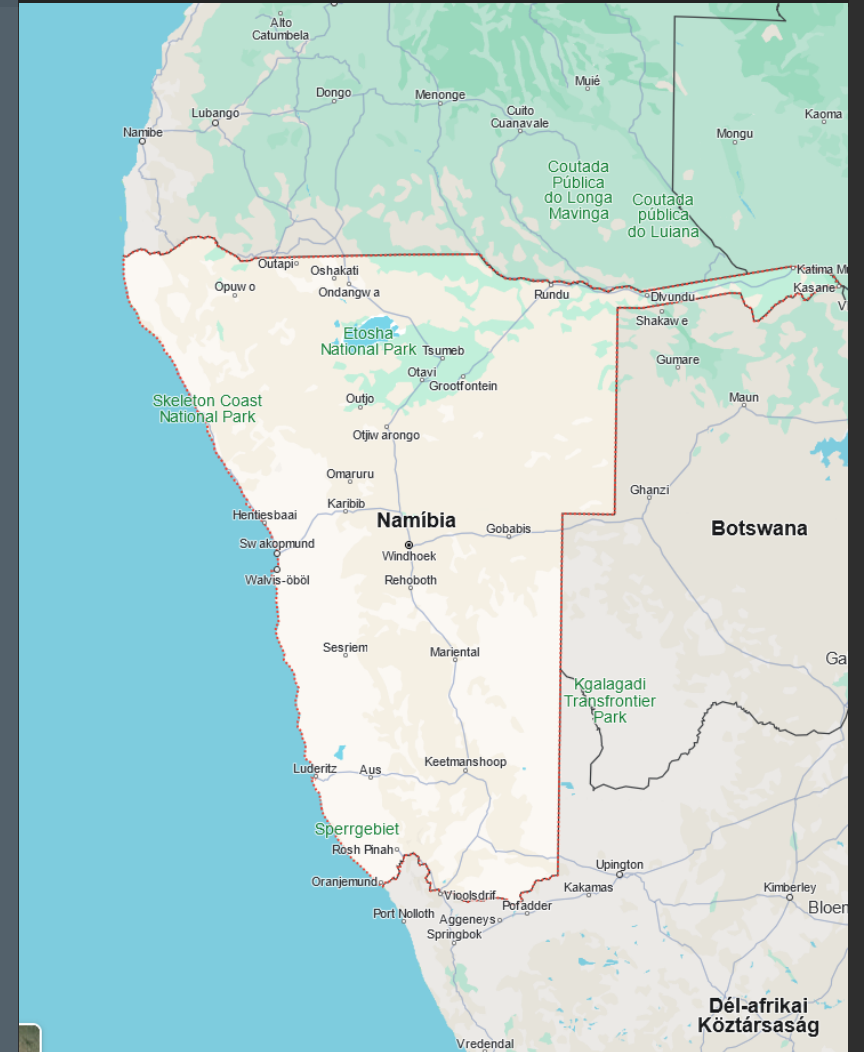




MAGYAR
ASZTROFOTÓSOK
EGYESÜLETE

SOUTHERN HEMISPHERE EXPEDITION

PÉTER FELTÓTI
2024 CEDIC





- PÉTER FELTÓTI – HUNGARY
- DOING ASTROPHOTOGRAPHY SINCE 2014
- VICE CHAIRMEN OF HUNGARIAN ASTROPHOTOGRAPHERS ASSOCIATION
- CURATOR OF „CONSTELLATIONS” NATIONAL ASTROPHOTO EXHIBITION
- 3RD PLACE ON APY GREENWICH 2023 (4 ADDITIONAL SHORTLIST)
- 3RD PLACE ON ASTROCAMERA 2023

- DEEP SKY PHOTOGRAPHER
- TYPICAL TRAVELER SEARCHING FOR THE BEST CONDITION
- 8” F/4 NEWTON TELESCOPE
- DSLR/CCD/CMOS



WHAT IS ASTROPHOTOGRAPHY?

ASTRONOMICAL OBSERVATION AIDED BY ELECTRONIC DEVICES?

A PARTLY ARTISTIC PARTLY SCIENTIFIC PHOTOGRAPHY?

