ABSTRACT BOOK

6th Gaia Science Alerts Workshop

10-13 November 2015

Liverpool John Moores University, UK

The titles are sorted following the agenda of the workshop.

Workshop's agenda on-line: https://www.ast.cam.ac.uk/ioa/wikis/gsawgwiki/index.php/Workshop2015:agenda

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AGENDA

Tuesday, 10 November 2015		
10:00	**registration desk open**	
12:30	**lunch**	
14:00		Welcome
14:10	David Bersier	ASAS-SN: The All-Sky Automated Survey for SuperNovae
14:30	David Reiss	LSST Transient Alert Production Pipeline
14:50	Zuzanna Kostrzewa-Rutkowska	OGLE-IV Transient Survey
15:10	Krzysztof Ulaczyk	The Gravitational-wave Optical Transient Observer
15:25	**coffee break**	
16:00	Paul Groot	Gaia, BlackGEM and MeerLICHT: fast transients/variables
16:20	Fraser Lewis	Education and Outreach Opportunities from Gaia Transients
16:40	Sophie Bartlett	Getting to know Gaia - Applying a current, real-world context to the school science curriculum
17:00	Anna Hourihane	Gaia Science Alerts for outreach: publication and follow-up
17:20	Lorraine Hanlon	Watcher robotic telescope and Gaia archive
17:40	Tim Staley	Beyond ATEL's - How to hook in to the VOEvent network
18:00	*end of day 1*	

Wednesday, 11 November 2015		
09:30	Simon Hodgkin	Gaia Science Alerts
10:00	Lukasz Wyrzykowski	First year of the Gaia Alerts
10:30	Heather Campbell	First science from Gaia
11:00	**coffee break**	
11:45	Laurent Eyer	Variable stars in Gaia
12:10	Nic Walton	Gaia Science Alerts in the Main Gaia Data Releases
12:30	Nadejda Blagorodnova	Nuclear transient detection with Gaia
13:00	**lunch break**	
14:30	Grant Kennedy	Transits of exploding asteroids and fragmented comets
14:50	Chris Copperwheat	Gaia transients with the Liverpool Telescope and Liverpool Telescope 2
15:10	Rob Barnsley	IO:I - a new infrared imager for the Liverpool Telescope
15:25	**coffee break**	
16:00	Andrzej Piascik	Spectrographic Classification of Transients with the Liverpool Telescope
16:20	Helen Jermak	LOTUS: a low-cost UV spectrograph on the Liverpool Telescope
16:35	Massimo Turatto	SOXS, the next generation instrument for ESO NTT
16:50	Alceste Bonanos	Observing facilities at the National Observatory of Athens
17:10	Goran Damljanovic	Gaia-FUN-TO and the observations of Gaia Alerts objects using Serbian-Bulgarian mini-network telescopes
17:30	Giuseppe Leto	Catania participation in the Gaia Alerts Network
17:45	Kris Rybicki	Loiano and Ostrowik Observatories
18:00	**discussion**	
18:30	*end of day 2*	
19:30	**WORKSHOP DINNER**	

Thursday, 12 November 2015		
09:30	Peter Jonker	TDEs with Gaia
09:55	Sjoert van Velzen	Optical observations of stellar tidal disruption flares
10:20	Thomas Wevers	Fast transients from Gaia
10:40	Susanna Vergani	Catching GRB orphan afterglows from Gaia triggers
11:00	**coffee break**	
11:45	Seppo Mattila	Nuclear supernovae with Gaia
12:10	Morgan Fraser	Freaks and weirdos - A taxonomy of rare, peculiar and puzzling supernovae
12:35	Massimo Della Valle	Novae in the Gaia Era
13:00	**lunch break**	
14:30	Elme Breedt	Accreting compact object binaries from Gaia and other transient surveys
14:50	Kris Rybicki	Astrometric microlensing from Gaia and OGLE
15:10	Gerry Gilmore	OPTICON
15:25	**coffee break**	
16:00	Josep Manel Carrasco	The Montsec Observatory and the Gaia science alerts
16:20	Ulrich Kolb	PIRATE going forward
16:40	Orhan Erece	Observations, Contributions and A New Follow-Up Software at TUG
16:55	Murat Dindar	TUG Software Tools for ToO Observations
17:10	Vira Godunova	Monitoring of transient phenomena at the Terskol Observatory
17:25	Viktor Votruba	Danish 1.54m telescope na La Silla and Czech participation
17:45	Klaas Wiersema	Observing transients with the University of Leicester observatory
18:00	Magda Butkiewicz-Bąk	Global Astrophysical Telescope System - a new tool for photometry and spectroscopy
18:15	*end of day 3*	

