Cosmic Cataclysms

Become a Night Watcher

User Guide

V2.2

Night Watching Tutorial

First time observing a cosmic explosion in the night sky? Read this page to master your Unistellar telescope and join our team of Night Watchers.

PRE-OBSERVATION

1 Select your mission

A cosmic cataclysm is a cosmic explosion, like a supernova, that is only observable for a limited time - it is a transient event.

To begin observing a cosmic cataclysm, you first need to select a mission suitable for your observing location. Go to our Cosmic Cataclysms Alerts Page and select an event you want to observe. This page is updated as we receive alerts from professional telescope facilities that a suitable explosion has occurred. Note that your ability to participate in the scientific mission may depend on which hemisphere you are observing from!

PRE-OBSERVATION

2 Read the Mission Details

You can also access the alerts page straight from the app! Simply open the app, choose the science tab and select "Cosmic Cataclysms." Then click the following button:

Link	Finder	Name	Class	Discovered UTC	Vmag	Ra	Dec	Exp.	Cad.	Gain	Duration
		ZTF22abtspsw	SN	Nov 14	15.4884	09h 10m 42s	+07° 12' 20"	3970	3970	30	1200

Once you select an event row from the Alerts Page, you can see the mission details like the example above. *You will use these details later when you are ready to observe.*

- Coordinates: **Ra & Dec = 09h10m42s +07°12'20"**
- Observing parameters: **Exp = 3970ms, Cad = 3970ms, Gain = 30dB, and Duration =1200s.**

All these parameters are also saved in the **Link** column, which contains a Deep Link. (More on how to use the Deep Link in the "During Observation" section.) The **Finder** column shows the target's field of view, which may be rotated in your scope.

PRE-OBSERVATION

3 Get ready

Prepare your gear:

Before you observe the scientific mission, you need to charge your Unistellar telescope and empty its memory. If you need help emptying the memory of your telescope, please read these guidelines on “how to upload my data”.

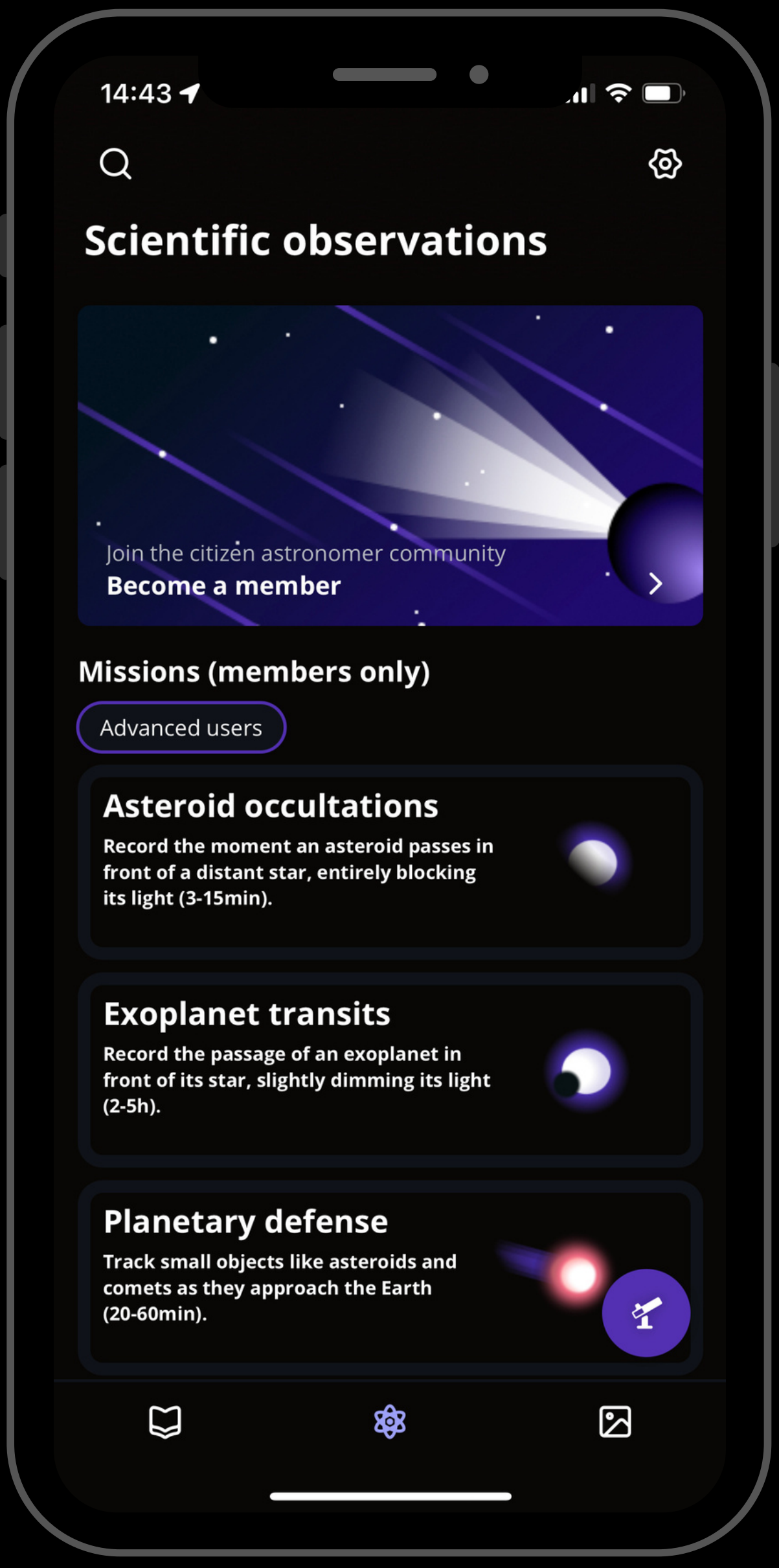
Find your location:

To improve the quality of your data we recommend observing from a place with few street lights, not exposed to wind, and where you have good cellular service. You should also check the weather to avoid clouds and strong winds. The websites ClearOutside or Astrospheric are good tools for astronomers.

PRE-OBSERVATION

4 Become a member

Join the community of Citizen Astronomers to receive alerts and be credited for your observation. To do so, in the Unistellar App V2.0, select the science menu and click on “Become a member”. You will also receive an email invitation to join our Slack communication platform where thousands of Unistellar Citizen Astronomers and professional astronomers are connected.



DURING OBSERVATION

1 30 minutes before

Set up your Unistellar telescope as you normally would before observing.

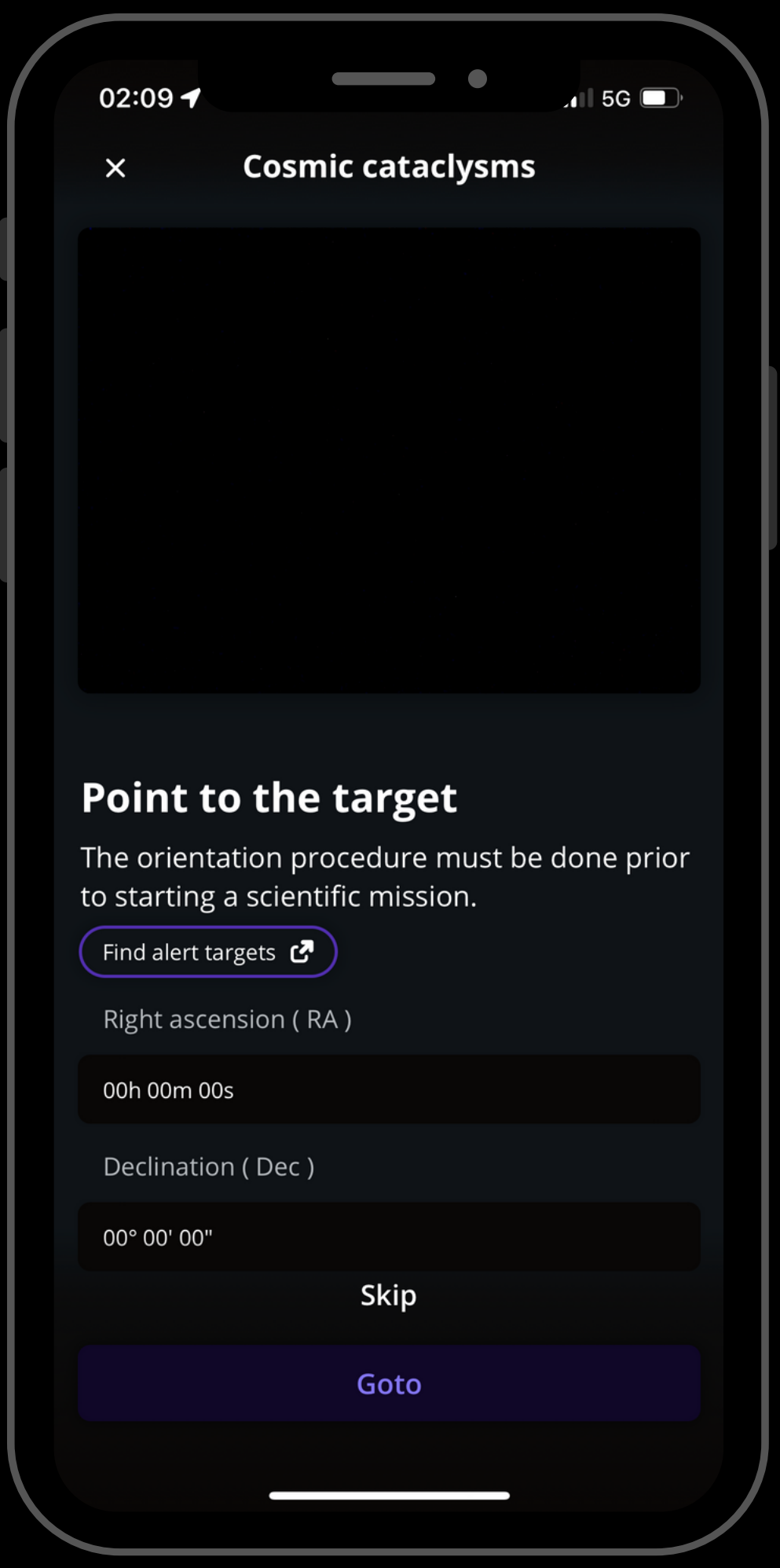
- Level the tripod
- Launch the Unistellar App (make sure that your smartphone was connected to 3G/4G/5G before opening)
- Turn your telescope On
- Launch Autonomous Field Detection through the App
- Calibrate your telescope with the Collimation Screw and Focus Wheel. If you need help calibrating, please read these guidelines on "how to collimate my mirror" and “how to use the bahtinov mask for focus”

DURING OBSERVATION

2 10 minutes before

It is time to point to your target! Two options:

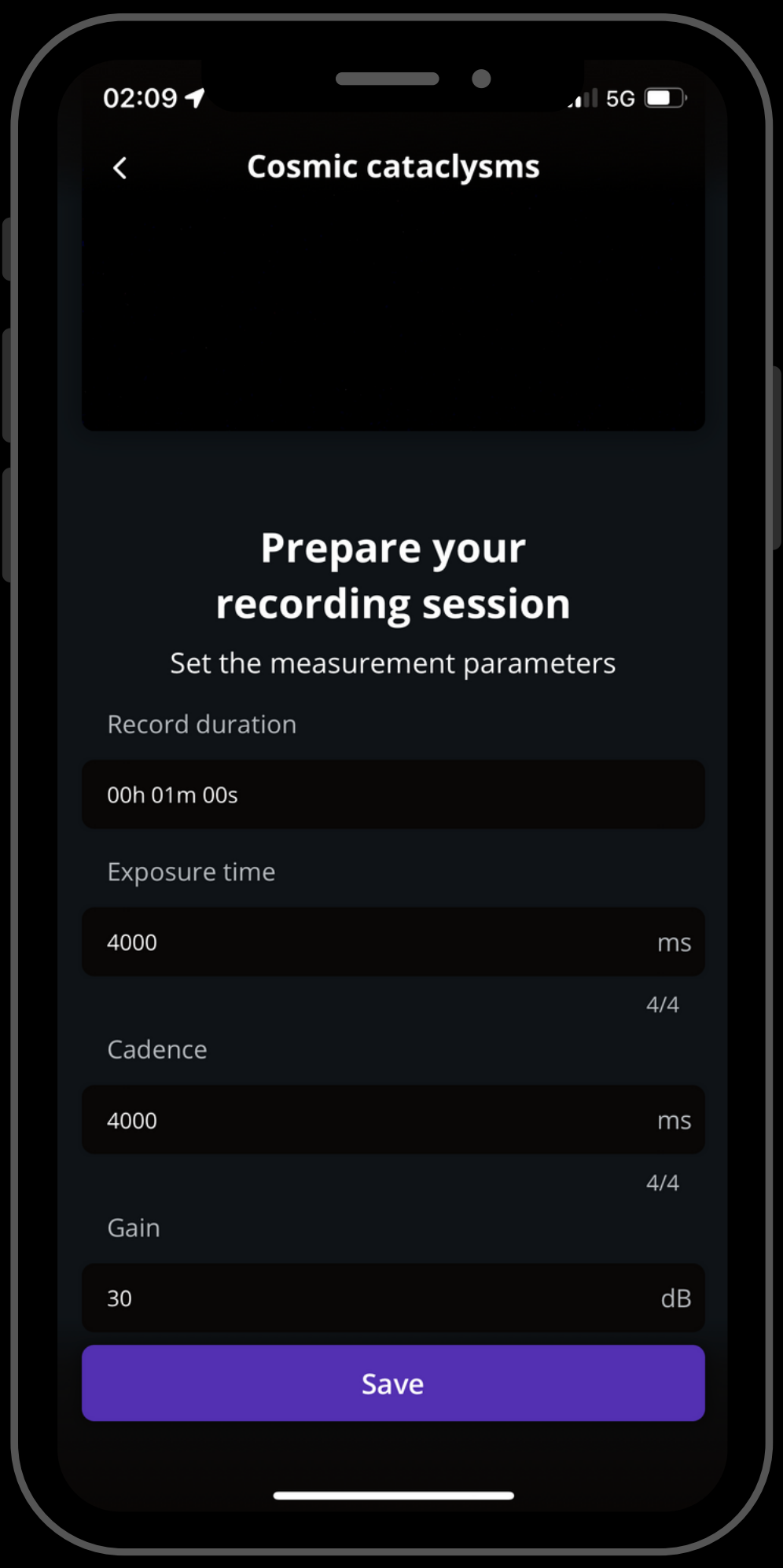
1. **Deep Link method:** The quickest way to find your target is to use your smartphone to click on the Deep Link associated with your event. Refer back to page 4 to see where this is located. It will automatically open the Cosmic Cataclysms tab of your Unistellar App and fill up the coordinates of the target and its recording parameters. If the *Right Ascension* box and *Declination* box are filled with the correct coordinates, click on Goto to point to your target. Once Goto is done, if the *Record duration*, *Exposure time*, *Cadence* and *Gain* are correct, click on Save.
2. **Manual method:** Open your Unistellar App, click on the Science menu and select the Cosmic Cataclysms tab. Enter the *Right Ascension* and *Declination* and click on Goto to point to your target. Once Goto is done, enter the *Record duration*, *Exposure time*, *Cadence* and *Gain* and click on Save.