A TECHNICAL SPORT WITH PLEASING RESULT?



ASTRONOMICAL PHOTOGRAPHY IS THE **MEASUREMENT** OF
THE PHYSICAL PROPERTIES OF THE UNIVERSE AROUND US,
WHERE INFORMATION IS TRANSFERRED BY **PHOTONS**



BEFORE WE MOVE TO THE TOPIC LET'S CONSIDER WHAT
ASTROPHOTOGRAPHY IS IN **MEASUREMENT** POINT OF VIEW



PHOTOGRAPHY AS MEASUREMENT CHALLENGE

- EXPOSITION – Measurement
- IMAGE PREPROCESSING – preparation of measurement data set
- IMAGE – Visualization of the processed measurement data



THE CHALLENGE COMES FROM:

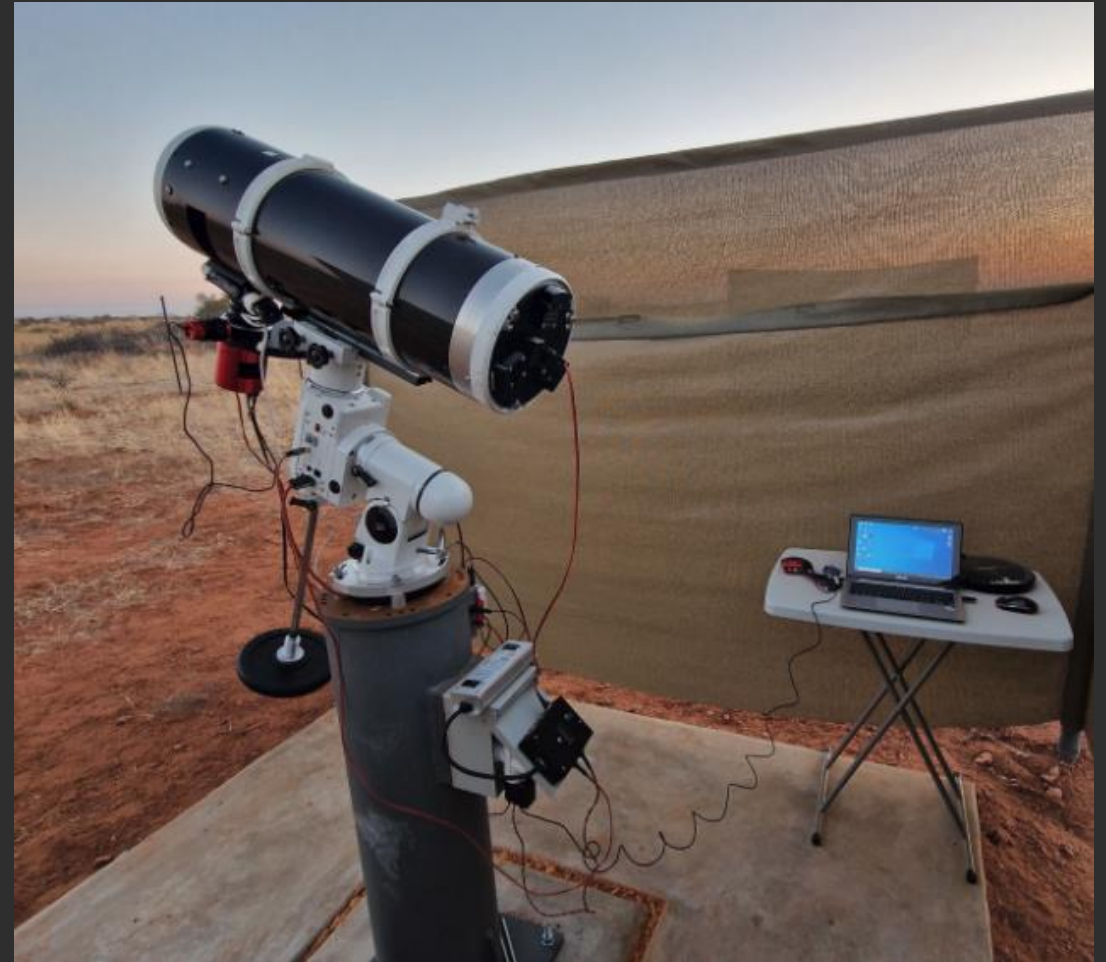
- LACK OF PHOTON
- LONG FOCAL LENGTH
- MOVING TARGET



