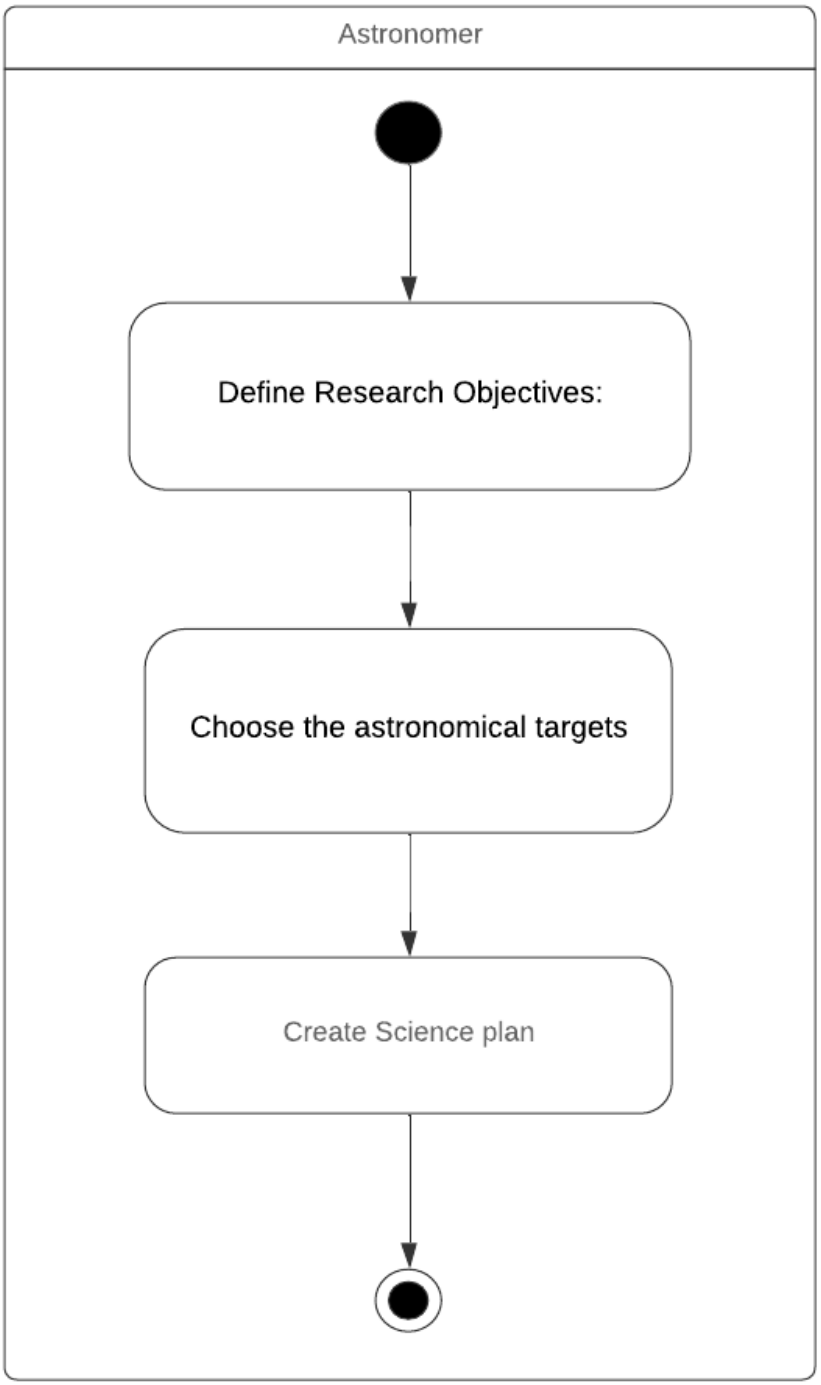
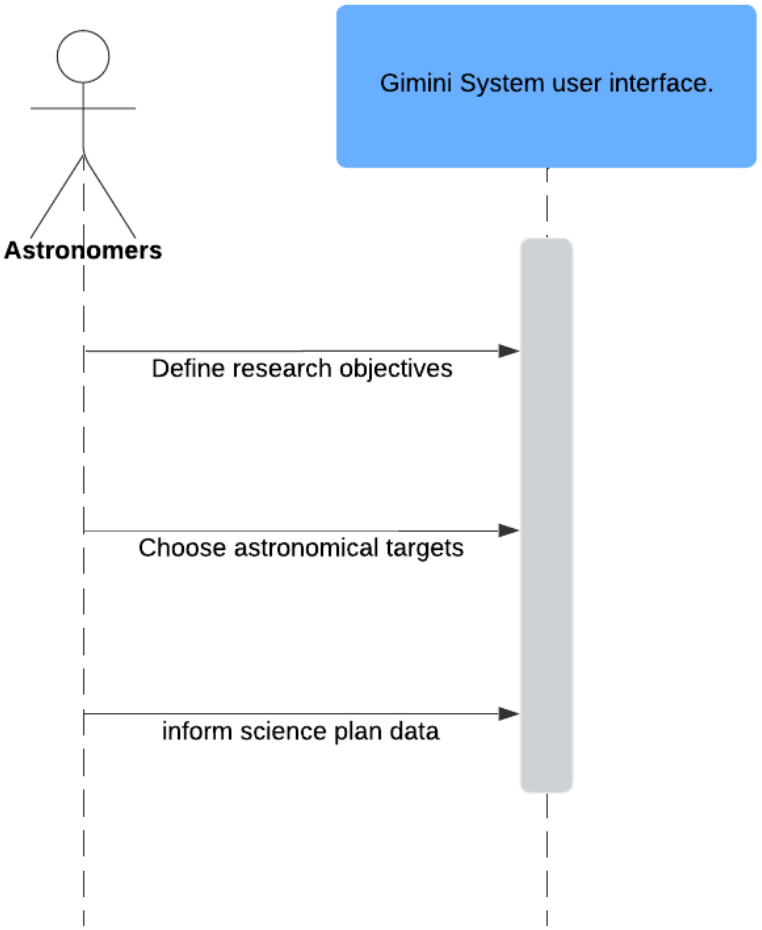
Create a Science Plan 01

