CELESTRON®

60TH ANNIVERSARY LIMITED EDITION

# NEXSTAR **EVOLUTION 8HD**

WITH STARSENSE


CELESTRON®
NEXSTAR EVOLUTION HD
60th ANNIVERSARY EDITION

# QUICK SETUP GUIDE

MODEL #12098

# Equipment and System Requirements

To charge your telescope's battery, you will need:

- An AC outlet to use with the supplied AC power adapter. (The adapter works with US, UK, EU, and AU format AC outlets.)

If you would like to use the telescope's wireless control feature in lieu of the provided StarSense hand control, you will need:

- An Apple device running iOS 7.0 or later OR an Android device running Android 4.0 or later.
- The Celestron SkyPortal app (available as a free download on the App Store and Google Play).

# ⚠ Solar Warning

- Never look directly at the Sun with the naked eye or with a telescope (unless you have the proper solar filter). Permanent and irreversible eye damage may result.
- Never use your telescope to project an image of the Sun onto any surface. Internal heat build-up can damage the telescope and any accessories attached to it.
- Never use an eyepiece solar filter or a Herschel wedge. Internal heat build-up inside the telescope can cause these devices to crack or break, allowing unfiltered sunlight to pass through to the eye.
- Never leave the telescope unsupervised. Make sure an adult who is familiar with the correct operating procedures is with your telescope at all times, especially when children are present.

# Battery Caution

This product contains a long-life lithium-iron phosphate battery (LiFePO4). The battery includes numerous built-in safety features, including protection against overcharging, over discharging, and overheating. With proper use and care, the battery should last thousands of charge cycles without the need to replace it. To benefit from the maximum battery life, note the following recommendations:

- Charge the battery to full as soon as you receive the telescope.
- Only use the included power supply to charge the battery, or an FCC and CE certified 12VDC power supply with at least 2 Amperes of current.
- Do not leave the battery fully discharged or low for an extended period of time.
- Every 3 to 6 months, fully recharge the battery.
- Do not store the battery above 140°F/60°C.

# Overview


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# Parts List

**TELESCOPE**
EdgeHD 8” telescope with carbon fiber tube
2” star diagonal
32mm 2” E-Lux eyepiece
15mm Omni Plössl eyepiece
9mm Omni Plössl eyepiece
StarPointer Pro illuminated reflex finder

**MOUNT AND TRIPOD**
NexStar Evolution fork arm mount
Tripod assembly
Accessory tray
AC to 12 Volt DC adapter with US, UK, EU, and AU format plugs
3 interchangeable altitude clutch badges (one mounted on scope)

**STARSENSE AUTOALIGN**
StarSense camera
StarSense hand control
Coiled cable (connects camera to AUX port on mount)
2 Nylon-tipped thumbscrews
4mm Allen wrench

## How to Use this Quick Setup Guide

Refer to this guide to get your telescope set up and aligned with StarSense and the SkyPortal app using your smart device. Here you will also find useful information about the EdgeHD optical tube assembly and different options for astrophotography. Refer to the full NexStar Evolution and StarSense AutoAlign manuals available for download on Celestron.com, for more advanced settings options, including usage of the StarSense hand control.

Note that the NexStar Evolution manual refers to Schmidt-Cassegrain optical tubes and the NexStar+ hand control, which are not part of your telescope. Your special edition telescope comes with an 8" EdgeHD optical tube instead of the standard Schmidt-Cassegrain tube, the StarSense hand control instead of the NexStar+ hand control, and the StarSense camera.

## SkyPortal App

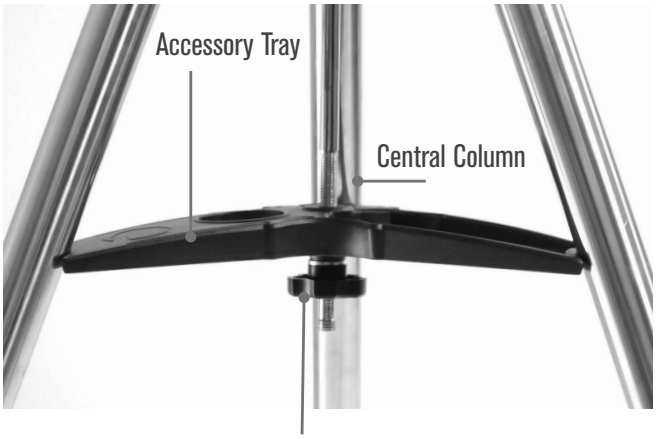

Download the SkyPortal app, available on the App Store and Google Play, or scan the QR code below.