Pointing to your target

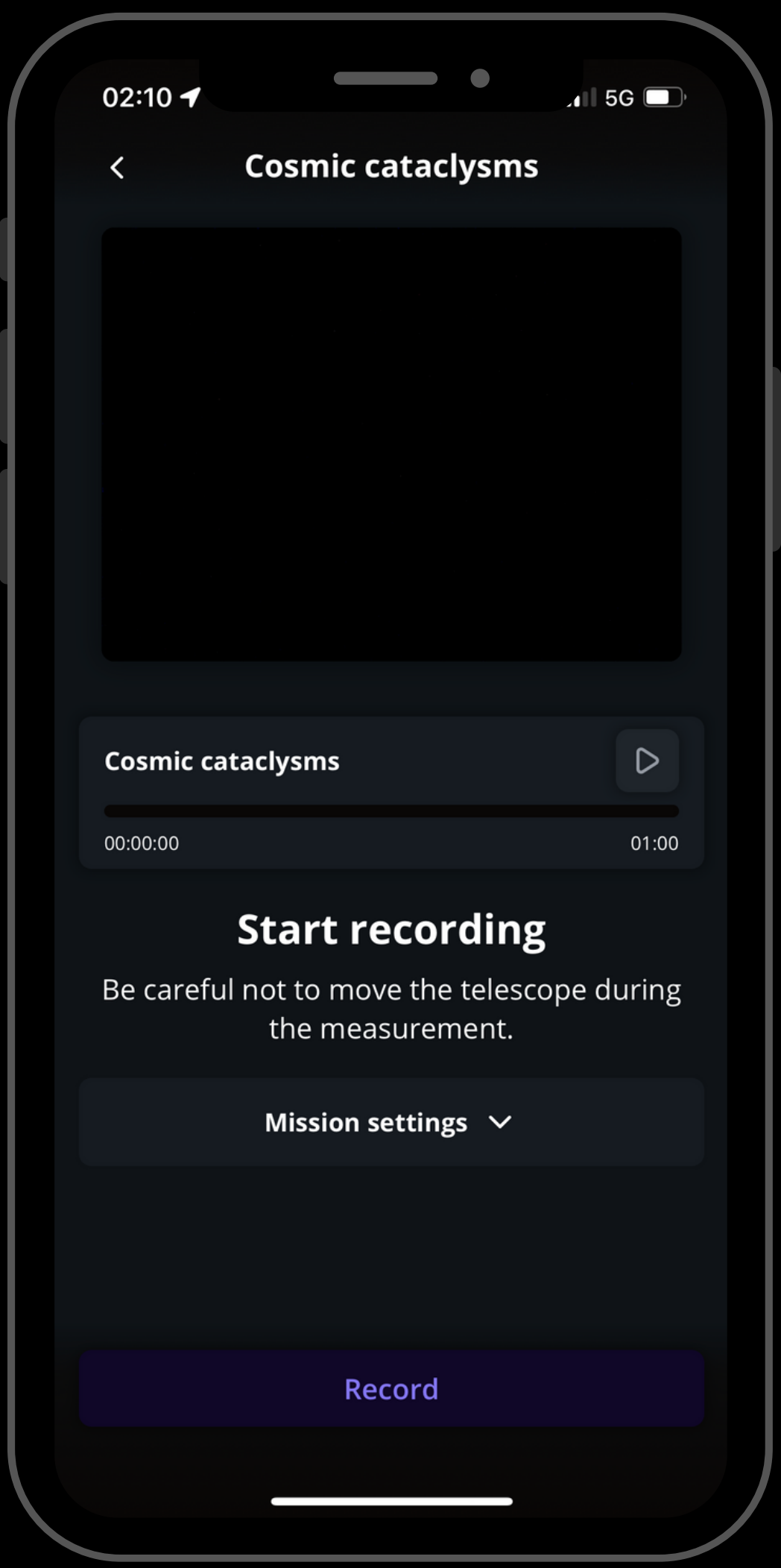
The "Find alert targets" button will take you back to the **Cosmic Cataclysms Alerts Page** where you can access mission details and deep links.

Entering observation details



DURING OBSERVATION

3 Launch observation



When you are ready, click on the Record button to start the observation.

