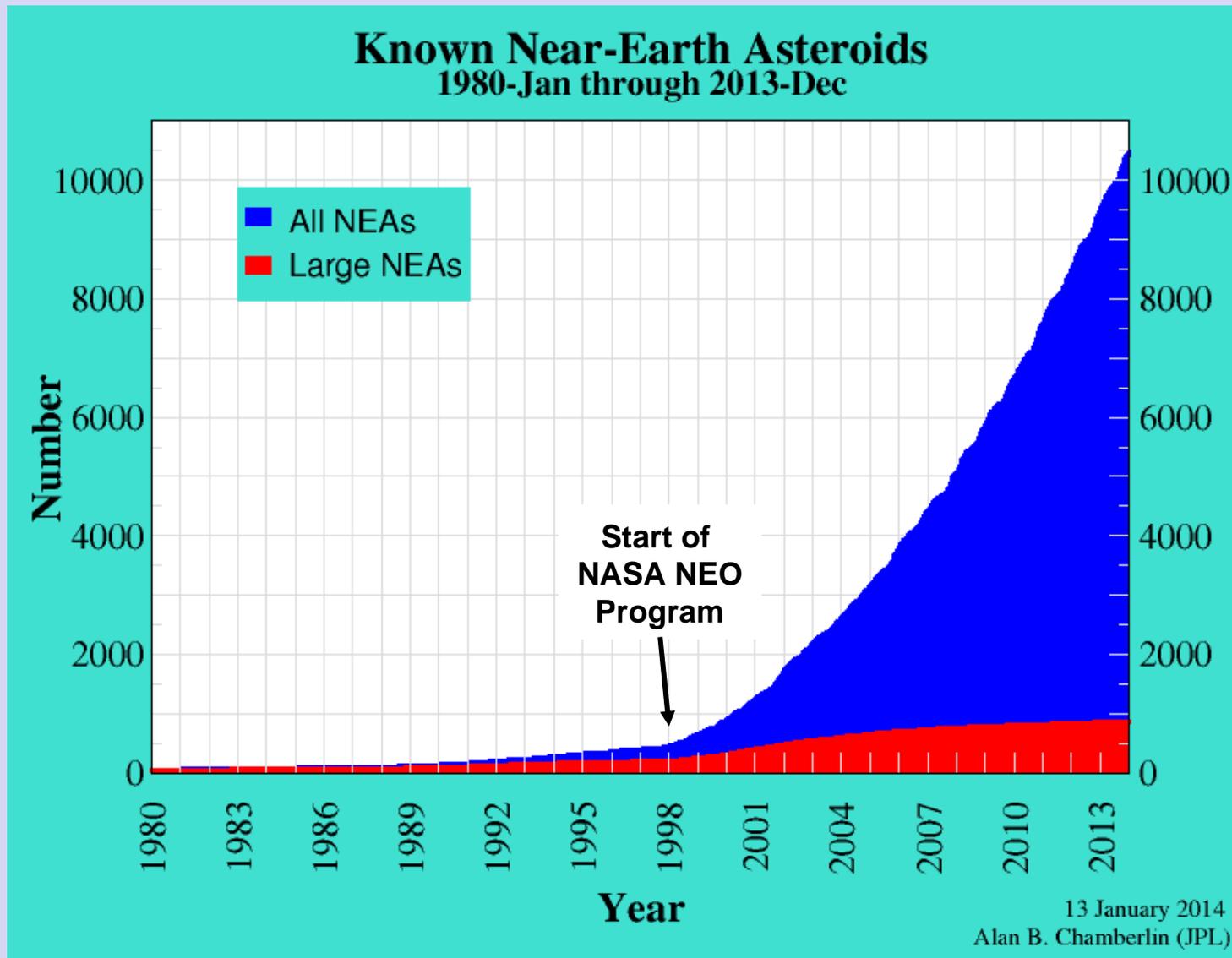

Near Earth Objects 2013 Work Update

UNCOPUOS Scientific & Technical Subcommittee

Lindley Johnson
Near Earth Object
Programs Executive
NASA HQ
February 10, 2014

Known Near Earth Asteroid Population



10,591
2/1/14

Includes
1454 PHAs

868
2/1/14

155 PHAs

