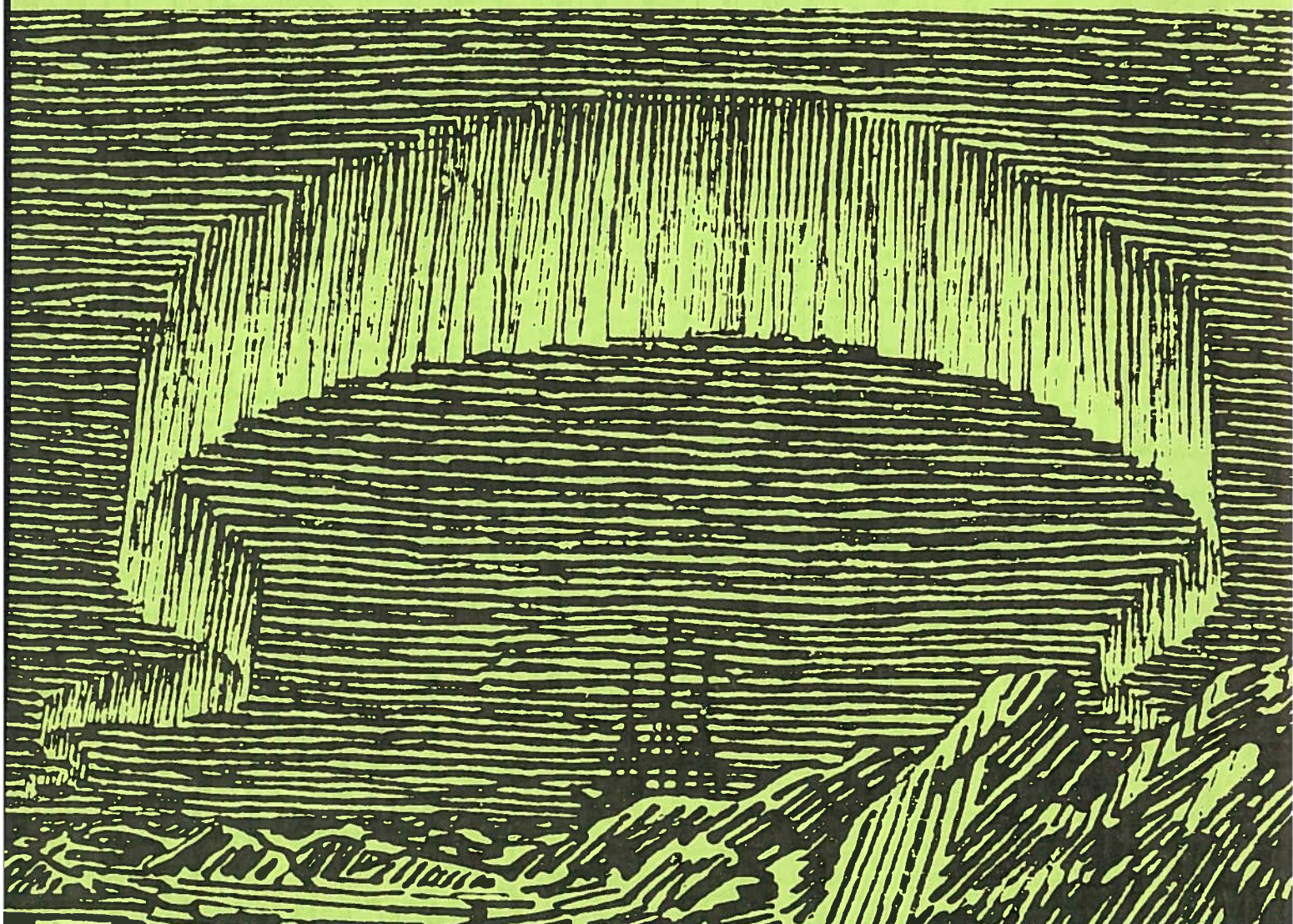


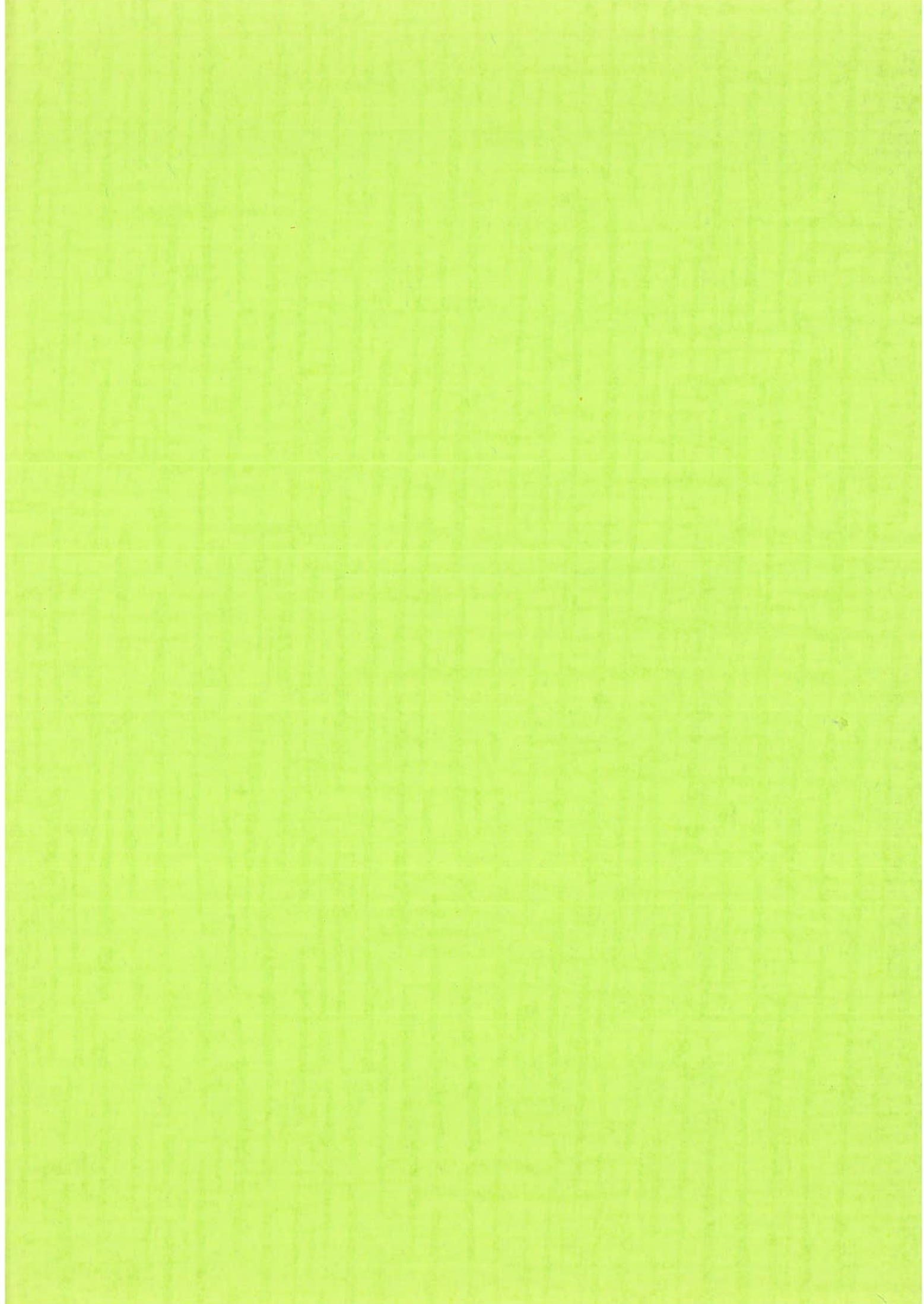
# THE AURORAL OBSERVATORY

TROMSØ

NORWAY

**MAGNETIC OBSERVATIONS  
1975**





## INTRODUCTION

This yearbook presents the results of the geomagnetic measurements carried out at The Auroral Observatory, Tromsø, Norway. The Observatory is now an institute at The University of Tromsø. Inquiries can be addressed to:

The Auroral Observatory  
P.O. Box 953  
N-9001 TROMSØ, Norway.

The Observatory is situated 2 km NW from the centre of the town. The geographical coordinates are:

Latitude:  $69^{\circ}39'.7$  N      Longitude:  $18^{\circ}56'.4$  E

Altitude: 105 m above sea level.

### Instrument Equipment

The values of hourly means etc. are based on photographic records from the following three variometers: D and H of the Askania-Bamberg type and a Z-variometer of the type La Cour.

Insensitive recordings of the three elements are obtained by a modified La Cour system.

Pulsations recordings are obtained by a Grenet system.

The following instruments have been used for base-line control: Askania theodolit and a double magnet suspended in a silk-thread for D-measurements, for H-measurements QHM 123 and QHM 164, and for Z-measurements BMZ 39 and BMZ 57. From 1975 will a Geometric G 826 protomagnetometer be used for Z-base line control.

### Scale value determinations

The scale value of the variometers are determined by means of Helmholtz coils. The values are as follows expressed in

units pr. mm:

	D	H	Z
Normal:	1',45	5,28 nT	6,57 nT
Storm:	3',0	22,2 nT	24.0 nT

Notes to the tables

The hourly mean values are centered on the half hours. The quiet mean values are estimated from selected quiet hours only.