IT IS CRUCIAL TO PAY ATTENTION TO **EVERY FACTOR**
INFLUENCING THE **MEASUREMENT RESULTS** AND ENSURE
THE **BEST POSSIBLE CONDITIONS** TO THE GREATEST
EXTENT POSSIBLE



EXPOSITION ITSELF IS
THE MEASUREMENT
OUR GOAL IS TO HAVE
THE FINEST AND BEST
EXPOSITIONS AS
POSSIBLE







THERE ARE **TECHNICAL** AND **ENVIRONMENTAL** FACTORS.
TECHNICAL FACTORS CAN BE ENSURED BY US,
ENVIRONMENTAL FACTORS CAN BE **ENSURED BY TRAVEL!**



FACTORS INFLUENCE THE MEASUREMENT RESULT

WEATHER – SUM OF INTEGRATION TIME

SEEING – RESOLUTION LIMIT

SKY BRIGHTNESS – SIGNAL TO NOISE RATIO

TEMPERATURE CONSTANCY – SENSOR TEMP. THERMAL EXPANSION OF OPTICAL DEVICES

WIND – GUIDING

TRANSPARENCY – SIGNAL TO NOISE RATIO

SKYGLOW – GRADIENT, SIGNAL TO NOISE RATIO, „NOISE”

COMFORT – CONCENTRATION AND FOCUS



WHERE TO GO?

