

Abstract

We present lightcurve data from monitoring of 29P/Schwassmann-Wachmann 1 during its 2018 apparition, beginning in June 2018 and extending up to within the weeks before this meeting. 29P is an enigmatic object in a near circular orbit at 6 AU that puts it at the borderline between Jupiter Family Comet and Centaur. At this distance it is clearly beyond the water sublimation zone, yet it has nearly continuous activity with semi-regular outbursts of material that increase its brightness by up to four magnitudes. The source of these outbursts remains unknown. While CO has been observed, so far, no clear connection between CO and outbursts has been made.

Our data are being obtained at the Great Basin Observatory, an automated 0.7 m telescope with access to the excellent dark skies within Great Basin National Park in Nevada. Our program runs every clear night, and depending on scheduling pressure from partner programs, obtains 1 to 6 hours of data. By the time of this meeting we should have monitoring of the evolution of at least one outburst. The intent of this project is to better understand the nature of comet outbursts, distant activity, and to inform our observing partners of when to trigger spectroscopic observations at larger observatories to characterize the gas composition at the time of outburst.

210.09 Comet 66P/du Toit: A Near Earth Main Belt Comet?

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Abstract

We obtained medium-resolution and high-resolution spectra of the near-Earth Jupiter family comet (JFC) 66P/du Toit from 300 to 2500 nm with X-shooter/VLT and UVES/VLT on 2018 July 01, 07 and 13, respectively. In addition, we obtained a series of narrow-band images of 66P between 2018 May and July with TRAPPIST-South. Comet 66P is one of the weakly active JFCs that were identified by Fernandez & Sosa (2015) as having the highest probability of coming from the Main Belt. Our main goal is to investigate the composition of this comet via measuring the gaseous species in the UV and visible and to study its dust properties via measuring the continuum over a broad wavelength range. Additionally, we aim to measure the ortho-to-para abundance ratio of NH₂ to constrain the formation conditions of this comet. I will present our spectroscopic observations as well as the photometric observations of 66P. I will discuss whether this comet shows any clear difference in terms of its volatile profile or its dust profile compared to other typical JFCs.

210.10 Origin of Peculiar Comet 21P/Giacobini-Zinner: Volatiles and Crystalline Silicates

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