Universal time is used everywhere in this yearbook, and the declination is reckoned positive towards west.

Stars in the tables indicates that the values are greater than - 999.

ANNUAL MEANS OF THE MAGNETIC ELEMENTS

Year	D	H	Z	Year	D	H	Z
1930	4°07',7 W	11567 nT		1957	0°15',9 W	11182 nT	50868 nT
31	3°59,6	49	50198nT	58	12',7	94	902
32	49,0	499	95	59	08,1	96	35
33	37,3	72	50203	60	03,9	97	80
34	25,9	41	23	61	02,1	214	51004
35	14,3	07	47	62	00,1 E	17	37
36	04,8	379	76	63	03,9 E	22	65
37	2°53,7	50	308	64	03,7 E	39	88
38	44,1	25	40	65	04,6 E	51	94
39	35,0	297	62	66	04,5 E	60	130
40	26,6	78	81	67	04,0 E	65	60
41	16,6	56	417	68	02,0 E	68	96
42	10,6	44	24	69	01,5 W	79	235
43	02,5	22	49	70	04,2 W	95	78
44	1°54,3	13	67	71	05,5 W	333	303
45	45,7	199	503	72	05,5 W	64	19
46	34,6	79	54	73	03,5 W	70	65
47	26,5	74	85	74	00,3 E	73	415
48	18,4	56	94	75	02,4 E	84	46
49	10,5	53	612				
50	03,6	52	47				
51	0°54,1	43	93				
52	43,9	44	711				
53	36,0	53	24				
54	29,1	65	44				
55	24,0	72	76				
56	18,1	73	825				





TROMSØ. DECLINATION, D=0 DEG. W + TABULAR QUANTITIES EXPRESSED IN TENTH OF MINUTES.  
HOURLY MEAN VALUES

MARCH 1975

DAY

1	-57	-231	-246	-130	-14	0	29	58	102	102	58	29	29	44	29	29	-14	-217	-86	-72	131	-72	-14	0	-21
2	-115	-217	-14	-72	-14	0	29	29	44	44	29	44	58	44	29	29	0	-72	-28	-86	-159	-173	-115	0	-27
3	-115	-57	-28	0	0	15	29	15	15	15	29	58	87	87	87	87	-43	-28	-43	29	-28	-217	-231	-6	
4	-43	-57	-86	-28	0	44	29	44	29	44	44	58	44	73	29	15	15	15	29	29	29	15	0	-130	10
5	-72	-159	-217	-217	-115	-159	-57	58	58	44	29	58	87	102	131	29	102	73	160	-101	15	0	-115	-260	-21
6	-144	-57	-57	-28	-14	44	73	29	29	44	87	102	44	131	116	131	-72	44	15	-43	-86	-753	-318	0	-28
7	29	29	15	0	0	0	0	0	15	15	29	29	29	29	15	15	0	15	15	15	15	15	0	0	13
8	0	0	0	-14	-14	-14	0	15	15	15	29	29	29	29	15	15	15	15	15	15	15	0	15	0	10
9	0	0	0	-14	-28	-28	-14	-14	0	29	44	58	44	29	44	29	29	44	44	58	15	15	-28	-420	-2
10	*****	-971	-463	-231	-217	-144	29	73	-57	44	-14	87	116	189	116	334	334	334	-101	-28	44	-115	15	-132	
11	-246	-188	-246	-318	-391	-173	-130	-101	-101	-28	-15	15	-43	44	116	-28	44	44	15	232	-72	-130	-217	-79	
12	0	-347	-420	-318	-86	-72	-28	-14	-28	-14	-28	73	-14	-57	131	160	145	73	116	116	15	-173	-72	-405	-51
13	-260	-434	-275	-28	-28	0	0	-28	-14	-28	15	0	87	58	87	58	145	102	421	44	-14	-57	189	-246	-8
14	-130	-72	-72	-14	-43	-72	44	73	29	0	73	58	87	73	116	58	87	15	44	29	-144	15	-130	-159	-1
15	-318	-275	-188	-115	-101	-72	15	29	29	15	44	87	102	102	102	87	29	29	73	15	-14	-173	-275	-144	-38
16	-57	-72	-57	-43	-57	-14	15	29	-43	29	73	116	116	116	-28	160	58	87	44	29	0	0	-14	-144	14
17	-173	-202	-202	-217	-101	-14	-14	15	29	29	44	58	58	44	44	15	0	29	29	-28	0	-28	-72	-246	-37
18	-391	-246	-101	-43	-43	-28	-14	0	15	29	44	87	73	116	145	160	160	189	160	116	0	-202	-188	-86	-2
19	-43	-57	-57	-43	-28	-28	-14	0	29	58	73	73	102	131	87	116	116	102	116	189	29	-202	-275	-246	9
20	-86	0	0	-28	-28	-28	15	29	29	44	58	73	131	116	189	160	73	-14	102	73	102	-72	-362	-318	10
21	-86	0	-14	-14	-14	-14	-28	-14	-14	29	44	44	44	29	15	0	0	0	0	15	0	15	0	15	1
22	15	0	0	0	-14	-14	-28	-14	0	29	44	44	29	29	15	15	29	29	44	44	29	29	29	-28	14
23	-188	-246	-434	-202	-115	-28	29	44	102	73	87	87	116	73	73	44	15	29	44	0	15	0	29	0	-14
24	0	-14	-28	-28	-43	-43	-28	-14	0	29	87	131	189	232	232	276	145	58	73	29	-101	-101	-115	15	40
25	15	-57	-43	-28	-14	-28	-28	-14	15	44	58	87	87	73	15	-14	-14	-28	28	15	15	15	15	0	6
26	0	0	-14	-28	0	-43	0	15	58	87	87	116	116	102	44	29	44	58	-101	-260	-86	0	-72	6	
27	-130	-144	-115	-101	-14	-14	0	0	29	73	102	145	160	116	189	305	319	334	232	131	116	0	-101	-173	60
28	-144	-115	-57	-28	-57	-28	-72	-115	58	0	29	0	29	-57	116	-101	73	-14	73	-115	-173	-57	-306	-188	-51
29	-72	-115	-217	-130	-14	-28	-14	15	29	0	44	87	-28	73	58	29	29	58	-14	-14	-57	-72	-101	-18	
30	-188	-43	-14	-14	-14	-28	-28	-14	-14	15	73	73	58	58	44	29	29	15	0	29	-28	-101	-188	-159	-17
31	-115	-333	-318	-57	-86	-14	15	0	15	15	44	87	87	102	87	87	87	44	73	-173	-14	0	-14	-101	-20
MEAN	-142	-160	-144	-89	-55	-34	-11	5	18	26	46	62	74	67	82	75	66	47	71	5	-4	-71	-97	-133	-12

