

BigSky Planner iOS

A detailed, screen-led guide from a new, unregistered iOS installation to a reviewed observation plan.

01

Agreement and privacy

02

20-day trial or key

03

First Start Setup

04

Home to plan

Begin with a fresh, unregistered installation

This guide documents the native iPhone/iPad market flow in Version 20 (4). It begins before agreement acceptance, trial access, or saved planning setup. It is not the web version.

Read the screen and the steps together

Native capture: an actual iOS Simulator screen from this build. Gold numbered callouts are manual annotations, not app controls.

Instructional map: an explicitly labeled workflow diagram, used where a future access state or external service is not being demonstrated.

The phone layout is shown. iPad spacing and your date, sky window, visible counts, and clock format may differ.

Navigate the manual

- 1 Follow first-launch and setup in order on your first use.
- 2 Select a contents or index link to jump to an action. Page numbers also work in a printed copy.
- 3 Use the Contents footer link to return. Zoom screenshots when checking small labels.

Three worked deep-sky examples

M31 Andromeda Galaxy, M45 Pleiades open cluster, and NGC 7000 North America emission nebula illustrate the target and plan workflow.

Times are a captured example for September 4-5, 2026. Recalculate for your own night and observing site; do not copy these intervals as universal recommendations.

Location privacy

No personal GPS coordinates, address, map label, or identifying pin is published. Setup is captured before entering private data. “Manual Test Site” is an anonymous demonstration label, not a place you should select.

Market and local development builds

The market build retains agreement, trial, and purchase checks. The separate, development-signed local USB build omits access gates. This guide follows the market route; it does not imply an App Store submission or purchase.

Table of Contents

Select any entry to jump to its page. The numbers are the printed PDF page numbers. Use a Contents footer link to return.

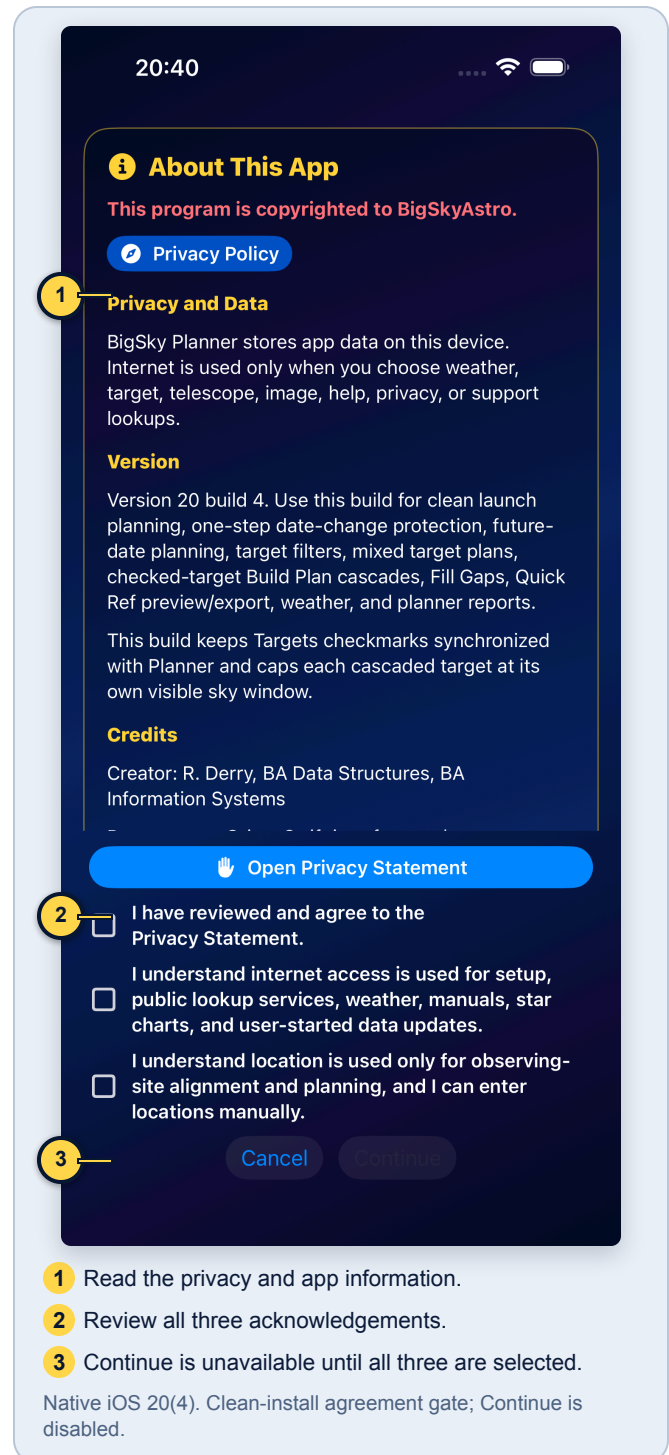
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1. Continue remains disabled until all acknowledgements are checked

After a new App Store download, the agreement gate appears before Home or planning data.

- 1 Read **About This App** and use **Open Privacy Statement**.
- 2 Review the three required acknowledgement statements.
- 3 Notice that **Continue** is disabled before all checks are complete.
- 4 Use **Cancel** only to clear the checks and remain outside the app.

The first-launch path is: agreement and privacy, then 20-day trial or supplied key, then First Start Setup, then Home.



2. Read the agreement gate before checking

Review the access and privacy information before entering the planner.

- 1 Read **About This App**; scroll its text if necessary.
- 2 Use **Open Privacy Statement** to read the linked statement. This external page requires internet access.
- 3 Return to the app and review each acknowledgement below the text.
- 4 Do not expect Home or planning controls until the agreement and access steps finish.

The screenshot shows Version 20 build 4 on a reset installation. Opening this information does not create an observation plan.

20:40

1 **About This App**

This program is copyrighted to BigSkyAstro.

[Privacy Policy](#)

Privacy and Data

BigSky Planner stores app data on this device. Internet is used only when you choose weather, target, telescope, image, help, privacy, or support lookups.

Version

Version 20 build 4. Use this build for clean launch planning, one-step date-change protection, future-date planning, target filters, mixed target plans, checked-target Build Plan cascades, Fill Gaps, Quick Ref preview/export, weather, and planner reports.

This build keeps Targets checkmarks synchronized with Planner and caps each cascaded target at its own visible sky window.

Credits

Creator: R. Derry, BA Data Structures, BA Information Systems

2 **Open Privacy Statement**

3 ☐ I have reviewed and agree to the Privacy Statement.

☐ I understand internet access is used for setup, public lookup services, weather, manuals, star charts, and user-started data updates.

☐ I understand location is used only for observing-site alignment and planning, and I can enter locations manually.

[Cancel](#) [Continue](#)

1 About This App identifies the product and build.

2 Open Privacy Statement opens the linked policy.

3 Return here to acknowledge what you reviewed.

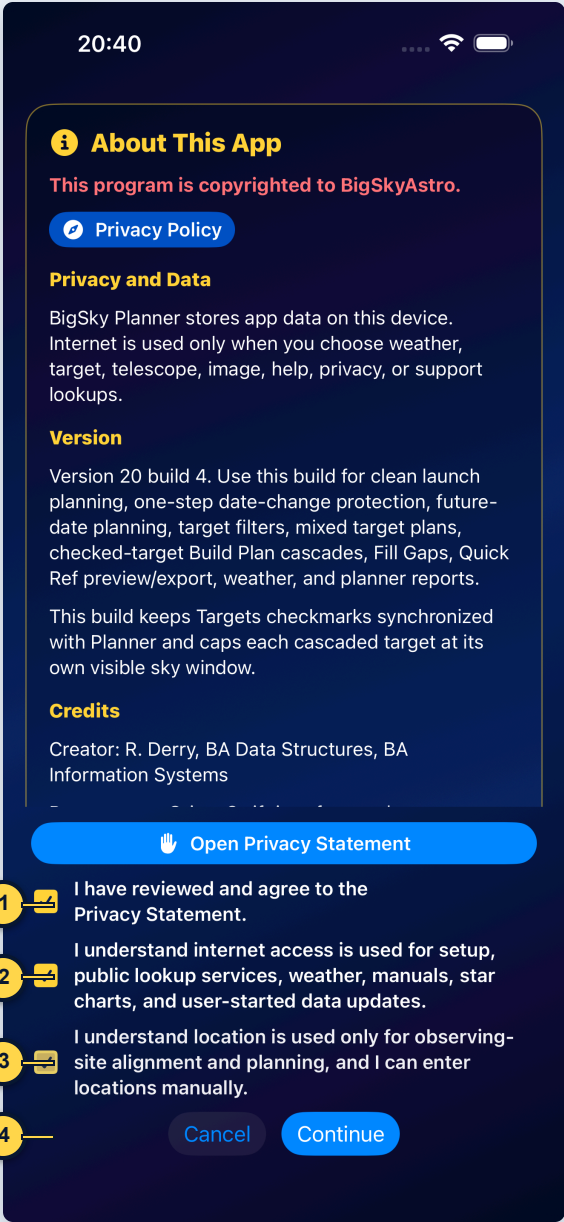
Native iOS 20(4). About This App and Open Privacy Statement before entry.

3. Check all three statements to enable Continue

The required statements

- 1 I have reviewed and agree to the Privacy Statement.
- 2 I understand internet access is used for setup, public lookup services, weather, manuals, star charts, and user-started data updates.
- 3 I understand location is used only for observing-site alignment and planning, and I can enter locations manually.

Cancel: clears the selections and displays the reminder to review and accept each item. It does not enter the app.



