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**HYDROGRAPHIC RESULTS OF THE
DYNAMO CRUISE**

August 23 - Sept. 11, 1997

Technical Report

98/2

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METRO-MED - PNOC
(DYNAMO Cruise)

Conductivity/Temperature/Pressure/
Light transmission/Fluorimetry data
Processing Summary and Comments

1. CTD Processing Summary

232 CTD casts were completed using the Seabird 9/11 Plus CTD probe of the Observatoire Océanologique de Banyuls. The CTD data were recorded into 24 Hz time-series during the data acquisition. The pressure, temperature and conductivity channels were calibrated in laboratory. Light transmission was measured with a 25 cm optical pathlength Seatech transmissometer. Fluorimetry was measured with a Chelsea fluorimeter.

2. Hydrographic Data Acquisition

Six data channels (pressure, temperature, conductivity, elapsed time, light transmission and fluorimetry) were acquired at a data rate of 24Hz. CTD casts on the shelf were performed down to few meters above the bottom. Data acquisition consisted of storing all raw binary data on a hard disk. The raw data were then converted into engineering units using the laboratory calibration coefficients, generating pressure series data sets. An air calibration of the transmissometer was performed before the cruise and the estimated coefficients were used to calculate the transmittance (% of light transmitted).

A low-pass filter was used to compensate for the different time response of the sensors and to remove the salinity spikes. A ship-roll and minimum probe velocity filter (< 0.05 m/s) was applied to each cast to disallow pressure slowdowns and reversals. After filtering, the downcast portion of each cast was pressure-averaged and sequenced into 1 decibars pressure intervals. Recorded surface values were rejected only when it appeared that the drift was caused by sensors adjusting to the in-water transition. The 0-decibar level of some casts was then extrapolated considering homogeneous thermohaline characteristics in the first meters of the water column.

The one decibar pressure (PRES), temperature (TEMP) and conductivity (COND) data were used to compute the following hydrographic parameters depth, potential temperature (θ), salinity, potential density anomalies (σ_θ , σ_2 , σ_4), sound velocity (SVEL), specific volume anomaly (SVA), dynamic height (DYN HT), spiciness, density ratio (DENS RATIO) and buoyancy frequency (BUOY FREQ).

Temperature is ITS-68, salinity is PSS-78, density is calculated based on the equation of state of seawater (EOS80; Fofonoff and Millard, 1983), buoyancy frequency is calculated using the adiabatic leveling method (Fofonoff, 1985).

3. References

Fofonoff N.P. and Millard R.C. 1983. Algorithms for computation of fundamental properties of seawater. UNESCO report 44, 15-24.

Fofonoff N.P. 1985. Physical properties of seawater: a new salinity scale and equation of state for seawater. *Journal of Geophysical Research*, 90, 3332-3342.

DEFINITION OF DERIVED VARIABLES

In situ temperature	= t	[°C]
Conductivity	= c	[S/m]
Pressure	= p	[dBar]
Reference pressure	= p_r	[dBar]
Latitude	= lat	[°]

Gravity acceleration	= $g(lat, p)$	[m/s ²]
Depth	= $z(p, g)$	[m]
Salinity	= $s(t, c, p)$	[psu]
Potential temperature	= $\theta(s, t, p, p_r)$	[°C]

Density anomalies

$$\begin{aligned} \sigma_\theta &= \rho(s, \theta(s, t, p, 0), 0) - 1000 \\ &[\text{Kg/m}^3] \\ \sigma_2 &= \rho(s, \theta(s, t, p, 2000), 2000) - 1000 \\ &[\text{Kg/m}^3] \\ \sigma_4 &= \rho(s, \theta(s, t, p, 4000), 4000) - 1000 \\ &[\text{Kg/m}^3] \\ \sigma_t &= \rho(s, t, 0) - 1000 \\ &[\text{Kg/m}^3] \\ \sigma &= \rho(s, t, p) - 1000 \\ &[\text{Kg/m}^3] \end{aligned}$$

Specific volume = $V(s, t, p) = 1/\rho$
[m³/Kg]