TROMSØ. DECLINATION, D=0 DEG. W + TABULAR QUANTITIES EXPRESSED IN TENTH OF MINUTES.  
HOURLY MEAN VALUES

APRIL 1975

DAY

1	-215	-128	-41	-26	-26	-26	2	17	46	46	60	60	60	31	31	31	-12	31	17	31	2	-55	-12	-4	
2	2	-12	2	2	-12	-26	-41	-55	-26	17	31	46	46	31	2	2	17	31	31	46	31	46	-12	-55	6
3	46	-99	-12	17	-12	-41	-41	-41	-12	17	46	75	75	89	75	60	46	31	17	31	2	31	-41	-12	14
4	-12	2	-12	2	2	-12	-41	-41	-26	31	60	89	104	118	89	75	60	60	46	46	75	-302	-128	-70	8
5	-389	-186	-26	-26	-26	-26	-26	-26	-12	17	46	60	60	46	46	46	75	220	176	75	60	-55	-186	-128	-7
6	-113	-70	-41	-55	-26	-26	-26	-26	-12	46	60	104	104	133	176	307	176	75	46	60	31	-244	-171	-55	18
7	-113	-26	-26	-55	-55	-41	-26	-26	-12	46	75	89	75	89	118	89	147	-200	-157	89	-186	-200	-258	-20	
8	-186	-273	-316	-113	-26	-41	-26	-12	-12	-26	2	46	46	118	-70	60	31	-113	89	-128	46	-490	-606	-81	
9	-258	-432	-708	-273	-244	-99	-113	-12	2	-26	2	60	17	31	118	-70	46	17	-99	75	-99	89	-461	-461	-120
10	-389	-534	-534	-316	-287	-41	-41	-26	17	-26	17	162	60	104	60	104	75	191	-113	31	46	-70	-215	-273	-83
11	-244	-389	-200	-171	-99	-128	-41	2	-41	-55	-55	2	31	104	162	2	147	133	147	147	147	-99	-99	-345	-39
12	-302	-171	-157	-12	-12	-41	-41	-12	2	-26	46	104	104	118	89	46	89	60	60	-12	46	31	46	-316	-10
13	-606	-461	-824	-171	-157	-70	-12	-84	31	-12	75	89	147	60	46	60	75	17	104	75	-99	-389	-95	-95	
14	-215	-461	-157	-157	-26	-84	17	-41	-12	17	17	46	75	75	104	133	191	162	89	89	-12	-55	-12	-186	-16
15	-113	-55	-41	-26	-41	-26	-41	-41	-41	-41	31	-41	-26	46	75	60	75	46	104	89	-70	-128	-113	-200	-21
16	-142	-171	-84	-70	-26	-26	-26	-26	-26	2	31	31	46	46	46	46	31	17	2	31	-26	-12	2	2	-12
17	-12	-12	-12	-12	-26	-41	-26	-26	2	31	46	89	75	75	60	75	162	176	89	60	46	17	17	17	36
18	2	-12	-12	-12	-12	-12	-12	-12	-12	2	46	89	89	89	75	75	60	89	89	46	17	17	-26	-128	72
19	-157	-84	-41	-26	-26	2	2	17	31	60	75	89	89	104	133	118	60	75	60	31	31	31	2	17	28
20	2	-12	-12	-12	-26	-26	-41	-26	-12	2	46	60	75	118	118	162	278	263	191	2	-316	-244	-113	-244	9
21	-374	-345	-200	-84	-41	-41	-41	-41	-26	17	75	104	118	75	89	118	104	89	-70	-55	-12	-12	-70	-41	-27
22	-70	-142	-41	-26	-41	-99	-12	-12	2	2	17	46	46	60	31	46	46	17	-55	-26	-41	2	-389	-142	-32
23	-171	-273	-157	-12	-12	-12	31	46	31	60	-12	31	60	75	60	133	60	234	162	89	104	-215	-128	-84	4
24	-229	-142	-84	-70	-55	-26	-26	-12	2	17	17	75	75	60	75	46	-12	31	75	46	-171	-70	-128	-70	-24
25	-26	-84	-26	-26	-41	-26	-12	-12	-12	31	31	46	60	46	46	31	31	46	46	31	17	17	-12	-99	4
26	-142	-113	-55	-55	-41	-26	-26	-12	2	31	46	46	60	60	31	2	31	75	-12	31	17	-128	-113	-26	-13
27	-41	-26	-26	-41	-55	-26	-26	-26	-12	31	46	46	60	60	46	2	2	2	2	17	17	2	-12	2	1
28	-12	-12	-12	-26	-41	-55	-55	-55	-41	2	31	46	60	60	46	2	-12	17	31	46	31	2	-12	17	2
29	17	-26	-26	-41	-55	-55	-41	-41	-12	17	46	75	75	60	60	46	31	31	31	31	31	17	17	2	12
30	-12	-26	-26	-41	-55	-55	-41	-41	-26	31	75	75	89	89	89	60	60	60	46	46	31	31	-99	-99	10
MEAN	-149	-159	-130	-64	-53	-41	-29	-24	-8	12	36	64	66	75	79	62	72	82	32	35	4	-45	-110	-141	-14



TROMSO. DECLINATION, D=0 DEG. W + TABULAR QUANTITIES EXPRESSED IN TENTH OF MINUTES.  
HOURLY MEAN VALUES

MAY 1975

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	-12	-26	-41	-55	-55	-41	-41	-26	-12	60	89	104	118	104	104	104	133	133	89	31	-26	-41	-41	28							
	-55	-55	-26	-70	-99	-26	-26	2	-12	31	60	104	133	162	176	220	176	234	176	118	-157	31	-55	-548	20						
	-461	-186	-389	-244	-215	-84	17	46	2	17	60	60	104	162	191	118	104	89	89	60	17	2	-84	-244	-32						
	-287	-302	-55	-55	-70	-70	-26	-41	-26		75	89	104	75	104	89	89	75	-26	60	-99	-273	-171	-33							
	-606	-621	-534	-200	-70	-26	-12	75	17	60	104	133	104	118	89	104	2	-99	336	191	-229	-215	-142	-61							
	-534	-403	-244	-345	118	-157	-41	-55	-12	-26	2	46	60	89	75	118	46	176	205	118	75	-99	-316	-244	-56						
	-389	-389	-99	-70	-55	-41	-41	-26	2	-12	60	75	118	162	321	292	147	133	220	-55	46	2	-215	-157	1						
	-142	-171	-99	-26	-70	-55	-84	-41	-12	17	17	17	46	60	31	2	17	2	75	118	46	-244	-316	-157	-40						
	-244	-316	-389	-128	-70	-70	-99	-55	-26	17	17	60	75	133	104	46	75	89	-26	2	-128	-99	-244	****	-102						
	-461	-432	-316	-99	-157	-171	-55	-26	-41	17	17	17	133	46	118	75	89	89	133	104	46	-215	-99	-55	-51						
	-41	-55	-70	-70	-70	-55	-55	-12	-12	2	17	17	17	2	2	2	2	17	46	46	17	2	2	-26	-11						
	-41	-41	-41	-55	-55	-41	-41	-41		2	17	46	46	46	46	46	31	31	17	17	17	17	2	-12	1						
	-41	-26	-55	-70	-55	-55	-55	-26	-12	17	46	60	46	46	46	31	31	46	17	-99	-55	-316	-679	-389	-64						
	-389	-389	-418	-389	-99	-99	-41	-41	-12	17	17	17	75	118	133	89	60	60	60	46	-55	46	-99	-41	-55						
	-26	-41	-41	-41	-55	-55	-41	-41	-26	2	2	17	31	31	31	17	31	31	31	31	46	17	2	-12	-2						
	-26	-41	-41	-84	-113	-70	-99	-157	46	118	104	89	31	75	118	118	104	147	133	118	89	60	-12	-171	22						
	-273	-142	-84	-84	-41	-12	-12	-55	-12	-12	75	60	89	133	60	60	46	17	60	60	46	17	-17	-12	-1						
	-12	-84	-70	-84	-84	-55	-12	-12	2	2	2	46	46	17	46	17	46	46	60	60	2	-26	-171	-142	-15						
	-99	-258	-215	-99	-41	-26	2	2	2	46	46	46	31	17	17	17	17	31	31	104	-287	191	-99	147	-15						
	-41	-244	-661	-461	-287	-41	-12	75	-70	-84	75	60	46	17	31	75	89	46	60	60	17	-12	-26	-55	-47						
	-41	-244	-55	-84	-41	-41	2	-12	2	-12	17	60	89	118	31	46	31	31	46	60	-84	-99	-113	-99	-16						
	-128	-55	-55	-55	-70	-26	-26	-12	2	46	-12	46	60	75	31	60	60	60	31	17	31	17	-99	-229	-9						
	-128	-55	-70	-70	-70	-70	-12	17	-12	-12	2	31	17	31	31	17	31	31	133	2	-12	-12	-26	-26	-9						
	-41	-55	-70	-55	-70	-70	-41	-12	-12	2	17	17	31	31	31	31	31	31	46	46	31	2	-99	-128	-12						
	-171	-157	-128	-84	-84	-41	-55	-55	-55	31	31	60	75	46	60	60	133	263	60	-171	-55	-360	-215	-244	-44						
	-200	-316	-186	-171	-244	-26	2	-26	-12	46	60	75	75	60	46	31	46	46	46	17	-12	2	-12	-26	-28						
	-41	-26	-55	-70	-99	-84	-99	-84	-55	17	75	118	89	89	46	46	75	75	167	118	60	-12	-26	-26	11						
	-84	-26	-55	-70	-41	-70	-70	-55	-26	17	46	46	46	46	31	46	46	17	31	17	2	2	-26	-26	-6						
	-12	-55	-113	-128	-142	-99	-128	-55	2	46	60	60	46	89	60	89	234	263	118	104	-26	60	-55	-84	13						
	-113	-70	-55	-55	-84	-84	-12	-12	17	46	60	60	60	89	89	75	75	46	31	31	2	-55	-84	-1							
	-70	-70	-70	-70	-55	-55	-55	-55	2	17	46	46	75	60	46	31	31	46	46	46	17	2	-12	-41	-1						

