VERA C. RUBIN OBSERVATORY

EPO's Rubin Component Library

Why we made it and how it could maybe help you too

NSF AURA U.S. DEPARTMENT OF ENERGY SLAC CHARLES AND LISA SIMONYI FUND FOR ARTS AND SCIENCES LSST CORPORATION

Developers?

Have an application you'd like to make a little more Rubin-y

Who is in our audience?

Looking for a talk you could check emails in?

Do you have developers on your team?

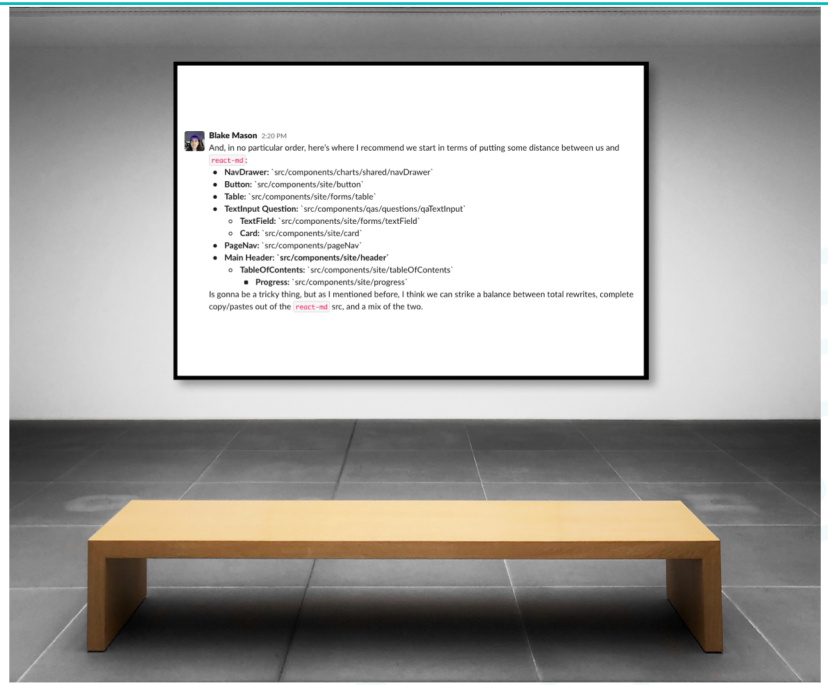
What is EPO’s Rubin component library?

A modular library for rapid application development

- Developed for React applications.
- Primitive components, complex layouts, styling utilities, and astronomy widgets.
- One-stop dependency to bootstrap a Rubin Observatory branded project.

Why did we decide to make it?

- At the end of FY2022, EPO planned development of multiple projects in FY2023
  - Summit Status Dashboard
  - Classroom Investigations 2.0
  - Ongoing rubinobservatory.org improvements
- Existing projects had fragmented dependencies and styling. Some UI libraries were at end of support.
- Large number of branded component primitives were developed for rubinobservatory.org



"EPO React Library, origins"
December 20, 2021
medium: Slack

Aren’t there already libraries out there you could use?

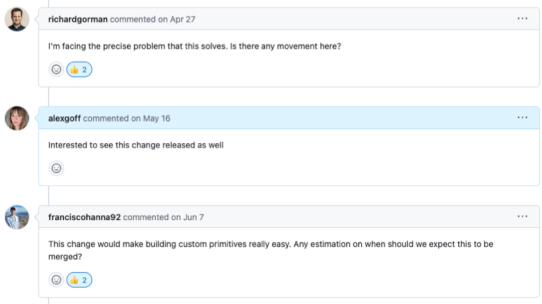
You just have to re-style the components yourself

…and live with importing all their other code you don't use…

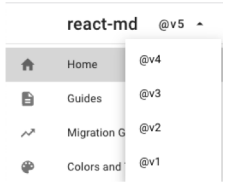
…and hope the styles don't change…

…and make sure the library has accessible features for each component…

…and wait for maintainers to resolve issues…



…and that you won't get left behind on the next big version…



Is it useful?

