GUSDON

Global University Space Debris Observation Network

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Introducing GUSDON

- A Global Observation Network for space debris that involves a great number of institutions in all continents
- An invaluable space debris infrastructure with a great educational return in the field of:
  - Hardware installation, operations, control
  - Data analysis of raw images
  - Data integration for orbit determination
  - Optimal observational strategies evaluation
  - Light-curve and spectroscopic analyses
Participants

• Prof. Rainer Sandau
• Prof. René Laufer
• Prof. Nobuyuki Kaya
• Ms. Rei Kawashima
• Mr. Paolo Marzioli, PhD Student
• Mr. Andrea Bellome, BSc Student
• Mr. Luca Collettini, BSc Student
• Prof. Fabio Santoni (group moderator)
• Mr. Aurelio Kaluthantrige (assistant)
Problem: the establishment of the GUSDON network needs trained professors and standardized procedures

Key steps to be considered

- Training Professors, PhD, Researchers, ...
- Standardize Hardware for easing network management
Step 1: Focus on the network standardization

1. Define an architecture
2. Test it, Improve it, Test it again
3. Define test procedures, assembly procedures, detailed user manuals
Step 2: Training course in Rome!

One week in Rome

Tentative date: Sept/Oct 2019 (before IAC);
Alternative date: Feb 2020?

Theoretical training – afternoon classes
Practical training – evening sessions
(+ night-time observations)
Free mornings...
Training course in Rome: Objectives

Theoretical Training

- To become familiar with optical observations of space debris, including:
  - applied orbital dynamics
  - astrometry
  - photometry
  - Etc...

- To understand the key aspects for a successful observation campaign (exposure, telescope settings, timing, scheduling, prioritization...)

Training course in Rome: Objectives

**Practical Training**

- To become a proficient user of the (standardized) observatory
- To be able to carry out an observation campaign without external support
- To perform basic observatory maintenance, in order to keep it in efficient operations
- At the end of the course, interested institutions can rent or buy telescopes for on-site training and for kicking off the observations!

**Educational and Scientific Return**

- To understand the major sources of scientific and educational return for all the people to be involved in the observatory network project
Conclusion

- We hope to show the results of the first edition of the training course at the next UNISEC Global Meeting!!
- We hope many people to rent or buy telescopes to kick off their operations – and reporting them at the next UNIGLO!