Predictable, mostly clear weather



High peak, thinner atmosphere, no turbulence



Far from light polluted residential or industrial zone



Constant cold ambient temperature like around 0 degree



Not too windy place



Transparent clear atmosphere

not always

Far from the poles – let's go south



Available infrastructure for photography and relaxation



Exotic rarely photographed objects



Affordable



Reachable - Easy to travel





LET'S GO TO NAMIBIA



MAGYAR
ASZTROFOTÓSOK
EGYESÜLETE

ABOUT NAMIBIA

Capital

Windhoek

Coordinates

22°34'S 17°5'E

Area

825,615 km²

Population

2,7 million

Density

3,2/km²





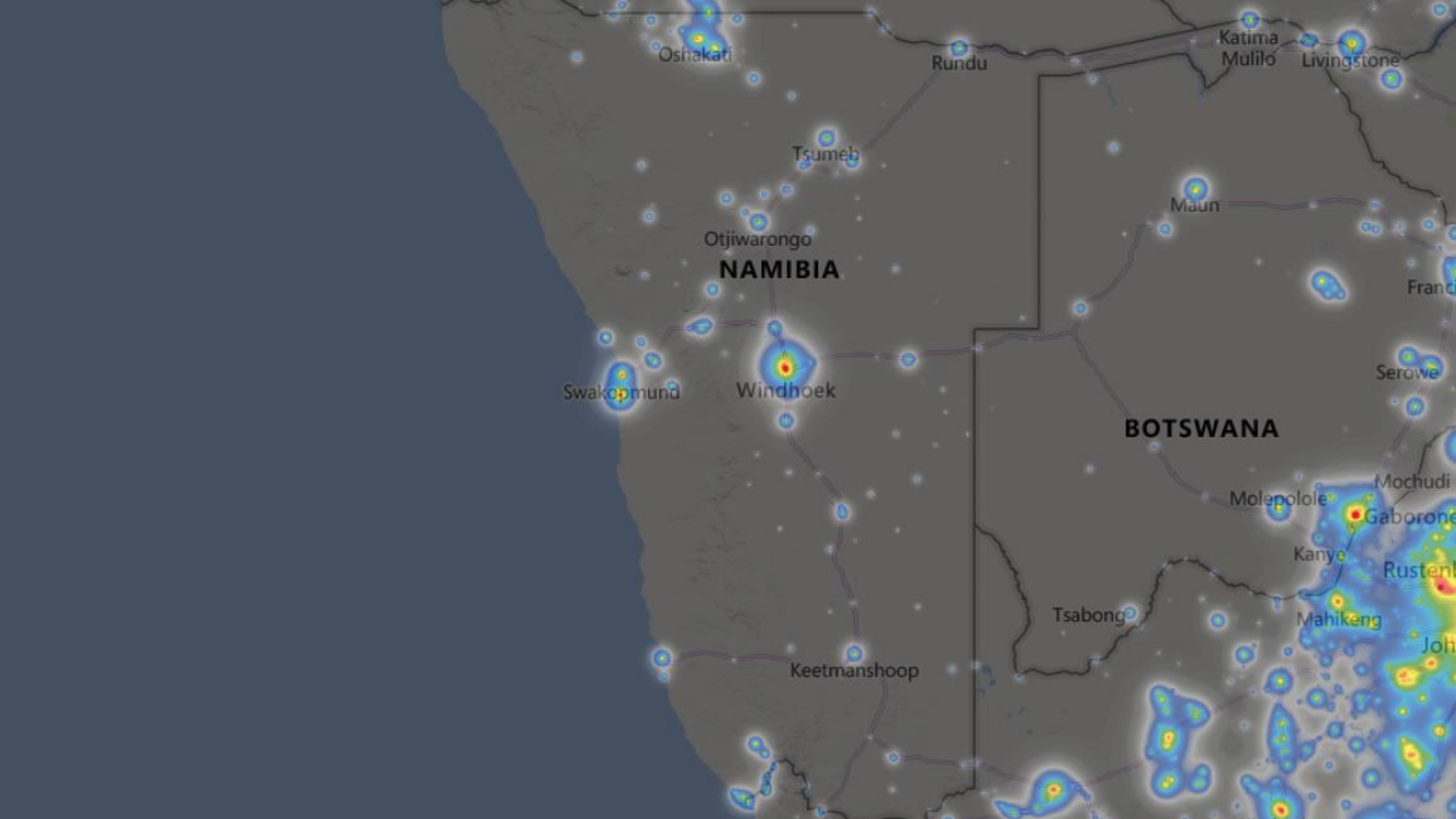
Form of government	Republic
Capitol	Windhoek
Official language	English
Other languages	Africans, German, Oshivambo, Herero, Nama
History	Former German colony, approximately 6% of the population is of European descent
GDP	per capita 5800 USD
Economy	Mining, livestock farming, trade, tourism. Strongly depends on South-Africa
Safety	No Risk



WHEN TO GO?

	Astrodark length	Cloudy/ 2 weeks	Clear/ 2 weeks	Seeing	Temp. Day (C)	Temp. night (C)	Season		Dangerous animals
April	9 h	4-5	9-10	good	27-30	8-10	end of rainy season	late fall	can be encountered
May	9,5 h	2-4	10-12	mostly good	22-25	3-6	dry season	winter	rearily
June	10 h	0-2	12-14	changable	20-22	0-5			no
July	9,5 h	0-2	12-14	rather bad	20-22	0-5			no

The impact of El Niño and climate change can disrupt the above-mentioned trends





ASTRO FARMS AND INFRASTRUCTURE

- THERE ARE FARMS DEDICATED TO ASTROPHOTOGRAPHY
- ACCOMMODATION AND CATERING
- TRANSFER
- PILONS/WINDSHIELDS
- RENTABLE SCOPES, MOUNTS, EYE PIECES



MAGYAR
ASZTROFOTÓSOK
EGYESÜLETE

HAKOS GUEST FARM

KHOMAS HIGHLAND – C26 NEXT TO GAMBSBERG PASS

1700 METER ABOVE SEE LEVEL

[HTTPS://HAKOS-ASTROFARM.COM](https://hakos-astrofarm.com)





