Gergely DÁLYA

Personal Data

Place and Date of Birth:	Budapest, Hungary | 22 September 1993
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Education

2015 -	Master studies in Physics, **Eötvös Loránd University**, Budapest
2012 - 2015	Bachelor studies in Physics, **Eötvös Loránd University**, Budapest Thesis: Discovering companions around pulsating variable stars using data from the *Kepler* space telescope
2010 - 2012	**ELTE Apáczai Csere János Gyakorlógimnázium**

Positions

May 2016 -	Mentor and module leader at **Milestone Institute**, Budapest
July 2016 - Sept 2016	Summer student at the **University of Glasgow**, Glasgow, UK
Sept 2015 - July 2016	Research assistant at **Konkoly Observatory of the Hungarian Academy of Sciences**, Budapest

Scholarships and awards

August 2016	New National Excellence Program
July 2016	Scholarship for the undergraduate summer student program of the Univerity of Glasgow
March 2016	Templeton Fellow
March 2016	Scholarship of the National Talent Program of the Ministry of Human Resources
February 2016	Certificate of Merit from the Ministry of Human Resources for successful preparation of the Hungarian team for the International Olympiad on Astronomy & Astrophysics
October 2015	Student-Scholar of the Hungarian Republic Award
May 2015	Excellence in Undergradual Studies Award, Eötvös University, Faculty of Sciences
January 2015	Certificate of Merit from the Ministry of Human Resources for successful preparation of the Hungarian team for the International Olympiad on Astronomy & Astrophysics
May 2014	Excellence in Undergradual Studies Award, Eötvös University, Faculty of Sciences
January 2014	Certificate of Merit from the Ministry of Human Resources for successful preparation of the Hungarian team for the International Olympiad on Astronomy & Astrophysics
March 2013	Young Talent of the 16th District of Budapest Award (Science category)
March 2013	Scholarship of the Prime Minister of Hungary

Research Projects

Current

Creating a value-added full-sky catalog of galaxies to support EM Follow-up efforts of the LIGO Collaboration

2014- *Eötvös Loránd University, supervisor: Péter Raffai*

I have created a value-added full-sky catalog of galaxies, named as Galaxy List for the Advanced Detector Era, or GLADE. The purpose of this project is (i) to identify host galaxy candidates for gravitational-wave (GW) sources detected and localized by advanced GW detectors, (ii) to support target selections for electromagnetic (EM) follow-up observations of GW candidates, and (iii) to identify host galaxy candidates for poorly localized EM transients, such as gamma-ray bursts observed by the InterPlanetary Network. The catalog is already being used by the LIGO-Virgo Collaboration and by external collaborators in all three areas.

2011-2015 Discovering (sub)stellar companions around pulsating A-F stars

Konkoly Observatory, supervisor: Róbert Szabó

Using the ultra-precise *Kepler* data our purpose is to detect companions around δ Scuti and γ Doradus stars, furthermore, to give the detectable mass limit as a function of the stellar parameters.

The project led to first prize in the astronomy section of the university's Scientific Research Competition and to second prize in the astrophysics section of the National Scientific Research Competition.

2012-2013 Discovering other planets or exomoons in systems containing hot Jupiters

Konkoly Observatory, supervisor: Róbert Szabó

We investigated hot Jupiters in the *Kepler* sample in order to detect transit timing variation, which can betray the presence of other planets in the system or exomoon companions.

Szabó, R., Szabó, Gy. M., Dálya, G. et al.: A&A 553, A17, 2013, 23 citations

2012 Minor planet searching

Konkoly Observatory, Piszkéstetö Mountain Station, supervisor: Krisztián Sárneczky

I operated the 1-m RCC telescope for one week searching minor planets.

Sárneczky, K., Csák, B., Dálya, G. et al.: Minor Planet Circular 80462, 2, 2012

2013-2014 Investigation of the formation of fractal structure in single crystals after elongation

Eötvös Loránd University, supervisor: Péter Dusán Ispánovity

Our purpose was to determine the fractal dimensions at different levels of deformation in order to enhance the modelling of the behaviour of dislocation avalanches throughout the deformation. We introduced two important corrections in our data which were not performed in the literature before.

The project led to second prize in the solid state physics section of the university's Scientific Research Competition.

