

Wollongong Galaxy Gazette

Wollongong Amateur Astronomy Club (WAAC) - October 2026

Spring galaxies, dark nebulae, Saturn at opposition and the DWARFLAB Draco



Messier 7, Ptolemy's Cluster. Image: ESO.

New Moon, Sculptor galaxies, southern dust lanes and practical targets for every rig

Clear captions - practical observing notes - no text over the stars

WAAC

OCTOBER 2026

Welcome from the Committee



Rho Ophiuchi and the Antares colour field — an archive favourite as these western targets leave the evening sky. Credit retained from the supplied WAAC archive.

October brings the southern spring sky into prime evening position. Give any remaining Scorpius and Sagittarius targets a brief early session, then turn to 47 Tucanae, the Helix and the Sculptor galaxies. This issue retains our illustrated features and member images, with refreshed October observing tables.

Plan the darkest sessions around New Moon on 11 October. Saturn reaches opposition on 4 October, while Mercury offers a useful evening appearance near 12 October. NSW clocks move forward on 4 October, so check the time setting on every observing device.

October at a glance

Saturn reaches opposition on 4 October. Mercury is at greatest eastern elongation on 12 October; Venus approaches inferior conjunction on 24 October. NSW daylight saving starts on 4 October: 2:00 am AEST becomes 3:00 am AEDT.

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ISSUE HIGHLIGHTS

An October comet watch list

Prioritise 10P/Tempel 2 and 161P/Hartley-IRAS. Use fresh charts for both; reserve later hours for C/2024 T5 (ATLAS). Keep 220P/McNaught as a variable monitoring target. Forecasts checked 29 September 2026.

Why Draco is different

Five pages on the 90 mm f/3.8 Draco: guiding, cooling, sensor rotation, filters, SHO imaging, FITS export and why Cuiv argues it should be judged more like an astro rig than a normal smart telescope. Based on published specs; independent production testing still required.

WOLLONGONG / SYDNEY — LOCAL TIME

October observing planner

OCTOBER 2026 | MOON AND DARK SKY

3 Oct 11:25 pm AEST — Last Quarter

Moon-free evenings develop before New Moon.

11 Oct 2:50 am AEDT — New Moon

Prioritise long faint-object sessions around 7–12 October.

19 Oct 3:12 am AEDT — First Quarter

26 Oct 3:11 pm AEDT — Full Moon

Times are AEST through 3 October and AEDT from 4 October. New Moon is 11 October at 2:50 am AEDT; Full Moon is 26 October at 3:11 pm AEDT.

Local date and time	Event	Best use	WAAC note
3 Oct, 11:25 pm AEST	Last Quarter Moon	Dark evening imaging	Moon rises after midnight.
4 Oct	Daylight saving / Saturn opposition	Reset clocks; observe Saturn	2:00 am becomes 3:00 am; Saturn visible most of the night.
11 Oct, 2:50 am AEDT	New Moon	Galaxies, faint dust, comets	Prioritise roughly 7–12 Oct.
12 Oct	Mercury eastern elongation	Western twilight viewing	Clear horizon; observe after sunset.
19 Oct, 3:12 am AEDT	First Quarter Moon	Lunar detail / bright targets	Evening Moon increasingly intrusive.
26 Oct, 3:11 pm AEDT	Full Moon	Lunar / planets / equipment	Faint broadband imaging is difficult.

The best all-night faint-object window is around 7–12 October. Earlier evenings also offer moon-free time; after mid-month, work after moonset when practical. Orionid viewing around the mornings of 21–22 October improves after the waxing Moon sets, before dawn.

MID-MONTH GUIDE

Planets and October sky highlights

OCTOBER 2026 | PLANET VISIBILITY

EVENING — Saturn and Neptune

Saturn at opposition 4 Oct; Mercury best around 12 Oct.

LATER NIGHT — Uranus

Use a current finder chart; let it climb before observing.

MORNING — Jupiter and Mars

Venus approaches the Sun: inferior conjunction 24 Oct.

October visibility guide for Wollongong/Sydney. Saturn and Neptune suit evening sessions; Jupiter and Mars favour the morning. Use a current planetarium chart for exact positions.

Mercury in the evening Mercury reaches greatest eastern elongation on 12 October. Look west after sunset with a clear horizon. Venus drops toward the Sun and reaches inferior conjunction on 24 October; it is not a reliable all-month outreach target.	Milky Way: a short farewell Scorpius and Sagittarius are western early-evening targets. Bright clusters are more practical than faint dust as twilight shortens the opportunity. Move to the Helix, 47 Tuc and Sculptor once these fields sink.
Saturn near its best Opposition on 4 October makes Saturn the main evening planet. Neptune is also an evening telescope target after its September opposition. Jupiter and Mars favour the pre-dawn sky.	Spring galaxies take over NGC 253, NGC 55, NGC 300 and NGC 247 reward October evenings. NGC 1365 improves later at night. Use the New Moon period for faint outer disks and keep broadband star colours natural.

SPRING TRANSITION SHOWPIECE

Constellation focus: Scorpius into Sagittarius



Messier 7 in the tail of Scorpius - a naked-eye cluster that rewards binoculars and short focal lengths. Image: ESO.

Scorpius and Sagittarius now sit in the western evening sky. Visit their bright clusters soon after dusk, especially early in October, then change to spring targets. Rho Ophiuchi and the faint western dust fields are increasingly difficult once the sky is fully dark.

Stop	Why it is worth the view	Best instrument
Antares + M4	Colour contrast and a bright globular cluster in one field	Binoculars to medium telescope
M6 Butterfly	Loose, bright cluster with a recognisable shape	Binoculars or short refractor
M7 Ptolemy	Large, bright and embedded in rich Milky Way stars	Naked eye, binoculars, 135-300 mm
NGC 6231	Compact young cluster often called the Northern Jewel Box	Binoculars to medium telescope
Rho Ophiuchi	Archive / next-season planning; increasingly low at dusk	Camera lens or short refractor

Easy star hop

Start at Antares, move south-east down the scorpion's body to the tail, then sweep M6 and M7. Shift north-east toward Sagittarius for M8, M20 and the dark lanes around Barnard 86.

Southern comets: the October watch list

SOUTHERN COMET WATCH | OCTOBER FORECAST

10P / TEMPEL 2 — about magnitude 9

Evening to midnight; a priority for southern observers.

161P / HARTLEY-IRAS — about magnitude 10-11

Follow changing position with a fresh local ephemeris.

LATER TARGETS — C/2024 T5 and 88P

Forecasts only. Check current brightness before every session.

October forecasts for southern observers, checked before publication. Magnitudes are provisional; confirm each comet's current brightness and position before a session.

10P/Tempel 2 and 161P/Hartley-IRAS remain the main October prospects. C/2024 T5 (ATLAS) favours later hours, while 88P/Howell is a fainter camera target. Keep 220P/McNaught on the monitoring list, but do not assume its post-outburst brightness will hold.

Comet / likely brightness	When and where from Wollongong	Best practical approach
10P/Tempel 2 Forecast ~mag 9	Evening to midnight; favourable southern placement.	Start here; refresh its chart and magnitude.
161P/Hartley-IRAS Forecast ~mag 10-11	Evening / midnight; position changes quickly.	Tracked imaging; compare short sequences.
220P/McNaught Brightness uncertain	Use a fresh ephemeris and recent observations.	Monitor only; August outburst is not a current magnitude.
88P/Howell Forecast ~mag 13	Midnight / morning; poor in early evening.	Faint camera target; build integration.
C/2024 T5 (ATLAS) Forecast ~mag 12	Later night / morning preferred.	Use a fresh chart and dark pre-dawn sky.

October focus: 161P/Hartley-IRAS

ALPO forecasts roughly magnitude 10-11 through October. It is worth following photographically, but diffuse surface brightness and changing geometry matter as much as the quoted magnitude. Check the night's coordinates.