Specific volume anomaly

$$\delta = 10^{-8} (V(s, t, p) - V(35, 0, p)) \quad [10^{-8} \text{ m}^3/\text{Kg}]$$

Geopotential anomaly

$$\psi = 10^{-4} \sum_{\Delta p, p=0}^{p=p} (\delta \times \Delta p) \quad [\text{J/Kg}] =$$

[m²/s²]

Buoyancy frequency

$$\begin{aligned} N^2 &= -10^{-4} \rho^2 g^2 \partial V / \partial p \\ &[\text{rad}^2/\text{s}^2] \\ &= 3600 \text{ N} / 2\pi \\ &[\text{cycles}/\text{hour}] \end{aligned}$$

Density ratio

$$R_p = (\alpha \partial \theta / \partial z) / (\beta \partial s / \partial z)$$

where $\alpha = -1/\rho (\partial \rho / \partial \theta) |_{s, p}$

and $\beta = -1/\rho (\partial\rho/\partial s)|_{\theta,p}$

Sound velocity = $svel (s,t,p)$ [m/s]

Specific heat = $C_p (s,t,p)$
[J/Kg/°C]

Spiciness = $\tau (s,t)$

TABLE 1
STATION DESCRIPTIONS

DYNAMO

R/V THETYS II 23 AUG 1997 - 11 SEP 1997

Cast	Station	Date	Time UTC	Latitude	Longitude	PDR Ocean Depth	Maximum Sampling Fepth	Distance above Bottom
1	1	24 Aug 97	07:50	43°N 20.00'	004°E 30.00'	30	29	1
2	2	24 Aug 97	09:30	43°N 15.00'	004°E 30.00'	61	60	1
3	3	24 Aug 97	10:25	43°N 10.00'	004°E 30.00'	73	70	3
4	4	24 Aug 97	11:25	43°N 05.00'	004°E 30.00'	93	90	3
5	5	24 Aug 97	12:27	43°N 00.00'	004°E 30.00'	130	129	1
6	6	24 Aug 97	13:35	42°N 55.00'	004°E 30.00'	496	481	15
7	13	24 Aug 97	14:54	42°N 55.00'	004°E 37.00'	160	157	3
8	12	24 Aug 97	16:00	43°N 00.00'	004°E 37.00'	121	120	1
9	11	24 Aug 97	17:20	43°N 05.00'	004°E 37.00'	91	90	1
10	10	24 Aug 97	18:20	43°N 10.00'	004°E 37.00'	74	73	1
11	9	24 Aug 97	18:54	43°N 12.50'	004°E 37.00'	68	67	1
12	8	24 Aug 97	19:25	43°N 15.00'	004°E 37.00'	59	58	1
