

# Montreal Camera Club

# Introduction to Astrophotography

By Bashar Dahabra

30th Oct 2017



© Bashar Dahabra Astrophotography 2013

# Interesting Background Story

- Long Passionate Astronomer
- Astrophotography group on Meetup
- Introduced to Montreal Camera Club



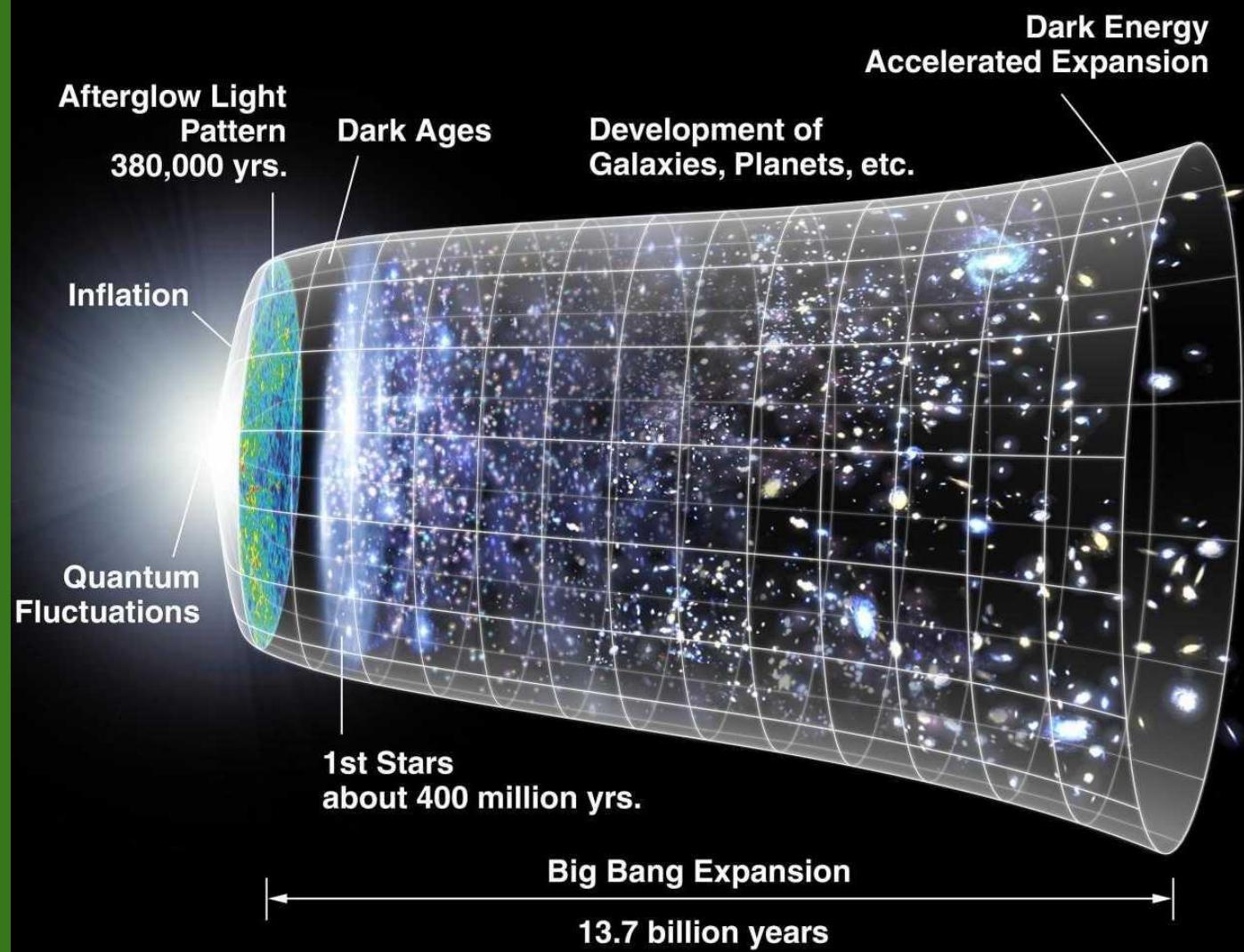
# Astronomy and what we see !

What are Galaxies

What are the stars

What are planets

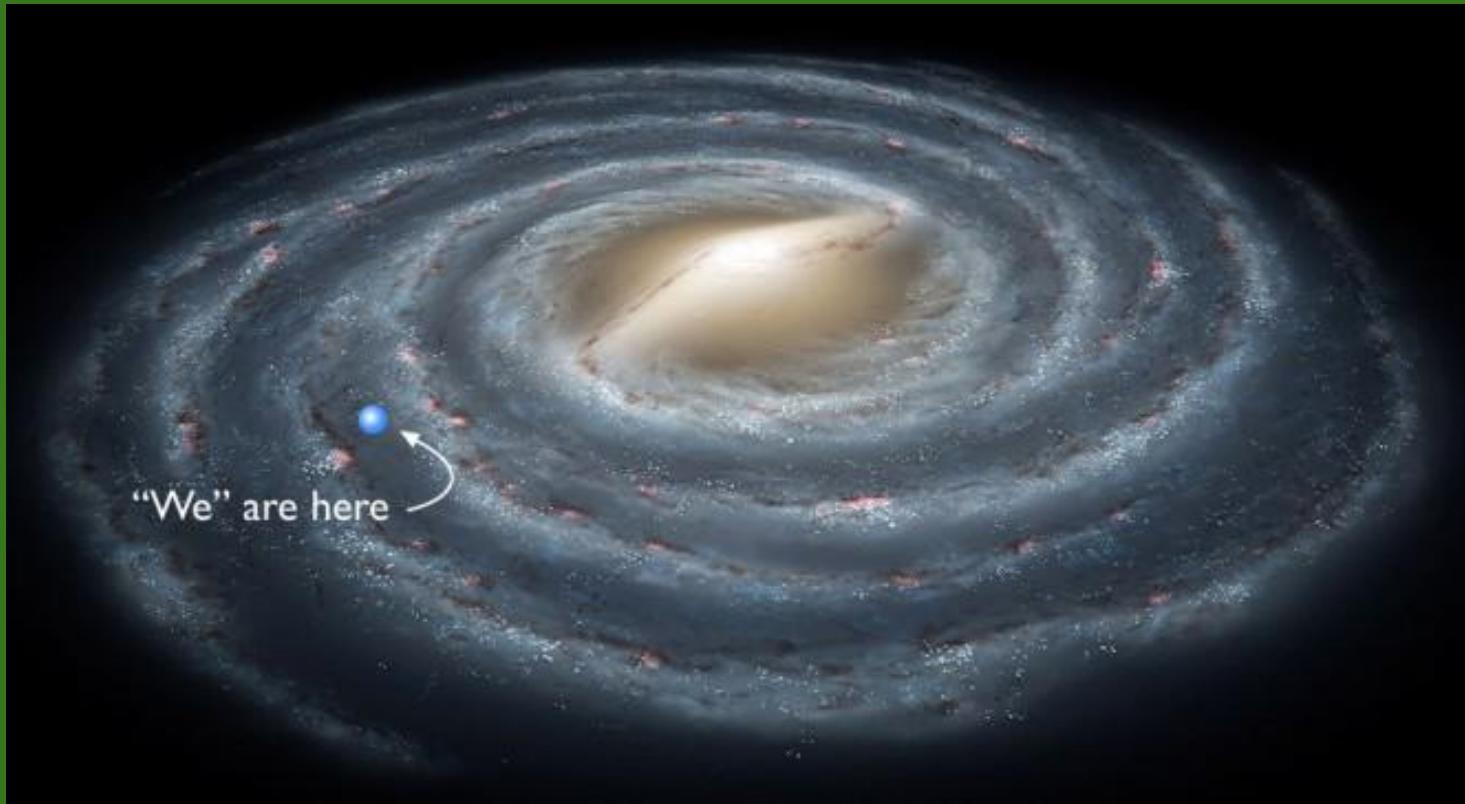
Big Bang

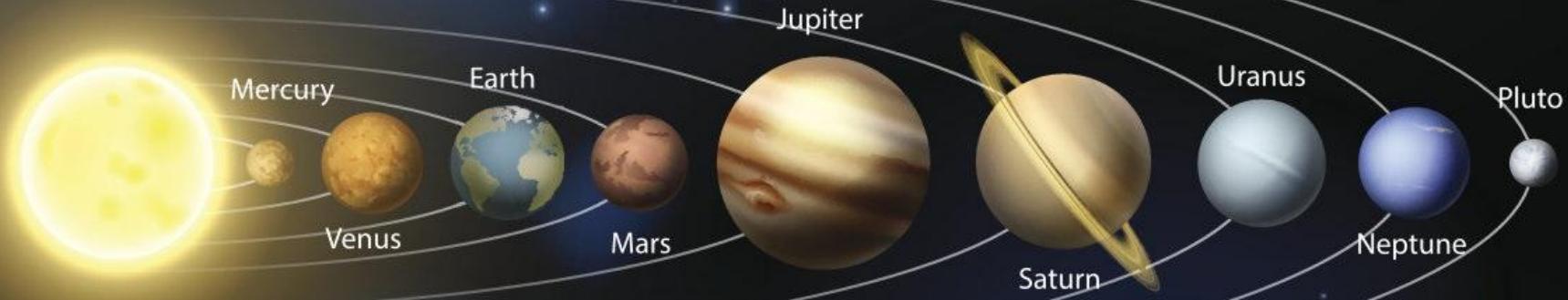


Billions of Galaxies



# Our Galaxy ! The Milky Way





# Many fields of Astrophotography

Stars

Planets and Moon

MilkyWay

Deep sky Objects

Iridium Flares

Aurora

Stars

River  
Rouge  
Nikon D750  
F4 15mm  
ISO 1250



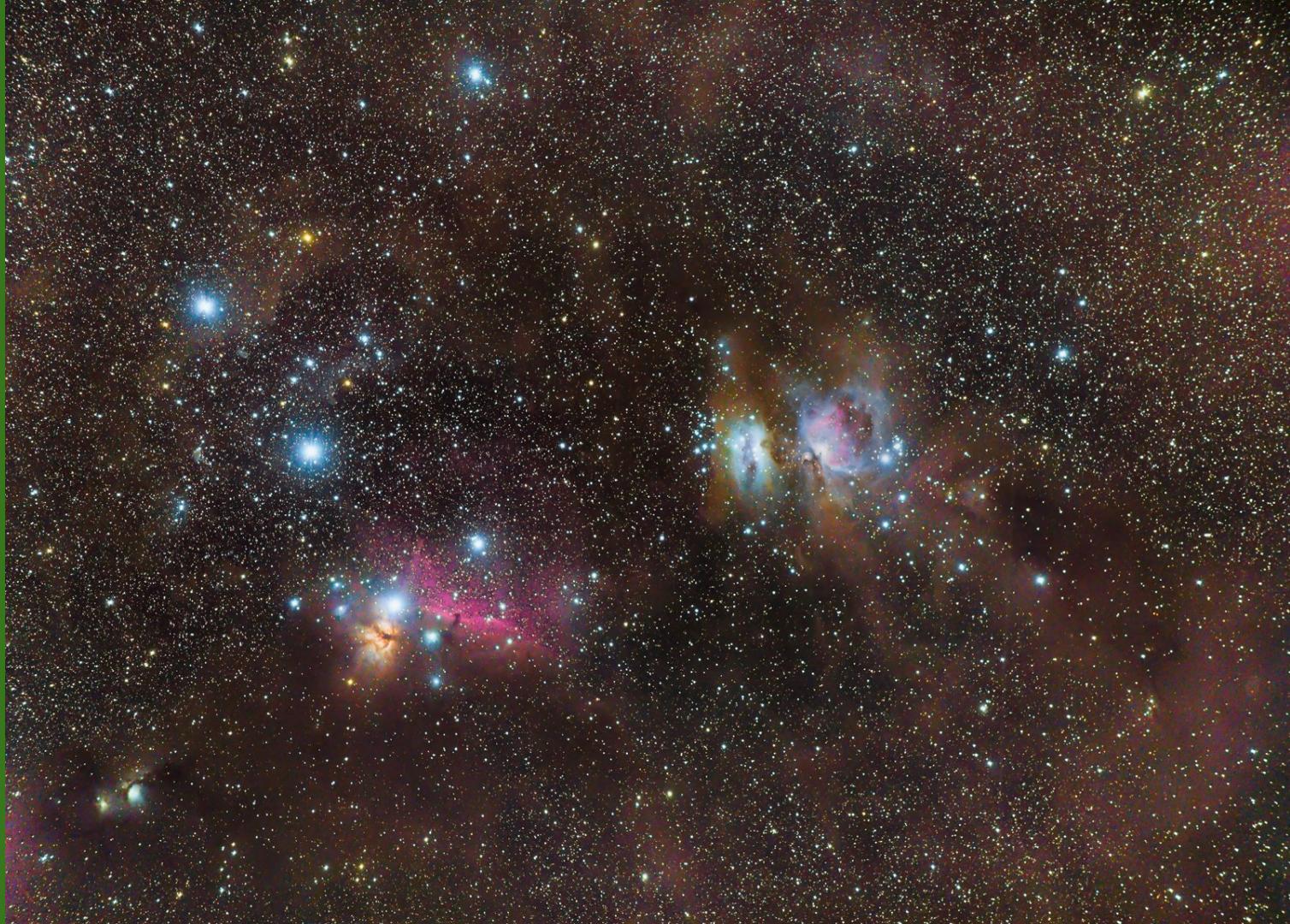
Moon  
Nikon D5500  
Celestron 14  
Inch



Milky Way  
Nikon D800  
24mm F2.8 20  
Sec



Deep Sy Object  
Constellation Orion  
Nikon D610  
70-200 mm @ 200  
mm F4  
St Zenon



Iridium  
Flare



# Aurora

SO 3200 | f/2.8 |  
15mm | 8sec.  
D750 | Tamron  
15-30mm  
Arundel QC



# Equipment

DSLR

Lens  
Tripod  
Cable Release  
Timer

Telescope (Optional)  
Celestron

Equatorial Mount (Optional)  
Star-Watcher



# Basic DSLR Kit

DSLR

Headlamp

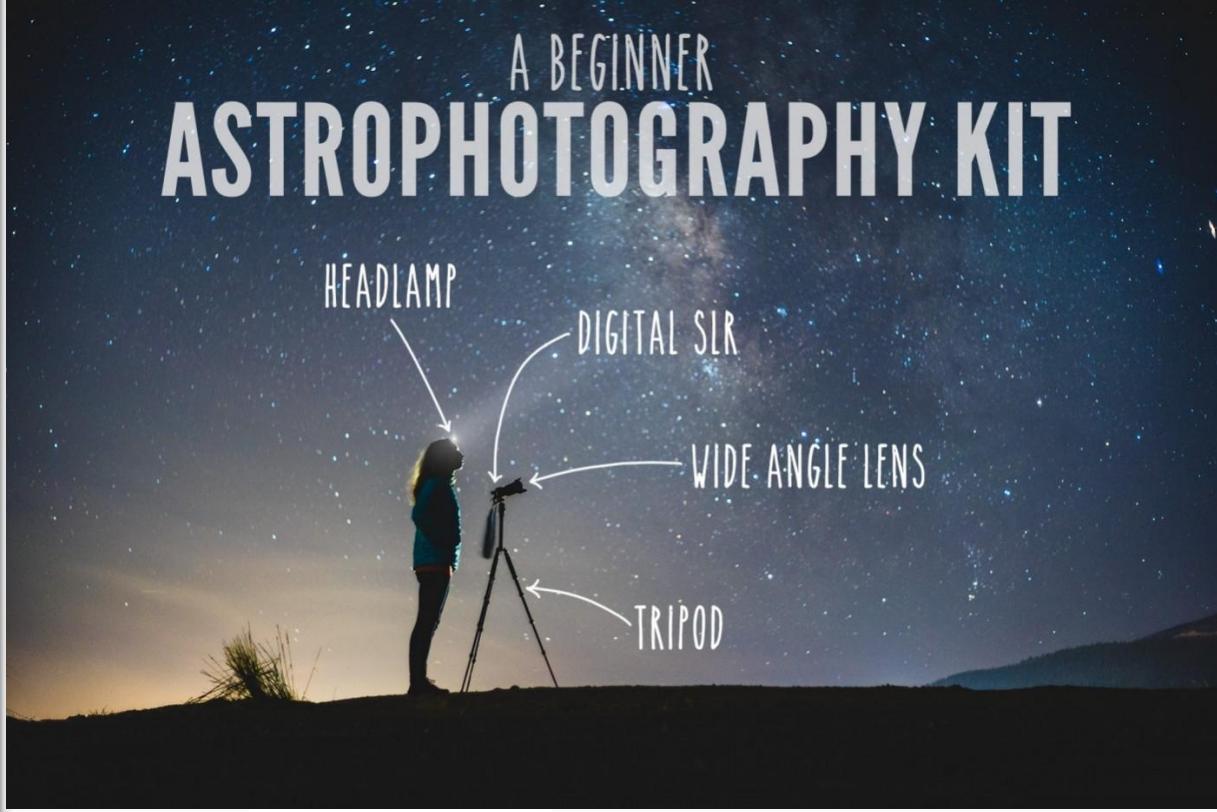
Wide Angle Lens

Tripod

Cable Release

Timer ( Built In Timer )

Star Tracker / Equatorial Mount



# Joe Angel's Photos

in iOS Photos



Like

Comment

Tag Photo

Options

Send in Messenger



Joe Angel

July 13, 2015 · Edited · 11

...