Friday, 13 November 2015		
09:30	Arancha Delgado	Introduction to the new Gaia Alerts Interface
10:00	Morgan Fraser	Running a successful spectroscopic programme - lessons from PESSTO
10:30	Lukasz Wyrzykowski	How to do the photometric follow-up?
11:00	**coffee break**	
11:45	Lukasz Wyrzykowski	Introduction to the Calibration Server and other tools
12:15	Heather Campbell	Photometric classification of transients
12:45	**lunch and end of the meeting**	

David Bersier

Liverpool John Moores University, UK

ASAS-SN: The All-Sky Automated Survey for SuperNovae

The All-Sky Automated Survey for SuperNovae (ASAS-SN) is an automated survey of the sky that uses several 14cm telescopes to monitor the sky every few nights. The long-term goal is to observe all the sky from several sites and produce transient alerts in real time. Currently the project has two telescope units in operation, one in Hawaii (USA) and one in Chile. I will describe the motivation for this project, the telescopes and detectors, describe the observing strategy, the data reduction pipeline, the search for transients and plans for the future.
While focusing on supernovae, this survey finds many other types of transients. I will devote time to recent science results on various types of transients, particularly rare SNe and tidal disruption events.

David Reiss

University of Washington, Department of Astronomy, US

LSST Transient Alert Production Pipeline

I will present a brief overview of LSST and the plans for the transient alert production pipeline. Beginning in 2022, the Large Synaptic Survey Telescope will survey the entire southern sky about 1,000 times in six bandpasses, generating a digital color movie of the sky and measurements of ~37 billion objects over ten years. One of the tasks of the project is to generate near-real-time (within 60 seconds of observation) alerts for an estimated 10 million variable objects detected each night (on average). I will discuss the LSST alert production pipeline, including plans for observation, detection, and alert transmission, and expected challenges yet to be addressed.

Zuzanna Kostrzewa-Rutkowska

Warsaw University Astronomical Observatory, Poland

OGLE-IV Transient Survey

The OGLE Transient Survey is a real-time search for transients within the 650 square degrees area around the Magellanic Clouds, conducted as part of the OGLE-IV project and aimed at detecting supernovae, novae and other events. I will briefly summarise survey design, rapid detection system and plans for the future research.

Krzysztof Ulaczyk

University of Warwick, UK

The Gravitational-wave Optical Transient Observer

The main goal of the robotic Gravitational-wave Optical Transient Observer (GOTO) is to identify optical counterparts to gravitational wave events as reported by the A-LIGO and VIRGO projects. In survey mode, a set of wide-field telescopes on a single shared mount will regularly monitor the visible sky, thus providing opportunities to pursue a variety of transient and time-domain astrophysics. Rapid response to transients other than GW events, such as the Gaia science alerts, will be also possible. We are about to deploy a prototype at the Observatorio del Roque de los Muchachos on La Palma. It will consist of four 40 cm telescopes each equipped with a 50 Mpixel detector. This will deliver a ~5 square degree field of view per telescope at a pixel scale of 1.2”. The system is expected to achieve a depth of 21 mag in a wide optical passband and to be fully robotic and autonomous. The plan is to scale the facility up after testing with additional telescopes, as each mount is designed to support 8 astrographs. Other nodes, such as a southern node in Australia are also planned.

Paul Groot

Radboud University, Netherlands

Gaia, BlackGEM and MeerLICHT: fast transients/variables

Gaia alerts on fast transients and/or outbursting compact binaries will work very well together with ground-based facilities such as BlackGEM and MeerLICHT, also in conjunction with large spectroscopic facilities. I will outline the parameter space in cadence/depth/area where the synergy is maximized as well as the scientific questions in the field of ultracompact binaries in our Milky Way Galaxy that can be addressed. A status update on the development of MeerLICHT and BlackGEM will be included.

Fraser Lewis

Faulkes Telescope Project, UK

Education and Outreach Opportunities from Gaia Transients

Sophie Bartlett

Faulkes Telescope Project/Cardiff University, UK

Getting to know Gaia - Applying a current, real-world context to the school science curriculum

We will introduce participants to the educational resources we are developing that enable students to study astronomical objects detected by Gaia, such as supernovae. We provide schools with the opportunity to carry out follow up observations with the Faulkes Telescopes and LCOGT network, in order to perform scientific research and investigations on real scientific data. We will explain the aims and purpose of developing these resources and how they are designed to meet the needs of schools, teachers and students.

