

Gergely DÁLYA

PERSONAL DATA

PLACE AND DATE OF BIRTH: Budapest, Hungary | 22 September 1993
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EDUCATION

2017- 2015 - 2017 PhD studies in ASTROPHYSICS, **Eötvös Loránd University**, Budapest
2015 - 2017 Master studies in PHYSICS, **Eötvös Loránd University**, Budapest
Thesis: Development of a galaxy catalog and its application in identifying host galaxies of electromagnetic and gravitational-wave transients
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

April 2017 Certificate of Merit from the Ministry of Human Resources for successful preparation of the Hungarian team for the International Olympiad on Astronomy & Astrophysics
August 2016 New National Excellence Program
July 2016 Scholarship for the undergraduate summer student program of the University 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

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|-----------|--|
| Current | Creating a value-added full-sky catalog of galaxies to support EM Follow-up efforts of the LIGO Collaboration |
| 2014- | <i>Eötvös Loránd University, supervisor: Péter Raffai</i>
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
<i>Konkoly Observatory, supervisor: Róbert Szabó</i>
Using the ultra-precise <i>Kepler</i> 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.
<i>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.</i> |
| 2012-2013 | Discovering other planets or exomoons in systems containing hot Jupiters
<i>Konkoly Observatory, supervisor: Róbert Szabó</i>
We investigated hot Jupiters in the <i>Kepler</i> sample in order to detect transit timing variation, which can betray the presence of other planets in the system or exomoon companions.
<i>Szabó, R., Szabó, Gy. M., Dályá, G. et al.: A&A 553, A17, 2013, 23 citations</i> |
| 2012 | Minor planet searching
<i>Konkoly Observatory, Piskéztető Mountain Station, supervisor: Krisztián Sárneczky</i>
I operated the 1-m RCC telescope for one week searching minor planets.
<i>Sárneczky, K., Csák, B., Dályá, G. et al.: Minor Planet Circular 80462, 2, 2012</i> |
| 2013-2014 | Investigation of the formation of fractal structure in single crystals after elongation
<i>Eötvös Loránd University, supervisor: Péter Dusán Ispánovity</i>
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.
<i>The project led to second prize in the solid state physics section of the university's Scientific Research Competition.</i> |

PUBLICATIONS, OUTREACH TALKS AND MEDIA APPEARANCES

Publications I made significant contributions to

6. LIGO Scientific Collaboration, Virgo Collaboration, ..., **G. Dályá**, ... et al.: A gravitational-wave standard siren measurement of the Hubble constant, *Nature*, 2017, Volume 551, issue 7678, pp. 85-88, **26 citations**
5. LIGO Scientific Collaboration, Virgo Collaboration, ..., **G. Dályá**, ... 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, *Astrophysical*

Journal, 2017, Volume 841, Issue 89, **9 citations**

4. Á. Szölgvény, **G. Dály**a, 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
3. **G. Dály**a, Z. Frei, G. Galgóczi, et al.: VizieR Online Data Catalog: GLADE catalog, 2016, **8 citations**
2. R. Szabó, M. Gy. Szabó, **G. Dály**a, et al.: Multiple planets or exomoons in Kepler hot Jupiter systems with transit timing variations?, *Astronomy & Astrophysics*, 2013, Volume 553, id. A17, 10 pp., **33 citations**
1. K. Sárneczky, B. Csák, **G. Dály**a, et al.: Minor Planet Observations [461 University of Szeged, Piszkesteto Stn. (Konkoly)], *Minor Planet Circular*, 2012, No. 80462, 2