Publications, outreach talks and media appearences

Publications

- LIGO Scientific Collaboration, Virgo Collaboration, ..., **G. Dálya**, ... et al.: Search for Gravitational Waves Associated with Gamma-Ray Bursts During the First Advanced LIGO Observing Run and Implications for the Origin of GRB 150906B,
- Á. Szölgyén, **G. Dálya**, L. Gondán, P. Raffai: Target-based optimization of advanced gravitational-wave detector network operations, Classical and Quantum Gravity, 2017, Volume 34, issue 7, id. 075011

- R. Szabó, M. Gy. Szabó, **G. Dálya**, et al.: Multiple planets or exomoons in Kepler hot Jupiter systems with transit timing variations?, Astronomy & Astrophysics, 2013, Volume 553, id. A17, 10 pp., 28 citations
- K. Sárneczky, B. Csák, **G. Dálya**, et al.: Minor Planet Observations [461 University of Szeged, Piszkesteto Stn. (Konkoly)], Minor Planet Circular, 2012, No. 80462, 2

Public outreach publications in Hungarian

- **G. Dálya**, B. Bécsy, P. Raffai: GW150914: elöször hallottuk az Univerzum zenéjét, Meteor, 2016, 46. évf. 3. sz.
- B. Bécsy, **G. Dálya**, P. Raffai: Interferométerekkel a gravitációs hullámok nyomában, Természet Világa, 2016, 147. évf. 3. sz.
- **G. Dálya**, O. Hanyecz, R. Szabó: Kisbolygóvadászat Kepler-ürtávcsövel, Természet Világa, 2015, 146. évf. 11. sz.
- **G. Dálya**, O. Hanyecz, R. Szabó: Új feladat vár a bolygóvadászra, Természet Világa, 2014, 145. évf. 4. sz.

Public outreach talks given in Hungarian

- November 2016, Gravitációs hullámok nyomában, Csillagászati hónap, Esztergom
- November 2016, Összeolvadó fekete lyukak nyomában, Náboj International Physics Competition, Budapest
- October 2016, Összeolvadó fekete lyukak nyomában, Uránia Csillagvizsgáló, Szolnok
- September 2016, Összeolvadó fekete lyukak nyomában, TIT Uránia Csillagvizsgáló, Budapest
- May 2016, GW150914: Elöször hallottuk az Univerzum rezgését, Geonap, Hungarian Academy of Sciences, Budapest
- March 2016, Elöször hallottuk az Univerzum rezgését, Apáczai Csere János Gimnázium, Budapest
- March 2016, Elöször hallottuk az Univerzum rezgését, Szent László Gimnázium, Budapest
- March 2016, Elöször hallottuk az Univerzum rezgését, Városi könyvtár, Jászberény
- March 2016, GW150914: Elöször hallottuk az Univerzum rezgését, Hungarian Astronomical Association, Polaris Csillagvizsgáló, Budapest
- January 2016, Interferométerekkel a gravitációs hullámok nyomában, Eötvös Collegium tehetségnap, Budapest
- November 2015, K2: Új bevetésen a bolygóvadász, Hungarian Astronomical Association, Polaris Csillagvizsgáló, Budapest
- July 2015, Exobolygók és a Kepler-ürtávcsö: a mikromagnitúdós forradalom, Bajai Csillagvizsgáló csillagászati tábora, Bakonybél

Television appearances

January 20, 2017	Spektrum, New Window to the Universe. Documentary about the GWs
May 17, 2016	MTV1, Tessék!. Topic: My research and career
March, 2016	24-es körzet TV. Topic: The first direct detection of GWs

Radio appearances

December 27, 2016	Kossuth rádió, Trend-idök. Topic: Laser Interferometer Space Antenna (LISA)
December 13, 2016	Kossuth rádió, Trend-idök. Topic: Start of the O2 observing run of LIGO
January 15, 2016	Kossuth rádió, Trend-idök. Topic: Expected interesting astronomical events in 2016
November 26, 2015	Kossuth rádió, Trend-idök. Topic: Discovery of a new, interesting exoplanet
December 5., 2014	Kossuth rádió, Tér-idö: a jövö kutatói. Topic: Young talented scientists