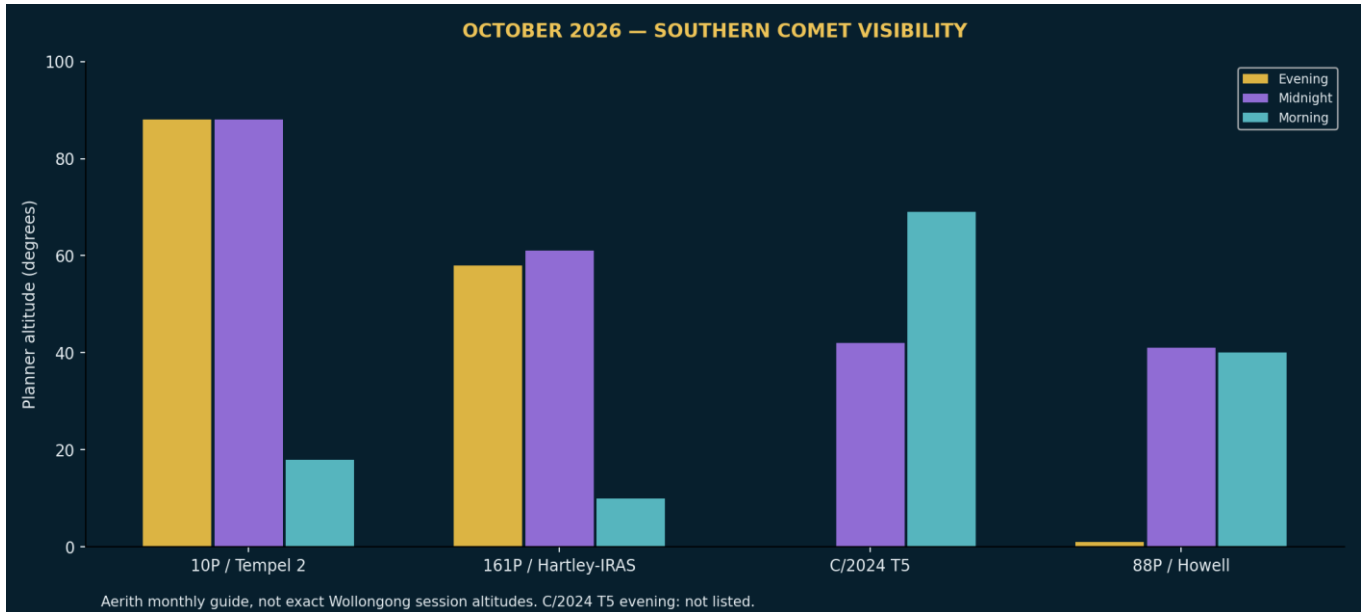
Low-altitude trap

169P/NEAT remains very low in the southern morning forecast. Prioritise the better-placed comets instead; a quoted magnitude alone does not make a target practical from Wollongong.

Record	Minimum useful note	Why it matters
Time, site and rig	Start/end in UTC or clearly labelled AEST/AEDT; site and instrument	Makes a detection, non-detection or image repeatable.
Coma	Angular diameter, brightness estimate and how condensed the centre appears	A large diffuse coma may be harder than its integrated magnitude suggests.
Tail or trail	Length, direction and whether it changes during the run	Separates real structure from gradients, satellites and stacking artefacts.
Image sequence	Sub length, frame count, filter and first/last frame	Preserves motion information and explains a smeared star-aligned stack.

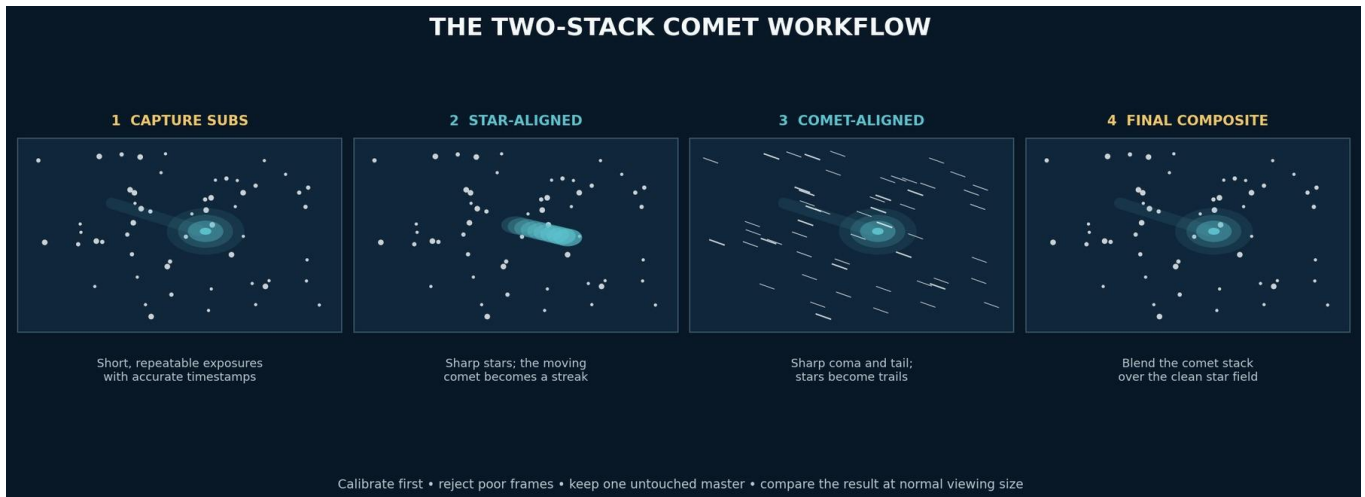
SOUTHERN COMET WATCH | CONDITIONS CHANGE QUICKLY

Visibility and a two-stack imaging recipe



October values from Aerith's broad Southern Hemisphere planner, updated 27 September. They are not exact Wollongong altitudes for a stated hour; generate a fresh local ephemeris before pointing.

Target	Evening	Midnight	Morning
10P / Tempel 2	~88°	~88°	~18°
161P / Hartley-IRAS	~58°	~61°	~10°
C/2024 T5 (ATLAS)	Not listed	~42°	~69°
88P / Howell	~1°	~41°	~40°



A comet-aligned stack sharpens the moving coma; a star-aligned stack preserves the field. Blend conservatively and keep the calibrated subs and an untouched master.

Capture and process in two ways

Visual observers should dark-adapt, use low power and gently move the telescope to reveal a diffuse coma. Imagers should synchronise the camera clock, take many repeatable short subs, reject poor frames, then compare a star-aligned stack with a comet-aligned stack. Smart-scope users should export individual frames when the app allows it; an ordinary star-aligned live stack can smear the nucleus.

October dark run

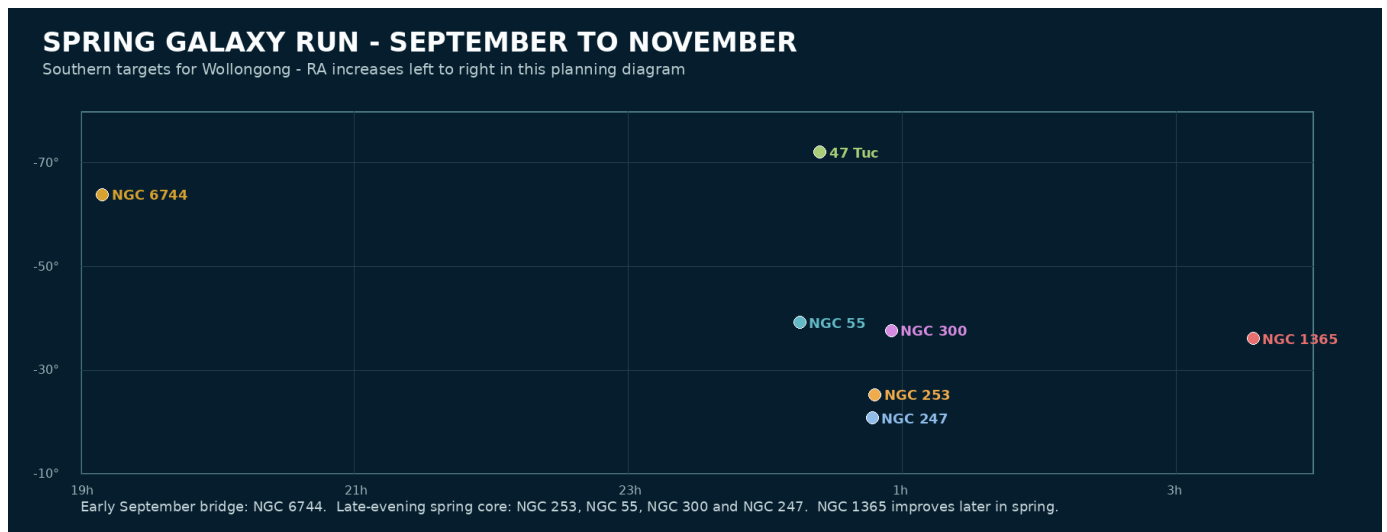
New Moon falls on 11 October. Aim for 7–12 October for long dark sessions, then check moonset for later-night opportunities. The bright Moon around 26 October favours planets, lunar detail and equipment testing.

Prepared 29 September 2026 using Aerith's October forecast and ALPO's September–October report. Forecasts are not October observations. Use JPL Horizons for the site and session time.

SPRING GALAXIES | WOLLONGONG

October spring galaxy planner

October is a strong month for the Sculptor group. NGC 253, NGC 55, NGC 300 and NGC 247 climb into useful evening positions, with NGC 1365 following later. NGC 6744 is now an early-session option rather than the centrepiece of the night.



Planning map: RA/Dec overview for southern spring galaxies. Use a live chart for exact altitude and meridian time.

Target	Constellation	Best October use	Rig / framing	WAAC note
NGC 6744	Pavo	Early evening	400-1000 mm	Already west; finish this field first.
NGC 253	Sculptor	Evening / around midnight	400-1200 mm	Bright Sculptor showpiece; build detail in the dust lanes.
NGC 55	Sculptor	Evening / around midnight	300-800 mm	Long target; allow room around its outer structure.
NGC 300	Sculptor	Evening / around midnight	250-700 mm	Low surface brightness; dark sky and total time matter.
NGC 247	Sculptor	Evening / around midnight	500-1000 mm	Subtle outer disk; preserve the background.
NGC 1365	Fornax	Late evening / after midnight	700-1500 mm	Improving through October; allow it to climb.

Practical order: start with anything still in Pavo or the western Milky Way at dusk, then let Sculptor climb. NGC 253 is the easiest spring-galaxy win; NGC 300 and NGC 247 reward darker sky and longer integration.

