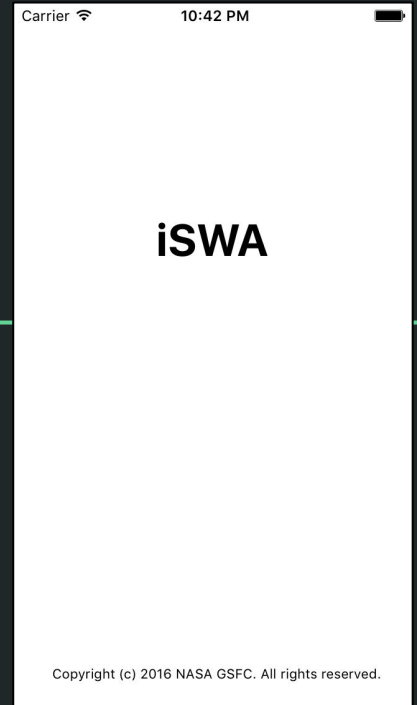


Integrated Space Weather Analysis System (iSWA) iOS Application

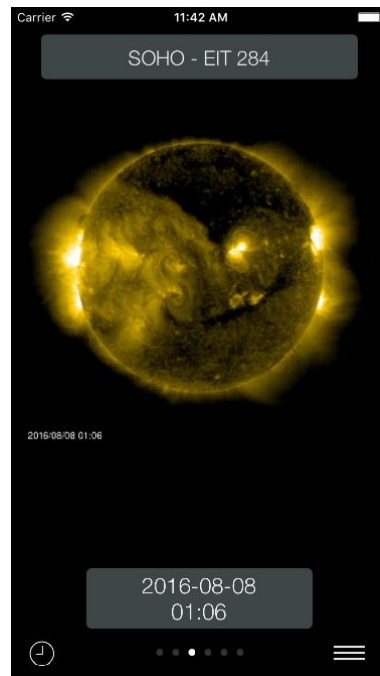
Binh Le

Mentor: Rick Mullinix



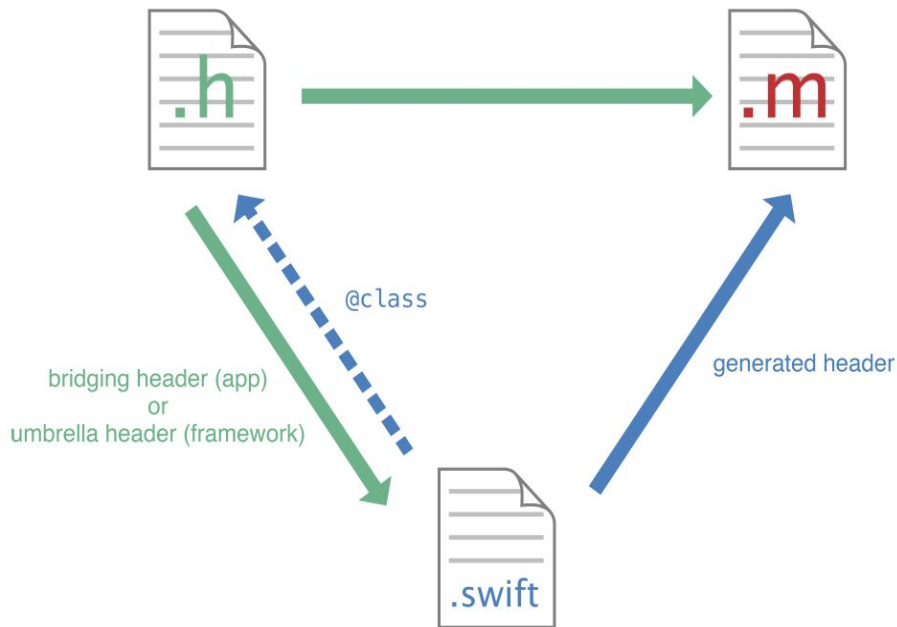
Project Outline

- Porting the previous iSWA iOS application written in Objective-C to Swift 3.
- Updating the application in order to be compatible to use on iOS 10.
- Purpose is to increase the accessibility of mobile software tools displaying real-time data for use by space weather forecasters and researchers.