- New projects have an entire suite of components with 0 setup time
- More complex layouts benefit from the baseline accessibility provided by library components
- Vendors can be handed libraries and begin development of Rubin-branded applications
- Projects receive unified styling

Should I make my own library too?


maybe!

Ingredients

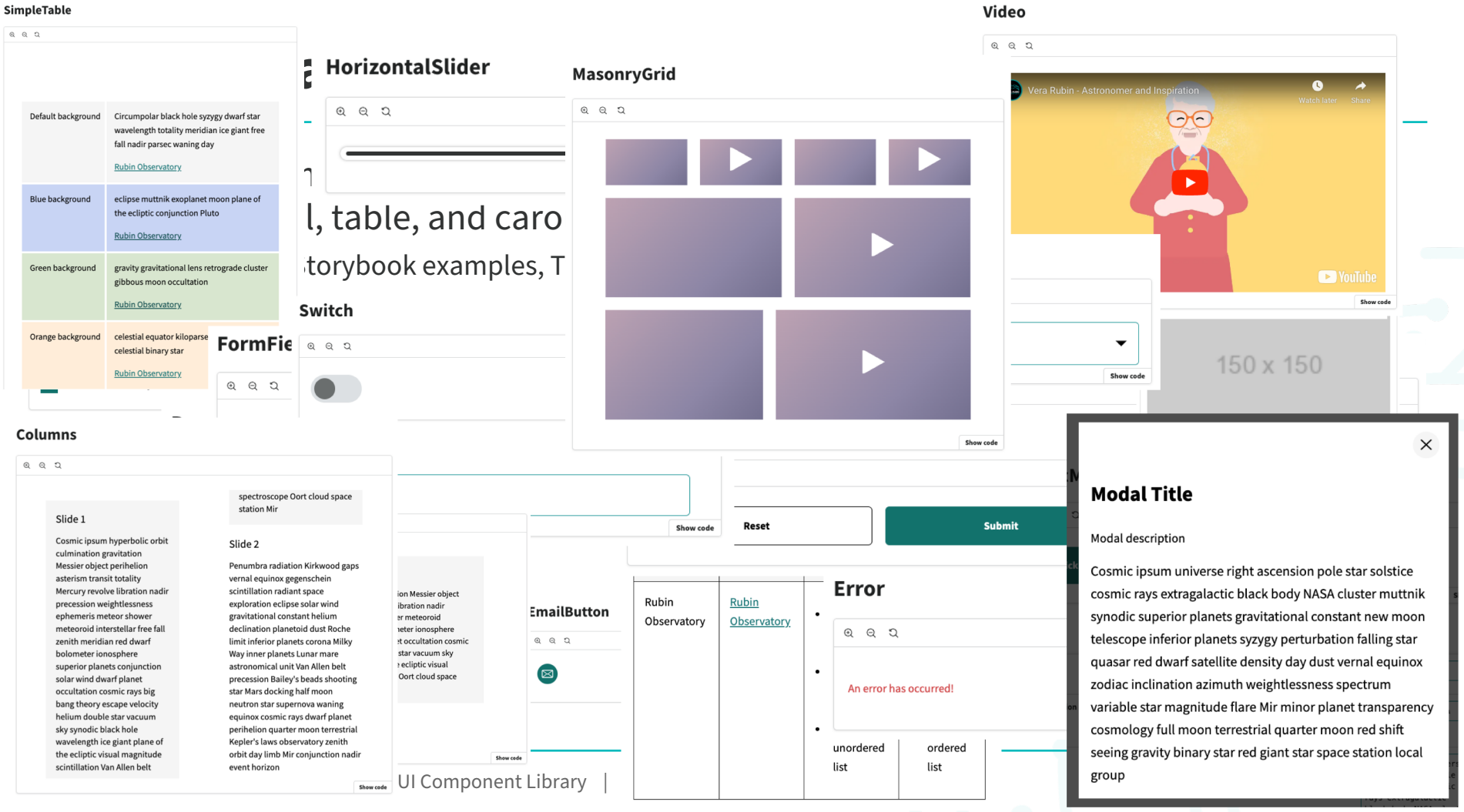
- React
- TypeScript
  - Generating type interfaces for libraries is useful even if it's used in JavaScript projects, IDE's will still type-hint.
  - Using TypeScript libraries is also a great starting point for converting projects to TypeScript.
- styled-components
  - CSS-in-JS solution that can easily style and restyle primitive components.
- Storybook 7
  - Display components in a React sandbox
- Jest
  - Write unit tests for each story
- Vite
  - Quick bundling tool
  - Try out Turborepo, tell us how it is