GALAXY SEASON | PRACTICAL EXAMPLES

Spring galaxies: Sculptor takes over



NGC 6744 in Pavo — an early-evening option in October before turning to Sculptor. Image retained from the WAAC archive.

NGC 253 is the headline object: bright enough for visual telescopes under a dark sky and rich in dust lanes for imagers. NGC 55 is long and irregular; NGC 300 is broad and comparatively low in surface brightness; NGC 247 is subtler and benefits from more total time. For all four, broadband RGB/OSC is the starting point - narrowband is an optional addition, not the main signal.

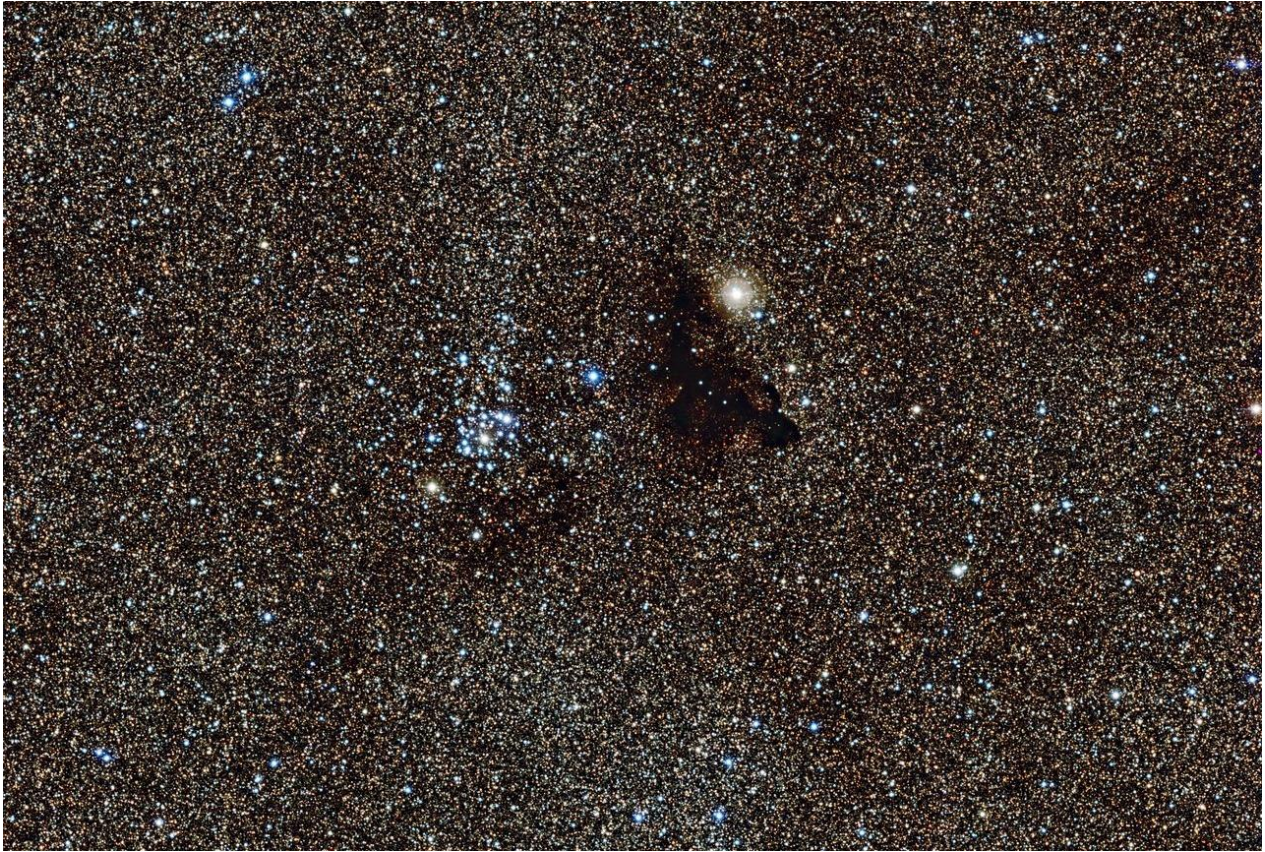
AstroBin examples - scan the cards below to open the original photographers' full-resolution images, equipment and integration details. These are reference examples; the QR cards do not reproduce the AstroBin photographs in the Gazette.

NGC 253 Jeff Fishman  TV-85 + ASI2600MC, 4+ h Scan for AstroBin image	NGC 300 FótonAstro  203/800 + ASI2600MM, 61h25m Scan for AstroBin image	NGC 55 Dionysus  130PDS + ASI533MC, 4h51m Scan for AstroBin image	NGC 247 Dionysus  130PDS + ASI533MC, 2h42m Scan for AstroBin image
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What to compare on AstroBin: framing at 250-600 mm versus 800-1500 mm, star colour, dust-lane contrast, background gradients and how much integration is needed before the outer disk becomes convincing.

DARK NEBULAE | BROADBAND TARGETS

Southern dark nebulae: the last dust lanes of the season



NGC 6520 beside Barnard 86 in Sagittarius. The dark cloud is visible because it removes background stars - do not crush the black point in processing. Image: ESO / existing Gazette archive.

Target	October timing	Best focal length	Capture note
Coalsack Nebula (Crux)	Low south-west at dusk	35-200 mm	Circumpolar from Wollongong but low; limited October imaging.
Dark Doodad (Musca)	Low south-west at dusk	85-300 mm	Poor elevation; keep as an archive or next-season target.
Pipe Nebula (Ophiuchus)	Very early; setting west	35-135 mm	Marginal October opportunity; use only a clear dark western sky.
Barnard 86 + NGC 6520	Early evening only	300-800 mm	Short western window; change to spring targets afterwards.

AstroBin dark-nebula examples - these links show how experienced imagers frame the dust rather than forcing it black.

Dark Doodad Alpha Zhang  FSQ106 + G4-16000, 34h30m Scan for AstroBin image	Pipe Nebula Marcelo Nahu  Sharpstar 61 + ASI533MC, 2h Scan for AstroBin image	Coalsack David Arseneau  Samyang 135 + ASI533MC, 2h38m Scan for AstroBin image
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Processing rule: dark nebulae depend on broadband star-field contrast. Use gentle gradient removal, protect the black point and avoid aggressive noise reduction that turns real dust structure into a smooth hole.

WAAC JUNE-JULY GALLERY

Member image: M20 Trifid Nebula



M20 Trifid Nebula - Petar Milevski / WAAC member image supplied from the June-July 2026 gallery.

Petar Milevski's M20 remains an excellent teaching image in October. The Trifid is now a short early-evening opportunity, but its combination of emission, reflection and dark lanes makes this archive image useful throughout the year.

What to notice	Why it matters in processing
Red emission region	Stretch colour without making every faint background pixel red.
Blue reflection lobe	Broadband signal and good colour calibration are important.
Dark central lanes	Local contrast helps, but clipping destroys fine dust structure.
Dense surrounding stars	Use restrained star reduction and preserve natural star colour.

Club image note

Member images are most useful when the caption includes telescope, camera, filters, total exposure and capture location. These details help other members learn from the result.

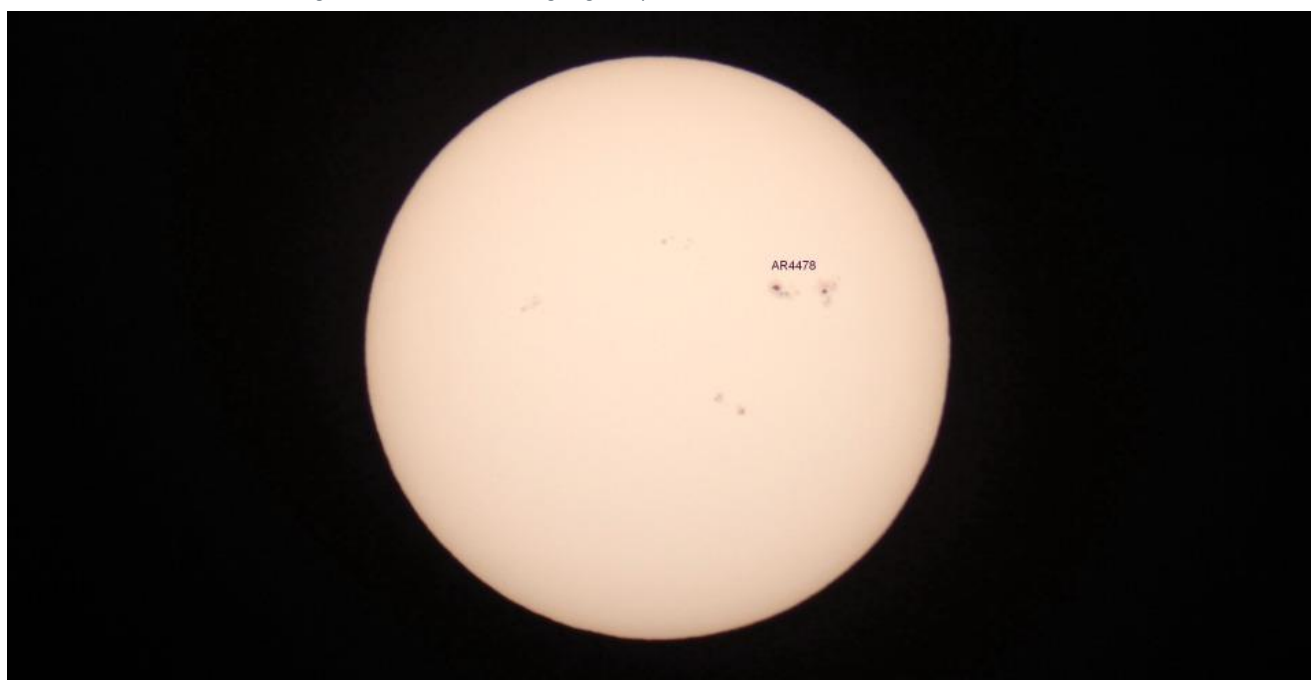
WAAC MEMBERS | JUNE AND JULY 2026

Member gallery: Moon and Sun

Jeff P. supplied two studies made under very different lighting: the rugged lunar surface around Petavius and a full-disc white-light view of the Sun. Together they show the value of careful focus, short exposures and restrained processing on bright Solar System targets.



