

Medellín, 07 March 2025

Dr. Kelly Fast  
Planetary Defense Officer (Acting)  
NASA Headquarters  
Washington DC USA.

Dear Dr. Fast,

On behalf of AstroCO Network (Colombian Network of Astronomers), the Astronomical Observatory of the Universidad Tecnológica de Pereira and all the enclosed institutions shown in the table below, we are pleased to submit the signed version of the Statement of Intent for Participation in the International Asteroid Warning Network (IAWN).

Colombian universities have established astronomical programs, like the Astronomical Observatory of the Universidad Tecnológica de Pereira, which continues to support and conduct research, particularly in the study and monitoring of minor celestial bodies. These efforts are undertaken in partnership with academic institutions nationwide, the Colombian Academy of Sciences, and the AstroCO Network (Colombian Network of Astronomers), which plays a dynamic role in advancing collaborative NEOs endeavors nationwide.

Additionally, it is important to highlight that the Air and Space Force (Fuerza Aeroespacial Colombiana FAC), encompasses the space domain as part of its mission and vision. In alignment with this, it is advancing its capabilities for surveillance of both natural and artificial threats in space, as well as in the processing, simulation, and integration of spatial data. These developments indicate that Colombia has reached a level of maturity that enables the fulfillment of the objectives outlined in this document, contributing effectively to international asteroid IAWN monitoring efforts.

We want to provide the following individuals as points of contact for communications with the IAWN:

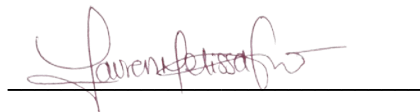
- Dr. Lauren Flor ([lauren.flort@udea.edu.co](mailto:lauren.flort@udea.edu.co)), President of the AstroCO Network (Colombian Network of Astronomers).
- Dr. Edwin Andrés Quintero Salazar ([equintero@utp.edu.co](mailto:equintero@utp.edu.co)), Director of the Astronomical Observatory of the Universidad Tecnológica de Pereira. (Minor Planet Center observatory code: W63).
- Dr. Adriana C. Ocampo (██████████) member of the Colombian Academy of Sciences.
- Dr. Jorge Zuluaga ([jorge.zuluaga@udea.edu.co](mailto:jorge.zuluaga@udea.edu.co)), Dr. Pablo Cuartas Restrepo ([pablo.cuartas@udea.edu.co](mailto:pablo.cuartas@udea.edu.co)) from the Universidad de Antioquia.
- Professor Gregorio Portilla ([jgportillab@unal.edu.co](mailto:jgportillab@unal.edu.co)), Dr. Santiago Vargas ([svargasd@unal.edu.co](mailto:svargasd@unal.edu.co)), and Dr. Giovanni Pinzón ([gpinzone@unal.edu.co](mailto:gpinzone@unal.edu.co)) from the Observatorio Astronómico Nacional (Universidad Nacional de Colombia).
- MSc. Benjamin Oostra ([boostra@uniandes.edu.co](mailto:boostra@uniandes.edu.co)), MSc. Maria Gracia Batista ([mg.batistar@uniandes.edu.co](mailto:mg.batistar@uniandes.edu.co)), and Dr. Jaime Forero ([je.forero@uniandes.edu.co](mailto:je.forero@uniandes.edu.co)) from Observatorio Astronómico at Universidad de los Andes.
- Dr. Alberto Quijano Vodniza (██████████) Director of the Observatorio Astronómico, Universidad de Nariño.
- Dr. Adriana Araujo (██████████) Member of the Meteoritical Society and the CEAF.
- Coronel Guillermo Alberto Poveda Zamora, Head of Space Operations, Fuerza Aeroespacial Colombiana (FAC), ([guillermo.poveda@fac.mil.co](mailto:guillermo.poveda@fac.mil.co)).
- Lieutenant Colonel Sonia Ruth Rincón Urbina, Director of Science and Technology, Fuerza Aeroespacial Colombiana (FAC), ([sonia.rincon@fac.mil.co](mailto:sonia.rincon@fac.mil.co)).

- Eng. Andrés David Torres Cañas ([andrestorres@itm.edu.co](mailto:andrestorres@itm.edu.co)), MSc. Nelson Anibal Miranda Rios. ([nelsonmiranda@itm.edu.co](mailto:nelsonmiranda@itm.edu.co)) from Observatorio Astronómico - Instituto Tecnológico Metropolitano (ITM).
- MSc. Raúl Joya ([raul.joya@usa.edu.co](mailto:raul.joya@usa.edu.co)), Director of the Astronomical Observatory of the Universidad Sergio Arboleda.
- MSc. Ana Milena Prada Uribe ([ana.prada@gestiondelriesgo.gov.co](mailto:ana.prada@gestiondelriesgo.gov.co)), Deputy Director for Risk Knowledge, National Unit for Disaster Risk Management.
- MSc. Leonor Ayude Rodríguez Rojas ([lrodrigu@igac.gov.co](mailto:lrodrigu@igac.gov.co)), Research and Prospective Department, Agustín Codazzi Geographic Institute.

