BIGSKYASTRO

IPHONE AND IPAD USER MANUAL

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 Full Access

03
First Start Setup

04
Home to plan

Version 23.0 - Build 114 | Illustrated user manual | Linked contents and index | Offline edition - October 2026

ABOUT THIS GUIDE

Begin with a fresh, unregistered installation

This guide documents the native iPhone/iPad App Store flow in Version 23.0 (114). It begins before agreement acceptance, verified trial access, or saved planning setup. It is not the web version.

Read the screen and the steps together

Screen capture: an actual iPhone or iPad screen from the app. Gold numbered callouts are manual annotations, not app controls. Some screens come from earlier versions, so small details can differ in 23.0 (114).

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

The guide combines iPhone planning captures from 20 (4) with the updated iPad purchase flow from 20.1 (4). Unchanged planning screens are retained; device spacing, dates, counts, and clock format may differ. The 21.2 (6) edition added Clear Sky give-back for interior holes, the short-capture alert, and whole-word short labels. The 21.2 (15) edition added weather sources (Automatic with NOAA and MET Norway, Open-Meteo with your own key, and your own weather station for personal use), planet and Moon accuracy, Credits, and backups that move between iPhone, iPad, Mac and Windows. The 21.2 (16) edition added the one-time, free 20-day trial extension (Need more time?). This 23.0 (114) edition adds support for buyers from before the app became free.

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.

Free download and Full Access

BigSky Planner is a free download with a 20-day free trial. Full Access is a one-time in-app purchase, not a subscription: $9.99 in the United States, and the App Store shows the price for your region. If you bought the app before it became free, you keep Full Access. Purchase or Full Access problems: support@bigskyastro.com.

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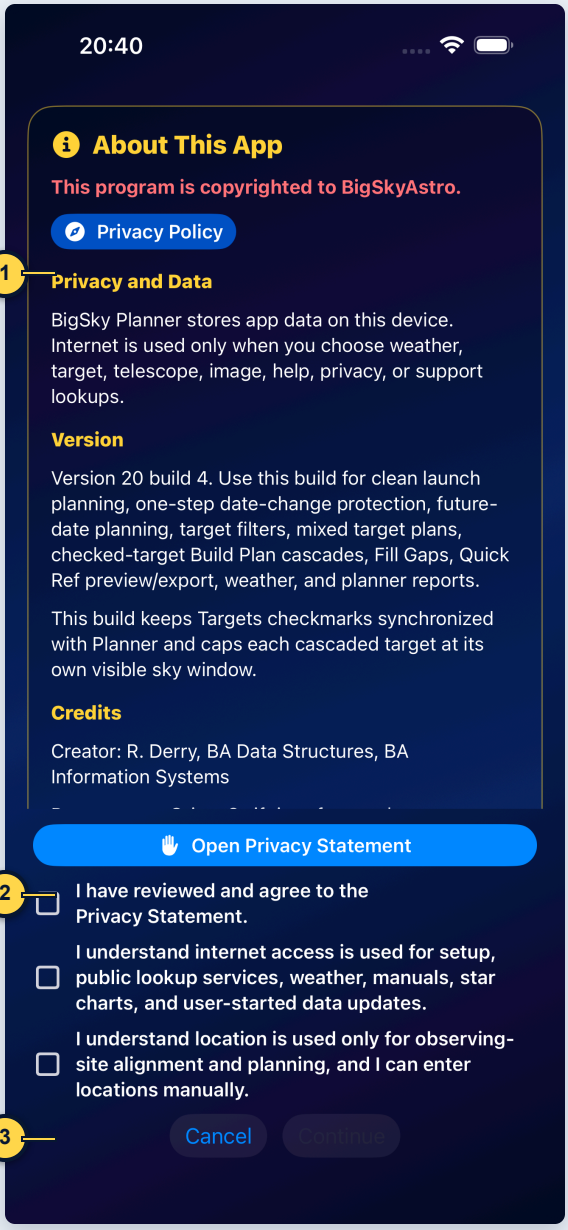
52 A compact field checklist

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 verified trial or Full Access, then First Start Setup, then Home.



1. Read the privacy and app information.
2. Review all three acknowledgements.
3. Continue is unavailable until all three are selected.

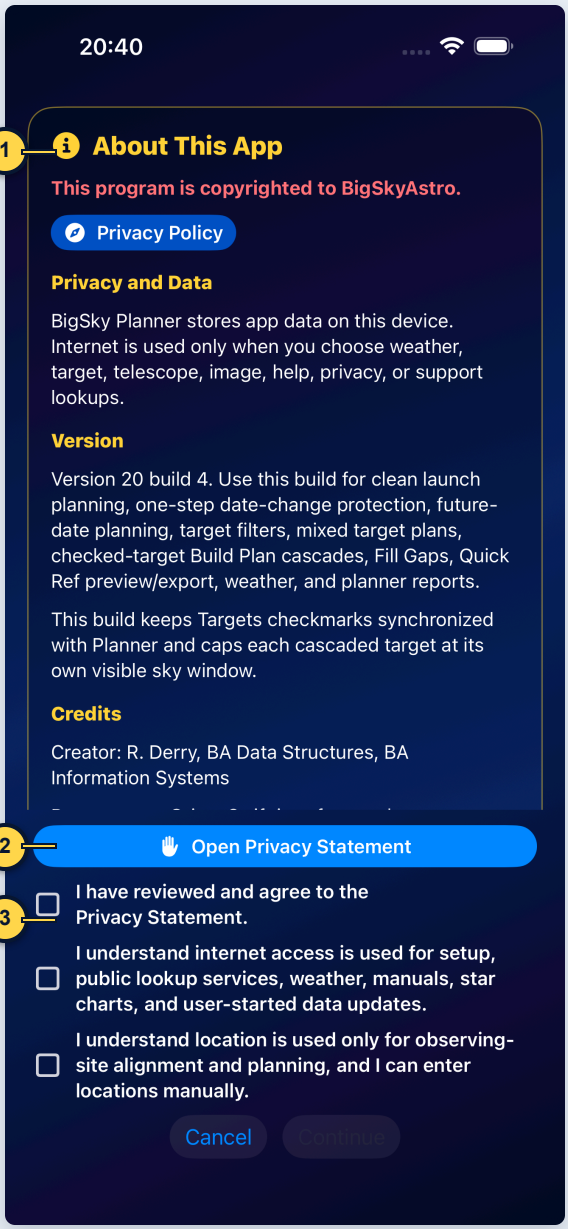
Native iOS 20(4); unchanged planning/setup flow. Clean-install agreement gate; Continue is disabled.

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.



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.

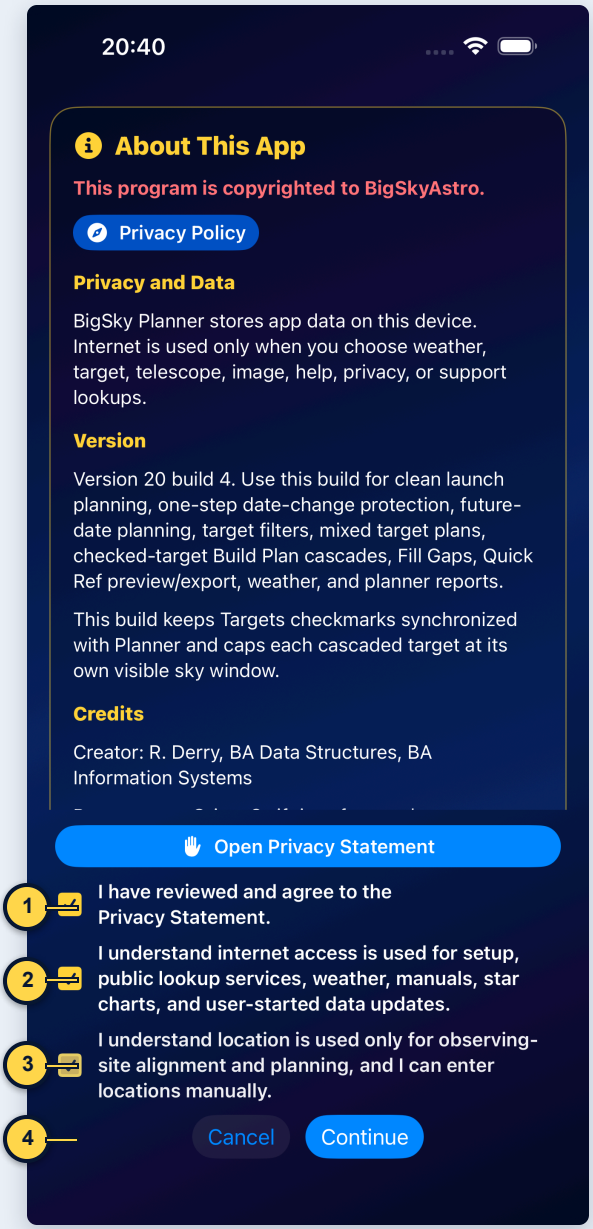
Native iOS 20(4); unchanged planning/setup flow. About This App and Open Privacy Statement before entry.

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.



1. Privacy acknowledgement selected.
2. Internet-use acknowledgement selected.
3. Location-use acknowledgement selected.
4. Continue enters the access introduction.

Native iOS 20(4); unchanged planning/setup flow. All acknowledgements selected; Continue enabled.

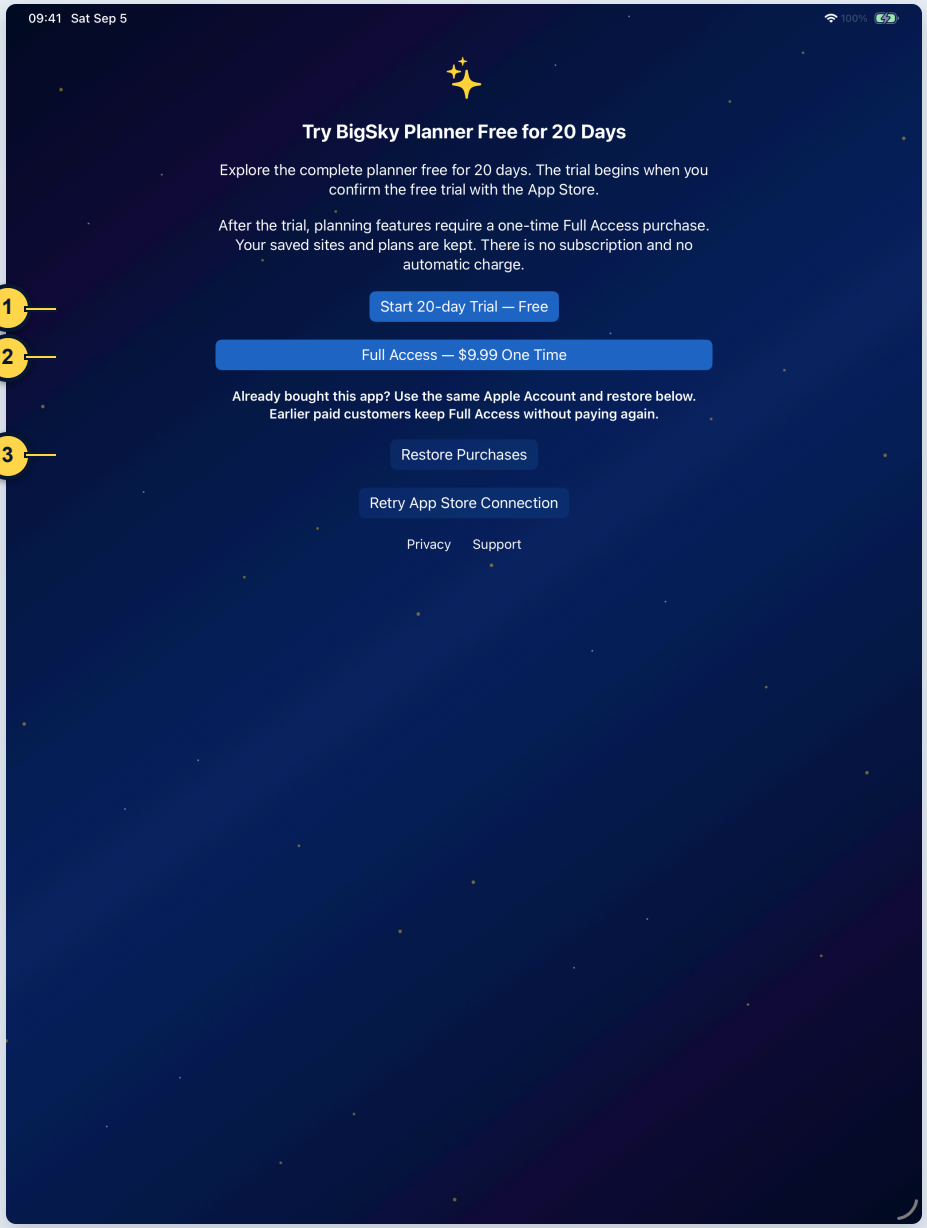
4. Start the free trial or choose permanent Full Access

1. Read the 20-day trial and one-time purchase disclosures.
2. Choose **Start 20-day Trial - Free** to request the zero-cost trial from Apple.
3. Read and confirm Apple's payment sheet. Cancelling does not start access.
4. After verification, continue into setup or your saved planner.

> The trial starts at the original verified Apple transaction time. It does not start merely by opening this page. No activation code or app login is required.

Already bought the app?

