THE NEWSLETTER OF THE

ROYAL ASTRONOMICAL SOCIETY OF CANADA - KINGSTON CENTRE

AND THE

QUEEN'S UNIVERSITY ASTRONOMY CLUB

DECEMBER '78

SUNSPOT OBSERVING

There have been several occasions recently on which there have been excellent conditions for sunspot observing. As one would expect at times when there have been numerous outstanding auroral displays, there seems to be a lot of solar activity and the large, interesting sunspot groupings are fascinating to observe in amateur instruments.

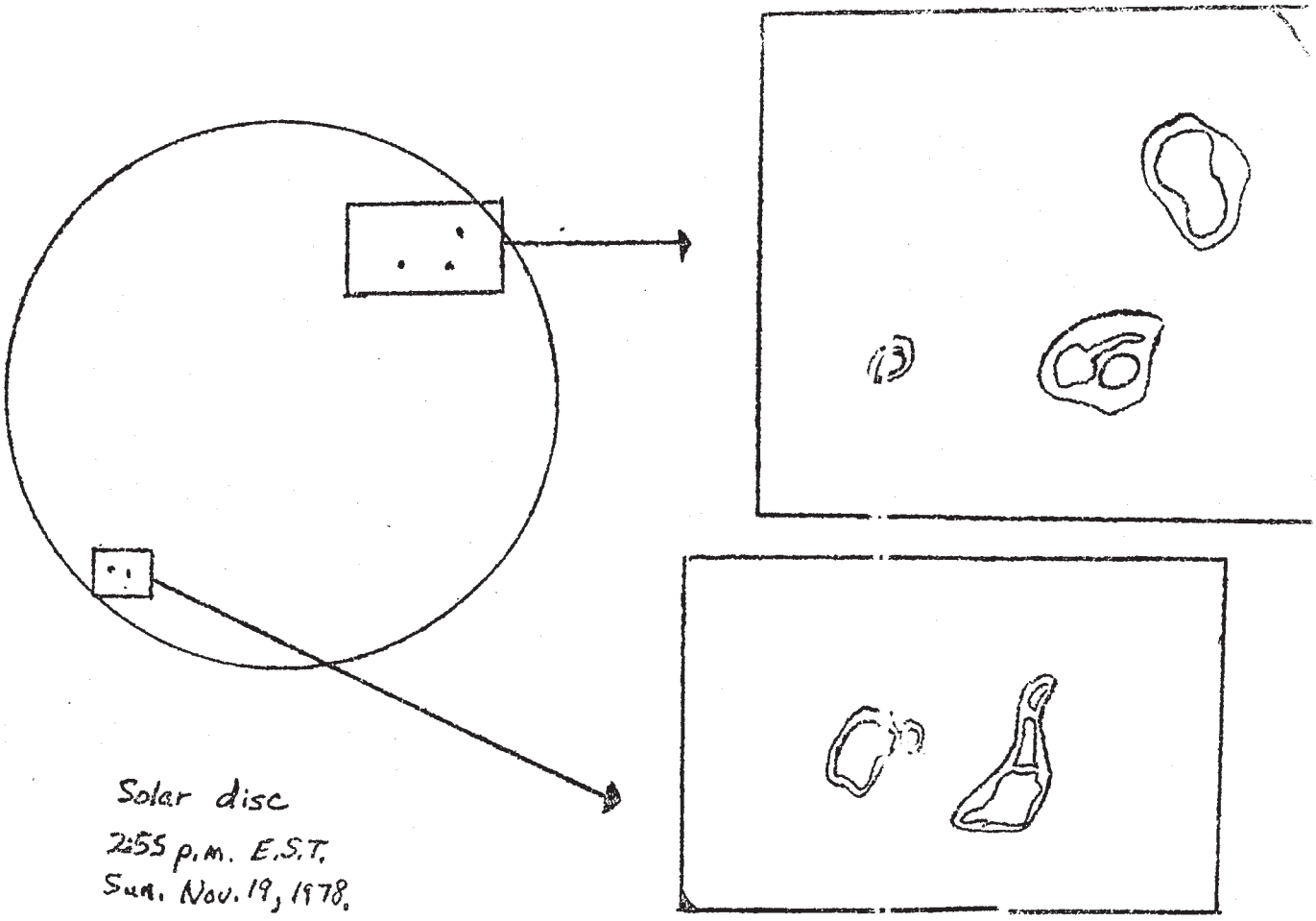
I found that two recent Sundays, November 19th and November 26th, were dates on which I had excellent conditions and was able to spend some time in serious sunspot searching. The air was crystal clear and quite steady. If I were to have any complaint about conditions on either day, I suppose it would be that there was a breeze by times on the former date, and on the latter the weather was fairly cold.