This group will coordinate collaborative efforts and serve as liaisons for IAWN initiatives. Additionally, the Statement of Intent for Participation Appendix outlines the specific resources, technical capabilities, and contributions each partner will provide to support IAWN's objectives. Note that more observatories or capabilities may be available in the future, at which time IAWN will be notified.

We look forward to advancing this partnership and contributing to global asteroid monitoring efforts.

Sincerely,



Dr. Lauren Melissa Flor Torres  
President, AstroCO Network (Colombian Network of  
Astronomers)  
Medellín, Colombia



Dr. Edwin Andrés Quintero Salazar  
Director of the Astronomical Observatory of the  
Universidad Tecnológica de Pereira.

**Statement of Intent**  
**for Participation in**  
**the International Asteroid Warning Network**

The intent of the International Asteroid Warning Network (IAWN) is to establish a worldwide effort to detect, track, and physically characterize near-Earth objects (NEOs) to determine those that are potential impact threats to Earth. This network is comprised of a partnership of scientific institutions, observatories, and other interested parties performing observations, orbit computation, modeling, and other scientific research related to the impact potential and effects of asteroids. IAWN endeavors to foster a shared understanding of the NEO hazard and optimize the scientific return on these small celestial bodies. Herein, this statement provides guidance and operational principles for the partners in this network. This partnership is organized consistent with the concept developed within the United Nations (UN) Committee on the Peaceful Uses of Outer Space (COPUOS).

**Participation**

Participation in the IAWN is entirely voluntary and each participant's activities are funded through their own resources. The IAWN can be supported by survey telescope operations; critical follow-up observations; orbit computation and hazard analysis; observations to characterize specific NEOs; data distribution, processing, and/or archiving; or other analysis and infrastructure contributions. New facilities and capabilities may contribute to the IAWN as they come online and are integrated into the network.

As a condition of participating in the IAWN, the partners accept the existing set of coordination roles amongst the various existing NEO network facilities and agree to a policy of free and open exchange of all data submitted to

the network. Distribution of data submitted to the network may be limited for a short period during processing while these data are ingested, correlated and verified.

As conceived, the IAWN may be expanded and enhanced with the identification of new partners and the availability of new capabilities for NEO detection, follow-up, and characterization observations, together with the methods to analyze these data products. As current survey and follow-up capabilities are limited, global coordination and distribution of effort is highly desired.

### **Operational Principles**

The overall needs, goals, and objectives of the IAWN are to:

- Maintain, support, and enhance existing ground-based observation facilities that currently perform discovery and physical characterization of NEOs;
- Develop international rapid all-sky search capacity, geared towards discovering small, imminent impactors;
- Build ground-based facilities to globally survey larger areas of sky to fainter magnitudes;
- Develop a well-positioned space-based infrared survey to discover objects much faster than the current rate; and
- Establish an international communication policy and procedures regarding close approaches and impact risks.

To execute the objectives above, the functions of the IAWN are to:

1. Discover, monitor, and characterize potentially hazardous NEOs using optical and radar facilities and other assets based in the northern and southern hemispheres and in space;
2. Provide and maintain an international clearing house for the receipt, acknowledgement, and processing of all NEO astrometric observations and orbits to provide a global NEO database;
3. Serve as the international focal point for accurate information on the NEO population and any hazards they pose to the Earth;
4. Compute precision orbit determination of specific NEOs that pose a threat with the Earth and provide appropriate warning and evaluation of that threat;
5. Provide a portal for characterization data on potentially dangerous NEOs that are of great interest;
6. Coordinate campaigns for observing potentially hazardous NEOs;
7. Support the development and use of numerical and other theoretical modeling to obtain broader understanding of object characteristics and thus to augment what can be achieved via direct observation;
8. Recommend policies regarding criteria and thresholds for notification of an emerging NEO impact threat;
9. Develop a database of potential impact consequences, depending on geography, geology, population distribution, and other related factors;
10. Assess hazard analysis results and communicate them to entities identified by partners as being responsible for the receipt of notification of an impact threat in accordance with established policies; and
11. Assist Governments in the analysis of impact consequences and in the planning of mitigation responses.

### **Communication Strategy and Planning**

The signatories to this Statement of Intent recognize the importance of being adequately prepared for communications with a variety of audiences about NEOs, close approaches, and NEO impact risks. Participants in the IAWN recognize the need to consult with experts in science communication, risk communication, public

policy analysis, and emergency management in developing messages and other content for communication with various audiences. The IAWN intends to be coordinated and prepared for communicating effectively the nature of the NEO hazard and detection of any specific impact threats with national and international political leaders, policy makers, emergency managers, and the general public. Signatories agree to coordinate with validated authoritative sources for: astrometric and orbital data (via the International Astronomical Union (IAU)-mandated

Minor Planet Center (MPC));

- the computation of impact probabilities (NEODyS and NASA's NEO Program Office);
- the ensuing actions aimed at improving the knowledge of the relevant NEOs (NASA's NEO Program Office and the ESA NEO Coordination Centre);  
before the release of any statements to the media or public warning of the potential for impact of any specific asteroid or comet threat.

