

OBSERVING PROGRAMS OF THE MINOR PLANETS SECTION CIRCOLO ASTROFILI DI MILANO

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The Minor Planets Section of Circolo Astrofili di Milano was established in November 1991. It promotes observing programs and research activities for amateur astronomers. It also collaborates with the Minor Planets Sections of the Unione Astrofili Italiani (where I coordinate the visual programs) and the Association of Lunar and Planetary Observers. At the moment, our programs include visual astrometry, visual photometry, and photographic astrometry.

The Minor Planets Section of Circolo Astrofili di Milano maintains close contact with two Italian researchers: Mr. E. Colombini of the "S. Vittore" Observatory at Bologna, and Mr. M. Cavagna of Sormano's Observatory. Periodically I publish the *Bulletin of The Minor Planets Section of Circolo Astrofili di Milano* which contains articles and reports of the observing programs of the Section.

For our visual astrometry program, I give observers a finding chart with the asteroid's predicted path indicated. Using the overlay from the *Uranometria 2000* atlas, observers estimate the asteroid's position. If the asteroid is fainter than 9th magnitude, charts from the *Falkauer Atlas* are used.

For the visual photometry program, I give observers AAVSO charts for use in estimating the asteroid's visual magnitude. If a variation in excess of 0.5 magnitude is detected, it is very interesting to determine its lightcurve. Both the astrometry and photometry programs deal with asteroids brighter than V magnitude 10.5.

For our photographic astrometry program we require instrument focal lengths greater than 1 meter. Plates which are obtained for asteroids brighter than V magnitude 14 (whose ephemerides are published in our *Bulletin*) are sent to me for measurement.

I would be glad if many amateur astronomers would like to contact me to participate in these observing programs. The *Bulletin of The Minor Planets Section of Circolo Astrofili di Milano* will be published in both Italian and English. This *Bulletin* will also publish more information on observing programs and suggestions for observational techniques.

CCD PHOTOMETRY OF ASTEROID 487 VENETIA

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Photometric observations of the asteroid 487 Venetia were made during its 1992 apparition using a CCD detector at the NF/ Observatory. The synodic rotational period, which was previously unknown, was determined to be 12.73 ± 0.12 hrs. The lightcurve amplitude was 0.30 ± 0.02 magnitudes.

Introduction

Asteroid 487 Venetia is listed as an S-type asteroid (Tholen 1989). It has a diameter of about 64 km and an albedo of about 0.22 with an absolute H magnitude of 8.21 (Tedesco 1989). No lightcurve results for Venetia have been previously published. During February and March of 1992, Venetia was in a favorable position and phase angle for observation. The asteroid was listed as a desirable target by Harris and Zappala (1992).

Observations

Exposures were obtained through a Johnson V-filter with a CRAF-Cassini charge-coupled-device (CCD) detector having 1024x1024 pixels, where the opposite quadrants are silvered to allow the frame transfer of a 512x512 pixel image. The image scale was 1.2 arcseconds per pixel. The chip and amplifier read-out noise is 25 electrons. Full well is 100,000 electrons. The telescope used was a 0.45-m Newtonian. Control of the observatory was by digital radio link and is described elsewhere (Neely 1989). The images were stored on tape and analyzed with PCVISTA, written by M. Richmond.

The comparison and check stars were within the same frame of the CCD image. This reduced the differential atmospheric extinction to negligible levels and allowed data collection on nights with marginal photometric conditions. The comparison star calibration was performed on February 29 with respect to standard stars from Landolt (1983).

Integrations of 200 seconds were obtained for all data points. Dark fields were taken before each exposure and approximately 60 exposures were taken per night. The dark and bias frames were subtracted at the time of readout and the images were flat-field corrected before being stored on tape for later analysis. All of the flat fields were obtained on the twilight sky.

Results

CCD observations of 487 Venetia were made on UT dates (1992): February 29, March 14, 17, 20, 21, and 22. Observational circumstances for these dates are shown in Table I.