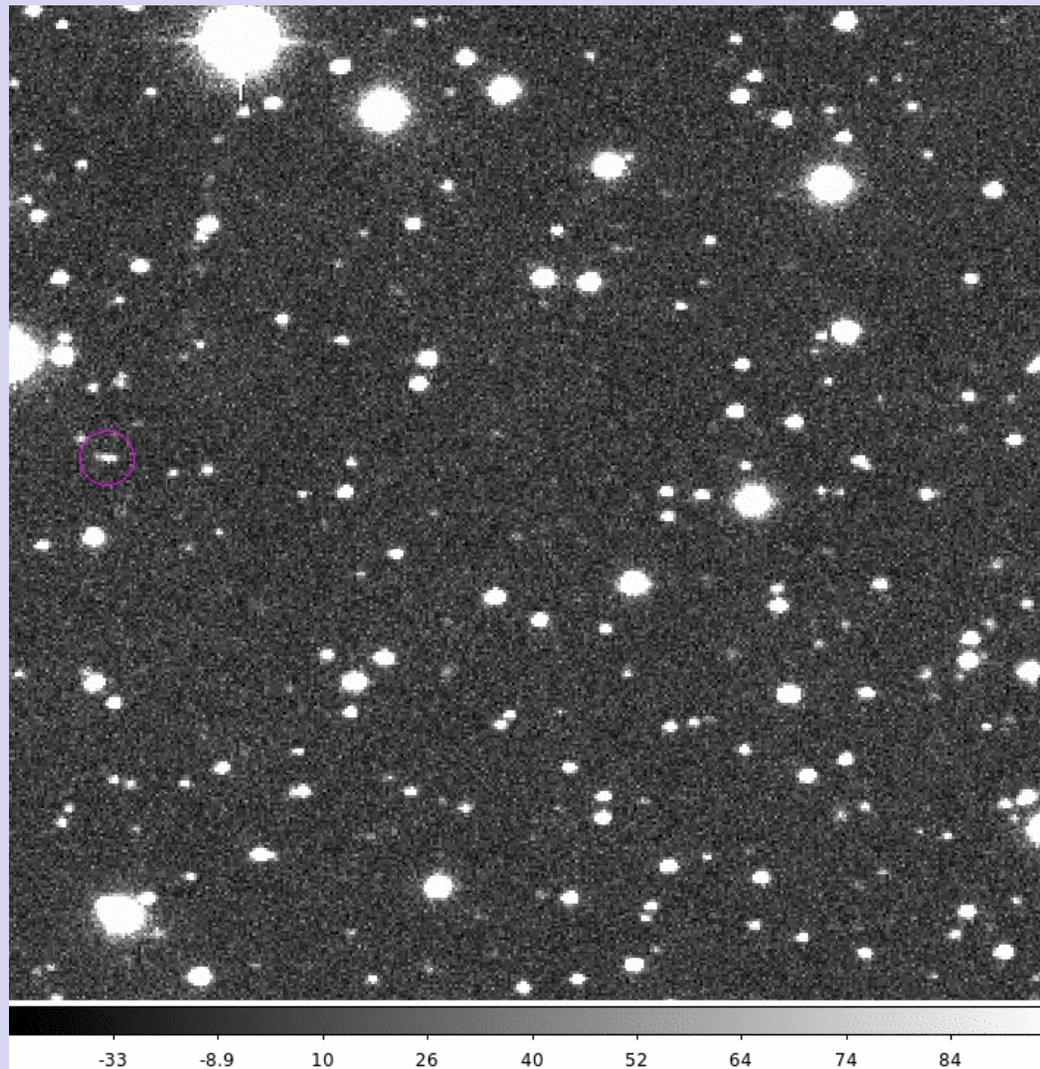
NEO Coordination Centre – ESRIN, Italy



SSA-NEO Coordination
Centre – Inauguration
22 May 2013

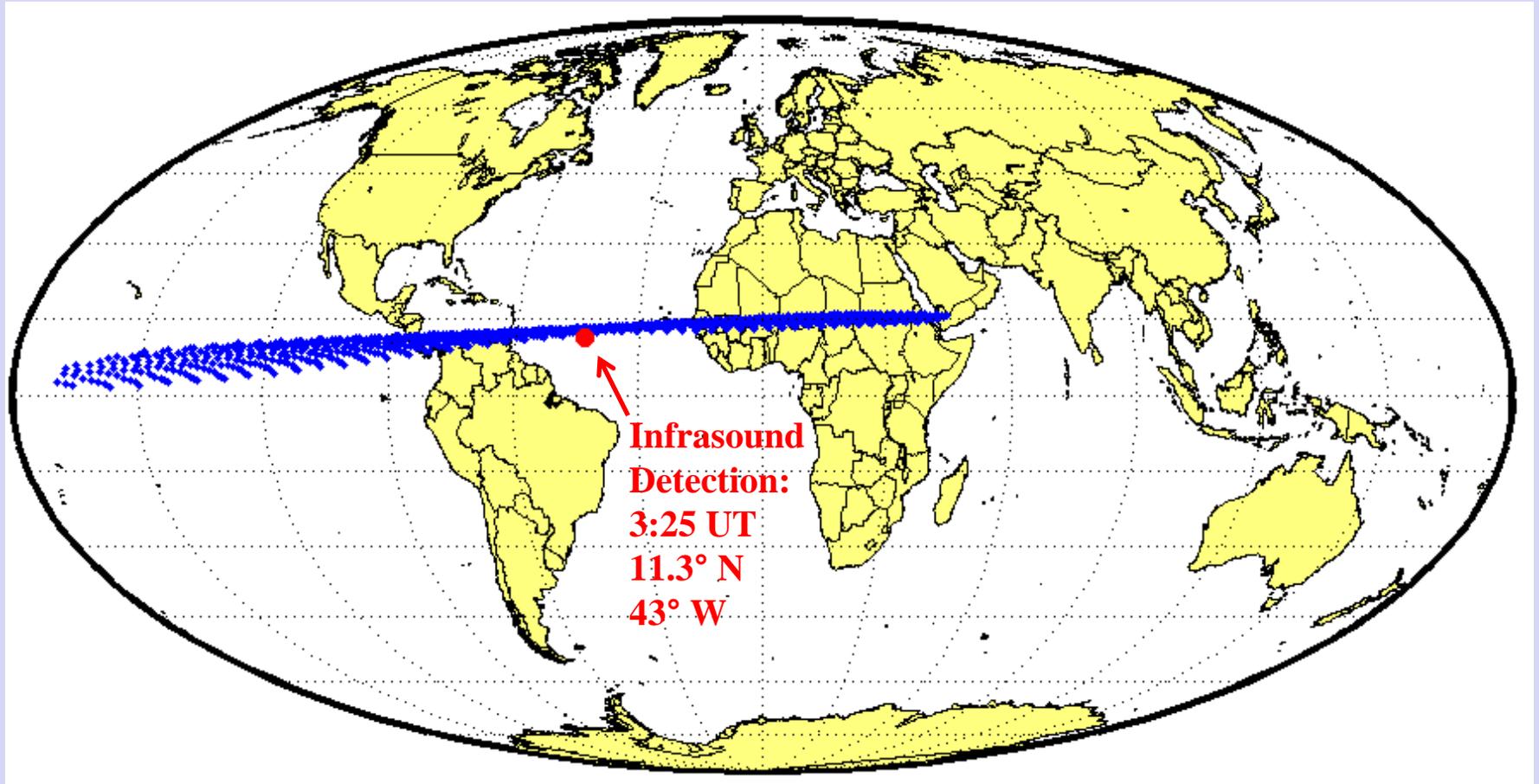


Discovery Images of Asteroid 2014 AA



Courtesy of Catalina Sky Survey

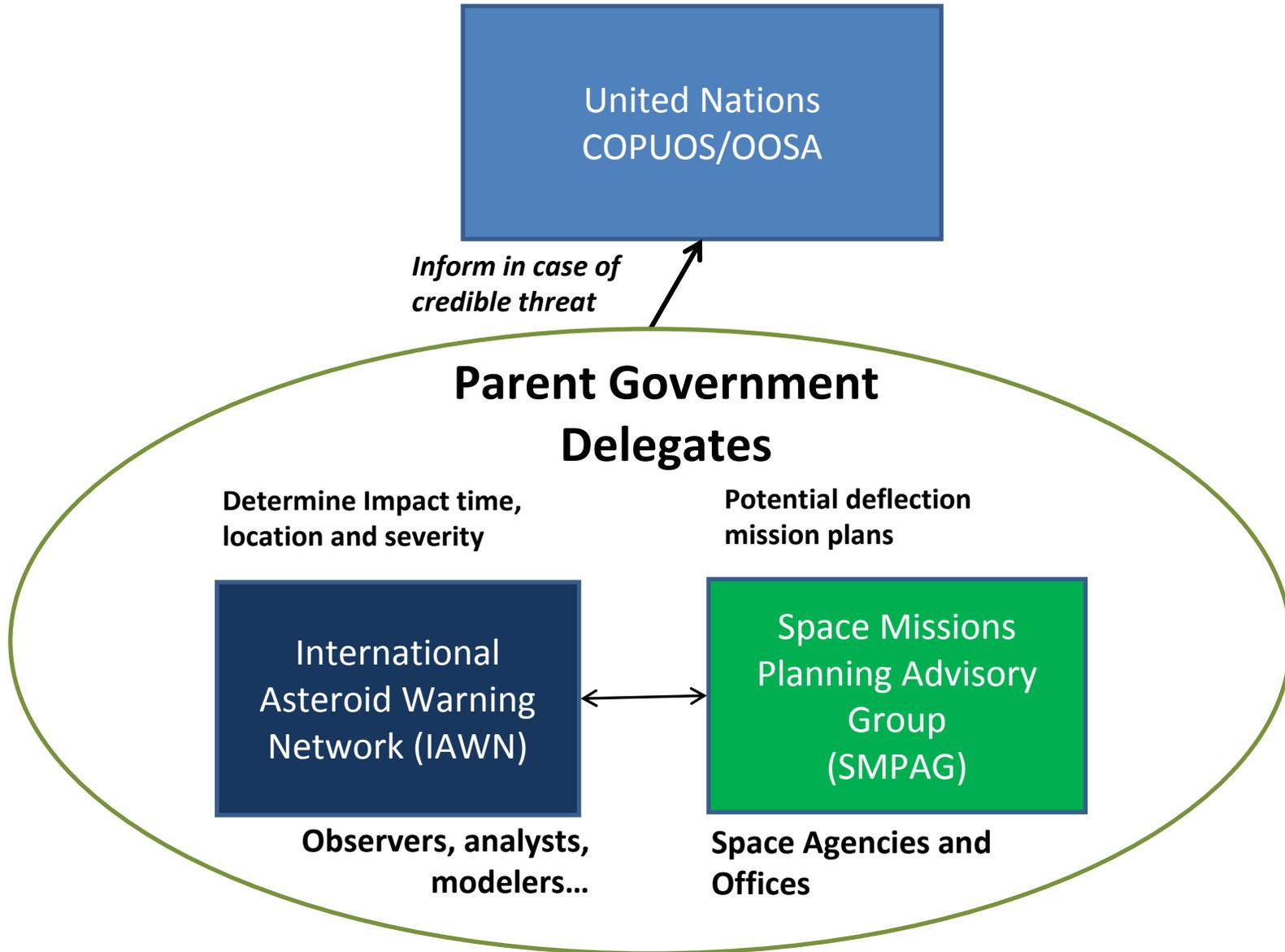
