

THE MOROCCO OUKAIMEDEN SKY SURVEY, THE MOSS TELESCOPE. Z. Benkhaldoun¹, C. Rinner², M. Ory³, A. Daassou¹, F. Colas⁴. ¹Laboratoire de Physique des Hautes Energies et d'Astrophysique, Université Cadi Ayyad, Marrakech, Maroc. ² AUDE association (Association des Utilisateurs de Détecteurs Electroniques), Paris, France, ³ Observatoire astronomique jurassien, Vicques, Switzerland, ⁴ Observatoire de Paris, Institut de Mécanique Céleste et de Calcul des Ephémérides, Paris, France.

Introduction: The Oukaïmeden observatory located at 50km south of Marrakech is operated by the University Cadi Ayyad and have been inaugurated in 2007. A robotic 0,5m telescope is in operation since october 2011. The telescope has a large field of view and is partly devoted to asteroid search. Two comets have been discovered the last months.

The telescope and the observatory: Oukaïmeden is located in the Atlas mountains, at an elevation of 2750m, it benefits of good observing conditions in a semi desertic area with a median seeing of 1 arcsec [1].



Fig 1 : Oukaïmeden observatory: on the left the main building, on the right the new MOSS dome.



Fig 2 : the telescope MOSS with the camera at the prime focus.

The telescope has a 500mm primary mirror and is used at prime focus with a Wynne corrector ($F/D=3.0$). The detector is a SBIG STL11000 based on a Kodak KAF 11000 chip. The pixel size is of 1,2 arcsec; the field of view is of 1,5 degree.

The telescope is used in remote control, it is operated by three teams in Marrakech Cadi Ayyad Univer-

sity, in France and in Switzerland. Observing time is also shared between observation of exoplanet transits and asteroid search.

Discoveries: From october 2011 5th to february 2012 9th the Oukaïmeden observatory (UAI code : J43) got 241 new designations, so about 60 new designations per month. MOSS send more than 30 000 astrometric measurements to the MPC and is eighth among minor planets observers.

Here are the main discoveries of this 5 month run:

- Two comets : P/2011 W2 (Rinner)[2] and C/2012 CH17 (MOSS)[3]
- One amor object : 2011 VP12 [4]
- Several Hungaria, Hilda, Trojans and Cybele family objects.
- Some Mars crosser

During this period the MOSS telescope has benefited of 65% of clear nights.

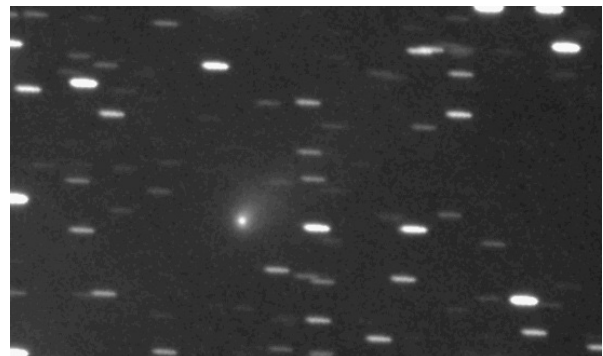


Fig 3 : comet P/2012 (Rinner) observed at Pic du Midi one meter telescope on January 18th

Conclusion: This small telescope shows that it is still possible to find new asteroids and comets with a small telescope, the success of MOSS come from the good seeing conditions prevailing at the observatory of the Oukaïmeden[1] and also from the efficiency of the team who run the telescope.

References: [1] Benkhaldoun, Z. et al.; *Astronomy and Astrophysics*, 2005, 441, 839-843. [2] Rinner C. (2011) *UAIC* 2922. [3] Rinner C. (2012) *UAIC* 2020. [4] *M.P.E.C. 2011-W18*