On the next page, I have included rough drawings taken from my rough sketches of what I saw. On November 19th I was using an 8-inch Cassegrain and I employed a wide range of eyepieces. I tried the following: a 40mm, a 25mm, a 12mm (all Kellners), a 12.7mm, and 18mm, and a 7mm (all Ramsdens) and a 5mm Orthoscopic. I saw the sunspots with all but the last, very-high-power eyepiece. The viewing was good through all of the others except the 7mm which was poor, and, in fact it was very good with the 12.7mm and 18mm. The close-up drawings were made mainly from the 12.7 with detailed additions from using the 18mm which probably provided the sharpest and finest details. (I hope that discussing what I used can perhaps be beneficial to some members of our centre who may be just beginning in solar observing)

On November 26, I had the use of a 6" Newtonian and again used several eyepieces. With such an instrument, the 40mm and 25mm eyepieces provide a good wide field enabling one to survey the sun, the former enabling an observer to see the entire solar disk. I tried some sunspot photography at the Newtonian focus but have yet to see the results.

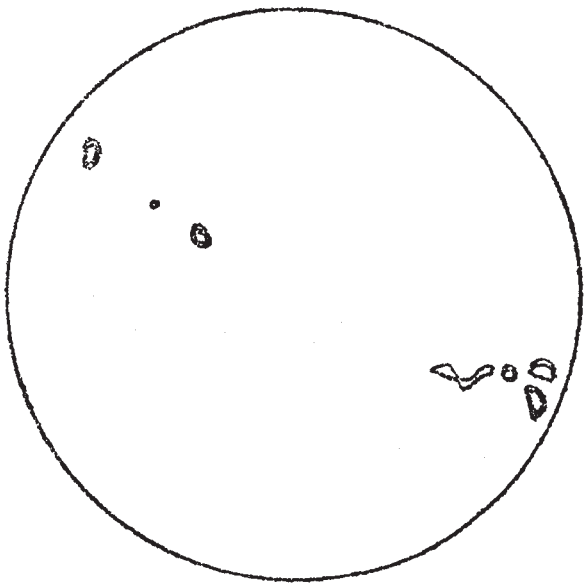
Sunspots

1 (a)



Solar disc
2:55 p.m. E.S.T.
Sun. Nov. 19, 1978.

Sunspots



Solar disc
2:30 p.m. E.S.T.
Sun. Nov. 26, 1978.

See accompanying article:
SUNSPOT OBSERVATION

Solar observing can be fascinating but a lot of care must be exercised. I hope that by passing on some hints and advice, I can help those who are starting out to do it safely. Your eyes must never be brought near the telescope or binoculars when the unfiltered rays of sun are being brought to a focus. To make sure that your eyes are not accidentally hit by focussed rays passing through your guidescope or finder scope you should remove them for solar work, or do the following if you wish to avoid spending time in realignment later - get a piece of cardboard and carefully tape it over the "upper" end of the guide or finder or otherwise completely cover it.

Use only the highest quality sun filter available for your telescope and be sure that it is installed or inserted properly before any of your observing begins and while the scope is directed far away from the sun. Locate the sun in your field of view only by means of ground-shadow-focussing. That is, watch the shadow on the ground behind your scope and when it is smallest, the sun should be in the field of view. Be very careful when changing eyepieces especially if your telescope employs the reflective mirror-type eyepiece sunfilter. If the telescope has an equatorial mount, lock the declination movement and turn the telescope eastward before changing the eyepiece. If you turn it in that way you need not fear that the sun will enter the field of view in the event that you should have a long, unplanned delay before reinserting the eyepeice. Work very carefully and thoughtfully and before every viewing check that the filter is properly in place.

Have a good, safe observing session.

AN IMPORTANT MEETING

Our regular meeting of November 30th was an important one because of what was accomplished. A motion was passed unanimously to purchase a ten-inch mirror and start construction of a telescope for our centre, the project to be completed before May 1st next year. If this project could be completed on schedule, it would surely be a tremendous boost to our centre and the realization of a dream that many people have pursued over the past decade. In the meantime smaller projects are to continue also. The major project is made possible by efforts and a donation by David Levy who once again has been more than generous toward our centre.

