

CURRICULUM VITAE

EDUCATION

- **PhD student in astrophysics** **2015-2018**
South African Astronomical Observatory (SAAO) - University of Cape Town (UCT)
Advisors: Prof. Shazrene Mohamed and Prof. Patricia Whitelock
Thesis title: *Multi-wavelength studies of classical novae*
- **MSc. in astrophysics** **2011-2014**
Notre Dame University and Université Saint-Joseph (Lebanon)
Advisor: Prof. Marwan Gebran
Thesis title: *Automated procedure to derive fundamental parameters of B and A star.*
(simultaneously working as a full-time high school teacher, see Section experience for more details).
- **BSc. in physics** **2007-2011**
Lebanese University, Faculty of Sciences

EXPERIENCE

- **Postdoctoral research associate** **2018-present**
Michigan State University (MSU)
Advisor: Prof. Laura Chomiuk
- **Supervising undergraduate students** **2018-present**
Michigan State University (MSU):
 - Supervising student A. Gordon.
Paper submitted to ApJ: “Investigating hard X-ray emission from classical novae”.
 - Supervising student J. Leahy-McGregor
Paper in prep: “The spectro-photometric evolution of the peculiar nova ASASSN-17hx”.
 - Supervising undergraduate students in the MSU observers’ group which aims to train students to observe at the MSU campus observatory.
- **Physics lab instructor** **2014-2015**
Notre Dame University – Lebanon
2nd and 3rd year mechanical and electrical engineering lab courses.
- **Physics and mathematics teacher** **2010-2014**
Collège National Orthodox (high school)
 - Teaching physics and mathematics for Grade 7, 8, 9, 10, 11 (*typical class size of 30 students*).
 - Designing lectures of physics and mathematics for the same grades.

AWARDS AND PRESS RELEASES

- **NASA/MSU press release** **April 2020**
NASA missions reveal help reveal the power of shock waves in a nova explosion
<https://www.nasa.gov/feature/goddard/2020/nasa-missions-help-reveal-the-power-of-shock-waves-in-a-nova-explosion/>
- **SAAO/SALT press release** **October 2017**
Discovery of one of the most luminous eruptions from a dying star: SALT contributes to a major international multi-wavelength effort led by South Africa.
<https://astronomy.com/news/2017/10/bright-nova-spotted>
- **People choice overall winner at the Three Minutes Thesis competition** **February 2017**
University of Cape Town
- **3rd place best talk in astronomy at the SA Institute of Physics conference** **July 2016**
University of Cape Town

AWARDED TELESCOPE TIME AND GRANTS:

- PI on Fermi cycle 13 joint Fermi/NOAO/NRAO proposal (awarded grant + telescope time on VLA and Gemini)
- PI on Swift cycle 16 proposal (awarded grant + telescope time)
- PI on CHARA proposals for semesters 2019B, 2020A, 2020B (awarded time) – proposed for semesters 2021A and 2021B.
- PI on Gemini proposal for semester 2019B (awarded time).
- PI on TRES proposal for semesters 2019B, 2020A, 2020B (awarded time).
- Co-I on NuSTAR cycle 4 and 5 proposal (awarded grant + telescope time).
- Co-I on ALMA cycle 7 proposal (awarded time).
- Co-I on VLA/VLBA proposals 2019A, 2019B, 2020A, and 2020 B. (awarded time). PI for VLBA proposals 2021A and 2021B.
- Co-I on SALT large transient program and PI of nova follow up under this program for years 2016, 2017, 2018, 2019, 2020, and 2021 (awarded time).
- Co-I on XMM-Newton AO-18 (awarded time).