Here is the SkyShed Pod observatory I have installed last week. It will house my Celestron CPC 9.25 telescope and an old 6-inch Newtonian. A 7-inch pier affixed to a 12-foot deep, 14-inch diameter piling isolated from the floor sits at the centre. I shall start moving equipment as soon as the rubberized caulking has cured fully (2-3 weeks). I guess everything will be functional by late August.

The site is at 51° 59.377' N, 106° 43.631' W.



Like



Comment



Frank Angel, Azza AG and 9 others

1 Share

10 Comments

[View 4 more comments](#)



Frank Angel Turned out to be a great job thumbs up

Like · Reply · 1 · July 13, 2015 at 8:29pm



Laila Barakat This is turning out to be a wonderful job

Enjoy it when fully finished

Like · Reply · 1 · July 13, 2015 at 9:12pm

↳ Raghad Gammo replied · 1 Reply



Rola Chehab You're so lucky. It is a great thing.  
Enjov it 😊



Alice Burgess



Nikon D5500  
Celestron 14 Inch



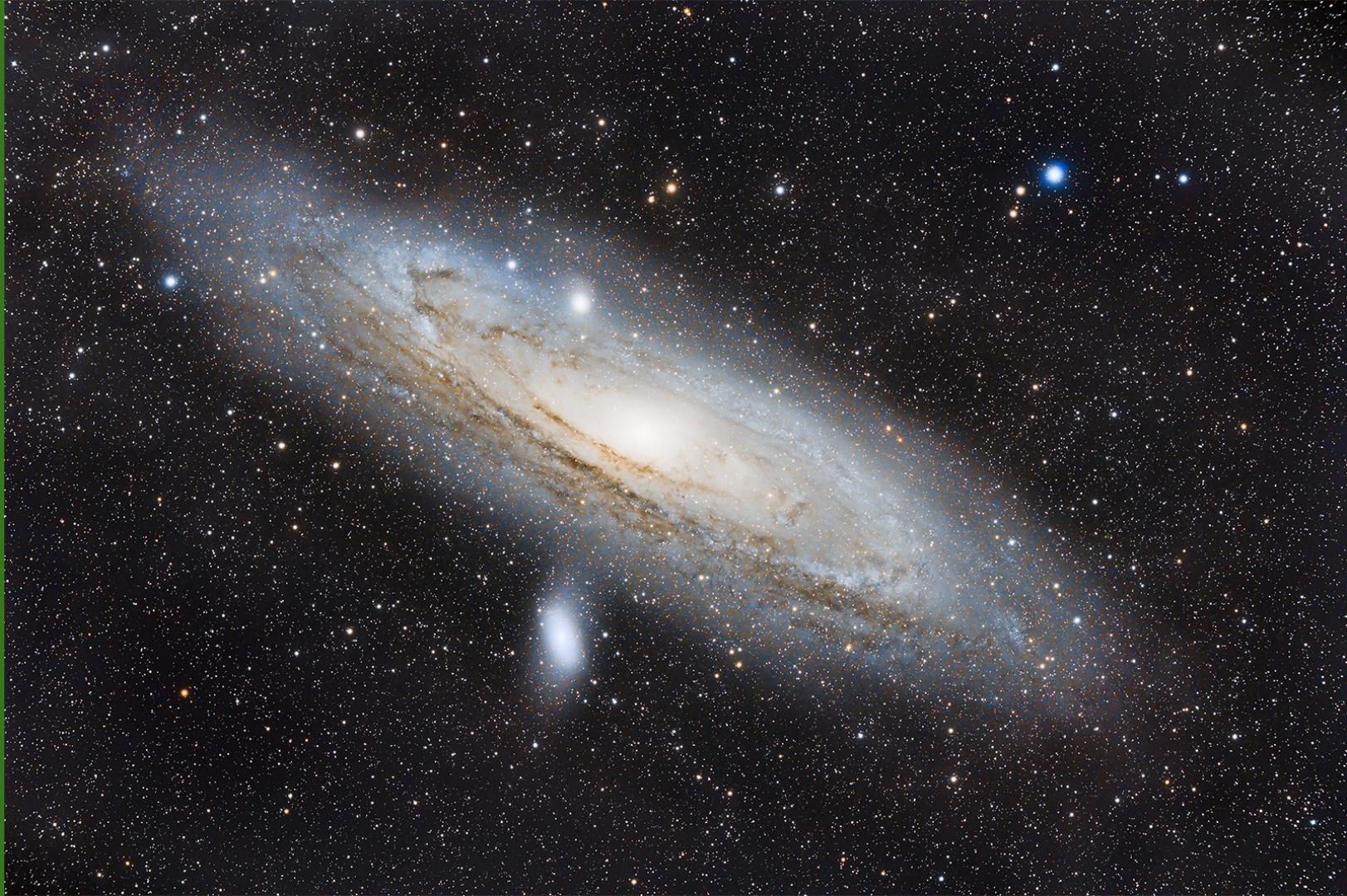
Espirit 100 ED  
Telescope

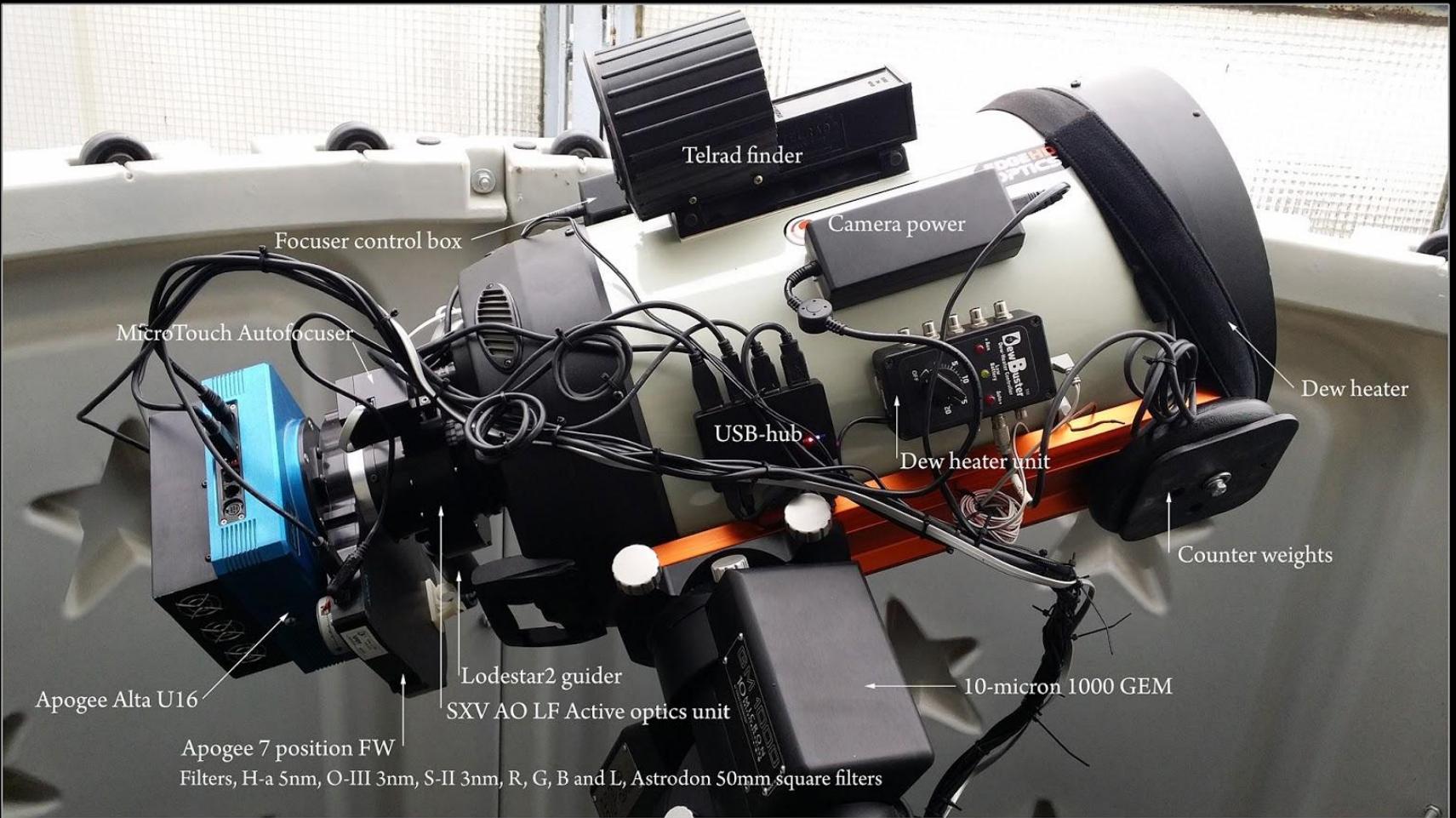


Andromeda  
Galaxy

2.5 Million  
Light Years

Nikon D610  
Espirit 100  
St Zenon





My new imaging setup

Messier 81 & 82  
Galaxies

12 Million Light Years

Constellation Ursa  
Major



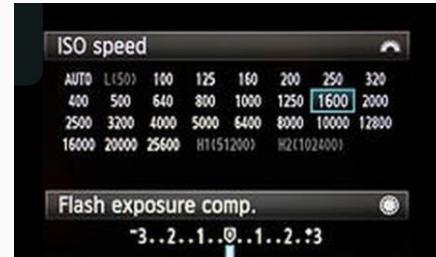
Messier 81 & 82

Processing, J-P Metsavainio  
Telescope operations, David lane

# Camera Settings

## Cameras Settings Summary

- Set Program Mode to Manual Exposure.
- Set Drive to Single Shot.
- Set ISO to 400, 800 or 1,600
- Turn Image Review OFF.
- Turn Auto-focus Off.
- Set White Balance to Daylight.
- Set File Format to Raw (or Raw + JPEG).



# ISO Setting

ISO 200

ISO 400

ISO 800

ISO 1600

ISO 3200

ISO 6400



ISO 1600

ISO 3200

ISO 6400

ISO 12800

ISO 25600

ISO 51200

ISO 102400

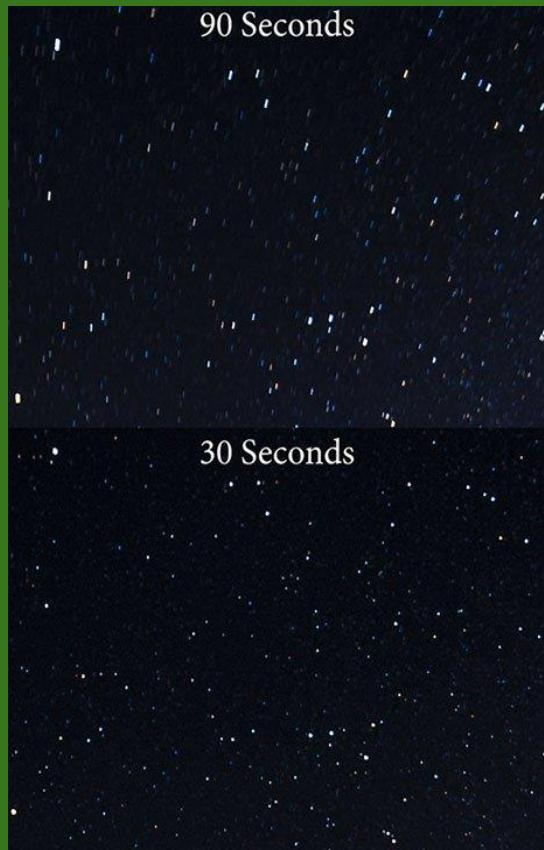
ISO 204800

ISO 409600



# 500 Exposure Rule

500 Divided By the Focal Length of Your Lens = The Longest Exposure (in Seconds) Before Stars Start to “Trail”



Focal Length	Seconds Before Stars Blur		
	Full Frame	Nikon 1.5 Crop	Canon 1.6 Crop
10	n/a	33	31
14	36	24	22
16	31	21	20
20	25	17	16
24	21	14	13
28	18	12	11
35	14	10	9
50	10	7	6
70	7	5	4
85	6	4	4

## Equatorial Mounts

Star Watcher ( 500 US )

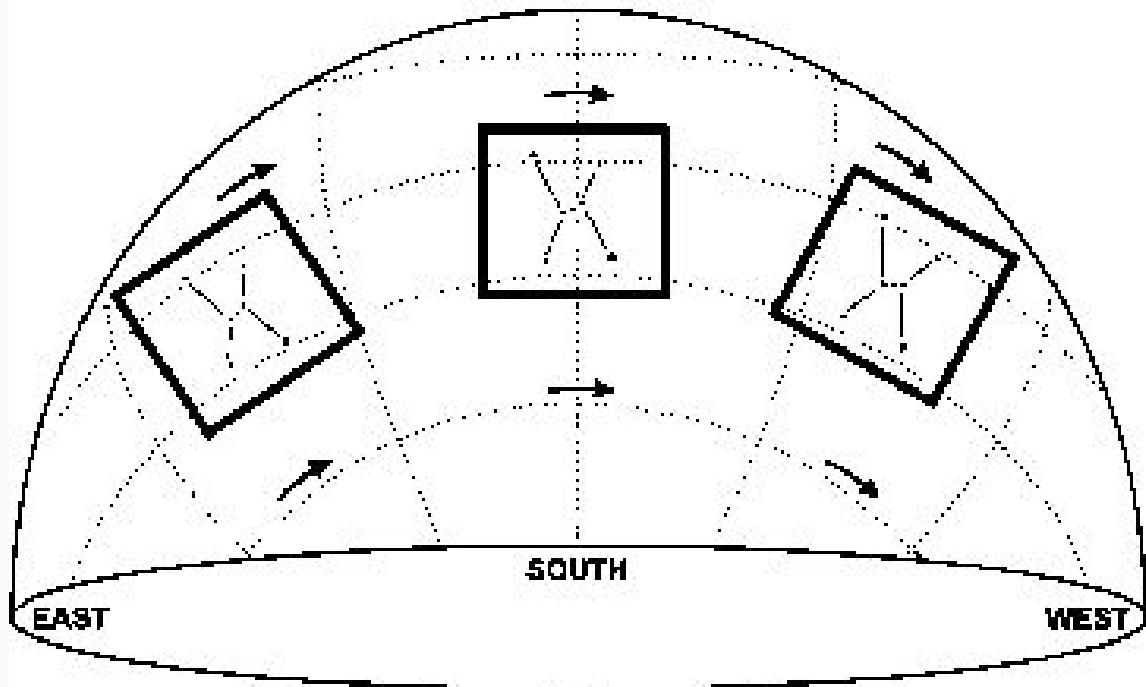
Vixen Polar Mount ( 600 US )

Orion Eq 1M ( 300 US )



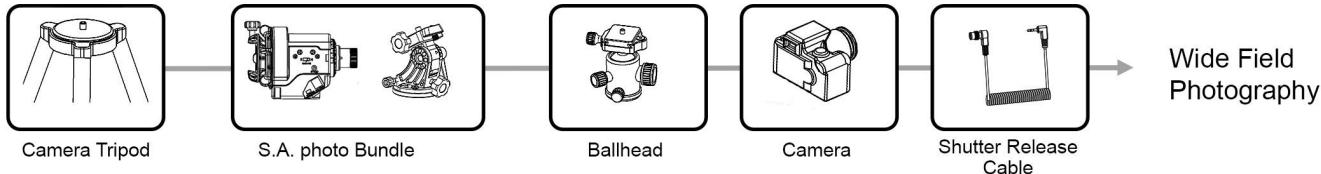
# Why Track

TRACKING WITH EQUATORIAL MOUNT  
Telescope rotates with image; long exposures work as intended