13	7	24 Aug 97	19:58	43°N 17.50'	004°E 37.00'	43	42	1
14	14	24 Aug 97	20:53	43°N 17.50'	004°E 44.00'	50	48	2
15	15	24 Aug 97	21:25	43°N 15.00'	004°E 44.00'	74	71	3
16	16	24 Aug 97	22:00	43°N 12.50'	004°E 44.00'	85	84	1
17	17	24 Aug 97	22:35	43°N 10.00'	004°E 44.00'	91	90	1
18	18	24 Aug 97	23:35	43°N 05.00'	004°E 44.00'	96	94	2
19	19	25 Aug 97	00:35	43°N 00.00'	004°E 44.00'	115	114	1
20	20	25 Aug 97	01:37	42°N 55.00'	004°E 44.00'	140	138	2
21	27	25 Aug 97	02:40	42°N 55.00'	004°E 51.00'	239	238	1
22	26	25 Aug 97	03:40	43°N 00.00'	004°E 51.00'	123	122	1
23	25	25 Aug 97	04:40	43°N 05.00'	004°E 51.00'	108	107	1
24	24	25 Aug 97	05:40	43°N 10.00'	004°E 51.00'	105	104	1
25	23	25 Aug 97	06:25	43°N 12.50'	004°E 51.00'	101	101	0
26	22	25 Aug 97	07:00	43°N 15.00'	004°E 51.00'	93	91	2
27	21	25 Aug 97	07:44	43°N 17.50'	004°E 51.00'	73	71	2
28	28	25 Aug 97	08:46	43°N 17.50'	004°E 58.00'	77	73	4
29	29	25 Aug 97	09:21	43°N 15.00'	004°E 58.00'	96	92	4
30	30	25 Aug 97	10:00	43°N 12.50'	004°E 58.00'	105	102	3
31	31	25 Aug 97	10:40	43°N 10.00'	004°E 58.00'	111	109	2
32	32	25 Aug 97	11:35	43°N 05.00'	004°E 58.00'	118	116	2
33	33	25 Aug 97	12:35	43°N 00.00'	004°E 58.00'	262	251	11
34	34	25 Aug 97	13:40	42°N 55.00'	004°E 58.00'	385	376	9
35	40	25 Aug 97	15:05	42°N 55.00'	005°E 05.00'	877	860	17
36	39	25 Aug 97	17:02	43°N 00.00'	005°E 05.00'	567	546	21
37	38	25 Aug 97	18:40	43°N 05.00'	005°E 05.00'	130	127	3
38	37	25 Aug 97	19:20	43°N 10.00'	005°E 05.00'	108	107	1
39	36	25 Aug 97	20:05	43°N 15.00'	005°E 05.00'	95	93	2
40	35	25 Aug 97	20:30	43°N 17.50'	005°E 05.00'	76	73	3