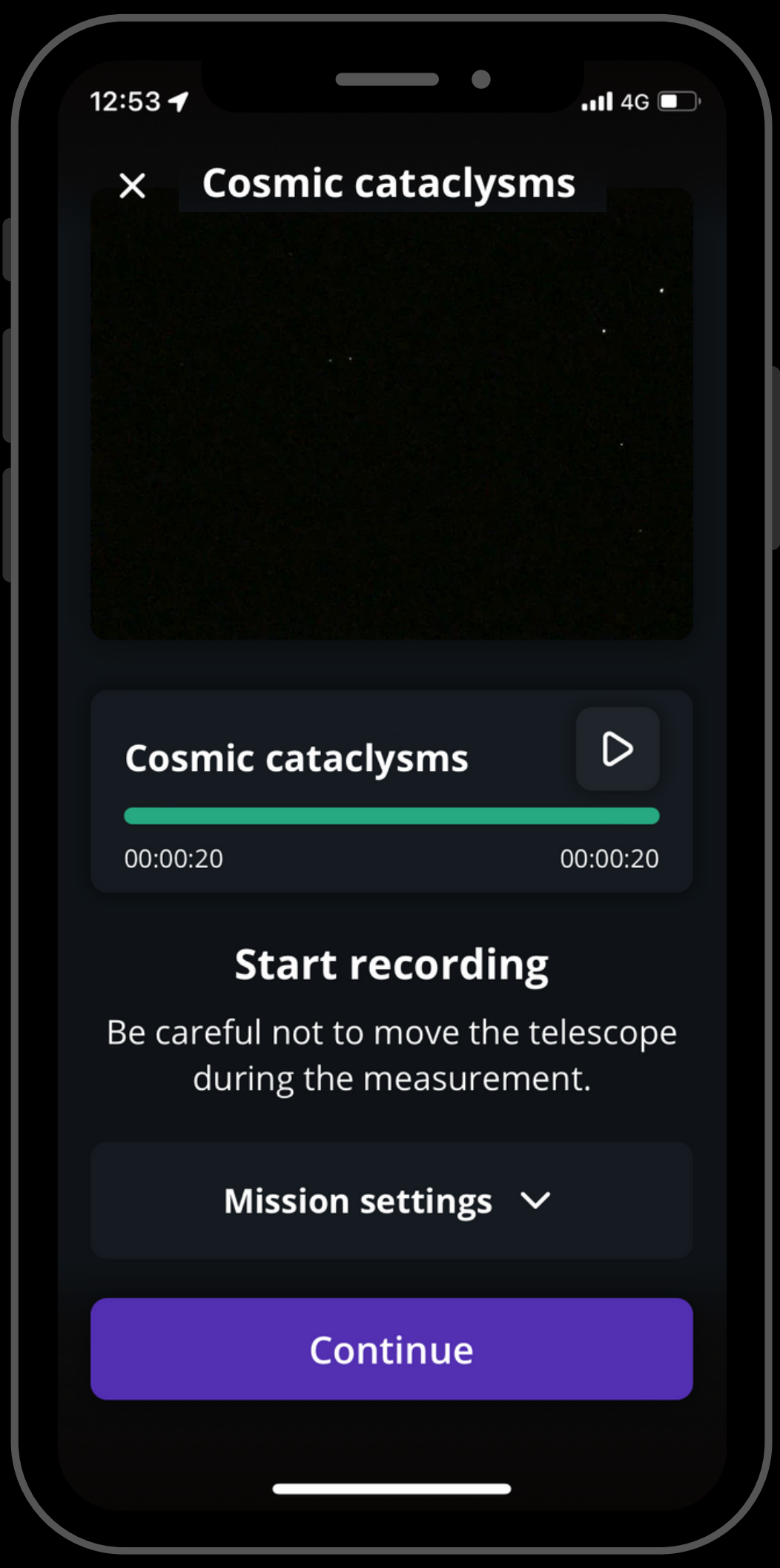
Note that you can begin recording at any point of the night when the target is visible to you.