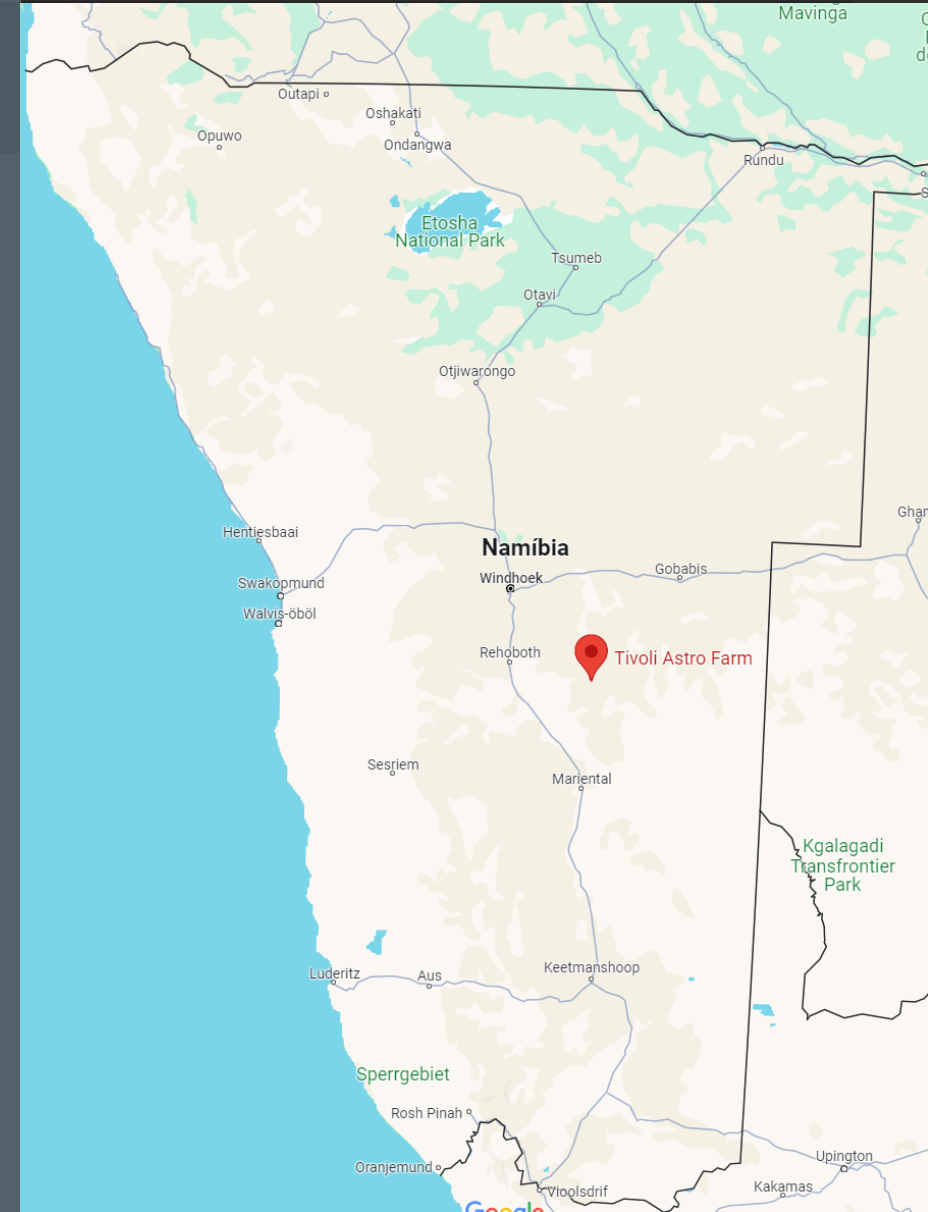
MAGYAR
ASZTROFOTÓSOK
EGYESÜLETE

TIVOLI ASTRO FARM

KHOMAS HIGHLAND – C15 NEXT

1335 METER ABOVE SEE LEVEL

[HTTPS://WWW.TIVOLI-ASTROFARM.DE/EN](https://www.tivoli-astrofarm.de/en)





MAGYAR
ASZTROFOTÓSOK
EGYESÜLETE

KIRIPOTIB ASTRO FARM

KHOMAS HIGHLAND – C15, D1448

1370 METER ABOVE SEE LEVEL

[HTTPS://WWW.ASTRO-NAMIBIA.COM/](https://www.astro-namibia.com/)