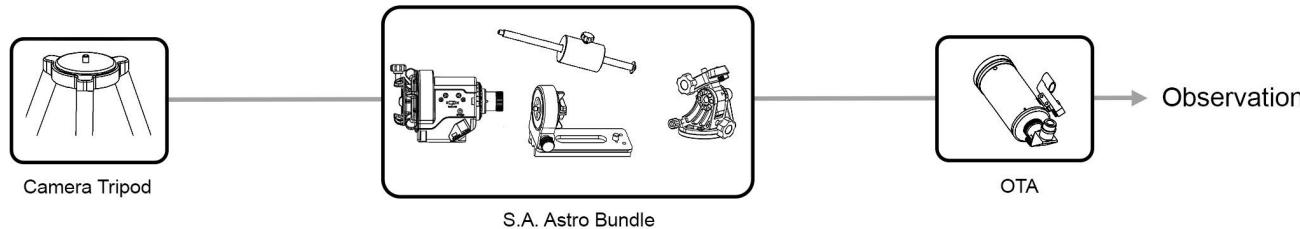


# STAR ADVENTURER Quick Set Up Chart

## Wide Field Astrophotography



## Telescope Observation



## Time-lapse Photography



Tripod, ball head, OTA and camera not included

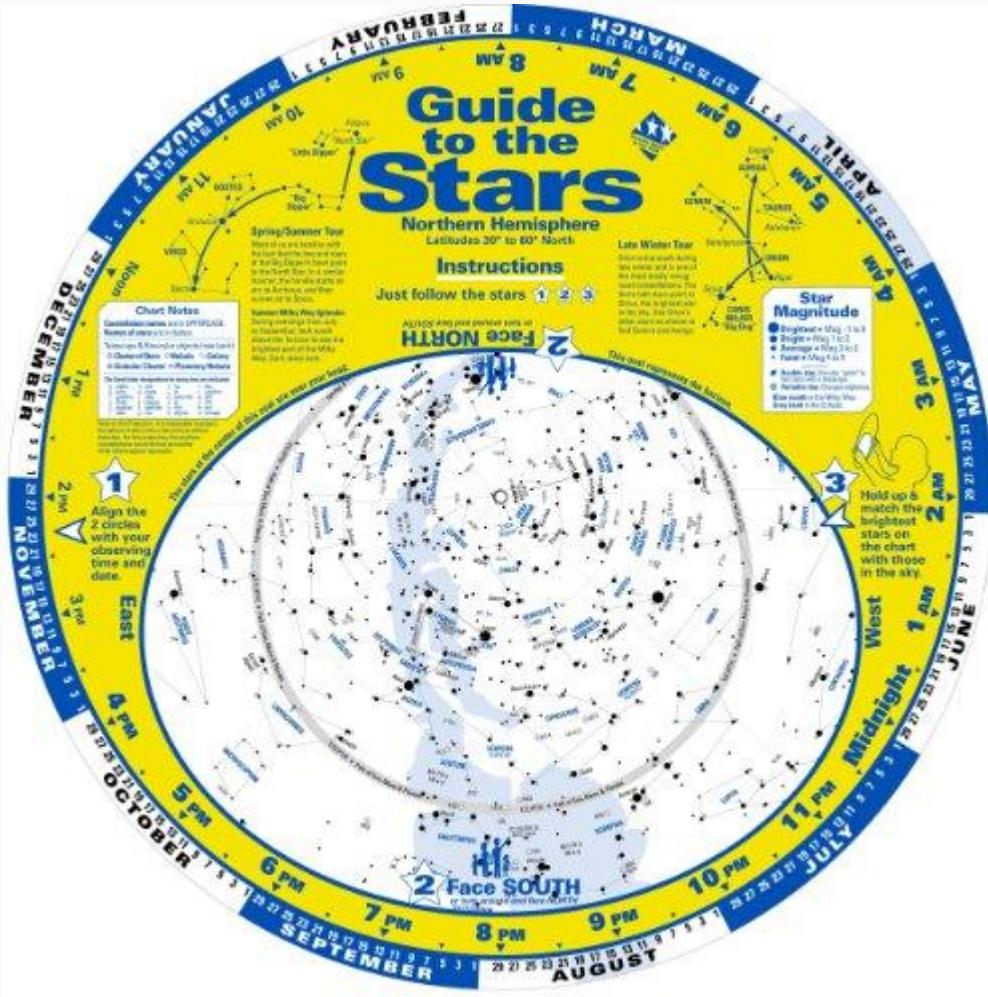
18mm f/1.8 @ 15 sec ISO 1600  
Using No Tracking



18mm f/1.8 @ .60 sec ISO 800  
Using Star Adventurer Mini



# Where to look !



# Software Tools - Mobile

SkyGuide

StarChart

iFlares

Auror

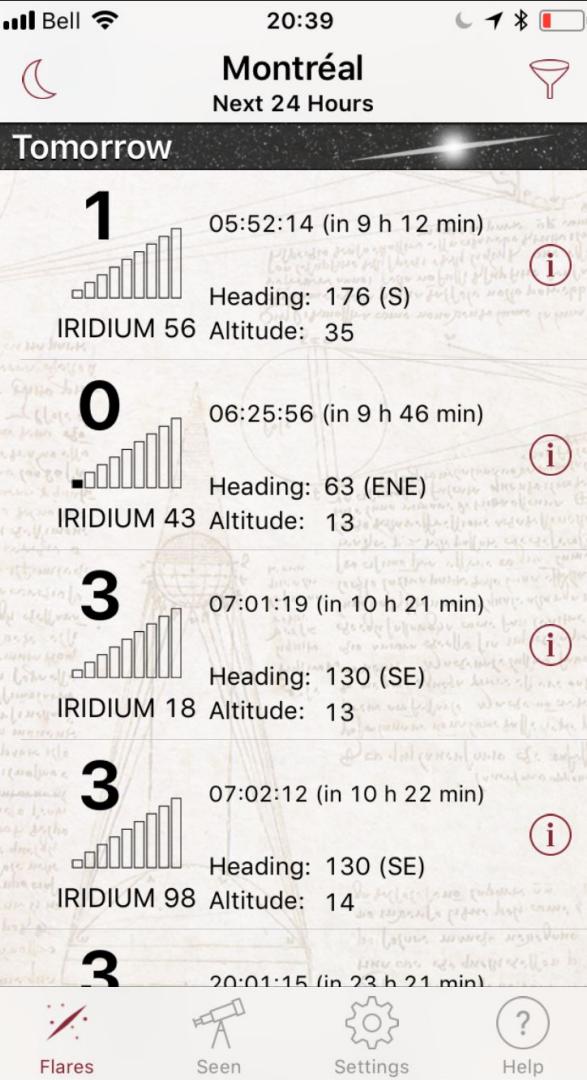
ICSC



20:37

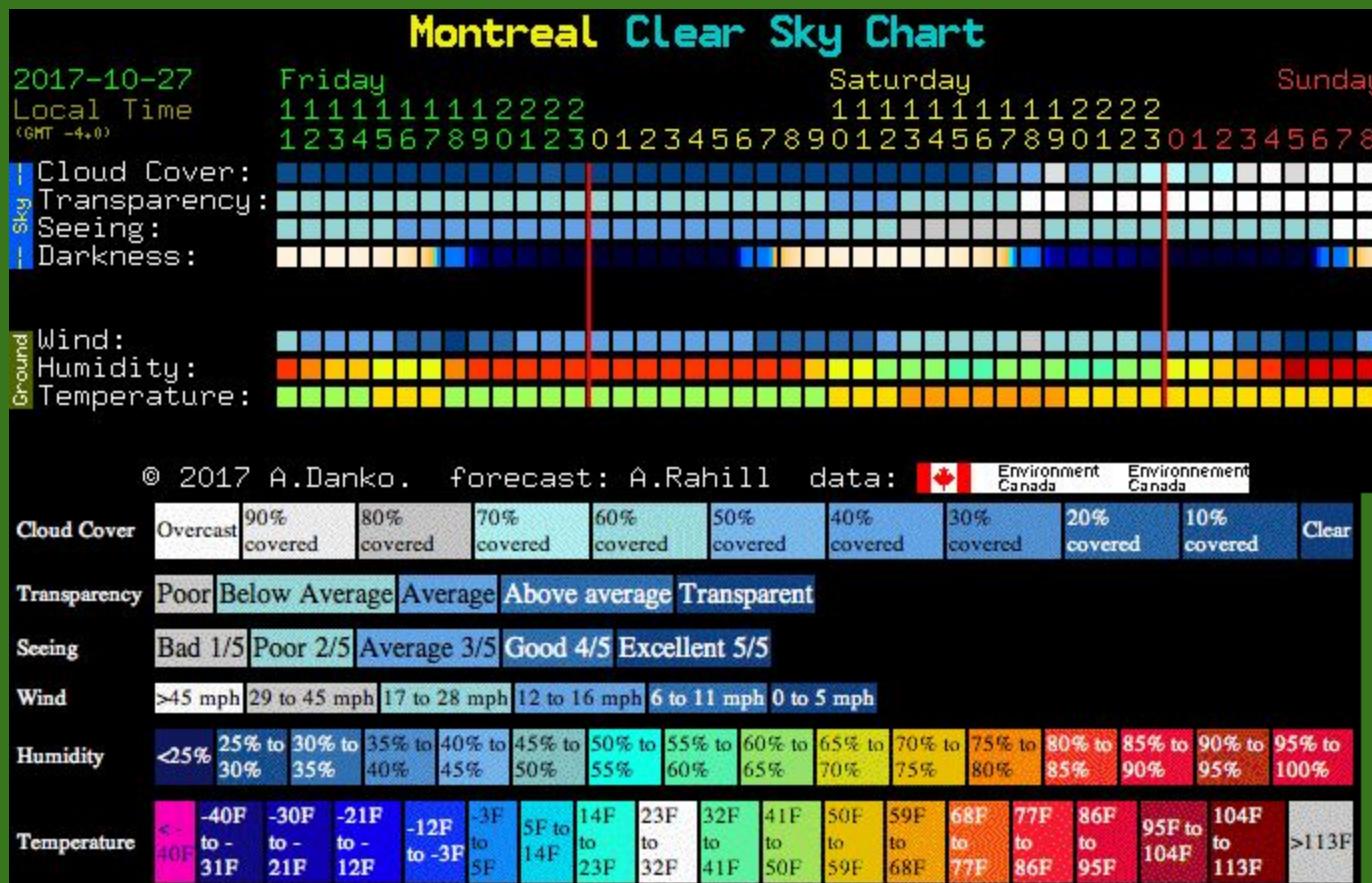
Skychart  
Oct 27th 20:38 pm





iFlares  
27th Oct 20:40 pm

# ICSC Clear Sky Chart



# Aurora Aurora Fcst

Bell 20:45

Back Best Locations Right Now

NORTH AMERICA

Toronto New York

London

Rome

North Atlantic Ocean

Greenland

1,680 miles away

23%

Iceland

2,478 miles away

21%

Greenland

1,457 miles away

18%

My Aurora Forecast Pro

No ads. Apple Watch & tvOS support. Tap to view.

Bell 20:46

Auroral activity Oct 27, 2017 at 20:46 LT

SWPC ovation auroral forecast

Aura Forecast Ovation-Prime Model Forecast for: 2017-10-28 01:10 UT Period End: 2017-10-28 10:00 UT Duration: 1 hour 59 minutes

Aura Forecast Ovation-Prime Model Forecast for: 2017-10-28 01:10 UT Period End: 2017-10-28 10:00 UT Duration: 1 hour 59 minutes

North

South

Geomagnetic activity probabilities

High Latitude	Sat, 28	Sun, 29
Active	20	15
Minor storm	20	25
Major-severe storm	20	30

Middle Latitude	Sat, 28	Sun, 29
Active	25	20
Minor storm	10	5
Major-severe storm	1	1

Auroral predictions

Predicted High Latitude Kp Index LT

# Software Tools - Desktop

Stellarium

AstroPlanner

Nebulosity

Moongiant

CelestiaÂ

TPE

# Stellarium



# stellarium

latest version is 0.16.1

Linux (source code) Mac OS X 10.10+; 64-bit Windows 32-bit Windows 64-bit Ubuntu latest stable release Beta 0.90.0 User Guide 0.16.1-1



Stellarium is a free open source planetarium for your computer. It shows a realistic sky in 3D, just like what you see with the naked eye, binoculars or a telescope.

It is being used in planetarium projectors. Just set your coordinates and go.

## features

### sky

- default catalogue of over 600,000 stars
- extra catalogues with more than 177 million stars
- default catalogue of over 80,000 deep-sky objects
- extra catalogue with more than 1 million deep-sky objects
- asterisms and illustrations of the constellations
- constellations for 20+ different cultures
- images of nebulae (full Messier catalogue)
- realistic Milky Way
- very realistic atmosphere, sunrise and sunset
- the planets and their satellites

### interface

- a powerful zoom feature
- time control
- multilingual interface



The dance of the planets above ESO headquarters, near Munich.

[view screen-shots >](#)

## news

- Planetary features: Call to translators
- Stellarium 0.16.1
- Stellarium 0.16.0
- 0.16.0RC1: Call to translators
- Stellarium 0.12.9
- Stellarium 0.15.2 has been released
- Stellarium 0.12.8
- Stellarium 0.15.1
- Call to translators
- Stellarium 0.12.7 discussion

## system requirements

### minimal

- Linux/Unix; Windows 7 and above; Mac OS X 10.10.0 and above
- 3D graphics card which supports OpenGL 3.0 and GLSL 1.3
- 512 MiB RAM
- 250 MiB on disk

## get involved

You can learn more about Stellarium, get support and help the project via these links:

- ⊕ [summary](#)
- ⊕ [forum](#)
- ⊕ [mailing list](#)
- ⊕ [news](#)
- ⊕ [wiki](#)
- ⊕ [FAQ](#)
- ⊕ [landscapes](#)
- ⊕ [scripts](#)
- ⊕ [plugins](#)
- ⊕ [textures](#)
- ⊕ [User's guides](#)
- ⊕ [documentation for developers](#)
- ⊕ [scripting](#)



Corvinus

Moon

Altair

Aquila

M 71  
Sagitta

Hercules

Great Cluster in Hercules

Graff's cluster  
NGC 6633

Scutum

Summer Beehive cluster

Corona Borealis

Eagle nebula

NGC 6611

Sagittarius Star Cloud

M 22

Sagittarius

M 25

M 23

M 21

NGC 6530

Ophiuchus

Serpens

# Astroplanner

Home

About

Download

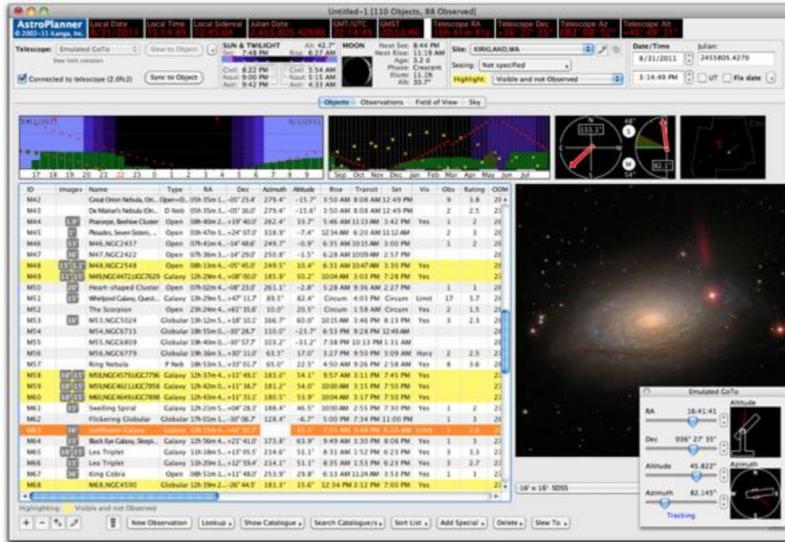
Purchase

Support



# AstroPlanner

## Software for astronomical observation planning



AstroPlanner is a software application for Macintosh and Windows computers that facilitates astronomical observation planning, visualisation and logging, as well as control of telescopes with computerised go-to mounts or digital setting circle controllers.

AstroPlanner is shareware and you are welcome to download and try a fully-functional version at no cost.

The application requires Mac OS X 10.4 or after, or Windows XP or after.