DURING OBSERVATION

4 Complete observation

During the observation, you may be able to see the target centered on your screen. If you cannot see it, do not worry - it may be quite dim.

Once the recording is over, click on Continue to calibrate your sensor.

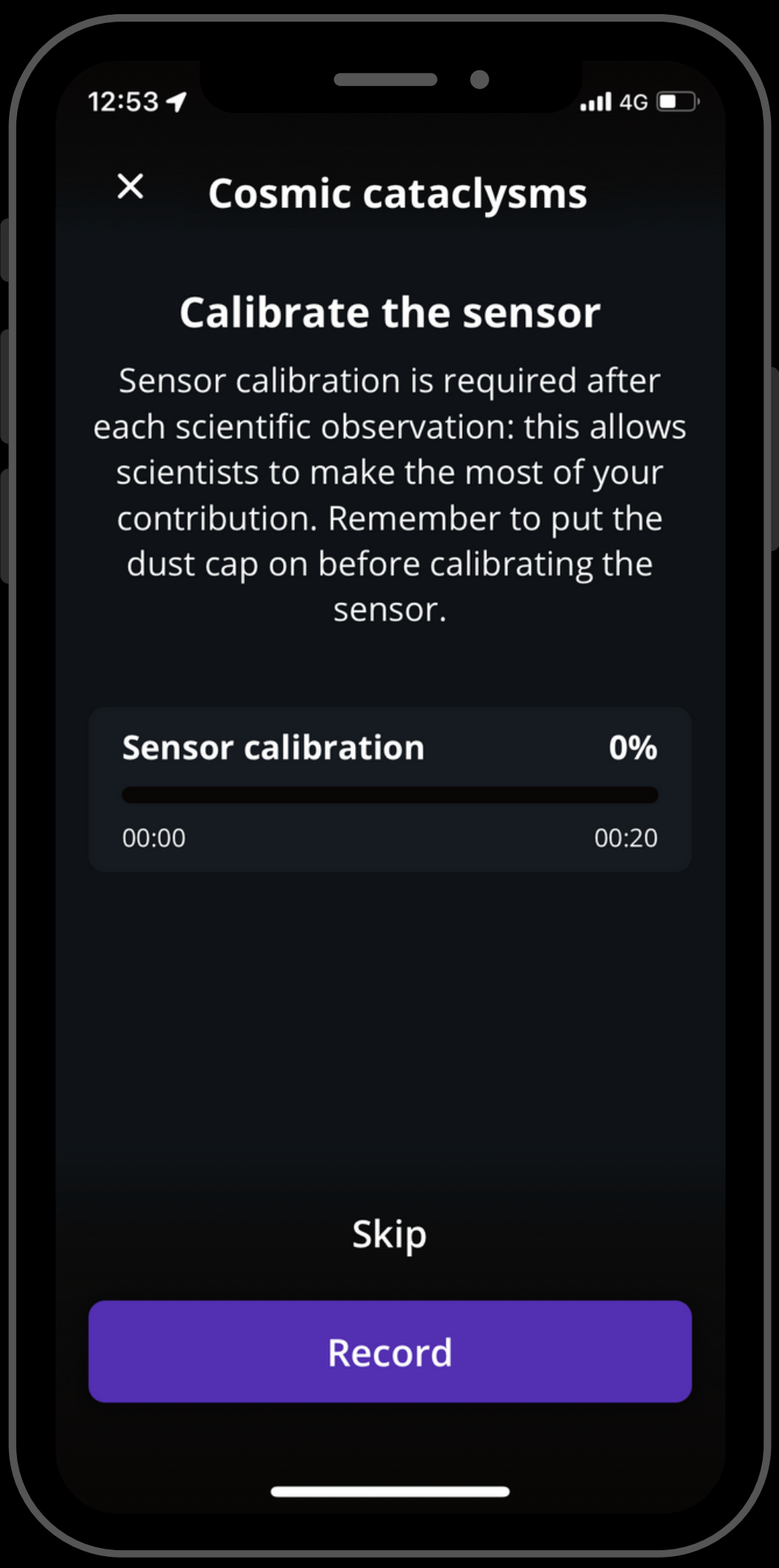


DURING OBSERVATION

4 Complete observation

This calibration step gathers *Dark Frames* which will help us better analyze your observation. You must put the dust cap on your telescope before recording the calibration.

