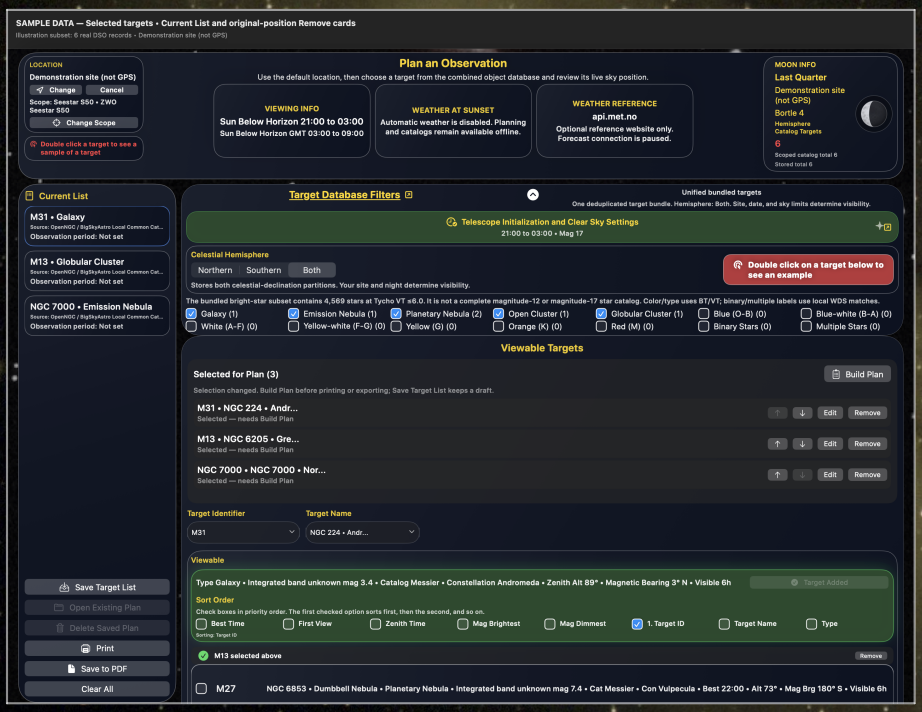
Your night. Planned on Mac.

BigSkyAstro Mac User Manual

Version 23.0: planning, access, catalog, and recovery on Apple silicon Macs that can run macOS 27



Actual Mac view with a sample target selection and a demonstration site; no private GPS.

Version 23.0 (114) / October 2026

Before you begin

This app is a free download with a 20-day free trial. Full Access is a one-time in-app purchase, not a subscription: $12.99 in the United States, and the app shows the price for your App Store region. If you bought the app before it became free, you keep Full Access. For purchase or Full Access problems, email support@bigskyastro.com. Screenshots use sample data and a demonstration site.

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1. Start with a new Mac download

Version 23.0 is the current Mac planner. It runs only on Apple silicon Macs that can run macOS 27 Golden Gate: MacBook Air, MacBook Pro, and Mac mini from 2020, iMac from 2021, Mac Studio from 2022, Mac Pro from 2023, and MacBook Neo. It does not run on Intel Macs. On those Apple silicon Macs it runs on macOS 14 and later, including macOS Tahoe and macOS 27. Setup can unlock with an Apple offer code, a 20-day trial, or Restore Purchases. There is no unlock key to type in. Home shows the setup step bar: Location, Equipment, Plans Folder, Settings & Clear Sky, Targets, Build Plan, and Save & Print. Plans Folder is on the Plan an Observation card, not in the top bar beside the copyright. This guide starts from a newly downloaded, unregistered Mac app.

See the Screen reference atlas for the illustrated controls.

01. Open BigSkyAstro from the location where macOS installed the app. For an App Store download, use the Mac App Store account that will own the app or its in-app purchase.

02. Read Welcome and the privacy information before continuing. This is not the web version, and loading the bundled target database does not require creating a separate astronomy account.

03. Choose whether to allow optional online resources. A network preference is separate from Apple's purchase verification and separate from macOS Location Services permission.

04. Choose Continue to Access. The app checks verified Apple ownership before offering a trial or purchase.

05. If access is available, continue to Locations, choose Equipment, then open Targets & Plan. Help & Recovery, including Credits, remains available even when access needs attention.

06. Keep the app's warning area visible. A temporary-workspace warning means new work is not safely stored across quitting.

07. Use this offline manual's contents list to jump directly to a topic. Use its Index button or search field to find terms such as Restore Purchases, hemisphere, or Build Plan.

Free download
This app is a free download with a 20-day free trial. Full Access is a one-time in-app purchase, not a subscription: $12.99 in the United States, and the app shows the price for your App Store region. If you bought the app before it became free, you keep Full Access. For purchase or Full Access problems, email support@bigskyastro.com.

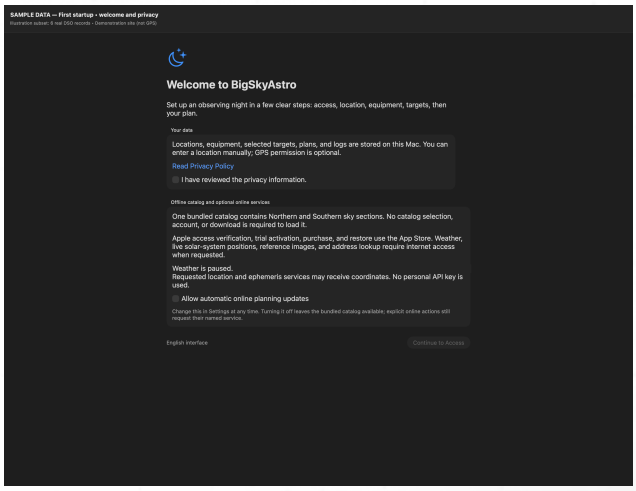
Version 23.0
The window title and Access menu show Version 23.0 (114). Until you choose, North, South, or All follows the selected site: latitude at or above 0°, including the equator, uses North; a latitude below 0° uses South; no site yet uses North. An explicit choice, including All and Make these my defaults, stays when the site changes. On Home, Plan an Observation shows Plans Folder as a path or Not set, with Choose or Change. After targets and a date and time window are set, Yes makes that plan the one that opens next time and shifts the same clock times onto the new calendar date. No then asks whether to save it in the Plans Folder.

Where it runs
The hardware cutoff is Apple's macOS 27 Golden Gate list. Every Mac on that list has Apple silicon: an M1 or later, or MacBook Neo. Intel Macs are not supported. The app is built for Apple silicon only. macOS 14 and later on those Macs is enough, including macOS Tahoe and macOS 27.

Mac navigation
Use the compact top navigation bar: Home, Locations, Equipment, Targets & Plan, Current Plan, Logs, and Help. Access at the right contains Manage Access, Redeem Offer Code, trial status, and build information. Command-4 opens Targets & Plan; Command-5 opens Current Plan. Help remains available without a completed purchase.

2. Privacy, permissions, and online resources

Planning coordinates are sensitive. Manual location entry, optional system location permission, and online service requests are different choices; understand each before sharing your observing site.



Actual Mac view; full-size detail is in the linked Screen reference atlas.

01. At Welcome, read the explanation of what stays on this Mac and what an optional online action can send to a service.

02. Leave optional online resources disabled if you want to prepare the observing plan from the packaged catalog without automatic external lookups.

03. Use manual coordinates when you do not want the app to request your Mac's current location. Declining Location Services does not prevent manual setup.

04. An explicit reference-image, address, or other online action can require a connection. Review the named destination and the fields involved before using that action.

05. Do not assume a saved site name hides its coordinates from a service that calculates site-specific information.

06. When sending screenshots to support or publishing a plan, cover location names, coordinates, street addresses, and other details that could identify a private observing site.

07. Do not include Apple credentials, purchase receipts, unredeemed offer codes, or your exact GPS values in public screenshots.

Weather privacy
Weather is paused in this version of the Mac app. When forecasts return, a forecast request sends the selected site's coordinates and your connection's IP address to the provider you choose, such as MET Norway, and only after you allow online planning updates in Settings.

3. Activate the 20-day trial or Full Access

Access uses verified Apple transactions. A trial is an explicit action, not a timer silently started when you first read the welcome screen.

See the Screen reference atlas for the illustrated controls.

01. Open Access at the right of the top navigation bar, then Manage Access; Help also offers access assistance. Wait for the status text to finish checking existing ownership.

02. If eligible and available, select Start 20-Day Free Trial. Review Apple's confirmation and complete it only if you want the trial to start.

03. The trial is free. It lasts 20 days from when it started, not from the latest installation.

04. After successful activation, continue to the planner. Open Access for remaining trial days; Manage Access explains whether you have trial or permanent access.

05. To purchase, read the price displayed by StoreKit, then select Purchase Full Access and complete Apple's confirmation. In the United States, Full Access is $12.99; the app always shows the current price for your App Store region. Full Access is a one-time purchase, not a subscription: it does not expire and stays with your Apple Account.

06. If you cancel Apple's sheet, return to Manage Access; cancelling is not a completed purchase. A pending approval is also not immediate ownership.

07. At expiry, purchase or restore an existing entitlement to regain access. Help and data recovery remain available so you can understand the status safely.

No automatic charge
The 20-day trial does not renew and does not automatically charge for Full Access. Reinstalling, changing devices, or restoring does not start a second trial.

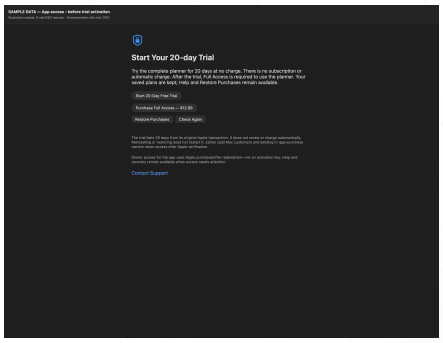
Bought before it became free?
The app was a paid download until it became free with the 20-day trial. If you bought it then, you keep Full Access with no additional purchase; Manage Access checks this automatically, and Restore Purchases checks again. Bought the app before it became free and having trouble with access? Contact support@bigskyastro.com.

Need more time?
When the developer offers trial extensions, Access shows Need more time? near the end of your free trial and after it ends. It opens 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 Access does not show Need more time?, extensions are not offered in your version.

Product availability
If Start 20-Day Free Trial or Purchase Full Access does not appear, check your internet connection and App Store sign-in, then choose Check Again. A missing button does not mean you already own Full Access, and there is no activation key to type in.

4. Restore an earlier purchase

If you already paid for the Mac app or its Full Access purchase, let the app verify it before buying again. Mac and iPhone or iPad purchases are separate; use the Apple Account that made the Mac purchase.



Actual Mac view; full-size detail is in the linked Screen reference atlas.

01. Sign in to the Mac App Store with the Apple account used for the original purchase.

02. Open Manage Access and let the app check ownership. A Mac download bought before the app became free keeps Full Access with no additional purchase.

03. If ownership is not recognized, choose Restore Purchases. Complete any Apple sign-in or authentication request.

04. Read the result carefully: nothing to restore, a pending transaction, a connection error, and verified permanent access are different outcomes.

05. Use Check Again after a temporary App Store issue is resolved. Do not purchase a second time merely because the first verification request failed.

06. If you previously bought the Mac Advanced Features in-app purchase, sign in with the same Apple Account. It is the same product as Full Access, so the app and Restore Purchases recognize it.

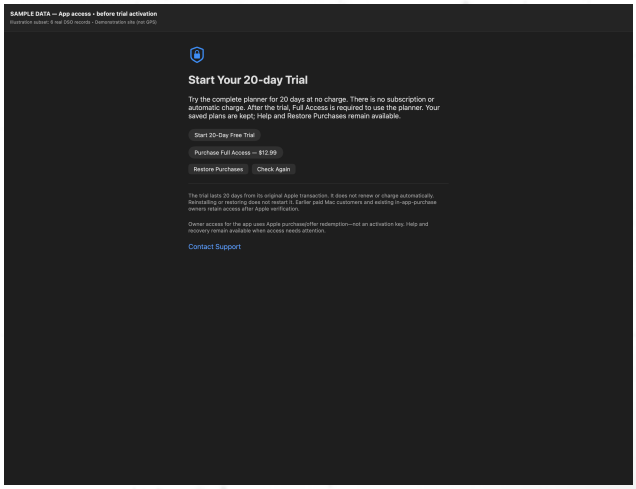
07. If you bought the app before it became free and access is still missing, contact support@bigskyastro.com (Contact support@bigskyastro.com in Manage Access and Help opens an email). Include the app version, the platform purchased, and the displayed error. Do not send your password or an unredacted receipt.

Bought before it became free?
The app was a paid download until it became free with the 20-day trial. If you bought it then, you keep Full Access with no additional purchase; Manage Access checks this automatically, and Restore Purchases checks again. Bought the app before it became free and having trouble with access? Contact support@bigskyastro.com.