Conference and workshop participation

March 2017	LIGO-Virgo Collaboration Meeting, Pasadena, United States
November 2016	2nd ASTERICS VO School, Strasbourg, France
August 2016	LIGO-Virgo Collaboration Meeting, Glasgow, United Kingdom Presentation: Improved matching for future galaxy catalogs
May 2016	Euro-VO Meeting, Strasbourg, France Presentation: GLADE and its astrophysical applications
March 2016	LIGO-Virgo Collaboration Meeting, Pasadena, United States Presentation: GLADE: An extended list of galaxies for GW searches in the Adv. Det. era
October 2015	High-Precision Studies of RR Lyrae Stars, Visegrád, Hungary As a member of the Local Organizing Commitee (LOC)
September 2015	LIGO-Virgo Collaboration Meeting, Budapest, Hungary Presentation: An extended list of galaxies for GW searches in the Advanced Detector era Poster: Temporal Optimization of Advanced GW Detector Network Operations
August 2015	International Conference of Physics Students, Zagreb, Croatia Presentation: Discovery of (Sub)Stellar Companions Around Pulsating Stars
November 2014	Presentation at the Hungarian Academy of Sciences (InnoDiákok Fóruma)
August 2014	COSPAR Scientific Assembly, Moscow, Russia
December 2013	International Francqui Symposium, Brussels, Belgium
June 2012	Kepler Asteroseismic Science Consortium Fifth Workshop, Balatonalmádi, Hungary
March 2011	International Particle Physics Masterclass, Budapest

Competitions

May 2017	NYIFFF National Team Competition of Experimental Physics: *1st*
April 2017	National Scientific Research Competition, Debrecen Extragalactic Astrophysics section: *2nd*
December 2016	University Scientific Research Competition, Astronomy section: *1st*
December 2016	Ortvay Rudolf International Physics Competition: *honourable mention & special prize*
September 2016	NYIFFF National Team Competition of Experimental Physics: *2nd*
December 2015	Ortvay Rudolf International Physics Competition: *honourable mention*
September 2015	NYIFFF National Team Competition of Experimental Physics: *2nd*
May 2015	PLANCKS International Physics Team Competition, Leiden, The Netherlands: *special prize*
April 2015	National Scientific Research Competition, Kolozsvár Astrophysics section: *2nd*
December 2014	University Scientific Research Competition, Solid state physics section: *2nd*
December 2014	University Scientific Research Competition, Astronomy section: *1st*
May 2014	NYIFFF National Team Competition of Experimental Physics: *3rd*
May 2013	NYIFFF National Team Competition of Experimental Physics: *2nd*
August 2012	6th International Olympiad on Astronomy and Astrophysics Rio de Janeiro, Brasil: *Bronze medal*
April 2012	Kulin György National Astronomical Competition: *1st*
March 2012	Explore the High-Energy Universe Competition of ESA: *2nd*
August 2011	5th International Olympiad on Astronomy and Astrophysics Katowice, Poland: *Honorable mention*
February 2011	Szilárd Leó National Nuclear Physics Competition: *3rd*

Languages

Hungarian:	Mothertongue
English:	Proficient user: IELTS 8.0, CEFL C1
German:	Intermediate level

Computer Skills

Word processing:	LaTeX, Open Office, Microsoft Word
Operating systems:	Unix/Linux, MS Windows
Scientific programs:	MATLAB, Octave, Gnuplot, Period04, IRAF
Advanced programming knowledge in:	C, shell scripting, awk/gawk
Basic programming knowledge in:	C++, Python
Other:	Stellarium, InkScape

Teaching

- Teaching *Astronomical Observational Practices 3* for Physics and Earth Sciences BSc students at Eötvös Loránd University, Autumn 2016
- Teaching *Astronomical Observational Practices 4* for Physics and Earth Sciences BSc students at Eötvös Loránd University, Spring 2016, 2017
- Teaching *Big Questions of the Universe* for talented high school students at Milestone Institute, Autumn 2016
- Preparing teacher of the Hungarian team for the International Olympiad on Astronomy and Astrophysics since 2013
- Organizer and teacher at the astrophysical study group at Könyves Kálmán Gimnázium for high school students since 2014

- Official team leader of the Hungarian team at the 2nd Hungarian-Croatian-Slovenian Astronomical Olympiad in 2016 (Avber, Slovenia)
- Official team leader of the Hungarian team at the 1st Hungarian-Croatian-Slovenian Astronomical Olympiad in 2015 (Veránka, Hungary)

Interests and Activities

- Climbing, mountaineering: Base level rock climber exam (May 2015, Excelsior SE)
- Member of a Hungarian contemporary literature association Barátok Verslista since 2011
- History of central Europe and Hungary in the past century
- Programming
- Football
- Travelling
- Bridge