Anna Hourihane

Institute of Astronomy, University of Cambridge, UK

Gaia Science Alerts for outreach: publication and follow-up

The Gaia Science Alerts provide an excellent opportunity to engage a non-expert audience in cutting-edge science. I will discuss the publication of Alerts for outreach and the current status of our follow-up programme for schools using the LCOGT network.

Lorraine Hanlon

UCD, Ireland

Watcher robotic telescope and Gaia archive

Tim Staley

University of Oxford, UK

Beyond ATEL's - How to hook in to the VOEvent network

A short talk 'Intro to VOEvent' on what it is and how we've used it to trigger the AMI-LA / ALARRM program.
'Getting started with VOEvents' - show people how to put together their own alerts code (drawing on the material from Hotwired IV, possibly also https://github.com/timstaley/voevent-node-deploy/).

Simon Hodgkin

Institute of Astronomy, University of Cambridge, UK

Gaia Science Alerts

Lukasz Wyrzykowski

Warsaw University Astronomical Observatory, Poland

First year of the Gaia Alerts

Gaia Science Alerts (GSA) is the first product of the Gaia mission released to the public. The first supernova was found during the early stage of the mission on 30th August 2014 and since then a couple of hundreds of other transient events were discovered: supernovae, AGNs or CVs. In my talk I will provide an overview of the design and operation of the Gaia Science Alerts programme, present its current status and the lessons learned during the mission so far.

Heather Campbell

Institute of Astronomy, University of Cambridge, UK

First science from Gaia

During the first year of Gaia Science Alerts there has been interesting science discoveries. Here we highlight a few of these, including the discovery and characterisation of the first totally eclipsing AM CVn-system, found by Gaia Science Alerts, Gaia14aae.

Laurent Eyer

Geneva University, Switzerland

Variable stars in Gaia

Nic Walton

Institute of Astronomy, University of Cambridge, UK

Gaia Science Alerts in the Main Gaia Data Releases

I will review the status of the delivery of the packaged realtime Gaia Science Alerts to the main upcoming main Gaia Data Releases.

Nadejda Blagorodnova

Caltech, US

Nuclear transient detection with Gaia

Astronomical phenomena occurring close to their host galaxy nucleus have been only partially studied in the main transient programmes. The difficulty to detect such events using traditional rolling searches has put off for a long time the systematic exploration of their properties and statistics. Along with the recent efforts prom different groups to explore this new transient family, the Gaia mission stands out because of its highly accurate astrometry. In this talk, I will address the characteristics of the detection for nuclear and circum-nuclear transients with Gaia. Finally, I will present initial mission results for the detection of host galaxies.

Grant Kennedy

Institute of Astronomy, University of Cambridge, UK

Transits of exploding asteroids and fragmented comets

Many dwarf stars are seen to be obscured by circumstellar dust, but these are commonly young and host gas-rich protoplanetary disks (e.g. UXors). Two main-sequence stars show possible evidence for occultations by circumstellar dust - RZ Psc and KIC8462852. RZ Psc hosts a thermally detected asteroid analogue, and the dips in the light curve are thought to be post-collision ejecta from asteroids in this belt. KIC8462852 is an otherwise unremarkable F-type star, but was seen by Kepler to undergo two ~20% dimming events separated by two years, with the transit of a series of comet fragments the favoured scenario. These examples of "transiting debris" provide a proof of concept that normal stars can be dimmed by dust, but also highlight how little we know, and that immediate follow up is needed to constrain dust properties and different scenarios. I will suggest that with some follow up capability in place the new science of transiting debris can be advanced by GAIA Alerts.

Chris Copperwheat

Liverpool John Moores University, UK

Gaia transients with the Liverpool Telescope and Liverpool Telescope 2

The fully robotic Liverpool Telescope, based at the ORM on La Palma, is one of the world's leading facilities for time domain astronomy. The LT is in frequent use for Gaia alerts follow-up with a number of active programmes, and is also used on a nightly basis to track the spacecraft itself. In this talk I will give an overview of the LT's capabilities and contributions to date. I will also briefly discuss Liverpool Telescope 2: a new 4-metre robotic telescope we plan to have in operation on La Palma at the begin of the next decade. This facility will arrive too late to participate in the alerts programme directly, but we believe it will be a key facility for the medium to long term exploitation of the huge number of interesting, time variable objects which Gaia will discover over the course of it's mission.

