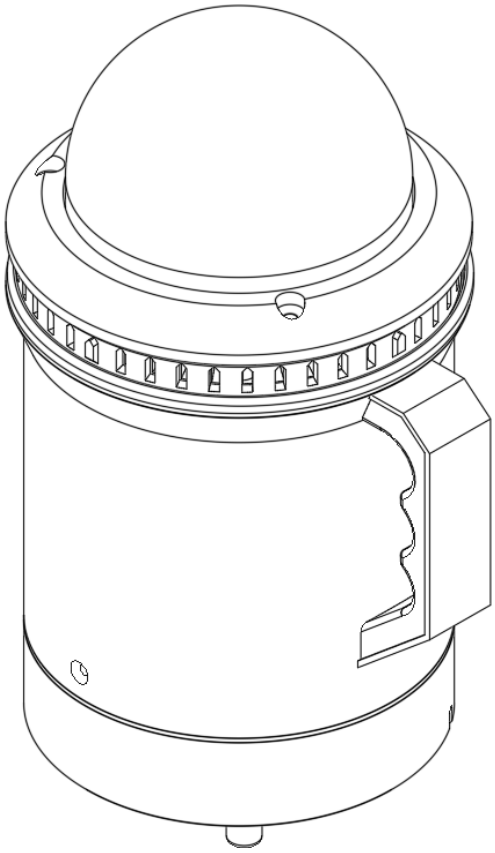
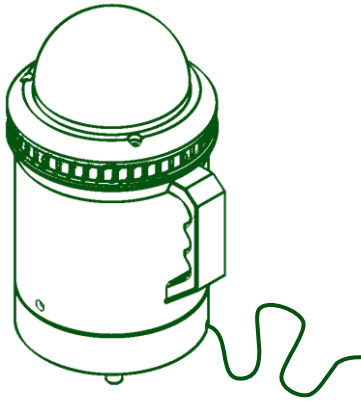
Allsky GO



