A SMALL OBSERVATORY WITH BIG PROJECTS.

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HISTORY

The Astronomical Observatory of the University of Nariño was founded on March 2002 by Alberto Quijano Vodniza (Master’s Degree in Physics of the University of Puerto Rico), and built thanks to the immense support given by Dr. Pedro Vicente Obando (Rector of the University of Narino from 1995 to 2004). It has a dome of approximately 4.5 meters of diameter and a capacious auditorium. At this point in time we own the following equipment: A Newtonian reflecting telescope Meade f/4 of 16 inches, one CGE Pro 1400 Celestron telescope (equatorial/f14/-f/11), a 14 inches Meade robotic telescopes LX200GPS, two 8 inches Meade robotic telescopes LX200GPS, a Newtonian reflecting telescope Celestron of 8 inches – Dobsonian type, and a Coronado solar telescope. We have several digital cameras and also a digital spectrometer SBIG, a high resolution spectrometer Shelyak and a “Jove” receptor for analyzing the radio signals emitted by Jupiter and the Sun. Electronic Engineering students from the University of Narino have completed the robotization of the 16” Meade f/4 telescope. The images obtained are processed through specialized software with the purpose of getting correct photometric and astrometric measurements. The observatory is destined for professors and students’ scientific research. At present we have an internal club and we open our doors to all the educational institutions in Nariño (Colombia). The Astronomical Observatory’s Director is a member of the AMERICAN ASTRONOMICAL SOCIETY since 2007.

OBSERVATORY’S ACHIEVEMENTS

As a result of our research, we have published several books: “Obtaining of the Luminous Curve of Comet Hale-Bopp and Measuring of the Rotation Period Through the CCD Camera,” “Digital Astronomy,” “Design of An Experimental Method for Measuring Stellar Temperatures Through the CCD Camera and Spectrometry.” “Obtaining of the Luminous Curve of the Comets C/2002T7 Linear, C/2001Q4 Neat, and Spectrometry of C/2001 Q4 Neat.” We have participated on several international meetings as speakers [1]. Our Observatory participated in the project “Deep Impact” of NASA. The Astronomical Observatory of the University of Nariño took part on the “Small Telescope Science Program”, associated program to the project “Deep Impact”. As a result of this scientific event, a book was published in Germany. The research we presented in this important meeting in 2006, was published in October 2008 in Germany by the internationally recognized publishing company “Springer-Verlag” on the meeting’ namesake book “Deep Impact as a World Event: Synergies in Space, Time, and Wavelength”. Our work appears with the name “The Deep Impact Event As Seen From The University Of Narino Observatory” [2].

Our Astronomical Observatory has also been distinguished for having photographed a lot of Asteroids, many of them supremely weak in brightness. In the year 2008 our Observatory received the international code “H78” from the MINOR PLANET CENTER of USA and our data also appears at the web page of NEODyS-2 [3].

One of the most important goals of our Observatory is having actively participated in the project with the Hubble Space Telescope: “Magnetospheric Accretion in Close Pre-Main-Sequence Binaries” [4].

REFERENCES

[1] http://adsabs.harvard.edu/cgi-bin/basic_connect?research=vodniza&version=1

THE ASTEROID “1998 QE2”

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INSTITUTION: University of Nariño Observatory, PASTO, NARINO, Colombia. Contributing Teams: Arebico Observatory,JPL Target Asteroids Team.

This big asteroid was at 5.9 millions of kilometers from the Earth on May 31 (2013) and it has a diameter of 2.7 km. The radar images obtained by JPL showed that the period of rotation around its axis is close to five hours. Hills K (2013) reported that the period is of 5.281 +/- 0.002 hours. On June 4 the team of Goldstone-Arecibo found a period of 4.75 +/- 0.01 hours. We also contributed with the light and phase curves to estimate the period by means of the telescope (with red filter). The radar imagery (JPL and Arebico) revealed that 1998 QE2 has a moon, and we captured a mutual event (eclipse).

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 CELETRON (111 Schmidt-Cassegrain Telescope) and STL-1011 SBIG camera. We obtained the light curve of the body. Astrometry was carried out, and we calculated the orbital elements.