Use the original Apple Account and **Restore Purchases**. If you bought the app before it became free, you keep Full Access without another purchase. Bought the app before it became free and having trouble with access? Contact support@bigskyastro.com.



1. Confirm the free trial when ready to start.
2. Full Access is a separate one-time purchase.
3. Restore using the original Apple Account.

Native iPad capture, iOS 20.1 (4). Full Access is $9.99 in the United States; the App Store shows the price for your region.

5. Keep the original trial dates when restoring

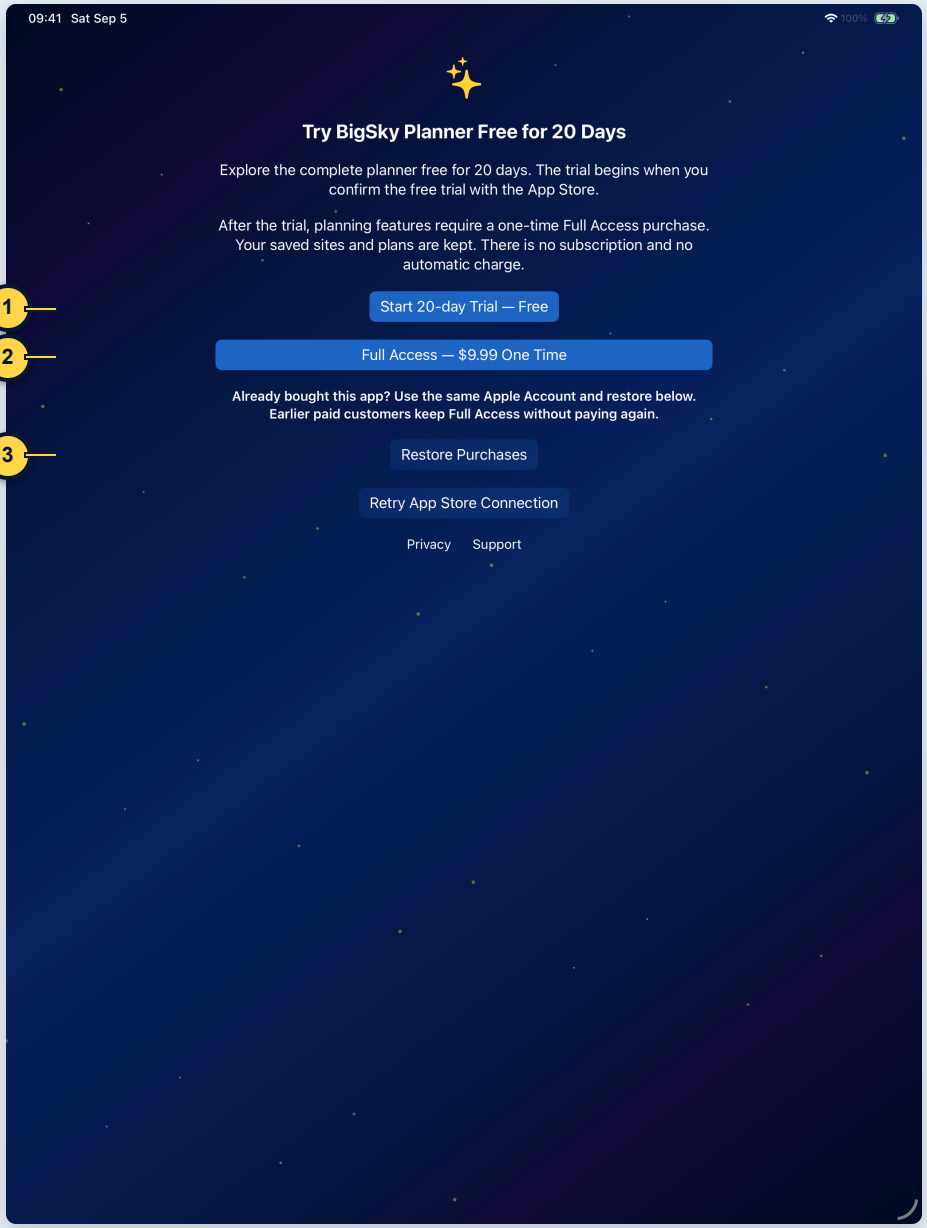
A single 20-day window

1. Start the free trial only when ready to explore.
2. The verified original purchase date defines the expiration: 20 days later.
3. During the trial, use **Manage Access** above Home to see the end date.
4. **Restore Purchases** restores the original dates. Reinstalling does not start another trial.

One-time Full Access

Select the localized **Full Access - One Time** button and confirm through Apple. This is not a subscription. There is no automatic charge when the trial expires.

> If Apple cannot verify an earlier purchase, restore or retry the connection before buying. Do not pay again just to resolve a connection problem. Bought the app before it became free and having trouble with access? Contact support@bigskyastro.com.



1. Confirm the free trial when ready to start.
2. Full Access is a separate one-time purchase.
3. Restore using the original Apple Account.

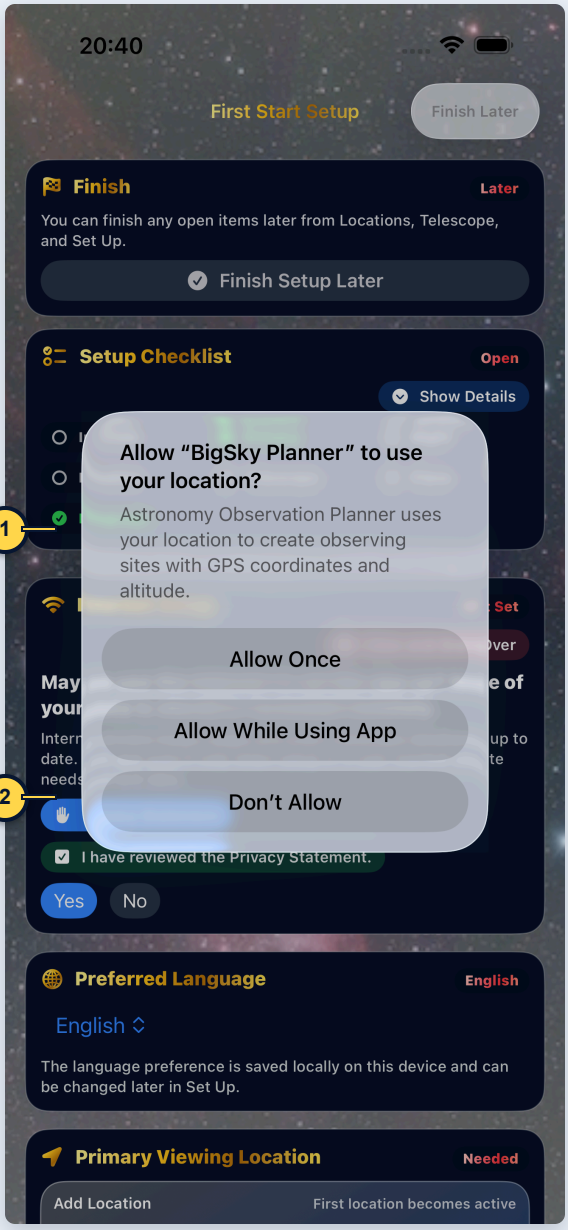
Native iPad capture, iOS 20.1 (4). Full Access is $9.99 in the United States; the App Store shows the price for your region.

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.



1 Read the system permission request.

2 Choose a permission response; manual entry remains available.

Native iOS 20(4); unchanged planning/setup flow. iOS location permission on the unregistered setup path.

7. Read the checklist as seven planning prerequisites

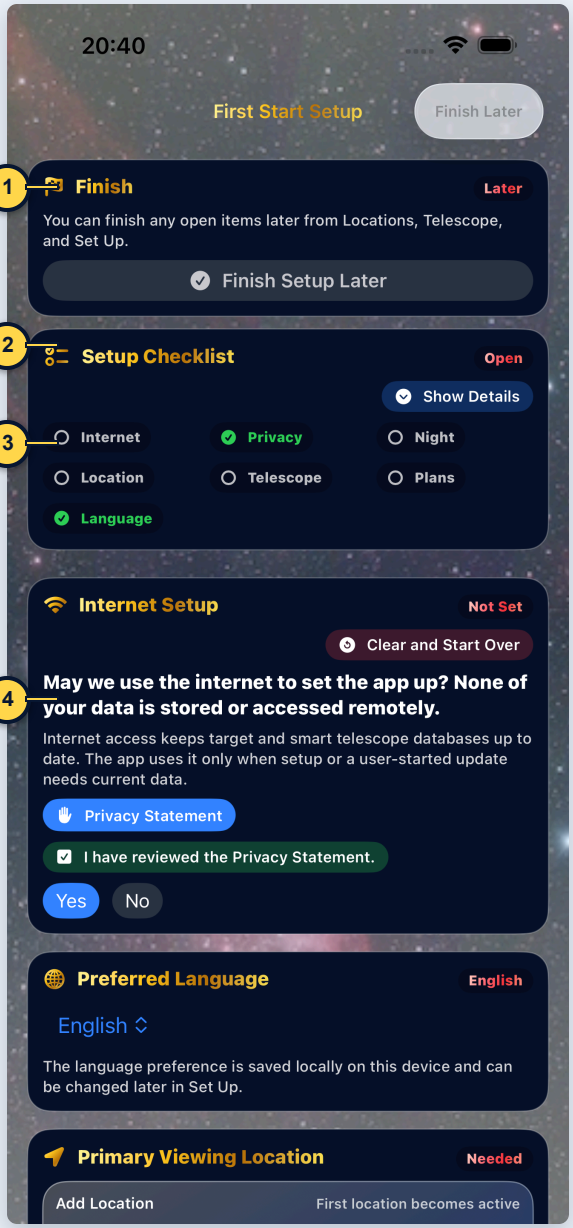
The checklist is ready only when all relevant setup cards are complete.

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.

At the largest accessibility text size, checklist chips stay whole words. Update Data and Build Plan do the same. The default system text size Large renders one step larger (extra large), so the default sits in the size range that fits. This is one app for iPhone and iPad.



1. Finish Later is initially disabled.
2. Show Details expands the checklist.
3. Status chips identify unfinished prerequisites.
4. Answer Internet Setup after reviewing privacy.

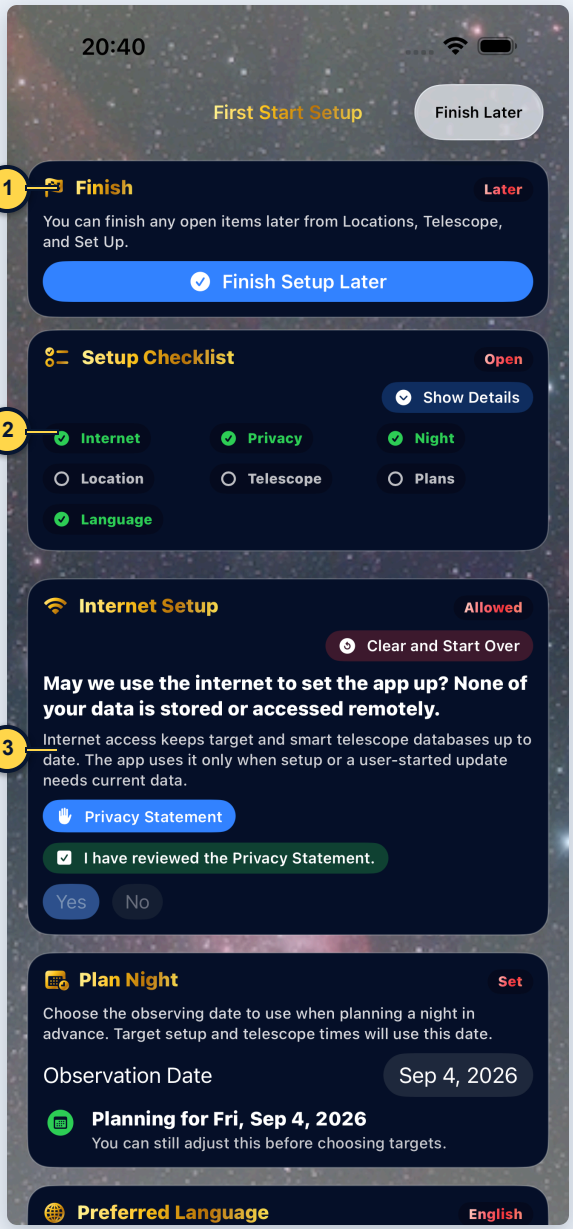
Native iOS 20(4); unchanged planning/setup flow. First Start Setup before the Internet answer.

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.