Mac and iPhone purchases are separate
Full Access bought in the Mac app unlocks the Mac app. A purchase in the iPhone and iPad app does not unlock the Mac app, and a Mac purchase does not unlock the iPhone and iPad app.

5. Redeem an offer code

If BigSkyAstro gives you an App Store offer code for the Mac app, redeem it during setup or later in Manage Access. You do not have to start another 20-day trial first. Apple handles the code; the app has no code field or activation key of its own.



Actual Mac view; full-size detail is in the linked Screen reference atlas.

01. On the setup screen, before a trial has started, choose Redeem Offer Code next to Start 20-Day Free Trial. After setup, open Access at the right of the top navigation bar, then Manage Access, and choose the same button.

02. Apple's redemption sheet opens. The code is entered there, not in this app.

03. Enter the code exactly as supplied and complete Apple's confirmation. Use a code meant for the Mac app; a code for the iPhone and iPad app does not apply.

04. When Apple confirms, the app grants Full Access and does not start a new trial. If the purchase has not appeared yet, choose Check Again or Restore Purchases. Cancelling the sheet leaves you on setup, and the trial is still available.

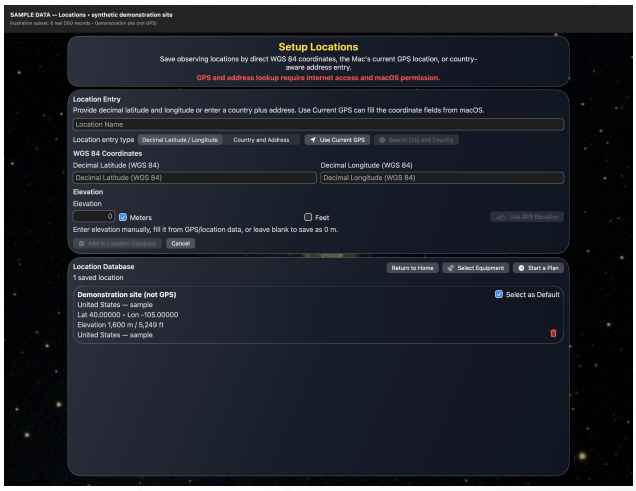
05. Note the Apple Account you used, so another Mac signed in to the same account can restore Full Access.

06. Keep an unredeemed code private, and never post it publicly.

No activation keys
Offer codes are redeemed only through Apple. The app has no unlock key or owner password. The only trial extension is the one-time Need more time? request described in section 3.

6. Create a location manually

A correct observing site is the foundation of reliable rise/set, altitude, and schedule calculations. You can enter a site without giving the app access to the Mac's current GPS location.



Actual Mac view; full-size detail is in the linked Screen reference atlas.

01. Choose Locations in the top navigation bar. Start a new location entry and give the site a useful name that you can recognize later.

02. Enter the WGS 84 latitude and longitude carefully. North/east and south/west signs matter; verify them before saving.

03. Check the observing site's time zone. Use the time zone of the site, not automatically the zone where the Mac happens to be.

04. Enter elevation if known and check whether the field is using meters or feet. If you leave it blank, the existing location workflow saves a zero-meter value; that is not a measured elevation.

05. Review any sky-quality or site-specific fields shown by the location editor rather than accepting unknown values as measurements.

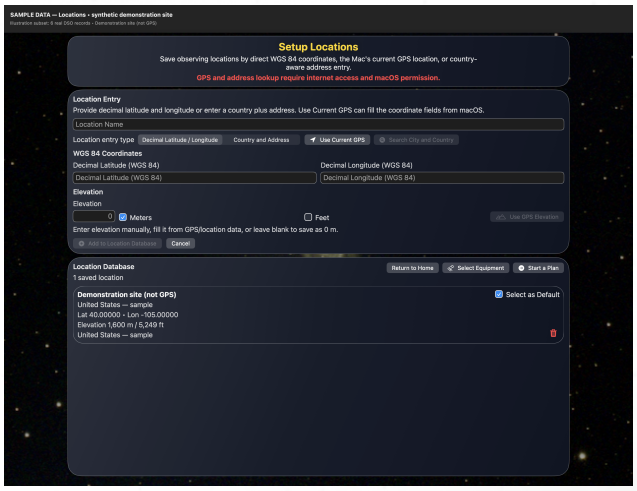
06. Save the location and verify that it appears in the saved-location database.

07. Select the intended default site when prompted. Recheck its name and time zone before starting a plan, especially if you maintain several observing sites.

> **Coordinate check**
> A latitude/longitude sign error can place the site on another continent or hemisphere. Confirm the actual values locally, but obscure them in all manual or support screenshots.

7. Optional GPS and address lookup

Use current-location or address lookup only when you want that workflow and understand the required connection or permission. A failed lookup should not prevent manual entry.



Actual Mac view; full-size detail is in the linked Screen reference atlas.

01. Open Locations and select the current-location action only when you intend to request the Mac's position.

02. Read the macOS Location Services permission dialog. You can decline and use direct coordinates instead.

03. Wait for the lookup result and inspect the returned position, name, elevation, and time zone before saving.

04. For address entry, choose the correct country and enter a sufficiently specific address. A broad region may require choosing a major city before continuing.

05. Treat a city result as approximate for planning until you replace it with the actual observing-site coordinates.

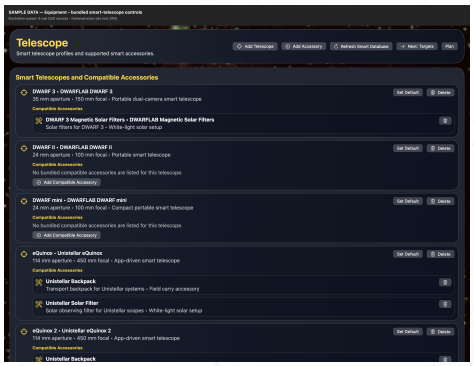
06. If lookup fails, check permission/connectivity or return to the manual WGS 84 fields. Do not repeatedly request GPS while another location request is still running.

07. Before sharing a screen capture, blur the GPS location everywhere it appears, including summaries, map labels, weather headers, and exported plan headings.

Optional permission
The app does not need your personal GPS location to illustrate galaxies, clusters, or nebulae in the manual. Use masked or clearly non-private demonstration sites.

8. Select equipment and accessories

Choose the equipment that will actually be used for the observing session. The equipment profile informs the plan context; it does not prove a physical telescope is connected or that tracking has started.



Actual Mac view; full-size detail is in the linked Screen reference atlas.

01. Choose Equipment in the top navigation bar. Open the telescope chooser and select the matching brand and model.

02. Before adding the telescope, review the accessory blocks now shown for that exact brand and model.

03. Choose compatible accessories in Imaging, Solar, Cases/Backpacks, and Other. Every category includes None; choose None to clear that category.

04. The bundled accessory source is aligned with the iOS catalog. Known Vespera-family filters appear for Vespera II; other products use explicit supported-model mappings. Solar filters and carrying cases that have different physical variants are labeled for their telescope range. Existing custom and legacy records are preserved.

05. Choose Add & Make Default after completing the accessory choices. Your saved default appears in the top Default Telescope card with Continue to Targets. Other telescopes are listed below, each with Set Default. That action moves the chosen telescope to the top and keeps it there until you explicitly choose another default or delete it; no duplicate profile is added. Edit Accessories and Save as Default update the telescope's accessory choices.

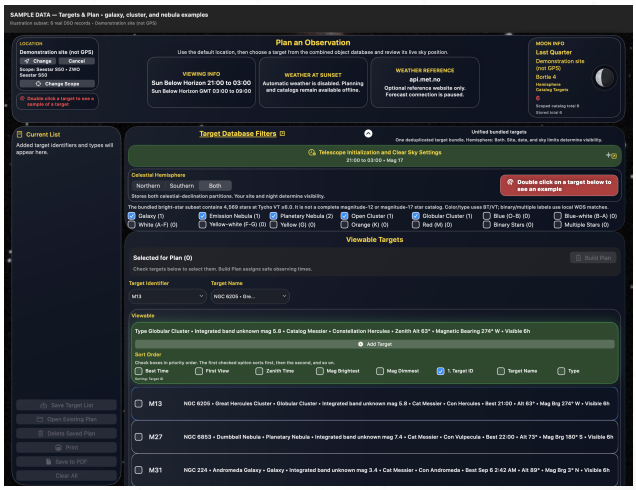
06. Refresh the bundled smart equipment catalog when needed. This refresh updates telescope and accessory records together, including missing rows. It reloads the packaged catalog; it is not a live manufacturer feed. Then choose Next: Targets and wait for the curation popup to clear.

07. Before actual observing, confirm device readiness, connection, alignment, and any tracking limits using the telescope manufacturer's controls and instructions.

Planning is not hardware execution
The planner prepares a schedule. Do not treat a selected equipment profile or a displayed observing time as confirmation that the telescope has slewed, focused, or begun imaging.

9. Set the observing date, window, and time zone

Times need both a calendar date and a time zone. The same clock reading can represent a different instant at another site or during a daylight-saving change.



Actual Mac view; full-size detail is in the linked Screen reference atlas.

01. Open Targets & Plan and confirm the selected site and equipment.

02. Open Telescope Initialization and Clear Sky Settings. Select the observing date and review the telescope-specific Initialize and Stop estimate, using the same readiness rules as the iOS app and the site's time zone. Estimates are not a guarantee of hardware readiness.

03. Edit Initialize or End when needed. Manual times are preserved when changing telescope, site, or date; Use Estimated Times explicitly restores automatic suggestions. If no estimate is possible, enter valid times manually. Review the displayed time zone and AM/PM selector.

04. Apply the edited window and limits. Draft filter text is not necessarily the same as the currently applied planning input.

05. Check the resulting night interval. A target cannot be scheduled before both the observing window and its allowed visibility begin.

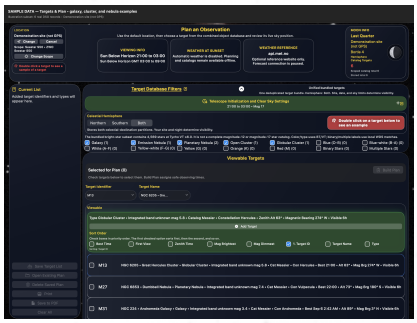
06. If an end clock is earlier than the start clock, the time-entry policy can place it on the next calendar day. Equal clocks are not silently interpreted as a 24-hour exposure.

07. After changing date, site, time zone, or window, wait for visibility to finish and rebuild before exporting.

Midnight and DST
The app uses calendar-day handling for clock entry and absolute dates for computed visibility. Review ambiguous local times around a daylight-saving transition; a calendar day is not always exactly 24 hours.

10. One catalog, North, South, and All

The updated app packages its approved targets together. There is no catalog-source choice page or requirement to rebuild a personal selection of public providers.



Actual Mac view; full-size detail is in the linked Screen reference atlas.

01. Open Hemisphere & Target Types on Targets & Plan and use Celestial Hemisphere, or use Change Catalog on the Home card One Bundled Target Catalog. Both offer North, South, and All.

02. Update Current Catalog rewrites only the set now in use, North, South, or All, from the catalog packaged with the app. The other set stays, including names you changed.

03. Update Both Catalogs rewrites North and South together. A target kept for a plan, a log, or a local edit is not removed. Neither action needs the internet.

04. Until you choose, the catalog follows the selected site. Latitude at or above 0°, including the equator, uses North. A latitude below 0° uses South. No site yet uses North. North keeps targets at declination 0° or higher. South keeps targets strictly below declination 0°.

05. Choose All for both declination partitions. An explicit choice, including All, is kept when the site changes. Make these my defaults plus Apply Filters saves that choice for later launches.

06. Remember that this is a celestial-coordinate partition, not a claim about everything observable from a northern or southern geographic site.

07. Choose All when you want the actual site, night, altitude, and clear-sky limits to determine what can be observed across the celestial equator.

08. Use target type, magnitude, and observing-window filters to narrow the list rather than looking for the retired catalog-choice page.

09. Selected or saved targets may remain available for the current plan even when they are outside the newly chosen browsing partition; they must still pass scheduling visibility validation.

Coverage is finite
The bundled package is a curated, deduplicated set from defined source snapshots. It is not a claim that every public astronomy table has been downloaded or that overlapping catalog memberships are separate objects.

11. Speed and the planning workflow

Version 23.0 does the slow catalog work while you set up, then keeps a finished night easy to pick up or file.

01. The catalog is decoded in the background while you set the location, equipment, and Plans Folder. Home is not waiting on that JSON parse.

02. Until you choose North, South, or All, the selected site sets the catalog. Latitude at or above 0°, including the equator, uses North. A latitude below 0° uses South. No site yet uses North. North or South keeps the first Targets visibility sample smaller than All.

03. The in-memory index is reused. Changing target types does not parse the catalog JSON again. A wider set, such as switching to All, uses that same decoded copy.

04. On this Apple silicon Mac the decode is about a tenth of a second. The wait that can still show up is the first Targets visibility sample and the first database write.