41	41	25	Aug 97	21:10	43°N 17.50'	005°E 12.00'	74	73	1
42	42	25	Aug 97	21:35	43°N 15.00'	005°E 12.00'	80	79	1
43	43	25	Aug 97	22:15	43°N 10.00'	005°E 12.00'	89	88	1
44	44	25	Aug 97	23:02	43°N 05.00'	005°E 12.00'	470	461	9
45	45	26	Aug 97	00:20	43°N 00.00'	005°E 12.00'	1166	1147	19
46	46	26	Aug 97	02:05	42°N 55.00'	005°E 12.00'	1215	1194	21
47	47	26	Aug 97	06:05	43°N 19.00'	004°E 58.00'	63	61	2
48	48	26	Aug 97	06:40	43°N 19.00'	004°E 51.00'	23	22	1
49	49	26	Aug 97	07:25	43°N 19.00'	004°E 44.00'	18	18	0
50	50	26	Aug 97	08:00	43°N 19.00'	004°E 37.00'	20	19	1
51	51	26	Aug 97	08:50	43°N 22.10'	004°E 30.00'	21	20	1
52	M	26	Aug 97	10:05	43°N 15.40'	004°E 42.00'	64	64	0
53	M	26	Aug 97	10:35	43°N 15.40'	004°E 42.00'	64	63	1
54	M	26	Aug 97	11:05	43°N 15.40'	004°E 42.00'	64	62	2
55	M	26	Aug 97	11:35	43°N 15.40'	004°E 42.00'	64	63	1
56	M	26	Aug 97	12:05	43°N 15.40'	004°E 42.00'	64	62	2
57	M	26	Aug 97	12:35	43°N 15.40'	004°E 42.00'	64	63	1
58	M	26	Aug 97	13:05	43°N 15.40'	004°E 42.00'	64	63	1
59	M	26	Aug 97	13:30	43°N 15.40'	004°E 42.00'	64	63	1
60	M	26	Aug 97	14:00	43°N 15.40'	004°E 42.00'	64	63	1
61	M	26	Aug 97	14:30	43°N 15.40'	004°E 42.00'	64	63	1
62	M	26	Aug 97	15:00	43°N 15.40'	004°E 42.00'	64	64	0
63	M	26	Aug 97	15:30	43°N 15.40'	004°E 42.00'	64	63	1
64	M	26	Aug 97	16:00	43°N 15.40'	004°E 42.00'	64	63	1
65	M	26	Aug 97	16:30	43°N 15.40'	004°E 42.00'	64	63	1
66	M	26	Aug 97	17:00	43°N 15.40'	004°E 42.00'	64	64	0
67	M	26	Aug 97	17:30	43°N 15.40'	004°E 42.00'	64	63	1
68	M	26	Aug 97	18:00	43°N 15.40'	004°E 42.00'	64	63	1
69	M	26	Aug 97	18:30	43°N 15.40'	004°E 42.00'	64	63	1
70	M	26	Aug 97	19:00	43°N 15.40'	004°E 42.00'	64	63	1
71	M	26	Aug 97	19:30	43°N 15.40'	004°E 42.00'	64	64	0
72	M	26	Aug 97	20:00	43°N 15.40'	004°E 42.00'	64	64	0
73	M	26	Aug 97	20:30	43°N 15.40'	004°E 42.00'	64	63	1
74	M	26	Aug 97	21:00	43°N 15.40'	004°E 42.00'	64	64	0
75	M	26	Aug 97	21:30	43°N 15.40'	004°E 42.00'	64	63	0
76	M	26	Aug 97	22:00	43°N 15.40'	004°E 42.00'	64	64	0
77	M	26	Aug 97	22:30	43°N 15.40'	004°E 42.00'	64	64	0
78	M	26	Aug 97	23:00	43°N 15.40'	004°E 42.00'	64	63	1
79	M	26	Aug 97	23:30	43°N 15.40'	004°E 42.00'	64	64	0
80	M	27	Aug 97	00:00	43°N 15.40'	004°E 42.00'	64	64	0
81	M	27	Aug 97	00:30	43°N 15.40'	004°E 42.00'	64	64	0
82	M	27	Aug 97	01:00	43°N 15.40'	004°E 42.00'	64	64	0
83	M	27	Aug 97	01:30	43°N 15.40'	004°E 42.00'	64	63	1
84	M	27	Aug 97	02:00	43°N 15.40'	004°E 42.00'	64	63	1
85	M	27	Aug 97	02:30	43°N 15.40'	004°E 42.00'	64	64	0
86	M	27	Aug 97	03:00	43°N 15.40'	004°E 42.00'	64	64	0
87	M	27	Aug 97	03:30	43°N 15.40'	004°E 42.00'	64	64	0
88	M	27	Aug 97	04:00	43°N 15.40'	004°E 42.00'	64	64	0
89	M	27	Aug 97	04:30	43°N 15.40'	004°E 42.00'	64	63	1
90	M	27	Aug 97	05:00	43°N 15.40'	004°E 42.00'	64	64	0
91	M	27	Aug 97	05:30	43°N 15.40'	004°E 42.00'	64	64	0
92	M	27	Aug 97	06:00	43°N 15.40'	004°E 42.00'	64	63	1