MAJOR SCIENTIFIC PUBLICATIONS

- A. C. Gordon, **E. Aydi**, K. L. Page, et al. arXiv, 2010, 15930
- **E. Aydi**, L. Chomiuk, L. Izzo, et al. 2020, arXiv, 2010, 07481
- **E. Aydi**, K. Sokolovsky, L. Chomiuk, Nat Ast, 4, 766
- **E. Aydi**, L. Chomiuk, J. Strader, et al. 2019, arXiv, 1903.09232
- **E. Aydi**, M. Orío, A. P. Beardmore, et al. 2018, MNRAS, 480, 572
- **E. Aydi**, K. L. Page, N. P. M. Kuin, et al. 2018 MNRAS, 474, 2679
- **E. Aydi**, P. Mroz, P. Whitelock, et al. 2016 MNRAS, 461, 1529

Check me on ADS: http://cdsads.u-strasbg.fr/cgi-bin/basic_connect?qsearch=Elias+Aydi&version=1

TIME ALLOCATION COMMITTEES

Served on several time allocation committees for NASA:

- NASA ADAP 2020
- NASA Chandra cycle 22, 2020
- NASA Fermi cycle 12, 2019.
- NASA TESS cycle 2, 2019.

SKILLS

Observational and data reduction skills:

- Optical observations on the Southern Astrophysical Research Telescope (SOAR; ~ 200 hours).
- JHK observations on the 1.4 m infra-red survey facility at the SAAO, Sutherland (~ 200 hours).
- 1-week training on the Southern African Large Telescope (SALT).
- Data reduction and analysis of a variety of data from several facilities across the multi-wavelength spectrum.

Computational and modelling skills:

- Computer programming: C/C++, Python, Unix Shell scripts, Java. .
- Parallel programming packages: MPI, openMP.
- TEX, Microsoft office, and most common packages in Linux and Microsoft.
- Smoothed Particle hydrodynamics (SPH) based codes and grid-based codes for fluid dynamics.

RECENT CONFERENCES AND WORKSHOPS

- AAS 235 special session: “Transient science with TESS”
Talk: Novae with TESS – exploring a new parameter space
- Compact white dwarf binaries, September 2019, Yerevan, Armenia
Talk: *Investigating flaring novae (invited talk)*
- Stars and their variability, August 2019, Vienna, Austria
Talk: *Nova Carinae 2018 – a first in many respects (invited talk)*
- Midwest workshop on supernovae and transients, March 2019, Chicago, USA
Talk: *A “shock” to the system – classical novae emitting gamma-rays*
- Advances with SALT conference, November 2018, Pretoria, SA
Talk: *SALT – an ultimate machine to study novae*
- COSPAR 42nd assembly, July 2018, Pasadena, USA
Talk: *multiwavelength studies of the two remarkable novae SMC 2016 & V407 Lup*
- Physics of evolved stars conference, July 2017, Nice, France:
Talk: *3D models of the outflow of evolved stars: Formation of multiple spiral structures*
- COASTARS 2017, June 2017, Gothenburg, Sweden:
Talk: *3D models of the outflow of evolved stars: formation of multiple spiral structures*

SCIENCE ENGAGEMENT

- Organizing regular public events at the MSU observatory, which involve public viewing, activities for kids and adults, short talks, and engagement with the public.
- Engaging in public outreach activities in Michigan, including public talks, public viewing, astronomy activities for kids, such as:
 - Presenting multiple public talks at the Abram's planetarium.
 - Presenting multiple public talks at the MSU science festival.
 - Presenting multiple public talks at AoT Lansing.
 - Giving a series of virtual activities and talks to 4-H programs across Michigan.
- Running public open nights at the SAAO, Cape Town, twice a month for 3 years and giving public talks during these events, as well as public tours of the historical at the site.
- Organizing public outreach activities in Cape Town during major astronomical events (e.g. eclipses, transits, meteor showers).
- in public tours of the telescopes at the SAAO, Sutherland observatory.
- Launching the first Lebanese YouTube and Facebook channel that communicate astronomy to the public using Lebanese language (April 2017). I post weekly short-podcasts discussing a wide range of topics in astronomy. The channel "Lebanese Astro-Podcast" has thousands of followers on Facebook and has been featured on Lebanese TV channels several times.

Languages:

Fluent in English, French, and Arabic (native language).

Professional references

- **Prof. Laura Chomiuk**
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- **Prof. Krzysztof Stanek**
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