05. The location you save sets the hemisphere until you choose otherwise. An explicit choice, including All and Make these my defaults, stays when the site changes.

06. On Home, open the Plan an Observation card. Plans Folder shows the path, or Not set. Choose sets the folder. Change replaces it. That control is on this card. It is not in the top bar beside the copyright.

07. The setup step bar on Home reads Location, Equipment, Plans Folder, Settings & Clear Sky, Targets, Build Plan, and Save & Print. Plans Folder also opens from that bar, as Choose Folder or Change Folder.

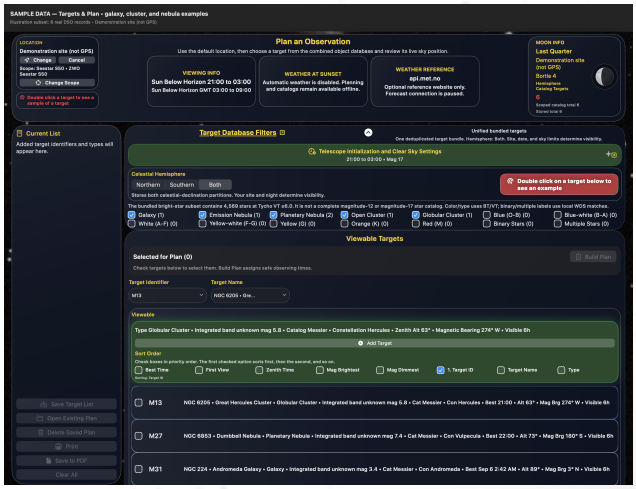
08. Home cards are Setup Locations, Observation Equipment Used, One Bundled Target Catalog, and Plan an Observation. One Bundled Target Catalog shows Catalog Set, Change Catalog, Update Current Catalog, and Update Both Catalogs.

09. Viewable Targets stays empty on a new launch until you apply the session window with Apply for This Session. After targets and a date and time window are set, Yes reopens that plan on the new calendar date with the same clock times. No asks whether to save it into the Plans Folder.

What still takes a moment
Home can open while the catalog decode finishes in the background. The pause you may still see is the first visibility sample on Targets, and the first time the app writes its database.

12. Understand magnitude 17 or brighter

For an apparent-magnitude scale, smaller numbers are brighter. The requested package ceiling is magnitude <= 17, including negative and zero magnitudes; it is not magnitude >= 17. Deep-sky records with no measured magnitude are also kept.



Actual Mac view; full-size detail is in the linked Screen reference atlas.

01. Read the magnitude and measurement label on a target, not just the number.

02. Use the magnitude filter to choose a brighter practical limit for your equipment and sky conditions. A magnitude-17 package can still be browsed at a limit such as 8 or 10.

03. Distinguish integrated object brightness from a single star's magnitude. A large diffuse nebula can be harder to see than a compact target with the same integrated value.

04. Check the photometric band: visual V, blue B, and stellar Tycho VT are not automatically identical measurements.

05. Do not assume that an object missing from a magnitude-limited package does not exist. It may have only an ineligible brightness measurement, have unsuitable classification, or be outside the chosen source snapshot.

06. Treat unknown magnitudes as unknown. A record with no measured magnitude is kept and is not hidden by the magnitude filter. A placeholder value must not be used merely to make an object pass the cutoff.

07. Use the catalog addendum and source notes to understand inclusion rules before comparing row counts across releases.

> **No universal visual conversion**
> The app labels the retained measurement. It does not silently convert B, VT, a central-star measurement, or an Abell ranked-member value into an integrated V magnitude.

13. Abell catalogs and brightness

Abell galaxy clusters and Abell planetary nebulae are different catalogs. A number in one of their magnitude columns is not necessarily the total apparent magnitude of the target you intend to observe.

01. For a galaxy cluster, check whether a published magnitude refers to its first-, third-, or tenth-ranked member galaxy.

02. Do not read a tenth-member value as the integrated brightness of the whole cluster. Richness, distance, membership, and photometry are separate quantities.

03. For a planetary nebula, distinguish integrated nebular light from the central star's magnitude.

04. Use a verified cross-match to an integrated measurement when available, retaining the original identifier, band, source, and measurement kind.

05. If no appropriate integrated value is available, keep the target outside a strict integrated magnitude-17 package or clearly classify it as unknown according to the chosen catalog policy.

06. Do not assign a convenient magnitude such as 8 to an Abell row with no eligible measurement.

Can Abell values be adapted?
Not by a universal arithmetic conversion. A valid adaptation requires an independently supported integrated measurement or a carefully defined, clearly labeled observational proxy. A ranked-member magnitude alone cannot establish an integrated magnitude.

14. Filter galaxies, clusters, and nebulae

Use filters to find appropriate targets without changing the underlying catalog. Galaxies, stellar clusters, and nebulae are the preferred deep-sky illustrations for this manual.

See the Screen reference atlas for the illustrated controls.

01. A new session follows the site's hemisphere and starts with every deep-sky type unless you explicitly saved defaults. Open Hemisphere & Target Types. Celestial Hemisphere is North, South, or All. Select any combination of types. The list scrolls above the fixed Apply Filters, Cancel, and Clear / None actions. Make these my defaults plus Apply Filters saves the hemisphere and types. Clear Saved Target-Type Default is staged until Apply Filters; Keep Saved Default undoes that mark. Cancel preserves the saved default. Unchecking Make these my defaults alone does not delete an existing default.

02. Viewable Targets stays empty on a new launch until the session window is applied. Open Telescope Initialization and Clear Sky Settings, review Initialize and End, then choose Apply for This Session. A count already shown on the magnitude card is not the filled list.

03. After the plan has targets and a date and time window, the app asks Open this plan next time? Yes and No are checkboxes, and only one can be on. Yes makes that plan the default and moves the same clock times onto the new calendar date, keeping the targets. No then asks Save this plan in your Plans Folder? with its own Yes and No checkboxes. Continue is available only after the needed boxes are checked. Viewing the list does not wait on that answer. Create New Plan, or an explicit choice not to reopen, is not replaced by an older default.

04. Plan an Observation starts with a compact information header. Show Observation Info expands the location, viewing, weather, and moon details; Hide Observation Info collapses them. Your choice is remembered, and Change Location and Change Scope remain available in the compact header.

05. A gentle sparkle marks the expandable observation header. Incomplete planning steps are red; completed steps are green. A moving checkmark identifies the next step once the preceding step is complete. Both cues move slowly, taking 12 seconds per pass. Motion pauses when the app is inactive and becomes static with Reduce Motion enabled.

06. After Apply collapses the filter panel, use its Clear Sky Settings button to reopen telescope timing and sky limits. The existing applied values load for editing; opening this popup does not reset them. The expanded panel still has the full Telescope Initialization and Clear Sky Settings link.

07. Scroll the planning page to reach all target cards. Scrolling does not change the selected target. Choose an identifier or name, or click a Current List entry, to jump to that target. Selected-for-plan cards and the target feed share the main page scroll; the Current List sidebar has its own bounded list.

08. For a galaxy session, select the galaxy categories you intend to observe and set a realistic magnitude limit.

09. For clusters, distinguish open and globular clusters. A galaxy cluster is a different object class and has different photometry concerns.

10. For nebulae, choose the available emission, reflection, planetary, supernova-remnant, or dark-nebula classes as appropriate.

11. Apply the observing window and sky limits, then wait for the visible-target calculation.

12. If the list is empty, change one constraint at a time: hemisphere, type, magnitude, observing date, or allowed altitude.

13. Use stable target identifiers to confirm the intended object. Different catalog aliases may refer to the same physical target; duplicates are not extra observing opportunities.

Known exclusions
H20 and H21 are suppressed, including their known blocked aliases. The duplicate C20 entry is removed, while the real North America Nebula remains as NGC 7000. Gaia targets and the Gaia provider choice are removed.

15. Altitude, azimuth, and clear-sky openings

A target may be above the horizon but hidden by a building, tree, roof, or local obstruction. Allowed clear-sky openings refine the usable part of the observing window.

See the Screen reference atlas for the illustrated controls.

01. Inspect the actual observing site and identify safe, unobstructed telescope sight lines.

02. With no clear-sky areas and no custom overall limits, the default is all 360° of azimuth and altitude 25°-90°. Existing explicit limits are preserved. Use Default Sky resets the draft to 000°-360° and 25°-90°; choose Apply to activate it.

03. Within Telescope Initialization and Clear Sky Settings, choose Add Clear Sky Area. A numbered editable card appears in the same popup. Complete its four Az/Alt fields. Az is measured from true north; 330° to 030° crosses north. An area can use any allowed Alt range within 00°-90°.

04. Choose Add Clear Sky Area again to append the next card below the first. A target that fits any complete area is valid. Each area uses its own Alt bounds; the overall Az range still constrains telescope pointing. Do not treat gaps between areas as visible sky.

05. Enable Save overall limits and marked areas as my defaults, then mark Include this area in my defaults on each desired card. More than one card can be retained. Apply & Save Defaults commits the complete current setup and remembers only the marked areas for future launches; unmarked areas remain session-only. Clear Saved Sky Default plus Apply removes the stored preset without deleting named saved plans.

06. Apply remains at the bottom of the settings popup while its content scrolls. Compare Currently applied with any edited fields: unsaved values do not affect the target calculation. Close discards unapplied edits. Applied session-only sky and target-filter choices survive navigation but reset at the next app launch; only explicit defaults return. Telescope times are freshly estimated for the new session.

07. If every target count is zero, check for a conflict between the overall Az restriction and the additional areas. For example, overall Az 160°-220° with an additional opening 220°-360° shares only one bearing and provides no usable interval. The app reports that conflict; it does not silently widen the allowed sky.

08. Apply commits all complete areas and overall limits together, then recalculates visibility. An incomplete card blocks Apply. Remove discards a draft card; Cancel Sky Edits or Close restores the previously applied sky settings without opening a second popup.

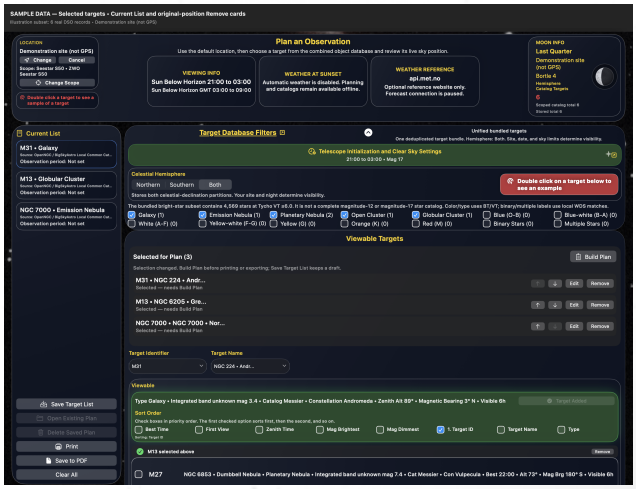
09. Check whether the chosen target has one continuous allowed interval or several separated intervals.

10. Build Plan and confirm that a requested exposure fits inside a single allowed interval. If it does not fit, shorten it, choose a later opening, or remove the target.

Sampling resolution
The visibility worker samples at one-minute intervals and uses conservative contiguous runs. It is a planning approximation; verify real obstructions and telescope safety before executing the plan.

16. Select targets: top cards and Remove placeholders

Selecting a target is now separate from scheduling its exposure. You can assemble the list without being forced through a time-entry sheet for every checkbox.



Actual Mac view; full-size detail is in the linked Screen reference atlas.

01. Browse the visible-target list and identify a target you want to include.

02. Check its selection control or use Add Target. The target is added immediately to Selected for Plan.

03. Look at the top selected panel to verify its identifier and name. Selection alone does not mean a safe observing time has been assigned.

04. At the target's former position in the browsing list, find the smaller selected-above placeholder.

05. Use Remove on either the selected card or the original-position placeholder to deselect it.

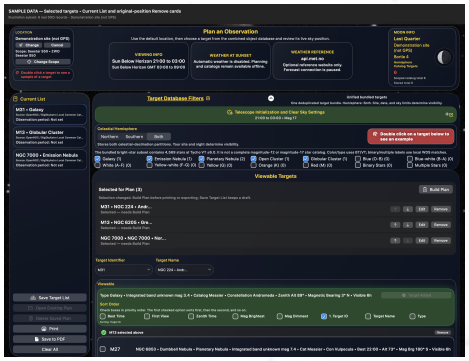
06. Repeat with other targets. Keep a manageable selection and compare their available viewing times.

07. Use Edit only when you want to request detailed timing. Otherwise proceed to Build Plan for automatic assignment.

> **Placeholder purpose**
> The small card explains where the target went and gives a direct way to remove it. It is not a duplicate target, a second exposure, or an independent saved record.

17. Build Plan, then balance or rank

Build Plan places every selected target across the Clear Sky it can use, so the times overlap. 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. When neighboring targets use different filters, a filter change is inserted. The Current Plan timeline draws that interval as a red block labeled Filter change and the telescope's change time.