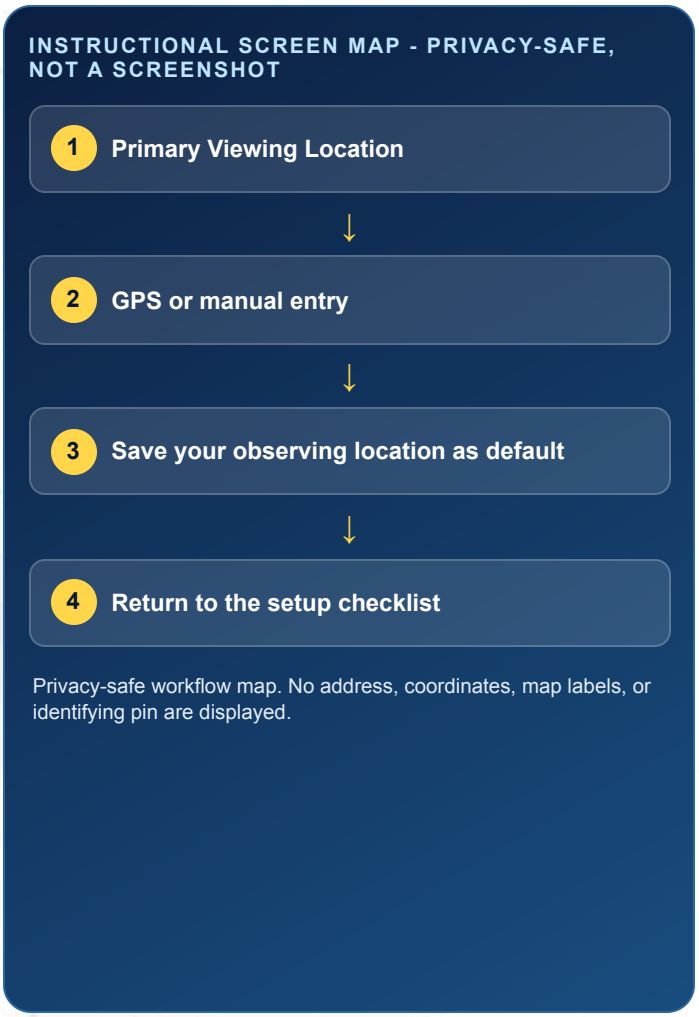
1. Finish Later is available after an Internet answer.
2. Review the changed checklist states.
3. Internet Setup records your choice.

Native iOS 20(4); unchanged planning/setup flow. 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.

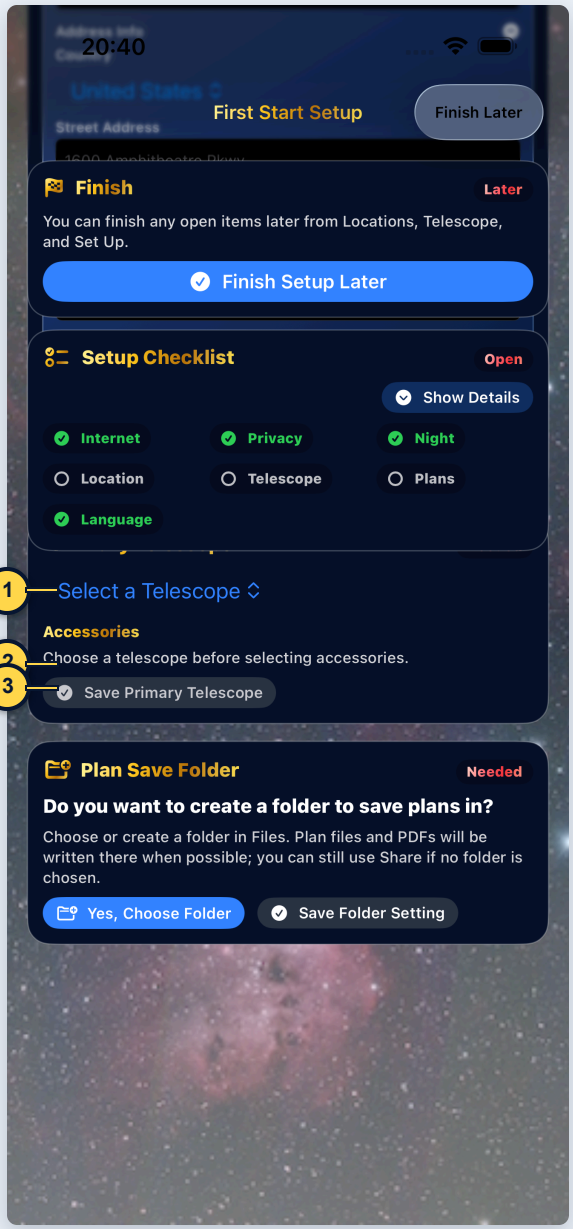


Privacy-safe workflow map. No address, coordinates, map labels, or identifying pin are displayed.

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.



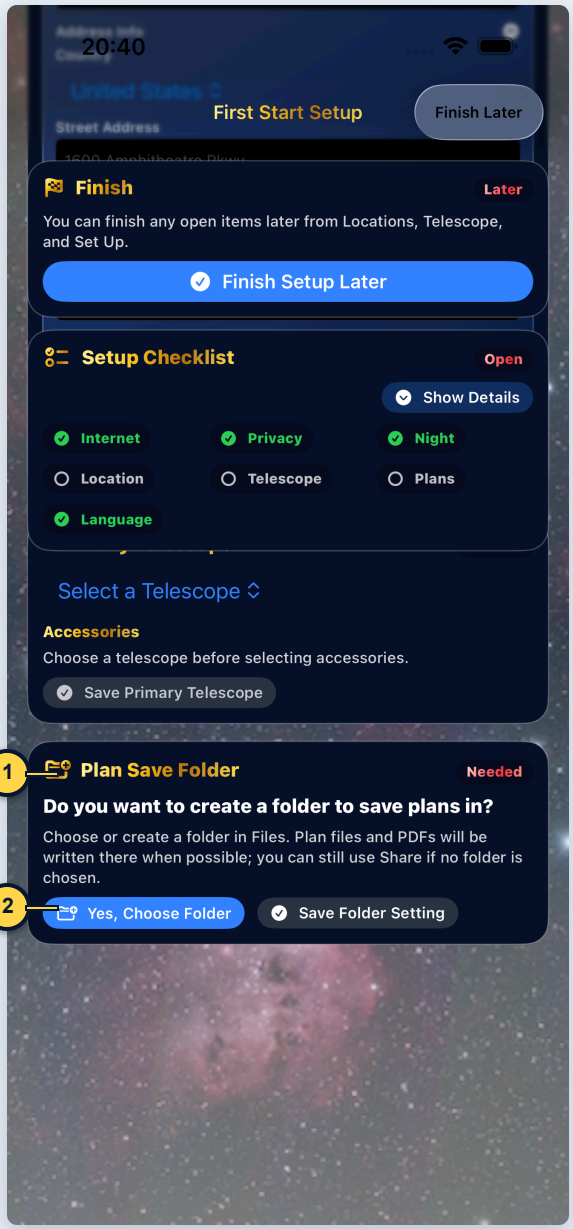
1. Select a Telescope opens the equipment choice.
2. Choose a telescope before accessories.
3. Save Primary Telescope activates after a valid choice.

Native iOS 20(4); unchanged planning/setup flow. 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.



1. Review where plan files and PDFs will be saved.
2. Choose Folder opens Files; Save Folder Setting records your choice, including no folder.

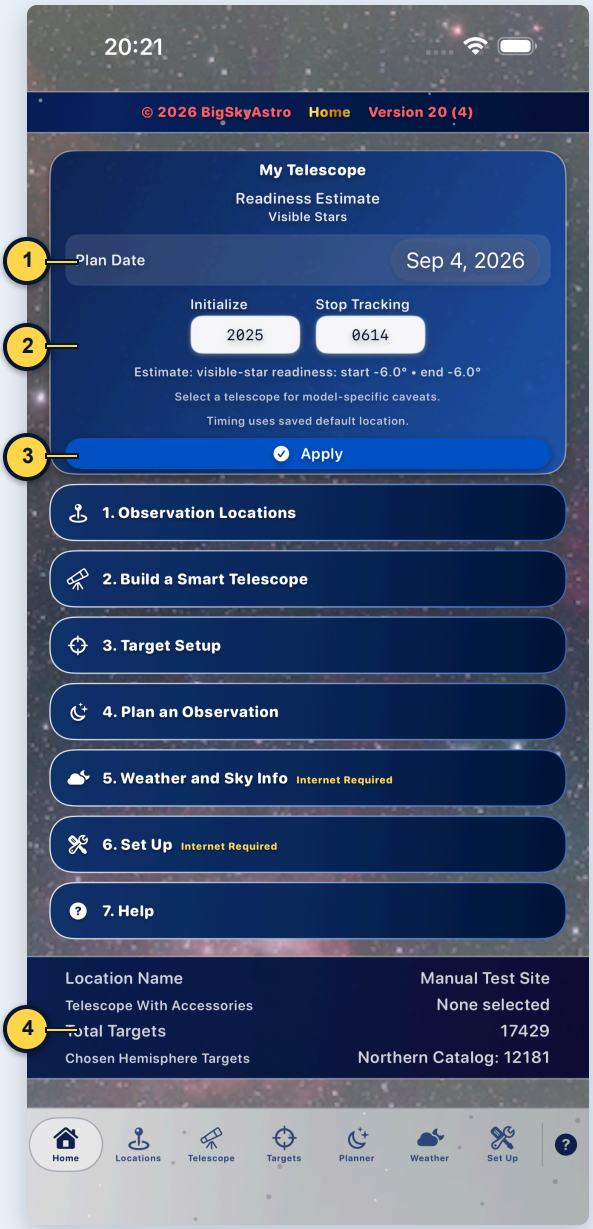
Native iOS 20(4); unchanged planning/setup flow. Plan Save Folder controls before a folder choice.

12. Start each observing night from Home

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

1. Read the Home status card: **Location Name**, **Telescope With Accessories**, **Total Targets**, **Chosen Hemisphere Targets**, and **Plan Folder**.
2. Under **Chosen Hemisphere Targets**, **Update Current Catalog** rewrites only the catalog now in use, Northern, Southern, or Global, from the catalog packaged with the app. The other hemisphere stays, including names you changed. **Update Both Catalogs** rewrites both. A target kept for a plan, a log, or a local edit is not removed. These actions do not need the internet.
3. **Plan Folder** shows the Files bookmark from Set Up, or **Not set**. It is on this card, not beside the copyright.
4. Set **Initialize** and **Stop Tracking**, then tap **Apply**. An overnight stop belongs to the following morning.
5. Open a numbered module when you are ready: **1. Observation Locations** through **7. Help**.

> 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.

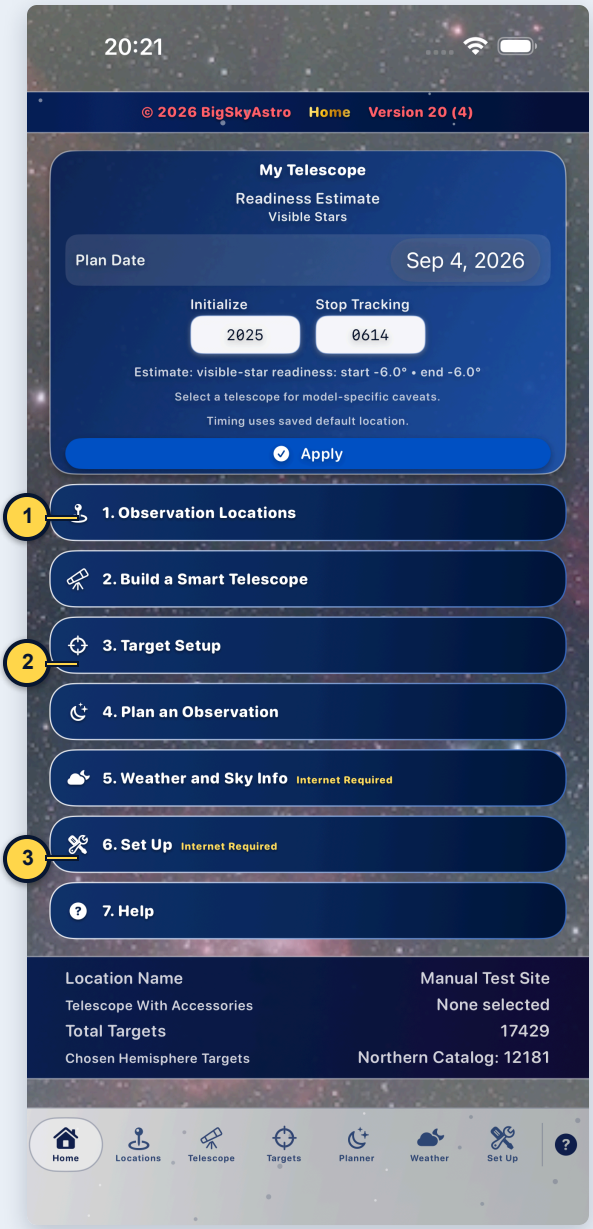


1. Plan Date defines the observing night.
2. Initialize and Stop Tracking define the telescope window.
3. Tap Apply before Targets.
4. Totals describe this captured catalog state.

Native iOS 20(4); unchanged planning/setup flow. 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.



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.