Publications as a member of LSC

12. LIGO Scientific Collaboration, Virgo Collaboration, ..., **G. Dály**a, ... et al.: Search for Post-merger Gravitational Waves from the Remnant of the Binary Neutron Star Merger GW170817, *Astrophysical Journal Letters*, 2017, Volume 851, issue 1, id. L16, 13 pp.
11. LIGO Scientific Collaboration, Virgo Collaboration, ..., **G. Dály**a, ... et al.: On the Progenitor of Binary Neutron Star Merger GW170817, *Astrophysical Journal Letters*, 2017, Volume 850, issue 2, id. L40, 18 pp., **4 citations**
10. LIGO Scientific Collaboration, Virgo Collaboration, ..., **G. Dály**a, ... et al.: Estimating the Contribution of Dynamical Ejecta in the Kilonova Associated with GW170817, *Astrophysical Journal Letters*, 2017, Volume 850, issue 2, id. L39, 13 pp.
9. LIGO Scientific Collaboration, Virgo Collaboration, ..., **G. Dály**a, ... et al.: Search for High-energy Neutrinos from Binary Neutron Star Merger GW170817 with ANTARES, IceCube, and the Pierre Auger Observatory, *Astrophysical Journal Letters*, 2017, Volume 850, issue 2, id. L35, 18 pp., **2 citations**
8. LIGO Scientific Collaboration, Virgo Collaboration, ..., **G. Dály**a, ... et al.: GW170608: Observation of a 19-solar-mass Binary Black Hole Coalescence, **10 citations**
7. LIGO Scientific Collaboration, Virgo Collaboration, ..., **G. Dály**a, ... et al.: GW170817: Observation of Gravitational Waves from a Binary Neutron Star Inspiral, *Physical Review Letters*, Volume 119, issue 16, id. 161101, **191 citations**
6. LIGO Scientific Collaboration, Virgo Collaboration, ..., **G. Dály**a, ... et al.: Search for post-merger gravitational waves from the remnant of the binary neutron star merger GW170817, **7 citations**
5. LIGO Scientific Collaboration, Virgo Collaboration, ..., **G. Dály**a, ... et al.: GW170817: Implications for the Stochastic Gravitational-Wave Background from Compact Binary Coalescences, **2 citations**
4. LIGO Scientific Collaboration, Virgo Collaboration, ..., **G. Dály**a, ... et al.: First narrow-band search for continuous gravitational waves from known pulsars in advanced detector data
3. LIGO Scientific Collaboration, Virgo Collaboration, ..., **G. Dály**a, ... et al.: Gravitational Waves and Gamma-Rays from a Binary Neutron Star Merger: GW170817 and GRB 170817A, *Astrophysical Journal Letters*, 2017, Volume 848, issue 2, id. L13, 27 pp., **72 citations**
2. LIGO Scientific Collaboration, Virgo Collaboration, ..., **G. Dály**a, ... et al.: Multimessenger Observations of a Binary Neutron Star Merger, *Astrophysical Journal Letters*, 2017, Volume 848, issue 2, id. L12, 59 pp., **80 citations**

1. LIGO Scientific Collaboration, Virgo Collaboration, ..., **G. Dály**, ... et al.: GW170814: A three-detector observation of gravitational waves from a binary black hole coalescence, Physical Review Letters, 2017, Volume 119, issue 14, id. 141101, **97 citations**

Book chapters published

- **G. Dály**, B. Bécsy: A gravitációs asztrofizika megszületése, In: Meteor Csillagászati Évkönyv 2018, Magyar Csillagászati Egyesület, pp. 261-276, 2018

Books ante hoc fact-checked and proofread

- Zs. Fejes: Csillagfény mellett, 2017, ISBN: 978-963-12-9647-1

Public outreach publications in Hungarian

- B. Bécsy, **G. Dály**, P. Raffai: Összeütköző neutroncsillagok – a többcsatornás csillagászat forradalma, Meteor, 2017, 47. évf, 12. sz.
- **G. Dály**, B. Bécsy, P. Raffai: GW150914: először hallottuk az Univerzum zenéjét, Meteor, 2016, 46. évf. 3. sz.
- B. Bécsy, **G. Dály**, P. Raffai: Interferométerekkel a gravitációs hullámok nyomában, Természet Világa, 2016, 147. évf. 3. sz.
- **G. Dály**, O. Hanyecz, R. Szabó: Kisbolygóvadászat Kepler-úrtávcsővel, Természet Világa, 2015, 146. évf. 11. sz.
- **G. Dály**, O. Hanyecz, R. Szabó: Új feladat vár a bolygóvadászra, Természet Világa, 2014, 145. évf. 4. sz.

Public outreach talks given in Hungarian

- DECEMBER 2017, IOAA 2017 élménybeszámoló, Városi könyvtár, Jászberény
- SEPTEMBER 2017, Többcsatornás csillagászat - az asztrofizika új érzékszervei, Kutatók éjszakája, Uránia Csillagvizsgáló, Szolnok
- SEPTEMBER 2017, Többcsatornás csillagászat - az asztrofizika új érzékszervei, Kutatók éjszakája, Városi könyvtár, Jászberény
- 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, Kutatók éjszakája, Uránia Csillagvizsgáló, Szolnok
- SEPTEMBER 2016, Összeolvadó fekete lyukak nyomában, TIT Uránia Csillagvizsgáló, Budapest
- MAY 2016, GW150914: Először hallottuk az Univerzum rezgését, Geonap, Hungarian Academy of Sciences, Budapest
- MARCH 2016, Először hallottuk az Univerzum rezgését, Apáczai Csere János Gimnázium, Budapest
- MARCH 2016, Először hallottuk az Univerzum rezgését, Szent László Gimnázium, Budapest