MEAN -153-172-151-128 -88 -63 -43 -29 -11 14 38 55 68 76 75 70 71 78 72 51 1 -44-119-150 -20

TROMSO. DECLINATION, D=0 DEG. W + TABULAR QUANTITIES EXPRESSED IN TENTH OF MINUTES.  
HOURLY MEAN VALUES

JUNE 1975

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	-84	-55	-41	-70	-55	-70	-70	-84	-12	2	60	89	133	104	278	263	191	263	249	133	118	46	17	61						
	-316		-389	-389	-84	-70	-70	-99	-26	60	75	75	89	118	89	220	104	89	118	89	-26	-142	-287	-35						
	-244	-99	-84	-84	-55	-70	-70	-55	-55	2	46	75	-12	46	46	60	89	89	75	118	31	-12	-12	-55	-9					
	-157	-244	-244	-41	-84	-99	-70	-55	-26	17	46	75	46	46	75	89	75	89	60	60	17	-171	-113	-128	-30					
	-200	-113	-99	-99	-99	-55	-55	-55	17	17	60	60	75	89	31	75	104	191	60	162	-12	-171	-244	-113	-15					
	-244	-171	-157	-128	-84	-26	2	-41	-12	46	75	75	60	46	75	75	104	191	60	31	2	-99	-215	-11						
	-215	-128	-84	-99	-84	-84	-55	-84	-12	17	17	46	31	31	17	2	-12	2	17	17	-99	118	-70	-41	-31					
	-84	-70	-84	-99	-84	-99	-99	-55	-41	2	31	31	46	46	46	46	17	17	2	2	17	-26	-55	-99	-24					
	-84	-84	-99	-128	-99	-99	-55	-26	2	46	60	60	89	60	46	31	46	31	46	31	17	-26	-12	-12	-6					
	-41	-55	-55	-41	-55	-70	-70	-41	-12	17	17	60	75	60	89	118	104	104	118	104	89	-12	-99	-128	11					
	-171	-186	-99	-84	-99	-99	-171	-157	-26	17	17	60	75	75	75	133	118	89	118	89	75	-12	-99	-128	-16					
	-171	-186	-99	-99	-99	-84	-12	2	-12	-26	46	46	60	118	118	75	191	336	2	118	46	191	-99	-287	7					
	-142	-244	-215	-26	-55	-70	2	-12	-26	2	46	31	133	147	118	60	46	75	60	-128	2	-26	-99	-84	-16					
	-55	-41	-84	-99	-55	-26	17	2	-12	2	46	60	46	17	60	60	75	89	75	2	31	2	-26	-12	7					
	-55	-55	-41	-55	-70	-84	-84	-70	-55	46	89	75	75	75	118	147	46	147	133	46	89	-244	-244	-389	-15					
	-824	-389	-403	-360	-26	2	-26	-12	-12	46	17	89	104	133	60	133	220	162	118	118	46	-99	-99	-157	-48					
	-70	-70	-70	-70	-84	-84	-84	-70	-26	31	89	60	75	104	104	104	75	118	60	118	-128	-186	-244	-11						
	-316	-302	-229	-142	-171	-142	-70	-41	-12	-12	2	2	31	60	60	-12	89	104	89	89	2	-41	-26	-70	-44					
	-142	-128	-99	-142	-128	-99	-70	-70	-26	2	2	46	-26	-26	46	46	46	60	133	46	17	17	-157	-171	-34					
	-84	-84	-70	-55	-70	-70	-41	-12	-41	17	46	46	46	46	46	31	31	46	89	-12	-84	-41	-41	-8						
	-41	-55	-171	-142	-99	-84	-84	-70	-55	-12	17	46	46	31	31	60	60	89	104	60	60	-171	-142	-244	-31					
	-171	-142	-99	-99	-84	-55	-55	-70	-55	-55	17	46	46	60	46	17	17	31	60	46	-12	2	-26	-21						
	-55	-55	-55	-55	-55	-26	-41	-41	-12	17	31	31	31	31	31	31	46	89	46	31	-12	-26	-41	-4						
	-84	-70	-55	-55	-41	-41	-70	-55	2	46	60	60	46	46	46	46	46	46	46	17	2	2	-12	0						
	-26	-41	-41	-55	-84	-84	-99	-84	-26	2	46	46	31	89	89	75	60	46	46	46	31	-12	-12	1						
	-55	-55	-70	-84	-70	-70	-55	-55	-55	-12	17	46	60	46	60	60	46	46	46	17	2	-41	-70	-8						
	-70	-84	-70	-70	-55	-55	-84	-84	-41	-12	-41	-84	-99	-142	-113	46	46	46	31	31	2	2	-26	-55	-40					
	-41	-84	-55	-26	-41	-41	-70	-55	-26	-12	46	60	75	118	89	60	46	46	31	31	17	2	-12	-55	4					
	-55	-70	-99	-128	-84	-99	-70	-70	-26	46	75	89	118	191	336	263	220	249	263	191	263	191	-244	-244	61					
	-360	-751	-534	-171	-99	-41	-84	-99	-55	-12	17	46	46	60	89															

TROMSØ. DECLINATION, D=0 DEG. W + TABULAR QUANTITIES EXPRESSED IN TENTH OF MINUTES.  
HOURLY MEAN VALUES

JULY 1975

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
	-272	-98	-141	-170	-127	-98	-98	-98	-83	-54	3	61	61	47	32	76	61	90	90	76	61	3	-11	-170	-31	-214	-170	-98	-141	-98	-69	-83	-83	-69	-25	3	47	47	61	76	76	105	90	105	90	18	18	-25	-25	-25	-18	-83	-127	-54	-83	-69	-54	-54	-11	3	47	47	47	47	29	61	61	61	105	119	47	-11	-112	-54	-1	-98	-127	-83	-69	-69	-83	-83	-69	-69	-11	18	47	61	76	47	47	47	47	47	47	76	-25	18	-69	-11	-13	-69	-54	-54	-54	-54	-54	-54	-25	-25	3	18	32	32	18	32	32	32	32	32	32	32	18	-11	-69	-40	-14	-40	-40	-54	-54	-69	-83	-69	-69	-25	3	47	47	47	32	32	18	61	76	76	47	3	-54	-54	-7	-112	-243	-228	-127	-127	-83	-98	-69	-54	18	32	61	119	192	134	119	192	235	221	192	192	119	61	18	18	31	-17	-243	-243	-591	-460	-286	-243	-40	-25	47	-11	-98	-98	-98	119	264	627	409	221	148	119	61	32	3	-40	-17	-54	-127	-315	-315	-315	-98	-11	-11	-98	-98	47	61	119	148	47	119	192	192	264	192	61	-25	32	18	1	-112	-127	-98	-98	-98	-83	-83	-83	-83	-11	18	47	47	-25	32	105	221	206	119	148	105	-83	-214	-243	-16	-388	-388	-228	-156	-127	-83	-156	-54	32	18	47	47	32	61	47	61	61	61	61	61	61	32	18	-11	-25	-40	-40	-83	-83	-98	-98	-69	-40	-54	-54	-25	-25	3	32	32	47	47	47	105	119	47	-40	3	-25	-25	-11	-25	-40	-69	-54	-40	-40	-25	-25	-11	18	47	61	61	61	47	119	61	76	47	61	-25	18	-388	-156	-9	-388	-185	-170	-112	-83	-83	-54	-54	-54	-11	3	32	32	47	32	3	18	47	47	32	-69	-214	-170	-315	-69	-489	-170	-199	-127	-98	-83	-98	-54	-40	3	18	-11	3	-98	-214	-170	-98	134	134	32	47	18	-98	-170	-76	-214	-315	-344	-112	-83	-83	-69	-54	-25	-11	-11	47	105	61	47	3	18	90	105	47	-54	-98	-40	-40	-42	-40	-98	-141	-83	-25	-54	-54	-25	47	32	61	76	119	119	76	47	134	105	105	90	3	-301	-170	-330	-12	-141	-98	-69	-98	-69	-25	-54	-40	-54	-11	18	61	76	119	76	119	177	264	250	221	148	47	-25	-243	-243	7	-243	-214	-228	-112	-40	-54	-25	-25	-11	18	47	47	47	61	47	47	119	163	47	-83	105	-54	-54	-170	-23	-388	-301	-156	-83	-83	-83	-83	-69	-25	3	18	32	18	3	-11	-11	-11	18	3	18	18	-98	-156	-185	-67	-69	-69	-69	-69	-69	-54	-25	-25	3	-11	-11	47	61	90	76	47	47	61	76	105	-25	-83	-54	-98	-4	-185	-83	-98	-83	-98	-83	-40	3	-11	3	47	61	61	61	47	32	61	61	76	61	61	47	-11	-54	-2	-98	-98	-83	-83	-25	-11	-54	-54	-54	-11	3	47	61	47	32	-11	3	18	3	18	18	3	-11	-127	-20	-315	-243	-98	-69	-83	-83	-98	-54	-25	18	18	61	105	76	47	3	18	47	47	-11	-25	-11	-11	-28	-40	-25	-54	-214	-199	-98	-388	-460	-83	18	18	76	177	192	308	337	192	148	134	148	-83	18	-315	-11	-8	-243	-185	-170	-199	-170	-69	-69	-25	-83	-25	18	47	61	119	90	3	61	47	47	61	76	32	-54	-127	-31	-156	-141	-257	-315	-112	-69	-83	-83	-40	-25	47	61	76	61	61	47	32	18	18	-11	-25	-40	-69	-40	-43	-228	-272	-243	-243	-112	-69	-69	-69	-25	-11	3	18	3	32	32	47	61	76	47	90	47	-69	-25	-25	-41	-40	-40	-83	-69	-69	-69	-40	-40	-25	32	32	90	90	76	61	32	18	18	32	47	18	32	-25	-98	0	-170	-170	-185	-185	-98	-98	-40	-69	-54	-40	-25	18	18	47	61	3	-11	-11	3	3	3	3	-83	-54	-47	-69	-83	-83	-98	-98	-69	-54	-54	-40	18	18	47	61	76	61	47	18	32	47	32	32	18	-98	-185	-17