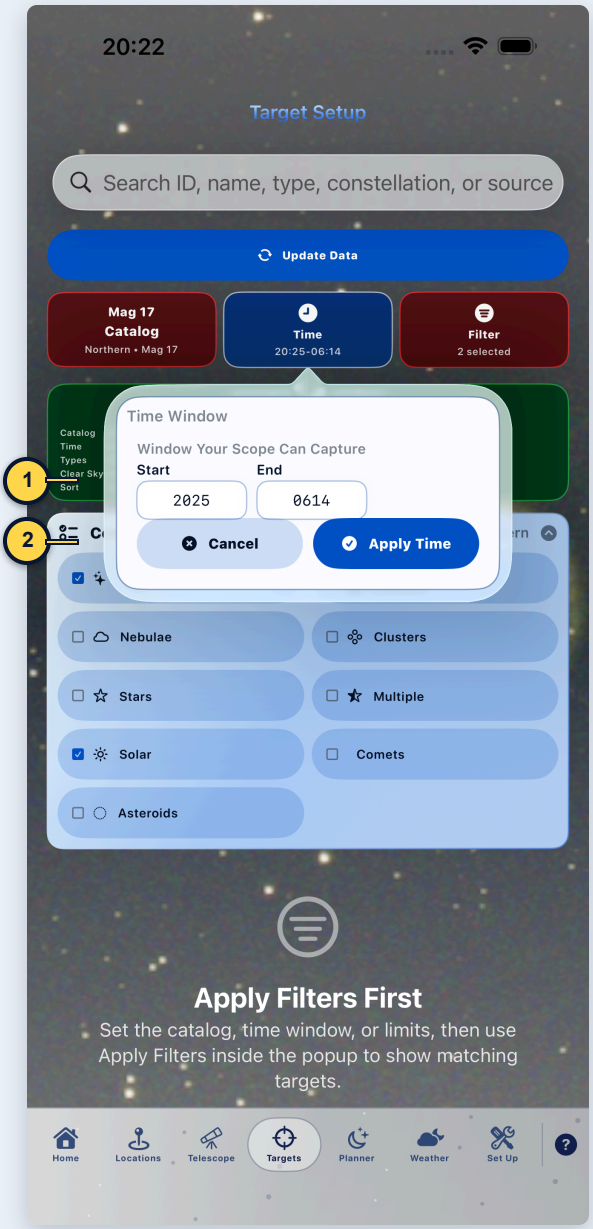
Native iOS 20(4); unchanged planning/setup flow. Seven numbered modules and the persistent bottom navigation.

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.



1 Start and End must describe the intended overnight window.

2 Apply Time commits this editor; Cancel leaves it unchanged.

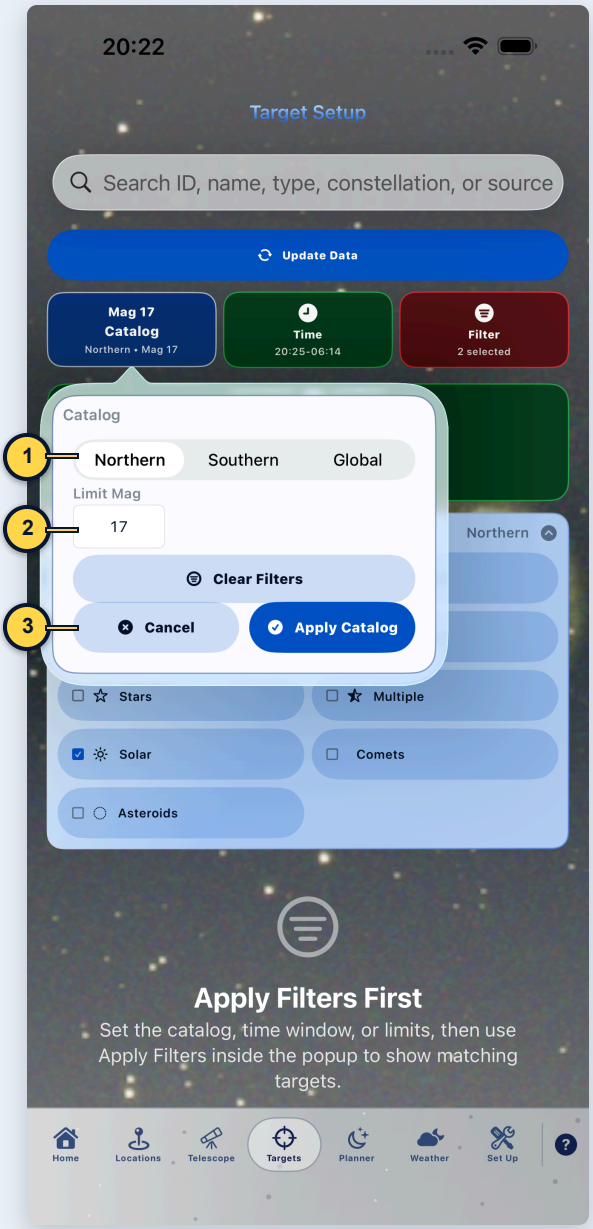
Native iOS 20(4); unchanged planning/setup flow. Time Window editor after Home Apply.

15. Start Targets with Catalog, Time, and Filter

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

1. Open **Catalog**. **Planning Catalog** is **Northern**, **Southern**, or **Global**.
2. **Northern** is declination 0° and above. **Southern** is strictly below 0°. **Global** is both. Until you apply a choice, the site decides: latitude at or above 0°, including the equator, is Northern; below 0° is Southern; no site is Northern.
3. Set **Limit Mag** and tap **Apply Catalog**. That choice, including Global, stays when the site changes.
4. The list stays empty until filters are applied. Open **Time** and **Filter**, then tap **Apply Time** and **Apply Filters**.
5. On Home, **Update Current Catalog** reloads only the catalog now in use. **Update Both Catalogs** reloads Northern and Southern together. Targets kept for a plan, a log, or a local edit stay.

> **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.



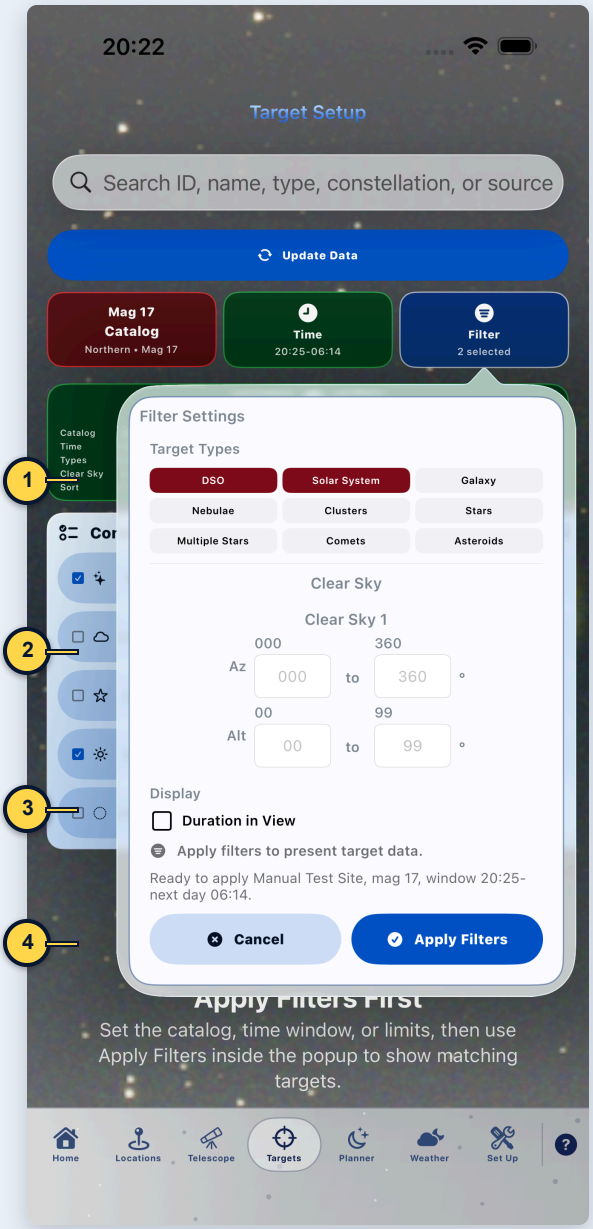
1. Choose Northern, Southern, or Global.
2. Limit Mag is 17: lower numbers are brighter.
3. Apply Catalog commits the scope.

Native iOS 20(4); unchanged planning/setup flow. 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.



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.

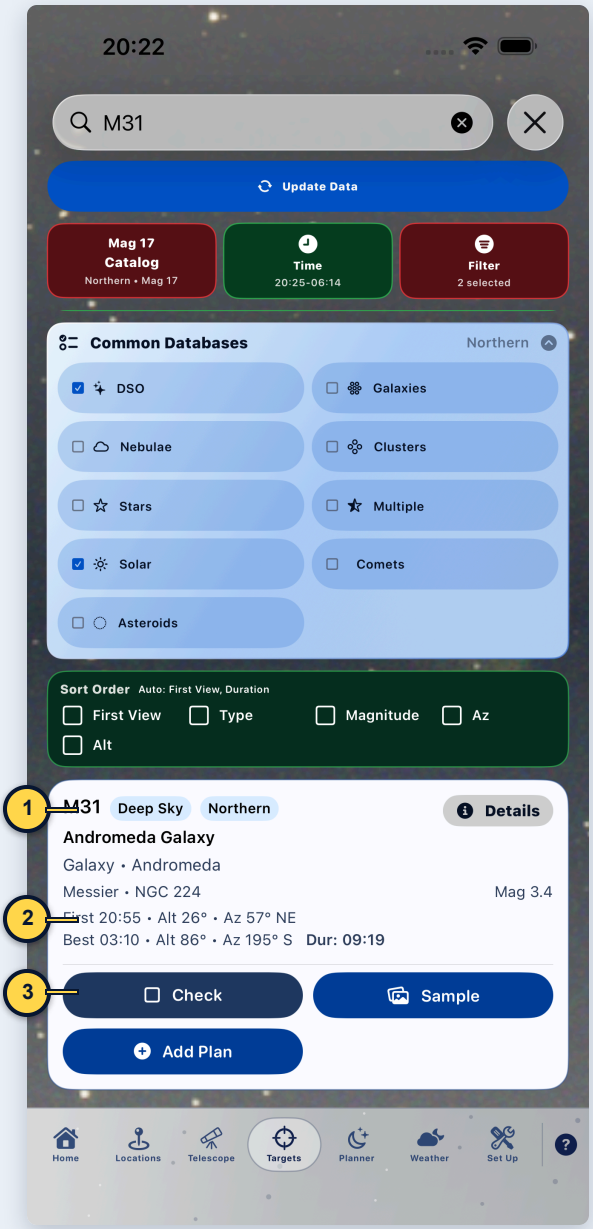
Native iOS 20(4); unchanged planning/setup flow. Filter Settings, Clear Sky limits, and Apply Filters.

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. Build Plan places this target with the others across the Clear Sky it can use.



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.

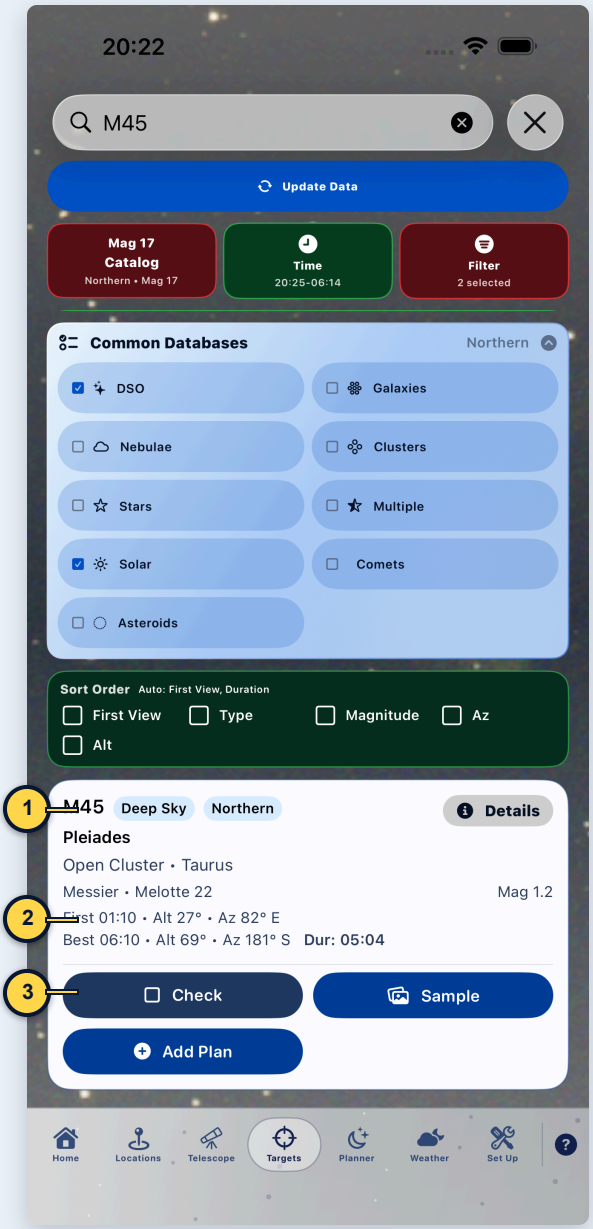
Native iOS 20(4); unchanged planning/setup flow. M31 Andromeda Galaxy: magnitude 3.4 and first usable time 20:55.

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. Build Plan waits until the target is inside Clear Sky. It does not start the target early just because it is bright.



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.