Petavius under the mid-morning lunar Sun - Jeff P. Low-angle light emphasises the crater rim, central mountains and the distinctive floor fractures.



The solar disc with active region AR4478 labelled - Jeff P. WAAC member image supplied from the June-July 2026 gallery.

Solar safety

Never look through, align or image a telescope at the Sun unless a certified, undamaged solar filter is securely fitted over the front aperture. Remove or cap any finder that is not safely filtered.

Member gallery: Moon and Venus



A slender crescent Moon shares the evening sky with Saturn at opposition - Stuart W. / WAAC member image supplied from the June-July 2026 gallery.

The wide separation and deep black sky make this an elegant record of a conjunction: the crescent carries visible surface texture while Venus remains a compact point of light. Scenes like this reward a short exposure that protects the lunar highlights, followed by only modest contrast and sharpening.

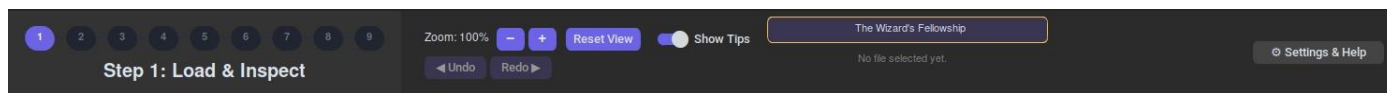
Capture choice	Practical approach	Why it helps
Framing	Leave generous space around both objects	The empty sky shows their apparent separation.
Exposure	Set for the bright lunar crescent	Protects crater detail along the illuminated limb.
Focus	Use the Moon's limb as the reference	A crisp edge usually keeps Venus compact too.
Processing	Keep the background naturally dark	Avoids halos and preserves the quiet composition.

Try it at twilight

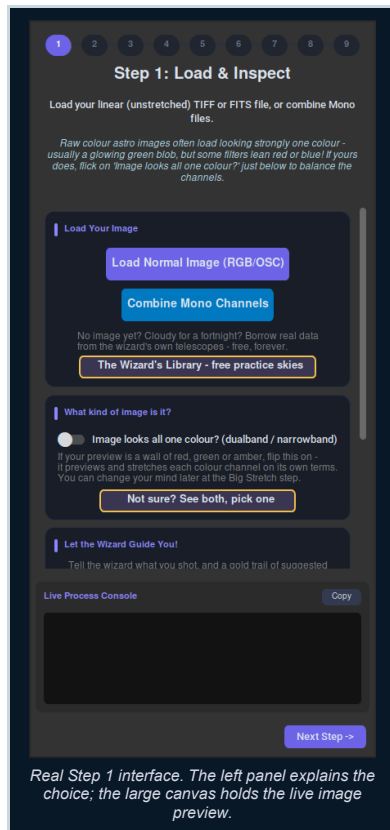
Begin before the sky is completely dark. A little twilight colour can preserve the Earth-lit side of the Moon and give the pairing more context, while a later frame can emphasise the clean graphic silhouette.

SIX-PAGE ILLUSTRATED FEATURE | RETAINED FOR OCTOBER

AstroWizard: a friendly path through processing



The AstroWizard navigation ribbon: nine numbered stages remain visible across the top. Interface image retained from the August review.



Real Step 1 interface. The left panel explains the choice; the large canvas holds the live image preview.

What is AstroWizard?

AstroWizard is Luke Newbould's free, guided astrophotography processor. It takes a stacked image and walks the user through the normal order of operations, one screen at a time. It is aimed at beginners and at experienced imagers who want a quick, repeatable first pass - not at replacing every advanced control in Siril, PixInsight or Photoshop.

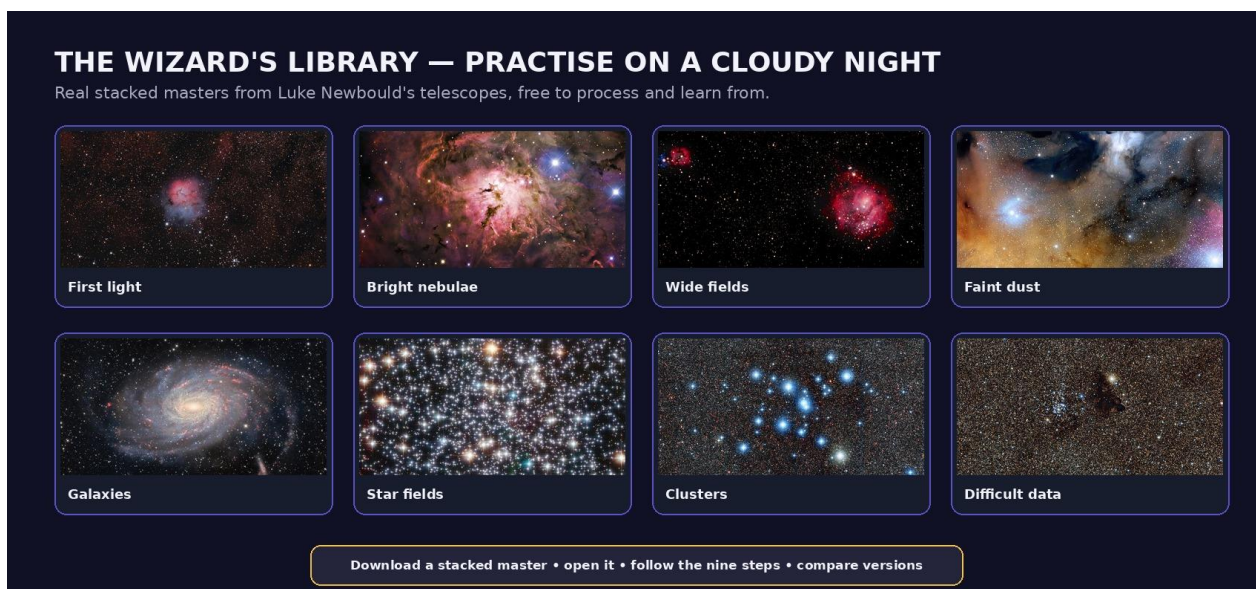
Cost: Free, with no ads, tracking or account. The developer says free is the continuing plan.

Inputs: Stacked FITS, TIFF or XISF from Seestar, Dwarf, ASTAP, Siril, PixInsight, DeepSkyStacker and other workflows.

Outputs: A small JPEG for sharing plus high-bit-depth masters when you want to preserve editing headroom.

Platforms: Windows 10/11, macOS Apple Silicon or Intel, and Linux x86-64.

Important: It does not calibrate or stack individual subframes. Stack first, then process.



The Wizard's Library lends real stacked masters for free practice. This editorial collage uses Gazette images to show the range of skills the library is designed to teach; visit the official library for Luke Newbould's actual data sets.

Why this matters to a club

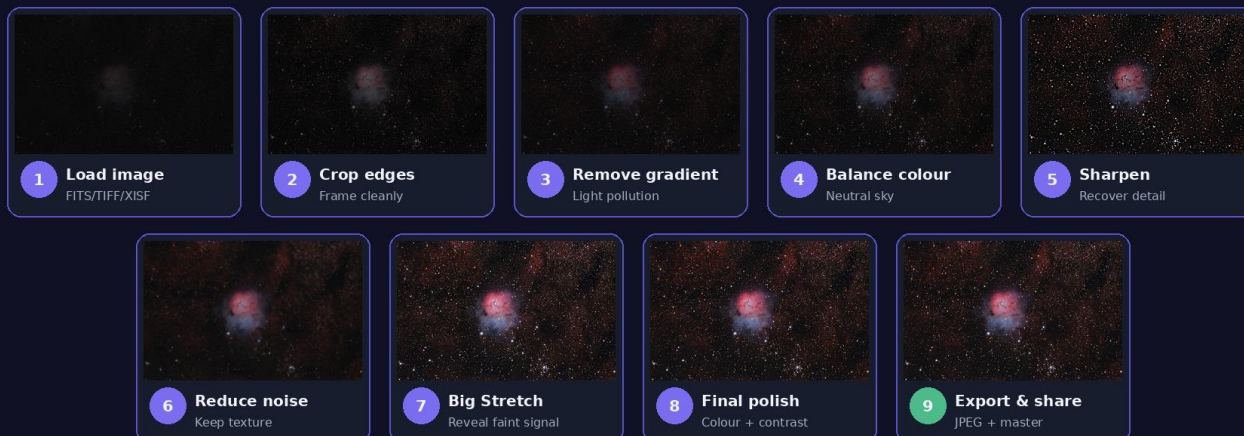
A dictated order lowers the first-processing barrier. Members can work on the same practice stack, compare choices and discuss why results differ instead of losing the night to installation and jargon.