## News

4 April 2015

# Nebulosity

[Home](#)[Nebulosity](#) ▾[PHD Guiding](#) ▾[Other Software](#) ▾[Downloads](#) ▾[Purchasing](#) ▾[Articles & Reviews](#)[Help!](#) ▾[Talks & Articles](#)[About](#)

## Nebulosity 4

Nebulosity is designed to be a powerful, but simple to use capture and processing application for Windows (7/8/10 32/64 bit) and OS X (10.7–11). A huge array of cameras are supported for capture (see below) and images from just about anything can be processed (support for many FITS formats, PNG, TIFF, JPEG, DSLR RAW files, etc). Its goal is to suit people ranging from the novice imager who wants to create his or her first images to the advanced imager who wants a convenient, flexible capture application for use in the field. In it, you get a host of purpose-built, powerful tools to make the most out of your images and imaging sessions.

*Nebulosity 4* (currently version 4.1) is \$95. Existing v4 users can [download the current full-release](#) or any pre-

## Why Nebulosity?

People looking at software for astrophotography have a wide range of options, these days. So, you might ask, why *Nebulosity*? *Nebulosity* takes a different approach than many packages. You've got a number out there that are trying to be the be-all and end-all package that controls everything from your camera to your dome to your toaster. As a result, they're often very large (and therefore tougher to navigate), and very expensive. In general, this doesn't make for something well-suited to someone just getting going in this hobby. In addition though, much of what you



# CELESTIA

# Celestia



## Welcome to Celestia

... The free space simulation that lets you explore our universe in three dimensions. Celestia runs on Windows, Linux, and Mac OS X.

**Unlike most planetarium software,** Celestia doesn't confine you to the surface of the Earth. You can travel throughout the solar system, to any of over 100,000 stars, or even beyond the galaxy.

**All movement in Celestia is seamless;** the exponential zoom feature lets you explore space across a huge range of scales, from galaxy clusters down to spacecraft only a few meters across. A 'point-and-goto' interface makes it simple to navigate through the universe to the object you want to visit.

**Celestia is expandable.** Celestia comes with a large catalog of stars, galaxies, planets, moons, asteroids, comets, and spacecraft. If that's not enough, you can download dozens of easy to install add-ons with more objects.

### NAVIGATION

- [Home](#)
- [Download](#)
- [News \(10.08.2016\)](#)
- [Documentation](#)
- [Add-Ons](#)
- [Screenshot Gallery](#)
- [Forum](#)
- [Related Sites](#)

### Website languages:



[How to translate?](#)

[Top of this page](#)

# Moongiant

moongiant.com

S T G M W F N P 5 Peg B - CalAmp - SE... Bashar Daha... presentation... moon phase...

OCTOBER 2017

CLICK ON DAY TO SEE DETAILS

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	FULL 5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	FIRST 27	28
29	30	31	1	2	3	4



# THE PHOTOGRAPHER'S EPHEMERIS

[Ephemeris](#) [Locations](#) [Settings](#) [Tutorials](#) [About](#)

TPE

Friday, October 27, 2017



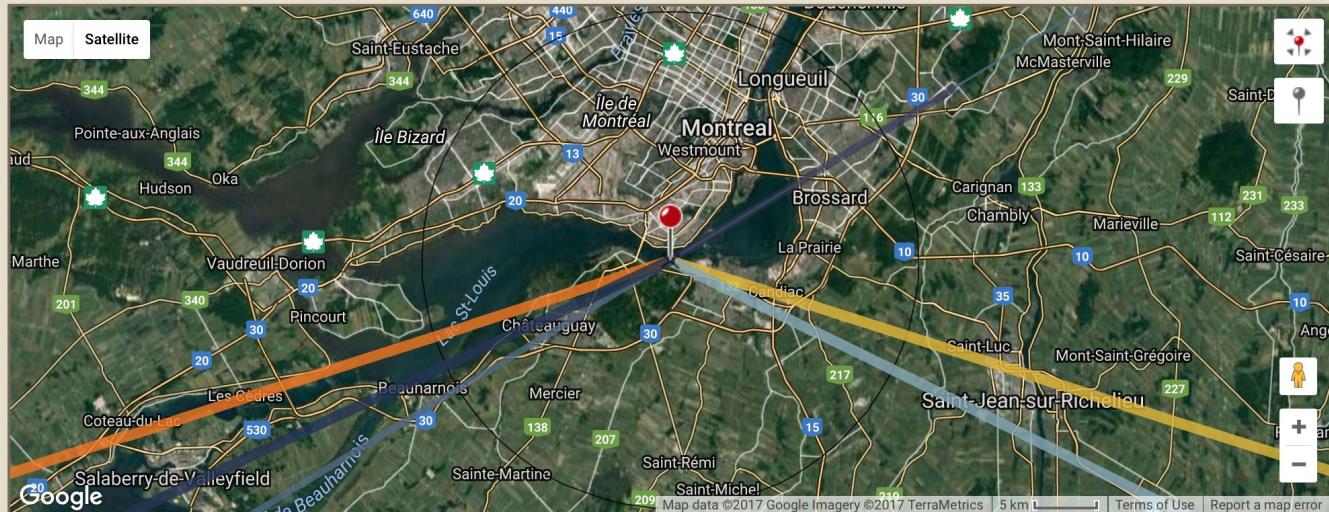
Search by place name/address



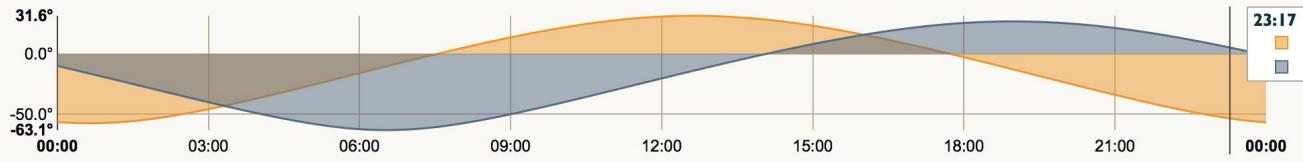
Fri 27 Oct 2017 23:17 America/Toronto -0400

Not set

+33m | 45.4064°N 73.6242°W



Astro start 05:47 90.3°	Nautical start 06:22 96.3°	Civil start 06:56 102.3°	Sunrise ↑ 07:27 107.7°	Moonrise ↑ 14:04 116.2° Waxing crescent 48.3%	Sunset ↓ 17:48 252.1°	Civil end 18:19 257.4°	1st quarter * 18:22 171.2° 50.1%	Nautical end 18:53 263.4°	Astro end 19:28 269.4°
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Quick Start Guide  
Support Page

# Software Tools - Web

<http://cleardarksky.com>

<http://darksitefinder.com>

<http://blue-marble.net>

Google Maps

# Montreal

## Clear Sky Chart

legend page

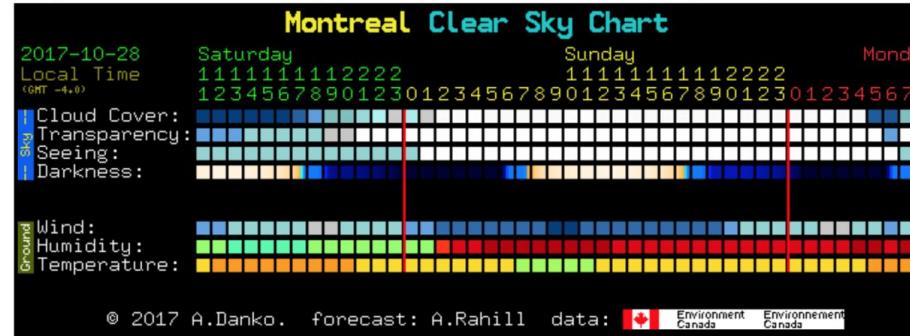
**Image Control**

1. Explain color and details when you mouse-over:

2. Click on a block to show full forecast map

3. Display color legend:

Last updated 2017-10-28 11:29:52. No Image below? Read [this](#). Not showing todays data? [Clear your cache](#).



Home of the I. K. Williamson Observatory of the RASC [Montreal Centre](#) and [La société d'astronomie de Montréal](#).

**Other Charts**[All](#)Quebec: [List](#) [Map](#)Within 100 Km: [List](#) [Map](#)Within 200 Km: [List](#) [Map](#)**Page Contents**[What is it?](#)[How do I read it](#)How to read Sky conditions:  
[Clouds](#)  
[Seeing](#)  
[Darkness](#)How to read Ground conditions:  
[Wind](#)  
[Humidity](#)  
[Temperature](#)

How do I see the

<b>Nifty Links:</b>	<a href="#">Sun &amp; Moon Data</a>	<a href="#">Road Map</a>	<a href="#">Topo Map</a>	<a href="#">Civil Weather</a>	<a href="#">Satellite Predictions</a>
	<a href="#">Star Map</a>	<a href="#">CalSky</a>	<a href="#">Light Pollution map</a>	<a href="#">Forecast History / Climate</a>	A Sponsored Feature

**What is it?**

It's the astronomer's forecast. At a glance, it shows when it will be cloudy or clear for up to the next two days. It's a prediction of when Montreal, QC, will have good weather for astronomical observing.

The data comes from a forecast model developed by [Allan Rahill](#) of the [Canadian Meteorological Center](#). CMC's numerical weather forecasts are unique because they are specifically designed for astronomers. But they have 763 forecast maps. It can be a chore to find the one you want.

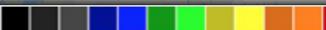
So, [I \(Attila Danko\)](#) wrote a script to generate the images like the one above which summarizes CMC's forecast images just for Montreal and the surroundings out to about 15 Kms.

There are charts for [5565 locations](#).

Jan Daria

Search...