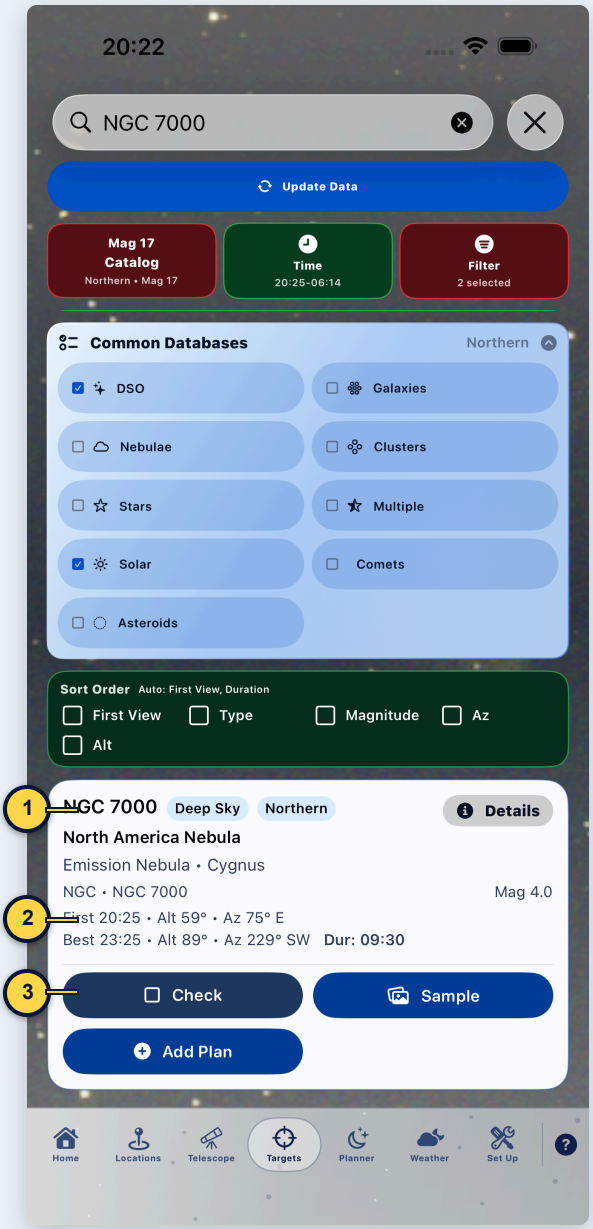
Native iOS 20(4); unchanged planning/setup flow. M45 Pleiades: an open cluster, first usable at 01:10 in this example.

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.



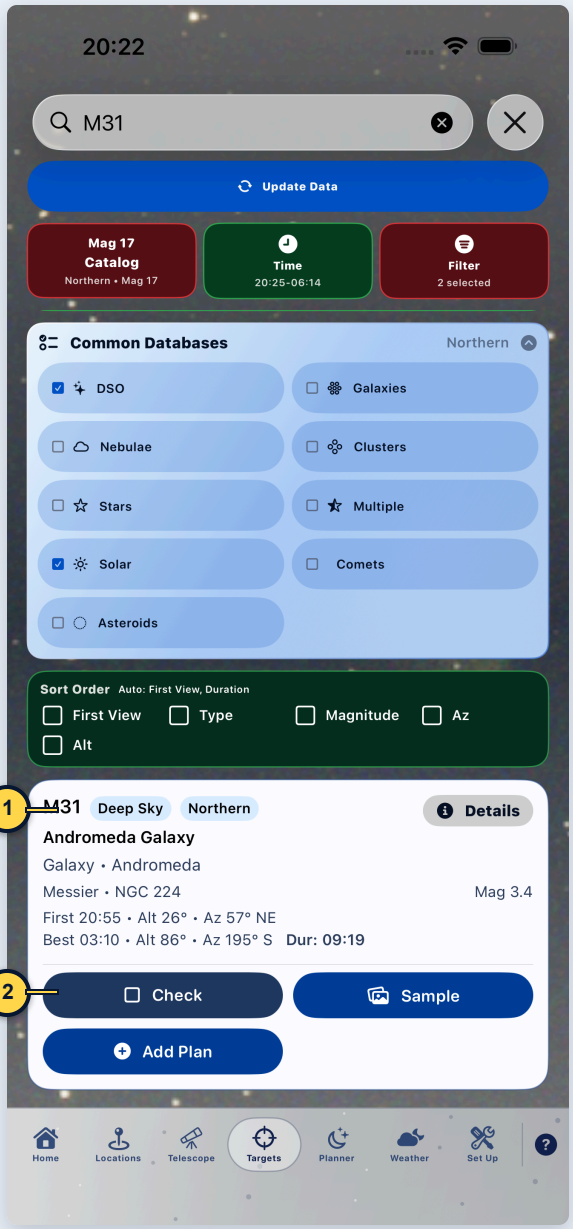
1. Confirm the canonical ID, name, and object type.
2. Read magnitude, first/best position, and duration.
3. Check selects the target; Sample is a separate image action.

Native iOS 20(4); unchanged planning/setup flow. 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.

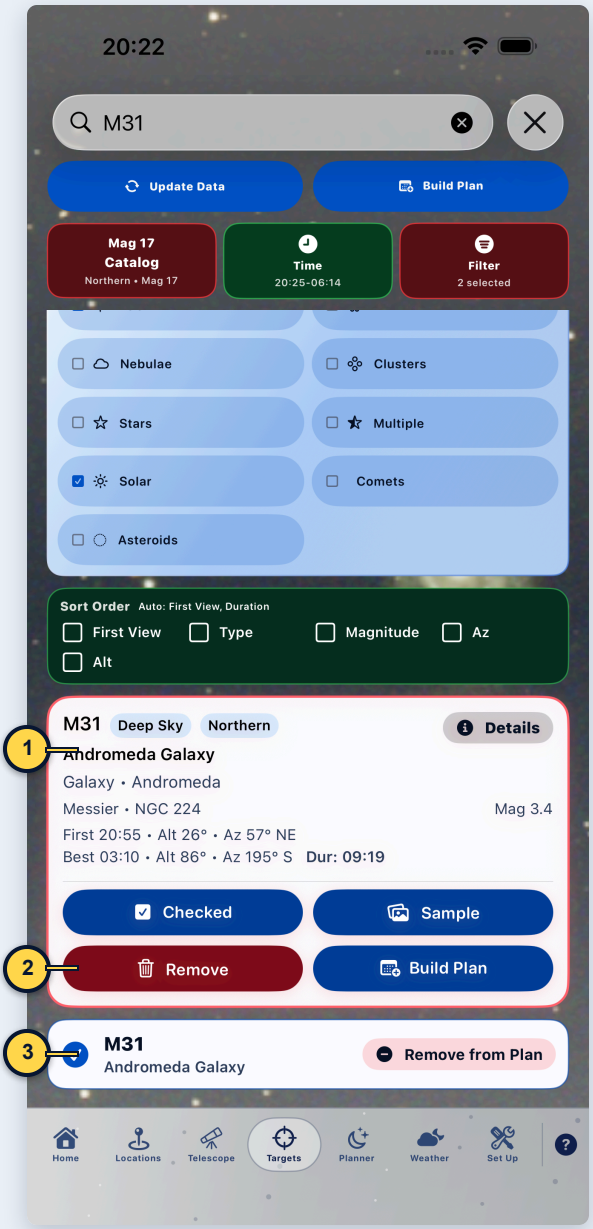
Native iOS 20(4); unchanged planning/setup flow. The Details entry point on the M31 result card; the details sheet is not shown.

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.

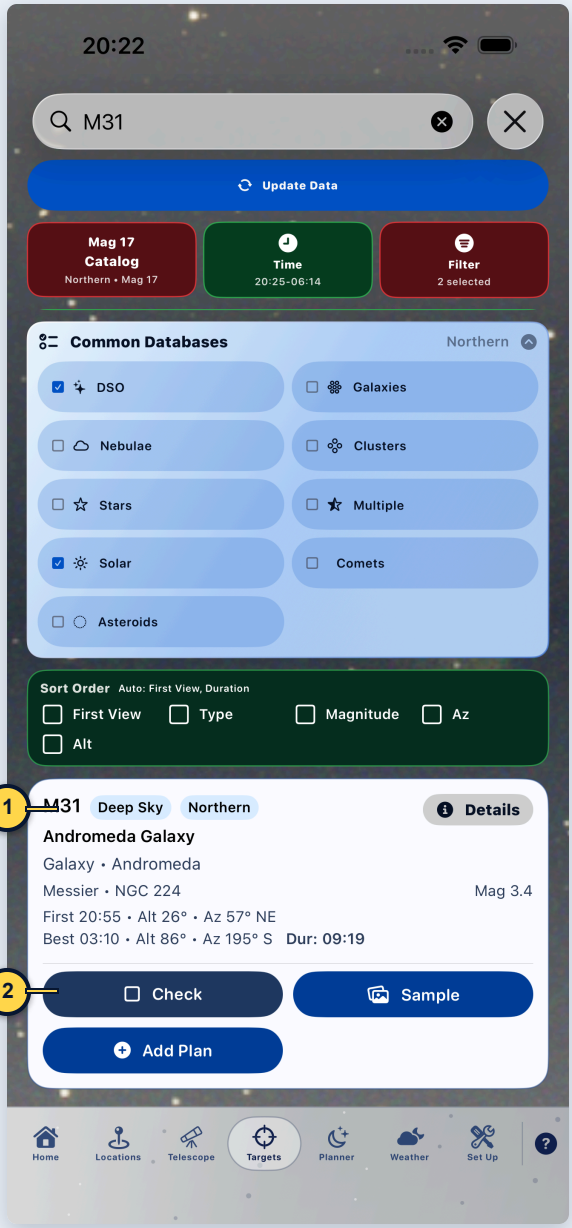
Native iOS 20(4); unchanged planning/setup flow. M31 in the checked stack, with its compact original-position placeholder.

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.

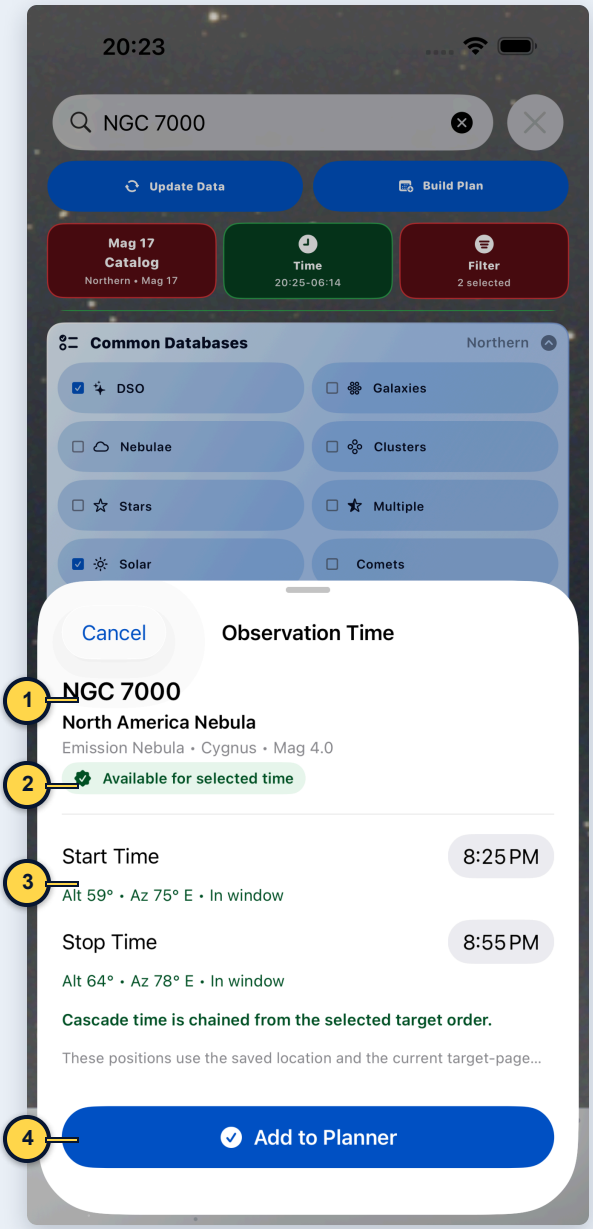
Native iOS 20(4); unchanged planning/setup flow. M31 after Remove from Plan: the full unchecked result card is restored.

23. Build Plan places every selected target

Build Plan does not ask for a time first. It places every checked target across the Clear Sky that target can use, so the times overlap. With two or more targets, the order sheet opens. Balance Plan gives nearly equal time and leaves the last target the time that remains inside its Clear Sky. Type a Rank, with 1 as the most time, then Use Priority. Every target that has Clear Sky stays in the plan. When neighboring targets use different filters, a filter change is inserted. The plan list shows that interval as a row labeled Filter change and the telescope's change time.

1. Check the approved targets.
2. Tap **Build Plan**. No time sheet appears first.
3. Read the overlap summary. A target with no Clear Sky stays selected and is named as not placed.
4. On the order sheet, choose **Balance Plan**, or type a Rank and choose **Use Priority**.

> The figure on this page is the Observation Time sheet from version 20 (4). Version 23.0 does not open that sheet. It places the targets together and opens Balance Plan and Use Priority.



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.

