THE MINOR PLANET OBSERVER: PROGRESS

Brian Warner
Palmer Divide Observatory
17995 Bakers Farm Rd.
Colorado Springs, CO 80908
brianw_mpo@compuserve.com

It was gratifying to get the third quarter edition of the *Minor Planet Bulletin* a few months back and see so many asteroid lightcurves. I don't propose to take credit for this, though I was fortunate enough to help in some small way with most of those who submitted papers. A cheerleader does not win the game; it is the player on the field who achieves ultimate success but those on the sidelines can still take some pride in the team's victories.

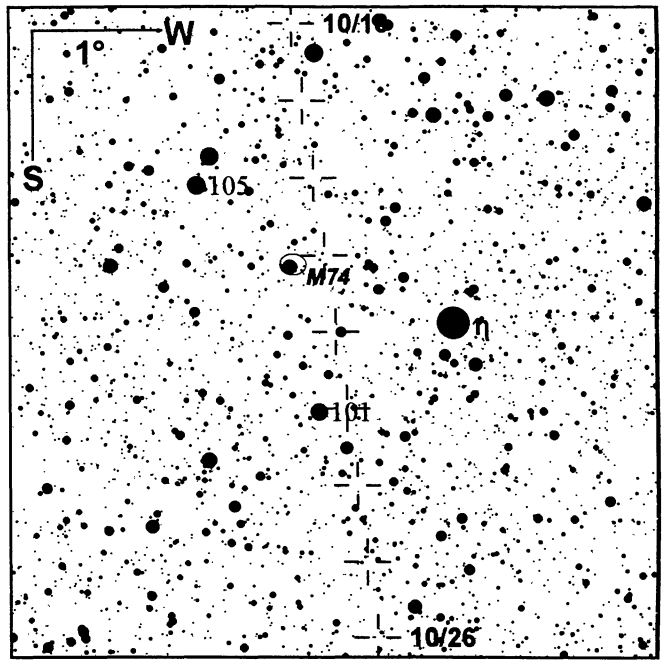
There are signs this trend will continue following the Minor Planet Amateur-Professional Workshop 2000 in Alfred, NY, this past June. It was a very successful meeting with special congratulations going to Roy Tucker who served as chairman and Drs. David DeGraff and John Stull of Alfred University who were hosts. There was a fair amount of discussion about photometry and lightcurve work that would indicate that these pages might soon sprout lightcurves.

A quick check shows there's no less than 150 asteroids reaching their brightest in 2000 October through December that have no established periods or have a period that needs checking. That's just from a pool of numbered asteroids reaching a maximum brightest of at least 15m more than a week from a full moon. There's still no lack of work!

A significant point made during the Alfred conference was the use of filters and reducing observations to a standard system. Using filters has the disadvantage of reducing the limiting magnitude that one can work but many advantages such as being able to combine observations with other observers and establishing phase coefficients, among others. For the very adventurous and sufficiently equipped, there's the possibility of helping to determine an asteroid's class by measuring the object's brightness through several filters.

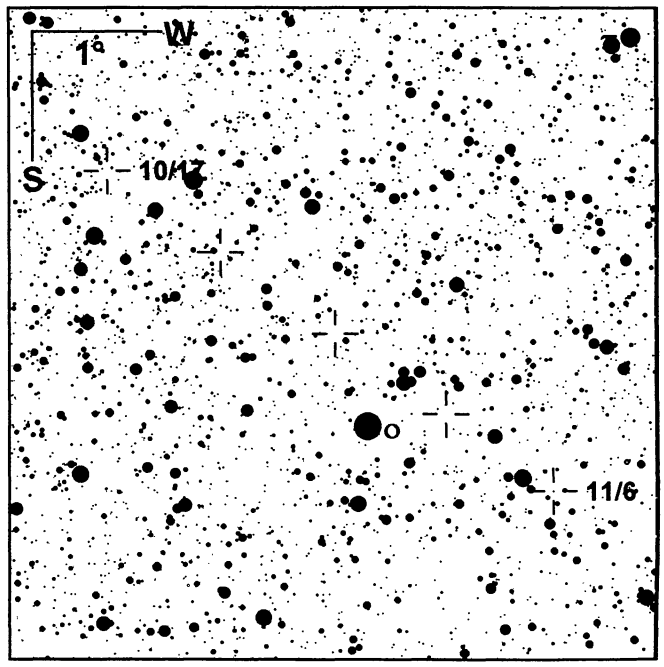
On the "home-front", the 20-inch is finally doing some legitimate work again. Two more lightcurves have been determined and, for the first time in nearly a year, I made some astrometric observations. Being out of practice I was victim to some of the common mistakes, e.g., bad times, measuring the wrong target and so on. It's easy to forget that even the "simplest" scientific research requires constant care and attention.