### The IAWN Steering Committee

Representatives of core capabilities for the IAWN intend to form a Steering Committee to better coordinate the operation and interchange of the network, and guide its growth, enhancement and evolution. The Steering Committee intends to meet on approximately an annual basis to perform a review and provide guidance and recommendations. All partners in the IAWN are welcome to send representation to the Steering Committee meetings.

### Signature:

The objectives of the IAWN can only be realized through a global multilateral partnership dedicated to a better understanding of the NEO impact hazard. Signature on this Statement of Intent serves as an expression of interest in supporting the IAWN and its objectives, but does not constitute a binding commitment.

## Appendix -

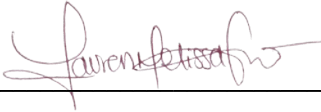
### List of elements and capabilities that contribute to IAWN efforts

#### Colombia

Facility	Location	Observations	Contribution
Astronomical Observatory of the Universidad Tecnológica de Pereira (MPC code W63): Meade LX200GPS 16" telescope, CCD cameras, UVBRI filters.	UTP-Pereira, Colombia	Astrometric, photometric and stellar occultation observations.	Observations, data processing, very short arcs and preliminary orbit calculations.
Software, data analysis at Universidad de Antioquia	<a href="http://seap-udea.org/pympact">http://seap-udea.org/pympact</a> , Universidad de Antioquia Antioquia, Colombia	Different teams in Colombia have developed methods and tools for orbit computation, hazard analysis, data distribution and processing	Software tools, data analysts and processing.
Astronomical Observatory of Universidad de los Andes: 16" and 8" Meade LX-200 telescopes, Shelyak echelle	UniAndes -Bogotá, Colombia	Spectroscopy and photometry.	Data distribution, processing, and archiving. Database of potential impact consequences.

spectrograph (R~10.000), ESPARTACO spectrograph (R~25000), DSS-7 spectrograph (R~1100), Nikon D810A camera, two SBIG CCD cameras (ST-402 and ST-8XME), motorized DSLR night sky tracker equatorial mount and two Seestar S50 robotic telescopes.			
Astronomical observatory of Universidad de Nariño : 16" Meade Starfinder Newtonian telescope, a 14" Meade robotic alt-azimuth telescope, a 14" Celestron robotic equatorial telescope, two 8" Meade robotic alt-azimuth telescopes, and Celestron robotic alt-azimuth telescopes (5", 6", and 8"). SBIG low-resolution spectrometers, and CCD cameras. PD: Soon we will have a 1 meter telescope. We are already in the construction of the new Centro de Ciencias de Pasto: <a href="https://periodico.udenar.edu.co/centro-ciencias-universidad-narino/">https://periodico.udenar.edu.co/centro-ciencias-universidad-narino/</a>	Astronomical observatory of Universidad de Nariño Nariño, Southern Colombia	Observations, Astrometric, photometric.	Observations, Data distribution, processing and archiving
Colombian Space Commission, CCE National Unit for Disaster Risk Management, UNGRD Agustín Codazzi Geographic Institute, IGAC	HQ in Bogotá, Colombia National warning network throughout Colombia	Coordination with <b>Fuerza Aeroespacial Colombiana (FAC)</b> for mitigation strategies National disaster coordination and alert network. Civil coordination	<b>CCE</b> : Strategic coordination for space threat mitigation <b>UNGRD</b> : National disaster response and alert dissemination <b>IGAC</b> : Cartography, Geodesy
Universities in Colombia Human resources,	Nationwide, Colombia	These universities have astronomy staff, graduate and undergraduate student, actively performing research in NEOs	Human resources, research and analysis
Dome 4.5 meters, CDK 17" Astrograph, CCD Cameras, Apochromatic optical telescope 105mm, Lunt Solar Telescope, UVBR Filters, Alcyone Ephemeris Software at Observatorio Astronómico - Instituto Tecnológico Metropolitano (ITM).	ITM-Medellín - Colombia	Data analysis Capabilities	Observations, Data distribution, processing and archiving
20" f/5 Portable Telescope at Astronomical Observatory Sergio Arboleda University	SAU-Bogota, Colombia	Stellar Occultations with mobile telescope	Stellar occultations and Observations; supported Lucy mission occultation 2022

AstroCO agrees to the terms governing the functioning of the Network and, representing the Colombian astronomical community, commits to NEOs observation efforts using the assets and capabilities specified in this Appendix and any others that may be added at a later time.



Dr. Lauren Melissa Flor Torres  
President, AstroCO Network (Colombian Network of  
Astronomers)  
Medellín, Colombia.



Dr. Edwin Andrés Quintero Salazar  
Director of the Astronomical Observatory of the  
Universidad Tecnológica de Pereira.