20:40

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- 2 ☒ I understand internet access is used for setup, public lookup services, weather, manuals, star charts, and user-started data updates.
- 3 ☒ I understand location is used only for observing-site alignment and planning, and I can enter locations manually.
- 4 ☐ [Cancel](#) [Continue](#)

1 Privacy acknowledgement selected.

2 Internet-use acknowledgement selected.

3 Location-use acknowledgement selected.

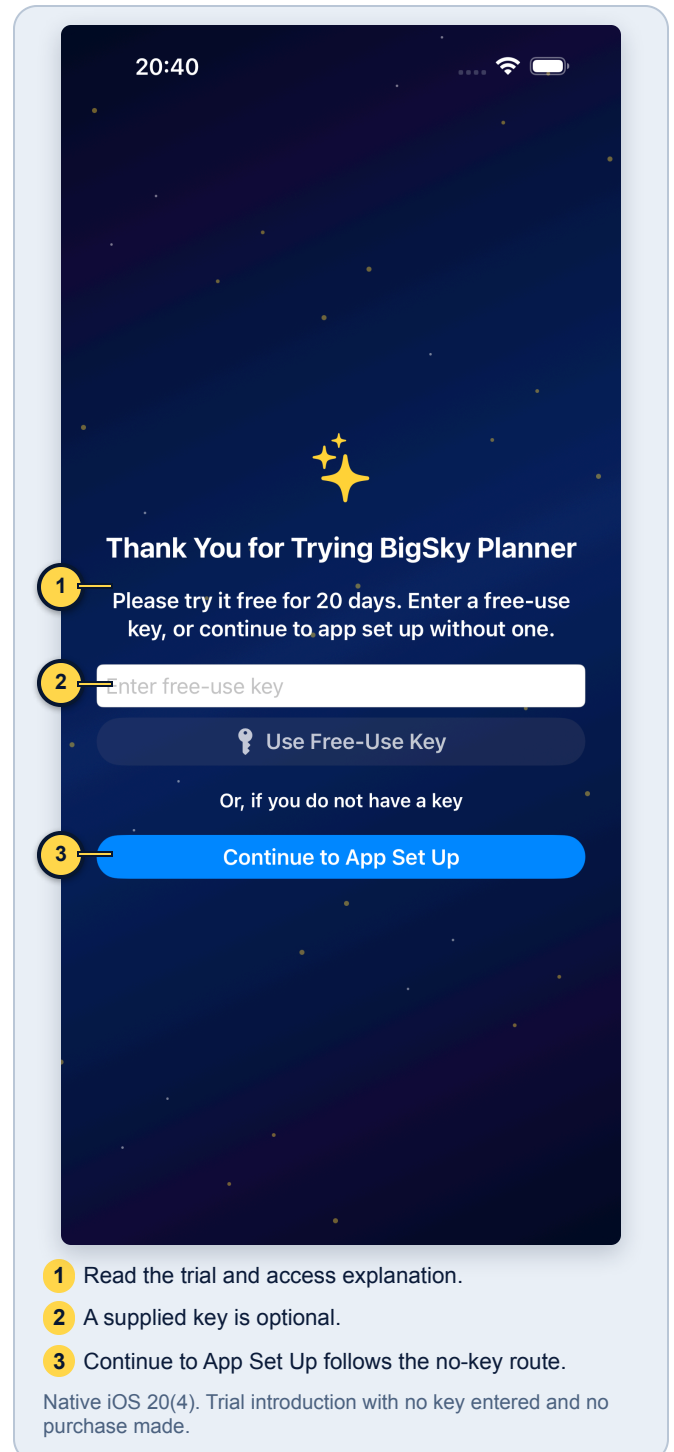
4 Continue enters the access introduction.

Native iOS 20(4). All acknowledgements selected; Continue enabled.

4. Start the 20-day trial or use a free-use key

- 1 Read **Thank You for Trying BigSky Planner**.
- 2 If supplied, enter the key in **Enter free-use key**.
- 3 Tap **Use Free-Use Key** to validate it.
- 4 Otherwise tap **Continue to App Set Up**.

Timing: the trial clock begins only when the no-key **Continue to App Set Up** path is used. A successfully accepted key unlocks this device without starting that trial path.



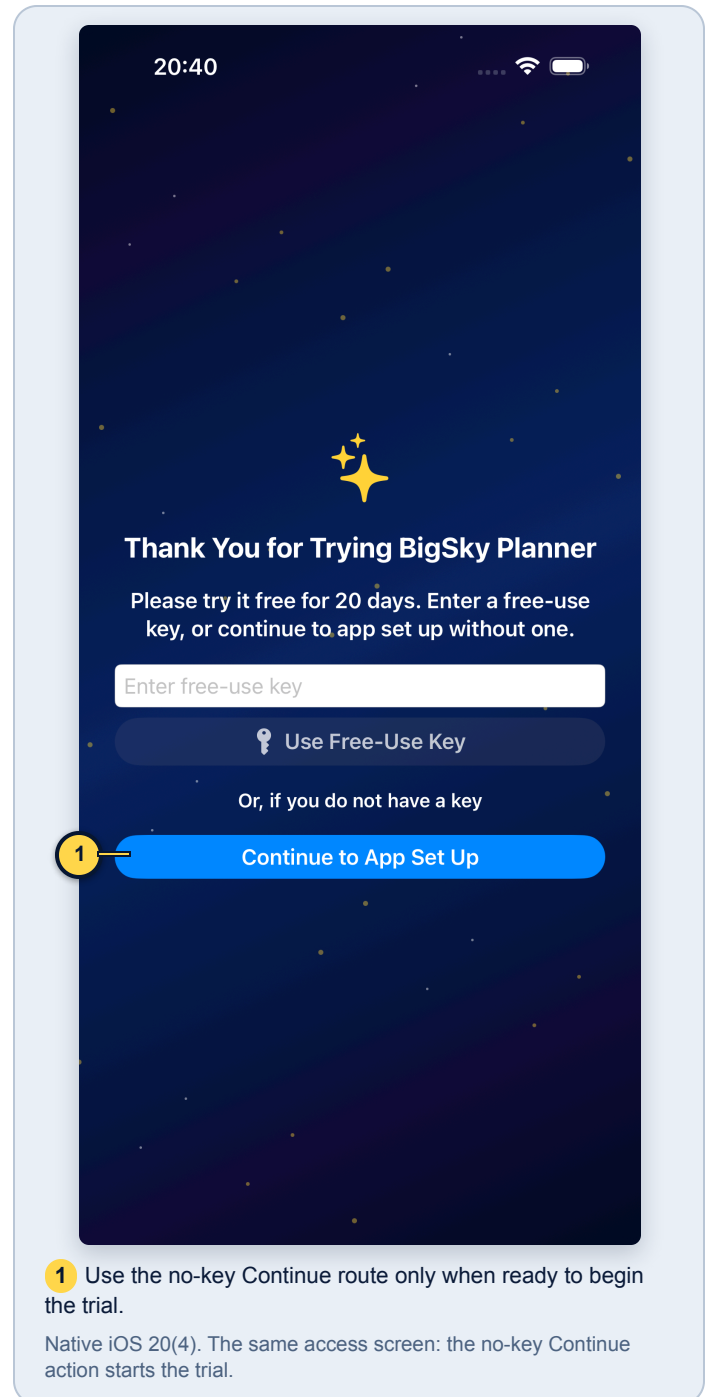
5. Know which access action starts the clock

Normal no-key route

- 1 Tap **Continue to App Set Up**.
- 2 The app records the first trial-start time.
- 3 First Start Setup opens.
- 4 Unexpired trial access then enters the main planner shell.

Key or later access

- 1 Use a supplied free-use key when appropriate.
- 2 At expiry, use **Purchase Full Access**, **Restore Purchase**, or a valid free-use key.
- 3 Let verified App Store access return the user to the planner.

