



LSST Discovery Alliance members meeting, 14.02.2024

“Intermediate Python for Astronomical
Software Development Workshop”
aka
TVS SC InterPython

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LSST Transient and Variable Sky Science Collaboration

The Carpentries workshops

- [The Carpentries](#) is a community of the developers, instructors and maintainers of the **free workshops on software development and data science for researchers** and people working in libraries.
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- An '[Intermediate Research Software Development](#)' Carpentries Incubator workshop was organized by the TVS Science Collaboration in 2022, gathering ~40 participants.
- In the following months, the TVS SC Software Task Force came up with the idea of **adapting the original workshop to the astronomers' and in particular LSST's needs.**
- The LSST DA Inclusive Collaboration initiative provided the organizers of the workshop with a \$7,500 grant for honorariums to the materials developers and workshop instructors.

The 'InterPython' workshop: Programme

- **Day 1:** Git and GitHub basics, Virtual environments, IDE Jupyter Lab, Jupyter Lab best practices, Code style, Linters
- **Day 2:** Unit testing, GitHub Continuous Integration, Debugging, Test Driven Development, Defensive programming
- **Day 3:** Software requirements, Software design, Programming paradigms, Functional programming paradigm, Object-Oriented Programming
- **Day 4:** Code reviewing using GitHub, Code packaging, Software documentation basics
- **Day 5:** Project management with GitHub, Issues, Milestones.

The 'InterPython' workshop: Overview

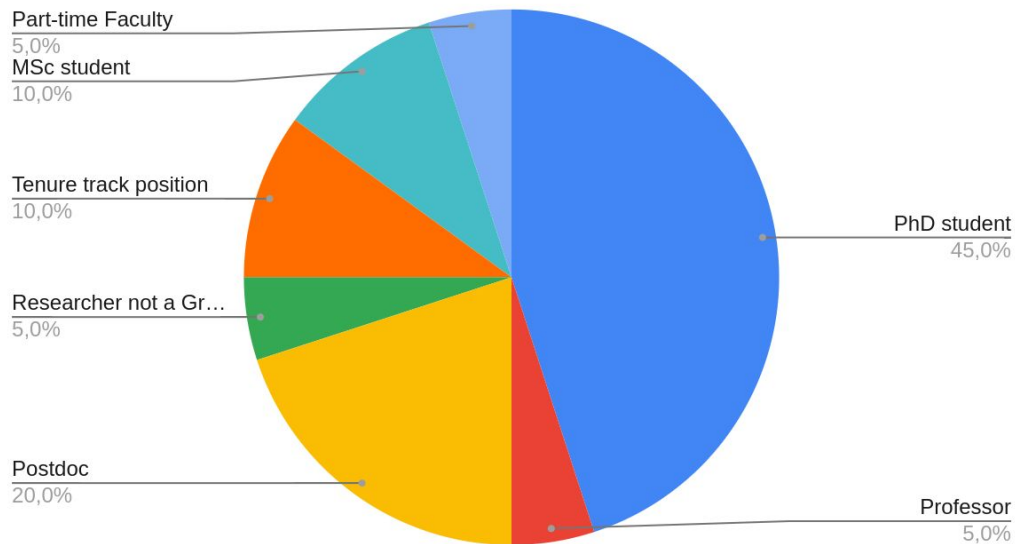
- 05-09.02.2024, 4 hours per day, 4-people core instructors' team, 3 more occasional instructors
- Implemented changes:
 - PyCharm -> Jupyter Lab;
 - More about best practices;
 - Less formal and scary software requirements episodes;
 - 'Inflammation patients' code examples -> LSST DP0 light curves analysis;
 - More accent on data analysis.
- Planned changes:
 - Add project template example (using LINCC project template);
 - More on documenting the software;
 - Add a checklist/routine recommendations for developing software without a team.
 - Experiment with the workshop format.

The 'InterPython' workshop team: Developers, instructors and consultants

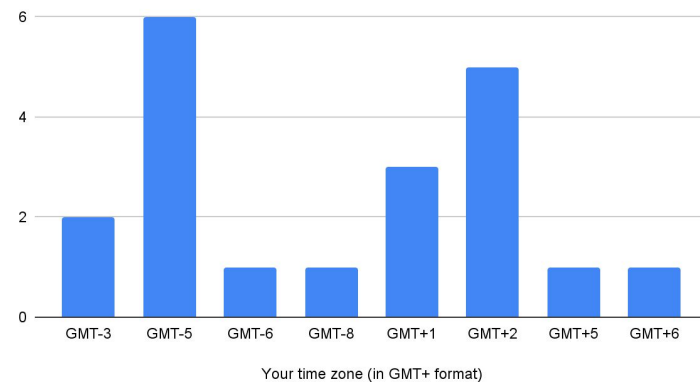
- **Alex Razim**, Ruder Boscovic Institute, Zagreb, Croatia
- **Markus Hundertmark**, Astronomisches Rechen-Institut, Heidelberg, Germany
- **Riley Clarke**, University of Delaware, USA
- **Angelica Kovacevic**, University of Belgrade, Serbia
- **Konstantin Malanchev**, Carnegie Mellon University/LINCC, Pittsburgh, USA
- **Jennifer Sobeck**, The California Institute of Technology, USA,
- **Rachel Street**, Las Cumbres Observatory, USA
- **Federica Bianco**, University of Delaware, USA
- **Jeremy Kubica**, Carnegie Mellon University/LINCC, Pittsburgh, USA
- **Michael Stroh**, Northwestern University, USA

The 'InterPython' workshop: demographics

Participants' career stages



Participants' time zones



Future plans

- Improve workshop's structure and content, 'rebalance' topics
- Organize at least one more workshop for the whole LSST community
- Consider organizing more narrow-subject workshops in this format (Data Visualization, High-Performance Computation/Code optimization)