ASTROWIZARD FEATURE | THE ORDER IS THE LESSON

The nine-step route

NINE STEPS — ONE DECISION AT A TIME

AstroWizard keeps the order visible; each stage has a live preview and Undo.



Editorial workflow illustration — not a controlled before/after test

Editorial workflow illustration using Petar Milevski's M20 image. The sequence shows the purpose of each stage, not a controlled AstroWizard benchmark; results depend on the stack and optional tools.

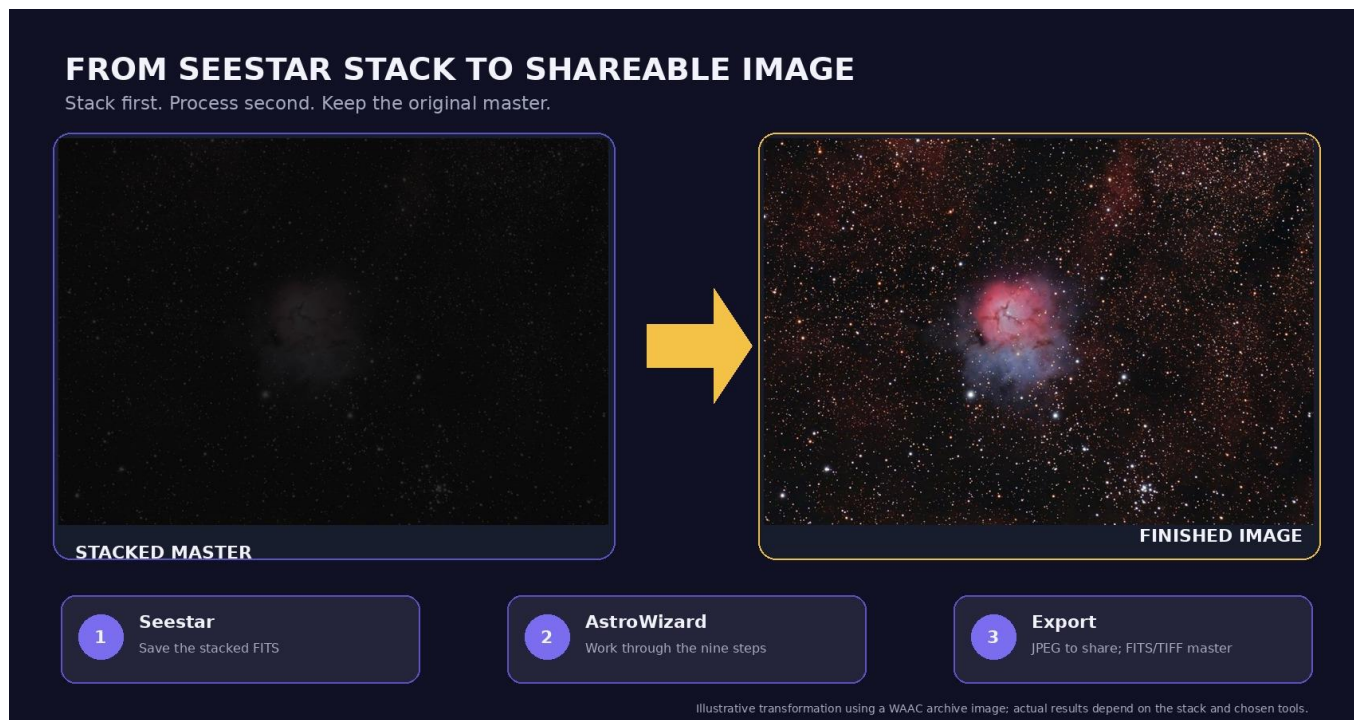
Step	What happens	The decision to make
1 Load	Open a stacked FITS, TIFF or XISF; choose RGB/OSC, planetary or mono combination.	If the preview is one strong colour, use the dual-band/narrowband viewing option.
2 Crop	Remove black stacking borders, poor edges, rotate and frame.	Cut artefacts completely before any AI step sees them.
3 Gradient	Use GraXpert background extraction when installed.	Start at Default; inspect the extracted background before accepting.
4 Colour	Use Star-True Colours on suitable linear broadband FITS with sky coordinates; otherwise check colour balance manually.	Skip automatic colour balance for SHO/narrowband palettes.
5 Sharpen	Recover detail with a native high-pass option or BlurXTerminator.	Choose one engine and avoid halos or hard star cores.
6 Noise	Reduce linear noise with GraXpert or NoiseXTerminator.	Keep some texture; a perfectly smooth sky often looks plastic.
7 Stretch	Compare live stretch profiles and reveal faint signal.	Try linked colour first; deeper is not automatically better.
8 Polish	Adjust stars, palettes, sky, colour, curves and final noise.	Most controls stack, so use small doses and compare often.
9 Export	Save share and master versions; start another image if desired.	Keep the untouched stack and a high-bit-depth final master.

Treat the wizard as a coach, not an autopilot

The suggested Normal or Default button is a starting point. Use the live preview, Undo and Reset Step; the best setting is the least aggressive one that solves the visible problem.

ASTROWIZARD FEATURE | FROM STACKED FITS TO CLUB-READY IMAGE

A practical Seestar S50 recipe



Illustrative transformation using Petar Milevski's WAAC archive image. A true linear Seestar stack will vary with target, filter, sky and total exposure.

AstroWizard is a natural companion to a Seestar because it accepts the stacked file rather than asking the beginner to master a full processing suite on day one. In the reviewed build, Seestar stacks can set their own profile on load.

Seestar / capture action	AstroWizard action	Why it helps
Build a clean live stack	Do not process until the stack is finished	More good integration time beats stronger noise reduction.
Save the stacked FITS	Load Normal Image (RGB/OSC)	FITS retains far more editing range than a phone JPEG.
Check the frame edges	Crop black bars, field rotation and rough margins	Bad borders can confuse background and AI tools.
Dual-band target?	Use the one-colour preview option only when needed	It helps inspect a red/green wall; begin the final stretch linked.
Work in order	Preview, apply, compare, then move on	Undo and Reset Step make experimentation safe.
Share and archive	Export JPEG plus FITS/TIFF master	Keep the original stack so every decision remains reversible.

FITS first

Do not feed AstroWizard the individual Seestar subframes, and do not throw away the original stacked FITS. JPEG is for easy sharing; the stacked FITS and a high-bit-depth master are your reusable negatives.

ASTROWIZARD FEATURE | STEPS 2-6

The critical middle: crop, background, colour and detail

**Crop before AI**

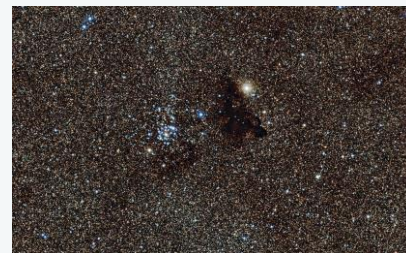
Remove every black edge and badly rotated margin before background extraction, sharpening or noise reduction. Frame for the target, not merely for the original sensor rectangle.

M8/M20 field from the supplied WAAC archive.

**Protect real sky structure**

Milky Way dust, IFN and broad nebulae can look like gradients. Hold to view the extracted background and reset if genuine structure is being removed.

Rho Ophiuchi image from the supplied WAAC archive.

**Sharp, not brittle**

Sharpen while the data is linear, but watch stars and dust edges. Reduce noise without erasing the grain and faint signal that make the image believable.

NGC 6520 and Barnard 86 image: ESO.

Stage	Good first move	Reset and reconsider when...
Crop / frame	Cut stacking artefacts; centre, rotate or choose an aspect ratio	A black or noisy edge is still visible.
Background	GraXpert Default; compare the extracted gradient	Nebulosity disappears or the sky becomes uneven.
Colour	Star-True Colours for suitable linear broadband data	A narrowband palette is being forced towards grey.
Sharpen	Normal strength; one engine only	Stars gain dark rings, hard cores or crunchy edges.
Noise	Normal or lighter; inspect at 100 per cent	Faint texture vanishes or the image looks waxy.

Milky Way warning

For M8, M20, Rho Ophiuchi and other crowded fields, background removal is the step most likely to erase real sky. A smooth model is useful; a model containing recognisable nebulae or dark lanes is a warning.

ASTROWIZARD FEATURE | STEP 7

The Big Stretch: reveal the signal, not the flaws

Teaching reconstruction based on labels and layout in the official 21 September build. The beta interface may change; the example previews use Petar Milevski's M20 image.

Stretching maps faint linear data into a range our eyes and screens can see. AstroWizard's strength is comparison: choose colour handling, then inspect several depth previews of the same data before applying one.

Choice	Start here	What it tells you
Colour handling	Linked channels first	Preserves the relationships established by calibration. Try unlinked only when the result remains strongly cast.
Gentle / Normal	Normal, then compare one step either side	A controlled result is easier to polish than an over-stretched one.
Deep	Use only with clean, well-corrected data	It can reveal faint dust and tidal streams - plus gradients, blotches and flat-field errors.
Deep + colour	Use when you want depth without losing a warm or cool field	Colour preservation can matter for Milky Way fields and intentional palettes.
Manual / Custom	Open only when the guided previews miss the look	More control is useful after you understand what the preset comparison is showing.

