

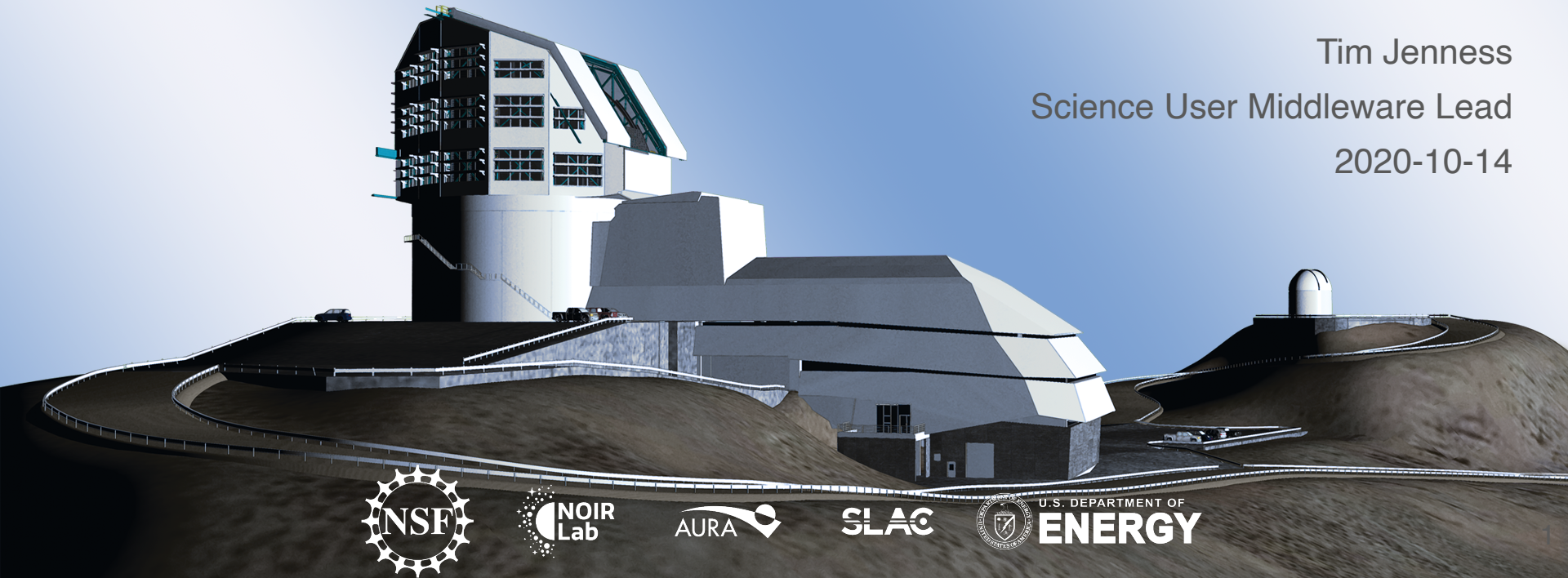
Rubin Observatory

Developing Rubin Software

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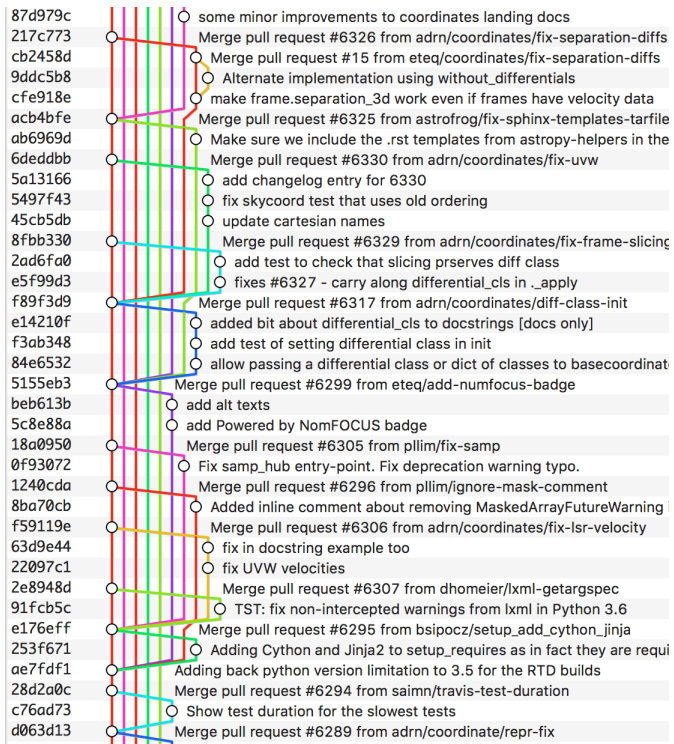