2014 AA Predicted Impact Location



Credit Steve Chesley, NEO PO, JPL

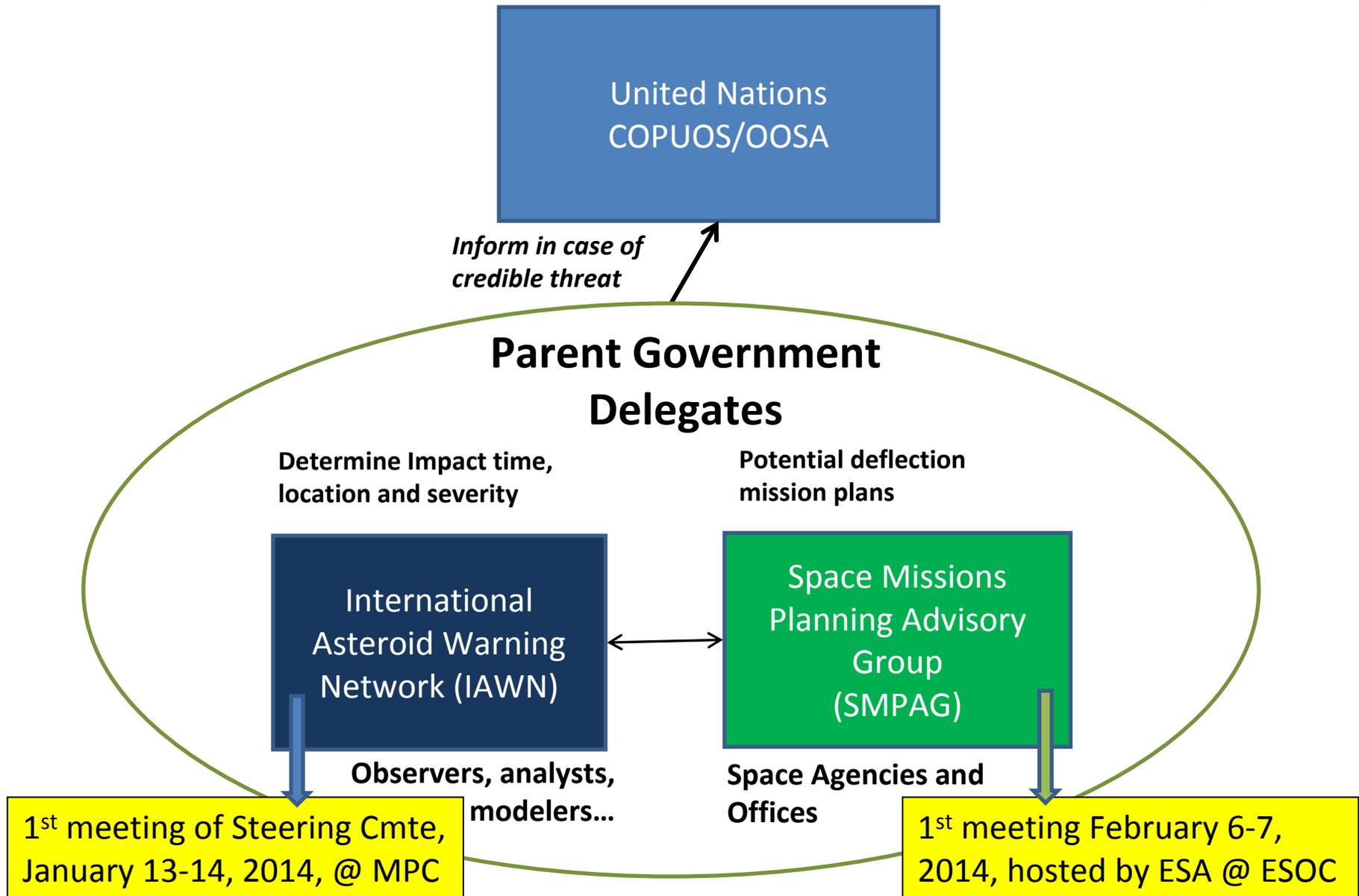
**UN Office of Outer Space Affairs
Committee on Peaceful Uses of Outer Space**

**Overview for NEO
Threat Response**



**UN Office of Outer Space Affairs
Committee on Peaceful Uses of Outer Space**

**Overview for NEO
Threat Response**



IAWN Meeting Information

- On 13-14 January 2014, the first meeting of the International Asteroid Warning Network (IAWN) Steering Committee meeting was hosted by the Minor Planet Center (MPC), at the Harvard-Smithsonian Center for Astrophysics in Cambridge, Massachusetts.
- Presentations were given by many NEO survey and characterization observer teams in the US and other nations
- Discussion was held on IAWN purpose and organization of Steering Committee
- Agenda, presentations, and findings are published at:
<http://minorplanetcenter.net/IAWN>