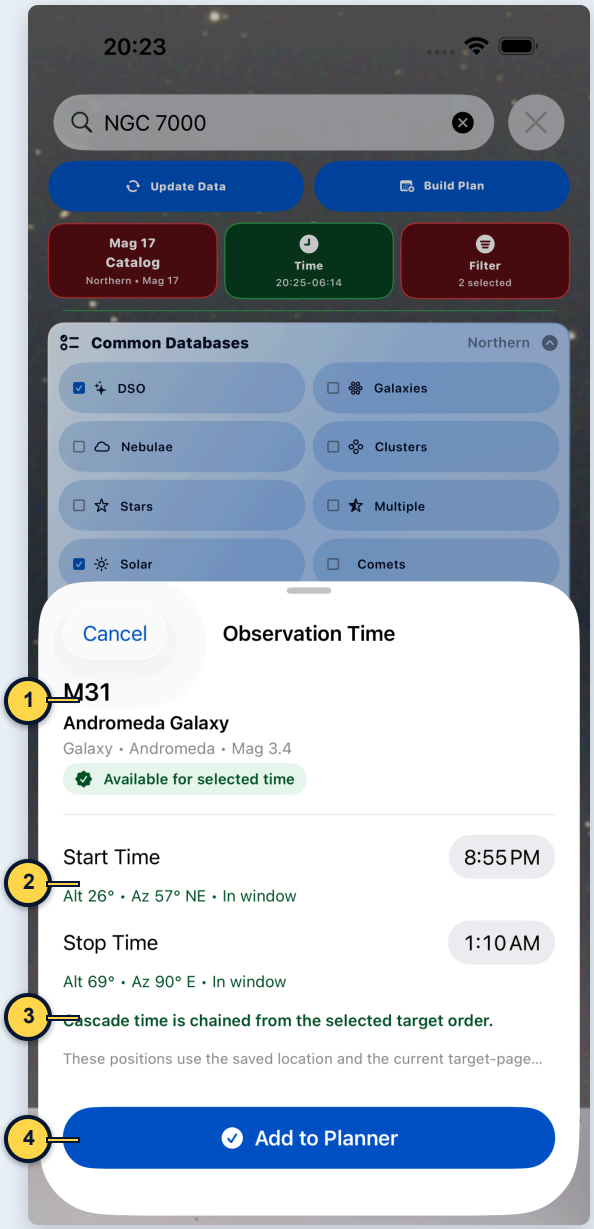
Native iOS 20(4); unchanged planning/setup flow. First cascade sheet: NGC 7000, 20:25-20:55.

24. Earlier time sheet, kept for comparison

Version 23.0 does not ask you to accept each target on an Observation Time sheet. The figure is that older sheet. Start and stop on the order sheet stay adjustable after Build Plan.

1. Read this figure as the version 20 (4) time sheet, not the 23.0 Build Plan.
2. In 23.0, start and stop are on the order sheet after the targets are placed.
3. A time still has to sit inside that target's Clear Sky.
4. Use **Balance Plan** or **Use Priority** to change the shares.

> The captured sheet shows M31 from 20:55 to 01:10, starting when NGC 7000 stopped. Version 23.0 can overlap those times.



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.

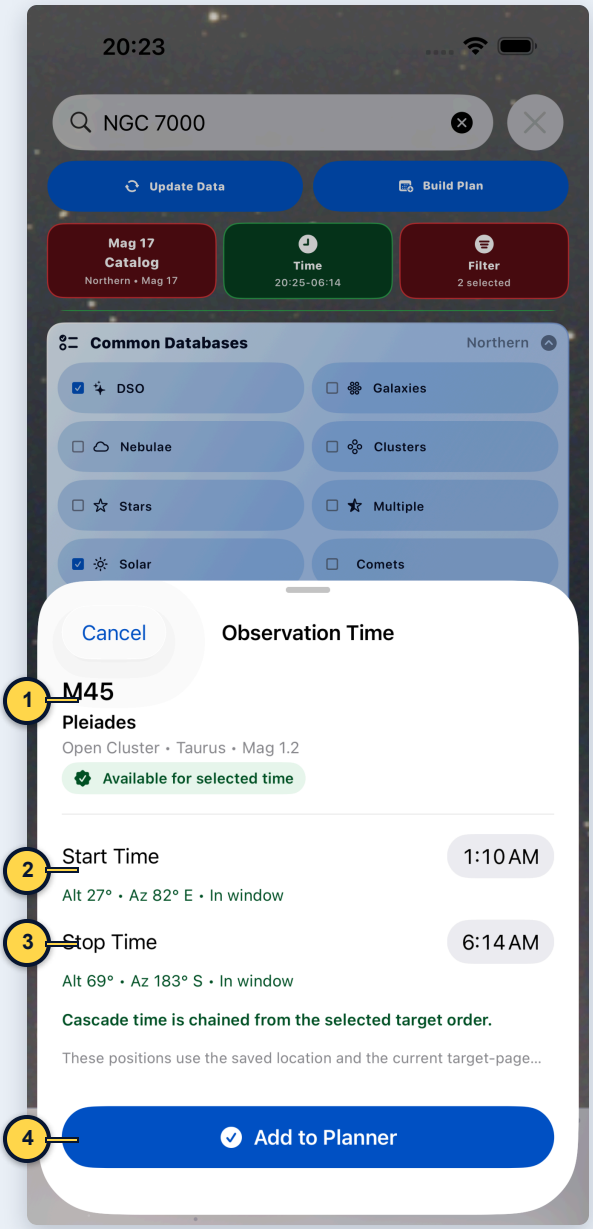
Native iOS 20(4); unchanged planning/setup flow. Second cascade sheet: M31, 20:55-01:10 across midnight.

25. Balance Plan and Use Priority

After Build Plan, the times overlap until you choose Balance Plan or Use Priority.

1. Choose **Balance Plan** for nearly equal minutes. The last target keeps the remainder inside its own Clear Sky.
2. Type a Rank. 1 gets the most time. A blank rank is worse than any typed rank.
3. Choose **Use Priority**. Every target that has Clear Sky stays in the plan.
4. A changed stop can move the next start. Confirm each time still sits inside that target's Clear Sky.

> The figure is the older time sheet from version 20 (4), where each target started when the previous one stopped. Version 23.0 overlaps those times until Balance Plan or Use Priority. A target still stays inside its own Clear Sky, including after midnight.



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.

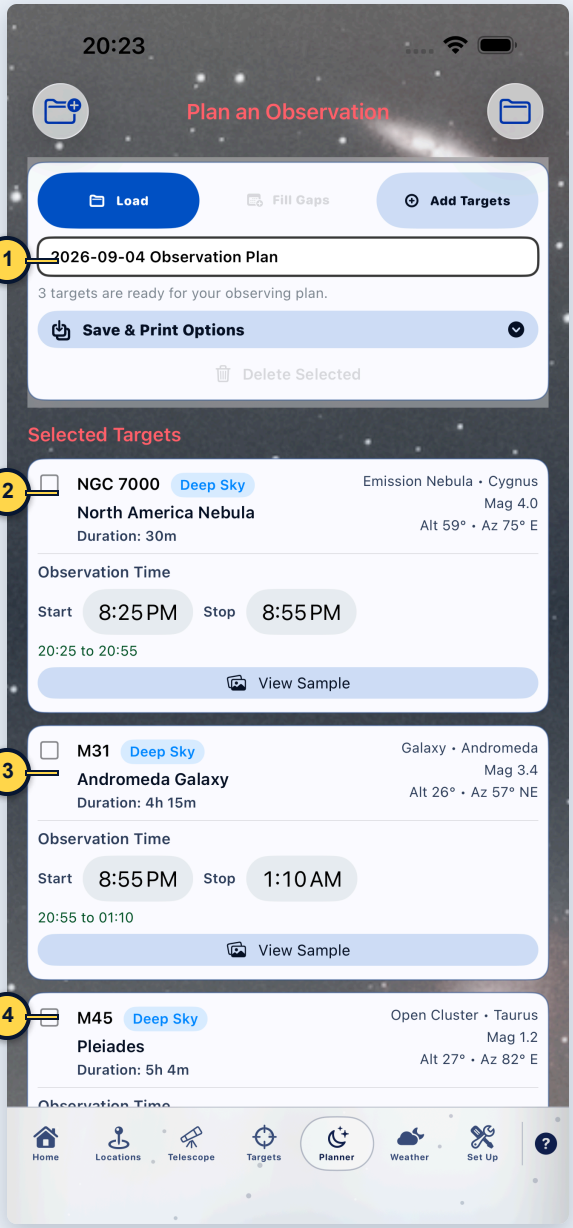
Native iOS 20(4); unchanged planning/setup flow. Third cascade sheet: M45, 01:10-06:14, available at both endpoints.

26. Review the plan

Planner lists every placed target. After Build Plan the times can overlap. Balance Plan and Use Priority change the shares without dropping a target that has Clear Sky.

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.



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.

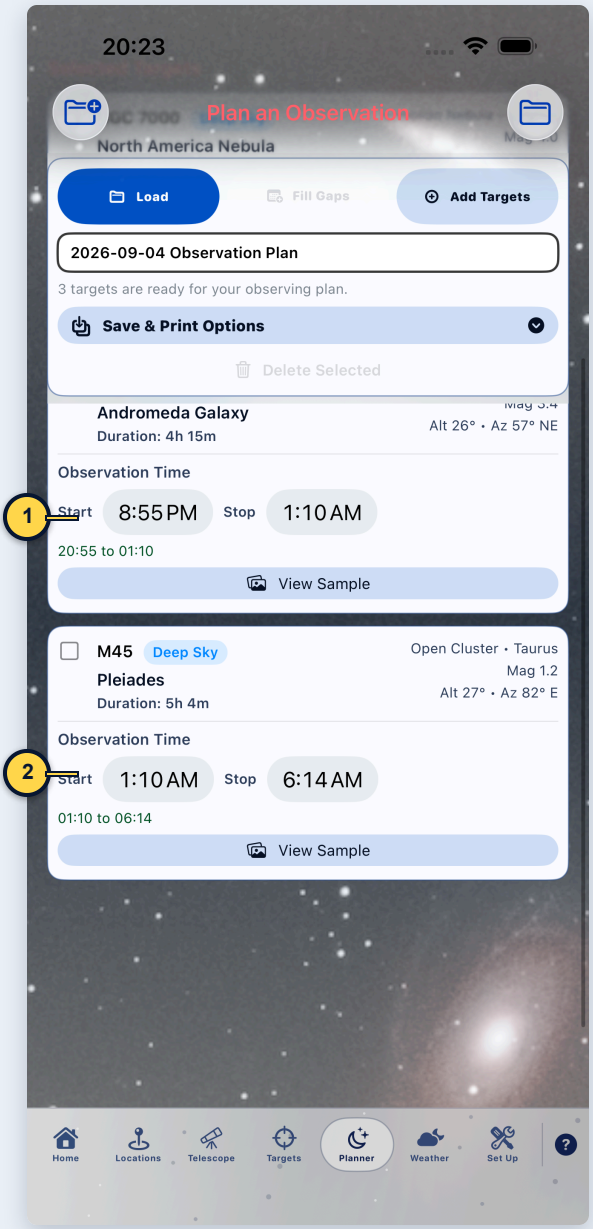
Native iOS 20(4); unchanged planning/setup flow. Completed plan with NGC 7000, M31, and M45; no timing-conflict warning.

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.



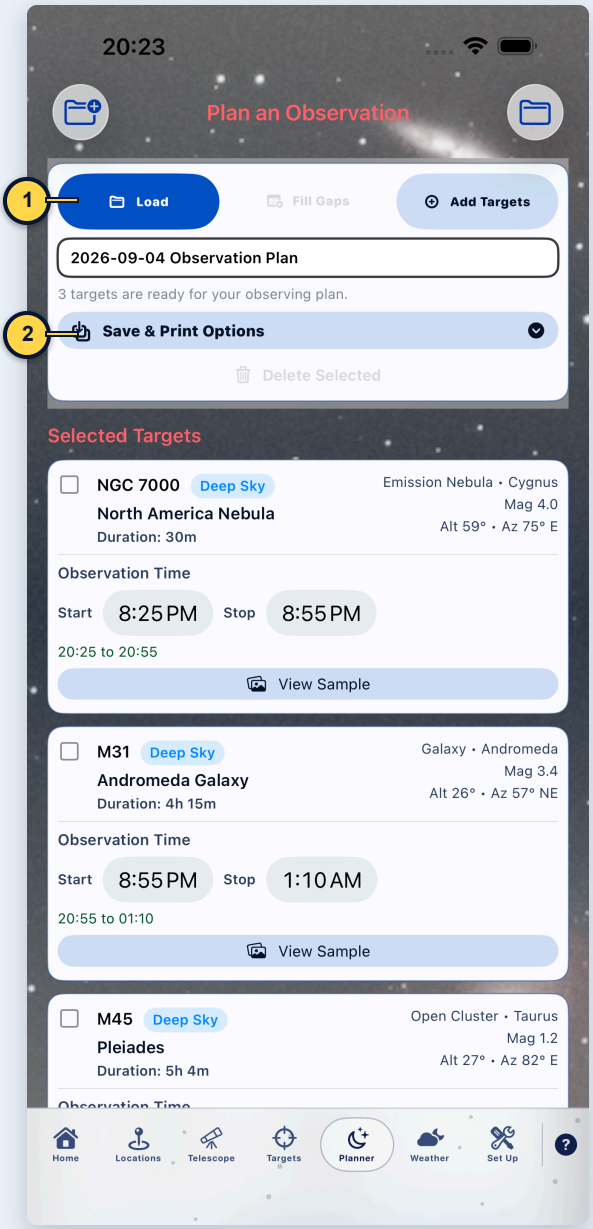
1. Review M31 Start and Stop.
2. M45 begins at M31's 01:10 stop. Recheck after any edit.

Native iOS 20(4); unchanged planning/setup flow. 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** to review suggestions that fit open mid-plan windows (active filters and location apply). Accept only after reviewing the proposed insert.
3. Use **Add Targets** to return to target selection using plan context.
4. Open **Save & Print Options** only after Preview review.