**Dark**



## Bright

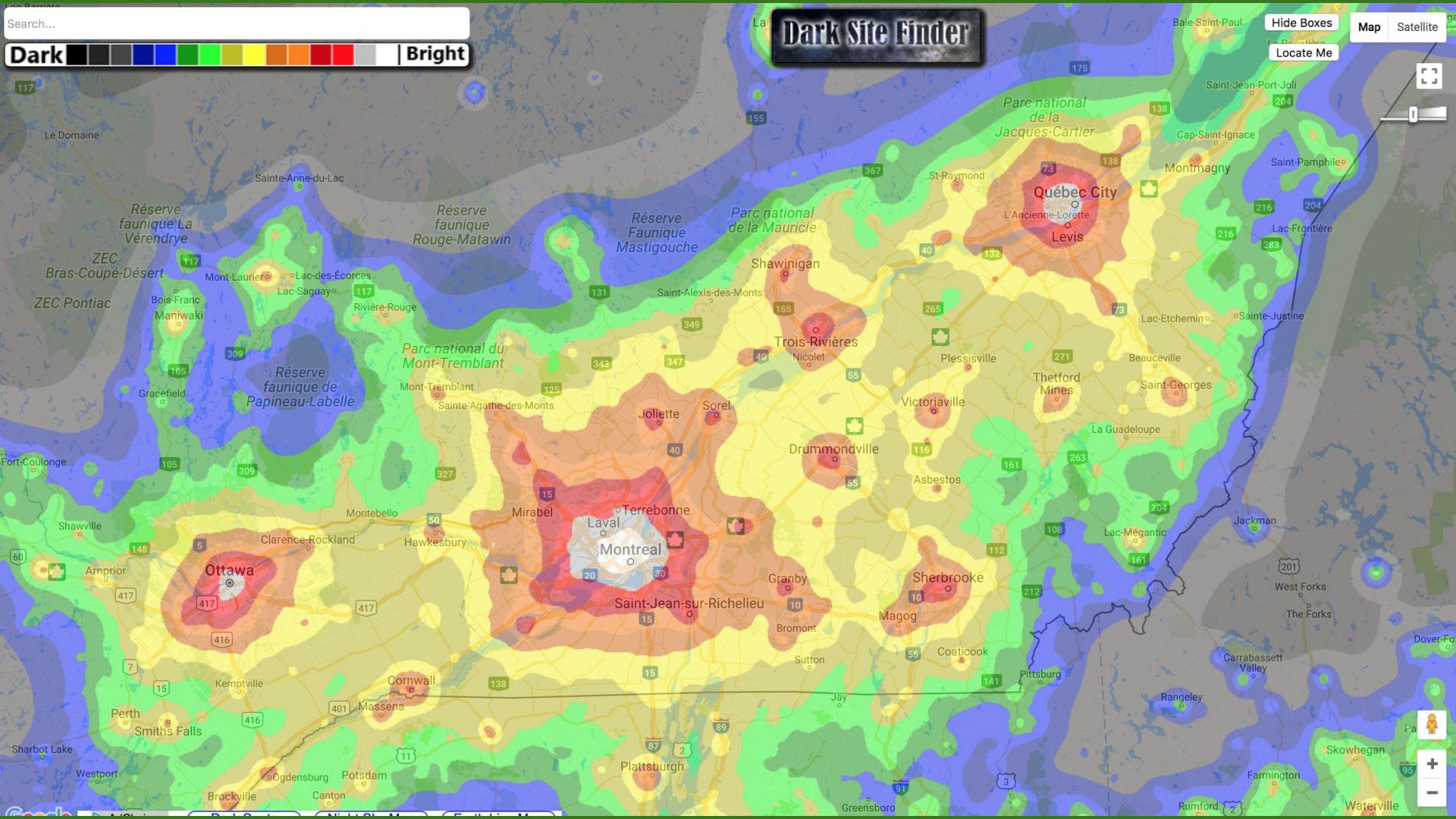
## Dark Site Finder

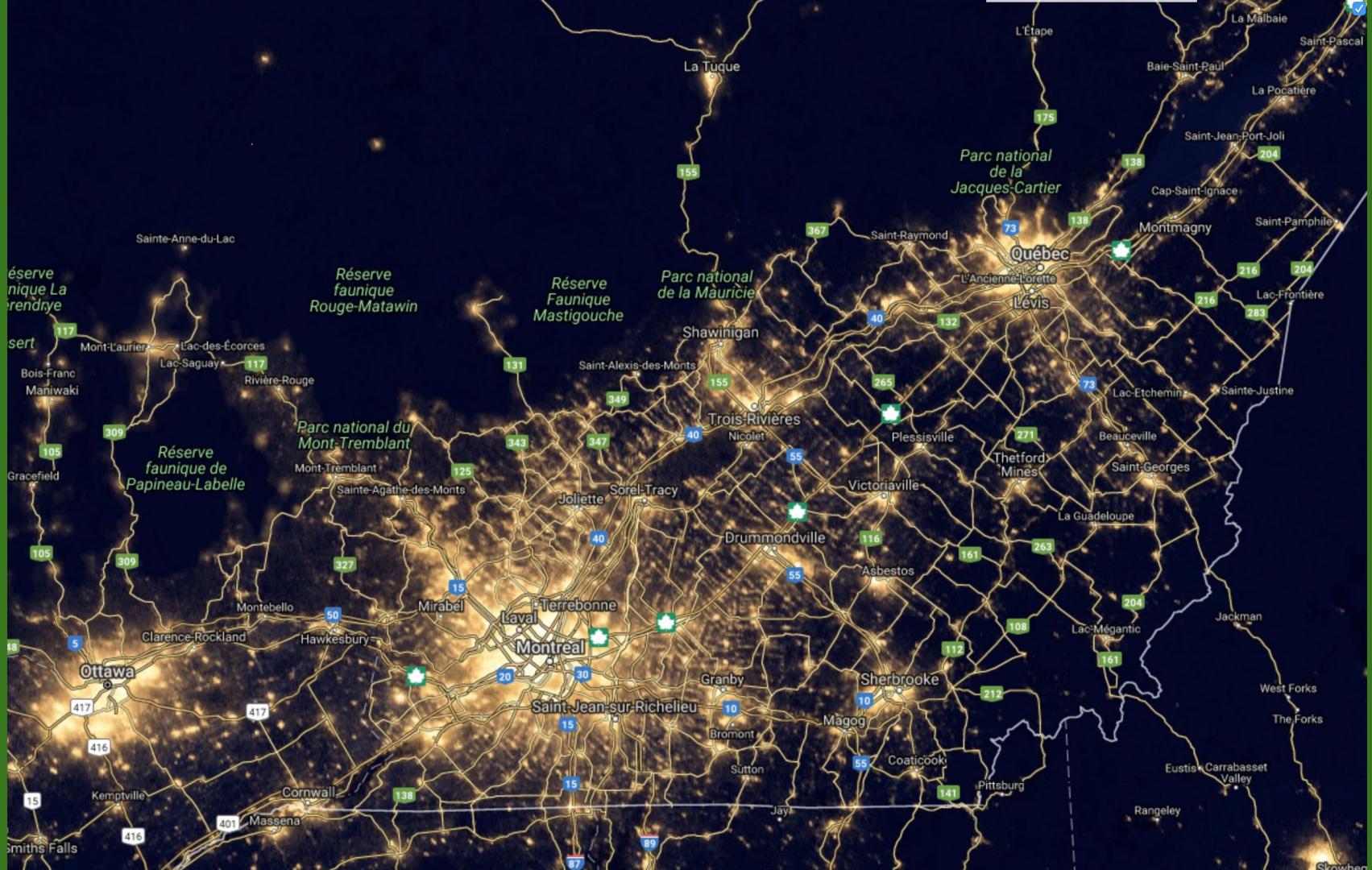
Hide Boxes

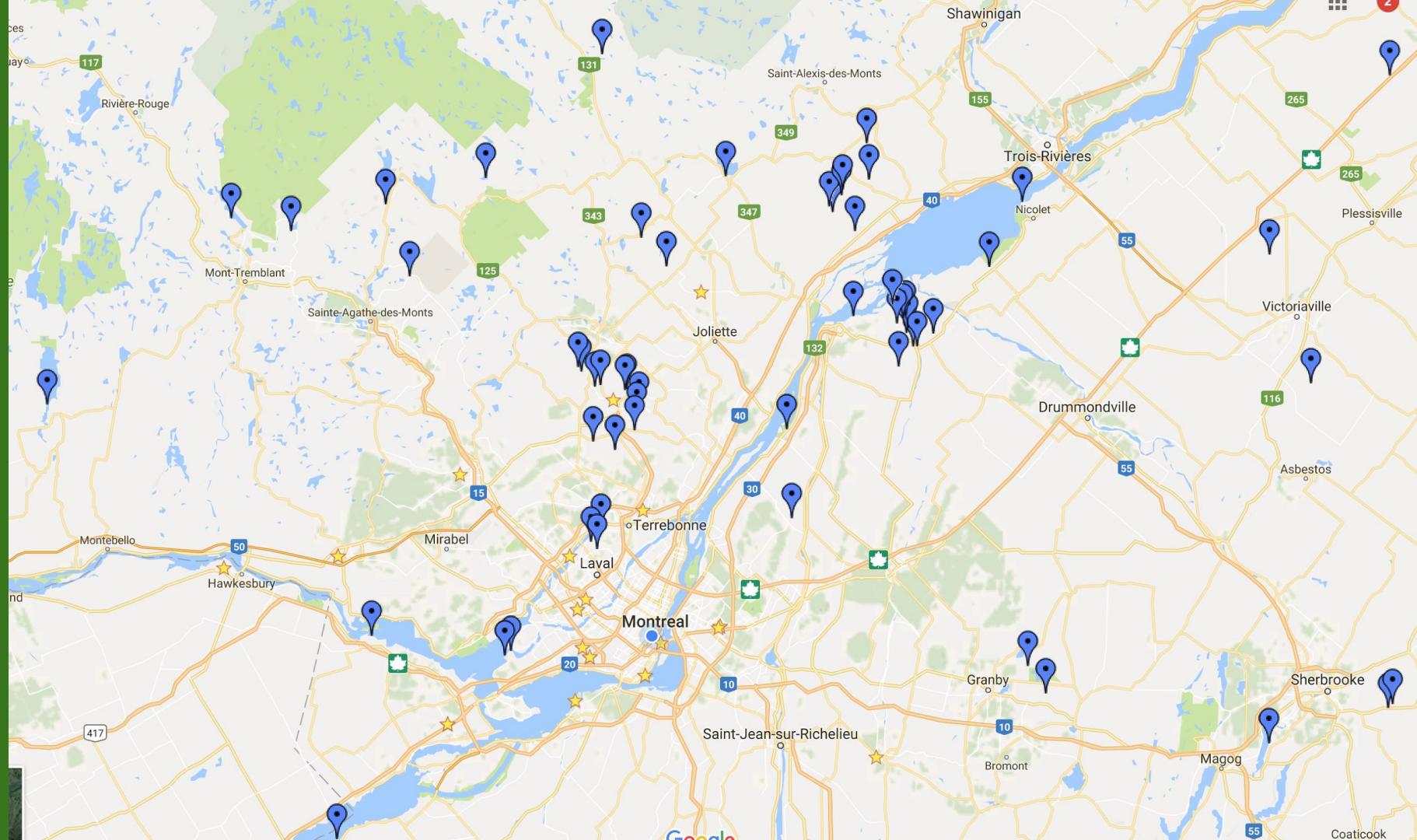
**Map** Satellite

Locate Me

53







# Workflow

## Processing

LightRoom  
Photo  
Shop

Stacking  
St  
arStax



Adobe Creative Cloud



⋮

Home Apps Assets Stock Discover

ALL APPS INSTALLED APPS

1 UPDATE [Update All](#)

▼ MY APPS & SERVICES



Photoshop CC

Create beautiful graphics, photos and art

Open



Premiere Pro CC

Professional video & film editing

Start Trial



After Effects CC

Industry Standard motion graphics & visual effects.

Start Trial



After Effects CC (2017)

[What's New?](#)

Update



Lightroom CC

The cloud-based photo service

Open



Lightroom Classic CC

(formerly Lightroom CC) Desktop-focused editing

Open



Bridge CC

Centralize your creative assets

Open



Media Encoder CC

Quickly output video files for virtually any screen

Open



Camera Raw CC

Edit and enhance your raw images inside Photoshop and Bridge

Up to date

⋮



Adobe Creative Cloud

# Photoshop Lightroom Classic CC

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Artwork by Mathew Guido  
See About Screen for details

Reading preferences...

Julie Kmoch, Jeff Van de Walker, Mark Soderberg, Becky Sowada, Kjetil Drarvik, Simon Chen, Benjamin Warde, Paul Kleczka, Sharad Mangalick, Yuhong Wu, Jeffrey O'Donald, Matthew Johnson, Eric Scouten, Jon Clauson, Ned Wright, Asha M J, Rani Kumar, Sreenivas Ramaswamy, Amit Kumar, Durga Ganesh Grandhi, Rahul S, Sunil Bhaskaran, Smit Keniya, Sudhir Manjunath, Venkatesh Penjuri, Jayesh Viradiya, Ramanarayanan Krishnaiyer, Katy Montanez, Bhakti Ramnani, Chandan, Rahul Agrawal, Arjun Haarith G, Anshul Patel, Abhishek Wankhede, Reetesh Mukul, Zahid Syed, Prabal Kumar Ghosh, Satish Thareja, Ruby Kumari, Abhishek Kumar, Garima Aggarwal, Mayuri Jain, Kanheiya Agrawal, Chinoy Gupta, Akshay Mathur



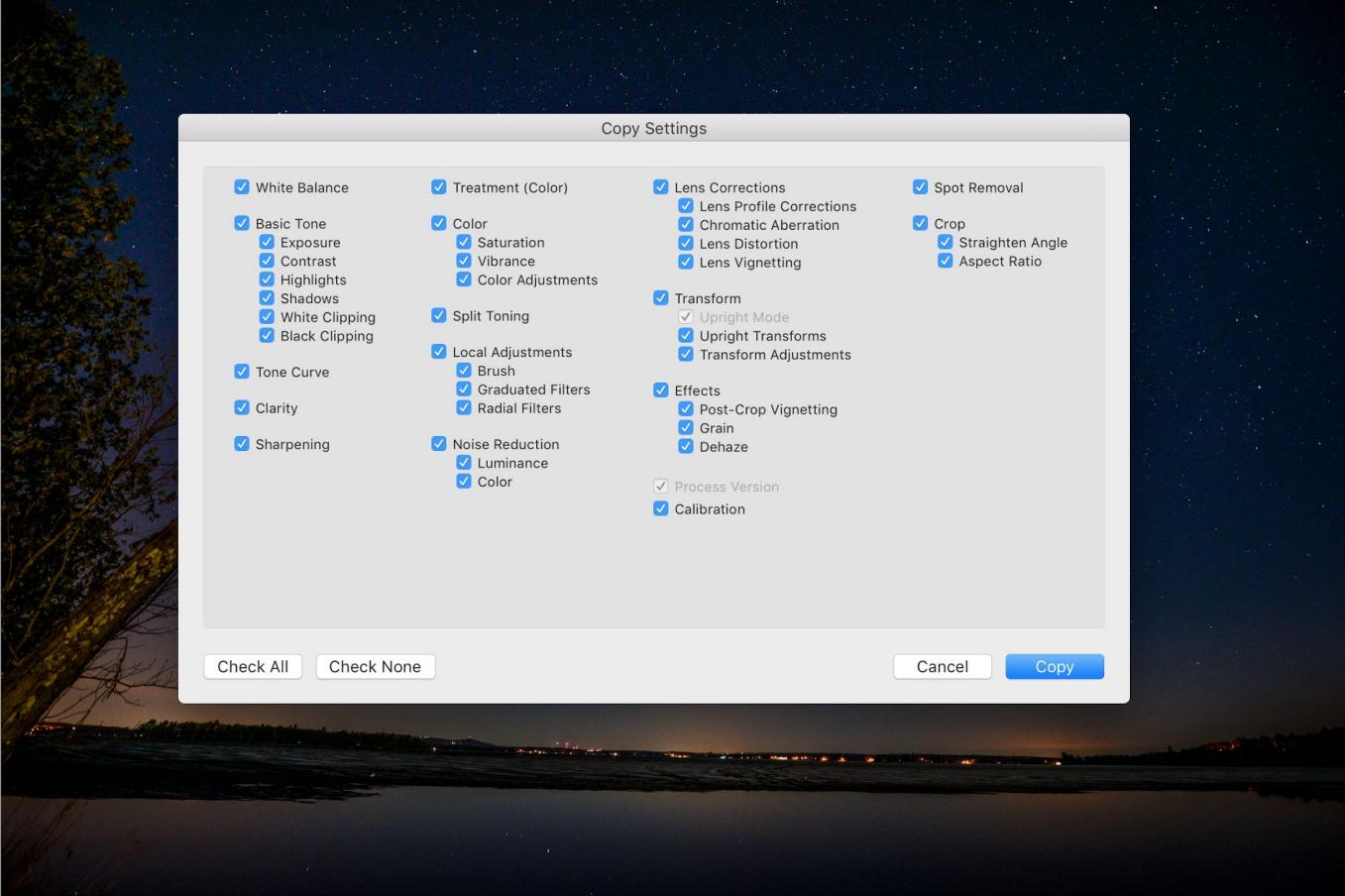
Milkyway  
Pop



Milkyway  
Pop







The image shows a night landscape with a dark blue sky filled with stars. In the foreground, the calm surface of a lake reflects the light from distant city lights and some nearby trees. A large, silhouetted tree trunk and branches are visible on the left side of the frame.

**Copy Settings**

White Balance     Treatment (Color)     Lens Corrections     Spot Removal  
 Basic Tone     Color     Lens Profile Corrections     Crop  
 Exposure     Saturation     Chromatic Aberration     Straighten Angle  
 Contrast     Vibrance     Lens Distortion     Aspect Ratio  
 Highlights     Color Adjustments     Lens Vignetting  
 Shadows  
 White Clipping  
 Black Clipping  
 Tone Curve  
 Clarity  
 Sharpening  
 Treatment (Color)  
 Color  
 Saturation  
 Vibrance  
 Color Adjustments  
 Split Toning  
 Local Adjustments  
 Brush  
 Graduated Filters  
 Radial Filters  
 Noise Reduction  
 Luminance  
 Color  
 Transform  
 Upright Mode  
 Upright Transforms  
 Transform Adjustments  
 Effects  
 Post-Crop Vignetting  
 Grain  
 Dehaze  
 Process Version  
 Calibration

**Histogram**

ISO 1000 14 mm f / 2.8 4.0 sec

Original Photo

**Basic**

Treatment: Color | Black & White

WB: Custom

Temp: -9  
Tint: 0

Tone  
Exposure: +0.05  
Contrast: +10

Highlights: 0  
Shadows: +62  
Whites: +46  
Blacks: -24

Presence  
Clarity: +100  
Vibrance: +42  
Saturation: 0

**Tone Curve**

Previous Reset



## Stacking Software

### Software

The software on this page is Copyright © by Markus Enzweiler, 2013 and provided as Freeware. All software comes as is. Use it at your own risk. We cannot take any responsibility for damages resulting from the use of the software provided on this website.

All software provided here is developed in personal spare time without support of any company or organisation.

#### StarStaX



StarStaX is a fast multi-platform image stacking and blending software, which is developed primarily for [Star Trail Photography](#). It allows to merge a series of photos into a single image, where the relative motion of the stars creates structures looking like star trails.

StarStaX is available as Freeware for Mac OS X, Windows and Linux. Click [here](#) for more information, documentation and software download.

593206 unique visitors since 05/2011.

[Home](#) > [Software](#) >

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- Resume
- Lectures & Workshops
- Research Interests
- Publications
- Software
- Datasets
- Disclaimer

[Google Custom Search](#)

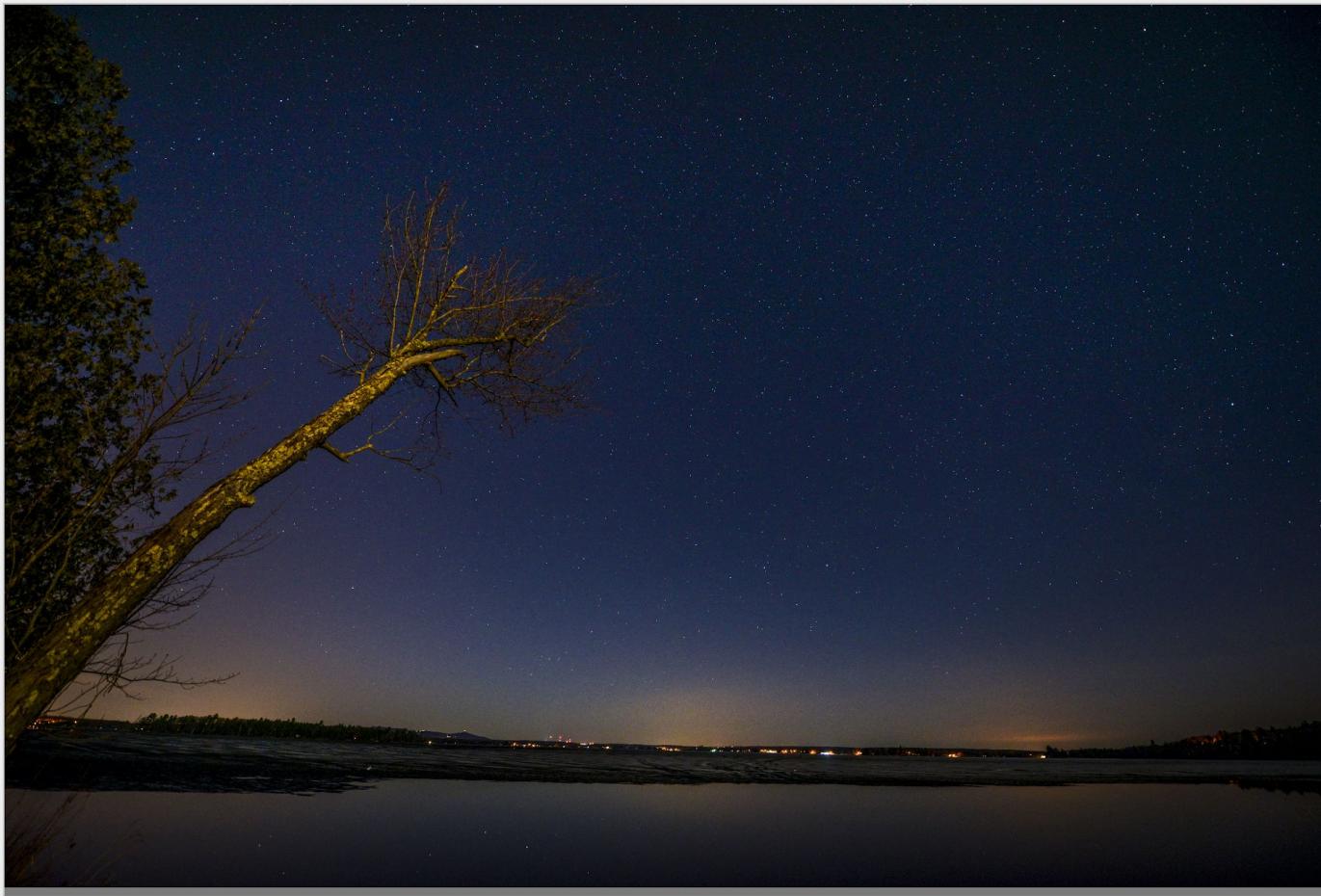
[Search](#)