TROMSØ. DECLINATION, D=0 DEG. W + TABULAR QUANTITIES EXPRESSED IN TENTH OF MINUTES.  
HOURLY MEAN VALUES

AUGUST 1975

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
	-154	-110	-168	-241	-241	-38	-23	-23	-9	20	5	34	34	34	20	20	20	20	20	20	-9	-9	-9	-23	-33	-38	-52	-52	-81	-81	49	-52	-52	-9	34	34	49	49	63	49	20	20	49	63	78	49	20	-96	-313	-8	-52	-52	-52	-67	-67	-67	-52	-23	5	-9	5	34	34	20	20	34	49	92	121	49	78	63	34	-23	7	-67	-110	-139	-96	-52	-23	-23	-23	-9	34	34	49	63	63	49	78	92	136	136	121	63	63	34	5	19	20	-270	-183	-96	-139	-67	5	-9	-23	63	5	-96	-23	63	20	194	324	194	165	49	49	-23	-96	-110	0	-241	-342	-197	-154	-96	-67	-52	-23	-23	-9	20	34	20	20	20	5	20	5	5	20	20	-9	-23	-9	-44	-38	-52	-52	-52	-52	-52	-52	-52	-52	-9	20	20	49	63	78	34	49	92	121	136	49	-67	-38	-23	5	-212	-270	-313	-299	-284	-313	-139	-125	5	5	49	63	78	78	49	49	78	49	78	49	78	49	20	-96	-154	-62	-154	-168	-125	-139	-139	-110	-52	-67	-81	-23	5	5	49	63	92	92	92	411	223	223	121	49	49	-96	13	-96	-168	-23	-168	-241	-67	-23	-81	-9	63	34	78	-52	78	63	-9	92	63	34	34	20	-23	-9	-38	-18	-67	-67	-67	-81	-38	-38	5	5	9	5	20	49	-52	107	107	63	63	49	49	20	5	9	5	5	12	-38	-52	-52	-81	-52	-67	-67	-52	-38	-9	-52	49	92	121	63	20	5	-9	-9	5	5	5	34	-9	-7	-38	-313	-821	-241	-255	-241	-139	-23	-38	92	63	63	49	78	34	20	20	63	63	63	-96	20	-38	-23	-68	-444	-96	-110	-96	-52	-23	-9	-23	-9	-52	-23	5	20	-81	121	266	136	150	194	208	121	-38	-38	-23	4	-23	-38	-23	-23	-52	-52	-67	-38	-9	20	20	49	49	49	49	20	20	5	34	34	20	5	-9	-23	-2	5	-9	-110	-183	-81	-38	-52	-38	-9	20	34	49	78	78	34	20	34	20	34	63	-110	-81	-52	-52	-10	-9	-23	-38	-67	-67	-67	-52	-52	-9	5	20	78	92	63	34	5	-9	5	5	49	-9	5	-23	-125	-7	-96	-67	-81	-81	-81	-96	-81	-67	-38	-9	20	34	49	20	5	-9	-9	5	5	20	5	-23	-9	-23	-25	-38	-38	-52	-52	-67	-81	-96	-81	-52	-9	34	49	92	150	136	121	107	107	136	-23	-38	20	-96	-241	0	-212	-125	-96	-96	-241	-23	-23	5	20	49	63	63	78	78	78	121	150	165	107	107	-23	266	339	-168	28	-241	-212	-241	-110	-154	-81	-52	-23	5	34	49	78	78	49	49	5	20	5	34	20	-38	-168	-52	-168	-46	-342	-96	-212	-154	-52	-81	-81	-52	-23	34	63	92	78	78	49	34	20	20	-23	20	-9	-38	-52	-67	-33	-67	-67	-67	-81	-96	-81	-96	-96	-67	-23	5	49	78	34	20	20	20	34	-38	5	5	-23	-110	-96	-30	-23	-23	5	-52	-52	20	-67	-52	-52	-23	5	49	63	78	92	49	49	20	-9	5	-96	5	-241	5	-10	-110	-67	-52	-23	-52	-67	-52	-67	-38	5	34	49	63	78	49	20	20	20	-96	20	-9	-9	-23	-168	-19	-226	-357	-255	-168	-139	-52	-81	-81	-38	5	20	34	34	34	20	5	5	5	-9	-9	-23	5	-23	-9	-54	-96	-52	-67	-96	-110	-96	-67	-81	-52	20	49	63	63	49	49	20	20	49	78	121	121	20	-96	-23	-4	-241	-473	-444	-241	-9	-23	34	78	-9	20	63	63	92	92	78	92	63	150	78	49	34	5	-212	-168	-34	-676	-676	-458	-386	-386	63	-23	-52	-81	5	20	63	63	49	49	34	-23	5	5	5	5	-23	-52	-9	-103	-23	-52	-67	-96	-96	-96	-96	-67	-23	5	20	63	78	63	49	20	5	5	20	-81	-197	-154	-9	-9	-30



























TRONSØ. VERTICAL INTENSITY. Z=51400 + TABULAR QUANTITIES EXPRESSED IN GAMMA.  
HOURLY MEAN VALUES

SEPTEMBER 1975

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	45	45	45	45	45	38	32	25	38	45	25	58	65	58	91	97	91	19	-7	45	51	32	12	-40	41					
	-112	-53	12	45	45	45	45	38	38	38	25	32	25	38	51	58	78	51	25	5	25	-33	65	-20	23					
	-13	0	19	38	45	45	45	32	32	32	32	38	38	38	38	38	38	65	51	38	38	25	19	19	32					
	25	38	38	38	38	38	25	32	32	38	32	32	38	45	51	65	58	45	38	32	19	12	12	0	34					
	19	25	38	38	38	38	38	38	38	38	38	32	32	45	71	78	51	45	51	38	32	32	38	130	44					
	45	-53	-40	0	19	25	25	32	19	25	25	45	71	51	0	-112	32	91	71	65	84	163	111	104	37					
	19	12	25	32	38	38	38	38	45	58	65	65	38	45	51	65	58	51	45	45	12	0	12	-33	35					
	-72	-86	-40	0	32	32	32	32	45	45	51	51	58	51	58	71	65	71	65	58	51	150	58	0	36					
	-40	-92	-99	-46	5	19	51	71	104	97	78	97	5	-184	-66	58	0	25	45	78	97	150	222	137	33					
	261	176	-20	25	-86	12	31	12	31	38	58	71	64	45	-46	-53	5	12	45	45	12	18	12	209	40					
	275	-112	-92	-33	-60	-40	12	25	31	71	45	64	71	64	58	12	-20	-14	-20	64	340	242	0	110	46					
	163	-119	-27	12	-27	12	38	45	77	97	71	77	77	64	51	77	18	25	38	58	71	-20	-20	45	37					
	45	77	143	64	-20	12	18	45	51	58	91	91	64	64	71	64	58	71	58	51	58	-20	77	150	60					
	110	176	196	-99	-106	-53	-20	25	45	51	64	51	77	84	77	58	51	58	51	51	38	38	38	38	45					
	38	38	38	38	45	38	38	38	45	45	45	45	45	45	45	45	77	71	38	104	0	-33	-40	-27	35					
	5	25	25	25	38	45	51	45	45	45	45	58	64	64	58	58	58	51	58	38	38	31	12	31	42					
	38	18	31	38	31	31	18	25	31	38	38	31	38	45	38	91	77	18	18	45	183	25	-86	77	39					
	143	32	12	38	45	38	45	45	45	38	38	45	51	91	71	45	71	45	45	-20	38	58	12	19	45					
	19	25	32	32	38	45	45	45	45	45	51	58	38	84	78	65	45	45	51	51	45	-7	5	12	41					
	25	38	38	45	45	45	45	45	45	45	51	51	51	58	58	58	65	65	51	65	-33	-86	-26	37						
	38	45	38	38	38	38	38	38	38	38	45	38	38	38	45	45	51	51	51	12	19	5	19	38	36					
	38	45	45	45	45	45	45	45	45	45	45	45	45	45	45	51	58	45	51	45	45	45	38	38	45					
	32	0	0	19	38	45	45	45	45	45	45	45	45	32	32	45	45	45	45	45	45	19	19	25	35					
	32	38	38	38	38	38	32	32	32	45	45	45	45	45	45	45	45	45	45	51	32	25	25	39						
	38	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	52	58	52	45	45	38	25	44						
	0	5	25	25	19	25	38	32	38	38	38	38	58	65	-20	-86	-20	71	71	71	130	170	124	150	46					
	97	-132	58	-86	-40	-7	5	38	64			84	91	71	58	-73	-60	0	38	71	104	110	71	64	28					
	58	31	0	12	38	45	51	51	51	58	71	71	64	58	51	71	71	84	77	71	58	51	45	45	53					
	-26	5	38	38	38	45	45	45	45	58	58	58	58	51	45	45	45	51	51	51	19	25	25	32	39					
	39	39	39	39	39	39	39	39	39	46	39	46	46	46	46	46	46	46	46	46	19	13	-39	-39	33					
MEAN	46	11	23	19	19	29	34	38	44	48	48	54	52	46	43	39	43	47	45	48	61	45	28	44	40					

