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19.

VISUAL PHOTOMETRY OF 7 IRIS

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Visual photometry of asteroid 7 Iris is reported. One maximum and one minimum were detected in two hours of observation, consistent with its known 7.139 hour rotation period.

On UT 1991 November 6, I made visual photometry estimates of the brightness of minor planet 7 Iris in order to study its lightcurve. The telescope used was my 11.4-cm Newtonian reflector. Although I observed only a portion of its rotational lightcurve, the results are very interesting. The Ephemerides of Minor Planets for 1991 lists a rotation period of 7.139 hour and a lightcurve amplitude of 0.04 to 0.29 magnitudes.

My brightness estimates for 7 Iris were made using Argelander's method. For three comparison stars (A,B,C shown in Figure 1), I estimated a linear brightness scale between them. My estimates were: A-C=120, A-B=140, and C-B=20. Relative to this scale, I made brightness estimates of 7 Iris at five to ten minute intervals between 21:20 and 23:15 UT. My minimum brightness estimate was 34 at 21:55 UT and my maximum brightness estimate was 120, occurring at 22:35 and 23:05 UT. The lightcurve, transformed to 0 magnitude at a brightness of 100, is shown in Figure 2. Clearly one minimum and one maximum were detected during the two hours of observation. Assuming that four extrema (two maxima and two minima) comprise the lightcurve, it appears that slightly more than one-fourth of the rotational cycle was detected in two hours. Therefore these observations suggest a rotation period of less than 8 hours, consistent with the tabulated period for 7 Iris.

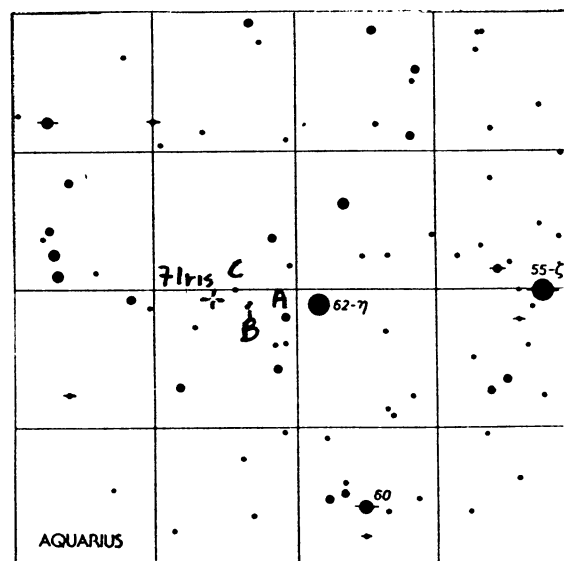


Figure 1. Chart showing the location of 7 Iris on 1991 November 6 UT and the identification of comparison stars A, B, and C. (From Uranometria 2000, chart 257.)

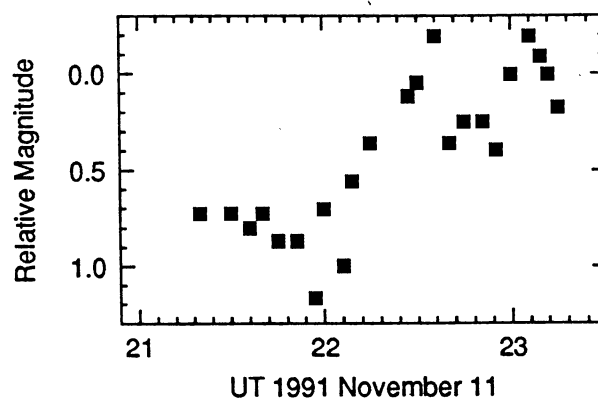


Figure 2. Visual lightcurve of asteroid 7 Iris on a magnitude scale.

GENERAL REPORT OF POSITION OBSERVATIONS BY THE ALPO MINOR PLANETS SECTION FOR THE YEAR 1991

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Observations of positions of minor planets by members of the Minor Planets Section in calendar year 1991 are summarized, along with significant discrepancies from the predicted magnitudes noted for a few planets.

During the year 1991 a total of 1789 positions of 380 different minor planets were reported by members of the Minor Planets Section. Of these 32 are photographic measures. All the rest are approximate visual positions. All of these planets were observed at positions agreeing within errors of measurement with those predicted from their published ephemerides.

The summary lists minor planets in numerical order, the observer and telescope aperture (in cm), UT dates of the observations, and the total number of observations in that period. The year is 1991 except as otherwise indicated, when a series of observations begun in calendar 1991 continued into 1992.

A special list immediately below indicates discrepancies between observed brightness and brightness as predicted from the new magnitude system first published in MPC 17257-17273, and also in the 1992 *Ephemerides of Minor Planets* volume. Although the visual estimates are of low accuracy, these planets are identified as high priority targets for further photographic or photoelectric photometry in order to correct errors probably occurring in the tabulated values.