Rob Barnsley

Liverpool John Moores University, UK

IO:I - a new infrared imager for the Liverpool Telescope

IO:I is a new instrument that has recently been commissioned for the Liverpool Telescope, extending current imaging capabilities beyond the optical and into the near infrared. IO:I could prove to be a useful instrument for obtaining early NIR light curves of transient targets detected by Gaia.
I will discuss characterisation of the instrument along with aspects of data handling and reduction, and finish with presenting results from recent photometric testing conducted on on-sky.

Andrzej Piascik

Liverpool John Moores University, UK

Spectrographic Classification of Transients with the Liverpool Telescope

We present the results of the 2015 transient classification programme using the SPRAT spectrograph on the Liverpool Telescope. Characterisation of this instrument was done using observation data. The limits and improvements in use of instrument for spectroscopic classification are explored.

Helen Jermak

Liverpool John Moores University, UK

LOTUS: a low-cost UV spectrograph on the Liverpool Telescope

The Liverpool (Optical) Telescope UV Spectrograph (LOTUS) is a low-cost, low-resolution spectrograph which was commissioned on the Liverpool Telescope in La Palma in the summer of 2015. The spectrograph is UV optimised and designed to measure the molecular features in the spectra of comets and other UV-bright sources, in particular the comet 67P/Churyumov-Gerasimenko, which is the main focus of the ESA Rosetta mission (and was the main reason for building the instrument). The design and optical components of the instrument are presented along with early results and possibilities for follow-up of Gaia transients.

Massimo Turatto

Osservatorio Astronomico di Padova - INAF, Italy

SOXS, the next generation instrument for ESO NTT

This talk beriefly summarizes SOXS, the next generation instrument for ESO NTT. The science case will be presented and, on this basis, the current conceptual design of the instrument. Finally, the consortium structure, the current status of the project and the timeline will be shown.

Alceste Bonanos

National Observatory of Athens, Greece

Observing facilities at the National Observatory of Athens

Two main observing facilities of the National Observatory of Athens are currently in operation. The 2.3 m "Aristarchos" telescope at Helmos Observatory and the 1.2 m telescope at Kryoneri Observatory. The characteristics of the sites and of the telescopes as well as the current instrumentation will be presented.

Goran Damljanovic

Astronomical Observatory, Belgrade, Serbia

Gaia-FUN-TO and the observations of Gaia Alerts objects using Serbian-Bulgarian mini-network telescopes

The Gaia mission is the cornerstone of the European Space Agency (ESA); the satellite was lauched at the end of 2013. Gaia began science operations in August 2014. Since October 2014, Gaia Photometric Science Alerts has been publishing alerts. During its 5-years lifetime, it is going to map the entire Galaxy (over one billion stars) and about 600 000 quasars (QSOs). Until now, about 300 transients have been found; mostly supernovae, cataclysmic variables, candidate microlensing events, etc. Using new 60 cm telescope (at Astronomical Station Vidojevica - ASV of Astronomical Observatory in Belgrade - AOB, Serbia), 60 cm Belogradchik AO one (Bulgaria) and few telescopes at Rozhen Observatory (2 m telescope, 60 cm one and 50/70 cm Schmidt-camera, Bulgaria), we observed few objects during test phase of Gaia-FUN-TO (2013 and 2014). After that, we continued with observations of Gaia Alerts objects (at the end of 2014 and during 2015); about 20 objects were observed (near 600 points in BVRI filters). Some of them are rare objects as it is the eclipsing AM CVn Gaia14aae one; we did our observations of that object in October 2014 using 60 cm ASV and 60 cm Belogradchik telescopes. The paper about that object was published (Campbell et al. 2015). Here, we present some of our results in line with Gaia-FUN-TO.

Giuseppe Leto

INAF-Catania Astrophysical Observatory, Italy

Catania participation in the Gaia Alerts Network

Kris Rybicki

Warsaw University Astronomical Observatory, Poland

Loiano and Ostrowik Observatories

Peter Jonker

SRON & RU Nijmegen, Netherlands

TDEs with Gaia

Tidal disruption events are our prime source of information on the large population of otherwise dormant black holes. We will highlight the recent results on tidal disruption flares by intermediate-mass black holes obtained from Chandra and XMM observations as well as results of the new Gaia satellite mission that recently started routine operations. We are investigating if rapid dissemination of intra-CCD variability detectable by Gaia is feasible. This intra-CCD variability of astronomical sources probes timescales related to TDEs of white dwarfs by an intermediate-mass black hole.