A committee made up of David, Doug, and Mike is responsible for seeing the project to its completion, and I intend to help with the work of the committee also.

It was also decided that the centre would start a nova-search project. Certain small areas of the sky marked off in an atlas were chosen by individuals who would be responsible for doing a thorough search of the chosen area or areas. If there are any members of the centre who did not choose a section, arrangements can be made with Enrico or David to pick an area which has not been taken. There's a lot of sky left. (as someone once said: "There are so many stars and so few astronomers.") Who knows? Someone might spot at nova. One of the areas chosen was the area in which the nova of 1572 was seen.

I hope that both projects are profitable for us, interesting, and fun to do. They can show that our centre is alive and well and "pound-for-pound" as active as any around.

REMINDERS AND OTHER ITEMS

1. There was some talk of a "Christmas party" at David's place on December 21st. Final confirmation may come at the meeting on December 14th. (Thanks again to David for having so many Centre activities at his place.)

2. The Kingston Centre is very happy to welcome back Paul Brown who was an active member here for a number of years. It may be hard for Paul who lives in Calgary to attend very many meetings, but if Paul reads this, I want him to know that I was glad to get his letter, we appreciate his interest, and maybe before long we can set up that long-base-line observing project. Welcome back, Paul!

3. Many of us by now have had a chance to peruse the new 1979 Observer's Handbook. The expanded edition is excellent and once again Dr. Percy and his helpers are to be congratulated.

4. I would like all members of the centre to record the following meeting dates in their calendar.

   Dates of Regular Meetings:

   December 14th, 1978
   January 11th, 1979
   January 25th, 1979
   February 8th, 1979
   Feburary 22nd, 1979
   March 8th, 1979
   March 22nd, 1979
   April 5th, 1979
   April 19th, 1979
   May 3rd, 1979
   May 17th, 1979
   May 31st, 1979
   June 14th, 1979
   June 28th, 1979

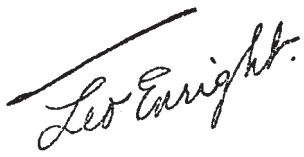
   It is expected that unless there is a notice otherwise, there will also be informal "get-togethers" and observing sessions in the intervening weeks. (P.S. Did you record the above dates and post them on your wall?)

5. For those who may still not have taken care of a very important matter, I would like to pass on a reminder - DUES ARE DUE. The annual fee of membership in our centre is only $16.00. Please see Enrico, our secretary-treasurer, to make your payment or if you want to buy an Observer's Handbook as a Christmas present. It might start a friend off on a regular observing program.)

6. Doug has come up with a fascinating contest and he may even plan to offer a prize to the winner. If you haven't seen the information on it yet, be patient. It may even be included with this newsletter.

7. Don't forget the Ursid meteors on December 22nd and December 23rd and the lunar occultation of Venus on the morning of December 26th. Let's try for some astrophotography!

8. I extend to you "Best Wishes for the Holiday Season"



CONTEST..CONTEST..CONTEST..CONTEST..CONTEST..CONTEST..CONTEST..

Stellar offset

You are on the starship KLUTZ on an exploration mission within 50 L.Y. of earth. Approaching an interesting planet a mini black hole comes screaming through the system, throwing your ship towards the surface out of control. The crew manages to slow the ship so that it survives the descent but the captain is killed and half the crew injured. The ship is ruined. It is imperative to send a message back to earth so a rescue ship can be sent. The problem is that nobody knows where the planet is and the communications officer says that the hyperwave was badly damaged and will only work once (maybe). A plastic-eating fungus found on the planet got into the navigatIon tapes and destroyed them. A man-eating plant(humanus consumous) got the navigator. All the equipment you have is a slightly misbehaving star scanning conputer.and your old copy of the Observers Handbook (which somehow got into your luggage). Your job is to find out which star up there is Sol and so find out which star you are at.

The planet is the same temperature as the earth but at an orbital distance of 2.6 A.U. It has a rotation period of 22.3 hours and a surface gravity of 0.96 G. It has a suitable atmosphere of 17% O2 , 0.1% CO2 , 78% N2, 4% Ar, and the remainder other non-toxic gases. The surface is 22% ocean which is teeming with life, mostly a microscopic form similar to algae. There is no animal life.