Use Case Name: Create a Science Plan	**ID:** 01	**Importance Level:** High
Primary Actor: Astronomers		**Use Case Type:** Essential
Stakeholders and Interests: ● Astronomers: Create a science plan		
Brief Description: Astronomers create a science plan outlining research objectives, methods, data analysis plans, timelines, and resource allocation for the research project.		
Trigger: Starting a new research project or the need to create a scientific plan for existing research. Type: Internal		
Relationships: **Association: -** **Include:** - **Extend: -** **Generalization:** -		
Normal Flow of Events: 1. **Astronomers** define research objectives: 2. **Astronomers** Choose the astronomical targets (e.g., stars, galaxies, nebulae) to be observed based on the research objectives. 3. **Astronomers** create science plans based on research objectives and astronomical targets.		
Sub flows: -		
Alternate/Exceptional Flow: -		

Activity diagram “Science Plan”



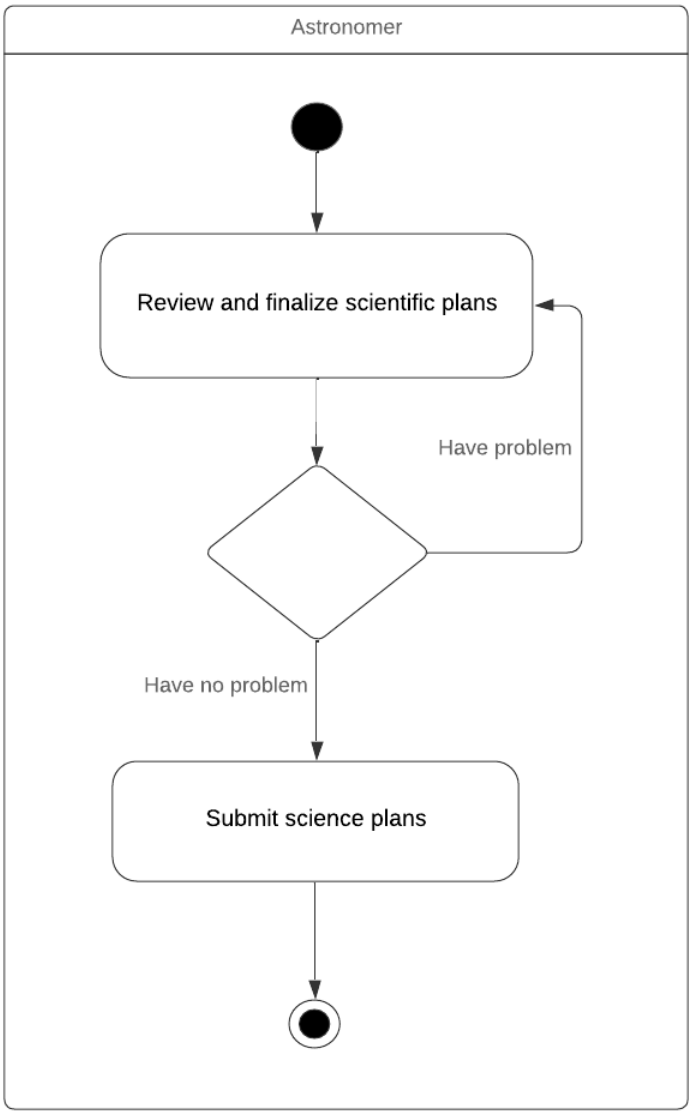
Sequence diagram “Science Plan”