TRONSØ. VERTICAL INTENSITY. Z=51400 + TABULAR QUANTITIES EXPRESSED IN GAMMA.  
HOURLY MEAN VALUES

OCTOBER 1975

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	5	25	12	-13	0	25	25	32	25	45	51	51	51	45	45	51	65	71	58	58	45	45	25	5	35						
	5	25	25	32	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	5	25	38	38						
	31	31	38	45	38	38	31	31	31	38	38	58	64	84	91	71	64	31	0	71	97	294	373	71							
	229	45	-66	-66	-7	25	38	45	45	45	45	45	52	58	58	58	52	58	45	6	19	84	38	78	42						
	-59	0	45	38	32	32	38	45	51	51	45	45	65	84	78	58	51	51	51	51	45	38	32	19	41						
	5	12	32	19	5	12	25	38	71	104	97	78	45	45	78	65	12	-53	209	176	51	78	242	163	67						
	31	241	-20	-191	-73	-66	-7	71	104			-1	44	64	71	51	25	12	-33	25	-40	406	274	-47	143	47					
	176	150	19	-46	12	-33	-7	38	71	91	38	-53	32	45	71	-7	38	71	124	19	124	176	45	340	63						
	177	45	-52	-33	-19	19	32	72	78	58	45	65	65	52	45	65	45	19	-6	-19	-92	91	341	118	50						
	-85	-137	-124	-85	-85	-45	-6	52	52	59	52	52	46	78	98	65	26	6	111	203	229	216	210	144	47						
	-26	-33	12	38	45	65	58	58	52	52	52	58	65	78	78	65	65	71	-20	-52	71	-20	229	163	51						
	110	58	18	5	0	25	58	77	91	77	64	58	64	77	38	25	38	-20	45	64	38	25	31	44							
	19	19	38	45	32	32	38	45	45	45	51	51	65	91	78	78	71	65	45	71	-46	-33	0	41							
	-7	31	45	45	45	45	45	58			117	117	110	104	117	97	12	12	-7	18	123	110	-27	57							
	32	45	45	45	45	38	38	38	45	45	58	52	58	58	52	52	45	45	52	52	52	38	25	38	45						
	51	38	12	12	25	32	38	38	38	45	45	58	58	58	65	65	65	45	12	-20	38	51	65	65	41						
	-46	0	19	38	45	45	45	45	45	45	45	65	58	65	91	91	65	71	71	65	38	5	12	38	44						
	47	47	47	47	47	47	47	47	47	47	47	47	67	106	73	73	80	80	80	60	53	47	47	47	57						
	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	54	48	35	41	54	47						
	47	41	47	41	47	47	47	41	41	41	41	47	47	47	60	60	54	47	60	60	60	34	15	-63	42						
	40	47	-25	14	40	47	47	47	47	47	47	47	47	47	47	47	53	53	53	53	53	34	7	41							
	25	32	51	51	51	51	51	51	51	38	45	45	51	65	91	91	71	84	71	51	19	78	0	32	51						
	0	25	25	0	32	32	38	38	38	38	38	45	58	58	58	58	51	45	45	45	12	25	65	71	39						
	46	13	39	46	46	33	39	39	46	46	46	46	46	46	52	52	52	52	59	46	46	46	46	46	45						
	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	49					
	12	38	-26	-66	-33	-20	12	25	38	38	38	38	38	38	38	45	45	45	45	45	45	38	38	24							
	14	34	-24	-70	-38	-18	7	21	27	40	40	40	40	40	40	47	53	53	53	53	53	40	40	26							
	28	9	35	41	41	48	48	48	48	48	55	55	48	48	48	48	48	48	41	-36	-17	166	127	147	50						
	201	181	70	-61	-28	-21	17	43	43	43	43	43	50	56	56	56	63	63	70	24	43	70	247	148	63						
	25	-13	-53	-33	19	45	52	52	52	58	58	71	71	84	78	65	58	58	71	52	91	19	52	46							
	0	-12	-124	-124	-150	-65	7	72	92	53	79	72	66	66	59	46	33	-111	20	138	33	53	66	53	17						





TROMSO. DECLINATION. D=0 DEG. W + TABULAR QUANTITIES EXPRESSED IN TENTH OF MINUTES.  
HOURLY MEAN VALUES

JANUARY 1975	-113	-78	-60	-61	-6	21	18	22	16	26	33	30	35	39	31	11	3	18	-2	-35	-42	-16	-42	-74	-8
FEBRUARY 1975	-106	-107	-87	-76	-44	-5	31	34	25	31	35	41	44	48	37	40	2	-27	0	23	-6	-48	-84	-67	-11
MARCH 1975	-142	-160	-144	-89	-55	-34	-11	5	18	26	46	62	74	67	82	75	66	47	71	5	-4	-71	-97	-133	-12
APRIL 1975	-149	-159	-130	-64	-53	-41	-29	-24	-8	12	36	64	66	75	79	62	72	82	32	35	4	-45	-110	-141	-14
MAY 1975	-153	-172	-151	-128	-88	-63	-43	-29	-11	14	38	55	68	76	75	70	71	78	72	51	1	-44	-119	-150	-20
JUNE 1975	-155	-142	-124	-106	-88	-70	-61	-50	-33	1	32	51	52	61	66	82	91	95	88	73	54	-73	-89	-121	-13
JULY 1975	-170	-150	-156	-136	-103	-76	-74	-64	-36	-9	14	40	57	66	61	72	78	90	84	68	24	-25	-83	-99	-22
AUGUST 1975	-131	-146	-150	-124	-115	-63	-53	-46	-27	10	24	44	51	60	54	49	49	65	52	49	5	-4	-32	-71	-18
SEPTEMBER 1975	-172	-167	-113	-95	-54	-44	-39	-33	-22	5	24	42	52	56	65	60	37	31	16	15	-30	-95	-118	-135	-29
OCTOBER 1975	-170	-129	-130	-110	-56	-36	-16	-22	-17	10	22	21	49	42	34	16	19	25	-18	-8	-65	-124	-138	-126	-38
NOVEMBER 1975	-142	-75	-95	-87	-63	-35	-27	-28	-21	-10	-11	3	8	10	7	18	0	-17	-21	-51	-45	-125	-124	-183	-46
DECEMBER 1975	-141	-136	-94	-53	-38	-29	-16	-17	-23	-16	-15	-13	-2	-21	-2	-38	-20	-36	-13	-49	-46	-75	-133	-153	-40
MEAN 1975	-146	-136	-121	-95	-65	-41	-28	-22	-12	8	23	36	46	48	49	43	40	38	30	15	-12	-58	-98	-122	-74

TROMSO. HORIZONTAL INTENSITY. H=11300 + TABULAR QUANTITIES EXPRESSED IN GAMMA.  
HOURLY MEAN VALUES

JANUARY 1975	4	25	43	70	104	109	112	114	110	109	112	120	128	133	130	127	126	134	85	84	32	2	0	0	84
FEBRUARY 1975	-34	-29	-7	60	89	101	107	111	118	114	116	139	134	153	147	139	149	112	98	59	-22	-9	-20	-36	74
MARCH 1975	-13	-4	-1	56	79	100	100	105	104	106	115	137	150	161	171	187	161	128	88	24	-39	-68	-90	-94	69
APRIL 1975	-56	-23	28	56	73	96	99	97	101	99	107	116	127	132	144	165	159	149	110	49	17	-35	-53	-38	71
MAY 1975	-32	17	22	22	61	93	102	96	100	103	108	118	149	166	170	170	169	163	130	79	52	-7	-40	-28	82
JUNE 1975	-1	38	56	84	92	106	105	102	98	98	106	119	140	156	159	173	188	170	156	137	70	-14	-17	-1	97
JULY 1975	-20	9	45	73	88	92	91	95	101	101	110	121	152	168	186	187	191	182	158	126	75	21	-21	-14	96
AUGUST 1975	21	7	39	40	45	78	95	101	100	100	112	125	140	151	165	170	168	162	150	117	68	60	44	25	95
SEPTEMBER 1975	-34	25	42	56	84	113	112	108	101	97	104	113	133	145	171	182	168	155	117	106	58	-9	-11	8	89
OCTOBER 1975	8	28	37	62	87	101	113	104	105	110	111	121	124	133	137	136	139	132	79	39	40	11	-33	-34	79
NOVEMBER 1975	-2	-10	38	75	92	102	107	110	111	117	131	135	161	162	145	115	110	50	71	-20	-42	-12	-9	-38	70
DECEMBER 1975	-6	30	71	98	110	114	116	115	112	116	122	120	134	146	158	148	150	142	124	98	45	60	-1	-11	96
MEAN 1975	-13	9	35	63	84	100	105	105	105	106	113	124	139	151	157	158	157	140	114	75	30	0	-21	-21	84

TRONSØ. VERTICAL INTENSITY, Z=51400 + TABLED QUANTITIES EXPRESSED IN GAMMA,  
HOURLY MEAN VALUES

JANUARY 1975	51	145	20	17	21	34	41	47	54	58	60	65	71	65	55	50	40	148	27	25	27	31	14	43	50
FEBRUARY 1975	25	59	23	7	10	24	31	39	55	56	60	61	67	67	63	60	42	20	0	2	28	22	35	51	38
MARCH 1975	41	35	22	24	19	34	43	52	57	62	62	59	64	66	56	31	16	13	18	24	52	67	89	64	45
APRIL 1975	65	55	44	18	21	34	45	47	52	58	59	58	57	65	71	59	46	30	35	42	77	88	91	70	54
MAY 1975	74	59	37	24	10	17	36	44	48	55	55	58	60	59	63	65	61	47	33	52	65	94	80	85	53
JUNE 1975	53	25	6	9	19	30	37	42	46	52	55	55	61	64	65	71	57	48	36	43	50	67	52	43	45
JULY 1975	50	35	10	17	25	28	33	36	39	44	48	50	56	58	48	47	41	36	33	41	29	53	60	48	40
AUGUST 1975	45	35	6	-6	-2	6	20	33	39	45	49	54	56	54	52	51	57	45	36	31	34	40	48	59	37
SEPTEMBER 1975	46	11	23	19	19	29	34	38	44	48	48	54	52	46	43	39	43	47	45	48	61	45	28	44	40
OCTOBER 1975	39	36	8	-2	11	20	33	46	52	51	48	50	56	61	65	59	52	41	52	43	60	69	80	79	46
NOVEMBER 1975	50	56	46	19	30	42	50	58	59	63	63	66	54	55	43	27	36	36	52	83	102	67	98	84	56
DECEMBER 1975	29	31	22	25	30	38	48	55	53	58	60	63	58	56	56	62	53	37	48	57	25	34	68	62	47
MEAN 1975	47	48	22	14	18	28	38	45	50	54	56	58	59	60	57	52	45	45	35	41	51	57	62	61	46

TRONSØ. DECLINATION, D=0 DEG. W + TABLED QUANTITIES EXPRESSED IN TENTH OF MINUTES,  
HOURLY MEAN VALUES.