Attention is called especially to planet 3578 1977 CC. This was listed in EMP 1991 at $H = 10.5$, $G = 0.25$, then revised enormously in MPC 17269 and EMP 1992 to $H = 8.1$, $G = 0.15$. G. Roger Harvey observed this object 1991 Oct. 13 at visual magnitude 14.0, which corresponds to $H = 10.0$, $G = 0.15$. Gerard Faure observed this object 1991 Oct. 4 at visual magnitude between 13.5 and 14.0

Error correction. In this report for the year 1990 (MPB 18, 3, (1991 July-September), p. 28), the observations by J. Sudol and G. Garber at the Van Vleck Observatory were made at Middletown, Connecticut, USA, not at St. Paul, Minnesota, USA written.

Planet	Observed	Date, 1991	Observer
157 Dejanira	0.8m fainter	Dec 13-14	Faure
835 Olivia	0.5m fainter	Oct 30	Harvey
968 Petunia	0.5m fainter	Mar 13	Faure
1150 Achaia	0.3m fainter	Dec 5	Harvey
1476 Cox	0.8m fainter	Aug 4	Harvey
1948 Kampala	0.7m fainter	Jan 26	Harvey
1989 Tatry	0.7m fainter	Mar 16	Harvey
2119 Schwall	0.7m fainter	Oct 8	Harvey
2657 Bashkiria	0.7m fainter	Dec 8	Harvey
2771 Polzunov	0.5m fainter	Sep 9	Harvey
2816 Pien	0.5m fainter	Oct 8	Harvey
3070 Aitken	0.5m fainter	Apr 11	Harvey
3139 Shantou	0.7m fainter	Oct 13	Harvey
3289 Mitani	0.4m fainter	Nov 29	Harvey
3329 1985 RT1	0.5m fainter	Dec 11	Harvey
3415 Danby	1.0m fainter	Sep 29	Harvey
3550 1981 YS	0.7m fainter	Dec 11	Harvey
3578 1977 CC	1.9m fainter	Oct 13	Harvey
3613 1982 VJ11	0.5m fainter	Mar 16	Harvey
3628 1979 WD	0.8m fainter	Nov 29	Harvey
3867 Shiretoko	0.5m fainter	Jan 14	Harvey
3913 1986 XO2	0.9m fainter	Jun 8	Harvey
4005 1972 TC2	0.5m fainter	Oct 8	Harvey
4156 1988 BE	0.5m fainter	Nov 29	Harvey
4173 Thicksten	0.8m fainter	Dec 11	Harvey
4202 1985 CB2	0.5m fainter	May 3	Harvey
4369 1982 OR	0.5m fainter	Dec 11	Harvey
4483 1986 RC2	1.0m fainter	Jun 8	Harvey
4545 1989 SB11	0.5m fainter	Oct 10	Harvey
4744 1988 RF5	1.2m fainter	Jan 26	Harvey
4896 1986 YA	1.0m fainter	Sep 29	Harvey
1986 WE	0.5m fainter	Jan 14	Harvey
1988 JV	0.8m fainter	Feb 5	Harvey
1989 YF	0.5m fainter	Jul 14	Harvey
1991 EE	0.5m brighter	Sep 8	Harvey

Positional observations were contributed by the following observers:

Observer, Instrument	Location	Planets	Positions
Comba, Paul G. 20 cm Celestron 28 cm Schmidt-Cassegrain	Brookline, Massachusetts, USA	31	75
Damiani, Matteo 10 cm Newtonian	Cazzago S.M., Italy	1	2
Faure, Gerald 20 cm Celestron,	Risset, France and environs	32	106
Foglia, Sergio 11 cm Newtonian 10 cm Newtonian	Milan and Cazzago S.M., Italy	1	3
Garrett, Lawrence 8 cm binoculars 32 cm f/6 Reflector 25 cm f/5.6 Newtonian 20 cm Celestron	Burlington, Vermont, USA	15	37
Harvey, G. Roger 73 cm Newtonian	Concord, North Carolina, USA	157	525
Koch, Bernd 20 cm f/5	Solingen, Germany	1	3
Pilcher, Frederick 35 cm Celestron	Jacksonville, Illinois, USA	84	632
Pryal, Jim 20 cm Schmidt-Cassegrain Photos with 6.4 cm f/2.8 lens and 9 cm Maksutov-Cassegrain	Federal Way, Washington, USA and environs	120	267
Stikeleather, Charles C. 44 cm f/4.4 Newtonian	Cornelius, North Carolina, USA	41	123
Werner, Bob 20 cm Celestron	Austin, Texas, USA	4	13