Recipe

- Identify any reusable atomic/primitive components as a starting point
  - button, link, image
  - Make primitives especially very re-styleable, they are your building blocks!
- Develop components in Storybook
  - make use of addons to test responsiveness, accessibility, themes, unit tests
- Build more complex components using your primitives
- Bundle into a single module, or a module for each component (or both)
- Release as a package and version, version, version
- Optional: Structure your repository as a monorepo and add new packages to your project.

That’s a bit of work… should I use yours?


absolutely!!!


SimpleTable
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Rubin Observatory
Blue background
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Green background
gravity gravitational lens retrograde cluster gibbous moon occultation
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Watch later
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Columns
Slide 1
Cosmic ipsum hyperbolic orbit culmination gravitation Messier object perihelion asterism transit totality Mercury revolve libration nadir precession weightlessness ephemeris meteor shower meteoroid interstellar free fall zenith meridian red dwarf bolometer ionosphere superior planets conjunction solar wind dwarf planet occultation cosmic rays big bang theory escape velocity helium double star vacuum sky synodic black hole wavelength ice giant plane of the ecliptic visual magnitude scintillation Van Allen belt
spectroscope Oort cloud space station Mir
Slide 2
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Rubin Observatory
Rubin Observatory
Error
An error has occurred!
unordered list
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UI Component Library
Modal Title
Modal description
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Styling Tokens & Fonts

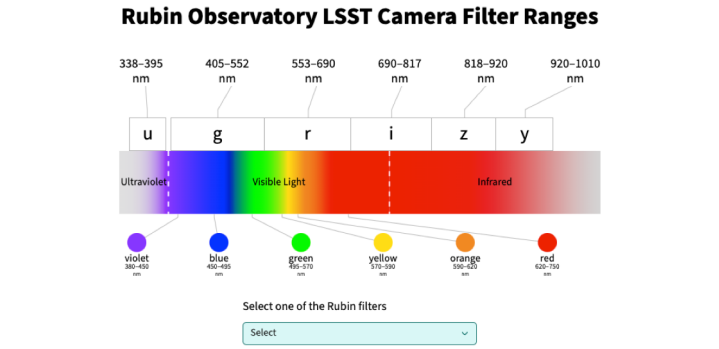
Global styling system based on Rubin Observatory visual identity. Includes basic CSS, CSS variables, font files, and JavaScript tokens.