Deep is not automatically better

Choose the shallowest stretch that reveals the wanted structure. If the background becomes mottled or stars dominate the field, fix the data issue, reset the step or choose a gentler profile.

ASTROWIZARD FEATURE | STEPS 8-9

Final Polish and export: build the look in small doses

1 2 3 4 5 6 7 **8** 9

Step 8: Final Polish
 Adjust colour, contrast and apply final noise touch-ups.

0. STAR MANAGEMENT
 Remove Stars (StarNet2 – free)
 Remove Stars (SXT)
 Replace Stars

1. FOUNDATION & PALETTES
 OSC Dual-Band to Hubble
 MONO SHO to Hubble
 Auto Colour Balance

2. BACKGROUND & CONTRAST
 Darker Sky
 Lighter Sky
 Make it Pop

3. COLOUR & ENHANCEMENTS
 Masked Saturation

FINAL POLISH — BUILD THE LOOK IN SMALL DOSES


GOOD HABIT Use Hold to Compare Original. If sharpening or saturation announces itself first, back off.

Teaching reconstruction from build 21 August 2026; controls may move during beta.

Teaching reconstruction based on labels and layout in the official 21 September build; the beta interface may change. M8 image: ESO.

Final Polish groups star management, palettes, sky, colour, curves and last noise touch-ups. Many controls stack: that makes them flexible, but also makes it easy to overshoot. Change one thing, compare, and decide before adding another dose.

Decision	Conservative default	Look for
Star removal	Only when it serves the composition	Halos, missing small galaxies and imperfect replacement around bright stars.
Palette	Use only for the matching data type	OSC dual-band is not the same input as three-channel mono SHO.
Saturation / curves	One click or a small custom dose	Natural star colour and separation between red, blue and brown dust.
Final noise	Light, if still needed	Texture remains visible at normal viewing size; the sky does not look waxy.
Export	JPEG to share; FITS/TIFF master to archive	No accidental overwrite of the original stack or high-bit-depth master.

The stop test

Return the image to normal viewing size and hold Compare Original. If sharpening, star reduction or saturation announces itself before the object does, undo the last move or lower the strength.

ASTROWIZARD FEATURE | OCTOBER UPDATE

Install, optional tools and the beta reality



Built in versus optional

Stretching, colour, curves and palettes are native. GraXpert and StarNet2 provide a free AI path; RC-Astro's BlurX, NoiseX and StarX tools are licensed separately, with trials available.

Editorial integration map based on the official AstroWizard documentation.



Install from the source

The open beta is not code-signed, so the first launch may trigger a Windows or macOS warning. Use only the official site or Lukomatico links, then follow the platform-specific first-open instructions.

Editorial safety panel based on the official install guidance.

Question	October update — checked 29 September
What does it cost?	AstroWizard is free. Optional RC-Astro processing products are paid; GraXpert and StarNet2 are free.
What runs it?	Windows 10/11, macOS Apple Silicon/Intel and Linux x86-64. Check the official download page for the current build.
What files?	Stacked FITS, TIFF or XISF. Stack first in Seestar, Siril, ASTAP, PixInsight, DeepSkyStacker or another tool.
What hardware?	A modest computer is sufficient. AI operations benefit from a supported GPU but can run more slowly on a CPU.
What setup?	Point AstroWizard to optional tools in Settings. Open GraXpert once and run its tools so the required AI models download.
What goes online?	Online features include update checks, the Fellowship roll and Gaia star lookup. Settings controls automatic access; a requested Gaia lookup can still go online.
What can go wrong?	Beta screens and behaviour can change quickly; external tools, models, paths or licences may be missing, and a data set may expose a bug.

October software update

The 24 September release adds object labels and batch project exports at Step 9. The 25 September release fixes macOS save locations. Earlier screenshots in this retained feature remain teaching examples; consult the changelog for current controls.

Primary reading: astrowizard.lukomatico.com • astrowizard.lukomatico.com/changelog.html • astrowizard.lukomatico.com/library.html • graxpert.com • starnetastro.com • rc-astro.com/stand-alone-rc-astro-tools/ • Community discussion: Cloudy Nights topic 1004620.

DRACO SPECIAL | UPDATED 29 SEPTEMBER 2026

DWARFLAB Draco: why Cuiv says it isn't really a smart telescope

Cuiv video review

"The Dwarflab Draco isn't a smart telescope (and that's a good thing)"

Cuiv's 19 September video is a detailed specification/workflow analysis rather than a production-unit field test.

This Gazette review follows the same useful question: what happens if we judge Draco as a compact astrophotography rig?

DRACO

90 mm x 340 mm f/3.8 guided / cooled / rotating sensor



Draco hardware reconstruction.



Cuiv review link

Published specifications

Status: pre-order; Standard shown sold out on 29 September.

Optics: 90 mm aperture, 340 mm focal length, f/3.8.

Main sensor: OV50Q40; 50.33 MP native, about 12 MP binned.

Dedicated monochrome guider and physical sensor rotation.

Cooling: only about 5–10°C below ambient; no user temperature setpoint.

FITS, TIFF, JPG and PNG export.

10,000 mAh battery; 128 GB storage; about 5.5 kg.

Exposures up to 300 seconds.

Independent production testing remains essential.

Category correction

DWARFLAB markets Draco as a smart telescope. Cuiv's title deliberately challenges that label because the hardware resembles a complete astro-imaging train. Both descriptions can be true: it is automated like a smart scope, but engineered more like a sealed observatory rig.

Why it matters: Draco combines a 90 mm f/3.8 optical system with guiding, active cooling, physical sensor rotation, internal filters, raw-file export and automated control. That puts it much closer to a compact integrated astrophotography rig than the usual short-sub smart scope.

Review basis: DWARFLAB specifications, Australian ordering page and FAQ, checked 29 September, plus Cuiv's 19 September analysis. This remains a specification-and-workflow review, not a production-unit field test. The cooling limit and current Australian prices are updated for this October issue.

90 mm folded astrograph

340 mm focal length at f/3.8 gives a much larger entrance pupil than the 30-50 mm smart-scope class while keeping the body portable.

Gazette schematic based on published specifications.



Three-camera architecture

A telephoto imaging sensor, an ultra-wide camera and a dedicated monochrome guide camera divide imaging, navigation and tracking jobs.

Gazette schematic based on DWARFLAB specifications.



What Draco actually integrates

WHY DRACO FEELS LIKE AN ASTRO RIG

Functions usually spread across separate hardware

GUIDE

mono guide camera

COOL

active sensor cooling

ROTATE

physical CMOS rotation

FILTER

broadband + dual-band
/ SHO

App automation + FITS export + 128 GB + 10,000 mAh

Cuiv's central point is useful: the label "smart telescope" hides how much normal astrophotography hardware is packed inside Draco. It is still app-controlled and automated, but the design adds functions that usually live in a separate guide scope, cooled camera, rotator, filter system and computer.

FROM SMART SCOPE TO INTEGRATED RIG

Automation stays — the hardware underneath gets serious



The September 2026 launch established Draco's published design. For October, the key clarification is modest cooling: approximately 5–10°C below ambient, with no user-selected temperature setpoint. Optical quality, guiding, thermal stability and software reliability still need independent field testing.

The cooling limit matters

Draco's automatic TEC cooling is specified at approximately 5–10°C below ambient. At 20°C ambient, that implies roughly 10–15°C at the sensor under suitable conditions. It does not promise a fixed sub-zero operating temperature; stability and calibration still need field testing.

The technical case: 90 mm, 340 mm and f/3.8

90 mm CHANGES THE SIGNAL BUDGET

Aperture is not everything, but it matters



50 mm



90 mm

90 mm has 3.24× the geometric collecting area of 50 mm before obstruction and optical losses.

DWARFLAB publishes a 90 mm aperture and 340 mm focal length, giving f/3.8. The telephoto camera uses an OV50Q40 1/1.3-inch sensor with 1.197 μm native pixels and 2x2 binning to 2.394 μm for roughly 12 MP deep-sky output.

At 340 mm, 2.394 μm pixels give a sampling of about 1.45 arcsec/pixel. That is a serious deep-sky scale for a portable all-in-one instrument, but final detail will still be limited by seeing, focus, tracking, optics and processing. Fifty megapixels on the box does not mean 50 MP deep-sky files.

DRACO DEEP-SKY CAMERA

OV50Q40 • 2×2 binning • 2.394 μm effective pixels • ~1.45 arcsec/pixel

TELEPHOTO
90 mm • 340 mm f/3.8
~12 MP binned

WIDE
23.3 mm eq.
Milky Way / context

GUIDE
Monochrome
Closed-loop tracking

A 90 mm entrance pupil has 3.24 times the collecting area of a 50 mm pupil before central obstruction and transmission losses. Draco's folded optical system therefore has a large signal-gathering advantage on paper, but the obstruction and multiple optical surfaces mean simple aperture-area arithmetic is not the whole story.