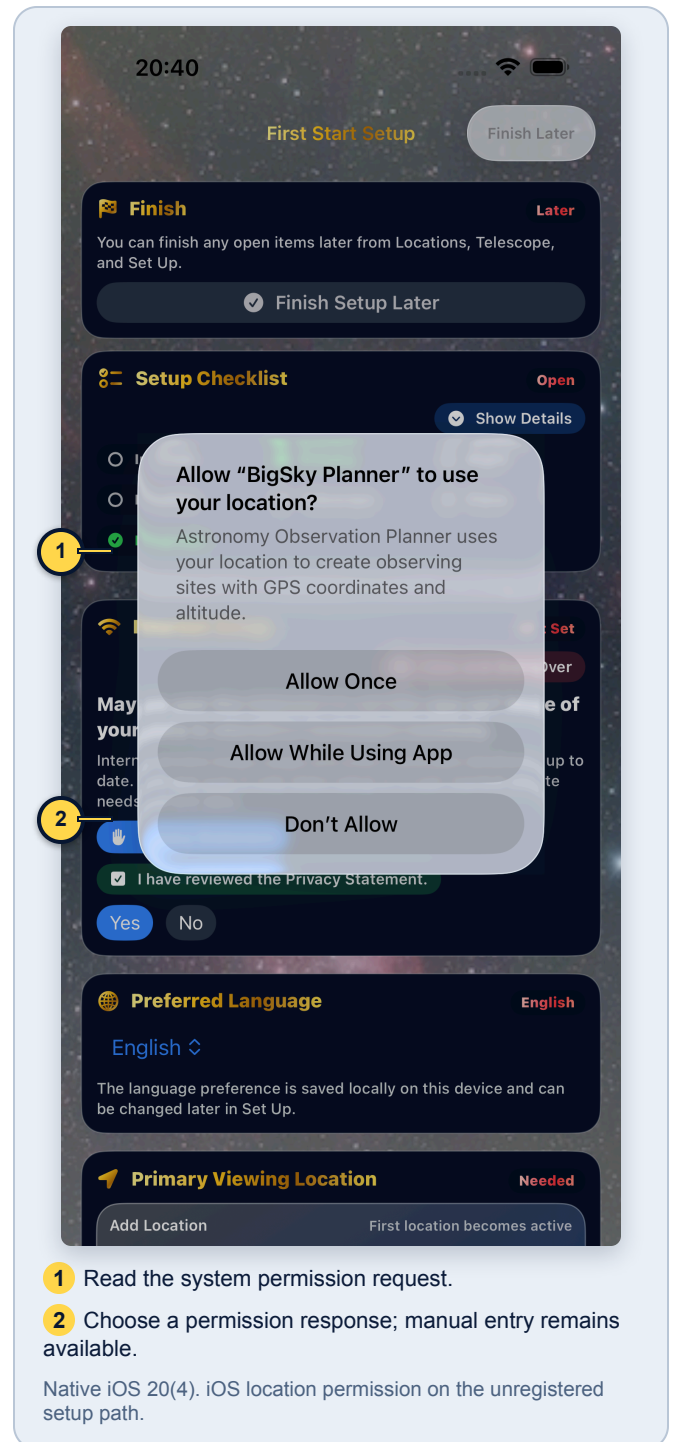


6. Allow or decline location, then build your setup context

Location permission is your choice. The manual follows the private, manual-entry route.

- 1 Read the iOS location request.
- 2 Choose an appropriate response. **Don't Allow** leaves manual site entry available.
- 3 If the app shows **Location Access**, read the explanation and tap **OK**.
- 4 Continue to First Start Setup and answer Internet Setup.

Declining GPS does not fill in an observing site. You must later save a valid location manually before time and sky calculations are ready.



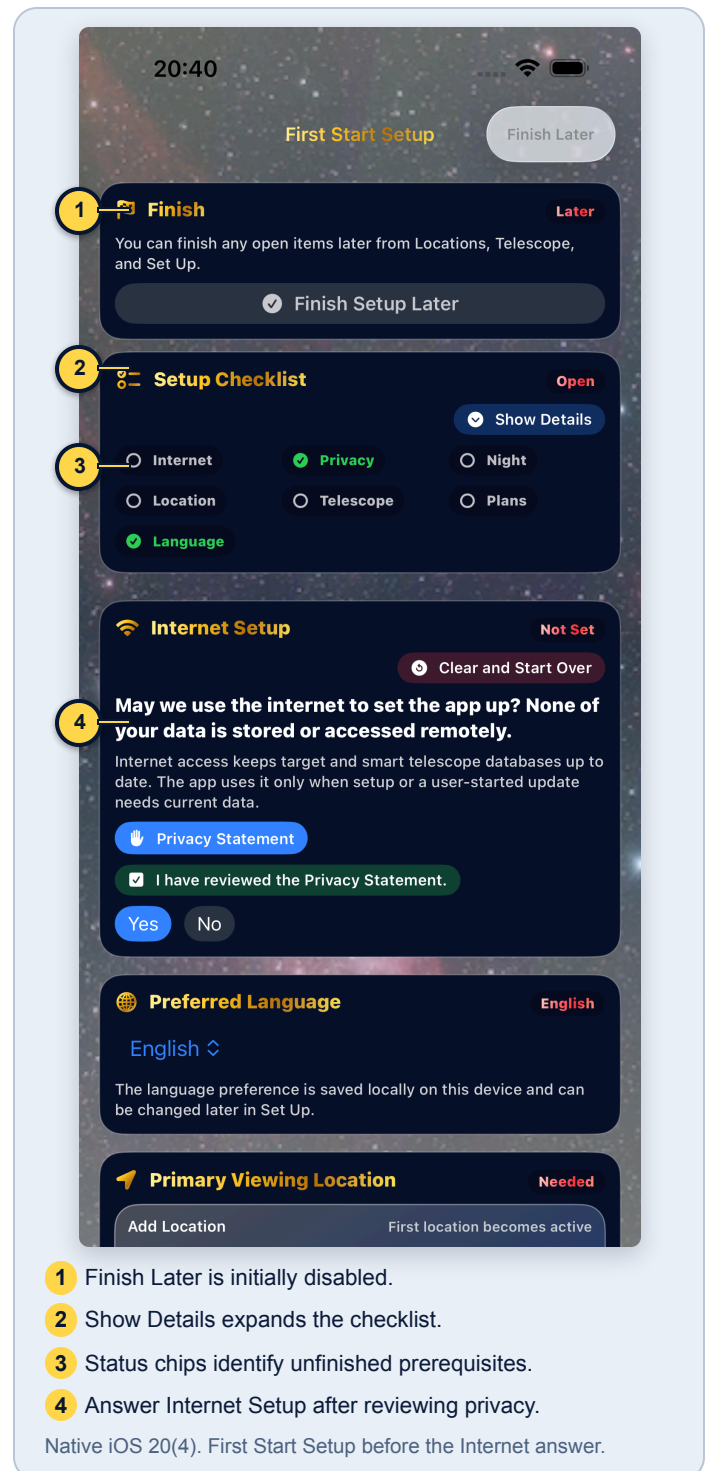
7. Read the checklist as seven planning prerequisites

The checklist is ready only when all relevant setup cards are complete.

Internet Privacy Night Location Telescope
Plans Language

- 1 Complete Internet and Privacy first.
- 2 Set the observation night.
- 3 Save a location and telescope.
- 4 Save plan-folder and language choices.

Ready requires Internet answered, Privacy reviewed, a default location, a default telescope, plan-folder setup, and a selected language.



8. Answer Internet Setup to enable Finish Later

The Internet answer controls whether you can leave incomplete setup.

- 1 Review the **Privacy Statement** and the acknowledgement. The first-launch agreement may already mark privacy reviewed.
- 2 Choose **Yes** for setup and user-started online lookups; or choose **No** and confirm **No, Continue Offline**.
- 3 Check that the Internet status changes from **Not Set**.
- 4 Use **Finish Later** only if you intend to complete location, telescope, and other open items later.

Finishing later does not make a missing site or telescope ready. Return to Locations, Telescope, and Set Up before relying on a plan.

1 Finish Later is available after an Internet answer.

2 Review the changed checklist states.

3 Internet Setup records your choice.

Native iOS 20(4). Internet permission answered; incomplete setup can be finished later.

9. Save your observing location without exposing it in this guide

- 1 Open **Primary Viewing Location**.
- 2 Use GPS if desired, or enter your observing location manually.
- 3 Name the location privately and save it as the default.
- 4 Add elevation when known for weather context.

For manual entry, begin with Country. This manual intentionally does not show an address, coordinates, map labels, or an identifying pin. Your saved default location supplies the private planning context.

INSTRUCTIONAL SCREEN MAP - PRIVACY-SAFE, NOT A SCREENSHOT

1 Primary Viewing Location



2 GPS or manual entry



3 Save your observing location as default



4 Return to the setup checklist

Privacy-safe workflow map. No address, coordinates, map labels, or identifying pin are displayed.

10. Save telescope and compatible accessories

- 1 Open **Primary Telescope**.
- 2 Select a smart telescope.
- 3 Choose only compatible accessories.
- 4 Tap **Save Primary Telescope**.

The planner stores the telescope and compatible accessory choice in plan reports. A phone accessory is not presented as a smart telescope.

1 Select a Telescope ↕

2 Choose a telescope before selecting accessories.

3 Save Primary Telescope

1 Select a Telescope opens the equipment choice.

2 Choose a telescope before accessories.

3 Save Primary Telescope activates after a valid choice.

Native iOS 20(4). Primary Telescope controls before choosing equipment; the checklist remains pinned above.

11. Save the folder choice and preferred language

- 1 Open the plan-folder card and choose a Files folder, or save the setting without one.
- 2 Confirm the folder status.
- 3 Choose **Preferred Language**.
- 4 Review the Finish card.

A saved folder is helpful, but plans can still be saved and shared from Planner. The Finish card says **Ready** only when all required checklist items are complete.



12. Start each observing night from Home

Home establishes the planning night and the window used by Targets.

- 1 Confirm **Plan Date** before entering times.
- 2 Save your default observing location and primary telescope if they are missing.
- 3 Set **Initialize** and **Stop Tracking**. An overnight stop belongs to the following morning.
- 4 Tap **Apply**, then choose the next module.

This demonstration uses an anonymous site. "None selected" in the telescope summary means model-specific equipment guidance is not yet available; choose your own saved telescope.

The screenshot shows the 'Home' screen of the BigSky Astro app. At the top, the status bar shows 20:21. Below the header, the 'My Telescope' section contains a 'Plan Date' field set to 'Sep 4, 2026', 'Initialize' and 'Stop Tracking' buttons with values '2025' and '0614' respectively, and an 'Apply' button. Below this is a list of modules: 1. Observation Locations, 2. Build a Smart Telescope, 3. Target Setup, 4. Plan an Observation, 5. Weather and Sky Info (Internet Required), 6. Set Up (Internet Required), and 7. Help. At the bottom, a summary table shows 'Location Name' as 'Manual Test Site', 'Telescope With Accessories' as 'None selected', 'Total Targets' as '17429', and 'Chosen Hemisphere Targets' as 'Northern Catalog: 12181'. A bottom navigation bar includes icons for Home, Locations, Telescope, Targets, Planner, Weather, Set Up, and a help icon. Numbered callouts 1 through 4 point to the Plan Date, Initialize/Stop Tracking buttons, Apply button, and the Total Targets row respectively.