Actual Mac view; full-size detail is in the linked Screen reference atlas.

01. Confirm the observing site, date, time zone, equipment, and applied filters.

02. Wait until the visibility progress indicator is finished.

03. Choose Build Plan. Every selected target that has Clear Sky is placed across that time, so the times overlap. Build Plan does not ask for a time first.

04. Choose Balance Plan when you want nearly equal minutes. The last target keeps the remainder inside its own Clear Sky.

05. Type a Rank on a target, with 1 as the most time, then choose Use Priority. A blank rank is worse than any typed rank. Every target that has Clear Sky stays in the plan.

06. When neighboring targets use different filters, a filter change is inserted. The Current Plan timeline draws that interval as a red block labeled Filter change and the telescope's change time.

07. Check that no target sits outside the time it can be seen. A stop after midnight stays on that same night.

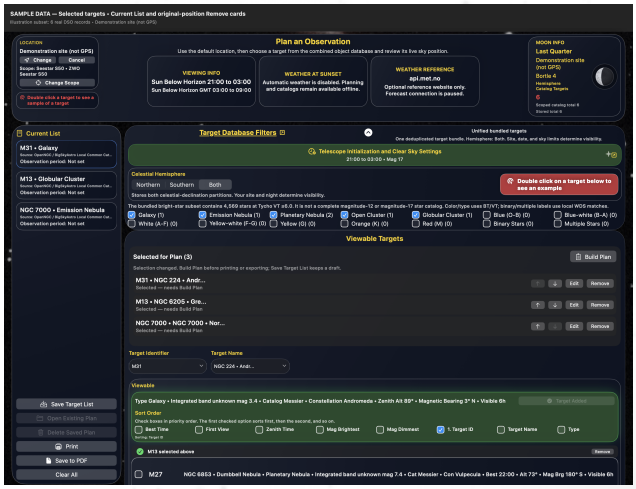
08. If a target has no Clear Sky, it stays selected and is named as not placed. Adjust the window or the selection and build again.

09. Do not print or export until the schedule is the one you want. You may save the selection as a draft while deciding what to change.

Infeasible is an honest result
An object may be real and catalog-eligible but unschedulable tonight. The app does not extend visibility or silently roll an equal time to tomorrow merely to create a successful-looking plan.

18. Edit times and reorder

Use manual timing when an exposure needs a particular duration or a target must be observed later. The listed observation period is the plan time. Reordering or editing makes the previous schedule require another build.



Actual Mac view; full-size detail is in the linked Screen reference atlas.

01. In Selected for Plan, choose Edit for the target to open Observation Period.

02. Review the prefilled values if a schedule already exists. Enter both start and end, or leave both empty to request automatic timing.

03. Use unambiguous clock input and check the AM/PM selectors where applicable.

04. Equal start and end times are invalid; they do not request a 24-hour exposure.

05. Continue to record the requested timing, then choose Build Plan to validate it against visibility and the other selected targets.

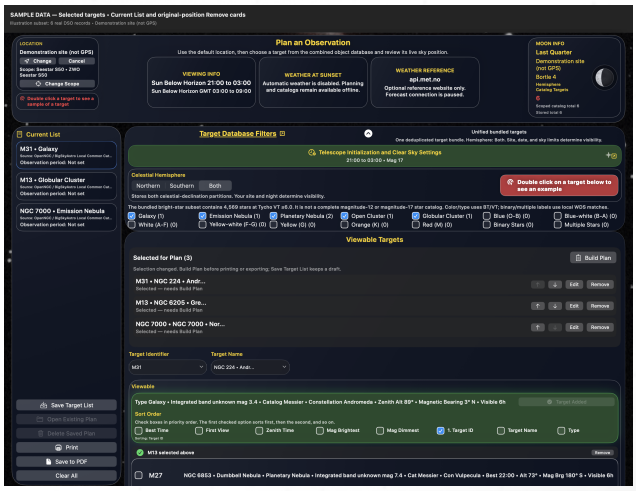
06. Use Up or Down to change the sequence. The app respects the explicit selected order rather than silently undoing your move.

07. If the requested duration does not fit one continuous allowed opening, review the error and adjust it; the planner must not bridge an obstruction to fit the exposure.

> **Request versus guarantee**
> A manual start is an earliest requested start, subject to the observing window, previous target, and visibility. Verify the resulting built period before export.

19. Save a selection draft

Saving a target list protects work that is not ready to export. Draft saving deliberately differs from saving a valid timed plan.



Actual Mac view; full-size detail is in the linked Screen reference atlas.

01. Add the desired targets even if you have not decided on the final observing window.

02. Choose Save Target List from the current-list controls.

03. Enter a meaningful name, then confirm the save.

04. If the schedule has not been built or is invalid, the saved list retains the selected targets without presenting stale timing as a validated plan.

05. If every selected period validates, the saved list can include the built observing times.

06. When updating a previously opened list, read the choice between updating the original name and creating a new plan.

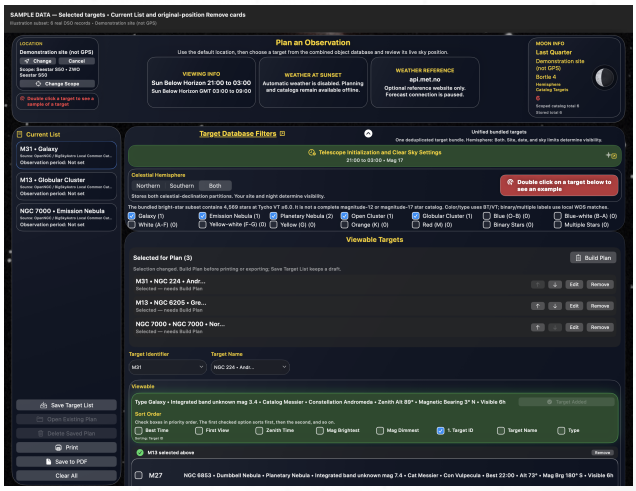
07. Use a new name when you want to preserve an earlier variation. Do not overwrite a list unintentionally.

08. Confirm the success message before quitting, and stop if a temporary-workspace warning is active.

> **Temporary workspace**
> A saved-looking selection in an in-memory recovery session is not durable storage. Important work should not be entered there; use the recovery guidance first.

20. Reopen and revise a saved list

A saved target list is reusable, but its old dates and assumptions may not match tonight. Reopening should preserve the selection while requiring current visibility to be checked again.



Actual Mac view; full-size detail is in the linked Screen reference atlas.

01. Choose Open Existing Plan and select the intended saved list.

02. Confirm the target count, identifiers, and any saved site association.

03. Read any warning about suppressed catalog entries. The original saved list is not silently rewritten merely because a blocked target was skipped.

04. Confirm the current observing date and window before building. Do not assume old times remain valid for a new night.

05. Review the equipment, hemisphere browsing filter, magnitude limit, and local clear-sky openings.

06. Wait for visibility to finish, then choose Build Plan.

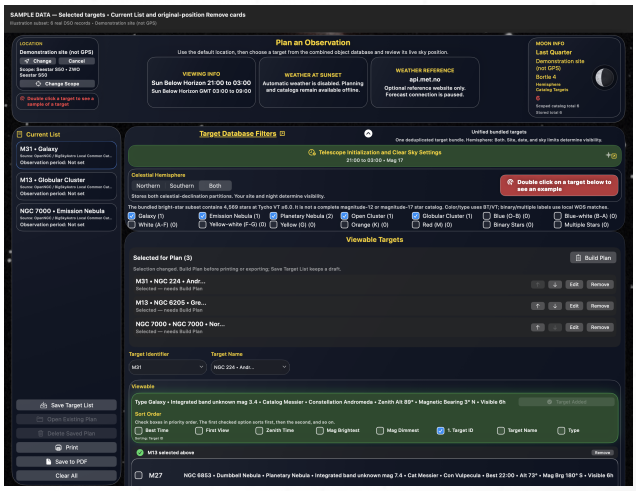
07. Save a new copy if you want to retain the original observation-night version.

08. Delete a saved plan only when you intend to remove that saved list; deletion is not the way to deselect a target from the current working list.

> **Stable identities**
> The app preserves stable target identifiers and historical plan/log relationships. Catalog curation excludes bad active choices without intentionally erasing old observation history.

21. Print the plan

Printing is the final schedule check, not a workaround for invalid or unbuilt timing. Printed plans can reveal site details, so review the output before sharing it.



Actual Mac view; full-size detail is in the linked Screen reference atlas.

01. Build Plan after the last edit, reorder, site change, or window change.

02. Verify that every selected target that has Clear Sky is placed inside that time. The times can overlap until you choose Balance Plan or Use Priority.

03. The next page, Quick Ref, is the card list for this night. Open it from the Current List.

04. Choose Print to open the system print workflow.

05. If printing is refused, return to the displayed scheduling issue rather than copying stale times into a separate document.

06. Review the output's plan name, site, equipment, date, and target order.

07. Use macOS's system print controls to choose a printer and finish the job.

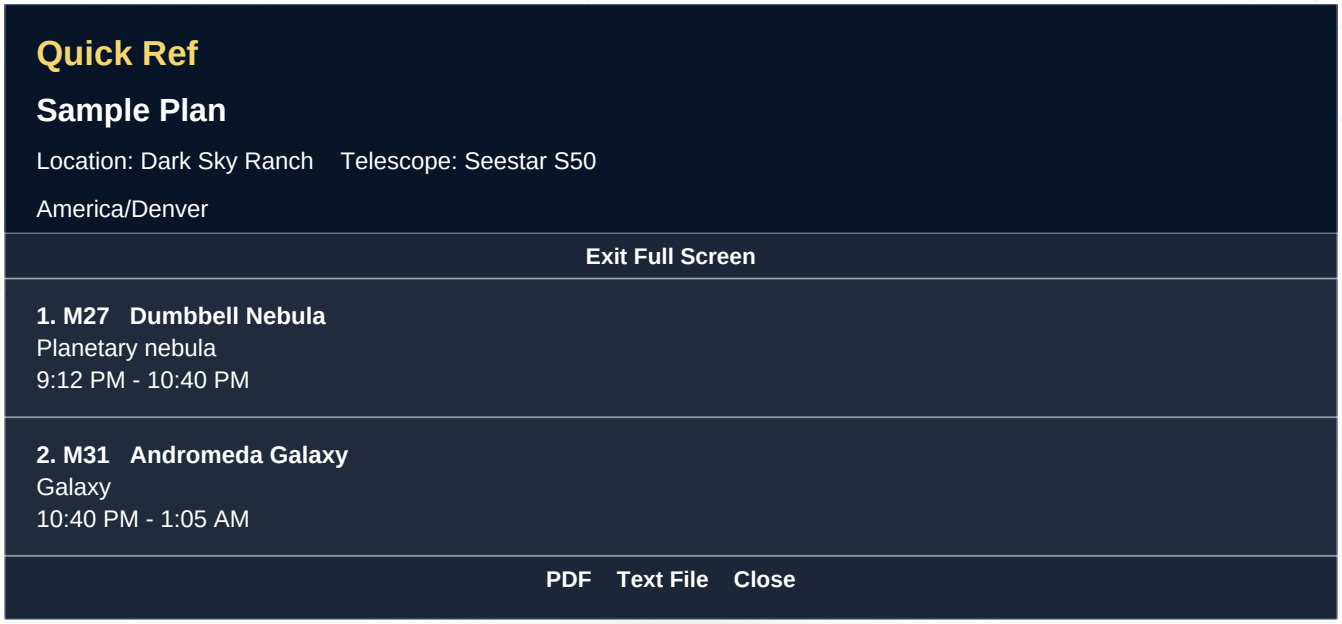
08. Inspect the printed output before sharing it. Blur or remove exact GPS coordinates, private site names, addresses, and identifying map details.

09. Keep the saved target list as the editable source; printed output is a report, not a replacement for the app's structured plan.

> **Printed plan**
> The illustrated user manual and a printed observing plan are different documents. Open Illustrated PDF in Help reads the packaged manual; Print in planning sends the current plan report through macOS.

Quick Ref

Quick Ref is its own view of the current night: a card for every target and the time you will observe it. It is not a second copy of the printed plan.



Quick Ref fills the window. Exit Full Screen returns to the sheet. Close leaves it. PDF and Text File use these same cards.

01. On Targets & Plan, open Quick Ref from the Current List. The button is labeled Quick Ref.

02. The collapsed Current List is the same idea in the sidebar: the label Quick Ref, a vertical time bar, each target and its time, Total for the duration, and the buttons Save, Delete Plan, Print, Delete All Targets, Quick Ref, and List Open.

03. The Quick Ref sheet is dark. At the top it shows Quick Ref, the plan name, Location and Telescope, the time zone, and the file names.

04. Each target is a numbered card. The card shows the name, the type, and the observation period. When targets have times, a horizontal time bar is drawn above the cards.

05. Make Full Screen covers the planner window, and the top bar steps aside. Exit Full Screen returns to the sheet. Close leaves Quick Ref and restores the planner surface that was already showing.