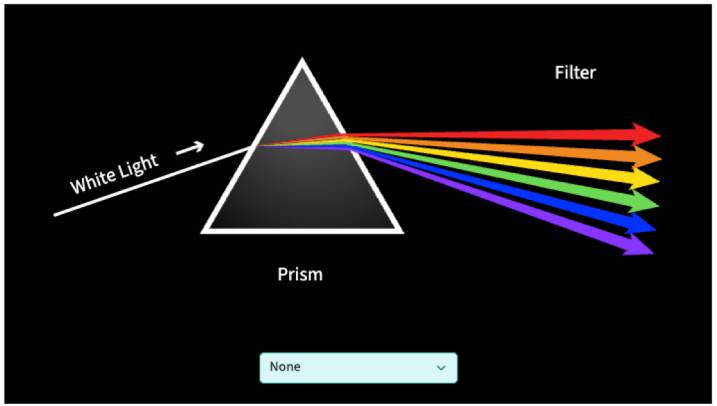
Icons

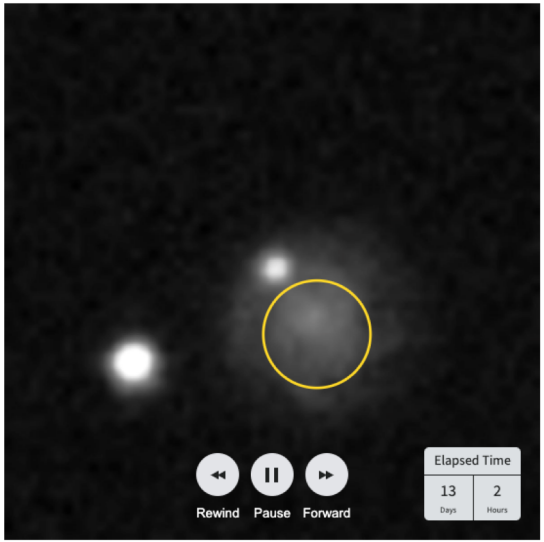
66 icons used across Rubin EPO platforms, available from a single composer component.

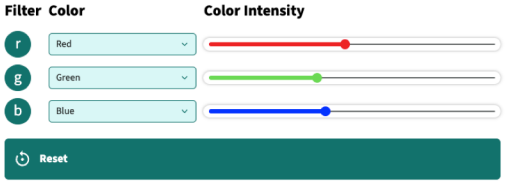
Want to add your own icons? You can extend the Icon component with icons for your own project and still display all your icons with the same interface.

Astronomy Widgets



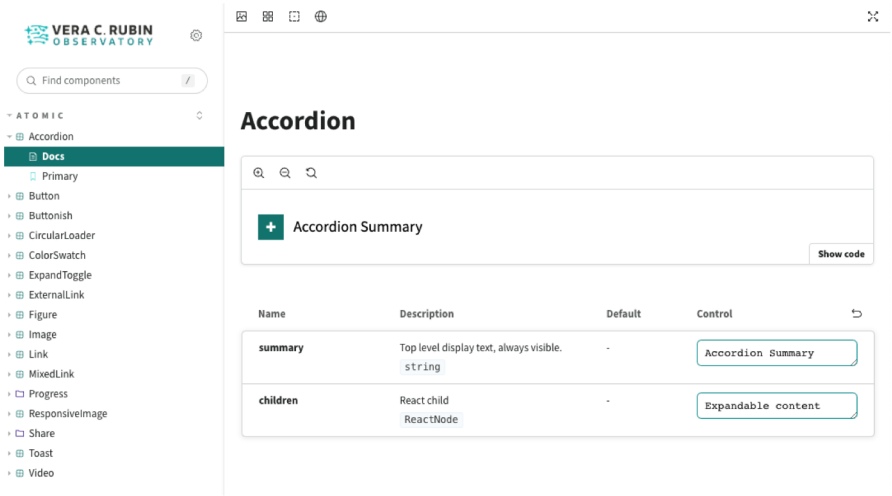






Web Interface

Public interface to browse EPO's Rubin component library using Storybook.js. Includes examples, playground controls, unit test results, and callback logging



https://lsst-epo.github.io/epo-react-lib/@rubin-epo/epo-react-lib

Good candidates to use EPO's Rubin component library

- React and Next.js web applications oriented toward presenting textual and graphic information relating to the Rubin Observatory
- Small development teams or solo developers looking to get started quickly
- Teams interested in restyling web applications to follow the Rubin visual identity
- Teams that use external contractors and want an easy styling handoff

Get it!

User interface components

```
npm install @rubin-epo/epo-react-lib
yarn add @rubin-epo/epo-react-lib
```

Widgets

```
npm install @rubin-epo/epo-widget-lib
yarn add @rubin-epo/epo-widget-lib
```

Contribute!

- EPO’s Rubin component libraries are open source, open an issue or pull request to address bugs and features.

GitHub repository:
https://github.com/lsst-epo/epo-react-lib

questions?

alternatively, some planned discussion