Since the 20-inch cannot yet be fully remotely controlled via software for astrometry, I must stay near the computer during a run. That has allowed progress on a different front: my piano playing. If you remember from the first of the year, I vowed to devote more time to getting back to learning how to play. As always, one thing or another kept getting in the way but now I have the perfect excuse to be in the same room with the instrument: it's in the same room as the telescope computer. Far more than relearning the tricks of astrometry, relearning scales, arpeggios, and – more important – which key on the piano corresponds to that black splotch on the paper is proving a difficult task. With the long winter nights, I'll have plenty of time to practice *and* to observe. Clear Skies!



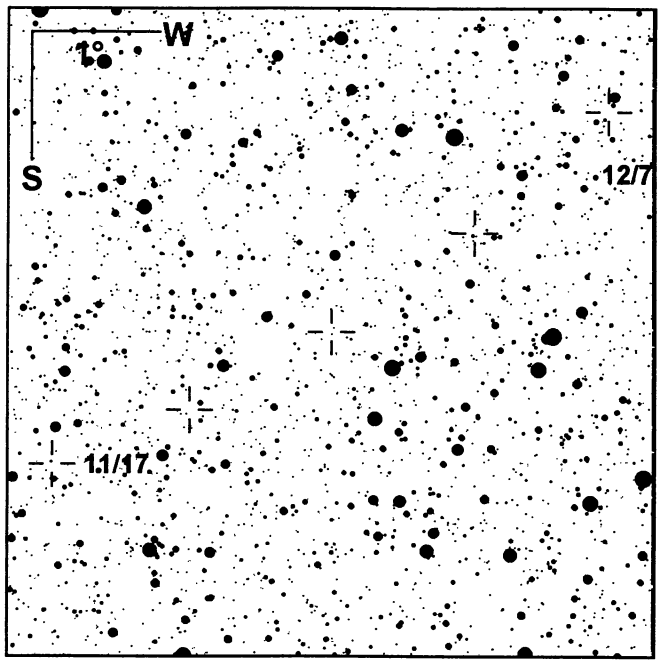
391 Ingeborg. Note that the chart interval is **2 days** and the near miss with M74. Max Wolf discovered Ingeborg in 1894 November. Based on brightness alone, this would be a good "beginners" target. Whether or not the lightcurve is an easy one is what's to be determined.

Date	RA2000	Dec2000	RA1950	Dec1950	M	PA	E
10/17	1 37.01	+18 15.1	1 34.30	+17 59.9	10.7	5.6	171
10/22	1 35.24	+15 16.7	1 32.56	+15 01.3	10.6	3.1	175
10/27	1 33.66	+12 20.9	1 31.01	+12 05.5	10.8	4.8	172
11/01	1 32.46	+ 9 33.4	1 29.83	+ 9 18.0	11.0	8.2	166
11/06	1 31.80	+ 6 58.9	1 29.18	+ 6 43.5	11.2	11.7	160