After a plan is built, unused time that is still inside a Clear Sky span is given back to the targets already seated on either side of an interior hole. Time outside both spans stays open. Fill Gaps can still list that leftover interior hole when it is longer than 15 minutes, and can suggest a matching target for an open mid-plan window using the active filters and the saved location. The open stretch after the last target stays open and is not listed as a gap. Accept a suggestion only after review. Removing a middle Planner row reflows later starts; recheck visibility after mid-plan edits. Editing an end time can move the next start. Fill Gaps does not replace review or authorize automatic additions.



1 Load opens a saved plan; Add Targets returns to selection. Fill Gaps is unavailable here.

2 Expand Save & Print Options to reach output actions.

Native iOS 20(4); unchanged planning/setup flow. Planner controls above the selected target sequence.

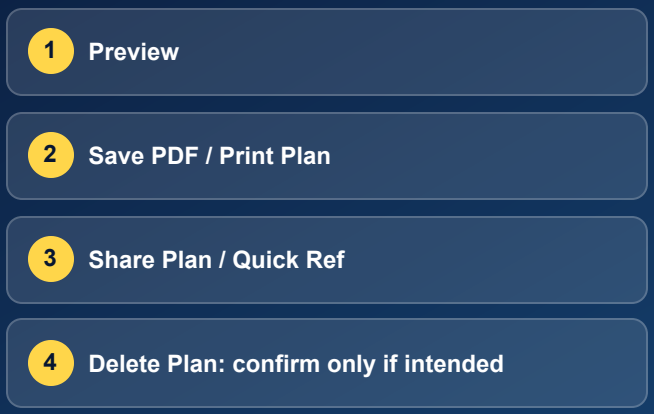
PLANNER OUTPUT

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

1. Tap **Save** after the plan has targets and a night window.
2. **Open this plan next time? Yes** keeps these targets and clock times and moves the window onto the next planning date.
3. **No** asks **Save this plan in your plan folder? Yes** writes the PDF. **No** does not.
4. Tap **Quick Ref** for the card list. Use **Preview**, **Save PDF**, **Print Plan**, or **Share Plan** for the full report.

> **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



Save & Print Options map; not a screenshot.

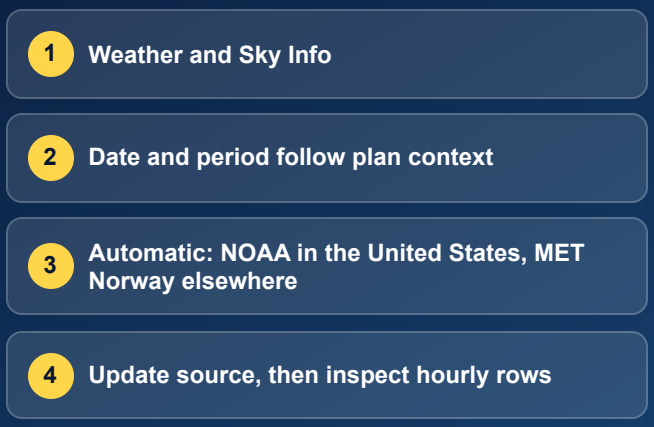
30. Check weather after planning context is set

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. The source name shows above the hourly rows.

Planet and Moon positions are calculated on the device with Paul Schlyter's method, including the main Jupiter, Saturn and Uranus perturbations. Planets agree with NASA/JPL Horizons to within about 2 arcminutes. The Moon is calculated from Earth's center, so from your location it can appear up to about 1 degree from the listed position.

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

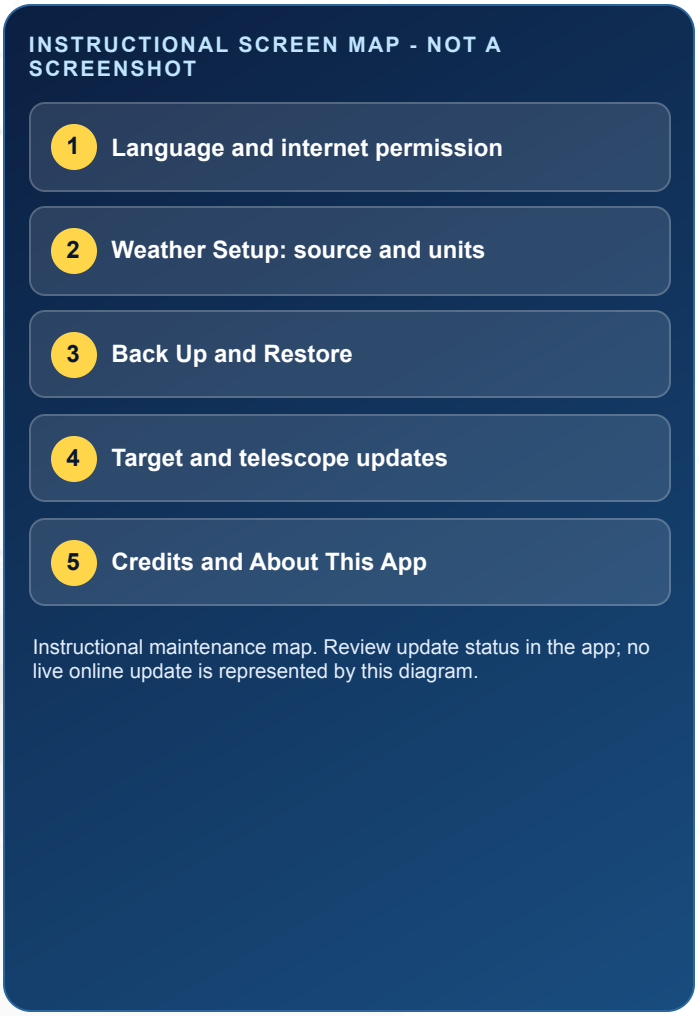


Weather workflow map, not a screenshot.

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

1. Open **Set Up** from Home.
2. Review language, internet permission, and privacy status.
3. Use **Weather Setup** for the weather source, temperature units, and barometric pressure units.
4. Use **Back Up and Restore** to save your planner data or bring it from another device.
5. On Home, use **Update Current Catalog** or **Update Both Catalogs** to reload the packaged catalog. In Set Up, **Update Target Database** is the separate online refresh for small-body data.
6. Use **Credits** for the data sources, services and people the planner relies on, and **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 maintenance map. Review update status in the app; no live online update is represented by this diagram.

32. Choose a weather source and connect your own keys

Automatic is the default, including during the trial. It uses only open services that need no account.

1. Open **Set Up**, then **Weather Setup**.
2. Under **Weather Source**, keep **Automatic**: NOAA (the US National Weather Service) for locations in the United States, MET Norway everywhere else. You can also choose **NOAA** or **MET Norway** directly; NOAA covers the United States only.
3. Have an Open-Meteo subscription? Choose **Open-Meteo (your key)**, paste your own API key, select **Test**, then **Apply**. The planner doesn't use Open-Meteo's free service, which is for non-commercial use only.
4. Optional: connect your own personal weather station. Choose **My weather station (WU)**, enter your station ID and your own Weather Underground API key, select **Test**, then **Apply**.

> API keys stay in the Keychain on this device, are sent only to their own service, and are never included in a backup. NOAA data is public domain; data from MET Norway is CC BY 4.0.

Your own weather station

This forecast comes from your own Weather Underground account under The Weather Company's terms of use. It's for your personal use, and you're responsible for following those terms. The planner shows it only to you on this device: it isn't uploaded, shared, or included in backups or exports.

Weather Setup links to the **Weather Underground Terms of Use**. Weather Underground gives API keys only to owners of a station that reports to wunderground.com, and the planner never includes or shares a key. Readings from your station show **Data provided by Weather Underground.** Cloud cover and later hours come from Open-Meteo with your key, otherwise from the Automatic source.

33. Back up, restore, and move between devices

1. Open **Set Up**, then **Back Up and Restore**.
2. Tap **Back Up to Files or Share**, then choose Save to Files or share the zip.
3. To restore, tap **Restore from a Backup** and choose the zip. The app checks it and asks before anything changes.
4. Close the app from the app switcher and open it again to finish. The data from before the restore is kept on the device.
5. Read the summary on Back Up and Restore: what was restored, what was kept, and what wasn't restored and why.

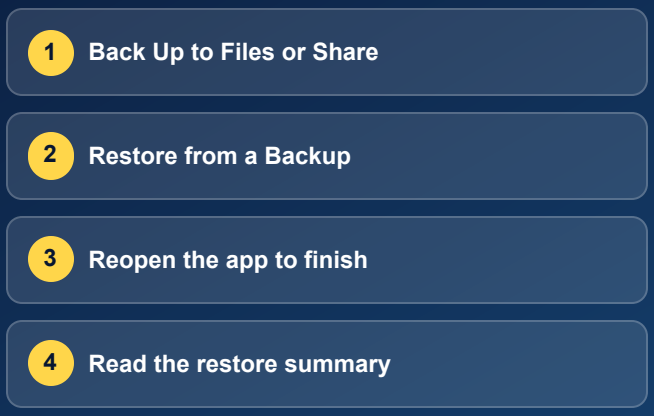
A backup holds saved plans and their targets, telescopes and timing adjustments, observing locations, target filters and display settings. API keys, your Weather Underground station, sign-in, trial and folder-access records are never included.

Backups move between devices

A backup from the Mac or Windows planner restores on iPhone and iPad. Its plans, locations, telescopes and weather settings are converted. Observing logs, target lists, custom telescopes and targets this catalog doesn't have are listed as not restored, and your timing adjustments and target filters stay.

An iPhone or iPad backup restores on the Mac and Windows planners the same way, each into its own storage. A backup made by an older planner, before backups could move between devices, restores only on the platform that made it; update the planner there and back up again.

INSTRUCTIONAL SCREEN MAP - NOT A SCREENSHOT



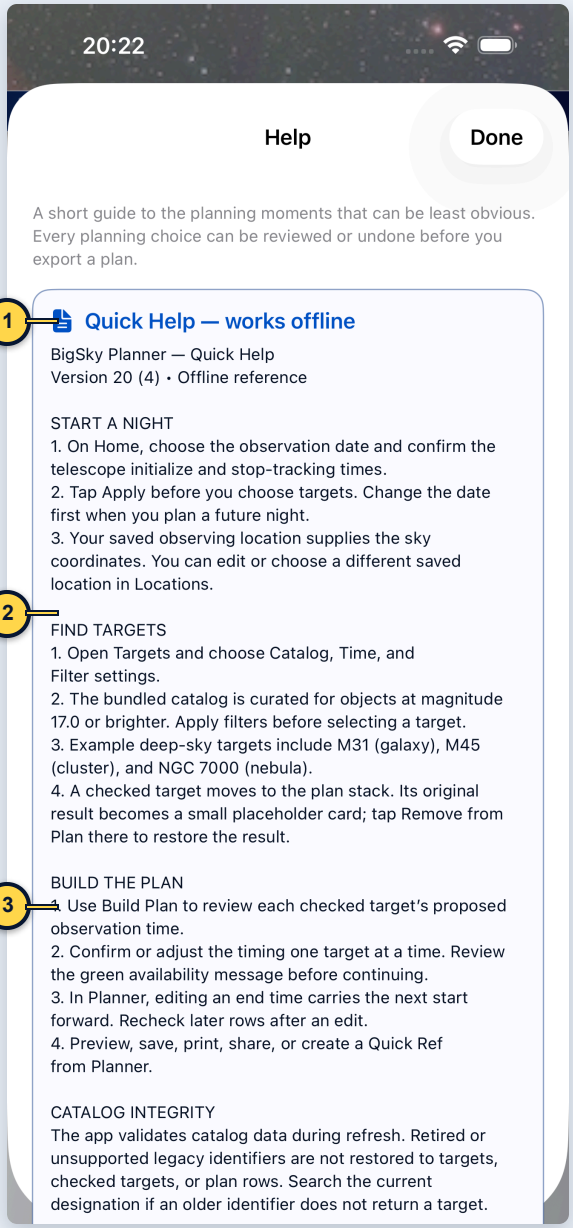
Back Up and Restore map; not a screenshot.

34. 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.



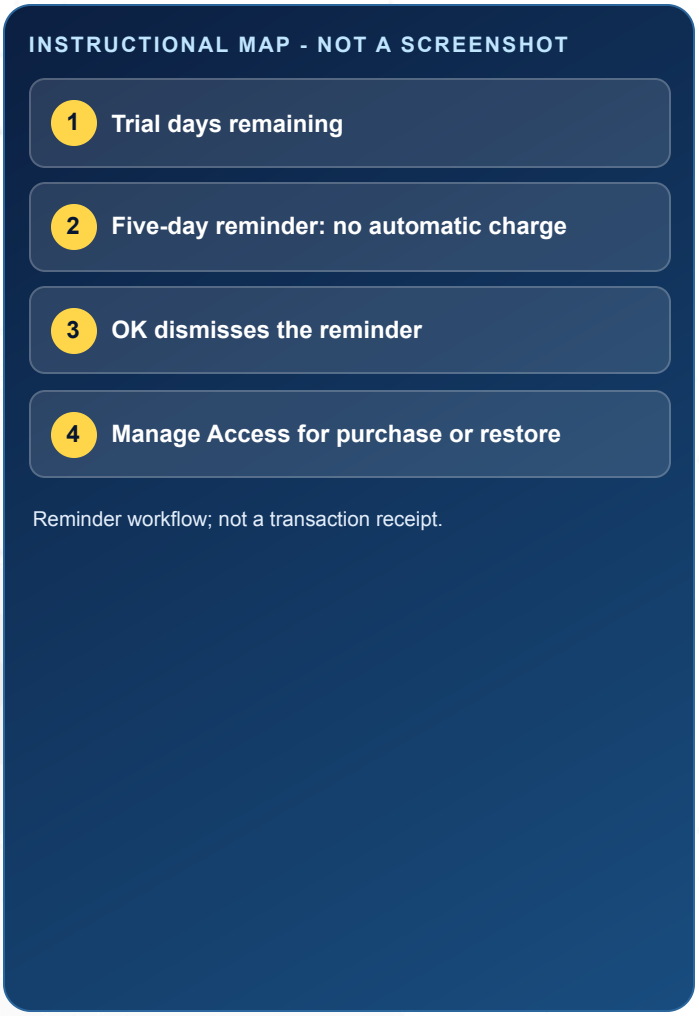
1. Quick Help opens as native text.
2. Read the relevant short procedure.
3. Use the full guide for detailed screenshots and callouts.

