

**THE COMET C/2013 A1 (SIDING SPRING) AND MARS.** A. Q. Vodniza<sup>1</sup> and M. R. Pereira<sup>2</sup>, <sup>1</sup>University of Narino Observatory, Narino, Colombia, [aquijanov@gmail.com](mailto:aquijanov@gmail.com), <sup>2</sup>University of Narino Observatory, Narino, Colombia, [mariorojaspereira@yahoo.com](mailto:mariorojaspereira@yahoo.com).

**Abstract:** The comet called C/2013 A1 (SIDING SPRING) was discovered on January 3, 2013 in Australia. In January 28/2014, NASA announced that is preparing for the close encounter that will happen between the comet C/2013 A1 and Mars on October 19-2014. The Mission called "MAVEN" will insert in Mars orbit on september 21—2014. The comet will pass just 138,000 kilometers far from the surface of Mars. The probability that the comet collides with Mars is small but the dust particles emitted by the comet can cause damage to spacecrafts and probes that are in orbit around that planet. NASA is making preparations to take all precautions. During the months of April and May the ice will begin to sublimate and thus let loose dust. If the comet is quite active, there will be almost no time to take security measures with Mars orbiters. For that reason NASA is already ahead of the facts. According to scientists of the "JET PROPULSION LABORATORY-JPL", dust particles spewing from the comet may be traveling at 56 km / sec in relation to the orbiters, fifty times faster than the speed of a bullet.

From our Observatory, located in Pasto-Colombia, we captured several pictures, videos and astrometry data during several days. The pictures of the asteroid were captured with the following equipment: CGE PRO 1400 CELESTRON (f/11 Schmidt-Cassegrain Telescope) and STL-1001 SBIG camera. We obtained the light curve of the body. Astrometry was carried out, and we calculated the orbital elements.

**Introduction:** After having processed adequately all the photographs (bias reduction, dark frames correction and correction of flat frames), we employed the software "The Sky6" and the "CcdSoft-Version 5" in order to identify the stars appearing on the images, so we could have the coordinates of any standard star. It is necessary to use many reference stars so we can have a higher precision on determining the comet's coordinates. The comet is identified superposing the photos and designing a small video to appreciate clearly enough its movement with regard to the fixed stars.

**Summary And Conclusions:** We obtained the following orbital parameters: eccentricity = 1.0003983, orbital inclination = 129.03078 deg, longitude of the ascending node = 300.99538 deg, argument of perihelion = 2.42310 deg, perihelion distance = 1.40023196 A.U. The parameters were calculated based on 20 observations (Jan 21 to April 02) with mean residual = 0.334 arcseconds.

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