Sjoert van Velzen

Johns Hopkins University, US

Optical observations of stellar tidal disruption flares

The tidal disruption of a star by massive black yields a powerful thermal flare. I will give a short overview of optical observations of tidal disruption flares and explain how Gaia Alerts can be used to find more of these rare events.

Thomas Wevers

RU Nijmegen, Netherlands

Fast transients from Gaia

Susanna Vergani

CNRS, France

Catching GRB orphan afterglows from Gaia triggers

Gaia is expected to detect a few gamma-ray burst (GRB) orphan afterglows per semester. These kind of afterglows are theoretically predicted, but not yet conclusively detected.
The detection of an orphan afterglow is much anticipated: not only will the positive detection be a fundamental and unique test of GRB jet structure, but orphan afterglow observations and detailed analysis of their light curves will enable to differentiate between different jet models.
To provide unambiguous orphan afterglow identification the combination of both photometric and spectroscopic follow-up of Gaia Alert orphan afterglow candidates are needed.
We have access to ground-based facilities (BOOTES network, Liverpool Telescope, LCOGT network, REM) to perform photometric follow-up observations and we could obatain Target of Opportunity time of observation at ESO with VLT/X-shooter to follow-up Gaia Alerts that could correspond to orphan afterglows.
Nonetheless, to be successful we need an improvement of the automatic Alert classification and on the available Alert information.

Seppo Mattila

University of Turku, Finland

Nuclear supernovae with Gaia

Most searches are neglecting supernovae (SNe) that occur within the nuclear regions of galaxies due to dust extinction and lack of sufficient spatial resolution. In particular, the properties and rates of SNe in the nuclear regions of luminous infrared galaxies (LIRGs), which are the most prolific SN factories and dominate the massive star formation at redshifts between ~1 and ~2, have remained largely unexplored. I will describe our ongoing efforts using adaptive optics imaging at near-infrared wavelengths to search and study dust obscured SNe in a small sample of local LIRGs. I will then discuss the potential of Gaia to discover SNe within the unobscured nuclear regions such galaxies over the whole sky.

Morgan Fraser

Institute of Astronomy, University of Cambridge, UK

Freaks and weirdos - A taxonomy of rare, peculiar and puzzling supernovae

Massimo Della Valle

Capodimonte Astronomical Observatory-INAF, Naples, Italy

Novae in the Gaia Era

Elme Breedt

University of Warwick, UK

Accreting compact object binaries from Gaia and other transient surveys

Compact interacting binaries will be responsible for a large fraction of the transients observed by Gaia, be they supernova explosions, nova eruptions or accretion disc instabilities that result in dwarf nova outbursts. The study of these transient populations is key to improve our understanding of accretion physics and binary evolution.
I will present some highlights from various transient follow-up programmes to showcase the scientific potential of Gaia transients for accreting binaries. I will briefly discuss our plans for follow-up observations, both on professional facilities and through collaboration with amateur observers from the AAVSO.

Kris Rybicki

Warsaw University Astronomical Observatory, Poland

Astrometric microlensing from Gaia and OGLE

The subtle astrometric centroid shift in microlensing events, once measured by Gaia and combined with ground-based photometry, will allow, for the first time, for measuring distances and masses to individual standard microlensing events, and for deriving mass distribution in the Galaxy. As microlensing does not require light of the lens, the astrometric signal will provide also an information on masses and spatial distribution of dark lenses, including brown dwarfs, neutron stars and black holes. We have investigated photometric microlensing events detected in 2014/2015 by the OGLE-IV survey in the Galactic Bulge, which may have also been observed by Gaia and which, at the end of the mission, will have their astrometry computed. In particular, we concentrate on long events exhibiting parallax effect, likely caused by massive or nearby lenses, and we simulate the expected Gaia astrometric signal using the constrains from the photometric light curves.

Gerry Gilmore

Institute of Astronomy, University of Cambridge, UK

OPTICON

Josep Manel Carrasco

University of Barcelona, Spain

The Montsec Observatory and the Gaia science alerts

From February 2015 a team of researchers from ICCUB contributes to the Gaia photometric science alerts follow-up programme with the robotic telescope Joan Oró (TJO), at the Montsec Observatory (OAdM), located at Àger (Lleida, Spain). Since then, a total of about 1400 images in multicolor Johnson-Cousins passbands were obtained with TJO for 17 Gaia science alerts. In this talk we will summarise the instrument, the obtained observations and analyse the derived lightcurves.