## ▼ Input Images

- Lac Bromn -2-TLS Dark-200
- Lac Bromn -2-TLS Final -1.jpg
- Lac Bromn -2-TLS-2000.jpg
- Lac Bromn -2-TLS-2001.jpg
- Lac Bromn -2-TLS-2002.jpg
- Lac Bromn -2-TLS-2003.jpg
- Lac Bromn -2-TLS-2004.jpg
- Lac Bromn -2-TLS-2005.jpg
- Lac Bromn -2-TLS-2006.jpg
- Lac Bromn -2-TLS-2007.jpg
- Lac Bromn -2-TLS-2008.jpg
- Lac Bromn -2-TLS-2009.jpg
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- Lac Bromn -2-TLS-2011.jpg
- Lac Bromn -2-TLS-2012.jpg
- Lac Bromn -2-TLS-2013.jpg
- Lac Bromn -2-TLS-2014.jpg
- Lac Bromn -2-TLS-2015.jpg
- Lac Bromn -2-TLS-2016.jpg
- Lac Bromn -2-TLS-2017.jpg
- Lac Bromn -2-TLS-2018.jpg
- Lac Bromn -2-TLS-2019.jpg
- Lac Bromn -2-TLS-2020.jpg
- Lac Bromn -2-TLS-2021.jpg
- Lac Bromn -2-TLS-2022.jpg
- Lac Bromn -2-TLS-2023.jpg
- Lac Bromn -2-TLS-2024.jpg
- Lac Bromn -2-TLS-2025.jpg
- Lac Bromn -2-TLS-2026.jpg
- Lac Bromn -2-TLS-2027.jpg
- Lac Bromn -2-TLS-2028.jpg

Clear images





## ▼ Input Images

- Lac Bromn -2-TLS Dark-200
- Lac Bromn -2-TLS Final -1.jpg
- Lac Bromn -2-TLS-2000.jpg
- Lac Bromn -2-TLS-2001.jpg
- Lac Bromn -2-TLS-2002.jpg
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- Lac Bromn -2-TLS-2019.jpg
- Lac Bromn -2-TLS-2020.jpg
- Lac Bromn -2-TLS-2021.jpg
- Lac Bromn -2-TLS-2022.jpg
- Lac Bromn -2-TLS-2023.jpg
- Lac Bromn -2-TLS-2024.jpg
- Lac Bromn -2-TLS-2025.jpg
- Lac Bromn -2-TLS-2026.jpg
- Lac Bromn -2-TLS-2027.jpg
- Lac Bromn -2-TLS-2028.jpg

[Clear images](#)





# StarStaX - Image stacker for Mac / Windows / Linux

2,504 Members • 5.6K Photos • 77 Discussions

Joined

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Group pool

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Group Since Apr 22, 2011



by crystal\_singer (Dawn Rodd)



by jonathan at...



by A. Gisle



by Steve\_P\_Knight



by teo teo teodios



by branty16



by I'm a Dreamer!..

# Clothing

Summer

Bugs

Winter

Cold





# Locations

Canada

Quebec

Zenon

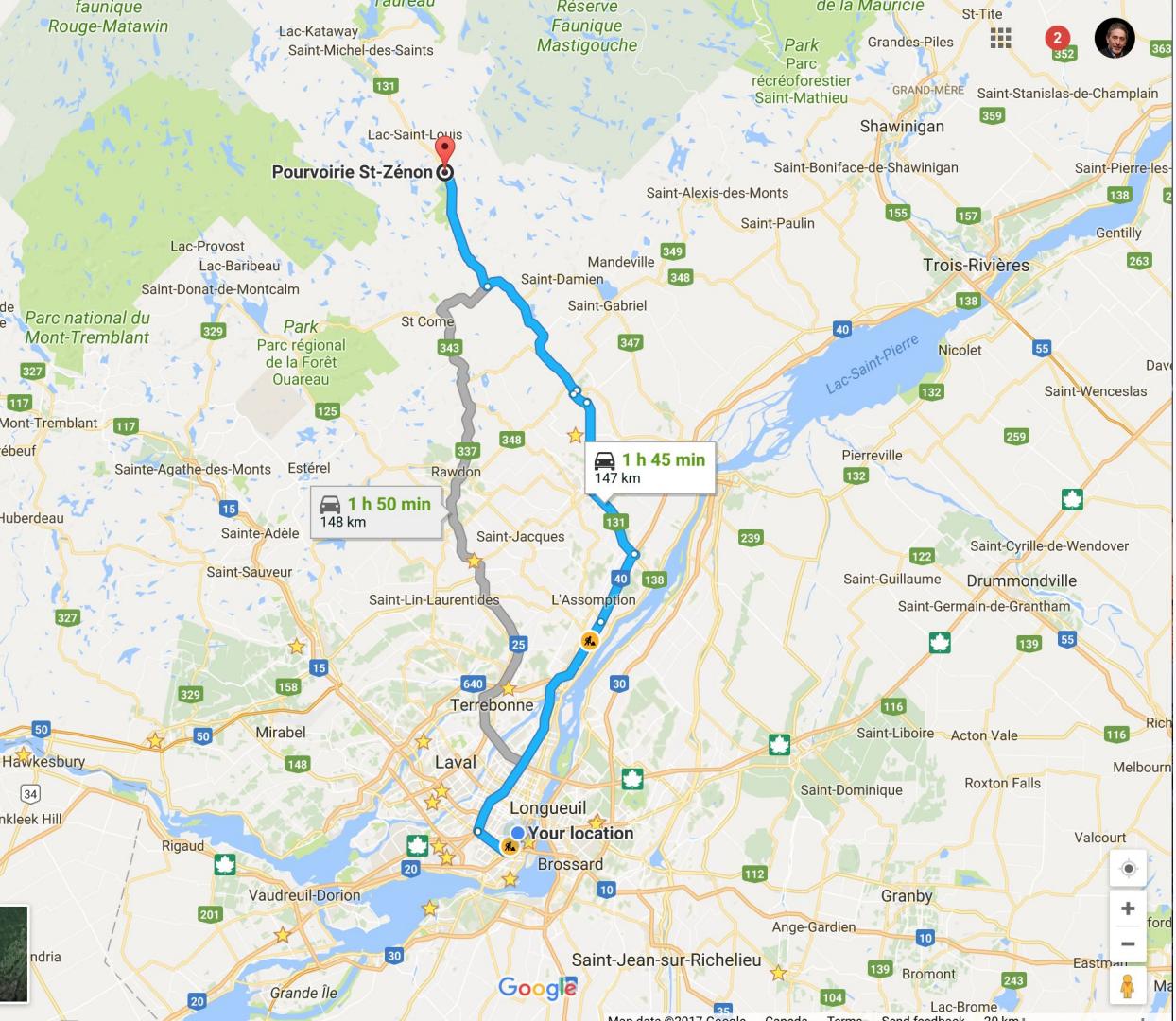
Arundel

Megantic

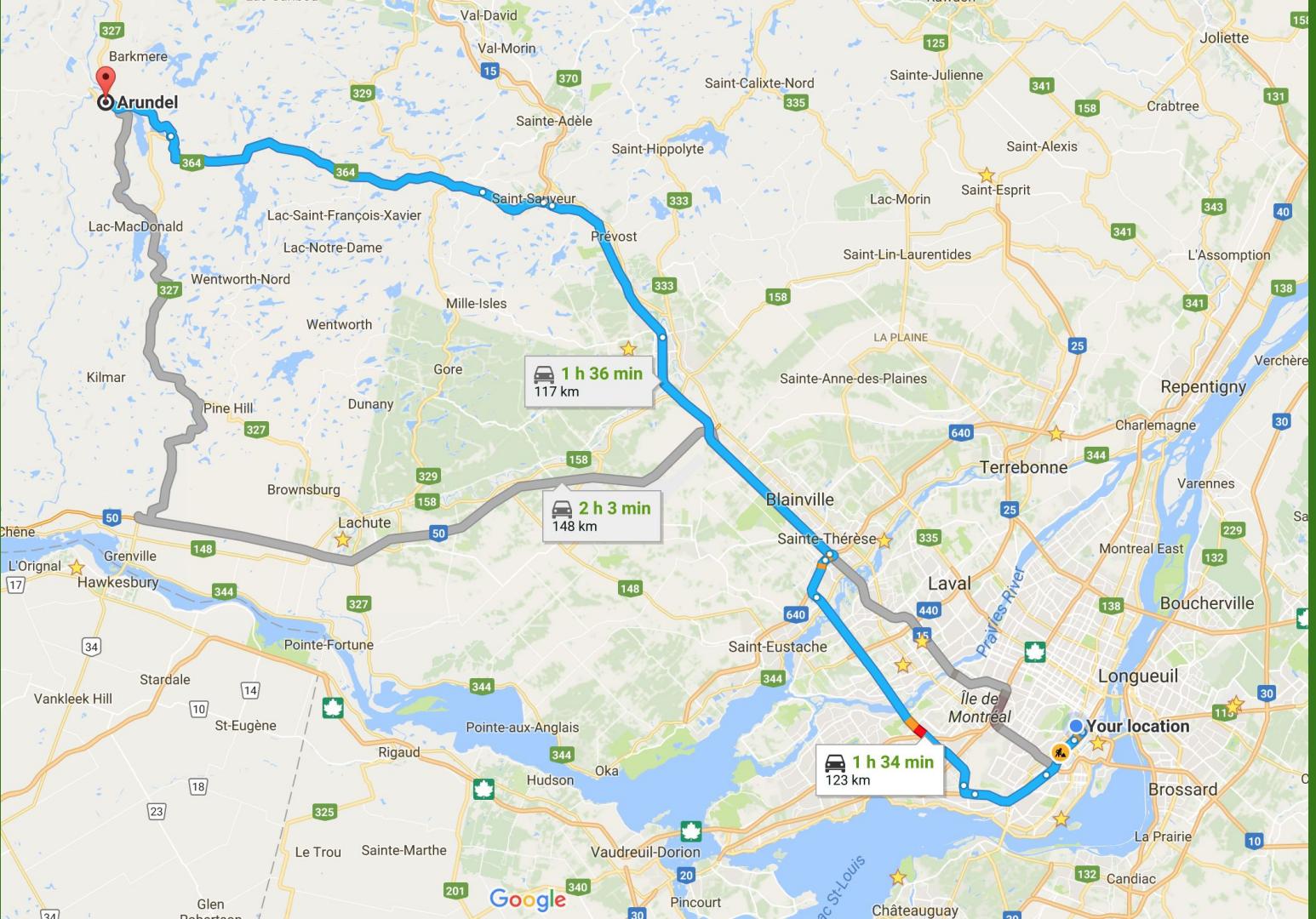
Jordan

Wadi Rum

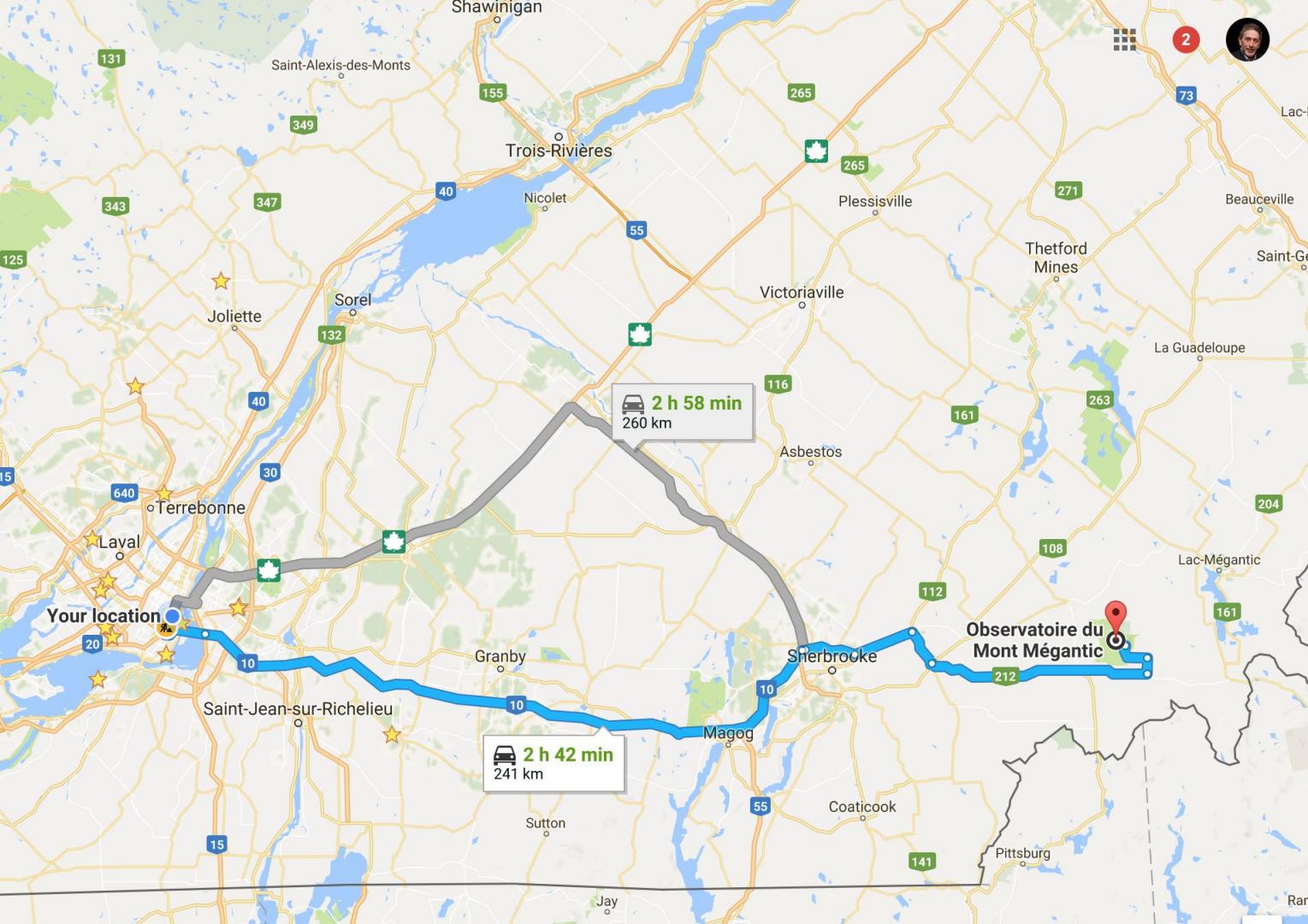
# Zenon



# Arundel



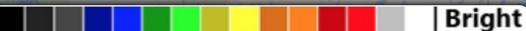
# Mégantic



an Dari

Search...