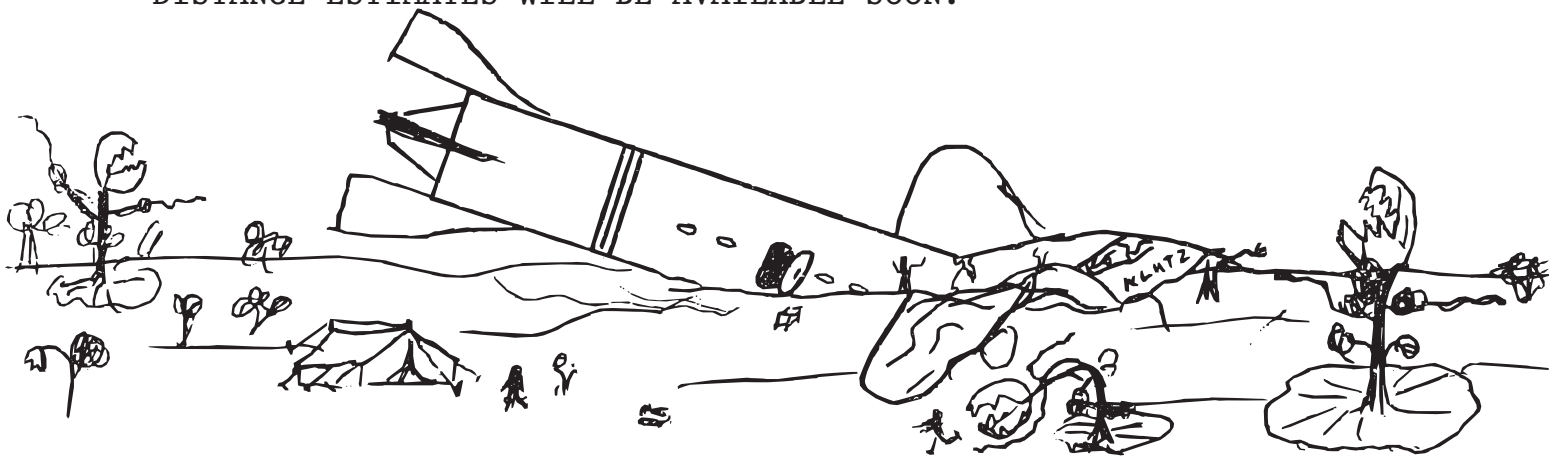
Star #	R.A. HH mm	Dec.	Mag.
1	00 01	-32.59	1.6
2	00 09	18.08	2.8
3	00 14	83.64	3.6
4	00 15	13.29	1.3
5	00 23	65.52	2.5
6	00 28	73.33	2.4
7	0029	41.39	3.3
8	00 53	56.32	2.3
9	00 58	-43.58	3.7
10	00 59	6.02	3.1
11	01 27	-42.97	3.4
12	01 30	-55.74	-0.2
13	01 49	54.76	3.7
14	01 51	53.39	2.9
15	01 52	66.26	3.4
16	0203	48.65	2.2
17	02 08	46.20	2.1
18	02 09	47.00	3.2
19	02 21	13.86	1.7
20	00 54	30.11	3.4
21	03 08	45.20	3.6
22	03 09	17.45	2.4
23	03 21	65.66	3.3
24	03 22	55.69	2.3
25	03 22	-22.67	2.1
26	03 26	52.54	1.8
27	03 45	50.40	3.0
28	03 49	27.25	2.9
29	03 54	33.45	1.3
30	03 59	42.37	2.9
31	04 08	-4.09	2.7
32	04 10	-75.33	3.1
33	04 25	-62.22	3.1
34	04 42	-29.70	3.6
35	04 44	27.95	3.4
36	04 48	-53.47	3.1
37	05 01	44.25	3.0
38	05 04	37.97	2.7
39	05 13	40.45	1.0
40	05 14	45.27	3.2
41	05 16	-6.56	0.1
42	05 19	-12.16	3.2
43	05 21	-14.26	2.9
44	05 26	-0.74	3.6
45	05 29	9.80	1.6
46	05 32	0.72	2.2
47	05 33	-16.33	2.6
48	05 35	33.87	1.7
49	05 35	10.82	3.6
50	05 35	-5.17	2.8
51	05 36	-0.24	1.6
52	05 39	22.86	3.1
53	05 41	-0.97	1.8
54	05 43	16.53	2.6
55	05 48	-8.98	2.1
56	05 54	-7.49	2.5
57	05 59	10.50	0.4