Native iOS 20(4); unchanged planning/setup flow. The compact text Help file is bundled and readable without internet.

35. Review access before the trial ends

1. Read the trial-days-remaining banner above the planner.
2. At five days remaining, the app shows the **Free Trial Reminder** once.
3. Tap **OK** to dismiss it. The reminder does not buy anything.
4. Use **Manage Access** to review the expiration date, purchase Full Access, or restore an earlier purchase.

> There is no automatic charge. Earlier paid customers and verified Full Access owners do not need this trial. For help, use **Support** on the access page.



36. Restore or unlock after the trial expires

1. Read **Your 20-Day Trial Has Ended** and the expiration date.
2. To buy permanent access, use the localized **Full Access - One Time** button and confirm with Apple.
3. If already entitled, use **Restore Purchases** with the original Apple Account. Bought the app before it became free and having trouble with access? Contact support@bigskyastro.com.
4. Wait for verification and read the status message. A restored expired trial stays expired.

> Cancellation, a pending family approval, or a failed transaction does not create Full Access. Retry only after resolving the reported condition.

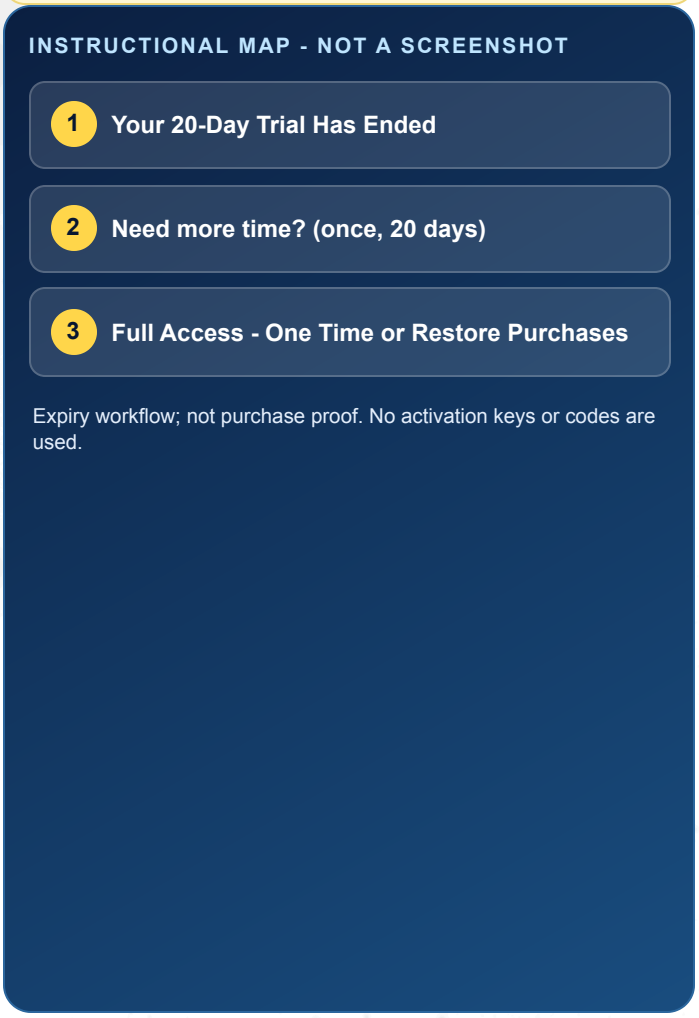
Your saved data

Trial expiry does not delete saved sites or plans. Planning features remain gated until valid access is restored or purchased. Deleting the app itself can remove local data; save personal copies before removing it.

Need more time?

When the developer offers trial extensions, Manage Access shows **Need more time?** near the end of your free trial and after it ends. Tap it to open an email to admin@bigskyastro.com with your trial ID filled in; add a line about why you need more time.

If the developer agrees, your trial is extended once, free, by 20 days. The app picks this up the next time it checks access, with an internet connection, and shows **Trial extended: 20 more days**. There is nothing to type into the app and nothing to pay. Each trial can be extended only once, and an extension always runs to its end. If Manage Access does not show Need more time?, extensions are not offered in your version.



37. 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.

38. Recover a plan, weather, or access issue

Symptom	Check first	Then do this
Planner times conflict	Edited end time and later starts	Review the later times. Build Plan again if a time sits outside that target's Clear Sky.
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, connection	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 Support on the access page or the available support route when a reported status message identifies an entitlement, update, or data-service condition you cannot resolve locally.

39. Troubleshooting: targets, times, and telescope

Find the symptom, check the listed setting, then apply the fix. Change one thing at a time and let the list recalculate before judging the result.

Targets

Symptom	What to check	Fix
Choose a Target Type appears when you tap Apply Filters	Filter: no target type is selected under Common Databases.	Select at least one type, such as DSO, then tap Apply Filters. New users start with DSO selected.
Apply filters to present target data.	The Filter settings have not been applied yet.	Open Filter, review the settings, and tap Apply Filters.
Enter the catalog magnitude limit before applying target filters.	The magnitude limit field is empty.	Enter a limit up to 17, the catalog ceiling, then tap Apply Filters.
No Matching Targets, or the list is nearly empty	Search text, the Catalog hemisphere and magnitude limit, the selected types, and the Clear Sky Az/Alt bounds.	Clear the search, raise the magnitude limit, add types, or widen the Clear Sky bounds, one change at a time.
Save a default location to apply viewable-field and altitude filters.	No default observing location is saved.	Set Up, then Primary Viewing Location: save a site as the default, then tap Apply Filters again.

Times and telescope

Symptom	What to check	Fix
Times look wrong, or the plan is on the wrong night	Home: Plan Date, Initialize and Stop Tracking. Targets: Time Start and End. Times are shown in this device's time zone.	Correct Home first and tap Apply, then Targets, Time, Apply Time, and Apply Filters.
The sun does not reach the needed angle, so there is no initialize time	The date and your location: the sky never gets dark enough that night.	Enter Initialize and Stop Tracking yourself, or choose another date.
Targets are never planned high in the sky, or the Alt bounds changed	Choosing a telescope sets its altitude range in the Filter (for example 20°-80° for Vespera).	Choose the telescope you will actually use. You can still edit the Alt bounds in Filter afterwards.

39. Troubleshooting: plan, weather, output, and access

Plan

Symptom	What to check	Fix
The plan does not fill the night	Open time between targets, the Clear Sky spans, and each target's own visible window.	Use Fill Gaps: it lists open time longer than 15 minutes between targets and suggests targets for gaps longer than 2 hours. The time after the last target stays open. Use Add Targets to add more.
Later start times moved after an edit	Editing an end time or removing a middle row reflows the later rows.	Review every later row. Build the plan again if a time sits outside that target's Clear Sky.

Weather

Symptom	What to check	Fix
Weather is blank	The default location, your Internet Setup answer, and the site elevation.	Correct the setup, then use Update in Weather and Sky Info.
Your own Open-Meteo key or weather station shows nothing	Set Up, Weather Setup: the API key and, for Weather Underground, the station ID.	Select Test, then Apply. Or choose Automatic again (NOAA in the US, MET Norway elsewhere).

Output, backup, and access

Symptom	What to check	Fix
Nothing to print or share	A plan is built and Preview shows it.	Open Save & Print Options, choose Preview, then Save PDF, Print Plan, or Share Plan.
A restore does not seem to finish	The restore completes only when the app opens again.	Close the app from the app switcher, open it again, and read the summary on Back Up and Restore.
The trial has ended, or Full Access is not recognized	Manage Access, the Apple Account that bought the app, and the internet connection.	Use Restore Purchases; never buy again just to clear an error. If you bought the app before it became free, you keep Full Access. Purchase or Full Access problems: support@bigskyastro.com.

Still need help?

Email support@bigskyastro.com with the app version and build (Set Up, then About This App), your iPhone or iPad model and its iOS or iPadOS version, your observing location (a town or region is enough; no precise GPS needed), and what you saw. For purchase or Full Access problems, email support@bigskyastro.com.

How this version plans a night

Version 23.0 places every selected target across the Clear Sky it can use, so the times overlap, and it does not ask for a time first. Balance Plan gives nearly equal time and leaves the last target the time that remains inside its Clear Sky. A Rank on a target, then Use Priority, gives more time to 1 than to 2 and keeps every target that has Clear Sky. A filter change is inserted when neighboring targets use different filters. The plan list shows that interval as a row labeled Filter change and the telescope's change time.

Catalog and site

1. Until you choose, the catalog follows the selected site. Latitude at or above 0°, including the equator, uses Northern. Below 0° uses Southern. No site yet uses Northern.
2. Northern keeps declination 0° and above. Southern keeps declination strictly below 0°. Global keeps both.
3. Applying Catalog, including Global, is an explicit choice. That choice stays when the site changes.
4. The target list stays empty until you apply the catalog, time, and filters. A summary that still says Setup is not a filled list.

Folder, Save, and Quick Ref

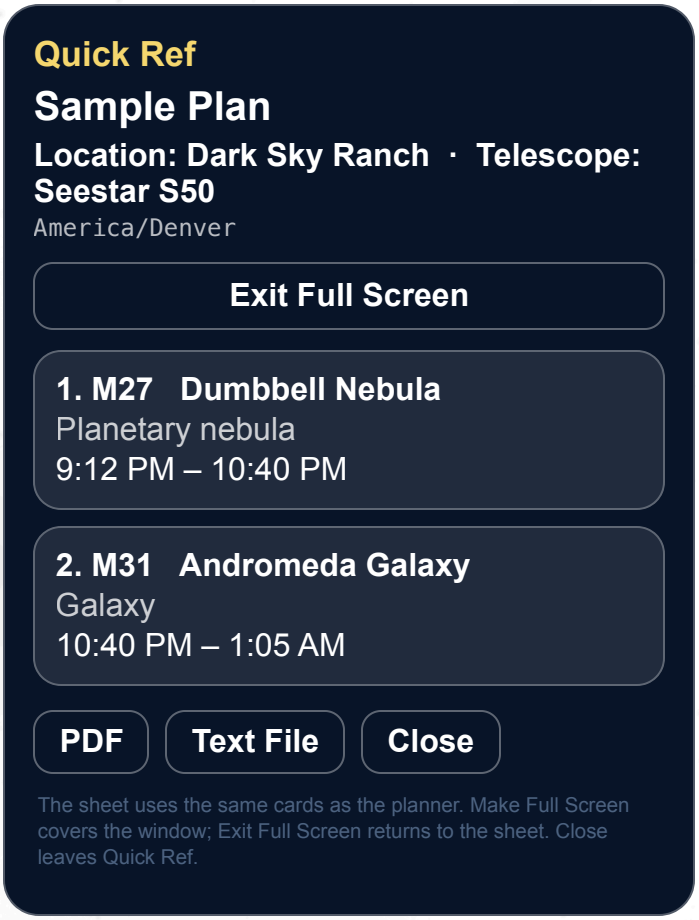
1. Set Up stores the plan folder as a Files bookmark. Home shows it on the status card as **Plan Folder**, or **Not set**.
2. After targets and a night window exist, **Save** asks **Open this plan next time? Yes** reopens those targets and clock times on the new date. **No** asks whether to write the PDF into the plan folder.
3. **Quick Ref** is the card list for that plan. **Make Full Screen** covers the planner. **Exit Full Screen** or **Close** returns. See the Quick Ref page.

> Access is still Apple's offer code, the 20-day trial, purchase, and Restore Purchases. There is no unlock key to type into the app.

Quick Ref

Quick Ref is the current card list, not an older compact chart. Open it from Planner after a site and a night window are set.

1. In **Plan an Observation**, tap **Quick Ref**.
2. The sheet title is **Quick Ref**. It shows the plan name, **Location** and **Telescope**, and the time zone.
3. Each target is a card: the name, the type, then the observation period. If nothing is added yet, the sheet says **No targets have been added yet.**
4. Tap **Make Full Screen** to cover the planner. The bottom tab bar steps aside until you leave.
5. Tap **Exit Full Screen** to return to the sheet, or **Close** to leave Quick Ref.
6. **PDF** and **Text File** share that same card list.



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. Abell planetary nebulae use integrated V magnitudes, including Abell 39. Retired identifiers H20, H21, and C20 stay out of targets, checked targets, and plan rows.

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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NIGHT-OF-USE CHECKLIST

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.