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- Developer Guide is source of truth (<https://developer.lsst.io>)
 - Has the coding style
 - Describes the development process.
- For a concise overview of the development process see 2018 SPIE paper:
 - [Document-28452](#)
 - aka [doi:10.1117/12.2312157](https://doi.org/10.1117/12.2312157)

- Python ≥ 3.7 (3.8 soon) and C++14.
- Manage work through Jira with bugs, stories, and epics.
- Git repositories on GitHub in two organizations ([lsst](#), and [lsst-dm](#)).
- All work is done on branches named after the Jira ticket (`tickets/DM-1234`).
- All code must be reviewed by at least one person (some exceptions).
- Reviews done on GitHub pull requests but approved on Jira
- We use master as our deployment branch.
- Ticket branches are rebased before merging to master.

Why do we rebase?



All	Local	"master"
Short SHA	Subject	
91bfccb	w.2018.11	Merge branch 'tickets/DM-13655'
1d5fd08	tickets/DM-13655	origin/tickets/DM-13655 Phase out pex::exceptions::MemoryError.
c8ca3e2		Merge branch 'tickets/DM-13788'
6413135	tickets/DM-13788	origin/tickets/DM-13788 remove dependency on DbTsvStorage
62bd50a		remove dbStorage use from ExposureFormatter
fbf2208		Merge pull request #328 from lsst/tickets/DM-13750
c4da012	tickets/DM-13750	origin/tickets/DM-13750 Move BaseRecord.__str__ implementation to C++.
c2958ee		Merge branch 'tickets/DM-13129'
cf3c4ef	tickets/DM-13129	origin/tickets/DM-13129 Stop trying to set None value if default unknown
2e4184d	v15.0.rc1	w.2018.10 Merge branch 'tickets/DM-13680'
0dae580	tickets/DM-13680	origin/tickets/DM-13680 Test the SkyWcs(FrameDict) constructor
ad45ac6		Update test_skyWcs.py to test TAN-SIP persistence
03b8c38		Add bbox arg to SkyWcsBaseTestCase.checkPersistence
a6b0709		Merge branch 'tickets/DM-13534'
bf9fc95	tickets/DM-13534	origin/tickets/DM-13534 Remove unnecessary NumPy C API usage.
af69380		Fix array template parameters.
d12f74c		Rewrite customization of Angle column conversions.
19103d3	w.2018.09	Merge branch 'tickets/DM-10411'
4f3b790	tickets/DM-10411	origin/tickets/DM-10411 Remove special TIMESYS handling in readFitsWcs
0115757		Merge branch 'tickets/DM-12447'
607a0d2	tickets/DM-12447	origin/tickets/DM-12447 Update cameraGeom.dox for new API
b16a45d		Implement RFC-392: Camera & Detector API changes
6b2845b		Fix doxygen warning in camera.py
055735b		Clang-format detector.cc

- eups is an environment manager used by Science Pipelines developers.
- Don't panic!
- Like git, a few commands will take you a long way:
 - `eups list lsst_distrib`
 - `setup lsst_distrib`
 - `cd $MY_WORK_DIR`
 - `setup -k -r .`
 - `scons -j4`

- Use CI integration with GitHub (migrating from Travis to GitHub Actions)
 - Run `flake8` tool to ensure style compliance.
 - Can also do other checks if required (eg run `mypy`).
 - Enable branch protections to require that branches are up to date before merging. (never hit the “update branch” button on GitHub!).
- Use Jenkins for integration/unit testing.
 - Use `pytest` as the test runner (but `unittest` for tests themselves).
 - [ci.lsst.codes](#) lists all the options. `stack-os-matrix` is the common one for testing science pipelines.
 - Must pass before merging branch. (usually `lsst_distrib + lsst_ci` for science pipelines).

