EPSC-DPS 2019

European Planetary Science Congress 2019

15.-20.9.2021 Geneve, Sveitsi

Paikka ja aika

- Geneve
- Centre International de Conférences de Genève (CICG)
- Syyskuun 15.-20. päivä
- Yhdessä Division for Planetary Sciences - American Astronomical Society

EPSC 2020

European Planetary Science Congress 2020

27.9-2.10.2021 Granada, Espanja

Palacio de Exposiciones y Congresos de Granada

EPSC 2021

European Planetary Science Congress 2021

19.-24.9.2021 HELSINKI

Finlandia talo

Paikka ja aika

- Helsinki
- Finlandia talo
- Syyskuun 19.-24. päivä
- Koko viikon ajan avaruusasiaa

Mitä kannattaa esitellä?

Kaikkea mikä vähänkin liippaa tiedettä

Suomalaiset ovat Euroopan tasolla todella **PROAM**

- Fotometriset mittaukset
- Planeettakuvat
- Meteorit
- Komeetat
- Kaikki mikä on vähänkin ”erikoisempaa”
- Yleistä toimintaa Suomessa/paikkakunnalla

Mitä seuraavaksi?

- Aikataulu, mm. Sessioiden aikataulu, ratkeaa myöhemmin keväällä 2021
- Harrastajien pitää miettiä osallistuminen
  - Posteri/puhe ei pakollinen
  - Hinta harrastajille noin 50...75e koko tapahtumasta
  - Yhteinen ständi näyttelyyn !!!!!
  - Valmistelut alkavat NYT

Sessiot

Esimerkki posterista

- **Organized network for supporting the amateur–scientist co-operation in Finland**; V. Mäkelä, H. Haukka, A. Oksanen and V-P. Hentunen; European Planetary Science Congress 2014; Vol. 9, EPSC2014-168, 2014 [PDF]; Poster
- **Pro-Amateur Observatories as a Significant Resource for Professional Astronomers – Taurus Hill Observatory**; H. Haukka, V-P. Hentunen, M. Nissinen, T. Salmi, H. Aartolahti, J. Juutilainen and H. Vilokki; European Planetary Science Congress 2013; Vol. 8, EPSC2013-443, 2013 [PDF]; Poster
- **Amateur astronomy by Taurus Hill Observatory**; T. Salmi, V-P. Hentunen; European Week of Astronomy and Space Science (EWASS) 2013, Turku, Finland; Oral talk
- **Transit Observations in Taurus Hill Observatory**; H. Haukka, V-P. Hentunen, M. Nissinen, T. Salmi, H. Aartolahti, J. Juutilainen and H. Vilokki; European Planetary Science Congress 2012; Vol. 7 EPSC2012-169 2012 [PDF] [Kuvia tapahtumasta]; Poster
- **Ground Based Support for Exoplanet Space Missions**, Oral presentation; H. Haukka, V-P. Hentunen, M. Nissinen, T. Salmi, H. Aartolahti, J. Juutilainen and H. Vilokki; EPSC-DPS Joint Meeting 2011; Vol. 6, EPSC-DPS2011-683, 2011 [PDF, tiivistelmä] [Kuvia tapahtumasta]; Oral talk
- **Small telescope stellar object light curve measurements**; H. Haukka, V-P. Hentunen, M. Nissinen, T. Salmi and H. Aartolahti; European Planetary Science Congress 2010; Vol. 5, EPSC2010-170, 2010 [PDF]; Poster
- **Small Telescope Exoplanet Observations in Taurus Hill Observatory**; V.-P. Hentunen, M. Nissinen, H. Haukka and H. Aartolahti; European Planetary Science Congress 2009; Vol. 4, EPSC2009-119, 2009 [PDF]; Poster

Organized network for supporting the amateur–scientist co-operation in Finland

V. Mäkelä (1), H. Haukka (1,2), A. Oksanen (1,3) and V.-P. Hentunen (2)

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PROAM network is a working group of Ursa Astronomical Association [1] for supporting Finnish amateur astronomers participating to co-operation projects between professional and amateur astronomers. The network relays the information on projects, maintains professional contacts and arranges training on technical skills for research work.