06. Save Quick Ref writes the card list into the Plans Folder. Print QR prints that card. Save Plan as PDF writes the full plan. Text File writes the same cards as text. Send Plan to Printer prints the full plan.

07. Load Plan, beside the Plan name field, saves this plan into Saved Plans so Open Existing Plan can load it later.

How to leave Quick Ref
Exit Full Screen returns to the sheet. Close dismisses Quick Ref. Full screen is the same sheet drawn edge to edge, not a different set of controls.

22. Current Plan and observation logs

The desktop app retains its plan and log tools alongside the new single-night target-selection workflow. Use logs to record what actually happened rather than treating the planned schedule as a completed observation.

01. Open Current Plan to inspect a saved NightPlan and its target order.

02. Use the available target or plan actions to send intended entries to an observation log when that matches your workflow.

03. Check whether an entry is planned, completed, changed, or otherwise pending synchronization.

04. Record actual observing results, notes, and relevant conditions in Observation Logs.

05. Keep historical names and relationships intact when reviewing a catalog update. A suppressed target can remain in old history even when it is no longer selectable for a new plan.

06. Before printing a legacy Current Plan, review the timing bounds and any invalid-schedule message.

07. Do not delete old log records simply because a newly bundled catalog reorganizes aliases or hemisphere sections.

Selected list versus NightPlan
A current single-night selection, a Saved Target List, a NightPlan, and an observation log are related workflow records, not interchangeable views of one automatically completed event. Verify which record an action changes.

23. Offline operation and weather status

The catalog and this text guide are bundled. That does not make every optional feature offline: purchase verification, reference images, address resolution, and current service data may still require a connection.

01. Start with optional online resources disabled when you want a local planning session.

02. Use an already saved site or direct coordinates, choose equipment, and browse the bundled targets.

03. If Manage Access needs verification, read its status. The app must distinguish a service failure from proven ownership; offline operation does not create a new entitlement.

04. Treat a missing weather forecast as unavailable information, not as a clear-sky prediction.

05. Do not use demonstration transient rows as current observing targets. Live solar-system values need the correct date and, where applicable, site.

06. Before relying on a forecast, confirm the provider configuration, freshness, and any warning shown by the app.

07. Proceed with local target planning when online information is unavailable, while independently checking actual weather and observing safety.

Weather sources
Weather is paused on the Mac in this version. When it returns, Automatic is the default, including during the trial: it uses open services that need no key, the U.S. National Weather Service (NOAA) for U.S. locations and MET Norway elsewhere. Open-Meteo is used only with your own API key, entered in Settings. Optional: if you own a personal weather station, you can connect your own Weather Underground API key; Weather Underground gives keys only to station owners.

Your own weather station is for personal use
A Weather Underground forecast comes from your own account under The Weather Company's terms of use. It's for your personal use, and you're responsible for following those terms; Settings links to the Weather Underground Terms of Use. The planner shows it only to you on this Mac: it isn't uploaded, shared, or included in backups or exports. Readings from your station are marked “Data provided by Weather Underground.” API keys stay in the Keychain.

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

No hidden conversion to online-only
The retired catalog-choice page is not needed to load the package. Losing internet access should not require downloading the static targets again.

24. Reference images and screenshot privacy

Reference images help identify and illustrate a target. They are not live telescope captures and do not guarantee the framing, orientation, brightness, or detail your equipment will produce.

01. Double-click a target to request its reference-image view when you want an illustration.

02. Read the target identifier and image context to make sure the result corresponds to the selected object.

03. Recognize that image lookup is an optional online action; it can fail or return no suitable result.

04. Use galaxies, clusters, and nebulae as the deep-sky examples in manual illustrations.

05. Do not substitute a decorative or generated image for a screenshot that claims to show the app's current controls.

06. Keep all screenshots tied to the current Mac build and its actual startup, selection, and scheduling behavior.

07. Before publishing or sharing, obscure GPS values in every visible location: input fields, headings, summaries, maps, dialogs, and exported reports.

25. Troubleshooting

Each entry gives a symptom, what to check, and the fix. Change one thing at a time and let the visibility calculation finish before judging the result. Repeated launches, deleting caches, or replacing the database are never the first step.

See the Screen reference atlas for the illustrated controls.

The target list says "No target types selected."

Check: Hemisphere & Target Types. Clear / None, or a saved default with no types, leaves nothing to show.

Fix: Select at least one type (new sessions start with every deep-sky type), then Apply Filters. If an empty choice returns at every launch, use Clear Saved Target-Type Default and then Apply Filters.

The list says "No targets match the hemisphere, target types, magnitude limit, and observing window."

Check: whether the session window has been applied. A newly opened Targets & Plan page keeps the list empty until Apply, even when the magnitude card already shows a count. Then check the hemisphere, the selected types, the magnitude limit, and the date and observing window, one at a time.

Fix: Apply the telescope window, or widen one setting and wait for the calculation: choose All, raise the magnitude limit (17 is the catalog ceiling), add types, or try another night.

Every target count drops to zero after editing Clear Sky Settings.

Check: that the overall Az range and your clear-sky areas actually overlap, the Alt ranges, and that no area card is incomplete (an incomplete card blocks Apply).

Fix: Choose Use Default Sky (000°-360°, Alt 25°-90°) and Apply, then add your areas back one at a time.

A target is never planned high in the sky, or its time ends early.

Check: the telescope chosen in Equipment. The planner keeps targets inside that telescope's tracking range: Vespera 20°-80°, Stellina 20°-75°, Unistellar 20°-79°, DWARF 30°-75°, and 25°-75° for other models. Clear-sky areas can narrow this range but never extend it to the zenith.

Fix: Choose the telescope you will actually use, or pick a target that passes through the allowed altitudes tonight.

Times look wrong, or the app asks you to correct the observing site's time zone.

Check: the default site in Locations, its latitude and longitude signs, and its time zone (the site's zone, not this Mac's), plus the date and AM/PM.

Fix: Correct the location, then open Telescope Initialization and Clear Sky Settings, choose Use Estimated Times or enter the times, Apply, and build the plan again.

No start time is suggested, or there is no observing site.

Check: that a location is saved and set as the default (section 6). "No model-readiness estimate is available" means the site, date, or time zone could not produce an estimate.

Fix: Add or correct the default location, choose another night, or enter Initialize and End manually.

Build Plan leaves a target unplaced.

Check: that target's Clear Sky, the observing window, and the telescope's altitude range. Build Plan places every selected target that has Clear Sky, and the times overlap.

Fix: Widen the window or remove a target that has no Clear Sky, then build again. Balance Plan or Use Priority changes the time shares after the plan is placed.

The list keeps calculating or feels slow.

Check: the visibility progress indicator.

Fix: Wait for it to finish or change one input; the calculation restarts on its own. Do not open extra copies of the app.

The list keeps calculating, or the first Targets page feels slow.

Check: the visibility progress indicator, not the catalog decode. The catalog is decoded in the background while you set up, so Home is not waiting on the JSON parse. On this Apple silicon Mac that decode is about a tenth of a second.

Fix: Wait for the first Targets visibility sample to finish, or for the first database write. Changing types reuses the in-memory index and does not parse the catalog again. Do not open extra copies of the app.

No weather or cloud forecast appears.

Check: weather is paused on the Mac in this version, so no forecast is shown.

Fix: Plan without it and check the real sky and a forecast you trust separately. A missing forecast is never a clear-sky prediction.

A restore did not seem to change anything.

Check: a restore finishes the next time the planner opens. A backup from an older Windows or iPhone planner restores only on the platform that made it.

Fix: Quit and reopen the planner, then read the restore summary in Settings. Your previous data is kept in the BeforeRestore folder.

Access says the trial has ended, or Full Access is not recognized.

Check: Manage Access, that the Mac App Store is signed in with the Apple Account that bought the app, and that this Mac's date and time are correct.

Fix: Choose Restore Purchases, then Check Again. Never buy a second time to clear an error. If you bought the app before it became free, you keep Full Access; for purchase or Full Access problems, email support@bigskyastro.com.

A storage warning appears, or the planner opened a temporary workspace.

Check: the warning text. Changes in a temporary workspace are lost when you quit.

Fix: Stop entering important data and go to Data Recovery (section 26).

Still need help?
Email support@bigskyastro.com with the app version and build (Astronomy Observation Planner menu, About), your Mac model and macOS version, your observing location (a town or region is enough; no precise GPS needed), and what you saw, including any exact message. For purchase or Full Access problems, email support@bigskyastro.com.

26. Data Recovery and safety copies

If the persistent store cannot be opened, the updated app preserves the original files and clearly identifies its temporary workspace. Recovery starts with inspection and a safety copy, not automatic replacement.

See the Screen reference atlas for the illustrated controls.

01. Read the persistent-store warning fully. A temporary workspace will lose session changes on quit.

02. Open Help & Recovery, then Data Recovery. Use Reveal Data Folder to inspect the existing folder in Finder.

03. Do not delete, rename, replace, or separate the original .store file and its existing -wal and -shm companions.

04. Historical recovered groups can be inspected separately. Select the intended historical group and confirm that it is not open in another app before requesting a safety copy.

05. Choose a new backup destination outside the source directory. Existing destinations are not overwritten.

06. Wait for the copy result. A completion manifest confirms byte-copy verification, not that the database is healthy or ready to restore.

07. If copying fails, retain the original files and the clearly incomplete partial backup. Do not mistake a folder without the completion manifest for a finished safety copy.

08. Quit the app before attempting any external recovery of the active persistent store. Restoration is a separate, reviewed operation; the Help workflow does not automatically overwrite live data.

Never copy an open live store
The in-app safety-copy workflow is limited to historical recovered groups. The active store must be closed before an external backup or restore; its companion files must stay together.

No automatic restore
Finder reveal and backup are not restore operations. Ask for a recovery review before moving a safety copy into the active store location.

Routine backups
For everyday backups and restores of the active planner data, use Settings -> Back Up and Restore (section 27). This Data Recovery workflow is for a store that cannot be opened.

27. Back Up and Restore

A backup is one zip file holding your saved plans, target lists, equipment, locations and observing logs, plus your default site and equipment. API keys and Weather Underground setup stay on this Mac and are never included. A backup from Windows, iPhone or iPad restores here too, and a Mac backup restores on those devices.

01. Open Settings and find Back Up and Restore.

02. Select Back Up…, choose where to save the zip (for example an external drive or cloud folder), and select Save. The planner can stay open; the backup is a consistent copy of the database.

03. To restore, select Restore… and choose a backup zip, from this Mac or from the Windows, iPhone or iPad planner. The planner checks the zip and shows where and when it was made before anything changes.

04. Select Restore to confirm. The restore is prepared now and finishes the next time the planner opens.

05. Select Quit Now, or quit later, then open the planner again. Your previous data is kept in a BeforeRestore folder beside the database (Help & Recovery, then Data Recovery, then Reveal Data Folder).

06. Read the summary in Settings: when the restore finished, what was restored, and anything from another device that the Mac planner couldn't use.

Backups move between devices
Mac, Windows and iPhone/iPad backups share one zip layout. Each also carries the planner data in a shared format, so a backup made on another device is converted into the Mac's own storage: its plans, locations, equipment, target lists and logs. Anything the Mac doesn't have, such as an iPhone-only setting or a target this catalog can't match, is listed as not restored.

Older backups from other devices
A backup made by an older Windows or iPhone planner, before backups could move between devices, restores only on the platform that made it. The planner says so and leaves your data unchanged; update the planner there and back up again.

Nothing is overwritten without a copy
Restore never replaces the database while it is open, and the files it replaces are moved to a dated BeforeRestore folder rather than deleted.

28. Catalog addendum and count meanings

A package can contain one physical target with many aliases and observing-list memberships. Counts must distinguish physical objects from source rows, aliases, stored history, and currently visible targets.

01. Snapshot bigskyastro-unified-offline-2026-09-05 packages 16,128 rows: 11,559 deep-sky records and 4,569 bright stars. The deep-sky count includes 349 records with no measured magnitude, such as NGC 7538. These are packaged records, not a claim to contain every public catalog or every unique physical object.

02. North contains 6,972 deep-sky records and 2,165 stars (9,137 total). South contains 4,587 deep-sky records and 2,404 stars (6,991 total). Declination zero belongs to North; All contains the 16,128 combined rows without adding a third copy.

03. Deep-sky source-family assignments are NGC 7,355; IC 4,042; Messier 107; OpenNGC addendum 50; Lynds Bright Nebula 2; Sharpless 2; and Caldwell 1. These are primary row assignments, not the full membership counts of the named catalogs.

04. Deep-sky types are 10,391 galaxies, 630 open clusters, 202 globular clusters, 130 planetary nebulae, 137 emission nebulae, 28 reflection nebulae, 10 supernova remnants, and 31 asterisms. Stars are a separate 4,569-row bright-star extract with Tycho VT magnitude 6 or brighter.