Available on the App Store

ANDROID APP ON Google play

## Set up the Tripod

1. Spread the tripod legs and stand the tripod upright.
2. Remove the tripod support nut and washer from the central column attached to the top of the tripod.
3. Place the accessory tray over the central column so that each of the three arms of the tray is supporting a tripod leg.
4. Thread the nut and washer back onto the threaded column and firmly tighten into place. The accessory tray should not be able to move against the tripod.
5. Adjust the height of the tripod by loosening the lock knobs on the end of each tripod leg. Then adjust the leg height as needed and re-tighten the lock knobs, one leg at a time. Note that the leg index marks can be used to easily level the tripod.
6. Confirm the tripod is level using the built-in bubble level on the tripod base.




## Attach the Mount to the Tripod

1. Position the fork arm mount over the center post on the tripod head. Do not let go of the mount until it has made a secure connection with the center post. The mount should not wobble.
2. With the mount resting on the tripod head, rotate the mount until the three mounting sockets align. The sockets will click into place to indicate they are aligned.
3. Thread the three captive mounting bolts from underneath the tripod head into the bottom of the telescope base.

## Attach the Telescope to the Mount

1. Loosen the silver altitude clutch lock knob and rotate the altitude axis until the quick release knob faces downward.
2. Tighten the altitude clutch lock knob.
3. Loosen the quick release knob a couple of turns to allow room for the dovetail on the telescope optical tube.
4. Slide the telescope optical tube into the quick release slot from the back side of the telescope. The fork arm should be on the left side of the optical tube. For correct balance, position the telescope so that you can read the Celestron EdgeHD optics nameplate. If you choose to add accessories to your telescope, you can re-balance it later.


## Attach StarSense to the Telescope

1. Partially thread the two nylon-tipped thumbscrews (included in the StarSense box) onto your StarSense camera bracket.
2. Slide the StarSense camera onto the mounting bracket on the telescope. Lock both thumbscrews.
3. Plug one end of the supplied coiled cable into the StarSense camera and one of the 4 AUX ports on the fork arm.


## Insert the Star Diagonal and Eyepiece

1. Remove the cap from the back of the telescope and thread on the 2" star diagonal.
2. Loosen the two setscrews on the 2" star diagonal and slide out the 1.25" eyepiece adapter. Slide the eyepiece into the diagonal and secure it by tightening the setscrews.
3. To use 1.25" eyepieces with this telescope, remove the dust cap from the center of the 1.25" adapter and slide the adapter into the star diagonal. Slide your 32mm 1.25" eyepiece into the adapter and secure the setscrews on the side of the adapter ring.


## Inserting the Battery into the StarPointer Pro

The StarPointer Pro uses a CR-2032 button battery (included). To insert or change the battery, turn the StarPointer Pro over. The battery compartment is located in the center of the on/off/brightness switch. Use a coin in the slot on the cover to unscrew the cap counter-clockwise until the cap comes off. Insert the new battery with the Positive (+) side facing upward and screw the cover back on. If your StarPointer Pro does not immediately turn on, open the battery compartment to remove the small plastic disk that lies between the battery and the battery cover. This is used to prevent the battery from accidentally discharging during shipment.