Figure 1: The map presenting the teams and members of the Finnish Observatory Network in Finland

Background

Finnish Observatory Network [2] was originally founded for co-operation between the observatories of Finnish amateur astronomical associations and private amateurs who were interested in professional–amateur astronomy. Its goals were to help amateurs and associations in communication between professional and amateur astronomers and to share know-how in construction and equipping of observatories.

Results and Main Interest

During the last ten years the teams and members of the network (figure 1) have participated in several professional research projects, eg.

- photometry of exoplanet transits [3] (figure 4)
- asteroid search and monitoring
- photometry of asteroids [7] [9]
- mutual phenomena of Galilean satellites [4] (figure 5)
- comet monitoring campaigns [5]
- supernova search and monitoring [8]
- photometry of variable stars [6]
- photometry of GRB optical afterglows [10]

Figure 2: Hankasalmi observatory on winter. Photo: Arto Oksanen

Figure 3: Taurus Hill Observatory on summer. Photo: Jari Juutilainen

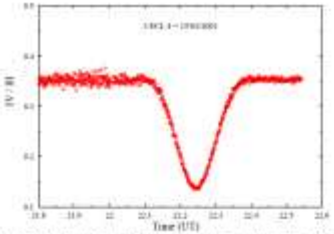

Figure 5: PHEMU03 [4] Campaign observations in Hyvölä Observatory with 16-inch Meade LX200 and SBIG ST8XE CCD camera by A. Oksanen. Ganymede eclipsing Callisto on 15 Mar 2003

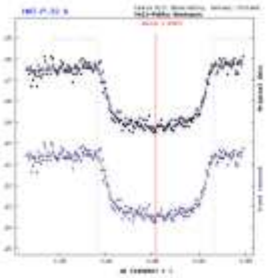

Figure 4: HAT-P-32 b observed at THO 22.8.2013 by V.-P. Hentunen

Goals of the PROAM Network

The main goals of Finnish PROAM network are:

1. Relay information on professional research projects, campaigns and observational requests where amateur contribution is needed
2. Be a contacting channel between professional astronomers and Finnish amateur astronomers
3. Help and train the network members in research skills, eg. photometry and data processing

The network have own web pages [2] and use e-mail and other electronical channels for communication.

Present Network

Recently the scope of the network is focused more on private amateurs interested in scientific work in professional-amateur projects, and the working group is renamed as Finnish PROAM network. The interest to scientific work among Finnish amateur astronomers is rising. There are plenty of high quality instruments and observatories in Finland. There is obvious need for information and support on research work.

References

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[6] http://www.aavso.org/

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[9] Lightcurve inversion for asteroid spins and shapes. J. Torppa. University of Helsinki, Faculty of Science, Department of Astronomy, Doctoral dissertation, 2007

[10] Afterglow Upper Limits for Four Short-Duration, Hard Spectrum Gamma-Ray Bursts. Hurley, K., et. al., The Astrophysical Journal, Volume 567, Issue 1, 2002, pp. 447-453

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Poster design: Harri Haukka

Pro-Amateur Observatories as a Significant Resource for Professional Astronomers – Taurus Hill Observatory

H. Haukka, V-P. Hentunen, M. Nissinen, T. Salmi, H. Aartolahti, J. Juutilainen and H. Vilokki

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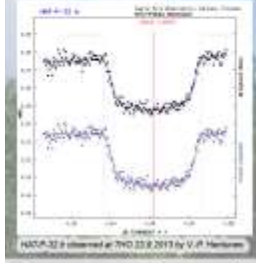
Taurus Hill Observatory (THO), observatory code A95, is an amateur observatory located in Varkaus, Finland. The observatory is maintained by the local astronomical association Warkauden Kassiopeia.

THO research team has observed and measured various stellar objects and phenomena. Observatory has mainly focused on asteroid [1] and exoplanet light curve measurements, observing the gamma rays burst, supernova discoveries and monitoring [2]. We also do long term monitoring projects [3]. THO research team has presented its research work on previous EPSC meetings [4], [5], [6] and [7] and got very supportive reactions from the European planetary science community.