05. Read the packaged manifest's snapshot identifier and source provenance when comparing this build with another catalog version.

06. Count North and South partitions by declination using a single shared boundary. All is their union, not another set to add to the total.

07. Do not add catalog-family counts without understanding cross-membership. Messier, Caldwell, and NGC names can describe the same object.

08. Keep the magnitude rule attached to each retained measurement's band and kind. Unknown, central-star, or ranked-member measurements are not silently promoted to integrated DSO magnitudes.

09. Verify that H20, H21, their blocked aliases, and the duplicate C20 choice do not reappear after a refresh or reopening a saved list.

10. Verify that NGC 7000 remains available as the real North America Nebula.

11. Gaia is excluded. A small bright-star extract must not be advertised as the complete Tycho, Gaia, or all-public-stars population.

12. Treat example or stale transient data separately from verified current targets. A magnitude-filtered catalog is not a substitute for a time-dependent ephemeris.

13. Use exact unique-row and byte measurements from the final packaged manifest for release documentation. Hypothetical app-size scenarios are not verified counts of every public catalog.

No invented total
The public catalog universe contains overlapping surveys, repeated measurements, unsupported object classes, and incompatible bands. An exact all-public magnitude-17 count requires a defined source list, eligibility rules, and completed deduplication.

Credits
Settings -> Credits…, or Credits in Help & Recovery, lists the people, catalogs, data sources and services the planner relies on.

Catalog counts at a glance

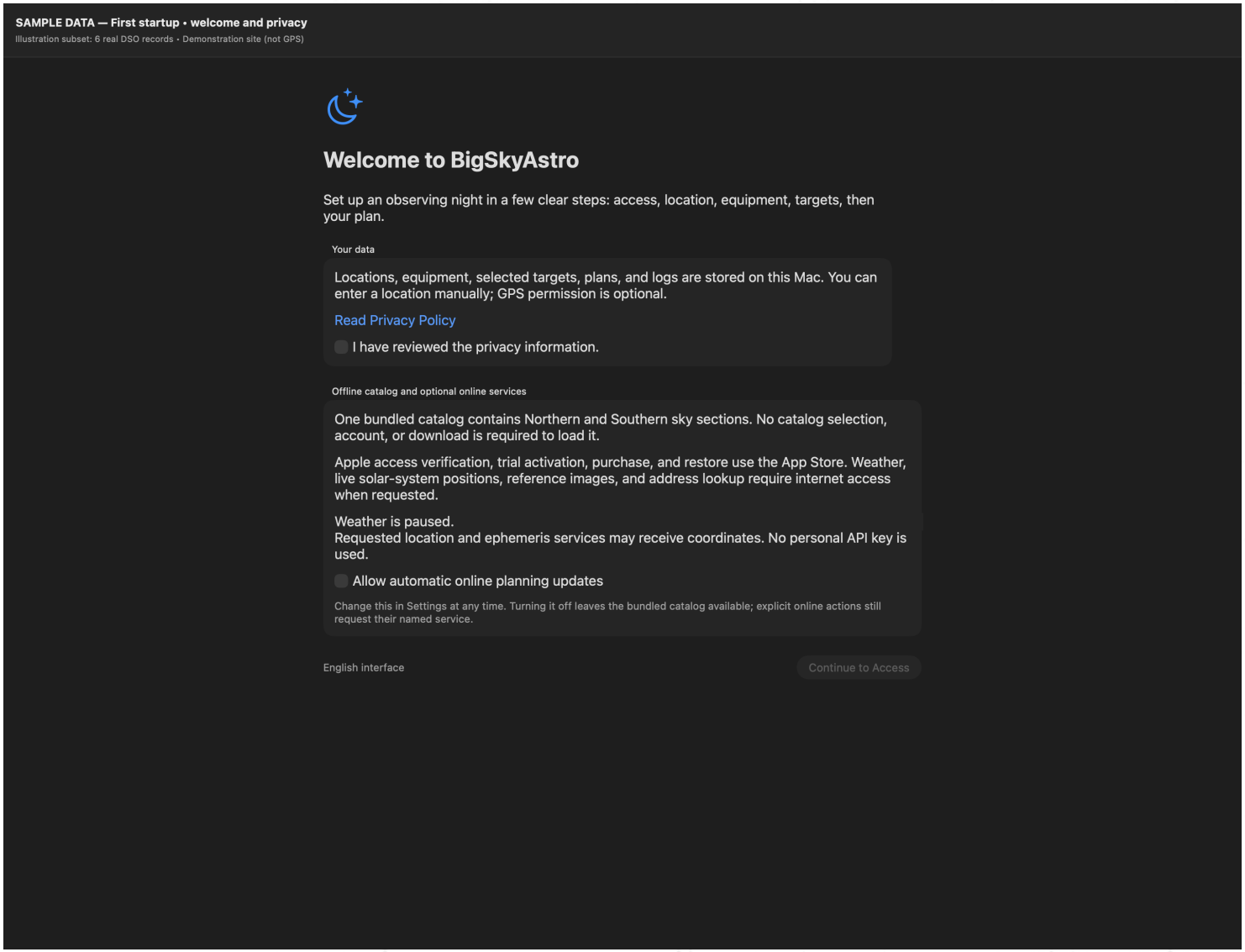
Packaged row counts for snapshot bigskyastro-unified-offline-2026-09-05. Both is the union of the two declination partitions. Source-family totals below describe primary assignments; aliases can cross catalogs.

Partition	Deep sky	Bright stars	Total
Northern (Dec >= 0)	6,972	2,165	9,137
Southern (Dec < 0)	4,587	2,404	6,991
Both	11,559	4,569	16,128

Primary DSO family	Rows
NGC	7,355
IC	4,042
Messier	107
OpenNGC addendum	50
Lynds Bright Nebula	2
Sharpless 2	2
Caldwell	1

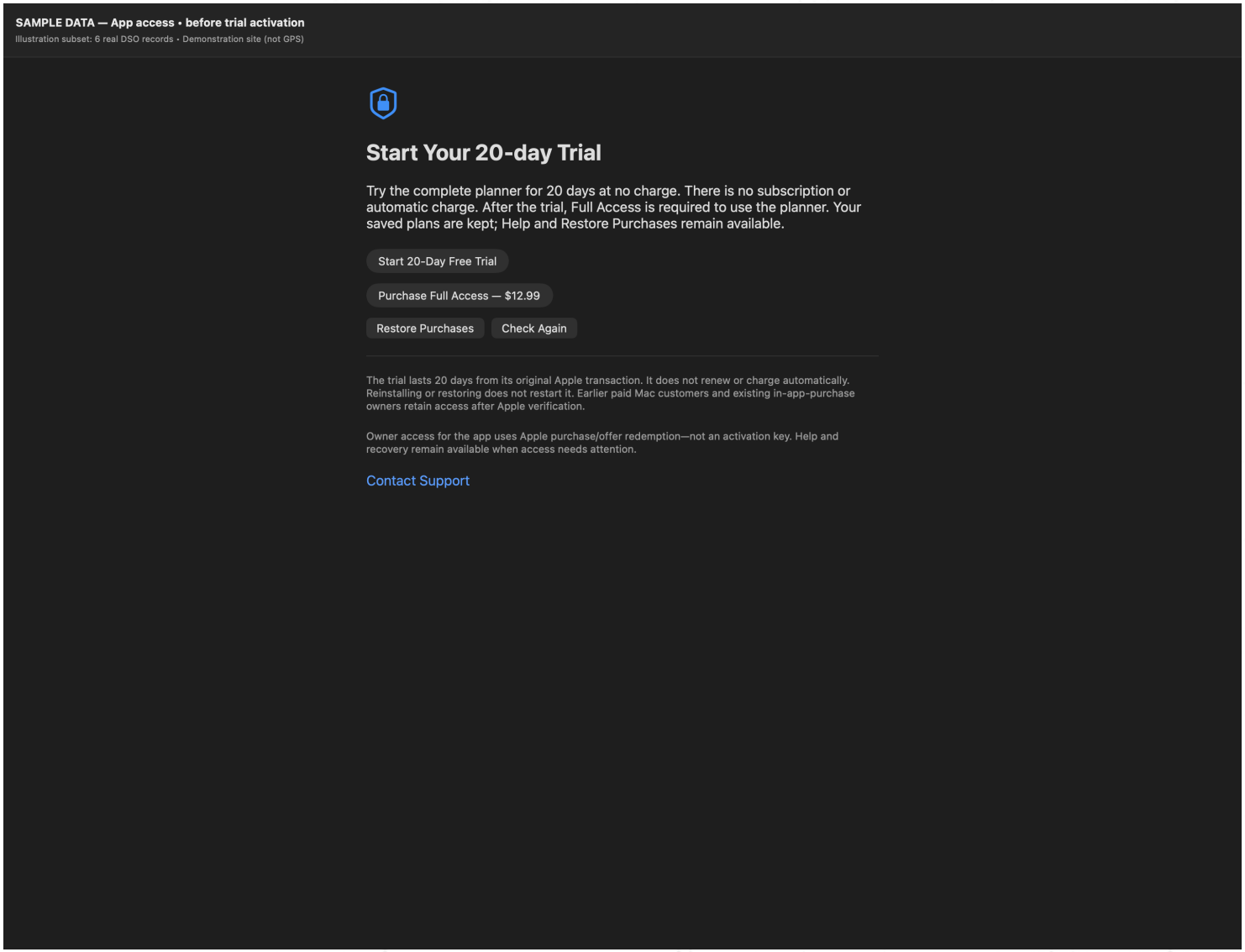
DSO type	Rows
Galaxy	10,391
Open cluster	630
Globular cluster	202
Planetary nebula	130
Emission nebula	137
Reflection nebula	28
Supernova remnant	10
Asterism	31

Screen reference atlas



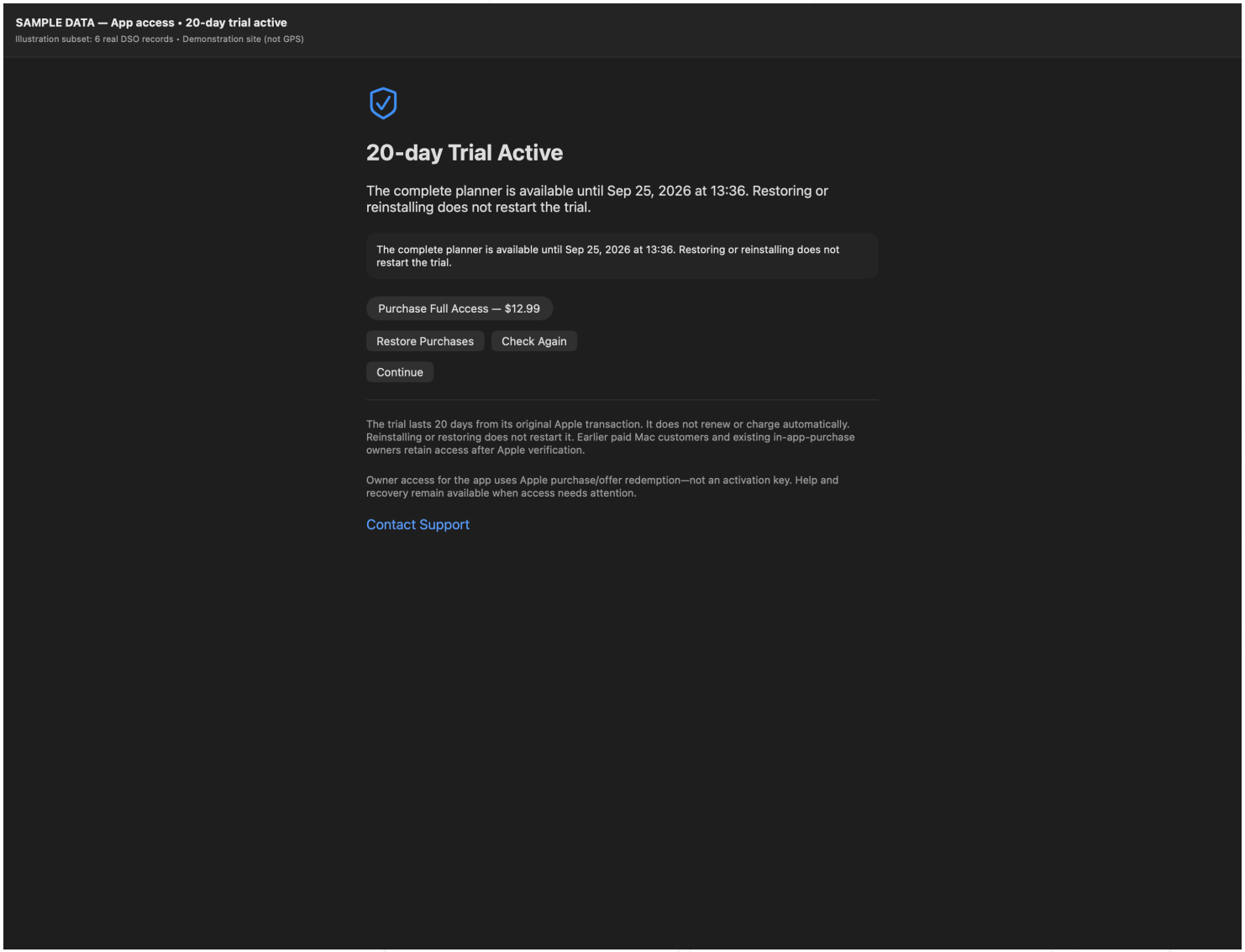
01 / 01 welcome. Actual Mac view with sample data. Zoom for control details.