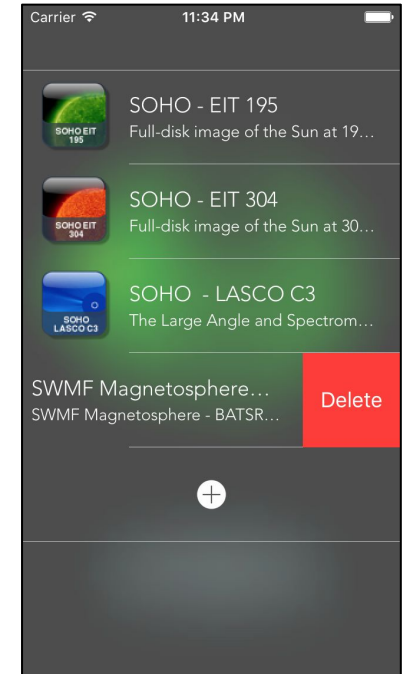
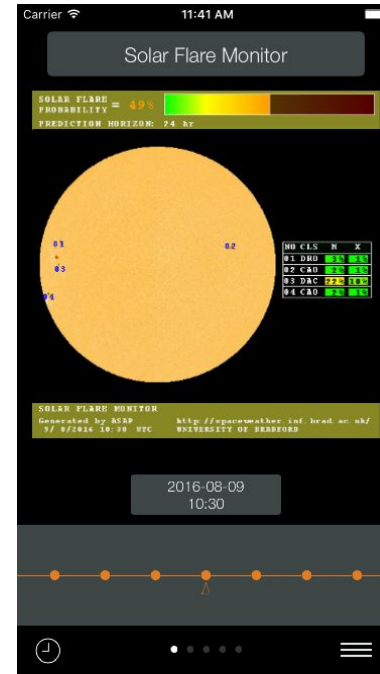
Migrating to Swift

- Converted one Objective-C file at a time by using bridging headers in order for Swift files to be exposed to Obj C files and for Obj C files to be exposed to Swift files.
- Allowed for the implementation, testing, and debugging of individual Swift files. Therefore limiting the time to find and fix bugs within the application.



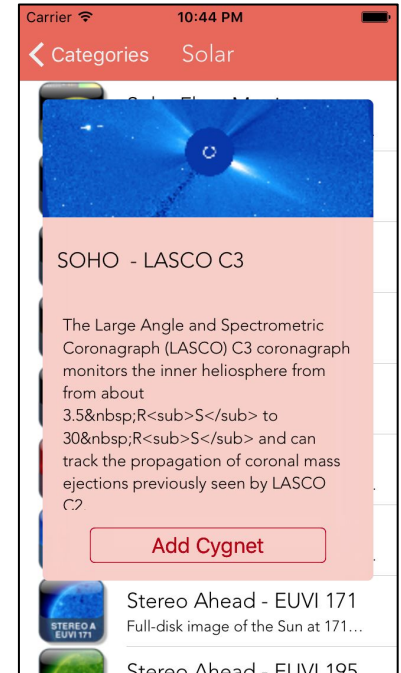
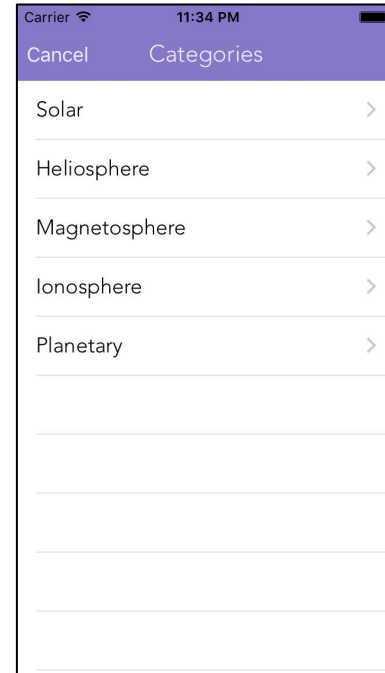
Home Display

- Provides large view of cygnet and allows for the scrolling of the cygnet's current and recent past images.
- Switch quickly between selected cygnets by swiping left and right on the home display.
- Ability to easily add and delete cygnets from your personalized home display.