Southern sweet spots

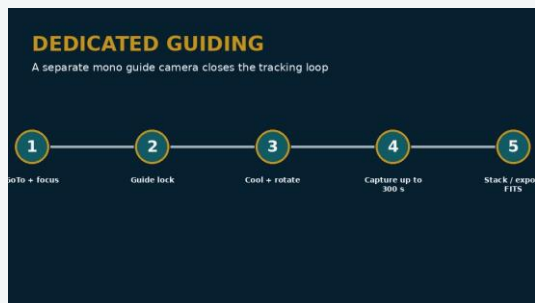
Draco's ~340 mm focal length is a strong match for the Helix, M8/M20, Rosette, Carina sub-fields, 47 Tuc, Omega Centauri, M83, NGC 253, Centaurus A and many medium-size emission nebulae. Very large Milky Way landscapes still favour the wide camera or a shorter-focal-length system.

DRACO REVIEW | GUIDING, COOLING, ROTATION AND FILTERS

The pieces that make it more like an astro rig

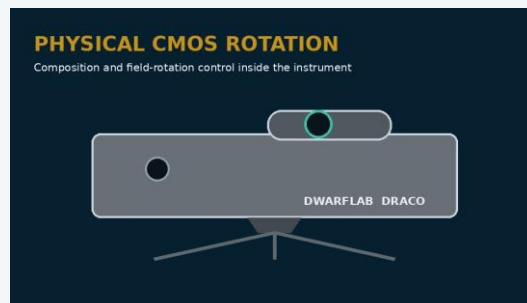
Dedicated guiding

A separate monochrome guide sensor allows closed-loop tracking rather than relying only on the main imager.



Physical sensor rotation

The CMOS can rotate to manage composition and field rotation. This is a major difference from basic fixed-sensor alt-az smart scopes.



Active cooling + dew control

The sensor can only be cooled approximately 5–10°C below ambient, depending on conditions. No user-defined temperature setpoint is currently supported. DWARFLAB also describes heat reuse for dew prevention.



Filters and SHO option

Both versions include broadband/dual-band capability. The SHO Edition adds an S II + O III filter; solar ND handling differs between editions.



Draco subsystem	Published value	Why it matters
Optics	90 mm, 340 mm, f/3.8	Large aperture and fast focal ratio for a compact integrated system
Tele camera	OV50Q40; 1/1.3-inch; 50.33 MP native; ~12 MP binned	Binning prioritises deep-sky signal; native mode is used for brighter Solar System targets
Platform	Guide camera + sensor rotator + EQ mode + app automation	Functions that normally require separate astro hardware are integrated
Power / body	10,000 mAh; ~5.5 kg; 128 GB	Portable, but no longer "throw it in a coat pocket" smart-scope territory

Picture note

This draft uses Gazette schematics and hardware reconstructions because direct extraction of Cuiv's YouTube frames was not available in the publishing environment. The review link and QR code are included. If club-owned screenshots are supplied, they can be swapped into the same picture positions without changing the layout.

What integration solves	What it does not solve
Guiding built in	Guiding accuracy still has to be measured under real wind, seeing and balance conditions
Cooling built in	Only about 5–10°C below ambient; no selectable temperature setpoint. Measure stability and calibration behaviour.
Sensor rotation built in	Mechanical rotation adds capability but also another system whose precision and reliability matter

DRACO REVIEW | STANDARD VS SHO AND THE BUYING QUESTION

Draco Standard vs Draco SHO - and what still needs testing

Specification	DWARF 3	Draco Standard	Draco SHO
Status	Released	Sold out / pre-order	Pre-order
Aperture	35 mm	90 mm	90 mm
Focal length	150 mm	340 mm	340 mm
F-ratio	f/4.3	f/3.8	f/3.8
Main sensor	Sony IMX678	OV50Q40	OV50Q40
Deep-sky output	8.3 MP class	~12 MP binned	~12 MP binned
Guide camera	No dedicated guider	Dedicated mono guider	Dedicated mono guider
Sensor rotation	No physical rotator	Physical CMOS rotation	Physical CMOS rotation
Cooling	No active sensor cooling	5–10°C below ambient	5–10°C below ambient
Narrowband	Dual-band	H+O dual-band	H+O plus S+O capability
Solar ND	External filter	Built-in ND	External ND included
Storage	128 GB	128 GB	128 GB
AU price checked 29 Sep	Lower-cost class	A\$2,299 listed	A\$2,599 listed

Who are you?	What to do	Reason
Current DWARF 3 owner	Keep the D3 unless you specifically need smaller-target reach and deeper integrations	Draco is a different size/price class, not just a firmware upgrade
First smart-scope buyer	Decide whether simplicity or serious data is the priority	Draco adds capability, weight, cost and more settings
Experienced imager	Wait for raw FITS and independent guiding/cooling tests	The value is in data quality, not the phone preview
Club / outreach team	Judge setup time, reliability, solar procedure and recovery from disconnects	Public-night gear must work repeatedly and safely

WAAC assessment

Draco is best understood as a sealed, automated astrophotography rig. On paper the 90 mm f/3.8 optics, dedicated guiding, cooling, sensor rotation, filters and FITS access are a genuine step beyond the basic smart-scope recipe. The remaining question is execution. Until independent production units show clean stars, stable guiding, controlled sensor temperature and good raw data over full nights, the specification sheet is the beginning of the review - not the end.

Video focus: Cuiv's "The Dwarflab Draco isn't a smart telescope (and that's a good thing)" treats Draco as an integrated astrophotography rig. The distinction is useful, but it is a category argument rather than a change in what DWARFLAB sells: the manufacturer still markets Draco as a smart telescope.

Production-unit test	What to measure	Why it decides the review
Matched integration	Same target, sky and total time against DWARF 3 / Seestar-class systems	Shows the real gain from aperture, focal ratio and processing
300-second run	Guide RMS/accepted-frame rate/star eccentricity across repeated long subs	Tests the headline long-exposure claim
Cooling test	Sensor vs ambient; verify the stated 5–10°C reduction and drift	Shows whether active cooling is stable and useful, not just present
Raw-file audit	Corners, gradients, bit depth, calibration behaviour and repeatability	Determines whether Draco really behaves like an astro rig outside the app

Solar safety

Use only the manufacturer-approved Draco solar configuration for the exact edition you own. Confirm the ND filter is correctly installed and undamaged before pointing at the Sun, and follow the app's solar workflow. Never improvise a rear-mounted or damaged solar filter.

OCTOBER WORKFLOW

Processing corner: treat Draco like an astro camera



Draco can produce app-processed results, but its FITS export is one of the reasons experienced imagers will care. Keep the calibrated source data, compare the app stack with an external stack, and do not throw away the files that let you inspect tracking, gradients and sensor behaviour.

1. Save the original FITS data before experimenting with processing or compression.
2. Inspect individual stars at 100 per cent. Look for guiding elongation, rotation artefacts and corner aberrations before blaming processing.
3. Compare broadband and dual-band data separately. Do not force colour from weak channels.
4. Build a conventional external stack as a control result, then compare it with the app output.
5. If using SHO data, keep channel mapping explicit and avoid treating an aesthetic Hubble palette as “natural colour”.
6. Judge the result at both pixel level and normal viewing size. A phone preview can hide problems that become obvious in a full-resolution file.

Common problem	Likely cause	Better response
Stretched stars / elongation	Guiding, wind or rotation error	Inspect raw FITS and rejection statistics before processing harder
Colour cast in nebula	Filter/channel imbalance	Calibrate channels separately and map SHO deliberately
Plastic background	Over-aggressive app or AI noise reduction	Keep an untouched master and compare with an external stack
Hidden corner defects	Judging only phone-size preview	Inspect full-resolution output at 100%

Broadband: preserve the data Use FITS masters as the reference and apply gradient removal only after checking that the “gradient” is not genuine Milky Way or galaxy structure. Rho Ophiuchi image retained from the WAAC archive.	SHO: map channels consciously The SHO Edition is interesting because it can automate S II / O III / H-alpha-style capture. Keep channel assignments documented and avoid clipping weak sulphur signal. M20 image: Petar Milevski / WAAC.
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Final quality check

For Draco, the decisive test is not whether the app produces an attractive image. Check the full-resolution files for star shape, gradients, calibration residuals, cooling stability and repeatability across multiple nights.

WAAC

Club corner and October field plan



A club setup day from the supplied WAAC archive - shared experience makes field nights safer and easier.

October club meeting

Thursday 1 October 2026, 7:30 pm AEST, Wests Illawarra Boardroom, Unanderra. Meetings are on the first Thursday of each month. The following regular meeting is Thursday 5 November at 7:30 pm AEDT.

October priorities are Saturn, the Helix, 47 Tucanae and the Sculptor galaxies. Use the dark period around 11 October for faint broadband targets; reserve bright-Moon nights for lunar detail, planets and equipment practice. Please submit an Image of the Month entry and vote when the website poll opens.

Before leaving	At the site	Before packing
Confirm forecast and site access	Park to protect night vision	Run final calibration or notes
Charge every battery	Secure cables and tripod legs	Check lens caps and adapters
Load target coordinates	Dew heaters on early	Leave the site clean
Tell someone the plan	Use red light and warm layers	Confirm everyone is fit to drive

Member submissions

Submit your Image of the Month entry and vote when the poll opens on the club website. Include object, date, location, telescope, camera, filters and total exposure with images sent to the committee.