- 1 Plan Date defines the observing night.
- 2 Initialize and Stop Tracking define the telescope window.
- 3 Tap Apply before Targets.
- 4 Totals describe this captured catalog state.

Native iOS 20(4). Home with anonymous demonstration context and current catalog totals.

13. Use the seven numbered Home modules

- 1 **Observation Locations** - default site and coordinates.
- 2 **Build a Smart Telescope** - primary telescope and accessories.
- 3 **Target Setup** - catalog, time, filters, and results.
- 4 **Plan an Observation** - planner and report workflows.
- 5 **Weather and Sky Info** - context and user-started updates.
- 6 **Set Up** - language, units, data, and maintenance.
- 7 **Help** - focused reminders and clock formats.

The screenshot displays the BigSky Astro app interface. At the top, the status bar shows the time 20:21 and battery level. Below the status bar, the app header reads "© 2026 BigSkyAstro Home Version 20 (4)". The main content area features a "My Telescope" section with a "Readiness Estimate" and "Visible Stars" section. Below this is a "Plan Date" field set to "Sep 4, 2026". There are two buttons: "Initialize" with "2025" and "Stop Tracking" with "0614". Below these buttons, it says "Estimate: visible-star readiness: start -6.0° • end -6.0°", "Select a telescope for model-specific caveats.", and "Timing uses saved default location." There is an "Apply" button with a checkmark icon.

Below the "My Telescope" section is a list of seven numbered modules, each with an icon and a label:

1. Observation Locations (location pin icon)
2. Build a Smart Telescope (telescope icon)
3. Target Setup (target icon)
4. Plan an Observation (moon icon)
5. Weather and Sky Info (cloud icon) Internet Required
6. Set Up (wrench icon) Internet Required
7. Help (question mark icon)

At the bottom of the screen is a persistent bottom navigation bar with icons for Home, Locations, Telescope, Targets, Planner, Weather, Set Up, and a help icon (question mark).

Below the screenshot, three numbered points explain the modules:

- 1 Locations and Telescope establish the equipment/site context.
- 2 Target Setup and Plan an Observation handle selection and scheduling.
- 3 Weather, Set Up, and Help provide supporting controls.

Native iOS 20(4). Seven numbered modules and the persistent bottom navigation.

14. Make the date and telescope window agree

Set the night on Home, then confirm the same observing window in Targets.

- 1 On Home choose **Plan Date**, enter Initialize and Stop Tracking, and tap **Apply**.
- 2 Open Targets, then **Time**. Read Start and End.
- 3 Use **2030, 9:30 PM**, or **21:30** as accepted entry styles.
- 4 Tap **Apply Time**; then review and apply Filter settings.

The captured 2025-0614 values mean 20:25 through 06:14 the next day. If the night is wrong, correct Home first. A result card cannot repair the wrong date or site.

The screenshot shows the 'Target Setup' screen in the BigSky Planner app. At the top, the time is 20:22. Below the title, there is a search bar and an 'Update Data' button. Three main buttons are visible: 'Mag 17 Catalog' (with subtext 'Northern • Mag 17'), 'Time' (with subtext '20:25-06:14'), and 'Filter' (with subtext '2 selected'). A 'Time Window' popup is overlaid on the screen, showing 'Start' as '2025' and 'End' as '0614'. Below the popup, there are filter categories: Nebulae, Stars, Solar (checked), Asteroids, Clusters, Multiple, and Comets. At the bottom, there is a section titled 'Apply Filters First' with instructions: 'Set the catalog, time window, or limits, then use Apply Filters inside the popup to show matching targets.' The bottom navigation bar includes icons for Home, Locations, Telescope, Targets (selected), Planner, Weather, and Set Up.

- 1 Start and End must describe the intended overnight window.
- 2 Apply Time commits this editor; Cancel leaves it unchanged.

Native iOS 20(4). Time Window editor after Home Apply.

15. Start Targets with Catalog, Time, and Filter

Work through Catalog, Time, and Filter before reading target results.

- 1 Open **Catalog** and choose the hemisphere scope.
- 2 Set **Limit Mag** at 17 or a brighter numeric limit. The shipped inventory excludes fainter records.
- 3 Tap **Apply Catalog**. Open **Time** and apply the correct window.
- 4 Open **Filter**, select the required types and sky rules, then tap **Apply Filters**.

Clear Filters changes the filtering setup, not the source catalog. A familiar ID may have no result because of the selected type, hemisphere, horizon, or time.

20:22

Target Setup

Search ID, name, type, constellation, or source

Update Data

Mag 17 Catalog
Northern • Mag 17

Time
20:25-06:14

Filter
2 selected

Catalog

1 Northern Southern Global

Limit Mag

2 17

Clear Filters

3 Cancel Apply Catalog

Stars Multiple

Solar Comets

Asteroids

Apply Filters First

Set the catalog, time window, or limits, then use Apply Filters inside the popup to show matching targets.

Home Locations Telescope Targets Planner Weather Set Up ?

- 1 Choose Northern, Southern, or Global.
- 2 Limit Mag is 17: lower numbers are brighter.
- 3 Apply Catalog commits the scope.

Native iOS 20(4). Catalog editor with hemisphere scope and magnitude 17.

16. Set sky rules before reading results

- 1 Choose a target category.
- 2 Set the magnitude scope, which is capped at 17.0 in this build.
- 3 Set altitude and azimuth or Clear Sky conditions for the actual horizon.
- 4 Enable duration only when it matters to the comparison.

If a target does not fit the night or horizon, change the planning context or filter. Do not force it into a plan just because it appears in a search.

The screenshot shows the 'Target Setup' screen in the BigSky Planner app. A 'Filter Settings' popup is open, allowing users to refine their target search. The popup includes sections for 'Target Types' (DSO, Solar System, Galaxy, Nebulae, Clusters, Stars, Multiple Stars, Comets, Asteroids), 'Clear Sky' settings (Azimuth and Altitude ranges), and a 'Display' section with a 'Duration in View' checkbox. Numbered callouts 1-4 highlight these key configuration areas.

- 1 Select object types. This capture shows the broad DSO scope.
- 2 Enter real usable azimuth/altitude bounds.
- 3 Duration in View enables a duration comparison.
- 4 Apply Filters calculates the displayed result set.

Native iOS 20(4). Filter Settings, Clear Sky limits, and Apply Filters.

17. Galaxy example: M31 Andromeda

M31 illustrates the galaxy workflow in the active observing context.

- 1 Search **M31** in an applied DSO or Galaxy scope. A broad DSO scope is shown here.
- 2 Confirm **Andromeda Galaxy**, Galaxy, and magnitude 3.4 on the result.
- 3 Read first usable time, altitude (Alt), azimuth (Az), best time, and duration.
- 4 Open **Details** before using **Check**.

First 20:55 is the calculated first usable sample for this captured session. Best 03:10 is not automatically the scheduled start. The final cascade considers the other checked targets too.

20:22

Search M31

Update Data

Mag 17 Catalog Northern • Mag 17

Time 20:25-06:14

Filter 2 selected

Common Databases Northern

DSO Galaxies

Nebulae Clusters

Stars Multiple

Solar Comets

Asteroids

Sort Order Auto: First View, Duration

First View Type Magnitude Az

Alt

1 M31 Deep Sky Northern Details

Andromeda Galaxy

Galaxy • Andromeda

Messier • NGC 224 Mag 3.4

2 First 20:55 • Alt 26° • Az 57° NE

Best 03:10 • Alt 86° • Az 195° S Dur: 09:19

3 Check Sample

Add Plan

Home Locations Telescope Targets Planner Weather Set Up ?

- 1 Confirm the canonical ID, name, and object type.
- 2 Read magnitude, first/best position, and duration.
- 3 Check selects the target; Sample is a separate image action.

Native iOS 20(4). M31 Andromeda Galaxy: magnitude 3.4 and first usable time 20:55.

18. Star-cluster example: M45 Pleiades

M45 demonstrates why a bright, familiar target still needs a valid time window.

- 1 Search **M45** within an applied DSO or Clusters scope.
- 2 Confirm **Pleiades** and **Open Cluster**; the card also lists Melotte 22.
- 3 Read **First 01:10** and Alt 27 degrees for this example.
- 4 Review Details, then Check only if it fits the session.

M45 is not placed at the early-evening start merely because its magnitude is 1.2. The corrected cascade waits until the target is usable under the active conditions.

20:22

Search M45

Update Data

Mag 17 Catalog Northern • Mag 17

Time 20:25-06:14

Filter 2 selected

Common Databases Northern

DSO Galaxies

Nebulae Clusters

Stars Multiple

Solar Comets

Asteroids

Sort Order Auto: First View, Duration

First View Type Magnitude Az

Alt

1 M45 Deep Sky Northern Details

Pleiades

Open Cluster • Taurus

Messier • Melotte 22 Mag 1.2

2 First 01:10 • Alt 27° • Az 82° E

Best 06:10 • Alt 69° • Az 181° S Dur: 05:04

3 Check Sample

Add Plan

Home Locations Telescope Targets Planner Weather Set Up

- 1 Confirm the canonical ID, name, and object type.
- 2 Read magnitude, first/best position, and duration.
- 3 Check selects the target; Sample is a separate image action.

Native iOS 20(4). M45 Pleiades: an open cluster, first usable at 01:10 in this example.

19. Nebula example: NGC 7000 North America

NGC 7000 is the nebula example for position and duration review.

- 1 Search the canonical ID **NGC 7000** in a DSO or Nebulae scope.
- 2 Confirm **North America Nebula**, **Emission Nebula**, and magnitude 4.0.
- 3 Read first and best time, Alt, Az, and the reported duration.
- 4 Review Details; use Check if this target belongs in the same plan as M31 and M45.