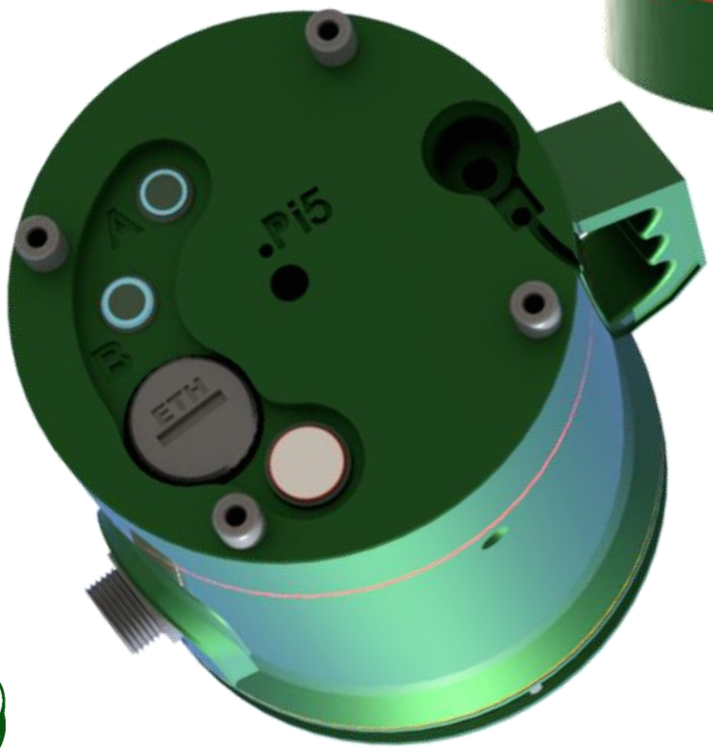
User Manual v1.0

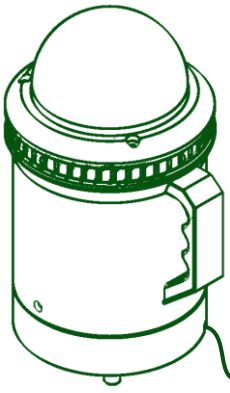
July 2025



Contents

3D Printed Design & Layout

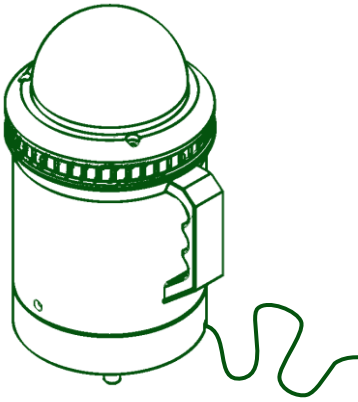




Introducing the Allsky *GO!* Timelapse Camera

Inspired by the Thomas Jacquin concept, Allsky Go! is the latest innovation in all-sky camera technology, engineered for seamless use both off-grid and at home. With smart features, sleek portability, and robust casing, this camera is built to capture the night sky wherever your curiosity takes you.

True Wireless & Portable Operation



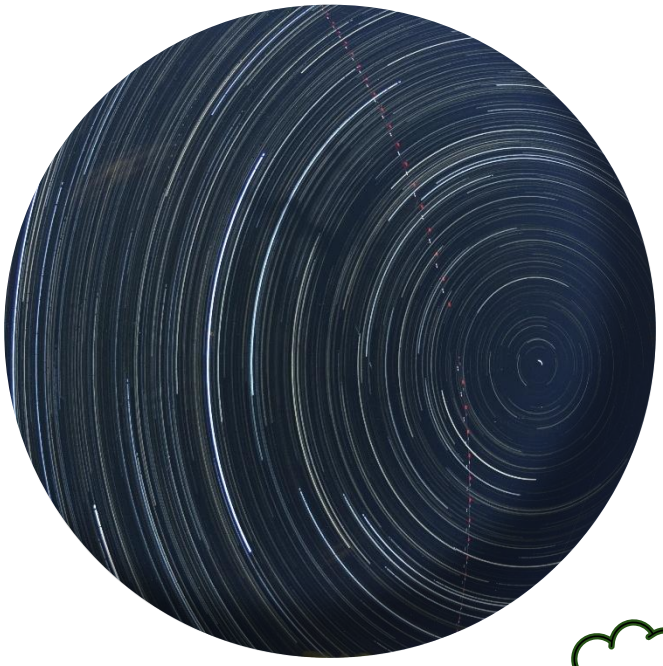
🌌 Allsky Go!

Pursuit of Dark Skies

Whether you are camping under remote starlit skies, exploring new destinations, or gazing from your own backyard, Allsky Go! is your cosmic companion—ready to reveal the magic of the night wherever you roam. Discover the stars like never before with a compact, smart, and rugged system built for travel and exploration.

Your Portal to the Night Sky

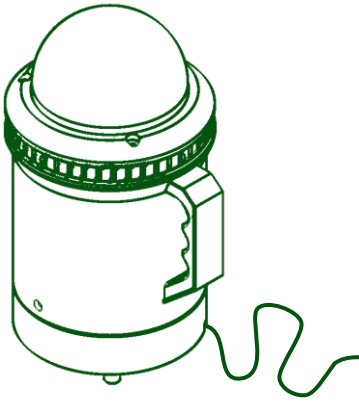
- 🏕️ **Camping Expeditions**
- 🌩️ **Storm Chasing Adventures**
- 🛩️ **Plane Spotting Missions**
- 🌠 **Dark-Sky Photography**
- 🏡 **Backyard Observatories**



Scope of Development

The core mission behind Allsky Go!