Dark



## Dark Site Finder

L

**Hide Boxes**

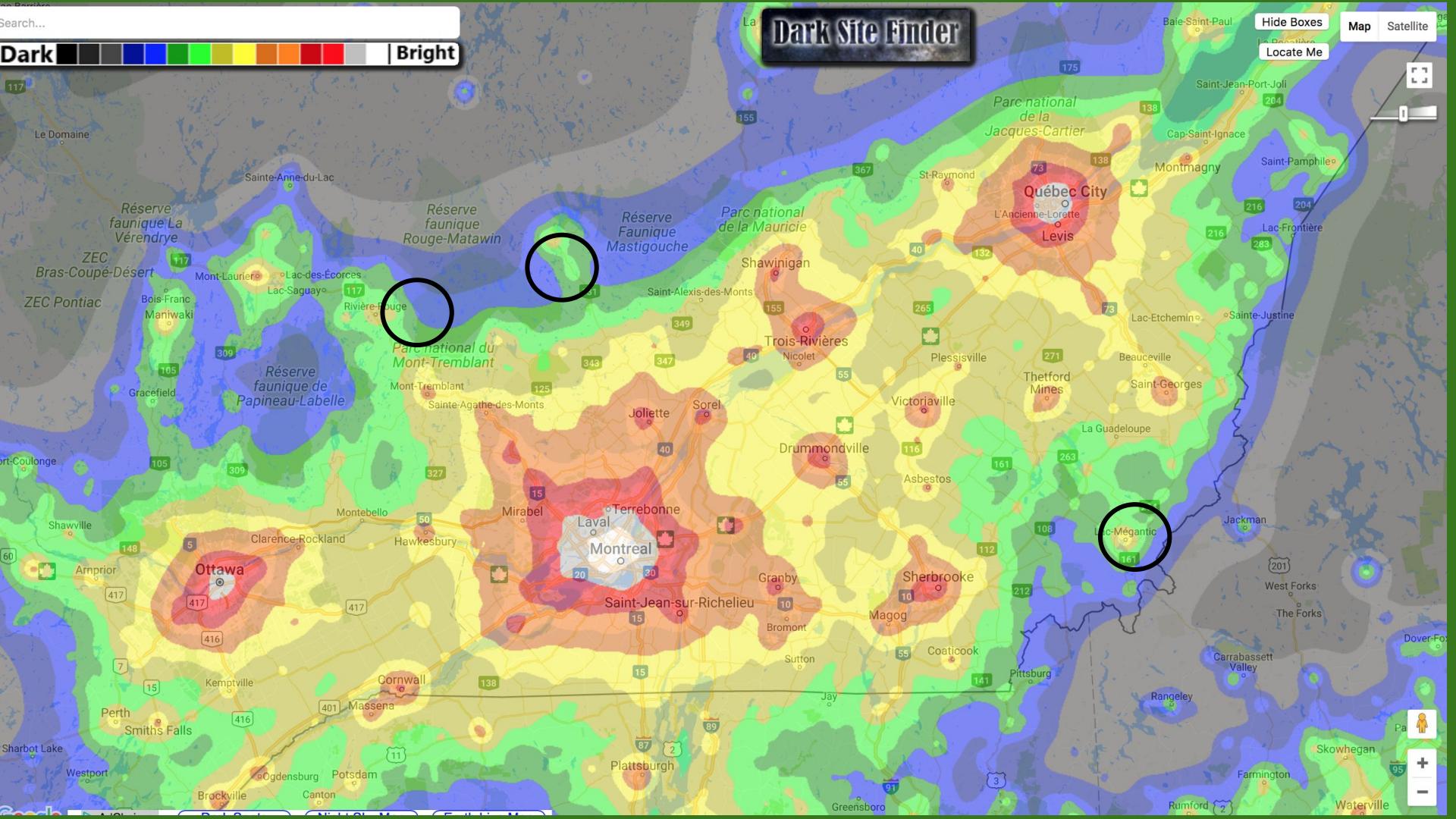
Map Satellite

Locate Me

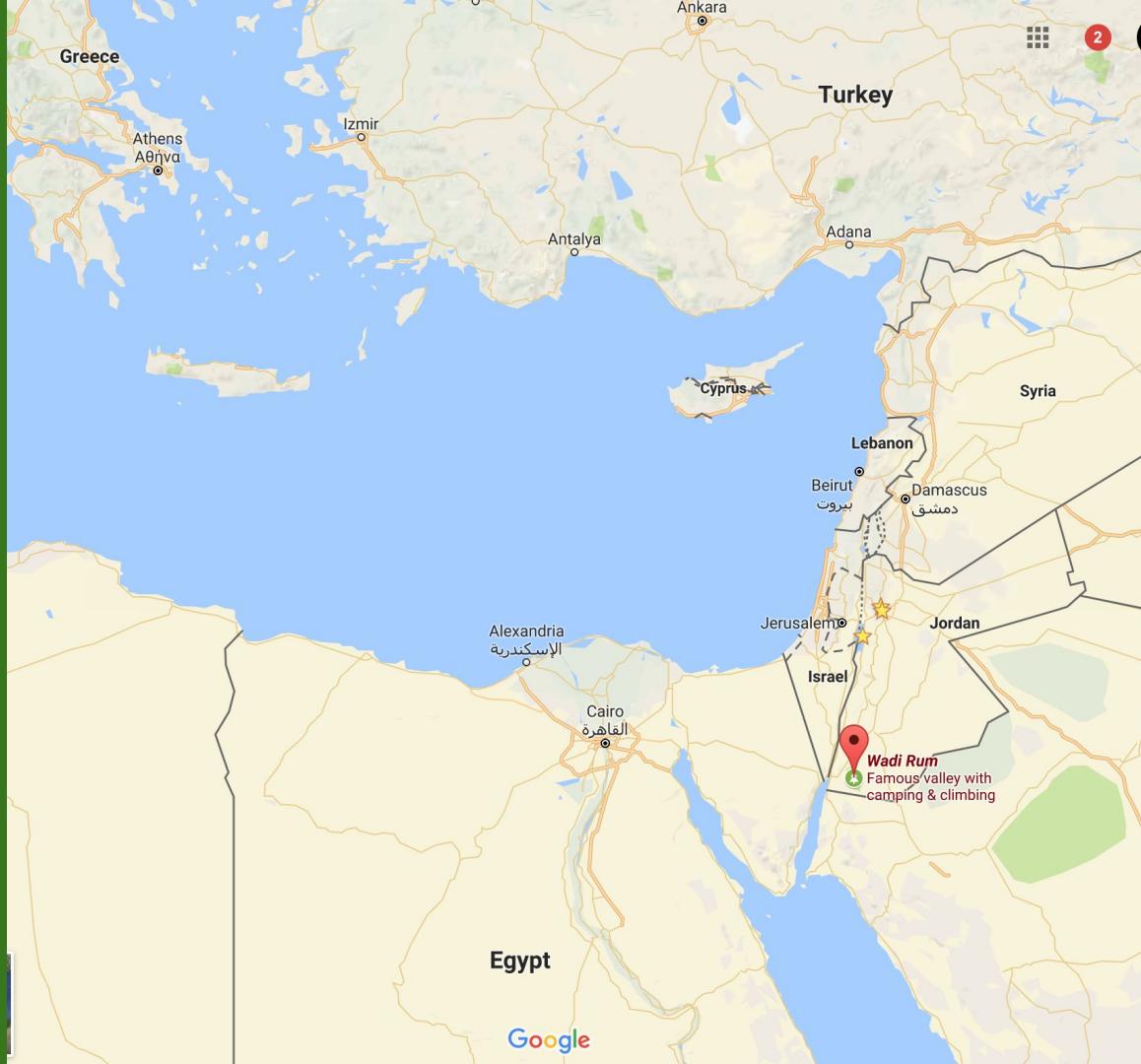
Locate Me

100

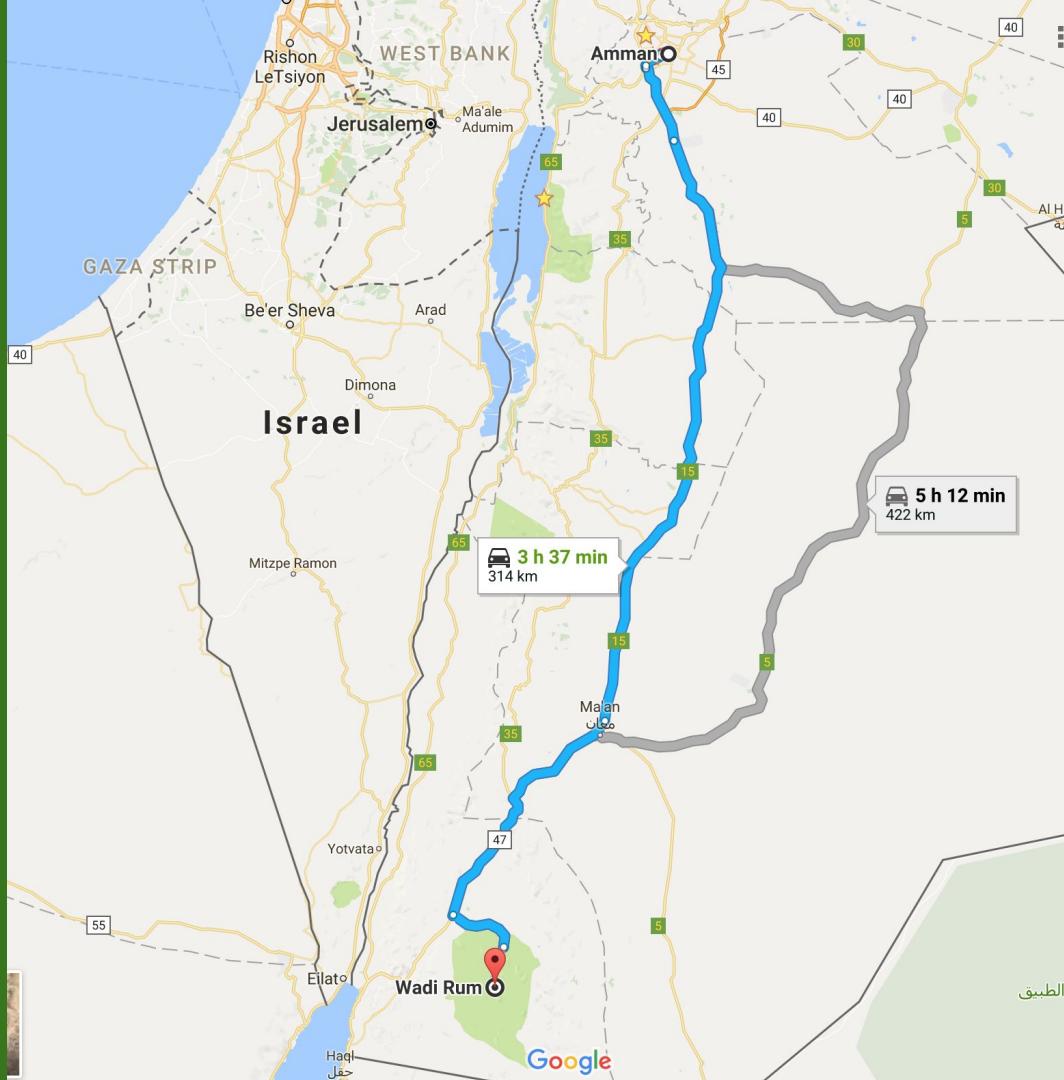
1



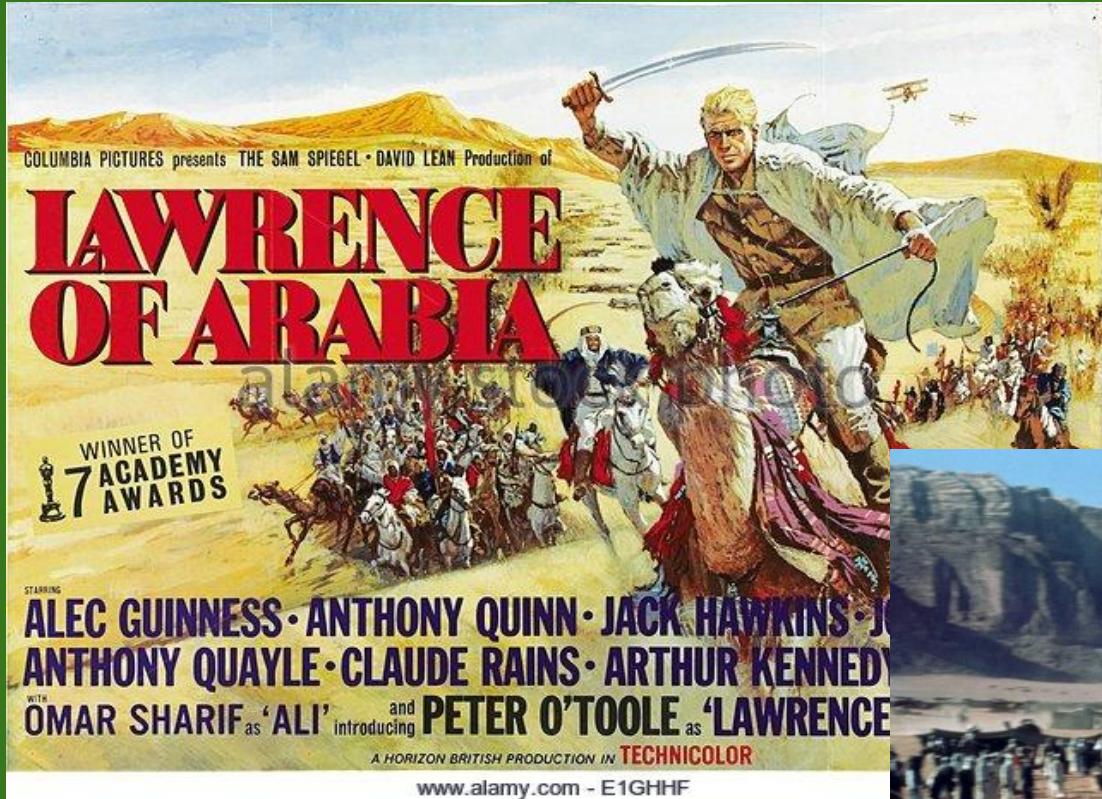
## Wadi Rum - Jordan



## Amman to Wadi Rum



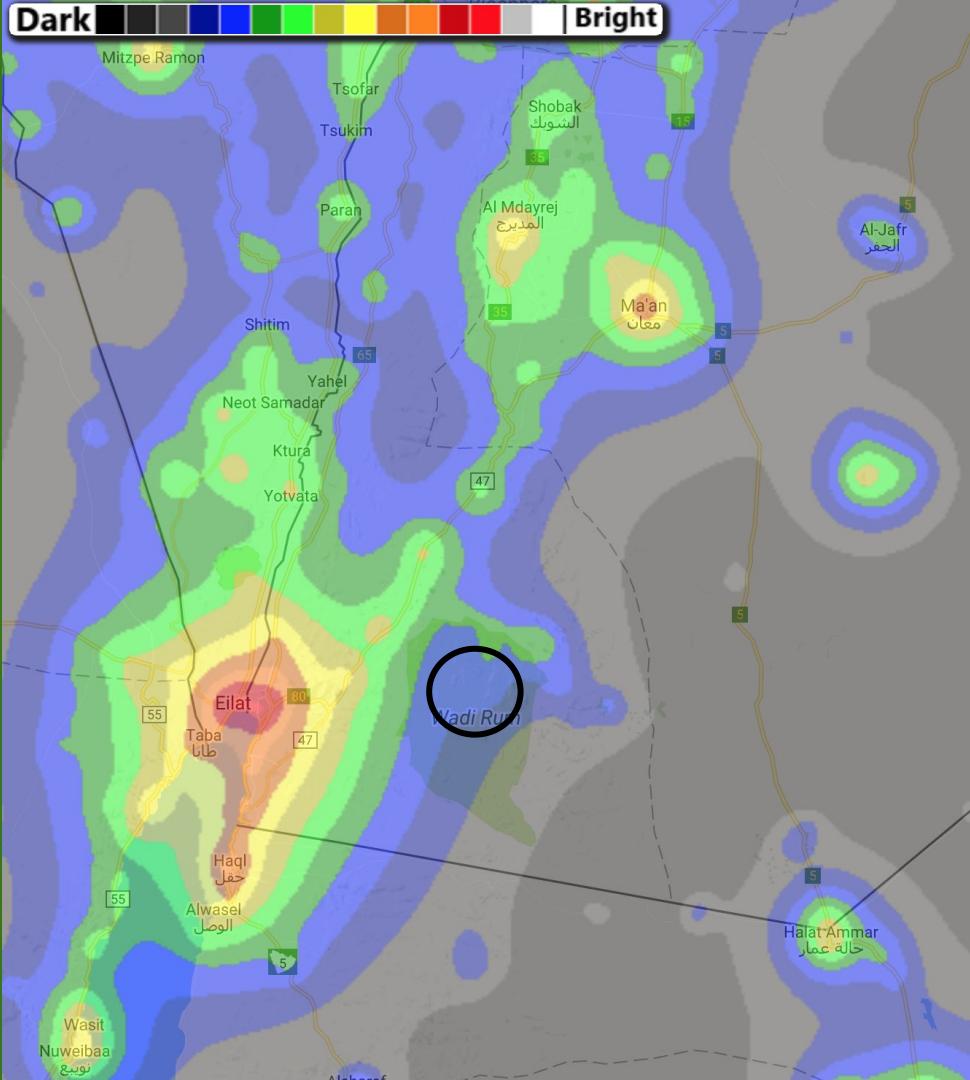




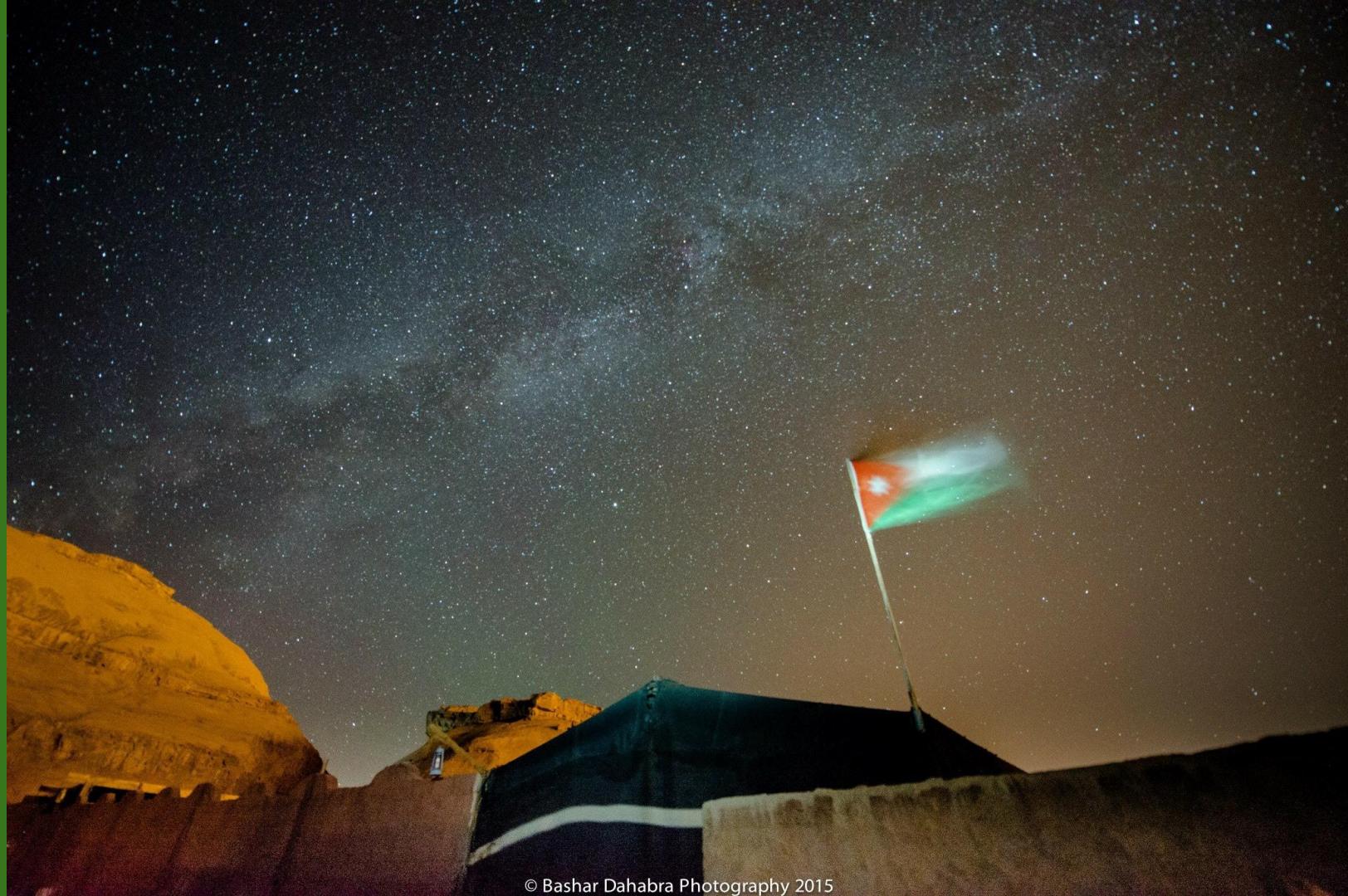
Wadi Rum 1917



# Dark Site Finder







© Bashar Dahabria Photography 2015





© Bashar Dahabra Photography 2015



Looking West ... The Milky Way Aretas IV  
Camp in Wadi Rum

Nikon D800 24mm F2.8  
15 Sec



© Bashar Dahabri Photography 2013

Looking North West ... The  
Milky Way on top of King  
Aretas IV Camp in Wadi  
Rum

Nikon D800 24mm F2.8  
15 Sec



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Andromeda Galaxy  
M31  
Stacking with Deep  
Sky stacker  
Post Processing  
LightRoom



© Bashar Dahabri Astrophotography 2013



©Bashar Dahabria Photography 2013

Moon Eclipse  
Nikon D800 400mm F4  
1/15 Sec





© *Bashar Dahabra Photography 2013*

# Groups / Workshops

Facebook

Montreal Astrophotography Party

Pointe-Claire Astro

Milkyway Chasers

Meetup

Montreal Astrophotography Party

Workshops

<https://goldpaintphotography.com/workshops/>

<https://intothenightphoto.blogspot.ca/2015/09/private-nightscape-photography.html>

<http://www.miketaylorphoto.com/Workshops/2018-Dates-and-Locations>

<http://www.jtblenker.com/workshops/>

# Montréal Astrophotography party

Facebook Montréal Astrophotography party

Lrenz Bustillo shared Pointe-Claire Astro's photo.

October 25 at 11:23am

Share of the day!



Pointe-Claire Astro

October 25 at 11:10am

The amazing Northern Lights  
ISO 3200 | f/2.8 | 15mm | 8sec.  
D750 | Tamron 15-30mm

Like Comment Share

Samer Hobeika, Greg Beaton and 14 others Seen by 95

1 Share

Rami Awad Where and when was that?  
Like · Reply · 1 · October 25 at 12:29pm

Lrenz Bustillo replied · 3 Replies

Write a comment...

People You May Know

Yousef Alarene

Helmut Mohelsky

Garage Sale group of south shore/st-hubert/green... + Join

EYE-Photo Magazine Photo Group + Join

BAZAR bazar Bazar NDG + Join

See All





Montreal  
Astrophotography  