The accepted NGC 7000 record remains available even when a retired alternate identifier has been stripped. The duration shown here depends on this night and the applied sky rules.

20:22

NGC 7000

Update Data

Mag 17 Catalog
Northern • Mag 17

Time
20:25-06:14

Filter
2 selected

Common Databases Northern

☒ DSO ☐ Galaxies

☐ Nebulae ☐ Clusters

☐ Stars ☐ Multiple

☒ Solar ☐ Comets

☐ Asteroids

Sort Order Auto: First View, Duration

☐ First View ☐ Type ☐ Magnitude ☐ Az

☐ Alt

1 NGC 7000 Deep Sky Northern Details

North America Nebula

Emission Nebula • Cygnus

NGC • NGC 7000 Mag 4.0

2 First 20:25 • Alt 59° • Az 75° E

Best 23:25 • Alt 89° • Az 229° SW Dur: 09:30

3 ☐ Check

Home Locations Telescope Targets Planner Weather Set Up

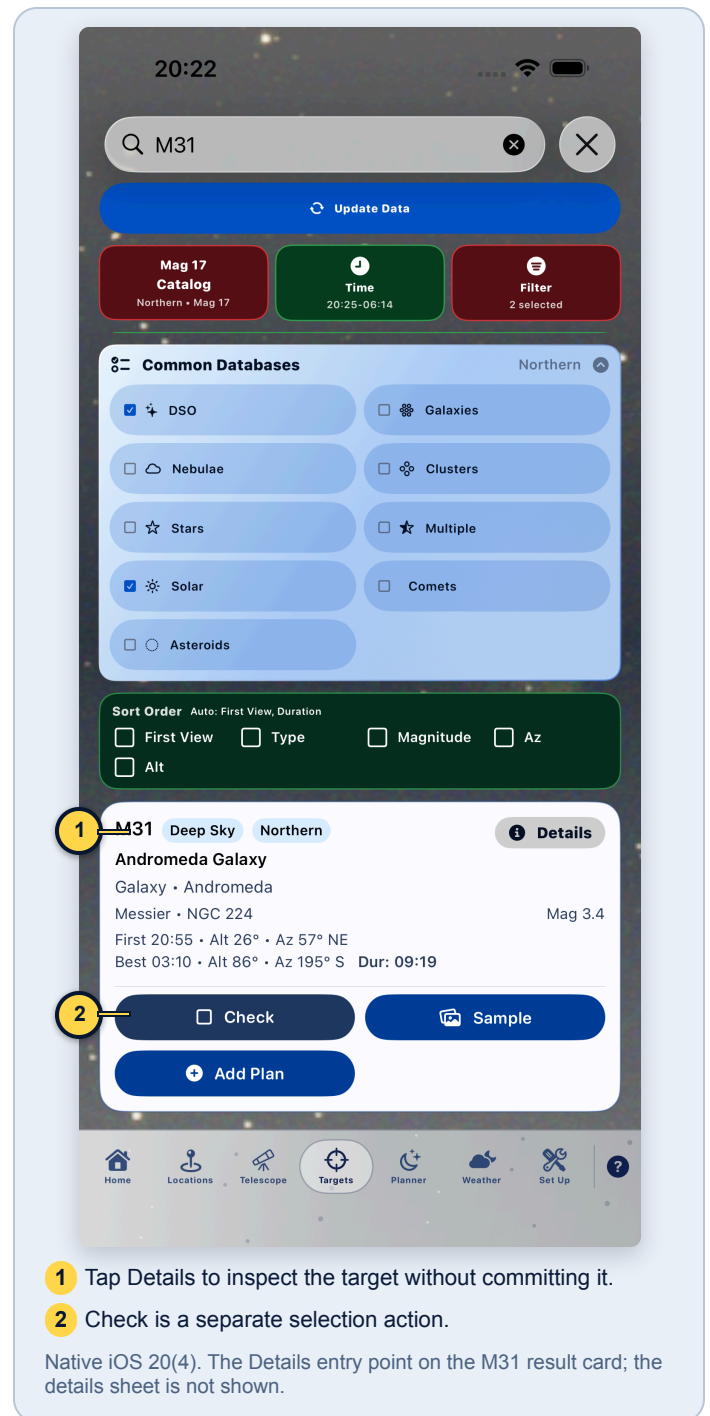
- 1 Confirm the canonical ID, name, and object type.
- 2 Read magnitude, first/best position, and duration.
- 3 Check selects the target; Sample is a separate image action.

Native iOS 20(4). NGC 7000 North America emission nebula: first usable at 20:25.

20. Use Details without committing a target

- 1 Tap **Details** on a qualified galaxy, star cluster, or nebula card.
- 2 Read object identity, magnitude, first usable time, altitude, azimuth, and duration when shown.
- 3 Read capture guidance for the saved telescope.
- 4 Close Details, Check, or leave the card unchanged.

Details is a review action. It does not create a plan, export a report, or override the active planning window.



- 1 Tap Details to inspect the target without committing it.
- 2 Check is a separate selection action.

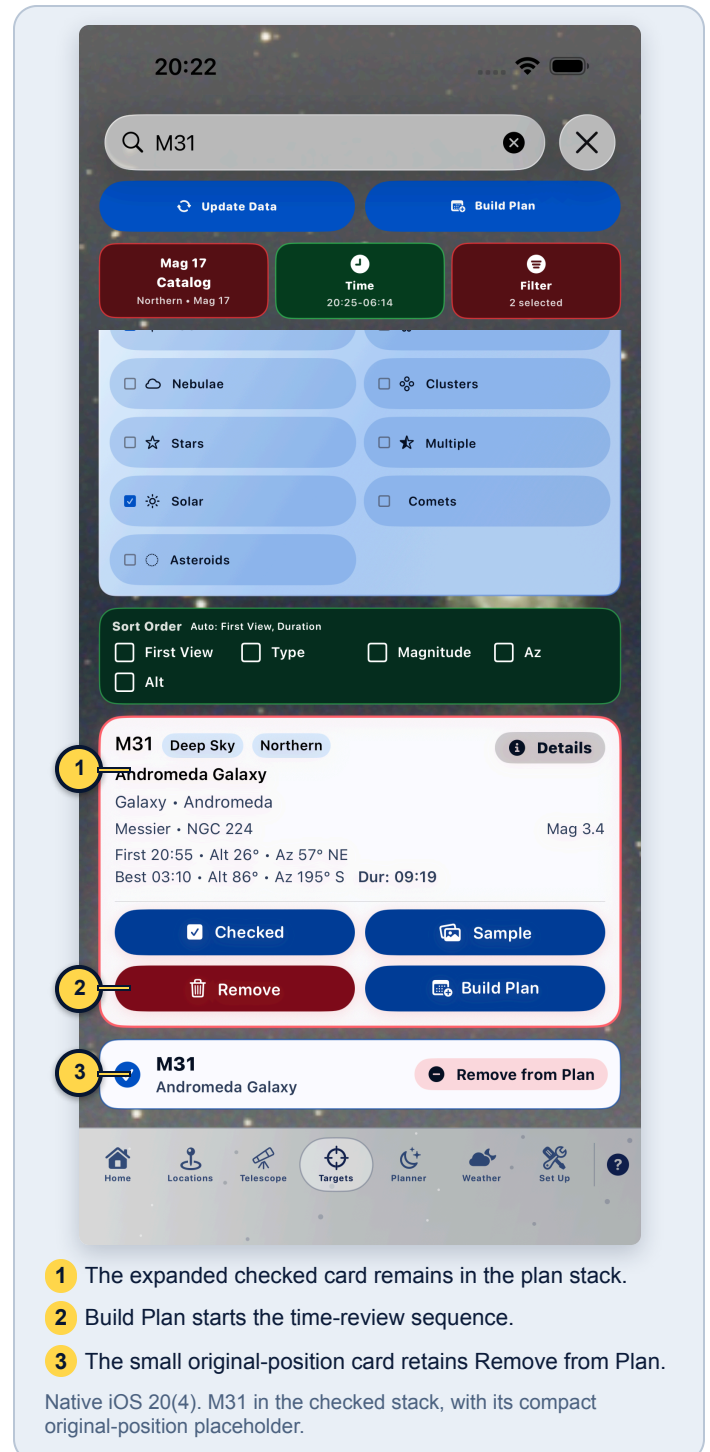
Native iOS 20(4). The Details entry point on the M31 result card; the details sheet is not shown.

21. Check a curated DSO and keep its original place

Checking a target preserves a clear way back to its original result position.

- 1 Tap **Check** on M31 after reviewing the card.
- 2 Find the checked card in the planning stack at the top of the result list.
- 3 Scroll to its original sorted position and find the compact M31 card.
- 4 Use **Remove from Plan** there when you want to undo the selection.

The pictured large card and small card refer to the same M31 target. They are not duplicate catalog entries. The small card is an intentional undo placeholder.



- 1 The expanded checked card remains in the plan stack.
- 2 Build Plan starts the time-review sequence.
- 3 The small original-position card retains Remove from Plan.