Ulrich Kolb

The Open University, UK

PIRATE going forward

I review the status of PIRATE, its contribution so far, and discuss plans for upgrading and relocating the facility, as well as opportunities arising from a new sister facility.

Orhan Erece

TUBITAK National Observatory, Turkey

Observations, Contributions and A New Follow-Up Software at TUG

The three telescopes of TUBITAK National Observatory (TUG) dedicated to Gaia target of opportunity (ToO) observations in a limited observing time. It has been taken the total photometric observations of 181 frames (the ratio of about %1 of all Gaia ToO observations) so far at TUG since the first observation was Asassn13dd in Oct. 2013. Besides, an aim of a project proposed to T100 telescope is time-resolved observations of Cataclysmic Variables (CVs) detected from Gaia alerts ToO observations. This project is a scheduled project totally independent of reserved time of Gaia ToO observations.

Murat Dindar

TUBITAK National Observatory, Turkey

TUG Software Tools for ToO Observations

Vira Godunova

ICAMER Observatory of NASU, Ukraine

Monitoring of transient phenomena at the Terskol Observatory

We report here recent results of various observational programmes which have been run at the Terskol Observatory (North Caucasus, 3143 asl). This includes follow-up studies of Solar system small bodies, search for optical afterglow of gamma ray bursts, investigation of ISM using high-resolution spectroscopy, etc. At our disposal are telescopes with diameters of 2 m and 60 cm equipped with low and high resolution spectrometers, high-speed photometers and CCDs. Studies of interstellar absorption features, especially DIBs, allow us to probe the structure and kinematics of the Galaxy thin gaseous disk. Furthermore, we obtained good results in classifying asteroids, as well as in computing their rotational properties. For photometry and astrometry of asteroids and comets, we also use a 70-cm telescope at the Kiev Comet Station. In addition to continuous studies of newly detected Earth-approaching objects, follow-up observations of the Gaia spacecraft have been started at Terskol in 2015. The different aspects of follow-up studies using small and medium-sized telescopes will be presented; the results and some findings will be discussed.

Viktor Votruba

Astronomical Institute, Czech Academy of Science, Czech Republic

Danish 1.54m telescope na La Silla and Czech participation

The talk will summarize status amd three years experience with the 1.54m Danish Telescope located on La Silla. Also, automatic data reduction process, archiving and some preliminary results will be mentioned.

Klaas Wiersema

University of Leicester, UK

Observing transients with the University of Leicester observatory

Over the last year, we have started using the 0.5m telescope of the University of Leicester (located at Oadby, UK) to followup a wide variety of transients and variable sources. These include gamma-ray bursts, blazars, X-ray binary outbursts, supernovae - and Gaia transients. The latitude of Oadby, and the magnitude range we can reliably cover (up to 21 mag), makes the telescope a good match for the Gaia transient source population. A set of pipelines and scripts largely automates data reduction and analysis. Here we show some results, as well as ways to enhance the observatory performance and capabilities.

Magda Butkiewicz-Bąk

Astronomical Observatory in Poznan, Poland

Global Astrophysical Telescope System - a new tool for photometry and spectroscopy

Global Astrophysical Telescope System is a pair of small highly automated telescopes dedicated for time-resolved high-resolution spectroscopy and photometry from two different continents. The first node of the pair - 0.5m PST1 - was constructed in 2007 in Poland, the second node - 0.7m PST2/RBT(Roman Baranowski Telescope) - started observing in 2013 and is located in Arizona. Both are delivering precise radial velocities (sigma ~40m/s) with duty-cycle up to 21h/day. The main science target of this new system is asteroseismology as a stand alone tool or in cooperation with BRITE satellite constellation. It was also succesfull in delivering high precision asteroid photometry and space derbis astrometry. It is a perfect tool for a photometric follow up of selected GAIA transients.

Arancha Delgado

Institute of Astronomy, University of Cambridge, UK

Introduction to the new Gaia Alerts Interface

Morgan Fraser

Institute of Astronomy, University of Cambridge, UK

Running a successful spectroscopic programme - lessons from PESSTO

Lukasz Wyrzykowski

Warsaw University Astronomical Observatory, Poland

How to do the photometric follow-up?

Lukasz Wyrzykowski

Warsaw University Astronomical Observatory, Poland

Introduction to the Calibration Server and other tools

Heather Campbell

Institute of Astronomy, University of Cambridge, UK

Photometric classification of transients