The synodic rotation period was calculated using a minimum phase error method similar to Stellingwerf (1978). A constant was added to each night's data to obtain the best vertical fit. A period solution of 12.73 ± 0.12 hours was obtained. The lightcurve, shown plotted for the rotational phase occurring on UT 1992 February 29, appears to display two unequal minima per rotation. Within the noise of the observations, we estimate the peak-to-peak amplitude to be 0.30 ± 0.02 magnitudes.

Acknowledgments

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Table I. Observational circumstances for 487 Venetia

Date	Long	RA(2000)	Dec	AU to Earth	α	VMag*
2/29/92	152 27	10 17.2	21 1	1.7881	5.1	12.2
3/14/92	155 22	10 6.3	22 17	1.86	10.2	12.3
3/17/92	156 0	10 4.4	22 28	1.881	11.1	12.4
3/20/92	156 37	10 2.7	22 38	1.905	12.3	12.5
3/21/92	156 50	10 2.2	22 41	1.913	12.6	12.5
3/22/92	157 3	10 1.6	22 41	1.923	12.9	12.5

*magnitudes are estimated except for 2/29/92 which was calibrated to PG0918 $\pm$.06.

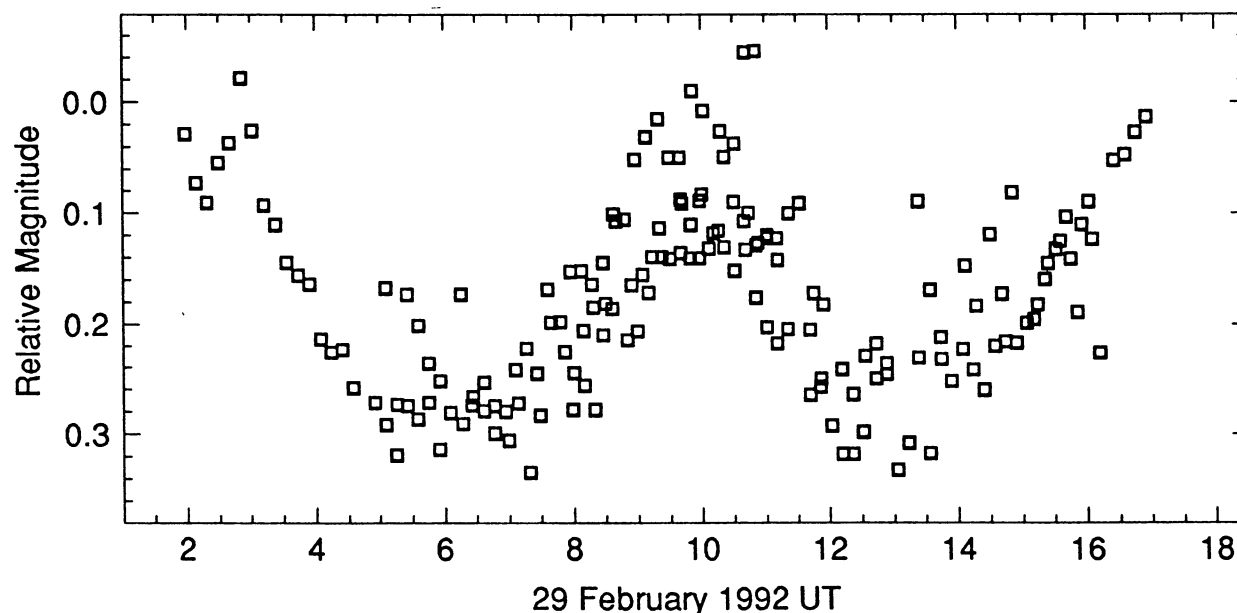


Figure 1. Lightcurve for asteroid 487 Venetia. Data from all nights have been placed into a single rotation cycle based on a period of 12.73 hours. Zero magnitude on the vertical scale corresponds to an apparent V magnitude of 12.10 ± 0.06 .