JANUARY 1975	-5	-3	-1	6	6	9	2	7	6	18	27	30	25	28	26	20	15	15	13	-4					-1	16
FEBRUARY 1975	6	-1	2				29	14	17	27	32	35	32	34	26	27	14	12	21	16	11	-3	4	-7	22	
MARCH 1975	3	0	-1	-9	-16	-17	-11	-2	4	19	25	25	26	24	12	10	2	12	12	8	10	5	1	2	5	
APRIL 1975	-1	-15	-16	-22	-36	-39	-36	-33	-20	13	38	46	58	53	45	24	11	15	22	27	22	13	6	2	1	
MAY 1975	-48	-50	-62	-67	-62	-62	-54	-34	-25	2	22	24	30	26	20	19	21	21	24	22	22	-3	-15	-30	-3	
JUNE 1975	-64	-64	-68	-63	-63	-54	-56	-59	-44	-17	22	32	32	40	32	32	25	23	36	29	17	-1	-10	-19	-3	
JULY 1975										4	18	44	48	62	58	33	18	19	47	32	19				33	
AUGUST 1975	-41	-51	-55	-65	-62	-58	-62	-58	-45	-11	2	16	30	21	13	7	5	3	3	-2	-5	-15	-20	-37	-19	
SEPTEMBER 1975	-45	-44	-41	-46	-46	-50	-46	-44	-34	-12	9	26	32	26	16	4	-2	-6	0	-2	-3	-20	-26	-36	-12	
OCTOBER 1975	-40	-40	-42	-37	-37	-40	-40	-41	-35	-11	-6	12	20	14	3	-6	-9	-10	-11	-15	-16	-38	-43	-42	-17	
NOVEMBER 1975	-50	-46	-50	-53	-52	-58	-46	-45	-33	-34	-26	-23	-20	-21	-23	-21	-19	-29	-31	-38	-40	-47	-53	-49	-36	
DECEMBER 1975	-51	-45	-44	-40	-42	-39	-32	-30	-31	-30	-29	-25	-22	-26	-25	-26	-24	-29	-23	-31	-49	-49	-59	-50	-33	
MEAN 1975	-35	-36	-38	-41	-42	-43	-40	-35	-25	-8	5	15	19	17	10	4	0	-1	2	-3	-8	-21	-24	-27	-11	

TROMSØ. HORIZONTAL INTENSITY. H=11300 + TABULAR QUANTITIES EXPRESSED IN GAMMA.  
QUIET MEAN VALUES.

JANUARY 1975	102	101	104	107	109	108	110	110	109	106	89	106	105	107	108	113	113	116	120	120	107				
FEBRUARY 1975	105	105	105	105	104	104	115	108	103	99	105	106	109	111	110	105	105	107	108	107	112	110	113	107	
MARCH 1975	114	111	109	111	111	109	109	105	106	98	100	102	105	108	112	112	112	115	116	115	115	112	112	111	110
APRIL 1975	115	117	116	118	118	113	108	103	95	87	87	92	98	103	110	116	120	120	128	130	123	114	116	116	110
MAY 1975	111	113	114	117	113	112	111	103	96	91	95	96	105	112	114	116	123	132	133	131	126	119	118	114	113
JUNE 1975	123	123	116	115	116	114	110	103	100	96	104	114	116	116	124	109	122	124	124	124	125	120	109	106	114
JULY 1975	122	122	122	125	124	119	112	106	103	91	93	103	100	122	127	128	128	118	129	129	120	113			
AUGUST 1975	116	112	110	111	112	110	106	103	71	91	93	98	118	121	123	128	131	126	131	127	116	115	112	112	107
SEPTEMBER 1975	113	114	115	116	119	117	112	108	102	97	96	99	104	110	115	114	121	124	126	123	123	120	115	112	
OCTOBER 1975	109	111	113	113	112	113	113	109	104	98	97	104	109	113	112	112	116	116	119	119	115	114	110	111	111
NOVEMBER 1975	109	108	109	110	112	112	113	112	109	107	107	107	109	110	106	112	111	112	112	109	114	111	109	108	110
DECEMBER 1975	106	107	107	107	112	114	101	114	113	112	112	114	117	116	115	115	115	115	113	110	110	108	103	107	112
MEAN 1975	110	111	112	113	114	113	109	108	102	101	99	104	109	111	113	114	117	118	120	119	117	113	111	111	110

TROMSØ. VERTICAL INTENSITY. Z=51400 + TABULAR QUANTITIES EXPRESSED IN GAMMA.  
QUIET MEAN VALUES.

JANUARY 1975	48	39	43	44	44	44	45	46	48	52	55	55	57	57	55	59	55	56	56	55	60	59	61	54	51
FEBRUARY 1975	48	45	61	33	49	56	48	51	51	49	54	56	56	54	57	66	61	58	57	57	55	54	45	45	53
MARCH 1975	52	53	47	50	50	54	54	56	55	60	63	64	64	68	67	62	57	59	56	58	61	59	57	58	57
APRIL 1975	43	48	51	47	51	52	54	52	51	54	55	55	52	53	61	68	72	71	64	59	58	51	44	48	54
MAY 1975	13	50	51	54	54	54	52	48	50	53	53	52	49	56	59	62	64	61	60	60	56	52	55	52	53
JUNE 1975	30	31	31	34	40	43	45	45	45	44	42	43	54	54	58	58	56	50	50	49	46	41	41	39	44
JULY 1975	24	28	30	35	36	41	38	40	38	42	42	42	44	48	53	58	51	51	42	42	39	35	34	40	41
AUGUST 1975	33	36	39	40	41	40	40	39	39	39	41	43	42	48	51	51	48	45	41	39	43	40	39	38	41
SEPTEMBER 1975	34	38	39	36	39	40	39	39	40	44	41	44	44	48	51	55	56	54	50	45	38	34	30	24	43
OCTOBER 1975	36	38	40	40	44	44	45	43	44	45	48	50	52	53	54	55	55	55	55	54	52	50	44	44	48
NOVEMBER 1975	56	56	53	51	51	52	49	53	53	59	61	61	64	63	64	71	73	74	72	69	62	59	56	55	60
DECEMBER 1975	47	52	50	48	49	55	52	54	53	55	56	58	60	60	64	68	70	69	68	68	68	64	57	45	57
MEAN 1975	38	43	44	43	45	47	47	47	47	50	51	52	54	55	58	61	60	58	57	54	52	49	48	46	50



TROMSO.

