EPSC Abstracts,
Vol. 2, EPSC2007-A-00166, 2007
European Planetary Science Congress 2007

Two-source activity of comet 81P/Wild 2 in the non-gravitational acceleration model.

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The orbital motion of comet 81P/Wild 2 is investigated applying a two-source model of outgassing. The model parameters such as the nucleus orientation, the locations and sizes of the active regions are derived from numerical fitting of the non-gravitational acceleration model to positional observations of the comet. The non-gravitational change of the orbit is used to constrain the mass of the comet nucleus. Two different classes of the orbital solutions are discussed based on orbital linkages of the last three and four apparitions of the comet. The derived spin axis orientation (I$\sim 60^O$, $\Phi \sim 150^O$) as well as the location of two active regions, the northern (about 75^O) and the southern one (about -45^O) agreed with determinations by other authors. The modeled two-source water production curve is consistent with the activity data represented by the water production curve and the converted brightness curve.