93	M	27	Aug 97	06:30	43°N 15.40'	004°E 42.00'	64	64	0
94	M	27	Aug 97	07:00	43°N 15.40'	004°E 42.00'	64	64	0
95	M	27	Aug 97	07:30	43°N 15.40'	004°E 42.00'	64	64	0
96	M	27	Aug 97	08:00	43°N 15.40'	004°E 42.00'	64	63	1
97	M	27	Aug 97	08:35	43°N 15.40'	004°E 42.00'	64	64	0
98	M	27	Aug 97	09:00	43°N 15.40'	004°E 42.00'	64	64	0
99	M	27	Aug 97	09:30	43°N 15.40'	004°E 42.00'	64	64	0
100	M	27	Aug 97	10:00	43°N 15.40'	004°E 42.00'	64	63	1
101	M	27	Aug 97	10:30	43°N 15.40'	004°E 42.00'	64	63	1
102	M	27	Aug 97	11:20	43°N 15.40'	004°E 42.00'	64	64	0
103	M	27	Aug 97	12:20	43°N 15.40'	004°E 42.00'	64	62	2
104	47	30	Aug 97	08:20	43°N 19.00'	004°E 58.00'	63	62	1
105	47	30	Aug 97	08:30	43°N 19.00'	004°E 58.00'	63	63	0
106	28	30	Aug 97	09:00	43°N 17.50'	004°E 58.00'	77	76	1
107	29	30	Aug 97	09:45	43°N 15.00'	004°E 58.00'	96	95	1
108	30	30	Aug 97	10:30	43°N 12.50'	004°E 58.00'	106	103	3
109	31	30	Aug 97	11:30	43°N 10.00'	004°E 58.00'	111	109	2
110	24	30	Aug 97	13:05	43°N 10.00'	004°E 51.00'	105	102	3
111	23	30	Aug 97	13:45	43°N 12.50'	004°E 51.00'	101	100	1
112	22	30	Aug 97	14:30	43°N 15.00'	004°E 51.00'	93	91	2
113	21	30	Aug 97	15:15	43°N 17.50'	004°E 51.00'	74	71	3
114	48	30	Aug 97	15:50	43°N 19.00'	004°E 51.00'	22	22	0
115	49	30	Aug 97	17:00	43°N 19.00'	004°E 44.00'	19	16	3
116	14	30	Aug 97	17:30	43°N 17.50'	004°E 44.00'	52	50	2
117	15	30	Aug 97	18:40	43°N 15.00'	004°E 44.00'	74	73	1
118	16	30	Aug 97	19:25	43°N 12.50'	004°E 44.00'	86	85	1
119	17	30	Aug 97	20:05	43°N 10.00'	004°E 44.00'	91	90	1
120	18	31	Aug 97	06:45	43°N 05.00'	004°E 44.00'	96	94	2
121	25	31	Aug 97	07:56	43°N 05.00'	004°E 51.00'	108	106	2
122	32	31	Aug 97	09:25	43°N 05.00'	004°E 58.00'	118	116	2
123	37	31	Aug 97	11:00	43°N 10.00'	005°E 05.00'	108	106	2
124	36	31	Aug 97	11:45	43°N 15.00'	005°E 05.00'	96	92	4
125	35	31	Aug 97	12:10	43°N 17.50'	005°E 05.00'	77	73	4
126	41	31	Aug 97	12:50	43°N 17.50'	005°E 12.00'	74	72	2
127	42	31	Aug 97	13:20	43°N 15.00'	005°E 12.00'	76	75	1
128	43	31	Aug 97	14:00	43°N 10.00'	005°E 12.00'	88	86	2
129	44	31	Aug 97	14:45	43°N 05.00'	005°E 12.00'	340	320	20
130	38	31	Aug 97	15:35	43°N 05.00'	005°E 05.00'	129	123	6
131	41	06	Sep 97	06:05	43°N 17.50'	005°E 12.00'	73	72	1
132	42	06	Sep 97	06:45	43°N 15.00'	005°E 12.00'	80	79	1
133	43	06	Sep 97	07:55	43°N 10.00'	005°E 12.00'	89	87	2
134	44	06	Sep 97	09:15	43°N 05.00'	005°E 12.00'	347	320	27
135	45	06	Sep 97	10:15	43°N 00.00'	005°E 12.00'	1156	1101	55
136	46	06	Sep 97	11:58	42°N 55.00'	005°E 12.00'	1146	1101	45
137	40	06	Sep 97	13:04	42°N 55.00'	005°E 05.00'	884	821	63
138	39	06	Sep 97	14:22	43°N 00.00'	005°E 05.00'	540	520	20
139	38	06	Sep 97	15:30	43°N 05.00'	005°E 05.00'	140	125	15
140	37	06	Sep 97	16:27	43°N 10.00'	005°E 05.00'	108	104	4
141	36	06	Sep 97	17:20	43°N 15.00'	005°E 05.00'	95	94	1
142	35	06	Sep 97	17:50	43°N 17.50'	005°E 05.00'	79	77	2
143	47	06	Sep 97	18:35	43°N 19.00'	004°E 58.00'	63	62	1
144	28	06	Sep 97	18:55	43°N 17.50'	004°E 58.00'	77	75	2