02 Access Before Trial



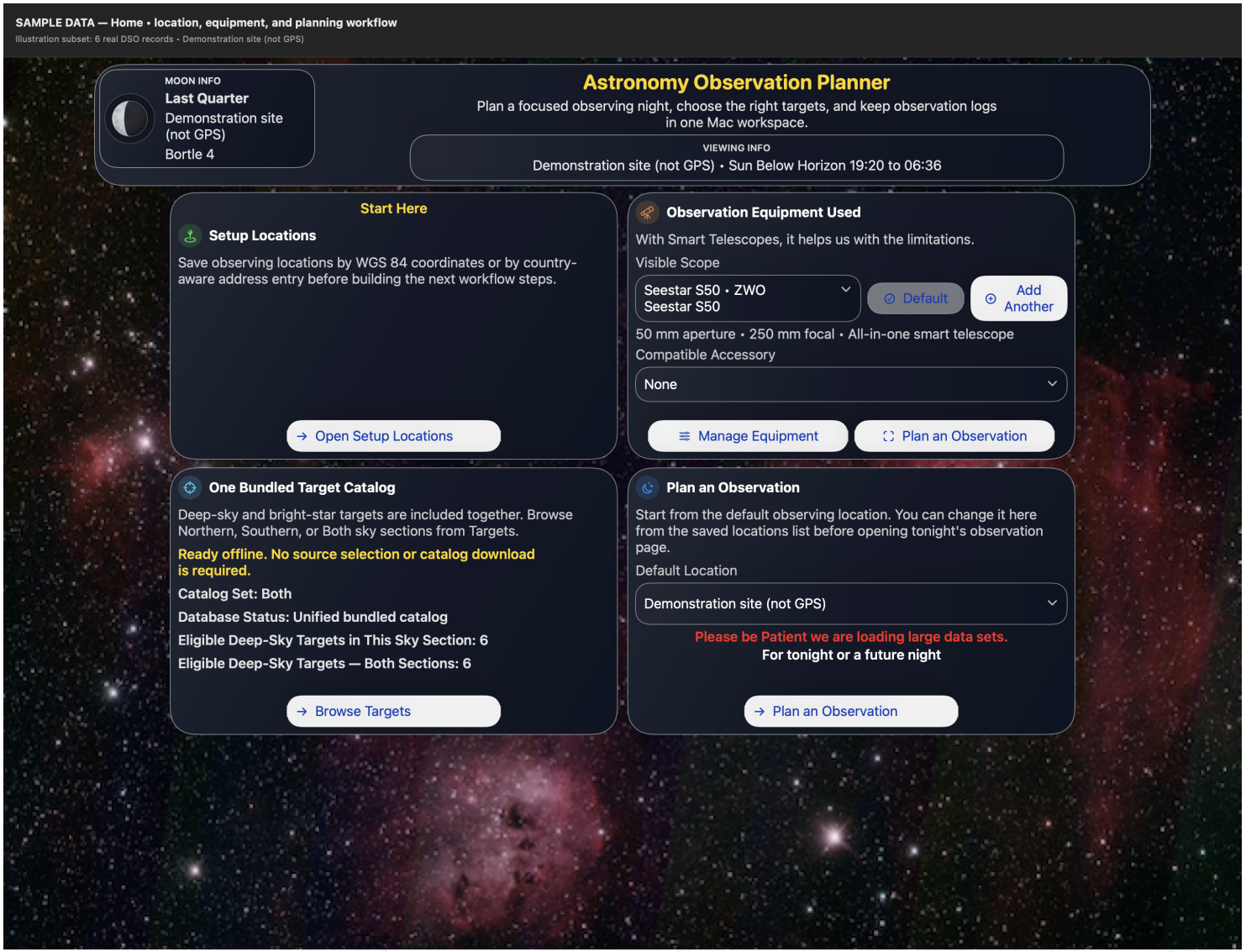
02 / 02 access before trial. Actual Mac view with sample data. Zoom for control details.

03 Access Trial Active



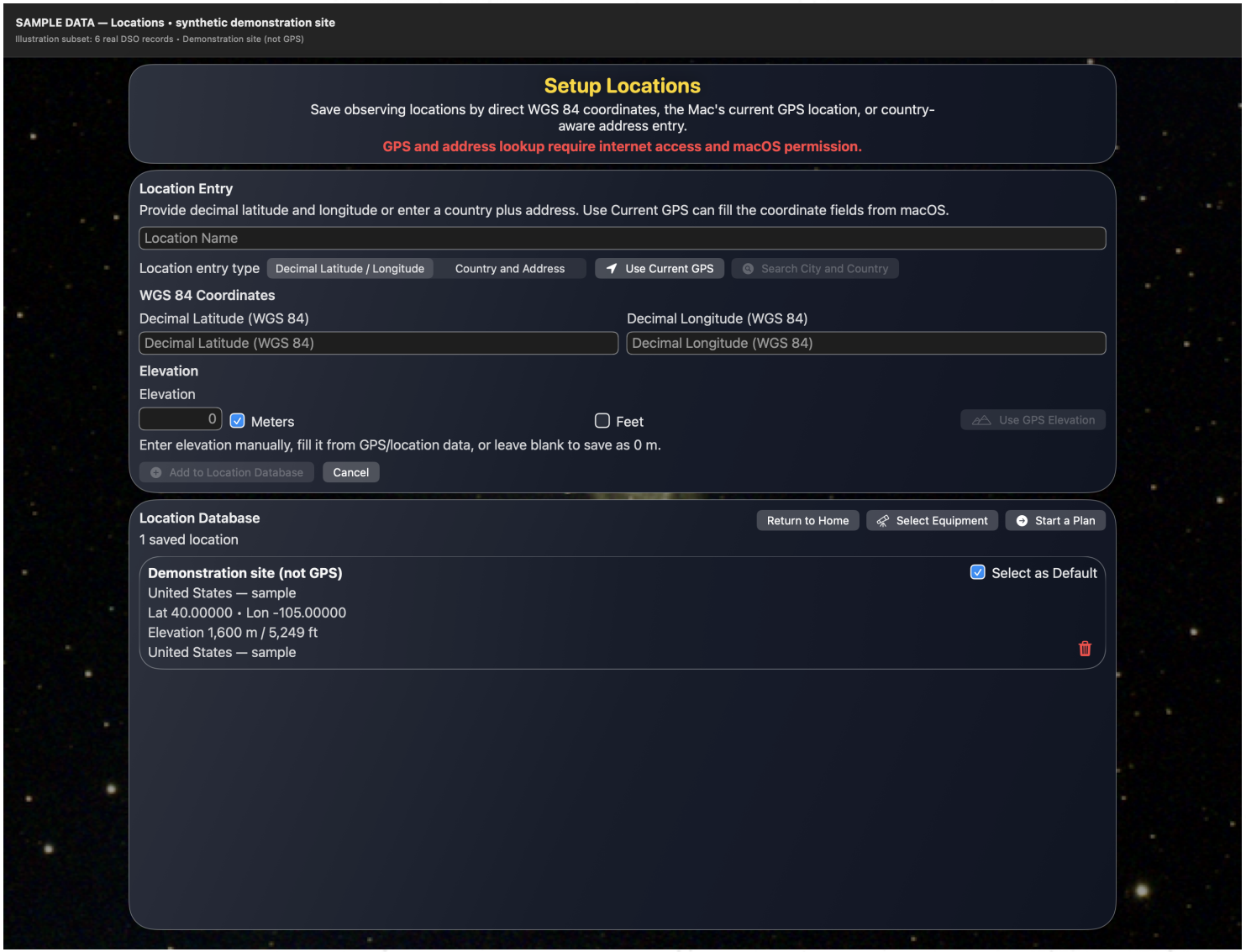
03 / 03 access trial active. Actual Mac view with sample data. Zoom for control details.

04 Home



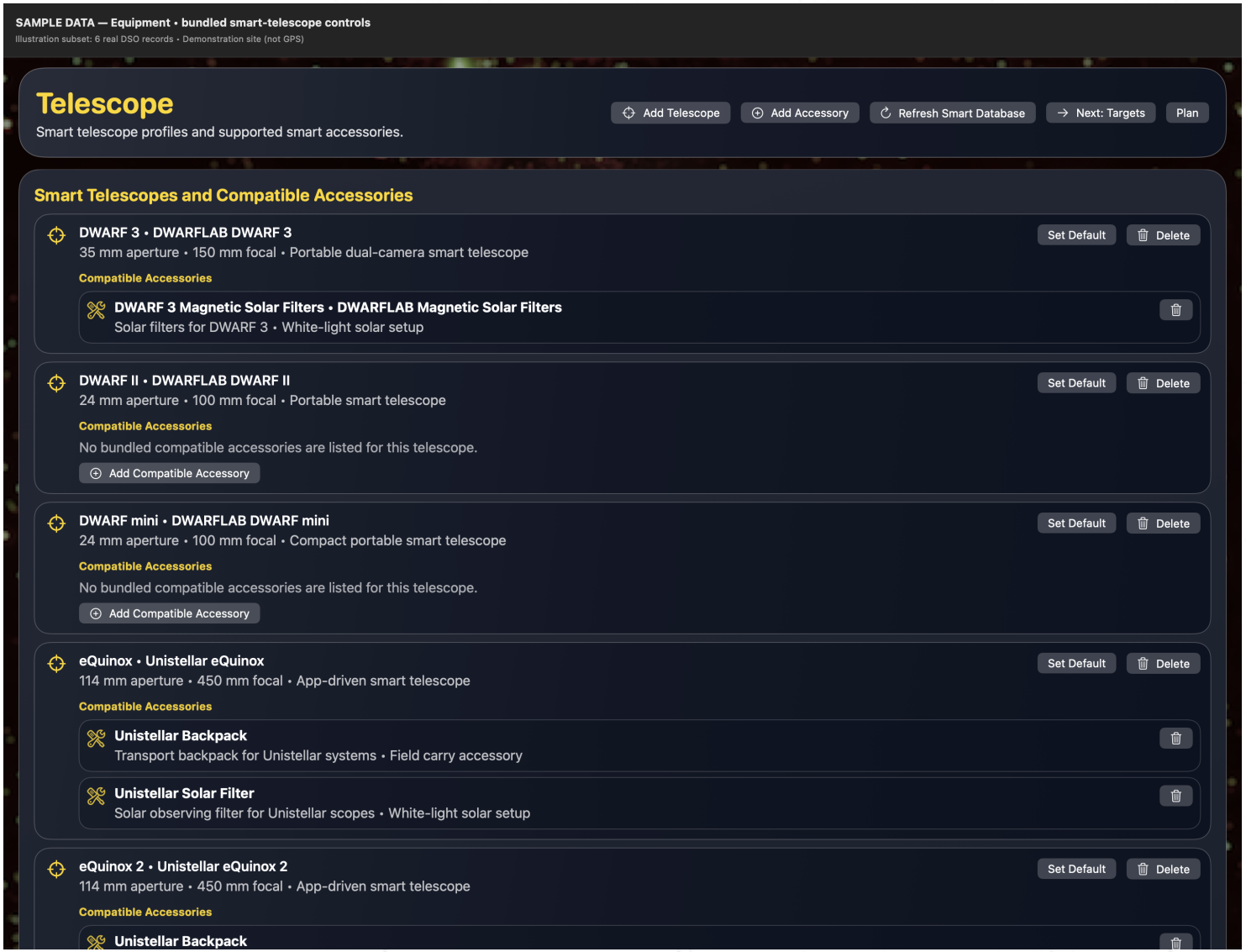
04 / 04 home. Actual Mac view with sample data. Zoom for control details.