#			
		-25.30	2.2
58	06 04	[redacted]	[redacted]
59	06 17	-27.13	2.8
60	06 26	-16.05	1.9
61	06 28	-26.86	2.9
62	06 30	30.15	3.4
63	06 34	49.29	2.9
64	06 43	31.88	2.9
65	06 44	-41.59	3.1
66	06 45	26.55	3.0
67	06 50	57.78	2.4
68	7002	54.42	3.8
69	07 03	-23.40	3.0
70	07 03	-27.04	1.4
71	07 04	67.73	0.8
72	07 09	-25.70	1.9
73	07 09	30.52	2.8
74	07 20	-42.55	-1.3
75	07 20	-43.00	3.3
76	07 24	-28.70	2.5
77	07 32	-42.16	2.6
78	07 38	35.00	3.6
79	07 42	15.63	3.0
80	07 46	-27.40	2.6
81	07 51	-23.68	3.3
82	07 54	-36.44	3.1
83	08 04	-39.44	2.2
84	08 09	-50.59	3.4
85	08 18	-48.09	1.8
86	08 41	-56.59	1.8
87	08 41	-9.23	2.7
88	08 56	-41.01	2.3
89	09 00	52.34	2.4
90%71.8 & &%$""#) POOF! (note: blew a fuse)			
91	09 08	16.80	3.9
92	09 09	12.74	3.1
93	09 02	64.17	3.7
94	09 13	-41.55	2.2
95	09 20	-57.02	3.3
96	09 24	-57.73	2.2
97	09 28	52.66	2.1
98	09 32	-52.36	2.3
99	09 40	39.97	3.5
100	09 47	-62.43	4.1
101	09 52	-35.21	1.5
102	09 54	27.40	3.1
103	09 58	7.57	2.1
104	10 01	-49.20	2.9
105	10 06	-61.72	2.8
106	10 20	-60.30	3.4
107	10 22	58.43	4.0
108	10 35	31.71	3.8
109	10 38	-66.28	3.2
110	10 38	58.62	4.0
111	10 38	26.26	1.8
112	10 39	47.53	3.8
113	10 40	-54.99	1.1
114	10 43	-58.61	3.2

#	HH	mm	Dec.	Mag.
115	10	48	31.71	2.8
116	10	50	-62.56	2.6
117	10	52	47.80	3.8
118	11	04	-5.27	3.2
119	11	16	-33.99	2.5
120	11	21	57.95	2.8
121	11	30	48.77	3.4
122	11	35	27.62	3.8
123	11	38	32.45	3.1
124	11	41	63.04	2.4
125	11	44	59.42	3.1
126	1145		59.79	1.2
127	11	46	-59.11	3.1
128	12	13	-46.20	2.5
129	12	18	-13.63	2.6
130	12	18	-55.99	2.7
131	12	19	56.49	3.0
132	12	20	-10.44	3.0
133	12	21	34.97	3.1
134	12	29	-8.22	3.7
135	12	32	-58.99	1.1
136	snap crackle BOOM! (another fuse)			
137	12	38	-3.33	3.1
138	12	39	-49.64	1.5
139	12	43	-65.80	2.6
140	12	44	-7.75	2.8
141	12	45	59.18	4.2
142	12	49	-38.00	2.8
143	12	50	-56.43	1.2
144	12	50	-65.04	3.6
145	13	03	43.33	3.4
146	13	04	29.91	4.6
147	13	09	23.47	3.3
148	13	11	58.02	2.6
149	13	26	-3.69	0.9
150	13	27	-11.87	2.9
151	13	30	89.57	2.1
152	13	30	56.81	2.9
153	13	37	13.81	3.8
154	13	39	-50.48	2.3
155	13	48	50.98	2.2
156	13	48	-39.25	3.4
157	13	49	-39.66	3.1
158	13	54	-43.90	2.6
159	13	55	39.72	3.9
160	13	58	61.66	4.7
161	14	02	-57.08	0.6
162	14	03	?4.50	4.1
163	14	03	54.50	5.5
164	14	03	-5.09	2.2
165	14	04	-6.54	3.4
166	14	09	38.83	1.1
167	14	26	-37.34	2.7
168	14	27	43.21	3.5
169	14	32	-37.58	2.3
170	14	32	71.48	2.6
171	14	37	32.52	1.6
172	14	37	34.99	3.0
173	14	38	43.34	2.3
174	14	40	6.74	3.1
175	14	48	2.22	3.5
176	14	50	82.18	5.1
177	14	53	44.37	3.0
178	14	55	-39.85	2.7
179	14	55	-38.32	3.1
180	14	55	-32.12	3.2
181	14	56	-54.63	2.5
182	15	03	-17.51	2.4
183	15	05	59.94	3.8
184	15	06	38.56	3.9
185	15	08	1.75	2.7
186	15	08	70.99	3.3
187	15	17	37.04	2.9
188	15	17	38.09	3.2
189	15	25	22.79	3.2
190	15	30	-38.10	3.5
191	15	42	48.59	4.3
192	15	42	62.57	3.5
193	15	48	81.62	5.4
194	15	51	-49.89	1.4
195	15	54	-23.03	2.9
196	15	55	-35.36	3.5
197	15	56	-19.65	2.3
198	15	58	-11.07	3.5
199	16	00	6.91	2.8
200	16	01	-17.12	2.8
201	16	05	47.80	4.3
202	16	10	31.12	3.5
203	16	14	-8.49	2.2
204	16	16	-22.53	1.8
205	16	18	-37.45	2.8
206	16	19	-9.64	3.2
207	16	23	-23.11	0.9
208	16	27	48.33	4.7
209	16	31	-25.91	2.8
210	16	32	-7.37	1.7
211	16	36	6.37	3.3
212	16	42	18.07	3.5
213	16	43	56.30	1.5
214	16	45	-34.86	2.9
215	16	48	34.77	3.6
216	16	52	31.04	2.7
217	16	59	65.90	3.3
218	17	05	53.13	2.5
219	17	06	38.92	3.2
220	17	07	17.62	3.3
221	17	10	83.72	3.9
222	17	16	53.92	2.9
223	17	16	-20.7	3.1
224	17	16	-22.65	3.3
225	17	17	-54.38	3.2
226	17	17	55.86	2.7
227	17	19	-46.12	2.9
228	17	20	15.68	3.0
ommission:226A	17	19	-54.21	2.9