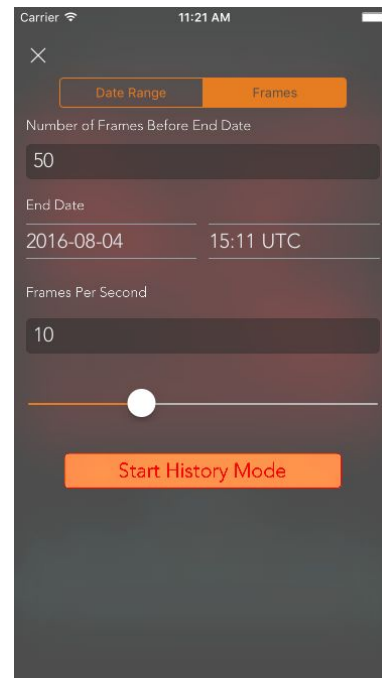
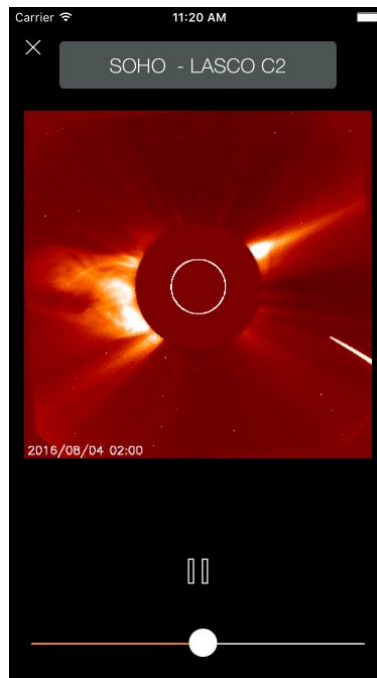
Cygnets Catalog

- Search for desired cygnets by navigating the 5 given categories: Solar, Heliosphere, Magnetosphere, Ionosphere, and Planetary.
- Taping on a cygnet opens a subview displaying the cygnet's preview image, its description and the 'Add Cygnet' button.



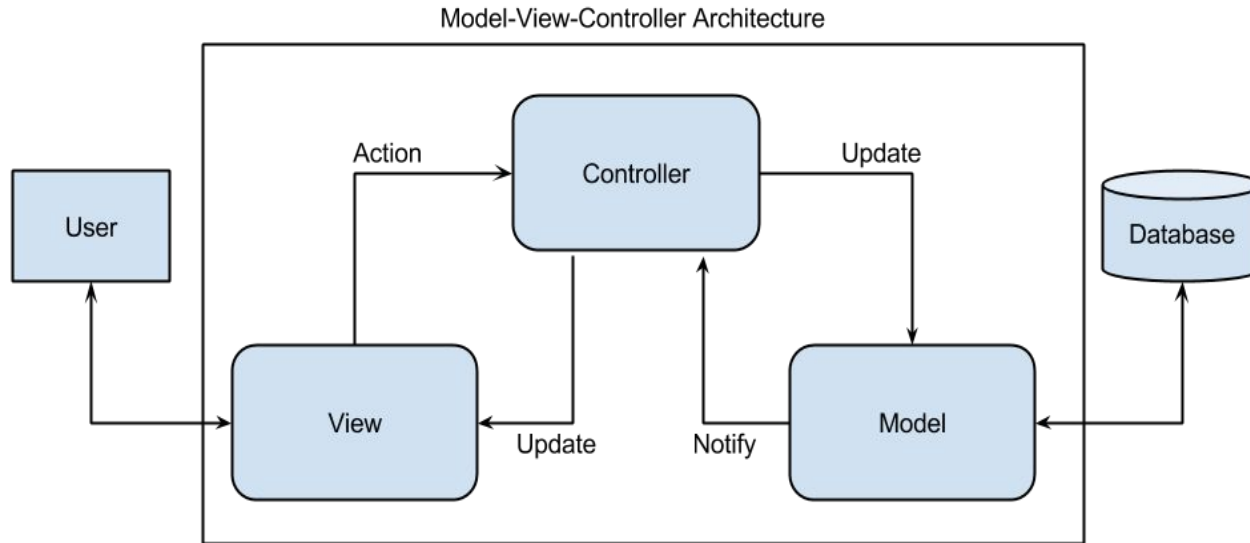
History Mode

- Compiles cygnet images in the specified time frame and then plays a movie-like clip of the images.
- User is able to select start and end date or the number of frames before an end date.
- The Frames Per Second slider determines how fast the cygnet images are played in the clip.



Software Design

- Followed the Model-View-Controller architectural design pattern.
- Data was collected through web requests to the iSWA web application.
- Organizes the files of the project based on its functions within the application.



Future Work

- More testing required before the app is ready for submission and deployment on the App Store for iOS 10.
- Possibility to add new features including push notifications for significant space weather events or more user interface modifications before release.