05 Demonstration Location



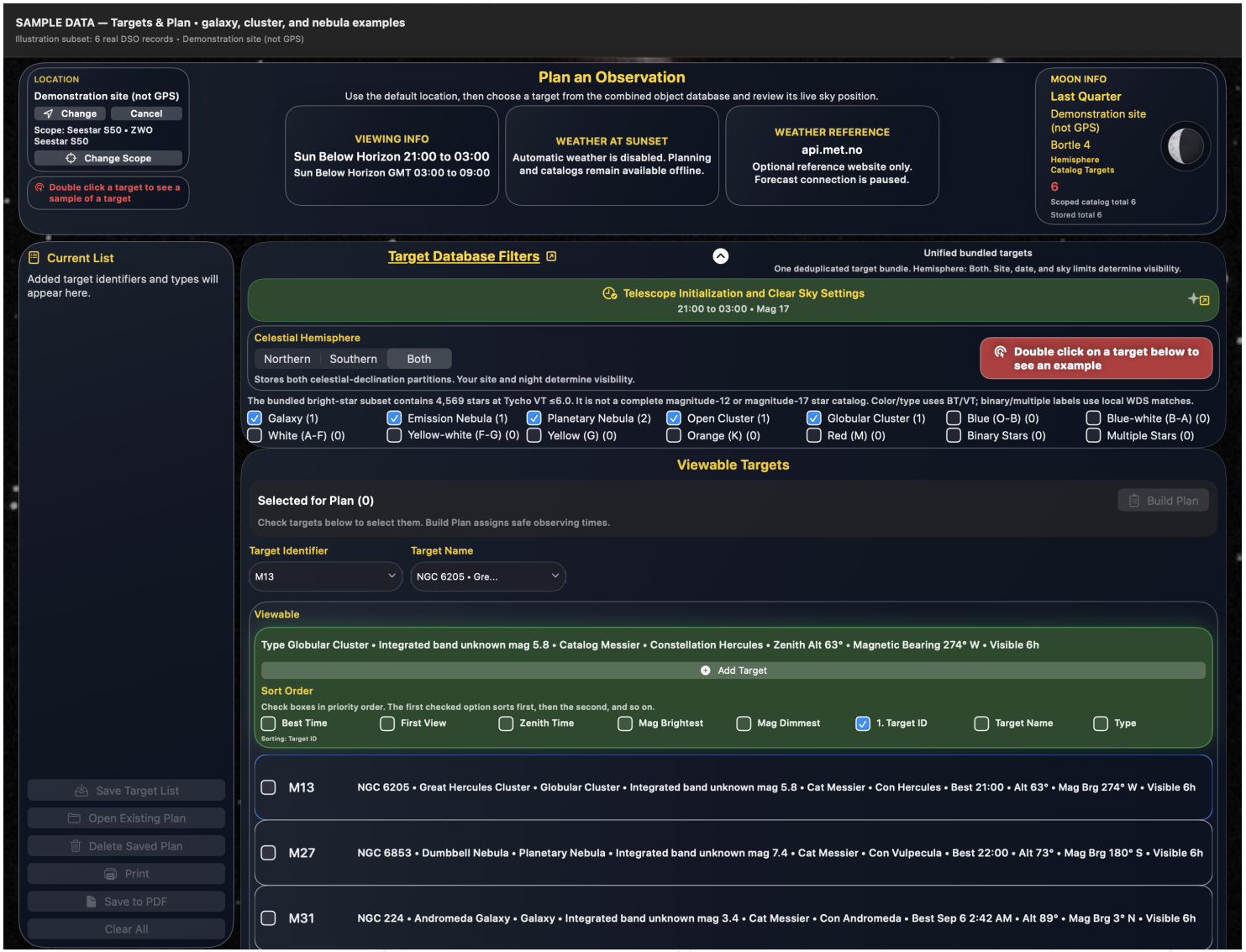
05 / 05 demonstration location. Actual Mac view with sample data. Zoom for control details.

06 Equipment



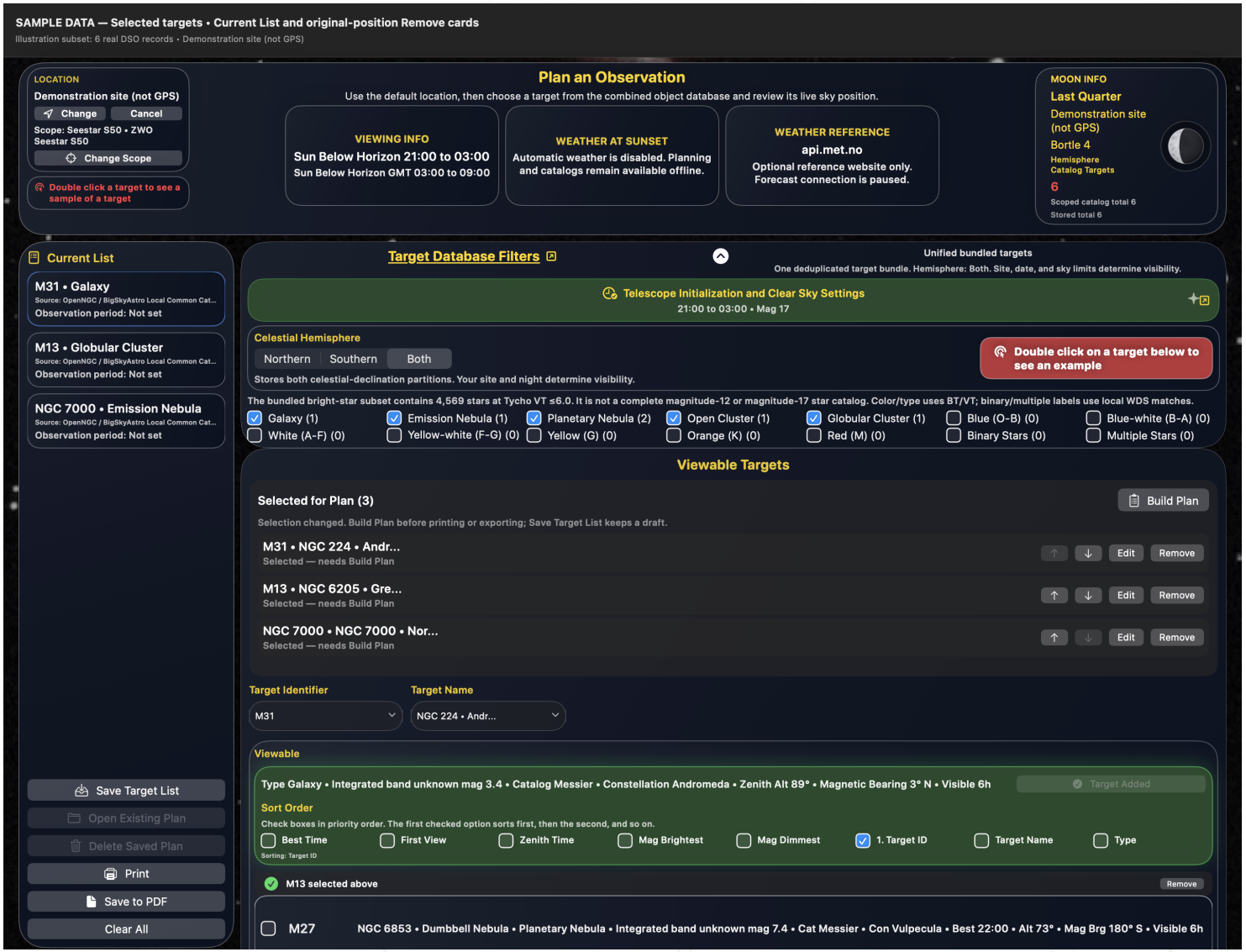
06 / 06 equipment. Actual Mac view with sample data. Zoom for control details.

07 Target Selection



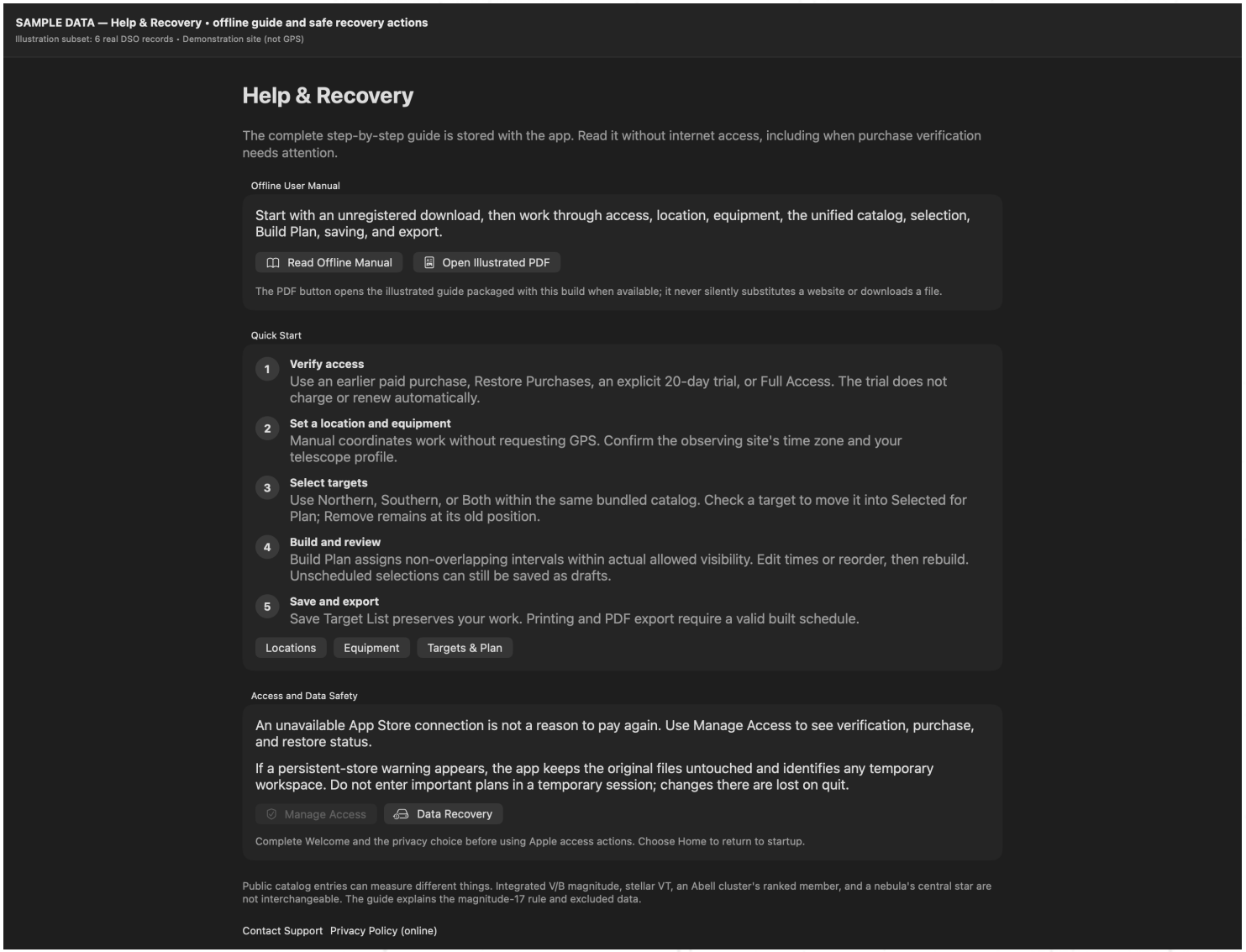
07 / 07 target selection. Actual Mac view with sample data. Zoom for control details.

08 Selected Target Placeholders



08 / 08 selected target placeholders. Actual Mac view with sample data. Zoom for control details.

09 Help Recovery



09 / 09 help recovery. Actual Mac view with sample data. Zoom for control details.

Source notes and edition limits

Abell cluster photometry

m10 describes the tenth-ranked cluster member. It is not integrated galaxy-cluster brightness.

https://heasarc.gsfc.nasa.gov/w3browse/all/abell.html

Galactic planetary-nebula catalog

Central-star V values cannot silently become the integrated magnitude of their surrounding nebula.

https://cdsarc.cds.unistra.fr/viz-bin/ReadMe/V/84?format=html

OpenNGC source and data licensing

Keep source attribution and applicable CC-BY-SA data-license obligations with redistributed catalog data.

https://github.com/mattiaverga/openngc

National Weather Service API

No-key forecast source for U.S. locations under Automatic. NOAA data is public domain. Weather is paused on the Mac in this version.

https://www.weather.gov/documentation/services-web-api

MET Norway terms

No-key forecast source outside the United States under Automatic.

https://api.met.no/doc/TermsOfService

MET Norway license

MET Norway data is CC BY 4.0; attribution is shown with the forecast.

https://api.met.no/doc/License

Open-Meteo terms

Used only with your own Open-Meteo API key, entered in Settings.

https://open-meteo.com/en/terms

Weather Underground Terms of Use

Optional, for owners of a personal weather station using their own API key. For personal use on this Mac only; never uploaded, shared, or included in backups or exports. Shown with "Data provided by Weather Underground."

https://www.wunderground.com/company/legal

Apple in-app-purchase offer codes

How Apple offer codes for in-app purchases work. In the app, choose Redeem Offer Code in Manage Access (section 5).

https://developer.apple.com/help/app-store-connect/manage-in-app-purchases/create-offer-codes-for-in-app-purchases

Catalog scope
The catalog addendum describes the packaged 11,559 DSO and 4,569 bright-star records, not all public astronomical catalogs. Namespace-aware duplicate checks do not establish a globally exhaustive unique-object census. Unknown or inapplicable magnitudes are not manufactured to pass the magnitude-17 limit.

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