K=INDICES FOR THREE-HOUR INTERVAL  
 RANGE 2000 GAMMA FOR K=9. SCALE VALUES D=4.77 GAMMA H=5.29 GAMMA Z=6.57 GAMMA

SEPTEMBER 1975										OCTOBER 1975										NOVEMBER 1975										DECEMBER 1975									
1	0	1	1	2	2	4	4	4	18	1	3	2	0	1	1	2	1	3	13	1	3	1	1	0	2	2	6	16	1	5	4	4	4	5	5	6	39		
2	5	2	0	1	1	3	4	3	19	2	2	0	0	0	0	0	0	4	6	2	3	2	1	2	4	5	6	6	29	2	5	5	3	4	3	35			
3	3	0	0	0	0	2	1	1	7	3	1	0	0	2	3	2	4	5	17	3	6	5	5	5	7	7	6	46	3	4	2	2	3	4	2	4	6	27	
4	0	0	0	0	1	1	1	1	4	4	5	3	1	1	1	1	3	4	19	4	6	6	5	4	4	5	5	40	4	5	2	2	3	4	4	3	4	27	
5	1	0	0	1	1	1	2	4	10	5	5	2	1	2	2	0	0	3	15	5	4	3	3	4	3	6	6	5	34	5	3	1	1	2	3	5	4	20	
6	5	2	1	2	5	5	3	5	28	6	3	2	3	4	4	4	6	4	30	6	6	3	2	2	4	3	0	1	21	6	0	1	0	1	3	3	3	4	15
7	4	1	1	3	2	1	1	4	17	7	6	6	4	3	3	5	5	6	38	7	3	3	1	2	2	4	3	3	21	7	4	0	0	0	0	2	4	3	13
8	4	2	1	1	3	2	3	4	20	8	5	5	3	5	4	6	6	7	41	8	2	1	1	1	1	3	3	13	8	3	4	1	1	1	4	5	6	25	
9	4	3	2	4	5	5	4	4	31	9	6	5	4	4	3	3	6	6	37	9	2	2	2	4	5	6	6	4	31	9	5	3	1	2	5	4	0	1	21
10	7	7	3	3	4	4	4	6	28	10	4	4	5	3	3	3	6	5	33	10	3	1	0	2	3	2	3	7	21	10	0	0	0	1	4	4	0	2	11
11	7	5	3	4	4	4	6	6	39	11	5	1	2	1	2	3	5	5	24	11	5	4	2	2	2	4	5	5	29	11	0	1	1	1	2	3	3	12	
12	6	4	3	3	4	4	4	4	32	12	5	4	3	3	3	3	5	2	28	12	6	3	3	2	1	2	3	3	23	12	0	0	0	0	0	0	1	1	1
13	4	6	2	3	2	1	1	1	24	13	2	2	2	1	3	2	5	5	21	13	2	1	1	0	0	0	1	0	5	13	0	0	0	0	0	2	2	3	7
14	5	6	2	3	4	1	1	1	23	14	3	0	1	3	4	3	3	5	22	14	0	0	0	0	0	1	2	2	5	14	2	0	0	0	1	2	3	5	13
15	1	1	1	1	1	2	6	5	18	15	0	0	1	2	0	0	2	3	8	15	1	0	0	0	0	0	0	4	5	15	4	1	1	1	2	3	2	4	18
16	2	1	0	1	2	1	1	2	10	16	3	1	1	2	2	2	4	4	19	16	4	2	1	1	1	1	0	1	11	16	4	3	2	2	1	4	5	4	25
17	2	2	2	0	3	2	5	5	21	17	4	2	1	2	3	3	3	3	21	17	0	1	0	1	4	5	5	5	21	17	4	4	1	0	2	2	3	5	21
18	5	2	2	2	3	5	6	5	30	18	0	0	0	1	2	2	0	7	18	18	4	2	0	2	1	1	2	0	12	18	2	1	0	0	1	1	2	6	11
19	3	2	1	2	3	1	1	3	16	19	0	0	0	0	0	0	1	3	4	19	2	3	2	1	0	0	4	2	14	19	0	2	0	0	1	2	2	1	8
20	1	0	1	1	1	3	4	5	16	20	2	2	0	0	0	0	1	5	10	20	4	1	0	0	0	3	5	5	18	20	1	1	0	0	0	1	2	5	5
21	4	0	0	1	1	2	3	2	13	21	4	2	0	1	0	0	0	4	10	21	6	3	4	3	1	1	6	4	28	21	1	0	0	1	4	4	3	16	
22	0	0	1	1	1	1	2	2	8	22	7	0	1	1	1	1	5	5	16	22	1	3	3	4	5	7	6	5	34	22	5	2	1	0	2	2	4	3	19
23	3	0	0	0	0	0	0	2	5	23	3	3	0	1	2	0	3	4	16	23	5	1	2	0	0	2	1	0	11	23	3	2	1	0	1	0	3	3	13
24	0	0	0	0	0	0	0	2	2	24	3	0	1	0	0	0	1	0	5	24	1	3	1	2	3	5	6	3	24	24	0	0	0	0	0	3	4	7	
25	0	0	0	0	0	0	0	3	3	25	0	0	0	0	1	0	0	1	2	25	4	2	2	2	3	4	2	21	25	4	4	3	1	4	4	3	6	29	
26	3	1	2	2	5	4	6	5	28	26	3	0	0	1	1	4	2	4	15	26	1	2	2	4	2	0	0	3	14	26	7	4	3	3	5	4	6	6	38
27	5	4	2	3	4	4	5	3	30	27	4	3	1	0	0	1	0	1	10	27	4	0	1	1	1	1	0	3	11	27	4	3	5	3	3	6	7	6	37
28	3	2	1	2	2	3	2	4	19	28	2	0	0	0	1	1	6	5	15	28	3	0	1	2	3	2	3	1	15	28	6	3	3	3	1	3	5	4	26
29	3	1	1	1	1	0	3	2	12	29	4	4	3	2	1	1	3	5	23	29	3	2	3	4	4	7	7	4	34	29	4	2	4	3	2	3	5	4	27
30	0	0	0	0	0	0	2	3	5	30	5	1	2	1	2	2	4	6	23	30	6	6	4	4	5	5	7	6	43	30	5	3	2	2	2	1	5	3	23
										31	4	5	3	4	1	4	6	3	30											31	1	1	0	0	1	1	1	3	8

JANUARY 1975  
 SUDDEN COMMENCEMENTS  
 20 1758 SSC - + A

JANUARY 1975  
 RAYS  
 11 2348 BS - - A  
 29 2217 BS - - A

JANUARY 1975  
 SUDDEN IMPULSES  
 20 1725 SI + + A  
 25 2352 SI - + A  
 28 2030 SI - - A  
 30 2019 SI - + A

FEBRUARY 1975  
 SUDDEN COMMENCEMENTS  
 10 2030 SSC - + A  
 20 2130 SSC - + B  
 23 2253 SSC - + A  
 28 2032 SSC - + A

FEBRUARY 1975  
 RAYS  
 NONE

FEBRUARY 1975  
 SUDDEN IMPULSES  
 13 1948 SI - + B  
 23 2152 SI - + A  
 24 2056 SI - + A

MARCH 1975  
 SUDDEN COMMENCEMENTS  
 4 2110 SSC\* - + A  
 9 1949 SSC - - A  
 16 2254 SSC\* - - A  
 22 2346 SSC - + B

MARCH 1975  
 RAYS  
 25 2121 BS - - B

MARCH 1975  
 SUDDEN IMPULSES  
 14 1919 SI - + B  
 19 2118 SI - + B

APRIL 1975  
 SUDDEN COMMENCEMENTS  
 1 2113 SSC + - B  
 2 2051 SSC\* - + A  
 3 2024 SSC - - B  
 4 1950 SSC - + A  
 10 2109 SSC\* - - B  
 12 2108 SSC - + A  
 25 2359 SSC - - A

APRIL 1975  
 RAYS  
 6 1132 R + - A

APRIL 1975  
 SUDDEN IMPULSES  
 6 2121 SI - + A  
 8 1937 SI - + A  
 22 2151 SI\* - + A  
 26 2046 SI - + B  
 26 2150 SI - - A

MAY 1975  
 SUDDEN COMMENCEMENTS  
 4 1757 SSC + + A  
 7 2200 SSC - + A  
 13 1924 SSC\* - - \*\* A  
 16 0308 SSC\* - - \*\* A  
 18 1830 SSC + + H  
 19 1951 SSC + - A

JUNE 1975  
 SUDDEN COMMENCEMENTS  
 5 2033 SSC - - R  
 15 2108 SSC - + A

JULY 1975  
 SUDDEN COMMENCEMENTS  
 10 1949 SSC - + H  
 17 2033 SSC - - A  
 23 2319 SSC - - R  
 25 1858 SSC - - A

AUGUST 1975  
 SUDDEN COMMENCEMENTS  
 NONE

AUGUST 1975  
 RAYS  
 NONE

MAY 1975  
 BAYS  
 NONE

JUNE 1975  
 RAYS  
 21 1151 R + H

JULY 1975  
 RAYS  
 NONE

AUGUST 1975  
 SUDDEN IMPULSES  
 NONE

MAY 1975  
 SUDDEN IMPULSES  
 5 1823 SI - + A  
 8 1900 SI - - R  
 16 2200 SI - + A  
 19 2026 SI\* - \*\* A  
 19 2115 SI\* - \*\* A  
 25 1830 SI - - A  
 29 2012 SI\* - \*\* R  
 30 0002 SI + + A

JUNE 1975  
 SUDDEN IMPULSES

2 2118 SI - - H  
 4 2047 SI - + H  
 7 2122 SI\* - - \*\* A  
 17 2024 SI\* - - \*\* A  
 19 2206 SI - + H  
 29 2013 SI - - A

JULY 1975  
 SUDDEN IMPULSES  
 1 2257 SI - + R  
 26 1849 SI\* \*\* \*\* A  
 28 2037 SI\* - \*\* A  
 30 2052 SI - - A  
 30 2148 SI - + A

SEPTEMBER 1975  
 SUDDEN COMMENCEMENTS  
 7 2019 SSC + - R  
 7 2236 SSC - - A  
 8 2106 SSC - + R  
 9 2046 SSC - + A  
 13 2058 SSC - + A  
 24 2024 SSC\* + - \*\* A  
 26 2015 SSC - - R  
 28 2303 SSC\* - - \*\* H

OCTOBER 1975  
 SUDDEN COMMENCEMENTS  
 4 1828 SSC\* \*\* + A  
 11 1810 SSC + - R  
 23 1947 SSC\* + \*\* A  
 28 1900 SSC - + A  
 30 1921 SSC\* - \*\* A

NOVEMBER 1975  
 SUDDEN COMMENCEMENTS  
 NONE

DECEMBER 1975  
 SUDDEN COMMENCEMENTS  
 24 1952 SSC\* \*\* + R

SEPTEMBER 1975  
 BAYS  
 NONE

OCTOBER 1975  
 RAYS  
 NONE

NOVEMBER 1975  
 RAYS  
 NONE

DECEMBER 1975  
 RAYS  
 NONE

SEPTEMBER 1975  
 SUDDEN IMPULSES  
 17 0648 SI + + R  
 17 2044 SI - + A

OCTOBER 1975  
 SUDDEN IMPULSES  
 2 2118 SI - - A  
 20 2226 SI\* - - \*\* R

NOVEMBER 1975  
 SUDDEN IMPULSES  
 11 1749 SI - + A  
 21 1935 SI - + A  
 24 0631 SI\* + - \*\* A

DECEMBER 1975  
 SUDDEN IMPULSES  
 23 1957 SI + + A  
 23 2044 SI + - A