145	29	06 Sep 97	19:20	43°N 15.00'	004°E 58.00'	94	93	1
146	30	06 Sep 97	19:50	43°N 12.50'	004°E 58.00'	106	104	2
147	31	06 Sep 97	20:20	43°N 10.00'	004°E 58.00'	111	110	1
148	32	06 Sep 97	21:15	43°N 05.00'	004°E 58.00'	119	118	1
149	33	06 Sep 97	22:05	43°N 00.00'	004°E 58.00'	212	210	2
150	34	06 Sep 97	23:00	42°N 55.00'	004°E 58.00'	420	381	39
151	27	06 Sep 97	23:51	42°N 55.00'	004°E 51.00'	272	251	21
152	26	07 Sep 97	00:58	43°N 00.00'	004°E 51.00'	123	110	13
153	25	07 Sep 97	02:00	43°N 05.00'	004°E 51.00'	108	105	3
154	24	07 Sep 97	02:55	43°N 10.00'	004°E 51.00'	104	101	3
155	23	07 Sep 97	03:36	43°N 12.50'	004°E 51.00'	101	99	2
156	22	07 Sep 97	04:13	43°N 15.00'	004°E 51.00'	93	90	3
157	21	07 Sep 97	04:40	43°N 17.50'	004°E 51.00'	74	72	2
158	48	07 Sep 97	05:05	43°N 19.00'	004°E 51.00'	22	20	2
159	49	07 Sep 97	05:39	43°N 19.00'	004°E 44.00'	18	16	2
160	14	07 Sep 97	05:52	43°N 17.50'	004°E 44.00'	49	49	0
161	15	07 Sep 97	06:21	43°N 15.00'	004°E 44.00'	74	72	2
162	16	07 Sep 97	06:50	43°N 12.50'	004°E 44.00'	86	85	1
163	17	07 Sep 97	07:17	43°N 10.00'	004°E 44.00'	92	90	2
164	18	07 Sep 97	08:00	43°N 05.00'	004°E 44.00'	97	94	3
165	19	07 Sep 97	08:47	43°N 00.00'	004°E 44.00'	115	115	0
166	20	07 Sep 97	09:35	42°N 55.00'	004°E 44.00'	140	137	3
167	12	07 Sep 97	10:59	43°N 00.00'	004°E 37.00'	121	121	0
168	11	07 Sep 97	11:41	43°N 05.00'	004°E 37.00'	92	91	1
169	10	07 Sep 97	12:36	43°N 10.00'	004°E 37.00'	75	73	2
170	9	07 Sep 97	13:05	43°N 12.50'	004°E 37.00'	68	67	1
171	8	07 Sep 97	13:35	43°N 15.00'	004°E 37.00'	60	60	0
172	7	07 Sep 97	14:00	43°N 17.50'	004°E 37.00'	43	42	1
173	50	07 Sep 97	14:20	43°N 19.00'	004°E 37.00'	19	18	1
174	51	07 Sep 97	15:03	43°N 22.10'	004°E 30.00'	21	20	1
175	1	07 Sep 97	15:25	43°N 20.00'	004°E 30.00'	30	29	1
176	2	07 Sep 97	16:15	43°N 15.00'	004°E 30.00'	61	61	0
177	3	07 Sep 97	16:55	43°N 10.00'	004°E 30.00'	75	74	1
178	4	07 Sep 97	17:36	43°N 05.00'	004°E 30.00'	93	92	1
179	5	07 Sep 97	18:25	43°N 00.00'	004°E 30.00'	158	154	4
180	6	07 Sep 97	19:14	42°N 55.00'	004°E 30.00'	498	487	11
181	13	07 Sep 97	20:06	42°N 55.00'	004°E 37.00'	462	420	42
182	41	08 Sep 97	04:00	43°N 17.50'	005°E 12.00'	74	73	1
183	42	08 Sep 97	04:30	43°N 15.00'	005°E 12.00'	81	80	1
184	43	08 Sep 97	05:20	43°N 10.00'	005°E 12.00'	89	88	1
185	44	08 Sep 97	06:04	43°N 05.00'	005°E 12.00'	366	351	15
186	45	08 Sep 97	06:56	43°N 00.00'	005°E 12.00'	1113	1052	61
187	46	08 Sep 97	08:12	42°N 55.00'	005°E 12.00'	1054	1001	53
188	40	08 Sep 97	09:18	42°N 55.00'	005°E 05.00'	816	804	12
189	39	08 Sep 97	10:30	43°N 00.00'	005°E 05.00'	628	601	27
190	38	08 Sep 97	11:30	43°N 05.00'	005°E 05.00'	126	126	0
191	37	08 Sep 97	12:20	43°N 10.00'	005°E 05.00'	109	108	1
192	36	08 Sep 97	13:12	43°N 15.00'	005°E 05.00'	95	94	1
193	35	08 Sep 97	13:45	43°N 17.50'	005°E 05.00'	78	77	1
194	47	08 Sep 97	14:25	43°N 19.00'	004°E 58.00'	63	63	0
195	28	08 Sep 97	14:45	43°N 17.50'	004°E 58.00'	77	76	1
196	29	08 Sep 97	15:11	43°N 15.00'	004°E 58.00'	94	92	2