IAWN Participation

IAWN *ad hoc* Steering Committee Members

- Sergio Camacho (UNCOPUOS/NEO AT-14 Chair) - Mexico
- Lindley Johnson (NASA HQ/NEO PE) - United States
- Detlef Koschny (ESA/ESTEC)*
- Boris Shustov (Institute of Astronomy, RAS) - Russia
- Tim Spahr (MPC) - United States
- Giovanni Valsecchi (IAPS/NEODyS) - Italy
- Karel van der Hucht (SRON/IAU)†
- Patrick Michel (Observatoire de la Côte d'Azur/CNRS)* - France
- Don Yeomans (JPL/NASA NEO PO) - United States
- Alan Harris (DLR)* - Germany

Plus 28 other presenters, mostly representatives from US observatory and research teams, but also JAXA and Canadian Space Agency

(* denotes attendance via telecon; † was not able to attend)

IAWN Findings (Slide 1 of 2)

- 1) The IAWN Steering Committee recognizes the needs to encourage additional participation in the IAWN and expand recruitment of other nations to the effort. These potential partners include, but not limited to: Russia, Japan, Canada, India, China, United Kingdom, France, and multinational astronomical institutions such as the European Southern Observatory (ESO).
- 2) A Statement of Intent should be drafted providing guidance for IAWN's operational principles and acknowledges the participation of each partner to the IAWN. It should address the goals:
 - a) For the global NEO database and methods within the IAWN
 - b) For communicating information to external audiences, including politicians, policy makers, emergency management, and the publicIt should also define basic roles and responsibilities of the Steering Committee.
- 3) IAWN should seek to enhance NEO discovery and follow-up observations through further international cooperation and coordination, especially in the southern hemisphere. IAWN should encourage use of existing ground-based telescopes for follow-up observations, to bridge gaps in global sky coverage, and to facilitate coordination of existing capabilities for more effective use.

IAWN Findings (Slide 2 of 2)

- 4) Through further international collaboration, the IAWN should seek to accomplish the following goals and objectives:
 - a) establish an international rapid all-sky search capability that is focused on discovering smaller, imminent impactors (e.g., Chelyabinsk event or larger);
 - b) develop and operate an effective, space-based NEO infrared survey telescope to significantly accelerate the current NEO discovery rate.
- 5) The IAWN Steering Committee should organize a two-day workshop on strategies and planning of communication regarding NEO impact hazards. The workshop should focus upon critical assessment of historical and hypothetical messages, strategies, and plans developed by the NEO community in an effort to improve upon international communications concerning potentially hazardous asteroids and impact risks. Social scientists with expertise in public communication, risk communication, cross-cultural communication, risk perception, emergency preparedness and disaster management should be utilized to organize and conduct the workshop.

SMPAG Formulation Meeting

On 6-7 February 2014, the first meeting of the NEO Space Mission Planning and Advisory Group (SMPAG) was hosted by the European Space Agency (ESA), at the European Space Operations Center (ESOC) in Darmstadt, Germany

Delegations attended from:

- AEM (Mexico)
- ASI (Italy)
- CNES (France)
- CSA (Canada)
- Chile
- DLR (Germany)
- ESA
- Ghana
- JAXA (Japan)
- NASA (USA)
- ROSCOSMOS (Russian Federation)
- SSAU (Ukraine)
- UK Space Agency (UK)

Representatives of NEO AT-14 and UN Office for Outer Space Affairs (UNOOSA)

SMPAG Meeting Information

- Brief presentations were given by many national delegates on their activities related to hazardous asteroid mitigation
- Discussion was held on SMPAG Terms of Reference to produce the final text
- ESA was elected by consensus to be the interim chair of the SMPAG
- The second meeting is planned in conjunction with UNCOPUOS in June to focus on technical efforts to date by the members
- Agenda, presentations, and findings will be published on a web page to be set up by ESA at their NEO Coordination Centre