- 📷 **Core System**
  - Standard Allsky setup
  - Open-source software + scripts
  - PI HQ & ZWO Compatible
- ✈ **Mobility & Independence**
  - Fully portable design
  - 12-hour autonomy
  - Travel Safe Battery, rechargeable via USB.
  - Off-grid capable
- 🌀 **Environmental Awareness**
  - Time synchronization
  - GPS for geolocation
  - External Humidity and temperature sensors
- 🔌 **Power & Connectivity**
  - Multiple power options: USB, POE, Power bank
  - WLAN & LAN support for flexibility



Features & Layout

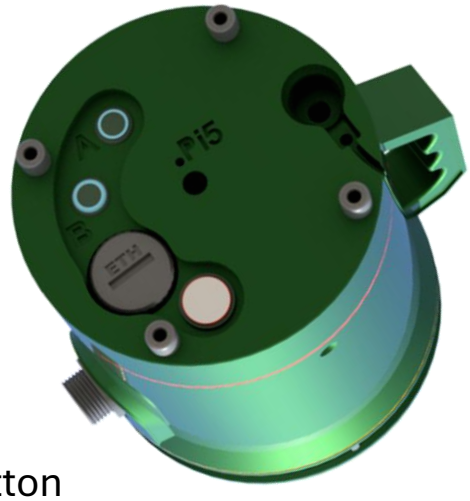
Version 2

Same V2 Dome, Camera & Seals Assy

NEW

New Portable Tub Design

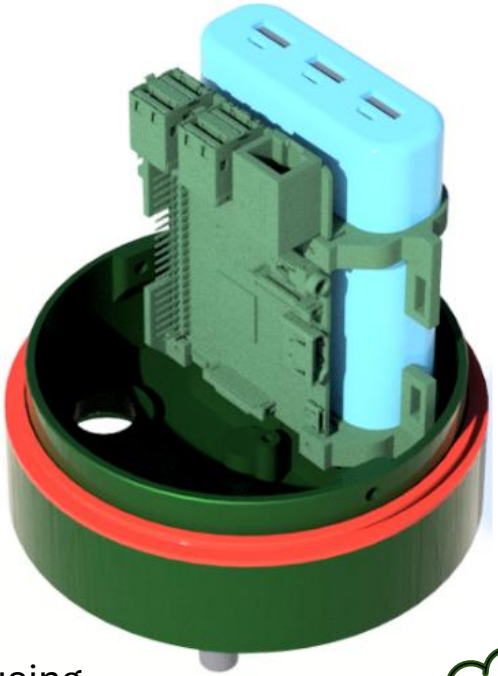
- Carrying Handle
- Waterproof USB-C Charging



NEW

Smart Base

- Power Button
- Ethernet/POE Port
- 2 Customizable Function Buttons
- Reset Hole (Pi5)
- Standard ¼-20 Tripod Thread Insert
- 3.5mm Jack Port for External Sensor

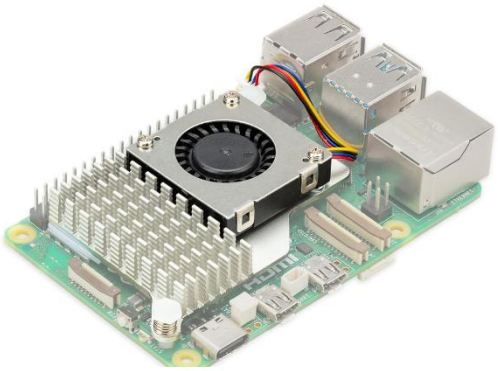


NEW

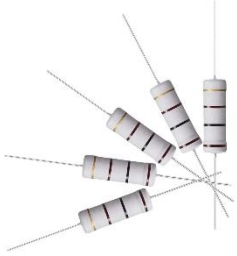
Electronics

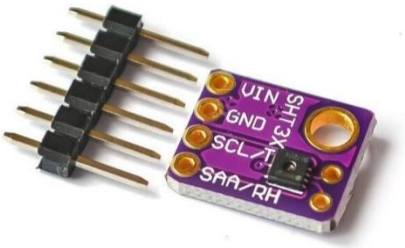
- Electronics Housing
- Raspberry/Power bank Cradle

