Name of validation program
Salinity	Standard_Data	In parts per million Contents of salinity on one level
Salinity_Number_Observ	Statistic	Number of salinity observations on one level odf depth
Salinity_SX	Statistic	Sum of results of salinity observatio
Salinity_SXX	Statistic	Sum of the squares of salinityresults
Ship_Code	Gordon_Ship, Ship	Code of the ship according to NOC
Ship_Id#	Ship, Cruise	Number identifier of the ship Primary key of Ship, foreighn key o
Ship_Name	Ship	Name of the ship
Short_Remarks	Validation	Short description of a validation pro
Sigma_T	Biomass_Standard_Data	Calculated SigmaT in °C
Sigma_T_Obs	Biomass_Standard_Data	Observed SigmaT in °C
Sigma_Theta	Biomass_Standard_Data	Potential Density in ls/m^3
Silicate	Gordon_Standard_Data Biomass_Standard_Data	Silicate (SiO_4) in mg/l Contents of silicate on one level

Table of ColumnDefinitions III		
Column	Tables	Definitions
Sound_Velocity	Biomass_Standard_Data	In j/m^2
Spec_Col_Anomaly	Biomass_Standard_Data	Specific_Volume_Anomaly
Standard_Data_Id#	Standard_Data,InsertData, DeleteData, UpdateData	Number identifier of data: Primary key of Standard_Data, foreighn key in Update_, Insert_ and Delete_Data
Station_Id#	Station, Standard_Data, Insert, Update, Delete_Data	Identifier of StationData Primkary key of Station, foreighn key in Standard_Data, Update_,Insert and DeleteData: Ranges of Station_Id# : GordonData : 100001-106313 AariData : 1-36059 Kuropatkin : 1-97(35963-36059) GonellaData : 400001-400277 HainesData : 300001-300617 NowlinData : 200001-201108 Tokyo Fisheries : 500001-500188 JareData : 700000-700119 A1111Data : 600000-602177 BiomassData : 800000-800814
Station_Name	Gordon_Station	Name of the station
Temperature	All Standard_DataTables Gordon_Interpol_Data	In ^{o} C Temperature on the respective
Temperature_Number_ Observ	Statistic	level of depth Number of temperature on one l
Temperature_SX	Statistic	Sum of results of temperature
Temperature_SXX	Statistic	Sum of squares of temperature r
Update_Flag	Standard_Data, Station	Marks a dataset, which has been updated
Update_Date	UpdateData, UpdateStation	Date of updating
User_Id#	Update, Insert, Delete Station and Data	Identifier of the user
Validation_Flag	Standard_Data, Station, UpdateData, UpdateStation	Marks a dataset, which has been validated
Validation_Id#	Validation	Identifier of the validation progr
Validation_Method_Id#	Aari_Statistic, Statistic Gordon_Statistic	Identifier of the validation meth in all StatisticTables
Version_of_Program	Validation	Version of program