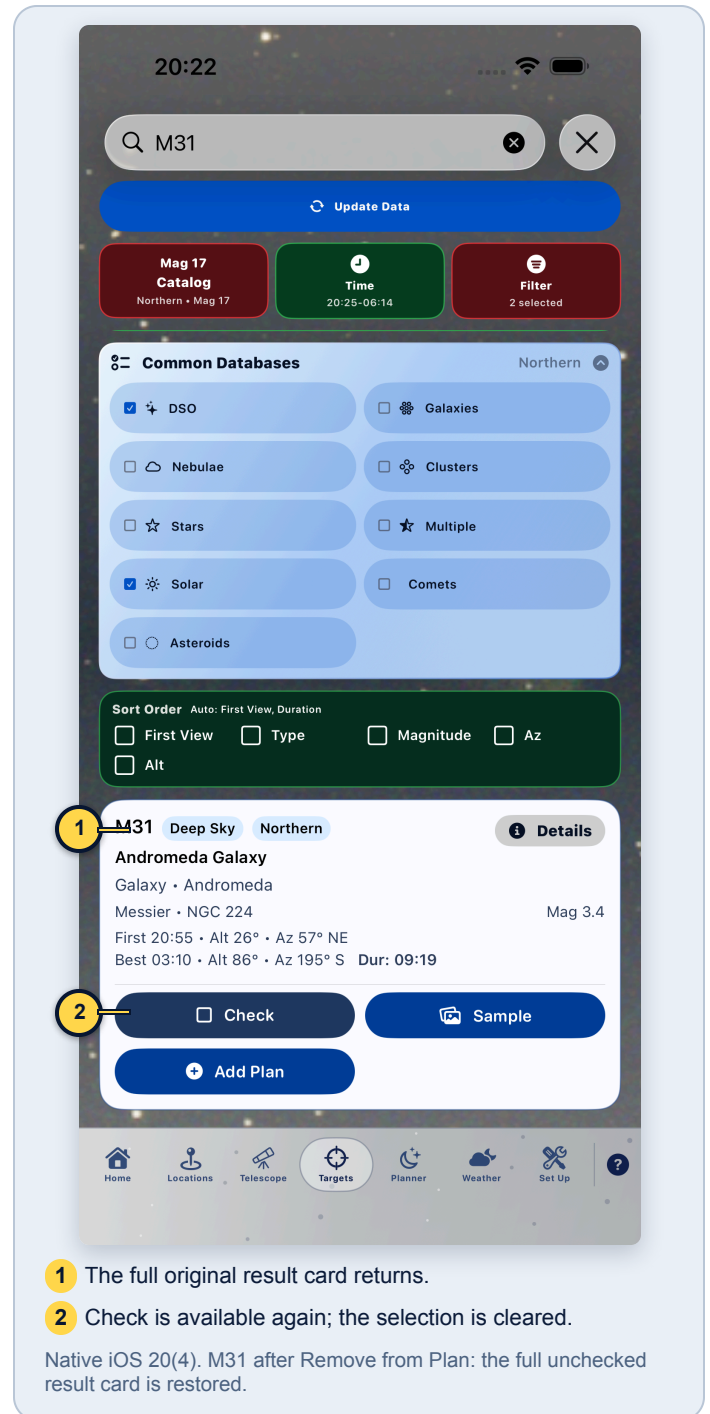
Native iOS 20(4). M31 in the checked stack, with its compact original-position placeholder.

22. Remove from Plan restores the full card

Remove from Plan restores the full result card at its original position.

- 1 Locate the compact M31 placeholder shown on the previous page.
- 2 Tap its **Remove from Plan** action.
- 3 Verify the full M31 card returns with an unchecked **Check** action.
- 4 Recheck only if the target still belongs in the current plan.

This removes the planning selection, not the catalog object. The native regression test verified the placeholder and the restored Check action in this build.



- 1 The full original result card returns.
- 2 Check is available again; the selection is cleared.

Native iOS 20(4). M31 after Remove from Plan: the full unchecked result card is restored.

23. Build Plan reviews the calculated target order

Build Plan turns checked targets into a sequence of proposed observation intervals.

- 1 Check the approved targets M31, M45, and NGC 7000.
- 2 Review the checked stack, then tap **Build Plan**.
- 3 Read the target named on the first **Observation Time** sheet; do not assume tap order is time order.
- 4 Check availability and Start/Stop, then use **Add to Planner** to accept and advance.

This captured sequence is NGC 7000, M31, then M45. The first interval is 20:25-20:55. If no usable interval remains, revise the selection or context; do not force a conflicting time.

- 1 Confirm the queued target identity.
- 2 Available for selected time must be valid.
- 3 Review Start and Stop before accepting.
- 4 Add to Planner accepts this interval and advances.

Native iOS 20(4). First cascade sheet: NGC 7000, 20:25-20:55.

24. Validate availability, Start, Stop, and Add to Planner

Observation Time is a validation step, not an instruction to accept blindly.

- 1 Read the target name and **Available for selected time** statement.
- 2 Confirm Start and Stop, including which side of midnight each belongs to.
- 3 Review the Alt/Az and in-window messages at both endpoints.
- 4 Adjust only within usable sky; use **Add to Planner** when the interval is valid.

In this example M31 begins when NGC 7000 stops, at 20:55, and ends at 01:10. If an edit makes the interval unavailable, correct it before advancing.

The screenshot shows the 'Observation Time' dialog for target M31. The dialog includes the following elements:

- Target Information:** M31, Andromeda Galaxy, Galaxy • Andromeda • Mag 3.4. A green status bar indicates 'Available for selected time'.
- Start Time:** 8:55 PM. Alt 26° • Az 57° NE • In window.
- Stop Time:** 1:10 AM. Alt 69° • Az 90° E • In window.
- Cascade Time:** A message states 'Cascade time is chained from the selected target order.' Below it, a note says 'These positions use the saved location and the current target-page...'.
- Action:** A blue button labeled 'Add to Planner' with a checkmark icon.

Below the screenshot, four numbered steps are provided:

- 1 Check target identity and availability.
- 2 Read the proposed start and stop.
- 3 Read the cascade validation statement.
- 4 Add to Planner advances to the next target.

Native iOS 20(4). Second cascade sheet: M31, 20:55-01:10 across midnight.

25. Understand the chained time cascade

Later targets must fit both the preceding interval and their own visibility.

- 1 Review the next target after each Add to Planner action.
- 2 Check that its start is not earlier than the preceding stop.
- 3 Check that the target is actually usable at the proposed start and stop.
- 4 After the last target, open **Planner** and review the complete sequence.

Captured handoffs: NGC 7000 ends 20:55; M31 starts 20:55 and ends 01:10; M45 starts 01:10 and ends 06:14. A required visibility gap is safer than forcing an unavailable target.

20:23

NGC 7000

Update Data Build Plan

Mag 17 Catalog Northern • Mag 17

Time 20:25-06:14

Filter 2 selected

Common Databases Northern

DSO Galaxies

Nebulae Clusters

Stars Multiple

Solar Comets

Cancel Observation Time

1 M45
Pleiades
Open Cluster • Taurus • Mag 1.2
Available for selected time

2 Start Time 1:10 AM
Alt 27° • Az 82° E • In window

3 Stop Time 6:14 AM
Alt 69° • Az 183° S • In window

Cascade time is chained from the selected target order.
These positions use the saved location and the current target-page...

4 Add to Planner

- 1 M45 is the final target in this example.
- 2 01:10 is a usable start, not a forced evening slot.
- 3 06:14 respects the telescope stop time.
- 4 Accept the last interval, then review Planner.

Native iOS 20(4). Third cascade sheet: M45, 01:10-06:14, available at both endpoints.

26. Review the completed sequence in Planner

Planner lists the final validated sequence in chronological start-time order.

- 1 Open **Planner** after Build Plan finishes.
- 2 Read targets in chronological start-time order.
- 3 Confirm Start, End, ALT, AZ, magnitude, and target identity.
- 4 Open a row only when it needs revision.

A plan is tied to one location, date, telescope window, filters, and visibility calculation. Review it in that exact context.

The screenshot displays the 'Plan an Observation' screen in the BigSky Planner app. At the top, the time is 20:23. The screen shows a list of targets for the date 2026-09-04. The first target is NGC 7000 (Emission Nebula, Cygnus, Mag 4.0) with a duration of 30m, scheduled from 8:25 PM to 8:55 PM. The second target is M31 (Andromeda Galaxy, Galaxy, Andromeda, Mag 3.4) with a duration of 4h 15m, scheduled from 8:55 PM to 1:10 AM. The third target is M45 (Pleiades, Open Cluster, Taurus, Mag 1.2) with a duration of 5h 4m, scheduled from 20:55 to 01:10. Each target entry includes a 'View Sample' button. The bottom navigation bar shows the 'Planner' icon selected.

- 1 Name the plan before output.
- 2 Read the first target and its scheduled interval.
- 3 Review the next chronological handoff.
- 4 Scroll to inspect the final target completely.

