MIAPP workshop report

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Detlef Koschny

MIAPP = Munich Institute for Astro- and Plasma Physics

- **MIAPP provides funding and facilities to host 4-week long workshops**
- **Funded by academical institutes in Bavaria/Germany**
- **Most people stayed 2 weeks or longer – typically between 30 to 40 in the room**
- **Moderated discussions in the morning, 'free' time in the afternoon**

Scientific Programmes 2018 | Topical Workshops 2018

NEAR-EARTH OBJECTS: PROPERTIES, DETECTION, RESOURCES, IMPACTS AND DEFENDING EARTH

14 May - 8 June 2018

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This programme will bring together an international group of experts in the fields of asteroid properties, detection, in-situ resource utilisation, orbit analysis, impact hazard assessment, and planetary defence, in combination with specialists from ESA and NASA and risk management organisations, to (i) identify how to dramatically reduce the current uncertainties in the number, orbital distribution and physical properties of asteroids that limit the determination of the Earth impact risk, (ii) clarify what is needed to generate a complete inventory of all asteroids that could impact Earth within the next century, (iii) estimate the availability of resources extracted from NEOs as a function of the delta-v required to return the material to near-Earth space and identify the most promising candidates, (iv) assess current limitations to impact risk assessment, and (v) evaluate and optimise strategies to deflect asteroids that could impact Earth. The conclusions of this programme will be summarised in a white paper with recommendations for future work and coordination for NASA, ESA, and other space agencies, the UN-sanctioned International Asteroid Warning Network and the Space Mission Planning Advisory Group (IAWN and SMPAG), and other interested organisations.

Some of the topics

- 5-min collaboration session
- Dynamical structure of asteroid belt and NEOs
- International coordination
- Science at asteroids
- Asteroid mining
- Science communications
- Asteroid deflection
- Spacecraft missions
- Surveys
- Consequences and coordination of impact response
- Interstellar objects as NEOs
- Follow-up
- Dynamics and impact monitoring

Some highlights

- We informed about SMPAG and IAWN – told people how to join
- There should be more coordinated observation campaigns
- Should the point person for announcements be a scientist or journalist? Recommendation: Find somebody who is both.
- We should consider an 'embedded journalist' to follow our work, this would make communication with the public easier
- Torino/Palermo scale not easy for communications – use something different?
- Should SMPAG also deal with re-direction of asteroids for mining?
- Should SMPAG recommend a reconnaissance mission to get a better orbit?