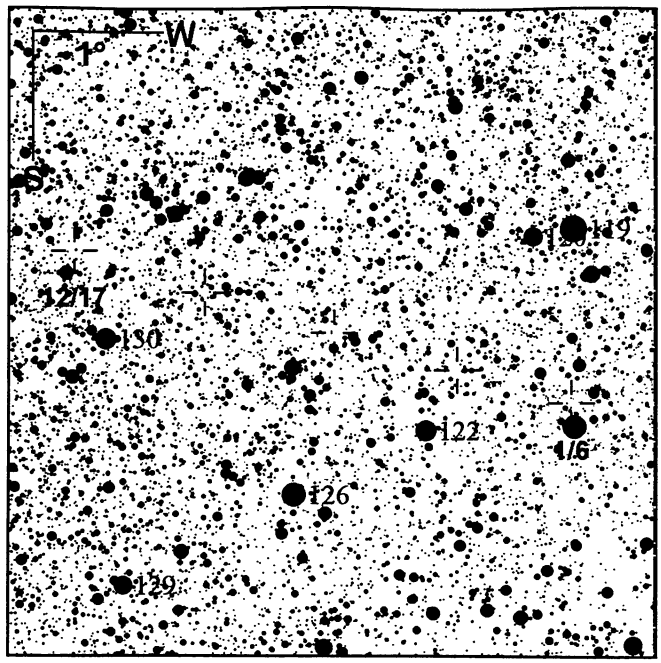
1309 Hyperborea. Named after a region of ancient Greece, Hyperborea was discovered by G.N. Neujmin in 1931 October. It is an unclassified asteroid with a size of about 32 km. Omicron Piscium is near chart center.

Date	RA2000	Dec2000	RA1950	Dec1950	M	PA	E
10/12	1 57.02	+11 43.2	1 54.35	+11 28.5	14.4	4.2	168
10/17	1 53.59	+11 06.9	1 50.92	+10 52.2	14.2	2.2	174
10/22	1 50.03	+10 29.6	1 47.37	+10 14.8	14.0	0.3	179
10/27	1 46.44	+ 9 52.0	1 43.80	+ 9 37.1	14.2	1.9	174
11/01	1 42.95	+ 9 15.0	1 40.31	+ 9 00.0	14.3	4.0	168



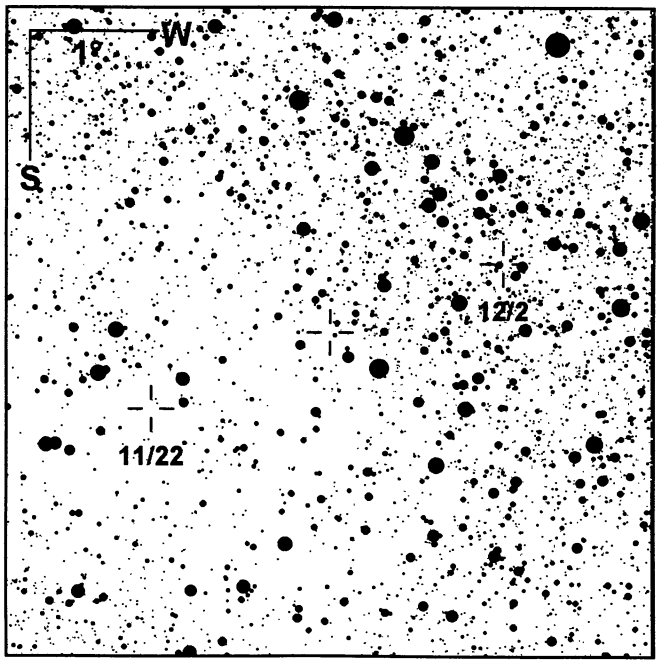
1362 Griqua. Griqua is a type CX asteroid of about 32 km size. Discovery was by C. Jackson in 1935 July. The name, like many of Jackson's discoveries, is out of South Africa; in this case, it's a tribe of people north of the Orange River.