#	H	m	Dec.	Mag.
229	17	21	-31.90	1.5
230	17	23	-34.33	2.6
231	17	30	-40.65	1.8
232	17	33	-35.71	2.3
233	17	34	19.79	3.6
234	17	36	-17.59	3.1
235	17	37	1.37	3.5
236	17	38	-17.21	3.0
237	17	41	-10.26	2.7
238	17	42	-2.59	2.8
239	17	45	-39.65	3.0
240	17	54	-21.41	1.7
241	18	08	69.80	3.5
242	18	14	70.75	4.4
243	18	24	-8.93	3.2
244	18	25	27.86	3.8
245	18	28	27.96	3.3
246	18	35	-18.67	3.1
247	18	35	-11.16	3.4
248	18	38	-24.41	3.2
249	18	42	-21.14	2.1
250	18	45	4.74	3.4
251	18	46	34.23	3.4
252	18	47	35.72	3.3
253	18	53	72.27	3.3
254	18	54	-14.78	3.7
255	19	20	31.03	3.2
256	19	27	48.67	3.1
257	19	35	14.94	2.7
258	19	36	-31.46	2.6
259	19	43	48.94	1.1
260	19	50	48.72	2.9
261	19	50	-62.08	2.9
262	19	53	-2.74	3.0
263	20	00	3.87	3.3
264	20	04	-53.98	1.8
265	20	15	41.80	2.2
266	20	23	-46.37	1.7
267	20	35	17.07	2.7
268	20	37	45.94	1.3
269	20	50	-27.33	0.8
270	21	02	33.80	3.2
271	21	18	71.27	3.2
272	21	27	-4.17	2.8
273	21	39	11.85	2.3
274	21	45	-35.50	2.9
275	21	52	79.52	3.2
276	22	02	1.04	2.9
277	22	05	59.06	3.3
278	22	15	34.46	3.1
279	22	19	3.38	2.9
280	22	24	59.26	4.0
281	22	27	-44.31	1.9
282	22	27	18.60	3.4
283	22	39	30.30	2.5
284	22	49	35.68	2.6
285	23	43	47.00	-0.2

DISTANCE ESTIMATES WILL BE AVAILABLE SOON.



CONTEST ENTRY SLIP....

Name..... _____

Address.. _____

_____

I think the star is _____

Return this entry form before Jan. 31 1979. 2400 hours E.S.T.
to Douglas Baker
895 Purdy's Mill Rd.
Kingston, Ont.
K7M 3N1