AOGS 2006

Sub-MM Observations of the Split Comet 73P/Schwassmann-Wachmann

MICHAEL KÜPPERS[1], PAUL HARTOGH[1], LUCAS PAGANINI[1], MICHAEL DRAHUS[1]

[1] *Max-Planck-Institut für Sonnensystemforschung, Germany*

Comet 73P/Schwassmann-Wachmann broke up in several pieces during its perihelion passage in 1995. At least 3 fragments were observed during the next perihelion passage in 2000/2001, one of them was brighter than the comet had been before it had split. By February 2006, two of the fragments had been recovered, while approaching perihelion in June 2006. The close approach of the fragments to the Earth in May 2006 prompted numerous observatories to target thecomet. We present monitoring observations from April - June 2006 with the SubMillimeter Telescope (SMT), a 10 m telescope on Mt. Graham, Arizona, USA, which targeted emissions of HCN, HNC, CO, CS, and CH3OH. The data are used to study the homogeneity of the original cometary nucleus by comparing the compostion of the different fragments. Additionally, the geocentric distance of the comet and the corresponding size of the telescope beam changed by a factor of 5 during the monitoring campaign. Therefore different regions of the coma are sampled, which allows to study the spatial distribution of the molecules. This is particularly interesting for CO, CS, and HNC which are known to be produced not only by direct sublimation from the nucleus but at least partly by an extended source in the cometary coma.