Joe Perulero - President, WAAC

CLEAR SKIES

October field checklist and sources

Rig type	First target	Second target	Finish with
Wide-field camera	Western Milky Way early	SMC / 47 Tuc field	Southern spring fields
Short refractor	Helix Nebula	NGC 253	NGC 300
Longer focal length	Saturn	NGC 253	NGC 1365 later
Visual / outreach	Saturn	47 Tuc	Sculptor Galaxy
Smart scope / Draco	Helix / 47 Tuc	NGC 253	Fresh comet chart

October field reminder

From 4 October, use AEDT on schedules and check mount, camera and app clocks. Start dew control early, secure tripods and cables, and plan a safe journey home.

Moon phases / daylight saving	timeanddate.com/moon/australia/sydney?month=10&year=2026 — local October phases; NSW clock change on 4 Oct.
October sky events	astropixels.com/almanac/almanac21/almanac2026aest.html — add one hour after NSW daylight saving begins.
Planet planning	2026 Sky Event Almanac: Saturn opposition 4 Oct; Mercury eastern elongation 12 Oct; Venus inferior conjunction 24 Oct.
AstroBin dark-nebula examples	Dark Doodad Alpha Zhang (m9pml); Pipe Marcelo Nahu (5mk5j3); Coalsack David Arseneau (uhd55v). QR links page 9.
M7 image	ESO image eso1406a - retained from August issue.
NGC 6520 / B86	ESO image eso1307a - retained from August issue.
WAAC archive images	April-August 2026 Galaxy Gazette editions supplied by Joe Perulero.
Member images	Petavius / Sun - Jeff P.; M20 - Petar Milevski; Moon and Venus - Stuart W.
Comet forecasts	aerith.net/comet/future-s.html (27 Sep update); ALPO Comet News for September and October 2026. Recheck in JPL Horizons.
AstroWizard updates	astrowizard.lukomatico.com/changelog.html — 24–25 Sep updates checked 29 Sep; earlier feature illustrations retained.
AstroBin galaxy examples	NGC 253 Jeff Fishman (ntpevt); NGC 300 FotonAstro (47sum0); NGC 55 Dionysus (2xq26z); NGC 247 Dionysus (7kxkag). QR links page 8.
DWARFLAB Draco AU	dwarflab.com/au/products/draco-smart-telescope — 29 Sep: Standard A\$2,299 / sold out; SHO A\$2,599 / pre-order.
DWARFLAB Draco technical specs	dwarflab.com/us/pages/draco-smart-telescope - optics, sensors, filters, power, storage and connectivity.
Cuiv video	YouTube: “The Dwarflab Draco isn’t a smart telescope (and that’s a good thing)” - PXOT9hxSv70, published 19 September 2026.
Draco cooling clarification	dwarflab.com/nz/pages/faqs — automatic cooling about 5–10°C below ambient; no user setpoint. Checked 29 Sep 2026.
Independent coverage	Digital Camera World, Draco announcement coverage, 9 September 2026.
Community discussion	Cloudy Nights Draco thread and recent discussion of judging Draco as an astrophotography rig.
Review limitation	No production-unit hands-on testing was available to this Gazette review; published specifications are not a substitute for raw-data field tests.

Ephemerides, product firmware and pre-order details can change. Confirm comet positions, planet visibility, weather, site access and the current Draco specifications before relying on printed information.

JUNE AND JULY 2026

Member image acknowledgements



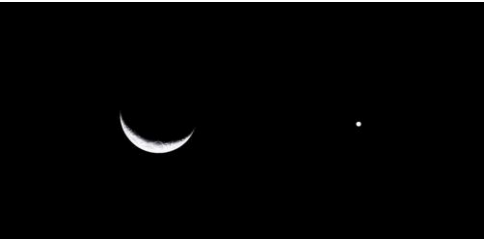
M20 Trifid Nebula
Emission, reflection and dark lanes in one rich field.
Petar Milevski / WAAC.



Petavius
Low lunar sunlight reveals rims, peaks and floor fractures.
Jeff P. / WAAC.



Sun with AR4478
A white-light full-disc record with the active region labelled.
Jeff P. / WAAC.



Moon and Venus
A clean wide-field pairing of the crescent and brilliant planet.
Stuart W. / WAAC.

WAAC DARK SKY WEEKEND

Frogmore observing and camping weekend

Friday 9 to Sunday 11 October 2026

Join us at our Bortle 1 site at Frogmore for a weekend of observing, imaging and camping with fellow club members. Bring your favourite setup, share a view through a telescope and make time to compare equipment and ideas across the field.



Members, shelter and equipment at the April 2026 Frogmore weekend. Photo from the supplied WAAC presentation.

A weekend around New Moon

New Moon falls at 2:50 am AEDT on Sunday 11 October, making Friday and Saturday nights well timed for faint galaxies and nebulae if the weather cooperates. Friday is an opportunity to settle in and observe, with Saturday planned as the main observing night. Sunday is for packing up and departure, with any backup observing subject to arrangements.

The April trip brought visual observers and imagers together, with members helping one another set up and sharing experience. October offers another chance to enjoy that company under a very dark sky. Confirm attendance, access, fees, camping and meal arrangements with the committee before travelling.

FROGMORE FIELD GUIDE

People and equipment under dark skies

The April photographs show the range of setups that make these weekends enjoyable. Portable imaging rigs and larger visual telescopes all have a place on the observing field.



Left: a refractor imaging setup. Right: a Dobsonian beside the campsite and members. Both photographs are from Frogmore, April 2026.

October targets

Start with Saturn once it is clear of the horizon, then enjoy 47 Tucanae, the Helix Nebula and NGC 253. Imagers can use the dark sky for NGC 55, NGC 300 and NGC 247, with NGC 1365 later in the night. Wide fields around the Small Magellanic Cloud offer another option. Check a fresh chart before attempting the comets in this issue.

Getting ready for camp

Arrive with enough daylight to set up your shelter and equipment. Bring warm layers, suitable bedding, food and drinking water, charged batteries, a red torch and dew control. The April trip reached about 0–2°C overnight; that is a reminder to prepare for cold, not an October forecast.

Keep white lights and vehicle headlights away from active observers, secure cables and allow time to rest before the drive home. NSW will be on daylight saving, so use AEDT for the weekend schedule and check your mount and camera clocks. Recheck weather and site access before departure.

Photo source: Frogmore Astro Weekend, 17–19 April 2026, supplied WAAC presentation. The photographs document the earlier trip; October conditions will vary.

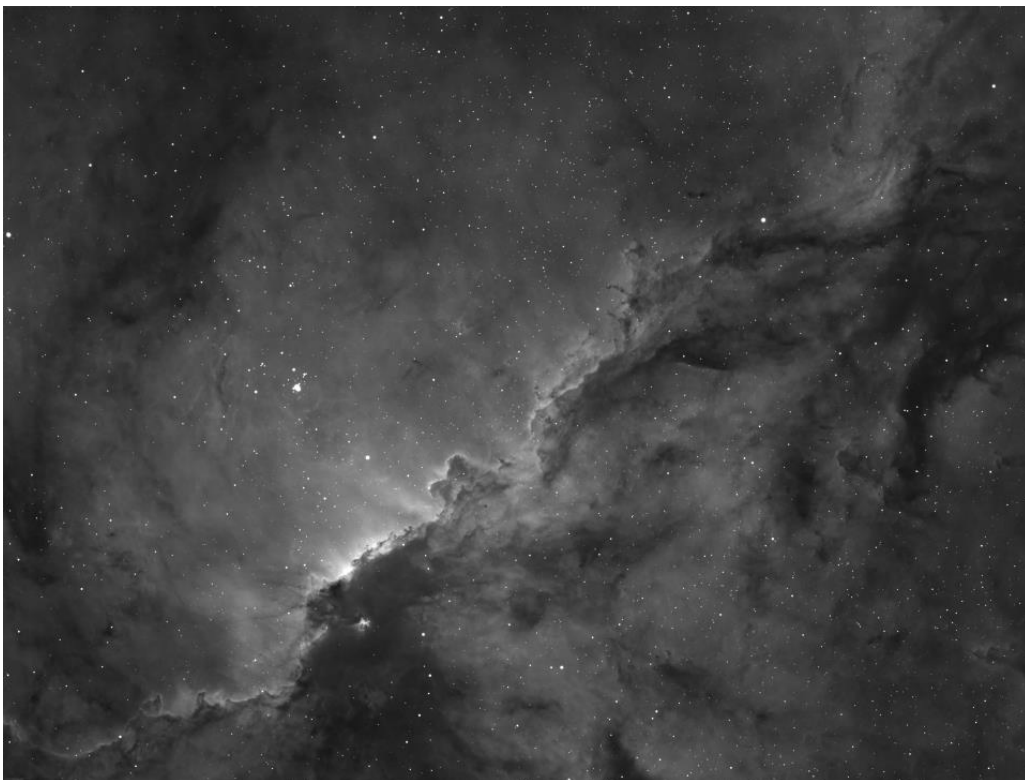
WAAC MEMBER IMAGES

Member gallery contributions from Jeff and Nigel

Two member images showing colourful nebulosity and the fine structure of interstellar clouds.



The Trifid Nebula with its pink glow and prominent dark lanes.



A monochrome nebula study showing bright cloud edges and intricate dark structure.

Images contributed by WAAC members Jeff and Nigel.