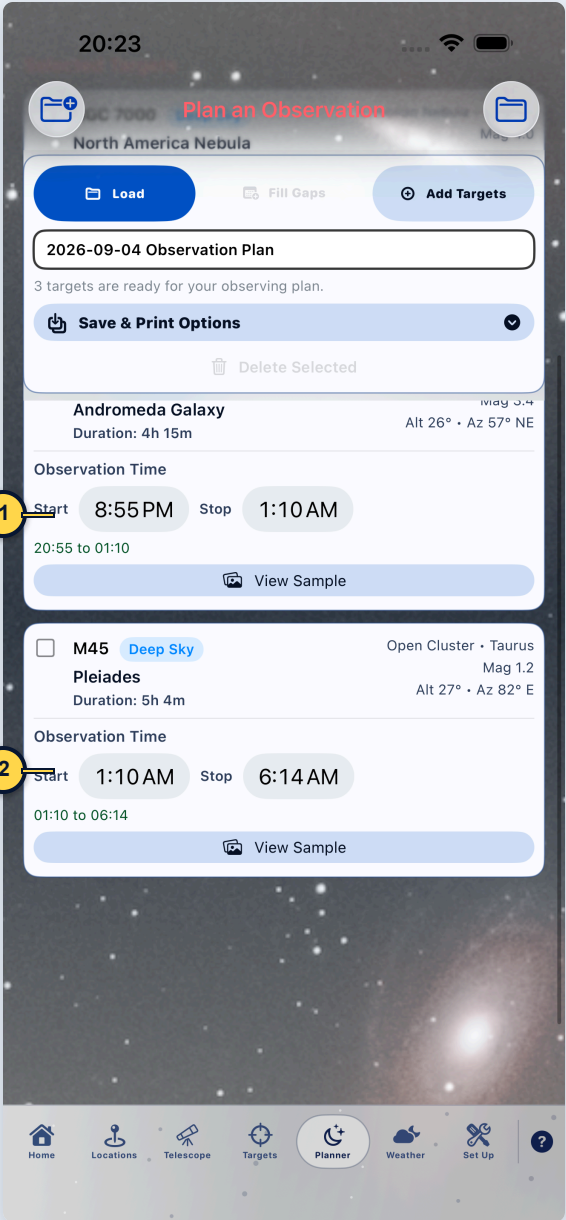
Native iOS 20(4). Completed plan with NGC 7000, M31, and M45; no timing-conflict warning.

27. Edit an end time, then review all later starts

A time edit can affect later targets. Review the whole chain before output.

- 1 Find the row that needs revision and inspect its existing Start and Stop.
- 2 Change the time deliberately within the target's usable sky window.
- 3 Review the next start and all later rows after the edit.
- 4 Resolve every availability or timing-conflict warning before previewing or saving.

The screenshot shows the completed later rows before an edit; it is a reference for checking handoffs, not evidence of an edited interval. Do not assume a changed boundary remains valid for the next object.



20:23

Plan an Observation

North America Nebula

Load Fill Gaps Add Targets

2026-09-04 Observation Plan

3 targets are ready for your observing plan.

Save & Print Options

Delete Selected

Andromeda Galaxy

Duration: 4h 15m

Alt 26° • Az 57° NE

Observation Time

1 Start 8:55 PM Stop 1:10 AM

20:55 to 01:10

View Sample

M45 Deep Sky

Open Cluster • Taurus

Pleiades

Duration: 5h 4m

Mag 1.2

Alt 27° • Az 82° E

Observation Time

2 Start 1:10 AM Stop 6:14 AM

01:10 to 06:14

View Sample

Home Locations Telescope Targets Planner Weather Set Up ?

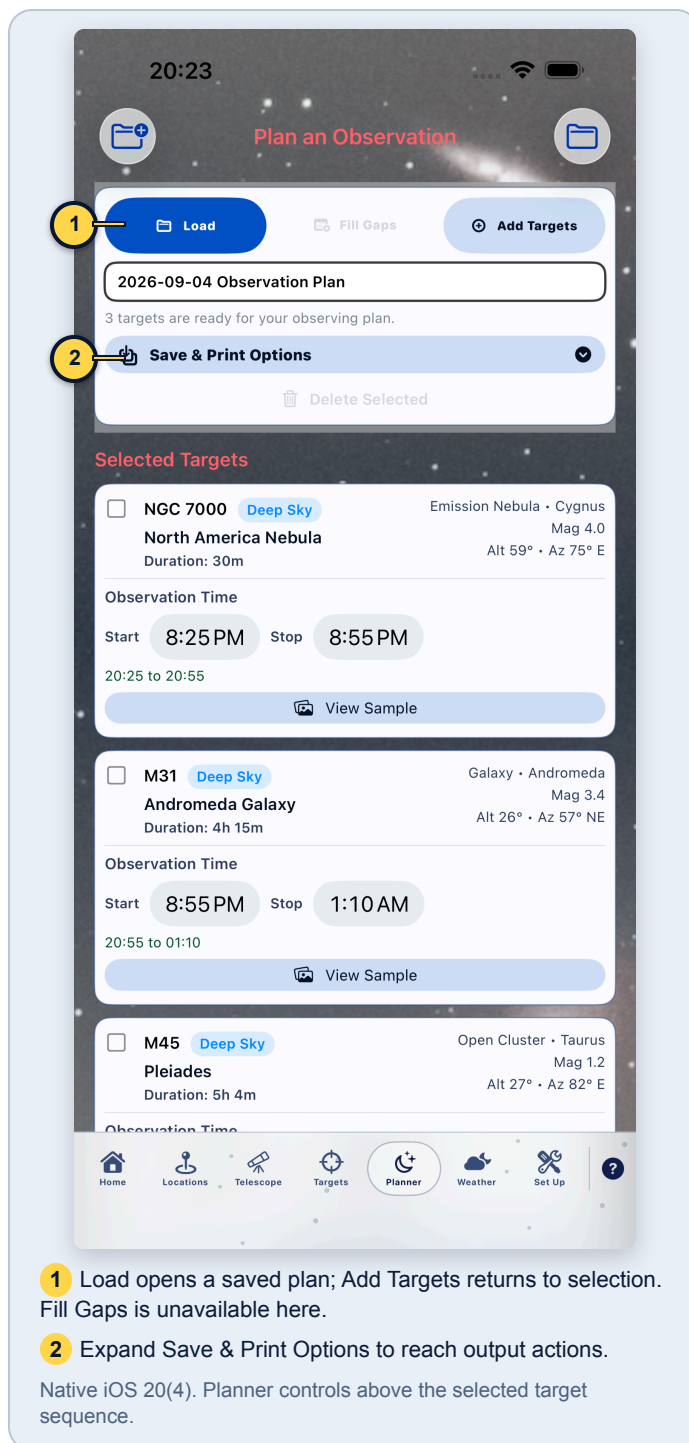
- 1 Review M31 Start and Stop.
- 2 M45 begins at M31's 01:10 stop. Recheck after any edit.

Native iOS 20(4). Later plan rows for handoff review; this is a completed sequence, not a simulated edit.

28. Load, fill gaps, add targets, then choose output

- 1 Use **Load Plan** to continue a saved plan.
- 2 Use **Fill Gaps** only to review suggestions for empty intervals.
- 3 Use **Add Targets** to return to target selection using plan context.
- 4 Open **Save & Print Options** only after Preview review.

Fill Gaps suggests matching candidates using active filters and the saved location. It does not replace review or authorize automatic additions.



29. Preview before saving, printing, sharing, or deleting

- 1 Choose **Preview** to check the report first.
- 2 Use **Save PDF** where a plan folder is available.
- 3 Use **Print Plan** or **Share Plan** after review.
- 4 Use **Quick Ref** for compact PDF or text.

Delete Plan is destructive. Verify the current plan name and use Load Plan or Save PDF first if retention matters.

INSTRUCTIONAL SCREEN MAP - NOT A SCREENSHOT

1 Preview

2 Save PDF / Print Plan

3 Share Plan / Quick Ref

4 Delete Plan: confirm only if intended

Save & Print Options map; not a screenshot.

30. Check weather after planning context is set

- 1 Open **Weather and Sky Info** from Home.
- 2 Confirm active date and time period.
- 3 Read Sun, Moon, darkness, Bortle/SQM, and timing context.
- 4 Use a source **Update** only when current data is needed.

Blank weather usually indicates a missing valid default location, a disallowed online feature, or missing elevation. Correct setup, then update again.

INSTRUCTIONAL SCREEN MAP - NOT A SCREENSHOT

- 1 **Weather and Sky Info**
- 2 **Date and period follow plan context**
- 3 **Update source, then inspect hourly rows**

Weather workflow map, not a screenshot.

31. Maintain sources, units, and settings in Set Up

- 1 Open **Set Up** from Home.
- 2 Review language, units, internet permission, and privacy status.
- 3 Use user-started target and telescope database updates when needed.
- 4 Use **About This App** for build information.

After a target-data update, return to Targets and apply the filters again. Curated validation runs before data enters the active catalog, so the explicitly retired identifiers are rejected after a reload.

INSTRUCTIONAL SCREEN MAP - NOT A SCREENSHOT

1 Language and units

2 Internet and privacy status

3 Target and telescope updates

4 About This App

Instructional maintenance map. Review update status in the app; no live online update is represented by this diagram.

32. Use Help and flexible clock entry

Use the small offline Help file for quick reminders and this PDF for detailed steps.

- 1 Open **Help** from Home or the bottom question-mark button.
- 2 Read **Quick Help - works offline**. Scroll for the planning and catalog-integrity sections.
- 3 Scroll to **Full illustrated PDF guide** and tap **Open PDF**. Use Share to save a copy in Files; Return to App closes the PDF viewer.
- 4 For time entry use 2030, 9:30 PM, or 21:30, and recheck midnight boundaries.

The pictured top of Help shows the concise text reference. The PDF is an app resource; viewing its offline pages does not require a separate download or web account. External privacy, weather, and support links still require connectivity.

The screenshot shows the 'Help' screen in the BigSky Planner app. At the top, the status bar shows 20:22. The 'Help' screen has a title bar with 'Help' and a 'Done' button. Below the title bar, there is a short guide text. The main content area is titled 'Quick Help — works offline' and contains three sections: 'START A NIGHT', 'FIND TARGETS', and 'BUILD THE PLAN'. Each section has a numbered list of steps. A fourth section, 'CATALOG INTEGRITY', is also present. Three numbered callouts (1, 2, 3) are overlaid on the screen, pointing to the 'Quick Help — works offline' title, the 'START A NIGHT' section, and the 'BUILD THE PLAN' section respectively.

Help Done

A short guide to the planning moments that can be least obvious. Every planning choice can be reviewed or undone before you export a plan.

