PHOTOELECTRIC PHOTOMETRY OPPORTUNITIES NOVEMBER-JANUARY

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The table below lists asteroids which come to opposition during the months of November through January that represent useful targets for photoelectric photometry observations. Observations are needed because the asteroid has either an unknown or ambiguous rotational period or because the asteroid will be observable at a very low phase angle. The table also includes asteroids which are candidates for pole determinations (see the article by Di Martino and Zappalá in issue 12, No. 1), are targets for radar observations (see the article by Ostro in *MPB* 10, No. 4), or are subjects for shape modelling (see the article by Davis and Binzel in *MPB* 14, No. 3). The table gives (in order of opposition dates) the asteroid number and name, opposition date, opposition V magnitude, the rotational period (in hours), the estimated lightcurve amplitude (in magnitudes), and the designation PER if observations are needed to determine the rotational period. AMB implies that previous period determinations have given ambiguous results and these alternate periods are listed in the table. PHA indicates observations of the phase curve are desired because the asteroid will be at an unusually low phase angle, POL indicates the asteroid is a pole position candidate, RAD indicates the asteroid is a planned radar target, and MOD denotes an asteroid at a critical longitude for shape modelling. Question marks are used to denote uncertain or unknown values. An outline of recommended observing procedures in given in *MPB* 11, No. 1, page 7. Also recommended is the book Solar System Photometry Handbook (see the review by Tholen in *MPB* 11, No. 4).

Asteroid	Opp'n Date	Opp'n V Mag	Per	Amp	
201 Penelope	Nov 1	11.4	3.747	0.4	MOD
43 Ariadne	Dec 5	11.2	5.751	0.3	MOD
122 Gerda	Dec 10	12.0	?		PER+PHA
240 Vanadis	Dec 11	11.1	?		PER
758 Mancunia	Dec 14	11.9	?		PER

Photoelectric Photometry Opportunities

DATE	R.A. (1950) HR MIN	DEC. DEG MIN	MAG V	PHASE ANGLE
Minor Planet	43 Ariadne			
1989 Oct 26	5 24.39	+24 56.3	11.98	17.9
Nov 5	5 19.70	+24 45.5	11.78	14.5
15	5 11.80	+24 28.7	11.57	10.4
25	5 1.39	+24 4.9	11.35	5.7
Dec 5	4 49.61	+23 34.2	11.06	0.8
15	4 37.90	+22 59.1	11.32	4.4
25	4 27.67	+22 23.6	11.59	9.0
1990 Jan 4	4 19.97	+21 52.0	11.83	13.1
14	4 15.37	+21 27.8	12.07	16.5
Minor Planet	122 Gerda			
1989 Nov 5	5 36.06	+21 13.5	12.71	12.1
15	5 31.44	+21 4.8	12.53	9.3
25	5 24.84	+20 55.1	12.34	6.0
Dec 5	5 16.84	+20 44.4	12.12	2.5
15	5 8.24	+20 33.5	12.05	1.6
25	4 59.98	+20 23.3	12.27	5.2
1990 Jan 4	4 52.90	+20 15.3	12.45	8.6
14	4 47.67	+20 10.8	12.63	11.6
24	4 44.71	+20 10.9	12.79	14.1
Minor Planet	201 Penelope			
1989 Sep 26	2 49.29	+ 8 59.9	12.04	16.4
Oct 6	2 45.25	+ 8 3.3	11.83	12.4
16	2 38.74	+ 7 0.7	11.62	8.0
26	2 30.60	+ 5 58.3	11.44	4.1
Nov 5	2 21.98	+ 5 3.7	11.51	4.6
15	2 14.10	+ 4 23.1	11.79	8.5
25	2 7.97	+ 4 0.8	12.07	12.5
Dec 5	2 4.23	+ 3 58.3	12.34	15.9
15	2 3.16	+ 4 14.5	12.59	18.6
Minor Planet	240 Vanadis			
1989 Nov 5	5 42.73	+20 49.6	12.16	19.0
15	5 39.88	+20 49.2	11.91	14.8
25	5 33.67	+20 49.7	11.65	9.9
Dec 5	5 24.96	+20 50.8	11.36	4.5
15	5 15.15	+20 52.5	11.19	1.7
25	5 5.87	+20 55.5	11.57	6.9
1990 Jan 4	4 58.61	+21 1.1	11.89	12.0
14	4 54.37	+21 10.8	12.19	16.2
24	4 53.58	+21 25.1	12.46	19.7
Minor Planet	758 Mancunia			
1989 Nov 5	5 53.87	+19 11.8	12.85	15.4
15	5 50.72	+19 16.8	12.64	12.3
25	5 45.03	+19 24.4	12.43	8.7
Dec 5	5 37.35	+19 34.6	12.19	4.6
15	5 28.57	+19 46.7	11.96	1.2
25	5 19.79	+20 0.6	12.20	4.5
1990 Jan 4	5 12.10	+20 16.3	12.45	8.5
14	5 6.40	+20 34.1	12.68	12.0
24	5 3.23	+20 54.4	12.90	15.0

INSTRUCTIONS FOR AUTHORS

The *Minor Planet Bulletin* is open to papers on all aspects of minor planet study. Theoretical, observational, historical, review, and other topics from amateur and professional astronomers are welcome. The level of presentation should be such as to be readily understood by most amateur astronomers. The preferred language is English. All observational and theoretical papers will be reviewed by another researcher in the field prior to publication to insure that results are presented clearly and concisely. It is hoped that papers will be published within three months of receipt.

The *MPB* will not generally publish articles on instrumentation. Persons interested in details of photoelectric instrumentation should join the International Association of Amateur and Professional Photoelectric Photometers (IAPPP) and subscribe to their journal. Write to: Mr. Robert C. Reisenweber, Rolling Ridge Observatory, P.O. Box 8125, Piscataway, New Jersey 08854 USA. The *MPB* will carry only limited information on asteroid occultations because detailed information on observing these events is given in the *Occultation Newsletter* published by the International Occultation Timing Association (IOTA). Persons interested in subscribing to this newsletter should write to: H. F. DaBoll, 6N106 White Oak Lane, St. Charles, Illinois 60174 USA.

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In most cases, the number of tables plus figures should not exceed two. Tables should be numbered consecutively in Roman numerals, figures in Arabic numerals. Tables must be neatly typed, single-spaced, on white paper with a very black ribbon to allow direct reproduction. Figures should be drawn on white paper with black ink. Labeling should be large enough to be easily readable after a 25 percent reduction. Tables and figures which fit in a single column may be no wider than 11.5 cm. Double column tables and figures may be no wider than 23 cm. Constrain your tables and figures to fit in a single column whenever possible. Limit the vertical length of your figures as much as possible. In general this should be 11.5 cm or less.

References should be cited in the text such as Harris and Young (1980) for one or two authors or Bowell et al. (1979) for more than two authors. The reference section should list papers in alphabetical order of the first author's last name. The reference format for a journal article, book chapter, and book are as follows:

Harris, A.W., and Young, J.W. (1980). "Asteroid Rotation Rates III: 1978 Results". Icarus 43, 20-32.

Bowell, E., Gehrels, T., and Zellner, B. (1979). "Magnitudes, Colors, Types, and Adopted Diameters of the Asteroids". In *Asteroids* (T. Gehrels, Ed.), pp 1108-1129. Univ. Arizona Press, Tucson.

Wood, F.B. (1963). *Photoelectric Astronomy for Amateurs*. Macmillan, New York.

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