Exhibit I

Global Geodetic Observing System
of the International Association of Geodesy

September 18, 2017

TO:
President Roberto Battiston, Agenzia Spaziale Italiana
Dr. Giuseppe Bianco, Agenzia Spaziale Italiana

CC:
Prof. Ignazio Ciufolini
Prof. Antonio Paolozzi

Subject: LARES -2 Mission

Dear President Battiston and Dr. Bianco,

I am Dr. Michael Pearlman, Director of the Global Geodetic Observing System's (GGOS) Bureau of Networks and Observations. We are the observing arm of the International Association of Geodesy (IAG). I am located at the Harvard-Smithsonian Center for Astrophysics in Cambridge MA, USA.

This letter is sent to express our very strong support for the LARES-2 Mission, which will further improve the accuracy of the International Terrestrial Reference Frame, the basis for all of our metric measurements of global change as well as civilian, mapping and engineering projects today as recently recognized by the United Nations. The current challenge is to reach mm accuracy to reveal details of many Earth processes, including sea level rise and tectonic motion.

With LARES-2, in addition to its primary purpose for relativistic experiments, there is a unique opportunity to improve the retroreflector design to help us reach the 1mm accuracy. All of our satellite targets to date rely on decades-old designs using 1.5-inch cube-corner reflectors (CCRs) with dihedral offsets to compensate for velocity aberration. This technology, established 40 years, suffered because of the discontinuities between these large size cubes, but the ground technology at the time was only capable of supporting measurements of cm's, so the shortcoming was not an issue. The newer technologies, with kilohertz lasers, solid state detectors and very fast event timers have improved to the point where the satellite design is now a major limitation in reaching the 1 mm goal.

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Current studies show that accuracies can be improved to a mm level if smaller (1.0 inch) cubes are used. In this case the diffraction pattern of the cubes is sufficient to compensate for the velocity aberration and the time-consuming and costly need to grind precise dihedral offset angles is avoided.

If this mission used the newer technology smaller corner cubes, it would pave the way for this design on future geodetic satellites. I also point out that going to smaller cubes will reduce optical distortions due to thermal effects in the cubes.

This is a very important opportunity to make a very fundamental improvement in satellite laser ranging data products. We hope the you will give this careful consideration.

Please feel free to contact me if I can be of any further help.

With my best wishes,

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