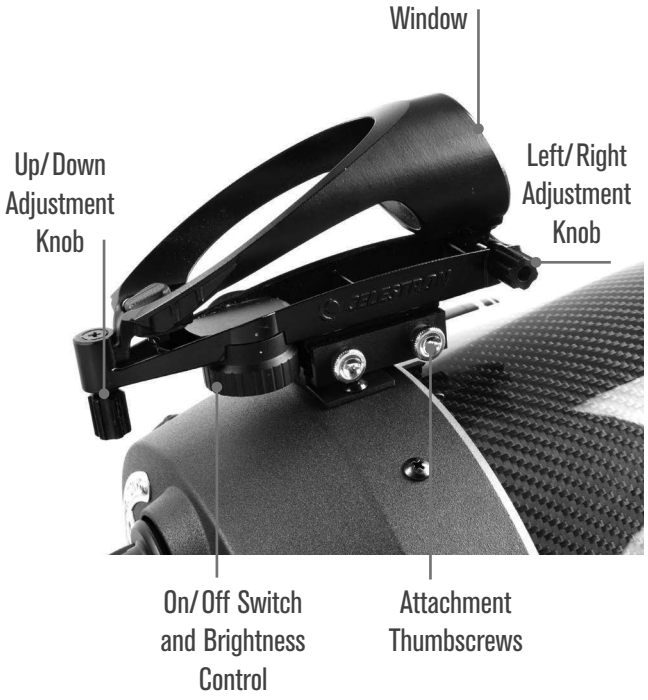
If you are going to store your telescope for a long period of time, remove the battery to prevent corrosion.

## Attach and Align the StarPointer Pro to the Telescope

1. Slide the StarPointer Pro over the dovetail base on your telescope and tighten the two silver thumbscrews to lock it in place.
2. Loosen the two silver ring clutch knobs and manually point the telescope to a distant object such as a streetlight, car license plate, tree top, or stop sign. (1000 yards or farther) during the day. NEVER point directly at the Sun! You can use a bright celestial object like the Moon, but we recommend choosing a stationary ground target.

3. Using the 32mm eyepiece, focus the telescope on the object by turning the focus knob. Ensure the object is centered.
4. Turn the StarPointer Pro on to full brightness to view the bullseye. Center the bullseye over your target using the up/down and left/right adjustment knobs.

***Note:*** *Remember to turn the StarPointer Pro off after use to preserve battery life*




## Charging your Telescope Mount

The included AC adapter comes with international plugs. Select the plug that applies to your country and slide it into the body of the AC adapter until it clicks in place. Plug the AC adapter into the 12V DC power input on the base of the mount and plug the other end into a grounded wall socket. The logo light on the mount will slowly pulse to show that the battery is charging. When the light remains steadily lit, the battery is fully charged and you are ready to observe.

A completely drained battery can take 3 to 4 hours to fully charge.

## Installing the Interchangeable Badges

Your 60th Anniversary Limited Edition NexStar Evolution 8HD with StarSense comes with interchangeable badges for the altitude clutch knob. These include the classic Celestron logo, the current Celestron logo and the 60th anniversary badge. Changing out the badges is simple. Slide your fingernail into the notch at the bottom of the installed badge and lift up. The badge is affixed magnetically and will come off easily. Install the new badge by lining up the notch with the register mark on the clutch knob and press it into place.

**Your telescope is now set up and ready to align!**

## Here's how to quickly align your telescope for the first time

1. Power the scope on and connect to its WiFi network from your phone or tablet. The WiFi network name will begin with "Celestron-XX".


*Your NexStar Evolution generates its own WiFi network. You do not need WiFi or cellular service to use the telescope.*

2. Open SkyPortal, tap the scope icon, and tap "Connect and Align". Follow the on-screen prompts and StarSense will automatically align your telescope.

***Please note the following for the most reliable WiFi connection to the telescope:*** Areas with high WiFi traffic, such as large star parties or crowded public spaces, can potentially pose difficulties connecting to the telescope. Additionally, multiple smart devices and multiple WiFi telescopes in the same area can generate conflicting traffic. Follow these tips to maintain the most robust connection to your telescope.

1. **If you experience lag or connection problems in areas with high WiFi traffic–**To minimize possible connection problems in high traffic areas, select a viewing site with minimal WiFi traffic. Numerous nearby devices with WiFi enabled can contribute to unwanted WiFi traffic. Disabling WiFi in nearby devices can improve connectivity to your telescope. Alternatively, high traffic areas may require the use of the included NexStar+ hand control instead of the SkyPortal app over WiFi.