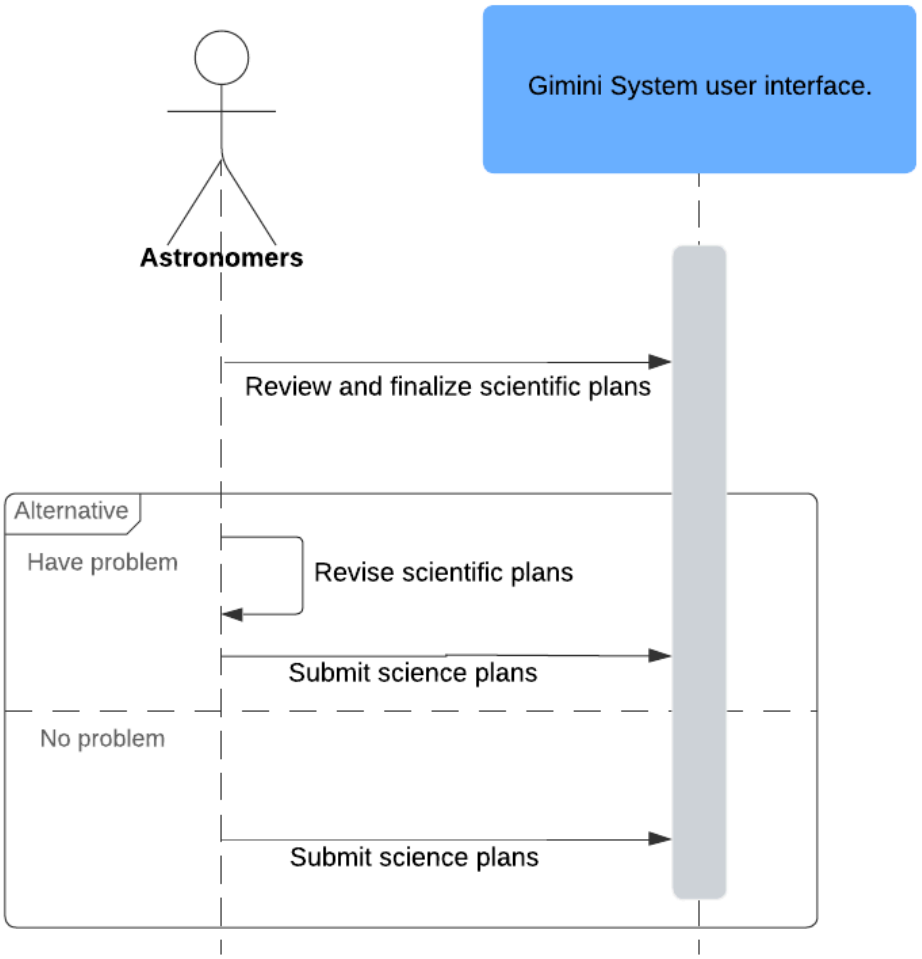
Submit Science Plan 02

Use Case Name: Submit Science Plan	**ID:** 02	**Importance Level:** High
Primary Actor: Astronomer		**Use Case Type:** Essential
Stakeholders and Interests: ● Astronomers: Submit a science plan into a system		
Brief Description: The astronomer reviews the science plan to finalize it before submitting it into the system for the test on the next step.		
Trigger: Astronomers submit the science plan into the system Type: Internal		
Relationships: **Association: -** **Include:** - **Extend:** - **Generalization:** -		
Normal Flow of Events: 1. **Astronomers** review and finalize scientific plans. 2. **Astronomers** submit science plans to the queue via the user interface.		
Sub flows: -		
Alternate/Exceptional Flow: - If there are problems (unclear, missing processes, etc.) with the science plan Astronomers will have to go back and revise their science plans.		