MAGYAR
ASZTROFOTÓSOK
EGYESÜLETE

ROOISAND DESERT RANCH

DESERT AREA – C26 NEXT TO KHOMAS HIGHLAND

1150METER ABOVE SEE LEVEL

[HTTPS://ROOISAND.COM/EN/](https://rooisand.com/en/)





MAGYAR
ASZTROFOTÓSOK
EGYESÜLETE

FARM ISABIS

KHOMAS HIGHLAND – NEAR HAKOS, C26/C24

1700 METER ABOVE SEE LEVEL

NO WEBSITE YET





TRAVEL TO NAMIBIA

- CHOOSE DATE BY MOON PHASE (APRIL, MAY, JUNE IS THE OPTIMAL)
- CHECK AIRLINES (ETHIOPIAN AIRLINE, BRITISH AIRWAYS)
- BOOK DATE AT FARM
- ORDER TRANSPORT OR RENT A CAR (CAR RENTAL AT THE AIRPORT)
- NO NEED TO VACCINATE (EXCEPT ETOSHA NATIONAL PARK - MALARIA)
- VISA IS NEEDED BUT CAN BE ARRANGED AT THE AIRPORT
- ATA CARNET IS OFFICIALLY REQUIRED BECAUSE OF THE EQUIPMENT*
- LEAVING THE OTA, MOUNT AND OTHER DEVICES AT THE FARM IS POSSIBLE AT HAKOS AND ISABIS. IT WORTHS IF YOU PLAN TO GO OFTEN, BUT CAN BE DIFFICULT ARRANGE IT WITH ATA CARNET!



FLIGHT TO NAMIBIA

- FROM EUROPE IT'S USUALLY 1 OR 2 STOPS (15-20 HOURS)
 - BRITISH AIRWAYS
 - ETHIOPIAN AIRLINES
- BAGGAGE OPTIONS MATTER. 2X23 KG CHECKED BAGGAGE + 1 CARRY ON BAGGAGE
- NO MATTER WHAT FARM, THE ARRIVAL IS **HOSEA KUTAKO INTERNATIONAL AIRPORT**
- **PREPARE FOR CUSTOM INSPECTION**
- **IMMIGRATION OFFICE OFFBOARDING CAN TAKE 2+ HOURS**
- **WITHROW CASH AT THE AIRPORT – CARD TERMINAL IS NOT COMMON**
- **AT THE AIRPORT BUY A PREPAID SIM – IT'S CHEAP**



Monte Christo

Frauenstein

Othase

Oupembamewa

Otjohase

Ongos

Hosea Kutako
International Airport

Ondekaremba
Kleinsiedlung

Detmont

EISENHEIM

Belle Rode

Daan Viljoen
Game Reserve

WANAHEDA

Herboth

Hoffnung

Kappfarm

OTJOMUISE

KHOMASDAL

Windhoek

WINDHOEK
CENTRAL

SOUTHERN
INDUSTRIAL AREA

Voigtland

Korlia

Paulinenhof

Grasland

Morester

OLYMPIA

Hohewarte

Hohenau

Koanus

Auas Born

Behr

Google

Rétegek



LOS ANGELES INTERNATIONAL AIRPORT

welcome to LAX

No 1 Telecarro
to Inark

NO 1578

NO 1578



CASHE

- OFFICIAL CURRENCY IS NAMIBIAN DOLLAR (NAD)
- SOUTH-AFRICAN RAND (ZAR) IS ALSO ACCEPTED EVERYWHERE (1:1 EXCHANGE RATE)
- ZAR IS AVAILABLE IN REVOLUT
- $1\text{NAD} = 0.05\text{ EUR}$
- $1\text{ EUR} = 20\text{ NAD}$
- PRICES ARE LOWER THEN IN EUROPE



- TO CALL A TAXI OR THE HOST – AWEH GIG IS MORE THAN ENOUGH
- 4G IN BIGGER TOWNS
- ON THE COUNTRY SIDE THERE IS NO COVERAGE AT ALL

The screenshot shows the MTC website's 'Aweh Products' page. The navigation bar includes 'PROMOTIONS', 'PRE-PAID', 'CONTRACTS', 'SHOP', 'INTERNET', and 'SUPPORT'. The main content area displays four product cards:

Product	Price (NAD)	Validity
Aweh Super	53.00	Excl. 15% VAT. Valid for 7 days
Aweh Prime	32.00	Excl. 15% VAT. Valid for 7 days
Aweh Gig	32.00	Excl. 15% VAT. Valid for 7 days
Aweh Go	13.00	Excl. 15% VAT. Valid for 7 days

The 'Aweh Gig' product card is circled in red. Its details are: 100 mins / Free, 700 SMS / Free, 1 GB Data / Free, 500MB Social Media / Free.