1 **Quick Help — works offline**
BigSky Planner — Quick Help
Version 20 (4) • Offline reference

START A NIGHT

1. On Home, choose the observation date and confirm the telescope initialize and stop-tracking times.
2. Tap Apply before you choose targets. Change the date first when you plan a future night.
3. Your saved observing location supplies the sky coordinates. You can edit or choose a different saved location in Locations.

2 **FIND TARGETS**

1. Open Targets and choose Catalog, Time, and Filter settings.
2. The bundled catalog is curated for objects at magnitude 17.0 or brighter. Apply filters before selecting a target.
3. Example deep-sky targets include M31 (galaxy), M45 (cluster), and NGC 7000 (nebula).
4. A checked target moves to the plan stack. Its original result becomes a small placeholder card; tap Remove from Plan there to restore the result.

3 **BUILD THE PLAN**

1. Use Build Plan to review each checked target's proposed observation time.
2. Confirm or adjust the timing one target at a time. Review the green availability message before continuing.
3. In Planner, editing an end time carries the next start forward. Recheck later rows after an edit.
4. Preview, save, print, share, or create a Quick Ref from Planner.

CATALOG INTEGRITY

The app validates catalog data during refresh. Retired or unsupported legacy identifiers are not restored to targets, checked targets, or plan rows. Search the current designation if an older identifier does not return a target.

- 1 Quick Help opens as native text.
- 2 Read the relevant short procedure.
- 3 Use the full guide for detailed screenshots and callouts.

Native iOS 20(4). The compact text Help file is bundled and readable without internet.

33. At five days remaining, save feedback and support details

- 1 Read the **Free Trial Reminder** message.
- 2 Use **Email Support** to send feedback or request a change.
- 3 Use **OK** to dismiss the reminder.
- 4 Continue testing or prepare purchase/restore before access ends.

The app shows this reminder once at the five-days-remaining boundary for a trial user. Purchased or key-unlocked access does not show it.

INSTRUCTIONAL SCREEN MAP - NOT A SCREENSHOT

1 Free Trial Reminder

2 5 days left in your free trial

3 Email Support

4 OK

Five-day reminder content map; not a screenshot.

34. When the 20-day trial ends, unlock through the right path

- 1 Read **20 Day Trial Ended**.
- 2 Tap **Purchase Full Access** for the App Store purchase path.
- 3 Tap **Restore Purchase** for an existing verified entitlement.
- 4 Use a valid free-use key only when one has been supplied.

A cancelled, pending, unavailable, or failed App Store action leaves the expiry gate visible with a status message. Retry only when the relevant purchase condition is resolved.

INSTRUCTIONAL SCREEN MAP - NOT A SCREENSHOT

1 20 Day Trial Ended

2 Purchase Full Access

3 Restore Purchase

4 Valid free-use key

Expiry access map; not a screenshot or purchase proof.

35. Fix target issues at the planning source

Symptom	Likely cause	Safe response
No useful results	Incomplete Catalog, Time, or Filter context	Confirm Home date/window, then Apply Filters again.
Target seems wrong	Default location or sky rules are wrong	Correct Locations and filter conditions before checking it.
Duration is unexpected	Window or duration rule changed	Reconfirm Time and active filter state.
Placeholder appears	Target is checked in the planning stack	Use Remove from Plan to restore the full card.
Unsupported or retired catalog ID appears after an update	Older data, an alias, or a non-approved record was attempted	Do not re-add it manually. Apply the update and filters again; the retirement rule rejects blocked identifiers.

Target recovery order

- 1 Home context.
- 2 Catalog, Time, Filter.
- 3 Apply Filters.
- 4 Details, then Check.

Do not bypass curation

Changing an output or planner row cannot make a retired identifier eligible. Select a validated target in the active catalog instead.

36. Recover a plan, weather, or access issue

Symptom	Check first	Then do this
Planner times conflict	Edited end time and later starts	Review all later handoffs; rebuild if the cascade is no longer usable.
Weather is blank	Default location, Internet choice, elevation	Correct setup, then use an explicit update.
No printable result	Plan exists and Preview works	Use Preview, Save PDF, Print Plan, or Share Plan.
Trial is locked	Trial end, purchase, restore, key	Use the appropriate expiry action and read its status message.

Plan recovery order

- 1 Review Planner rows.
- 2 Load Plan if appropriate.
- 3 Use Add Targets or Fill Gaps only after review.
- 4 Preview before output.

When to ask for help

Use Email Support from the five-day reminder or the available support route when a reported status message identifies an entitlement, update, or data-service condition you cannot resolve locally.

Magnitude 17 or brighter: what is packaged

The numeric cutoff is **magnitude <= 17.0**. Lower numbers mean brighter targets. Exactly 17.0 is included; fainter values are excluded.

12,919
records in the curated main catalog file

4,569
records in the separate star catalog

17,488
source records before cross-file duplicate merging

Source-data check	Main catalog	Star catalog
Numeric magnitude <= 17.0	12,919	4,569
Exactly magnitude 17.0	220	0
Fainter than 17.0	0	0
Missing, nonnumeric, or nonfinite magnitude	0	0
Retired identifiers or blocked aliases	0	0

The filename `dso_catalog.json` is not a promise that every row is a galaxy, cluster, or nebula. Its complete primary-type inventory is on the following pages. This manual uses only those three DSO classes as worked examples.

Catalog revision fingerprints

Main catalog SHA-256:
422e655fa588d2ff360ec0e5b44680a8f77b0c43aedf7b1a4933abde924d1623

Star catalog SHA-256:
f14ecf58fac354fd63f839454124f6c87a2108f0a8208b56f94e12263b3fcc97

Source audit: September 4, 2026. These fingerprints identify the exact packaged files, not a live online catalog.

Retired entries stay out of target selection

What the curation rule does

- 1 Reject the retired H20, H21, and C20 identifiers, including their blocked alternate identifiers.
- 2 Normalize case, spaces, punctuation, and numeric zero padding before checking an identifier.
- 3 Strip blocked aliases while retaining an accepted canonical target such as NGC 7000.
- 4 Apply the final guard after the source catalogs and updated data are combined.
- 5 Discard retired identifiers in saved-plan resolution, cached selection, and the planning queue.

This is a specific retirement rule, not a blanket ban on stars, asterisms, or Solar System categories. Use the appropriate catalog and type filters for your observing purpose.

Current revision evidence

Packaged retired-ID/alias scan	Pass: 0 matches
Swift policy checks	Pass: 29 assertions
Worked examples retained	M31, M45, NGC 7000
Retired-ID search regression	Pass: H20, H21, C20, MWSC 3774
New cascade screenshots	Pass: three valid DSO intervals

Scope of evidence: source policy checks and native search/cascade tests passed. A live network catalog refresh was not exercised in this review; source guards apply after refreshed data is merged. Reapply filters after any update and review saved-plan changes.

If a saved target disappears

Review the current catalog and select an accepted canonical target. Recheck its position and observation time. Do not restore a retired identifier by editing a saved plan.

Why the Home total differs from source counts

From source files to Home

17,488 source records

The two packaged catalog files are counted before cross-file alias merging.

17,418 distinct source targets

Shared-identifier and sky-position merging combines duplicates within 10 arcminutes. This total includes stars; the internal Deep Sky group is broader than the examples in this manual.

17,429 observed on Home

The September 4 review showed 11 additional Solar System entries. Solar System availability can change with date and refreshed ephemeris data; this is an observed total, not a permanent promise.

The table counts each main-catalog row once by its primary type. Secondary classifications and UI filters can overlap, so adding filter counts may double-count targets.

Main-catalog primary types

Type	Records
Galaxies	10,247
Galaxy clusters	1,546
Open clusters	527
Planetary nebulae	201
Globular clusters	197
Emission nebulae	82
Stars	61
Asterisms	15
Reflection nebulae	15
Double stars	14
Supernova remnants	7
Other	5
Novae	2
Total	12,919

Stored catalog-family counts

These are the primary family labels stored in the curated source files. A target is counted once here, even when it has names in several catalogs.

Stored primary family	Main-catalog records
NGC	7,180
IC	3,959
Abell galaxy clusters	1,546
Messier	107
Abell planetary nebulae	72
OpenNGC addendum	50
Lynds Bright Nebulae (LBN)	2
Sharpless 2	2
Caldwell	1
Main-catalog total	12,919
Separate star catalog	4,569

Stored family is not full catalog membership. Many entries have alternate NGC, IC, Messier, or other identifiers. A small primary-family count does not mean the app contains only that many searchable aliases from that catalog.

Use these counts correctly

- 1 Use the primary-family table to audit the shipped source inventory.
- 2 Search an accepted target by its canonical ID or an available non-retired alias.
- 3 Use the active Filters summary to inspect your current visible subset.
- 4 Expect visible counts to change with hemisphere, type, magnitude, time, and observing location.

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A compact field checklist

Use this page before you build or export a plan.

Context

- ☐ Plan Date is correct.
- ☐ Default observing location is correct.
- ☐ Initialize and Stop Tracking times are set and Applied.
- ☐ Primary telescope and accessories are correct.

Targets

- ☐ Catalog, Time, and Filter are applied.
- ☐ Each checked target was reviewed in Details.
- ☐ Placeholder behavior is understood before removal or recheck.

Plan

- ☐ Every Observation Time interval is validated.
- ☐ Later starts were reviewed after edits.
- ☐ Weather and Sky Info were checked when relevant.
- ☐ Planner was Previewed before Save, Print, or Share.

Access

- ☐ Trial reminder or expiry action is understood.

Return to the linked contents or alphabetical index whenever you need the detailed screen procedure.