Activity diagram “Submit Science Plan ”



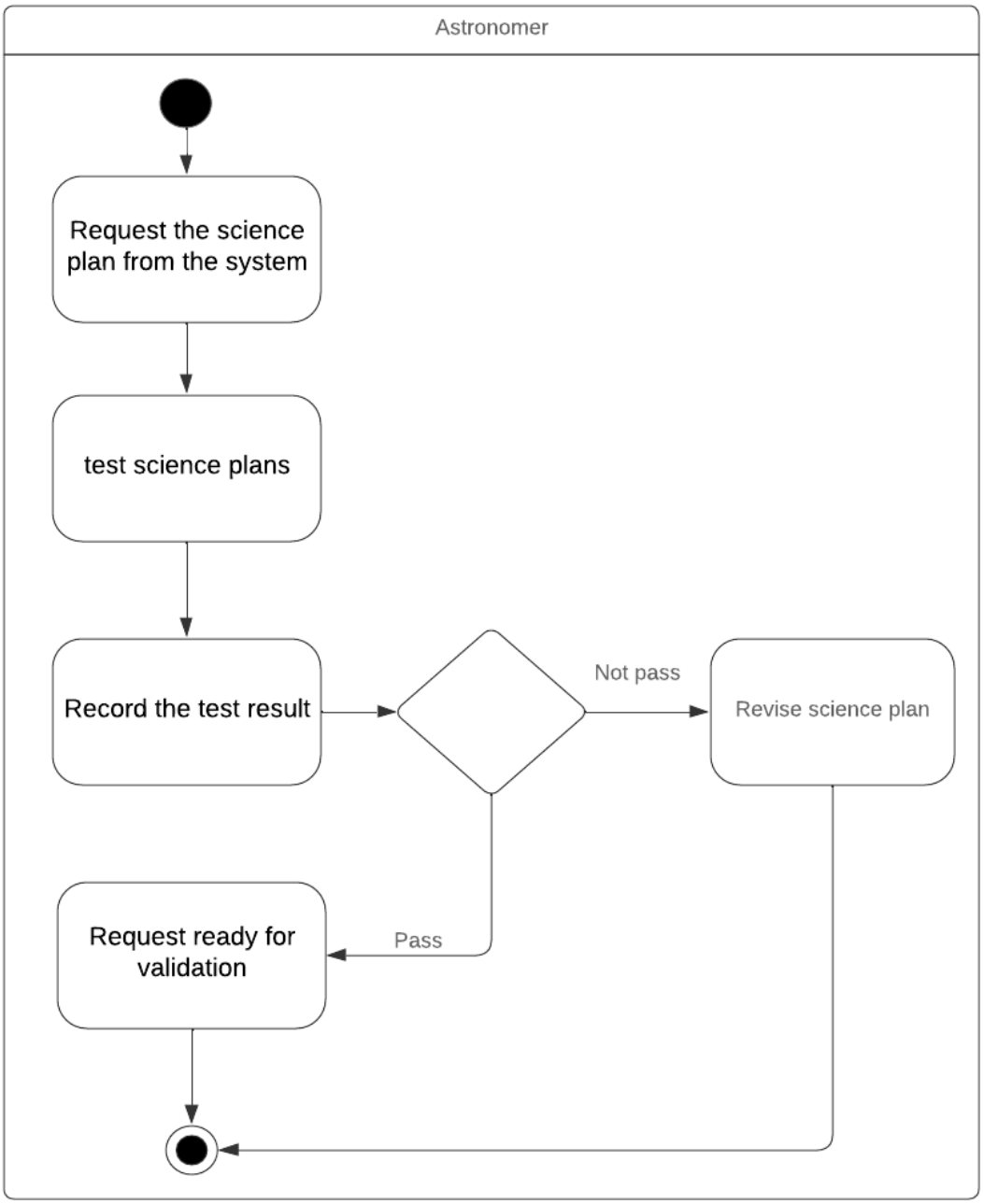
Sequence diagram “Submit Science Plan”



Test Science Plan 03

Use Case Name: Test Science Plan	**ID:** 03	**Importance Level:** High
Primary Actor: Astronomers		**Use Case Type:** Essential
Stakeholders and Interests: ● Astronomers: Test a science plan in a virtual telescope system		
Brief Description: After the science plan has been submitted into the system. Science observers will check the completeness of data and Astronomers will take this plan to test in a virtual telescope to see the result while Science observers record the result of observation.		
Trigger: Astronomers test science plan in virtual telescope Type: Internal		
Relationships: **Association:** - **Include:** - **Extend:** - **Generalization:** -		
Normal Flow of Events: 1. **Astronomers** request the science plan from the system 2. **Astronomers** test science plans by following the selected virtual telescope requirements(Software environment, speed, accuracy, reliability, and etc.). 3. **Astronomers** record the test result from the virtual scope that uses the selected science plan to system 4. **Astronomers** request ready for validation the finished test science plan		
Sub flows: -		
Alternate/Exceptional Flow: -If the test fails Astronomers need to revise the science plan.		

Activity diagram “Test Science Plan ”



Sequence diagram “Test Science Plan”