SHOPPING

- SUPERMARKETS IN WINDHOEK AND REHOBOT
- PREFER WINDHOEK, REHOBOT IS A POOR TOWN





DRIVING IN NAMIBIA

- FARMS OFFER TRANSPORT FROM AND TO AIRPORT
- CAR RENTAL IS ALSO AN OPTION. ADVISED: **TOYOTA HILUX OR SIMILAR**
- **LEFT SIDE TRAFFIC!**
- **GRAVEL ROAD!**







A metal gate stands closed across a dirt road in a dry, open landscape. The gate is made of metal pipes and has several strands of barbed wire attached to it. A white sign is mounted on the gate. The ground is reddish-brown and cracked, with sparse, dry vegetation. In the background, there are more trees and a clear sky.

ISABIS
Homestead ▲
◀ Waterfall



PACKING

- PACKING IS CRUCIAL
- TAKE CARE OF SIZE, WEIGHT AND SAFETY
- CHECK IN BAGGAGE WON'T BE HANDLE WITH CARE
- STUFF EVERYTHING WITH CLOTHES, PROTECTIVE MATERIAL
- 3D PRINT BOXES, HOLDERS
- CAMERAS, OPTICS BETTER BE IN CARRY-ON BAGGAGE
- TRY CARRY ON OTA: 200/800 FITS INTO ON-BOARD BAGGAGE HOLDER
- THERE'S NO RULE, YOU MUST FIGURE OUT YOUR OWN SOLUTION
- SPECIFIC EQUIPMENT REQUIRES SPECIFIC SOLUTION
- PACKING IS CHALLENGING









CHOOSE OBJECT AND SCHEDULE PLAN



APT DARK CLOCK
APPLICATION



STELLARIUM



BLACKWATERSKIES.CO.UK



SCHEDULE PLAN IN EXCEL



DAY-TIME ACTIVITY

- ETOSHA NATIONAL PARK: THIS VAST NATIONAL PARK IS KNOWN FOR ITS RICH WILDLIFE, INCLUDING LARGE MAMMALS SUCH AS ELEPHANTS AND GIRAFFES. THE SAVANNAH OF NAMIBIA IS AN UNMISSABLE EXPERIENCE HERE.
- NAMIB DESERT: HOME TO THE WORLD'S TALLEST SAND DUNE, DUNE 7, THE SOSSUSVLEI AREA WITH DEAD VLEI AND BIG DADDY DUNE (300M)
- WINDHOEK: THE CAPITAL CITY OF THE COUNTRY, THE GIBEON METEORITES
- GAMSBERG – STRANGE CUT OFF MOUNTAIN
- SPITZKOPPE: A STUNNING GROUP OF GRANITE PEAKS, OFTEN REFERRED TO AS THE "MATTERHORN OF NAMIBIA" DUE TO ITS UNIQUE GRANITE FORMATIONS.
- FISH RIVER CANYON: AFRICA'S LARGEST CANYON, OFFERING FANTASTIC PANORAMAS AND HIKING TRAILS.
- TWYFELFONTEIN: A UNESCO WORLD HERITAGE SITE FEATURING IMPORTANT ARCHAEOLOGICAL PETROGLYPHS AND ROCK ENGRAVINGS IN THE SURROUNDING AREA.
- KALAHARI DESERT
- H.E.S.S SITE (IF YOU ARE GUEST OF FAM ISABIS)
- GAME DRIVE
- DELICIOUS ANTELOPE STAKE



Alternatives can be
USA – New Mexico
Chile
Australia
Morocco
Hawaii
Canary Islands