OJ287 Observation Campaign 2006 - 2008

OJ287 was observed at THO from December 2006 to October 2008 about 50 times. The measurements were made normally once a week according to the prevailing weather conditions. The target was usually imaged with the exposures of 300 or 600 seconds through the photometric R-filter and on each observation night 3 - 6 times. In photometric measurements THO research team used the finding chart and the brightness list of the check stars which are listed on the project pages of OJ287: *www.astro.utu.fi/OJ287MMVI/*. The observation results were submitted to Dr. Kari Nilsson from Tuorla Observatory. We usually achieved brightness precision of 0.01 magnitudes. Our results were in harmony with the measurements done by others around the world. Also, THO's measurements of OJ287 measurements were used in the article that was published in Nature, April 2008 [2].

OJ287 is an Active Galactic Nuclei (AGN) that is located about 4.3 billion light years from Earth. There has been a variation in the brightness of the OJ287 in 12 years cycle. Photo: V.-P. Hentunen and M. Nissinen.



HAT-P-32 b observed at THO 22.8.2013 by V.-P. Hentunen

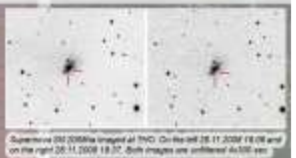
Transit Observations of Exoplanets

Exoplanets have been one of the specialties of the THO research team in Finland. The team has made for now many years transit and light curve measurements about the exoplanets. To this date the team has measured over 40 different exoplanet light curves, some of them several times. The first THO measurements have been added to AXA-database is maintained by Bruce L. Gary and now observatory is mainly using EDT maintained by Variable Star and Exoplanet of Czech Astronomical Society. Some of the measurements have been send to the Pulkovo Observatory (Russia) for further analysis.

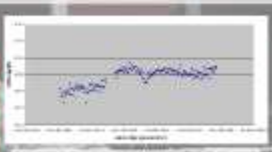
THO site is optimal place in Finland to observe and measure transits and light curves during the winter due the lack of the light pollution. This gives the observatory possibility to have long measurement periods during these dark winter months.

Supernovae Discoveries and Monitoring

THO has been the most active supernovae observer in Finland. The observatory research team has discovered eigth new supernovae from the northern part of the sky. Observatory has also monitored few interesting supernovae. For example, the measurements of the supernova SN 2008ha were used in the Nature article [3] published in June 2009.



Supernova SN 2008ha imaged at THO. On the left 28.11.2008 18:06 and on the right 28.11.2008 18:27. Both images are unfiltered 4x300 sec.



Asteroid 22 Kalliope light curve measured at THO 18-09.4.2013

Asteroid Light Curve Measurements

The Taurus Hill Observatory research team has measured dozens of light curves of different asteroids at THO since 2006. Because the rotation period of an asteroid is often 5 - 10 hours this usually means that the measurements take all night. Because of the quite fast relative motion of asteroids the exposure time must be short, about one minute. However, this is usually enough when using photometric R-filter since the brightness of the objects are between 11 and 13 magnitudes. Some of our measurements were submitted to Dr. Johanna Torppa who analyzed them. Her doctoral thesis "*Light curve inversion for asteroid spins and shapes*" [1], was accepted in December 2007 and THO asteroid measurements were part of the thesis.

THO has also made asteroid observation for the Pulkovo Observatory (Russia). One of them is 22 Kalliope that was observed at THO April 2013. Pulkovo Observatory is interested in multiply asteroids. These asteroids have unique "zik-zak" -shape of light curve that is also clearly visible in THO measurements.

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More information about the Taurus Hill Observatory research

If You would like to get more information about the research work made at the THO, please visit our website in the address *http://www.taurushill.net*. We recommend that You also visit the Transitsearch (*http://www.transitsearch.org/*) and AXA (*http://brucegary.net/AXA/x.htm*) websites. We are grateful to the Finnish Meteorological Institute who sponsored this poster.

Poster design: Harri Haukka · Background image: Jari Juutilainen

Kehen yhteyttä?

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