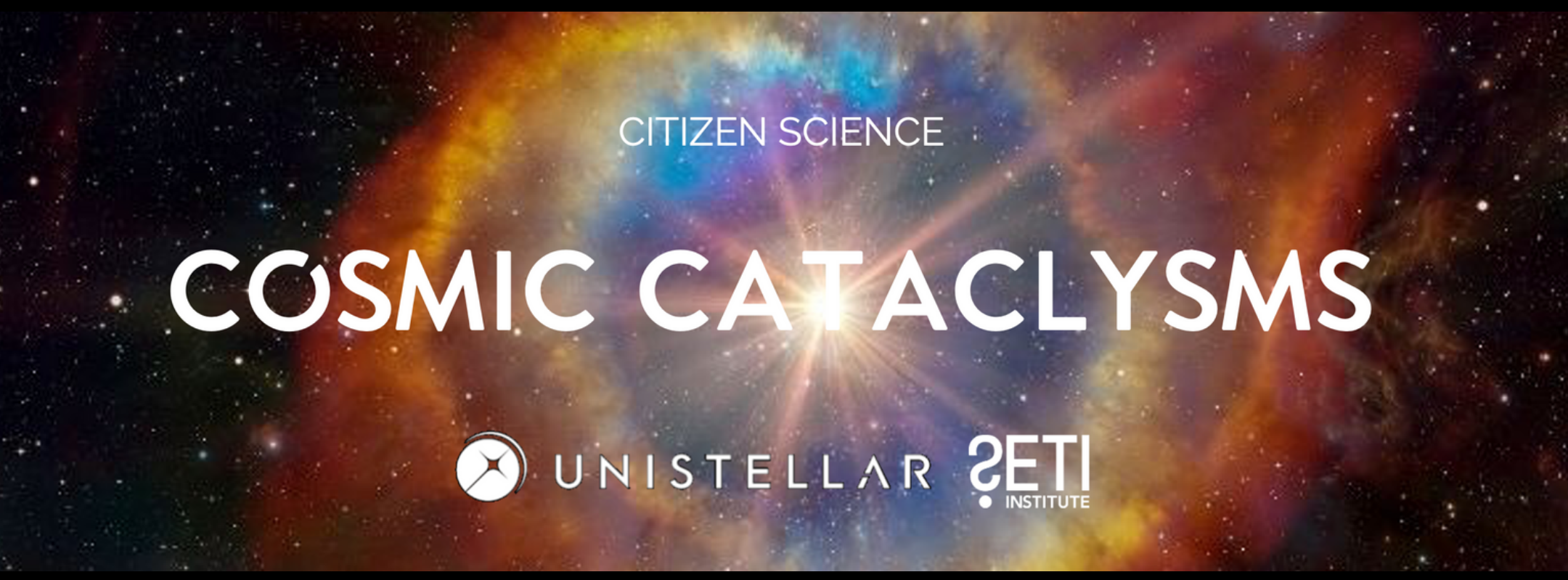
After this step, a final message appears: “Recording complete”. The mission is over.



POST - OBSERVATION

1. **Share your data:** Once you are at home, please upload your data to our server. Our team of scientists will analyze your observation to check if you detected the cosmic cataclysm. If you need help, please read these guidelines on “how to upload my data”.

2. **Tell Unistellar you have participated:** To make sure your contribution is properly processed and you are credited for the result, always fill out this Cosmic Cataclysms Report. It asks for your name, the serial number of your telescope, and the name of the scientific mission you just accomplished.



YOU'RE DONE

We will send you the result of your scientific mission through our Slack communication platform, typically within 24 hours.

Great Work, Citizen Astronomer!

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