2. **If you experience conflicts when using multiple devices to control a telescope–**If you have multiple smart devices, and have connected to the same WiFi telescope previously with them, both devices may unintentionally communicate with the telescope at the same time. For example, if you have previously used your smartphone to control the telescope and later use a tablet to control the same telescope, the smartphone may interfere with the telescope connection. We recommend "forgetting" the telescope WiFi network with any smart devices not currently in use.

3. **If you experience conflicts when multiple WiFi telescopes are in the same area–**If you are using multiple WiFi telescopes and have connected to them with your smart device previously, we recommend "forgetting" the other telescopes/devices not currently in use. This way, you won't accidentally connect to the other telescopes/devices. This is especially useful at a star party where more than one WiFi telescope may be in range.

**StarSense is aligned, but there's just one first-time-only step before you're ready to go: Calibrate the camera to the telescope.**

3. After the StarSense alignment is complete, select a bright star in SkyPortal by tapping it on the screen, then tap "GoTo". If the star is not in the eyepiece's field of view, start by centering it in the StarPointer, then center it in the eyepiece.

   With the star centered in the eyepiece, tap Align, then tap Calibrate. Once the camera is calibrated, follow the prompts to start a new StarSense Auto alignment. You only need to do this the first time you are using StarSense with the telescope in SkyPortal.

### Congratulations! You are now aligned and ready to observe.

Tap objects on your screen and select GoTo or search for a specific object in the search field. To start, you can choose from the "Tonight's Best" list in SkyPortal under the Search menu.

## Important Information About Your 8" EdgeHD Optical Tube Assembly

Your EdgeHD optical tube is optimized for both visual astronomy and astrophotography, delivering images free of coma or field curvature across a large image circle. Start by using the supplied Star Diagonal and eyepieces to familiarize yourself with the telescope.

### Primary Mirror Clutch Knobs (for Astrophotography Only)

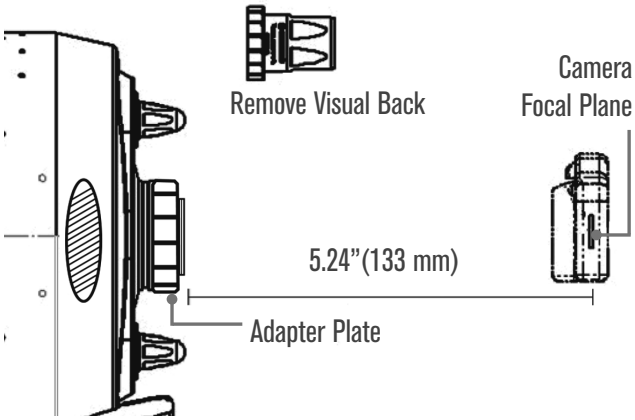
The primary clutch knobs hold the mirror in place to prevent movement during a long exposure astroimage. Keep these loosened unless you are using a camera for long exposures.

When using a camera, focus the telescope first, then tighten the knobs.

***Warning: Do not turn the focus knob with the clutch knobs tightened. Anytime you refocus the telescope, loosen the clutch knobs.***

### Optimum Camera Distance

The 8" EdgeHD was designed to work with your camera at a specific distance from the end of the threads on the back of the scope to the camera's sensor.



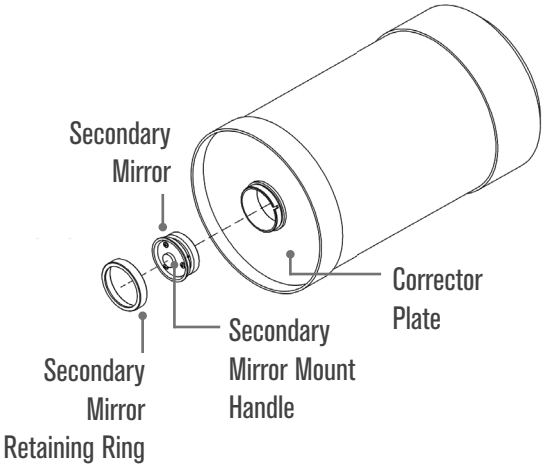

**Edge HD 8"- Optimum Back Focus Distance**

If you are using a DSLR, the distance is already set correctly when you use these standard adapters available from Celestron:
- T-ring for the make and model of your camera
- T-adapter for 8" EdgeHD

If you are using an astronomical CCD camera, you must determine the necessary adapter length to the camera body. ***The total distance from the end of the adapter plate threads to the camera sensor should be 133mm.***

This is the total required backfocus distance. Your camera body to the imaging sensor will take up some of this backfocus distance. Your camera manufacturer will usually specify the camera backfocus distance. For example, if your camera's backfocus distance is 55mm, then you will need 78mm of spacing to reach 133mm.

