Attila Juhasz

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EDUCATION

Walter Johnson High School, *Bethesda, MD, Class of 2027*

- GPA: *4.84/4.00* | SAT: *1510 (790 Math)*
- Relevant Coursework: Multivariable Calculus, Differential Equations, AP Calculus BC, AP Physics C Mechanics and E&M, AP Chemistry, AP Computer Science A

Montgomery College, *Dual Enrollment*

- Introduction to Astronomy, Computer Concepts

RESEARCH EXPERIENCE

Caltech Optical Observatories, *Pasadena, CA* *June – August 2026*
Summer Research Assistant | Intern

- Worked with Drs. Richard Dekany, Nemanja Jovanovic, and Daniel Echeverri on HISPEC, a next-generation high-resolution infrared spectrograph for exoplanet detection/characterization
- Tested fiber routing switch throughput and measured fiber coupling efficiencies; analyzed mirror responses/FFTs; debugged Xeryon stage baud rate issues; installed/soldered cryostat PCBs/sensors/heaters, & built Grafana gauges for power/temperature data
- Coauthored paper: Jovanovic, N., ... Juhasz, A., et al. (2026) "Updates on the Full-Scale Development of the Fiber Delivery Subsystem (FIB) of Keck/HISPEC" SPIE

Laboratory for Physical Sciences, *College Park, MD* *June – August 2025*
Summer Research Intern

- Worked with Drs. Joyce Coppock and Bruce Kane to study levitated gold nanoparticles behavior when exposed to gasses and to create reliable trapping/injection & deposition methods to measure effects
- Prepared Au nanoparticle suspensions (centrifugation, serial dilution) for electrospray injection; utilized syringe-pump electrospray and AC quadrupole ion trap; measured charge-to-mass ratio (q/m) via motional resonances

PERSONAL PROJECTS

1.42 GHz Radio Telescope

- Developed/built radio telescope using CAD, 3D-printed parts, Low-Noise Amplifier, and Arduino-controlled electronics to map the Milky Way 21cm hydrogen-line; coded script that takes radio signal and plots it on a frequency intensity map to visualize hydrogen-line emission as Milky Way passes overhead

GalacticBulletin.com, *Founder and Writer of Blog*

- Write blogs about the mysteries of space and the projects I build to explore it; reached ~18k views

Gravitational Wave Classification

- Built ML pipeline to classify LIGO/Virgo data using Radom Forests, FTTs, and spectral features

Exoplanet Habitability Predictor

- Developed ML model using 320 Random Forest decision trees to predict exoplanet habitability from planetary and stellar parameters

SKILLS

Language: Hungarian (fluent)
Computer: Python, Java, MATLAB, Fusion 360, Arduino, HTML, CSS, and PixInsight
Interests: Deep-space Astrophotography, Radio Astronomy, Optics, 3D Chess, Formula 1, and Soccer