- MARCH 2016, Először hallottuk az Univerzum rezgését, Városi könyvtár, Jászberény
- MARCH 2016, GW150914: Először hallottuk az Univerzum rezgését, Hungarian Astronomical Association, Polaris Csillagvizsgáló, Budapest
- JANUARY 2016, Interferométerekkel a gravitációs hullámok nyomában, Eötvös Collegium tehetsége nap, Budapest
- NOVEMBER 2015, K2: Új bevetésen a bolygóvadász, Hungarian Astronomical Association, Polaris Csillagvizsgáló, Budapest
- JULY 2015, Exobolygók és a Kepler-úrtávcső: a mikromagnitúdós forradalom, Bajai Csillagvizsgáló csillagászati tábora, Bakonybél

Television appearances

- NOVEMBER 3, 2017 MTV5, Magyar Tudomány Ünnepe. Topic: GW170817 discovery
 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 7, 2017 Kossuth rádió, Trend-idők. Topic: Hungarian participation on the 11th IOAA
 OCTOBER 18, 2017 Hitrádió, Középpont, live. Topic: GW170817
 OCTOBER 17, 2017 Kossuth rádió, Trend-idők. Topic: GW170817
 DECEMBER 27, 2016 Kossuth rádió, Trend-idők. Topic: Laser Interferometer Space Antenna (LISA)
 DECEMBER 13, 2016 Kossuth rádió, Trend-idők. Topic: Start of the O2 observing run of LIGO
 JUNE, 2016 Kossuth rádió, Trend-idők. Topic: GW151226
 JANUARY 15, 2016 Kossuth rádió, Trend-idők. Topic: Expected interesting astronomical events in 2016
 NOVEMBER 26, 2015 Kossuth rádió, Trend-idők. Topic: Discovery of a new, interesting exoplanet
 DECEMBER 5., 2014 Kossuth rádió, Tér-idő: a jövő kutatói. Topic: Young talented scientists

CONFERENCE AND WORKSHOP PARTICIPATION

SEPTEMBER 2017	IMPRS Summer School on Compact Objects & Gravitational waves, Heidelberg, Germany
AUGUST 2017	LIGO-Virgo Collaboration Meeting, CERN, Geneva, Switzerland Poster: GWsky towards O3: tiling, source localisations and visibility
MARCH 2017	LIGO-Virgo Collaboration Meeting, Pasadena, United States
NOVEMBER 2016	2 nd 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 Committee (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: <i>1st</i>
APRIL 2017	National Scientific Research Competition, Debrecen Extragalactic Astrophysics section: <i>2nd</i>
DECEMBER 2016	University Scientific Research Competition, Astronomy section: <i>1st</i>
DECEMBER 2016	Ortvay Rudolf International Physics Competition: <i>honourable mention & special prize</i>
SEPTEMBER 2016	NYIFFF National Team Competition of Experimental Physics: <i>2nd</i>
DECEMBER 2015	Ortvay Rudolf International Physics Competition: <i>honourable mention</i>
SEPTEMBER 2015	NYIFFF National Team Competition of Experimental Physics: <i>2nd</i>
MAY 2015	PLANCKS International Physics Team Competition, Leiden, The Netherlands: <i>special prize</i>
APRIL 2015	National Scientific Research Competition, Kolozsvár Astrophysics section: <i>2nd</i>
DECEMBER 2014	University Scientific Research Competition, Solid state physics section: <i>2nd</i>
DECEMBER 2014	University Scientific Research Competition, Astronomy section: <i>1st</i>
MAY 2014	NYIFFF National Team Competition of Experimental Physics: <i>3rd</i>
MAY 2013	NYIFFF National Team Competition of Experimental Physics: <i>2nd</i>
AUGUST 2012	6 th International Olympiad on Astronomy and Astrophysics Rio de Janeiro, Brasil: <i>Bronze medal</i>
APRIL 2012	Kulin György National Astronomical Competition: <i>1st</i>
MARCH 2012	Explore the High-Energy Universe Competition of ESA: <i>2nd</i>
AUGUST 2011	5 th International Olympiad on Astronomy and Astrophysics Katowice, Poland: <i>Honorable mention</i>
FEBRUARY 2011	Szilárd Leó National Nuclear Physics Competition: <i>3rd</i>

LANGUAGES

HUNGARIAN: Mothertongue
ENGLISH: Proficient user: IELTS 8.0, CEFL C1
GERMAN: Intermediate level

COMPUTER SKILLS

Word processing: L^AT_EX, 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, 2017
- 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
- **11th International Olympiad on Astronomy and Astrophysics**, 2017, Phuket, Thailand: **observer** of the Hungarian team
- **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