7 Project Management

The Management of all Tables

Steps in developing the SouthernOceanDB I

Date	Short Description	Name of the Program	Signature
June 89	Creation of the database Creation of Aaritables: (Aari_Station, Aari_Standard_Data, Aari_Station_Backup, Aari_Update_Backup, Aari_Garbage_Station, Aari_Garbage_Data)	`AARI.SCRIPT;42`	Script-1
June 89	Creation of Gordontables: Station, Standard_Data, Statistic	`GORDON.SCRIPT;17`	Script-2
10.7.89	Loading of AariData into AariTables	`OZEDB_SYBASE.FOR;35`	For-1
17.7.89	Loading of GordonData into Gordontables	`GORDON.FOR;43`	For-2
7.12.89	Creation of Aari_Statistic, Marsden_Square, Aari_Statistic_View	`AARI_STAT.SCRIP`	Script-3
7.12.89	Creation of Aari_Indices on AariTables	`INDEX.SCRIPT`	Script-62
13.12.89	Update AariTables + GordonTables Set missing values = 0	`UPDATE_DEFAUlt_NULL.SCRIPT`	Script-63
1.6.90	Creation of indices on Standard_Tables	`STATION_INDEX.SCRIPT`	Script-66
28.6.90	Creation of tables Station, Standard_Data, Statistic, DeleteTables, UpdateTables, InsertTables, Validation	`StATION.SCRIPT`	Script-64
28.6.90	Procedure to fill StandardTables with Aari and GordonData	`MAKESTATION.SCRIPT`	Script-65
28.6.90	Copy of GordonData into Standardtables Sql-Procedure	`GORDON_COPY.SCRIPT;2`	Script-4
25.7.90	Loading of further Aari_Data into AariTables	`OZEDB_SYBASE1.FOR;3`	For-3
?	Procedure to copy AariData into StandardTables	`AARI_COPY.SCRIPT`	Script-61
10.9.90	Creation of Gordon_Interpolated_DataTable	`GORDON_INTERPO-lated_DATA.SCRIPT`	Script-5
10.9.90	Loading of interpolated GordonData from file INTERGOR.DAT into Gordon_Interpolated_Data-table	`OZEDB_SYBASE2.FOR`	For-4
12.9.90	Creation of indices on Gordon_Interpolated_Data	`GORDON_INTER_DATA.SCRIPT`	Script-68
16.10.90	Drop Triggers for Station, Standard_Data	`TRIGGER_DROP.SCRIPT`	Script-7 ✓
16.10.90	Calculate marsden square number	`MARS.FOR`	For-5
11 90	Creation of Gordon_Statistic, Gordon_Statistic_View	`GORDON_STAT.SCRIPT`	Script-8 →?
12.11.90	Creation of Nowlintables	`NOWLIN.SCRIPT`	Script-10 ✓
12.11.90	Set missing values = 0 for NowlinData	`NOWLIN_UPD.SCRIPT;2`	Script-9 ✓
16.11.90	Create proc garbageCollectStandardData for Aari	`GC.SCRIPT`	Script-11 ✓
19.11.90	Selects Station_Id# from Standard_Data which is not in table Station	`CHECKGCSD.Script`	Script-12 ✓
19.11.90	Execute CHECKGCSD.SCRIPT	`GARBAGECOLLECT.SCRIPT`	Script-13 ✓

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Steps in developing the SouthernOceanDB II

