Use case description

Use Case Name: Create a science plan	ID: 01	Importance Level: High
Primary Actor: Astronomer		Use Case Type: Detail , Essential
Stakeholders and Interests: Astronomer - Create a science plan		
Brief Description: This use case describers how to create a science plan		
Trigger: When astronomers enter data to create science plans, the system checks if there are duplicate science plans. And enter the information completely or not? Type: External		
Relationships: Association: Astronomer Include: Extend: Generalization:		
Normal Flow of Events: 1. Astronomers can search for science plans they have already created, and each plan has a status such as submitted, saved, canceled, validated, invalidated etc. 2. If you want to create a new science plan you can Input information to create a science plan.		
Subflows: 2.If you want to create new science plan you can Input information to create a science plan by including the following details: 1.1 Input name creator of science plan 1.2 Input submitter 1.3Input fundingInUSD: the amount of funding in dollars		

1.4 Input objective 1.5Input starsSystem 1.6 Input startDate and endDate 1.7 Input telescopeLocation 1.8 Input data processing requirements - File type - File quality - Image processing (B&W, color, contrast, brightness, saturation)
Alternate/Exceptional Flow:

<table>
<tr><td>Use Case Name: Create an observing program</td><td>ID: 02</td><td>Importance Level: High</td></tr>
<tr><td colspan="2">Primary Actor: Science Observer</td><td>Use Case Type: Detail, Essential</td></tr>
<tr><td colspan="3">Stakeholders and Interests: Science Observer - create an observing program</td></tr>
<tr><td colspan="3">Brief Description: science observer transform validated science plan to observing program</td></tr>
<tr><td colspan="3">Trigger: There is a science plan in the system that has already been validated.

Type: External</td></tr>
<tr><td colspan="3">Relationships:

Association: Science Observer

Include:

Extend:

Generalization:</td></tr>
<tr><td colspan="3">Normal Flow of Events:

1. Science Observer received the science plan that has been validated.
2. Select the science plan to convert into an observing program.
3. Input observing program data in accordance with the science plan.
4. Submit an observing program to the system.</td></tr>
<tr><td colspan="3">Subflows: 3. Input observing program data in accordance with the science plan

3.1 Input movement

3.2 Input lens

3.3 Input filters</td></tr>
</table>

3.4 Input focus 3.5 Input light detector 3.6 Input special equipment
Alternate/Exceptional Flow: The system has detected that the observing program data has been entered incompletely or incorrectly - In the case that all fields are not filled in, Science Observer will not be able to submit observing programs to the system. - In the case that the information is incorrect, Unable to create an observing program.

Use Case Name: Collect astronomical data	ID: 03	Importance Level: High
Primary Actor: Science Observer		Use Case Type: Detail , Essential
Stakeholders and Interests: Science Observer - Collect astronomical data		
Brief Description: Science Observer can collect astronomical data		
Trigger: When the approved plan has been executed Type: External		
Relationships: Association: Science Observer Include: Extend: Generalization:		
Normal Flow of Events: 1. Science plan has been executed 2. Choose science plan to keep 3. Collect Astronomical Data		
Subflows:		
Alternate/Exceptional Flow:		