### Fastar Compatibility and Imaging at f/2




Your 8" EdgeHD is equipped with a removable secondary mirror that allows you to convert your f/10 telescope into an f/2 imaging system using an optional lens accessory. This adds versatility to use the telescope at different focal ratios for astrophotography. Imaging at f/2 is favored for wide-angle deep sky imaging with short exposures, well suited to large, deep sky objects.

### Optional Focal Reducer

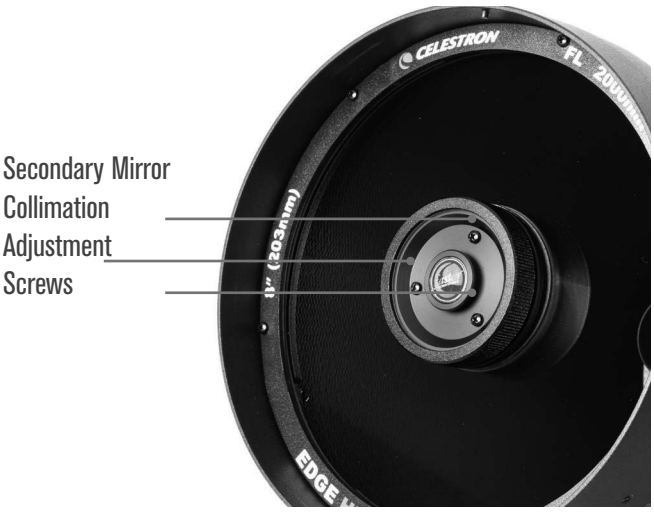
A dedicated 0.7x Focal Reducer for the 8" EdgeHD is available from Celestron. This focal reducer maintains the flat-field and coma-free imaging performance specifically designed for this telescope.

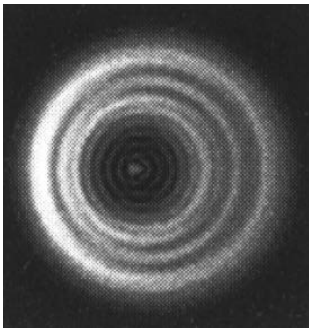
### Collimation

Your telescope is factory aligned and generally should not need collimation unless it is transported roughly. However, you should be aware of the eventual need to collimate your telescope to keep it operating at peak performance.

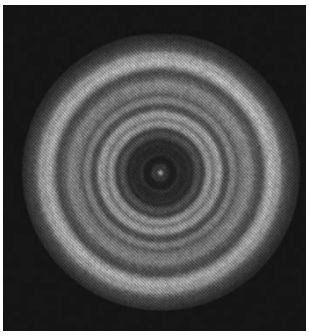
1. Using your included 13mm eyepiece (or a higher power eyepiece if you have one), point the telescope at a moderately bright star center it in the eyepiece.
2. Defocus the star about 1 turn on the focus knob.
3. Inspect the star pattern. When collimated, the pattern should look like a concentric doughnut. If the pattern is concentric, no adjustment is necessary.

4. Adjust the telescope collimation, if needed, by slightly adjusting the 3 Phillips head screws in front of the secondary mirror.
5. If the star pattern is thin on one side, adjust the collimation so that the star moves towards the thin side, then adjust the position of the telescope to re-center the star. Repeat this until you achieve correct collimation.



A defocused star where the secondary shadow is not concentric to the star pattern indicates the telescope requires collimation.



The telescope is collimated if the defocused star pattern is concentric as shown.

## Two Year Limited Warranty

Your telescope comes with a two year limited warranty. For more detailed information please visit: celestron.com/pages/warranty

CE FC RoHS

FCC NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Product design and specifications are subject to change without prior notification.

This product is designed and intended for use by those 14 years of age and older.

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celestron.com/pages/technical-support
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