Date	Short Description	Name of the program	Signature
20.11.90	Creation of tables Gordon_Cruise and Gordon_Ship	GORDON_CRUISE .SCRIPT;3	Script-6 ✓
22.11.90	Creation of Gordon_Station_Backfill	GSBACKFILL.SCRIPT	Script-14 ✓
26.11.90	Loading of NowlinData into Nowlin_Station and Nowlin_Standard_Data	NOWLIN.FOR;2	For-6
27.11.90	Creation of KuropatkinTables	KUROPATKIN.SCRIPT	Script-17 ✓
27.11.90	Loading of KuropatkinData into AariTables	AARILOAD.FOR	
27.11.90	Loading of KuropatkinData into Kurop.tables	KUROPATKIN.FOR;8	For-7
27.11 90	Creation of AariIndices	AARIINDEX.SCRIPT	Script-16 ✓
28.11.90	Update Gordon_Interpolated_Data	UPDATE_NULL_GORDON INTER_DATA.SCRIPT	Script-67
28.11.90	Creation of Update-,Delete-,Insert-Triggers	TRIGGER.SCRIPT	Script-15 ✓
28.11.90	Update of some Kuropatkinvalues on Aaritable	KUROPATKIN_UPD .SCRIPT;3	Script-18 ✓
28.11.90	Update Aari_Station		
28.11.90	Correction of Gordon_Statistic, advising the user H.Ross		
28.11.90	Creation of Hainestables	HAINESLOAD.SCRIPT	Script-19 ✓
28.11.90	Loading of HainesData into HainesTables	HAINESLOAD.FOR;13	For-8
28.11.90	Creation of all triggers on Station, Standard_Data	TRIGGER.SCRIPT	Script-15
29.11.90	Set missing values = 0 For HainesData	HAINESLOAD_UPDATE. SCRIPT	Script-20
11.12.90	Test for Cruise.script	CRUISE_TEST.SCRIPT	Script-27 ✓
11.12.90	Creation of tables Ship and Cruise	CRUISE.SCRIPT	Script-26 ✓
11.12.90	Copy of HainesData into StandardTables	HAINESLOAD_COPY .SCRIPT	Script-25 ✓
11.12.90	Copy data from Aari_Cruise-Table to table Ship	AARI_TO_SHIP.C;1	C-1
12.12.90	Rename Aari_Cruise in Aari_Cruise_Bck, Cruise_View in AARI_CRUISE	UPDATE_SODB.SCRIPT	Script-28 ✓
15.12.90	Creation of GonellaTables	GONELLA.SCRIPT;2	Script-21 ✓
17.12.90	Loading of GonellaData into Gonella_Station and Gonella_Standard_Data	GONELLA.FOR;10	For-9
18.12.90	Set missing values = 0	GONELLA_UPD.SCRIPT;5	Script-22 ✓
18.12.90	Copy GonellaData into StandardTables	GONELLA_COPY_ ALL.SCRIPT	Script-24 ✓
18.12.90	Execute Gonella_Copy_All.SCRIPT	GONELLA_COPY.SCRIPT	Script-23 ✓
18.12.90	Marsden_Square	MARSPROB.FOR	For-10
19.12.90	Grant select on AARI_CRUISE to PHYSIK1	CRUISE_TABLE.SCRIPT	Script-29 ✓

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Steps in developing the SouthernOceanDB III

Date	Short Description	Name of the program	Signature
11.2.91	Changes of Cruise_Id# in Cruise, which were recognized as erroneus in Aari_Cruise_Bck	`CRUISE_UPD070291.SCRIPT`	Script-30 ✓
12.2.91	Procedure, created to update GS_Backfill: set Date_Time = 0 were Jan 1 1900 12:00AM	`UPDATE_BACKFILL_PROC.SCRIPT`	Script-31 ✓
12.2.91	Rename Gordon_Station_Backfill in Gordon_Station_Backfill_Bck Backup of Backfill	`GSBackfill_Upd070291.SCRIPT`	Script-32 ✓ R
12.2.91	Loading of GordonData into Gordon_Cruise, Gordon_Ship, Gordon_Station and Gordon_Station_Backfill from files Headers.fil, Shipgord3.dat	`GORDON_CRUISE.C;152`	C-2 ?
12.2.91	Correction of Gordon_Cruise	LPK by hand ?	
13.2.91	Selects Min and Max Ship_Id# and calculates the sum	`MAX_MIN_FROM_SHIP.SCRIPT`	Script-33 ✓
13.2.91	Creation of TokyoTables	`TOKYOTABLE.SCRIPT;12`	Script-34
	Loading TokyoData into TokyoTables	`TOKYOLOAD.FOR;14`	For-12
13.2.91	Insert new Ships and Cruises to Ship and Cruise from TokyoData	`ADD_TOKYO_SHIPS.SCRIPT`	Script-35 ✓
14.2.91	Set missing values = 0 for TokyoData	`TOKYO_UPD.SCRIPT;3`	Script-36 ✓
8.3.91	Update in Aari_Cruise	`AARI_UPDATE_SHIPS.SCRIPT`	Script-39 ✓
8.3.91	Update of ships in Aari_Cruise	`AARI_UPDATE_SHIPS_CORRECTION.SCRIPT`	Script-40 → ?
8.3.91	Update_Bottom_Depth in Tokyo_Fisheries_Station	`TOKYO_FISH_BOTTOM_DEPTH_UPDATE.SCRIPT`	Script-37 ✓
8.3.91	Correction of some erroneus values in Tokyo_Fisheries_Station	`TOKYO_FISHERIES_STATION_UPDATE.SCRIPT`	Script-38 ✓
?13.3.91	Creation of A1111Tables	`A1111.SCRIPT;5`	Script-41 ✓
22.3.91	Loading new AariData from A1111Data into A1111Tables	`A1111LOAD.FOR;4`	For-11
22.3.91	Set missing values = 0 for A1111Data	`A1111load_UPD.SCRIPT;`	Script-42 ✓ R
22.3.91	Copy A1111Data into StandardTables	`A1111_COPY.SCRIPT;4`	Script-59 ✓
27.3.91	Insert of new Ships from A1111	`A1111_SHIPS_UPD.SCRIPT`	Script-44 ✓
27.3.91	" " " " (Update Cruise)	`A1111_Ships.SCRIPT`	Script-43 ✓
9.4.91	Copy of TokyoData into StandardTables	`TOKYO_COPY.SCRIPT;5`	Script-45 ✓
17.5.91	Creation of JareTables	`JARELOAD.SCRIPT;3`	Script-46 ✓
21.5.91	Loading of JareData into JareTables	`JARELOAD.FOR;9`	For-13
28.5.91	Creation of Gordon_Cruise_LPK Ship_Code removed, replaced by Ship_Id#	`GORDON_CRUISE_DELETE_SHIP_CODE.SCRIPT`	Script-47 → ?