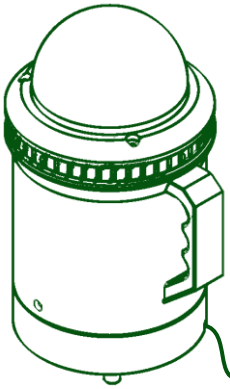
Key Hardware Components

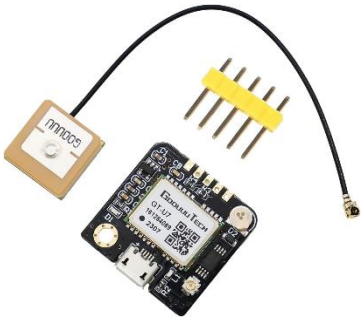


- Raspberry Pi 5
- 20.000mah power bank
- Ventilated 3.5in Dome.
- ZWO/PI HQ image sensors with CS Lens
- Battery isolator switch
- Programmable Buttons for Custom Functions
- RTC Time Keeping
- Acoustic Piezo Buzzer
- Ethernet Port
- GPS Receiver (optional)
- Humidity and temperature sensor (optional)
- Dew Heater (optional)







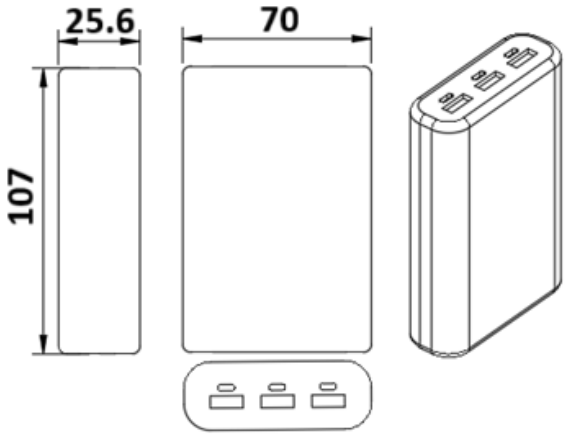


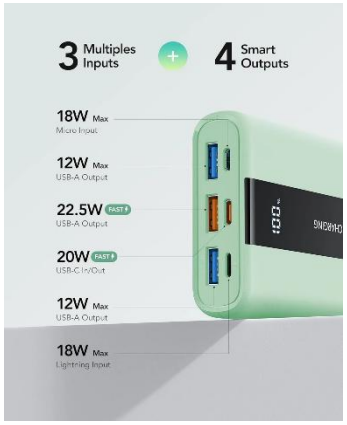
Power bank

Solution built around VRURC 20.000mah Power bank.

Available to purchase in EU and NA for around $30

(Amazon.it | Amazon.co.uk | Amazon.com)



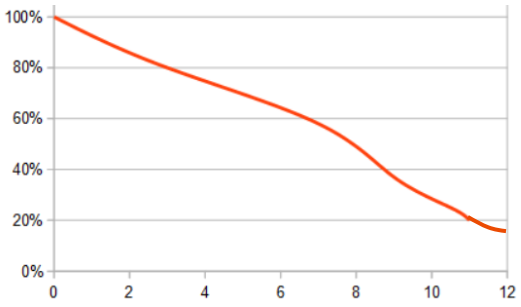


Raspberry Recommend 25W Supply to Pi5 to avoid throttling of USB output. The 22.5W 20000mah capacity is sufficient with the Raspberry PI HQ Set-up. The power bank also accepts charging and discharging on the same USB-C Port.

Autonomy

Measured Autonomy exceeds 12hrs continuous use on a single charge. Battery recharges within 8hrs using fast charging port.

