



John J. McCarthy Observatory



2024 March 8

Dear Members of the IAWN Steering Committee,

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Please accept this letter as our application to become a participating member of the International Asteroid Warning Network. The John J. McCarthy Observatory (JJMO), a facility envisaged, designed, built, and funded by a dedicated group of volunteers on the campus of a public high school, became operational in December of 2000 and earned Observatory Code 932 from the Minor Planet Center in March 2001. We are primarily an educational facility with the mission of furthering the science literacy of students and adults in our region of the northeastern United States. In 2005, to ensure the longevity and legacy of our mission, we incorporated as a not-for-profit scientific and educational organization and entered into a unique agreement with the Town of New Milford, Connecticut, and its Board of Education through which the John J. McCarthy Observatory Corporation manages and operates the observatory for the benefit of the school system.

Over the years, JJMO has made significant contributions to the study of Near-Earth Objects (NEOs) while mentoring students and raising public interest. In 2003 a student mentored by the JJMO staff ultimately won the grand prize in the Intel Science and Engineering Fair with her asteroid ranging by parallax project. In 2004 another student became a semi-finalist in the Science Talent Search for determining the rotation period of (21652) 1999 OQ2.

JJMO has an excellent record of precise observations and careful communication on NEOs and impact risks. We reported astrometry of the Genesis sample return spacecraft to help JPL validate its Sentry Impact Monitoring System algorithms on a known impactor in 2004. We submitted one of the last good observations of 2008 TC3 prior to its impact in Sudan, fifteen minutes before it entered Earth's shadow when its apparent motion for us was $>700''/\text{min}$. During the 2021 close approach of (99942) Apophis we submitted twelve very good observations over four days. The NEODyS system shows our 2,111 NEO observations to have a mean residual of only $0''.3756$. We were first to confirm about twenty NEOCP objects and helped with over 150 others as shown in the MPECs. In our asteroid astrometry program, we have incidentally discovered four asteroids.

In December, our Board of Directors made the decision to completely upgrade our equipment. Unbelievably, our community of supporters helped us to exceed our fundraising goal in just two months and the new telescope, a 0.43-m Corrected Dall-Kirkham will be installed and see first light this Spring. We will also be implementing a new imaging system complete with photographic and photometric filters. The new camera should give a sharp image ten times larger ($>0.5 \text{ sq}^\circ$) than our current setup. The success of our campaign will also allow us to acquire a new spectrograph.

Our geographic position makes us one of the first nightly dark sky observing stations in North America. With the facility upgrades mentioned above 932 will be a capable and valuable contributor to the International Asteroid Warning Network.

We acknowledge and agree to and will comply with the terms and conditions put forth in the IAWN Statement of Intent and the Charter. Thank you for considering our application.

Best regards,

Monty Robson