197	30	08 Sep 97	15:37	43°N 12.50'	004°E 58.00'	104	103	1
198	31	08 Sep 97	16:10	43°N 10.00'	004°E 58.00'	111	110	1
199	32	08 Sep 97	17:00	43°N 05.00'	004°E 58.00'	118	116	2
200	33	08 Sep 97	17:45	43°N 00.00'	004°E 58.00'	220	192	28
201	34	08 Sep 97	18:38	42°N 55.00'	004°E 58.00'	408	401	7
202	27	08 Sep 97	19:25	42°N 55.00'	004°E 51.00'	254	241	13
203	26	08 Sep 97	20:20	43°N 00.00'	004°E 51.00'	124	123	1
204	25	08 Sep 97	21:10	43°N 05.00'	004°E 51.00'	107	107	0
205	24	08 Sep 97	21:55	43°N 10.00'	004°E 51.00'	105	103	2
206	23	08 Sep 97	22:29	43°N 12.50'	004°E 51.00'	102	101	1
207	22	08 Sep 97	23:04	43°N 15.00'	004°E 51.00'	93	91	2
208	21	08 Sep 97	23:37	43°N 17.50'	004°E 51.00'	73	72	1
209	48	08 Sep 97	23:59	43°N 19.00'	004°E 51.00'	35	35	0
210	49	09 Sep 97	00:34	43°N 19.00'	004°E 44.00'	22	21	1
211	14	09 Sep 97	00:53	43°N 17.50'	004°E 44.00'	50	49	1
212	15	09 Sep 97	01:21	43°N 15.00'	004°E 44.00'	74	72	2
213	16	09 Sep 97	01:48	43°N 12.50'	004°E 44.00'	86	84	2
214	17	09 Sep 97	02:16	43°N 10.00'	004°E 44.00'	91	89	2
215	20	09 Sep 97	04:40	42°N 55.00'	004°E 44.00'	141	120	21
216	11	09 Sep 97	06:44	43°N 05.00'	004°E 37.00'	92	83	9
217	10	09 Sep 97	07:30	43°N 10.00'	004°E 37.00'	75	73	2
218	9	09 Sep 97	08:00	43°N 12.50'	004°E 37.00'	68	67	1
219	8	09 Sep 97	08:30	43°N 15.00'	004°E 37.00'	60	59	1
220	7	09 Sep 97	08:55	43°N 17.50'	004°E 37.00'	44	43	1
221	50	09 Sep 97	09:15	43°N 19.00'	004°E 37.00'	19	18	1
222	51	09 Sep 97	09:55	43°N 22.10'	004°E 30.00'	21	20	1
223	1	09 Sep 97	10:16	43°N 20.00'	004°E 30.00'	30	29	1
224	2	09 Sep 97	11:00	43°N 15.00'	004°E 30.00'	61	59	2
225	3	09 Sep 97	11:40	43°N 10.00'	004°E 30.00'	73	70	3
226	4	09 Sep 97	12:30	43°N 05.00'	004°E 30.00'	93	91	2
227	5	09 Sep 97	13:18	43°N 00.00'	004°E 30.00'	139	130	9
228	6	09 Sep 97	14:11	42°N 55.00'	004°E 30.00'	494	471	23
229	13	09 Sep 97	15:02	42°N 55.00'	004°E 37.00'	330	316	14
230	12	09 Sep 97	15:47	43°N 00.00'	004°E 37.00'	122	117	5
231	19	09 Sep 97	16:25	43°N 00.00'	004°E 44.00'	113	112	1
232	18	09 Sep 97	17:02	43°N 05.00'	004°E 44.00'	97	96	1