THE ASTEROID 2002 CE26. A. Q. Vodniza[1] and M. R. Pereira[2], [1]University of Narino Observatory, Narino, Colombia, aquijanov@gmail.com, [2]University of Narino Observatory, Narino, Colombia, mariorojaspereira@yahoo.com.

Abstract: The asteroid 2002 CE26 was discovered by LINEAR on 10 February 2002 and is a binary system. It was observed with radar at Arecibo in 2004 and by NASA's Wide-field Infrared Survey Explorer (WISE) spacecraft. Another investigations were published by Shepard et al. (2006). Both works indicate asteroid´s diameters of 3.5 and 3.3 km. The studies suggest that the primary has a rotation period of 3.3 h and the secondary has an orbital period of about 16 h. Shepard et al estimate that the secondary is roughly 0.3 km in diameter. Studies by radar estimate that this asteroid could have a second companion, but it is not verified yet. The asteroid was at 18.4 million km (0.123 AU) from Earth at its closest approach on Sept. 9th.

Our work aims to help refining the orbital parameters and the rotation period of the asteroid by astrometry and accurate lightcurves. From our Observatory, located in Pasto-Colombia, we captured several pictures, videos and astrometry data during several days. Our data was published by the Minor Planet Center (MPC) and also appears at the web page of NEODyS. 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 photographies (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 asteroid's coordinates. The asteroid 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 = 0.5620391 +/- 0.000775, semi-major axis = 2.24919404 +/- 0.00424 A.U, orbital inclination = 47.37486 +/- 0.024 deg, longitude of the ascending node = 161.92004 +/- 0.0017 deg, argument of perihelion = 227.94440 +/- 0.032 deg, mean motion = 0.29218888 +/- 0.000827 deg/d, perihelion distance = 0.98505901 +/- 0.000113 A.U, aphelion distance = 3.51332907 +/- 0.00815 A.U. The asteroid has an orbital period of 3.37 years The parameters were calculated based on 150 observations (2014 September: 02 to 13) with mean residual = 0.147 arcseconds. We photographed the asteroid straking through the constellation Pegasus on september 02/2014 and a video of the asteroid from our Observatory was published on the main page of the "SPACEWEATHER" web (september 06/2014):

http://spaceweather.com/archive.php?view=1&day=22&month=12&year=2014

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