Date	RA2000	Dec2000	RA1950	Dec1950	M	PA	E
11/17	4 31.14	-17 10.1	4 28.90	-17 16.5	14.2	17.1	141
11/22	4 26.68	-16 45.4	4 24.43	-16 52.1	14.2	16.5	142
11/27	4 22.10	-16 09.6	4 19.83	-16 16.6	14.2	16.2	143
12/02	4 17.58	-15 22.9	4 15.29	-15 30.2	14.3	16.2	142
12/07	4 13.29	-14 26.2	4 10.99	-14 33.7	14.3	16.4	142



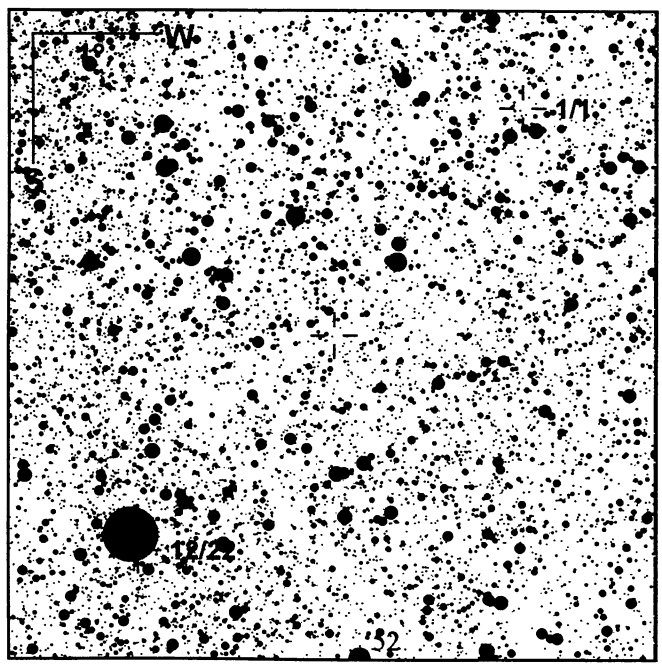
643 Scheherezade. With luck, it won't take a thousand nights to discover this asteroid's lightcurve story. A find of A. Kopff (1907 September), Scheherezade is a type EMP asteroid of 70 km size. The field is in eastern Taurus.

Date	RA2000	Dec2000	RA1950	Dec1950	M	PA	E
12/17	5 48.49	+18 25.0	5 45.56	+18 24.1	14.2	1.7	175
12/22	5 44.22	+18 05.9	5 41.29	+18 04.7	14.2	2.1	173
12/27	5 40.03	+17 47.7	5 37.11	+17 46.1	14.3	3.6	168
01/01	5 36.04	+17 30.4	5 33.13	+17 28.6	14.4	5.3	163
01/06	5 32.35	+17 14.5	5 29.44	+17 12.4	14.5	7.0	157



965 Angelica. Named after discoverer J. Hartmann's wife, Angelica was found in1921 November. It's about 32 km in size and is unclassified. It's high declination should allow long runs for northern observers – if the weather cooperates.

Date	RA2000	Dec2000	RA1950	Dec1950	M	PA	E
11/17	3 40.16	+30 43.8	3 37.06	+30 34.1	12.7	5.1	168
11/22	3 33.68	+31 24.6	3 30.58	+31 14.5	12.6	5.1	168
11/27	3 27.18	+32 00.8	3 24.08	+31 50.4	12.7	6.3	165
12/02	3 20.91	+32 32.3	3 17.81	+32 21.5	12.8	8.2	161
12/07	3 15.10	+32 59.4	3 11.99	+32 48.3	12.9	10.3	156



1963 Bezovec. Betelgeuse (lower left) makes an easy starting point for finding the 24 km Bezovec, which was named after a Slovakian mountain following discovery by L. Kahoutek in 1975 February. The rich field of the Orion sky might make this an interesting challenge.

Date	RA2000	Dec2000	RA1950	Dec1950	M	PA	E
12/17	6 00.99	+ 5 43.7	5 58.32	+ 5 43.6	12.9	9.3	162
12/22	5 54.95	+ 7 16.8	5 52.25	+ 7 16.3	12.8	8.2	164
12/27	5 48.84	+ 8 57.2	5 46.11	+ 8 56.3	12.8	8.4	163
01/01	5 42.93	+10 42.8	5 40.16	+10 41.4	12.9	9.8	161
01/06	5 37.46	+12 31.2	5 34.65	+12 29.5	13.0	12.0	156