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Steps in developing the SouthernOceanDB IV

Short Description	Name of the program	Signature	Date
5.6.91	Set missing values = 0 fore JareData	JARE_UPD.SCRIPT;2	Script-48 ✓
10.6.91	Creation of BiomassTables	BIOMASS.SCRIPT	Script-49 → ?
12.6.91	Change some Ship names in table Cruise according to table Ship	UPDATESHIP-CRUISE100691.SCRIPT	Script-56 ✓
12.6.91	Discussion with Victor to analyze mistakes		
12.6.91	Loading of BiomassData into BiomassTables	BIOMASS.C	C-4
25.6.90	Script to change table Cruise: For some Cruises Ships are set to unknown, Id# = 1000000	UPDATECRU24 .SCRIPT	Script-57 ✓
25.6.91	Script to change table Cruise	UPDATECRU24S.SCRTIPT	Script-74 ✓
26.6.91	Changes of ship names in table Ship	SHIPS_UPD050291 .SCRIPT	Script-50 ✓
26.6.91	Procedure to insert new ships	INSERT_NEW_SHIPS .SCRIPT	Script-54 → ?
26.6.91	Procedure to update table Ship	UPDATE_SHIP_ID .SCRIPT	Script-52 ✓
26.6.91	Procedure to insert a new ship into Cruise	INSERT_INTO_CRUISE .SCRIPT	Script-53 → ?
27.6.91	Procedure to execute UPDATE_CRUISE.SCRIPT	UPDATE_CRUISE .SCRIPT	Script-55 ✓
2.7.91	Preparation of BiomassData for Graphics(Brandini		
15.7.91	Set missing values = 0 for BiomassData	BIOMASS_UPD.SCRIPT	Script-75 → ?
16.7.91	Group added: BIOMASS_GRP Login added: BIOMASS User added to SODB Grant select to Biomass_ERP on Biomass_Station and Biomass_Standard_Data		
23.7.90	Inserting chlorophyll values for Biomass given by Brandini: no change of existing data, duplicates are made, which consists on Biomass data + Chlorophyll_A because of the same station_Id for Biomass and Brandini For identification a value was added to the Station_Id# of duplicates	BIOMASS_BRANDINI. SCRIPT	Script-58 → ?
li ✓ hline 24.7.91	Program to select special values for graphics from Biomass for F.Brandini	BRANDINI.C	C-5
24.7.91	Routines to evaluate specific values from measured oceanographic data	ALPHA.C	C-6
1.8.91	Modification of Biomass.C, writing a Biomass-Table Script and finally a new loading of BiomassData because of a mistake in an Update-Program		

Script-51 ?

