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The research funded under this grant consists of two projects analyzing telescopic data collected from asteroids. The first project involves analysis of photometric data collected from asteroid 2201 Oljato. The second project consists of collecting, calibrating and interpreting near-infrared reflectance spectra of asteroids located near the 3:1 Kirkwood gap in the inner part of the main asteroid belt. Completion of the project is marked by submission of manuscripts to refereed professional journals.

The UV-Visible photometric data available for 2201 Oljato was analyzed assuming fluorescence of dissociated OH molecules. Independent evidence suggests that this asteroid is not a typical asteroid, and may be a remnant of an extinct comet. The analysis was completed and presented at the annual meeting of the American Astronomical Society, Division of Planetary Sciences, October, 1990 (McFadden, 1990). Since that time, a manuscript has been written and submitted to Journal of Geophysical Research, Planets (McFadden et al., 1991) marking completion of this phase of the grant.

The second observing project involving measurements of the near-infrared reflectance spectra of asteroids near the 3:1 Kirkwood gap, designed to look for spectral evidence of ordinary chondrite parent bodies, was carried out during the tenure of this grant. Special data analysis algorithms had to be developed for these data because of noise from a lock-in amplifier during data collection. The correction calibrations have been made and these data were presented at the Third International Conference on Asteroids, Comets, and Meteors, in Flagstaff, AZ, 1991 (McFadden and Chamberlin, 1992). A more comprehensive presentation and analysis of the data is in preparation and will be submitted to a refereed journal in the future.

References

McFadden, L.A., "Reanalysis of 1979 Photometry of 2201 Oljato Assuming Fluorescent Emission" *B.A.A.S.* 22, 1088, 1990.

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McFadden, L.A., Chamberlin, A.B., " Near Infrared Reflectance Spectra: Applications to Problems in Asteroid - Meteorite Relationships," submitted to **Proceedings of the International Conference on Asteroids, Comets, Meteors 1991.**

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