

intermediate-age galactic cluster NGC7789 is reported. Metal abundances are determined from high-resolution spectroscopic observations of six giant stars. The abundance of iron in this cluster is $[Fe/H] = -0.1$ relative to the sun, and the mix of elements is approximately solar. No star-to-star differences among the six giants are detected.

The discrepancy between the spectroscopically derived masses and the cluster turn-off mass is explored.

AMATEUR OBSERVING BY THE A. L. P. O. MINOR PLANETS SECTION

FREDERICK PILCHER

Illinois College, Jacksonville, Illinois

The Minor Planets Section of the Association of Lunar and Planetary Observers acts to support and coordinate the observation of minor planets by amateurs. Photographs of astrometric quality are currently underutilized due to difficulties of access to measuring engines, and an appeal is made to improve accessibility. Visual surveys of faint asteroids by dedicated amateurs are finding and correcting significant discrepancies in published magnitudes. Visual light curves continued over long time intervals have proved a useful supplement to photoelectric light curves restricted by telescope assignment to a few days. Cooperative programs between amateur and professional minor planet observers are described.

NARROW-BAND PHOTOMETRY AND THE REDDENING OF CYGNUS A*

KARL D. RAKOS AND NORBERT FIALA

Institute for Astronomy, University of Vienna

A new procedure was used (Rakos and Fiala 1985) to calculate the total amount of reddening of Cygnus A. Supposing that the light of Cyg A comes from an average elliptical galaxy with average solar chemical composition without strong nonthermal components, and that the standard reddening law can be applied to the dark matter within elliptical galaxies, we get $A_v = 1.53$ magnitudes. The first estimation of reddening of Cyg A was discussed by Sandage (1972), he found $A_v = 0.90$. This was significantly lower than the value $A_v = 2.26$ that Osterbrock and Miller (1975) have obtained. Finally, van den Berg's (1976) photometry yields a galactic foreground reddening of $A_v = 1.30$, close to our estimation of 1.53 magnitudes for the total amount of reddening.

*Poster paper.

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SPECTROPHOTOMETRIC SPATIAL MAPPING OF COMET P/GIACOBINI-ZINNER

D. G. SCHLEICHER

Arizona State University

Spectrophotometric observations of comet P/Giacobini-Zinner were obtained on 1985 June 17–18 and 18–19 using the Steward 90-inch (2.3-m) telescope with Reticon. Spectral coverage included the range from 3000 Å to 6200 Å with a FWHM of 6 Å while spatial coverage extended to 14' from the apparent nucleus. The inner coma was dominated by dust, and a dust tail extending to ~ 40" was also present. Molecular species observed included OH, NH, CN, C₃, and C₂. Preliminary values for the production rates indicate that both C₂ and C₃ were depleted with respect to CN and OH, while the total gas production rate (based on OH) of $\sim 2 \times 10^{28}$ mol s⁻¹ was several times higher than predicted. This is understandable because the prediction (see "The Comet Giacobini-Zinner Handbook") was based on a normal C₂/OH ratio. The presence of a dust tail and the higher-than-expected gas production rate can both affect the success of the ICE spacecraft's encounter with the comet in September.

CCD IMAGING AND PHOTOMETRY OF THE DEVELOPMENT OF P/HALLEY, OCTOBER 1984–MARCH 1985

A. SCHULTZ, U. FINK, M. DISANTI, M. BUIE, AND

R. MARCIALIS

Lunar and Planetary Laboratory, University of Arizona

Between 1984 October 24 and 1985 March 18 we obtained approximately 50 images of comet Halley in the Johnson V filter. In addition, we have a number of images in the B, R, and I filters. The images were taken with our CCD system employing a TI 800 × 800 chip. Preliminary analysis indicates that P/Halley shows no developed coma as of 1985 February 17.

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