Steps in developing the SouthernOceanDB V

Date	Short Description	Name of the program	Signature
1.8.91	Creation of the table Programs (not run)	PROGRAMTABLE.SCRIPT	Script-69
7.8.91	Procedure to compare position and time of Biomass_ Station with the StationTable, the Station_Number is then written out	BIOSELPOSDAT.SCRIPT	Script-60 → ?
9.8.91	Creation of Muench_Standard_Data and Station	MUENCHLOAD.SCRIPT	Script-62 ✓
9.8.91	Loading of MuenchData into Muenchtables	MUENCHLOAD.FOR	For-14
12.8.91	Copy MuenchData into StandardTables	MUENCH_COPY_ALL .SCRIPT	Script-63 ✓
12.8.91	Update MuenchTables: Set missing values = 0	MUENCHLOAD_UPD .SCRIPT	Script-64 ✓
12.8.91	Copy BiomassData into StandardTables	BIOMASS_COPY_ALL.SCRIPT	Script-65 → ?
19.8.91	Inserting of two ships and eight cruises	Add_Ships_Jare140491.SCRIPT	Script-76 ✓
20.8.91	New creation of tables Cruise and Ship, additional the tables Cruise_Deleted and Cruise_Updated, Ship_Deleted and Ship_Updated, the indices for Ship and Cruise, and the triggers Delete_Cruise, Update_Cruise, Delete_Ship, Update_Ship	CRUISE.SCRIPT	Script-77

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Provided Procedures			
Date	Function	Program name	Signature
19.11.90	Selects Station_Id# from Standard_Data which is not in table station	CHECKGSCD.SCRIPT	Script-12
26.6.91	Procedure to insert new ships	INSERT_NEW_SHIPS .SCRIPT	Script-54
26.6.91	Procedure to update table Ship	UPDATE_SHIP_ID.SCRIPT	Script-52
26.6.91	Procedure to insert a new ship into Cruise	INSERT_INTO_CRUISE, .SCRIPT	Script-53
27.6.91	Procedure to execute UPDATE_CRUISE.SCRIPT	UPDATE_CRUISE.SCRIPT	Script-55
24.7.91	Program to select special values for graphics from Biomass for F.Brandini	BRANDINI.C	C-5
24.7.91	Routines to evaluate specific values from measured oceanographic data	ALPHA.C	C-6

8 Finish

To bring the documentation to a close a short description of the present state of the **SuothernOceanDB** follows.

Since the beginning of concepting the **SouthernOceanDB** in 1989 the database became more and more complex. So far the conception and structure of the database is finished. It is clear, how data are kept in the database, origin and standard, and which tables are needed for documentation.

Also the contents of the database, the data sets to be read in, is nearly complete. Most important data sets are available in the database.

But the work with data, the validation, is still going on. During the work with data for example the experience was made, that for controling the processing of data, previous tables for documentating were not sufficient. Because Dr. Guretzky, who is working with data, has found out, that so many ships do not correspond to the right cruise_numbers, that the names have to be changed, Lutz-Peter Kurdelski has created new tables for triggers to be run on Cruise and Ship. Then it is possible, to control the changed ship_names and cruises, to prevent possibly mistakes.

Also the programs, written by Dr. Guretzky have still to be read into the database. They must be load into an own table, where they are implemented with a signature.

So the further development of the database only means a completion of the existing database. But in this case a lot of ideas are possible, to improve the functions of the database. For example one of the last ideas was, to change the function of the Update_Flag in that way, that a user can see by this flag, which parameters of data have been changed of one record during the validation process.

It is also an aim to make the database more user-friendly by storing several finished applications, based on the user's wishes, in form of stored procedures.

For the future the development of the database is heavily determined by the user and his applications.