*(*Dew Heating, or ZWO Camera my effect total Autonomy).*



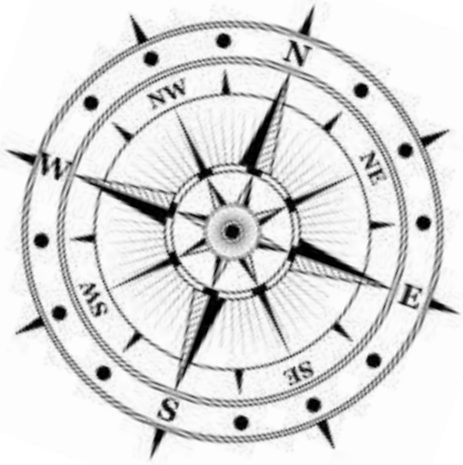
Measured Discharge over time

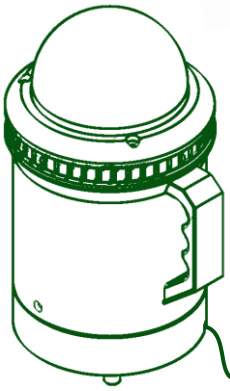
System Set-up

The goal of Allsky Go! a one-button setup, just switch it on and let it do the rest.

Thanks to its **integrated RTC Battery** & **GPS receiver (GT-U7)**, it can determine your time and location, updating the coordinates overlay automatically without user input; GPS coordinates are also used to adjust the switch between day and night in the Allsky settings.json

The **temperature and humidity sensor (SHT31**) can also be programmed to activate secondary circuits or heating elements to add further protection against frost or dew.





Software & Scripts

The system runs on standard Allsky Software available from the Allsky Team Repository.

I share custom scripts for initial button and sensor integration through a specific Allsky Go GitHub site.

https://github.com/Chrise-2000/Allsky_Go/

- **Button Service**
  [Background service monitoring button press]
  - Short & Long Press Button Function
  - *WPS One-Press guest connection*.
  - *GenerateForDay (Allsky End of Night Sequence)*

- **Overlay Service**
  [Background Service updating Overlay & Allsky Data]
  - Coordinate extraction from GT-U7 GPS Module
  - Temperature & Humidity Extraction from SHT31 Sensor

- **Time Synchronization (RTC, GPS, NTP)**
- **Start-up and Shutdown Melodies**

Bill of Material (3D Printed)

Choice of PI HQ or ZWO Dome Assembly (Carryover V2)
Seals and Gaskets (TPU, Carryover V2)
AllskyGO - Tub with Handle
AllskyGO - Smart Base
AllskyGO - Upper Pi Cradle
AllskyGO - Lower Pi Cradle
AllskyGO - Ethernet Screw Cap
AllskyGO - Ethernet Screw Cap Seal (TPU)
AllskyGO - Feet (x4)
AllskyGO – Dome Travel Cover

Bill of Material (Non-Printed)

Raspberry & Camera

- Raspberry Pi5 - Amazon / Reichelt (DE)
- Active Cooling Module - Amazon / Reichelt (DE)
- Pi HQ Camera Module - Amazon / Reichelt
- Pi5 Camera Cable (Different to Pi4) - Amazon
- CS Lens 2.5 - 2.8mm / 150-180 degree FoV - AliExpress
- MicroSD Card

Electronics

- Power Bank 20.000mah - Amazon (VRURC Mini Power bank)
- GPS Module (GT-U7) - Amazon
- Piezoelectric BIOS Speaker - Amazon
- Momentary Push Button (M12 Thread, Stainless, 3v-5v) x 2 - Amazon
- Power Button (M16 Thread, Stainless, 3v-5v) - Amazon
- Humidity Sensor (SHT31) (Optional) - Amazon
- 100ohm Resistors Metal Oxide Film (Optional) - Amazon
- RTC Battery Pack - Amazon

Non-Printed Parts

- JMX 3.5Inch Dome - Amazon
- USBC-USBC Passthrough - Amazon
- RJ45-RJ45 Passthrough - Amazon
- USBC-USBC Cable with 90degree connector - Amazon
- 3.5mm Jack Port - Amazon
- Misc M2 and M3 Screws
- USB Cables (15-30cm)
  - Charge (USB-C to USB-C 90˚)
  - Power (USB-A to USB-C 90˚)
  - GPS (USB_A to Micro-USB)

Other Resources & Links

ChrisE | Printables.com – Printables Store

Allsky Go on GitHub - Custom Scrips for Allsky Go!

AllskyTeam · GitHub – Allsky Software Repository & Installation Guidelines