Party outing

Credit Lorenz



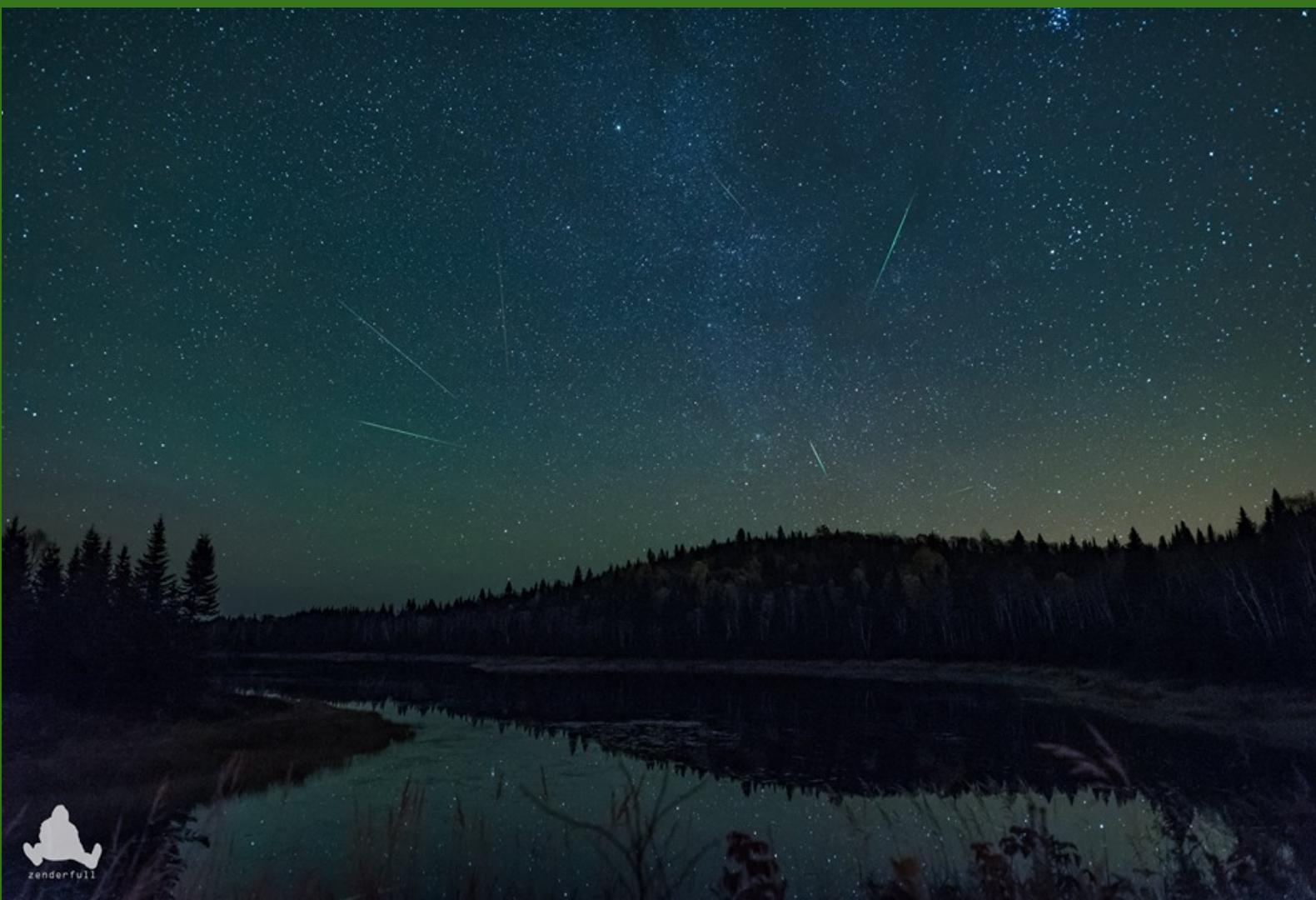
Montreal  
Astrophotography  
Party outing

Credit Lorenz



Composite of 5  
Images  
ISO3200  
F2  
10 Sec  
20 mm

Credit Samer  
Hobika



Nikon 24-70 mm  
F2.8 20 Sec

Credit Rami Awad



© R.A Capture

Montreal  
Astrophotography  
Party

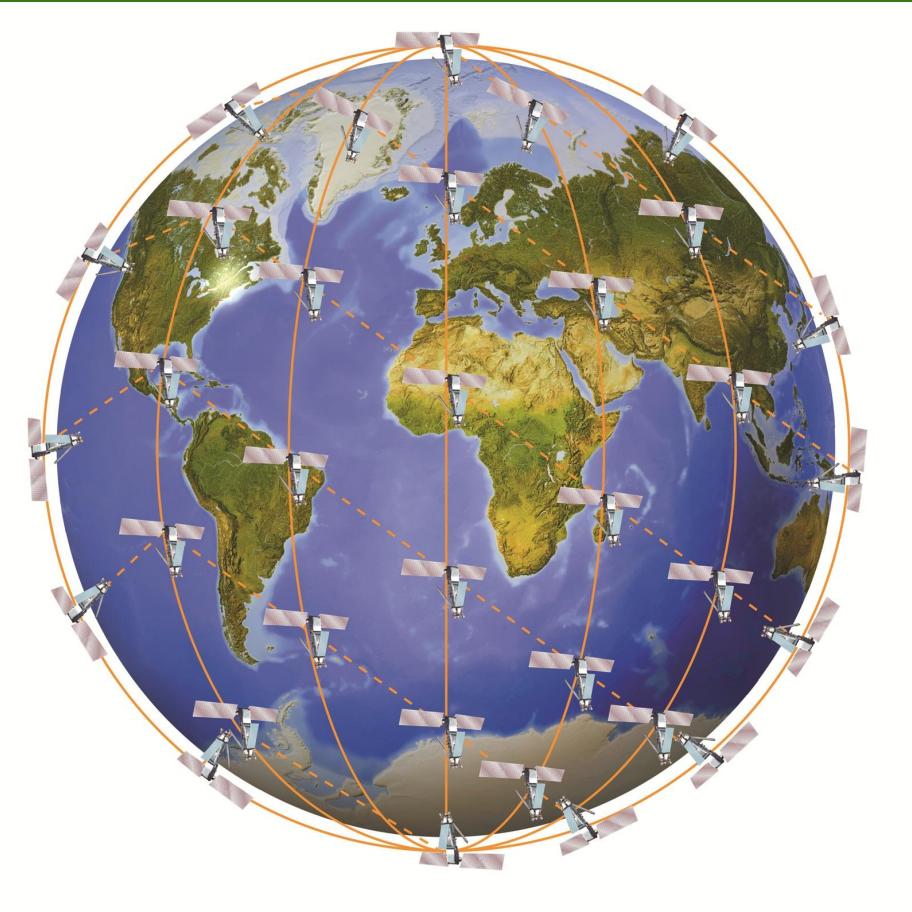
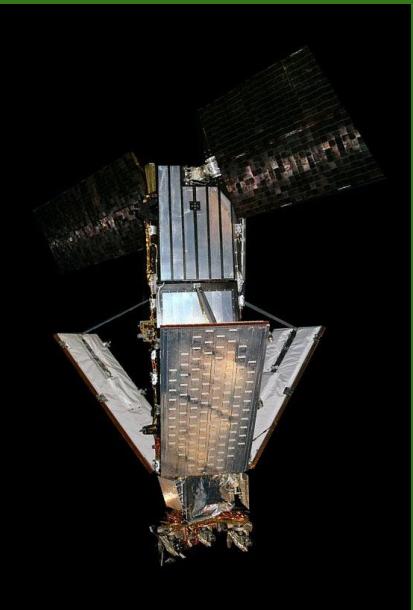
Lac-du-Taureau  
Quebec

Credit Meng Jia



## Iridium Flares

Iridium satellite constellation a system of 66 active satellites used for Voice and Data communication.

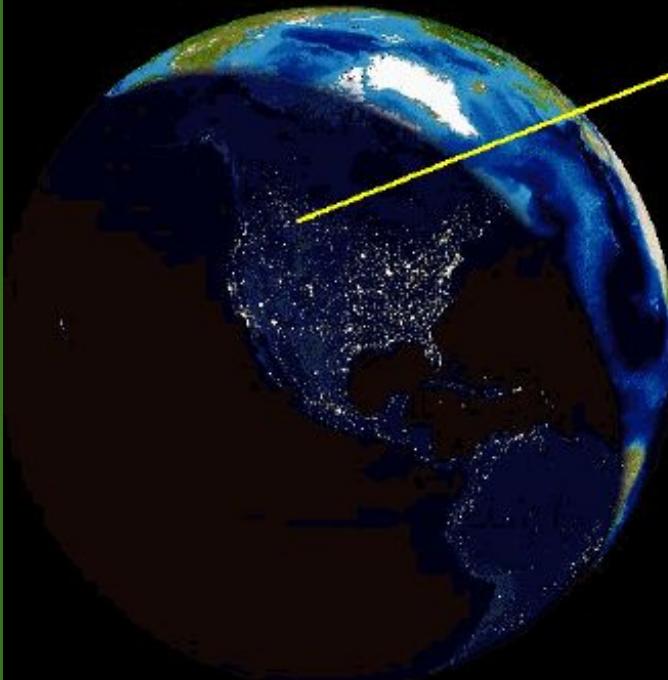


**How an Iridium Flare happens.**

Iridium satellite solar panels  
are pointed towards the Sun.



Iridium satellite antennas (3)  
are angled towards the Earth



**When the angles and orbital timing  
are just right, sunlight reflects off an  
antenna like a signal mirror in space.**



## Iridium Flares

[Home](#)

Search period start: 17:31 Friday, 27 October, 2017

< >

include daytime flares

Search period end: 17:31 Friday, 3 November, 2017

Clicking on the time of the flare will give more details about the flare, including a sky chart.

Time	Brightness	Altitude	Azimuth	Satellite	Distance to flare centre	Brightness at flare centre	Sun altitude
Oct 28, 05:52:15	0.7	35°	176° (S)	Iridium 56	45 km (E)	-7.5	-17° 🌞
Oct 28, 20:09:41	0.2	28°	16° (NNE)	Iridium 41	46 km (W)	-7.3	-26° 🌞
Oct 30, 19:44:13	-1.7	38°	19° (NNE)	Iridium 39	23 km (W)	-7.8	-22° 🌞
Oct 31, 05:43:15	-1.3	33°	188° (S)	Iridium 50	25 km (W)	-7.5	-20° 🌞
Oct 31, 07:05:53	-3.2	22°	141° (SE)	Iridium 81	20 km (E)	-6.2	-5° 🌞
Oct 31, 19:51:03	-4.0	32°	20° (NNE)	Iridium 80	13 km (E)	-7.5	-23° 🌞
Oct 31, 19:52:46	-2.1	34°	19° (NNE)	Iridium 15	22 km (W)	-7.6	-23° 🌞
Nov 1, 05:37:13	-3.1	33°	187° (S)	Iridium 53	15 km (E)	-7.5	-21° 🌞
Nov 3, 05:31:34	0.7	31°	196° (SSW)	Iridium 90	49 km (W)	-7.6	-22° 🌞

## Examples of Iridium Flares



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September 24 ·

Last Flight of the day Montreal Soaring Council - Club de Vol à Voile de Montréal

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# Bashar Dahabra

MontrealFlyer

59 Followers • 18 Following

3,033 Photos

Montreal, Canada

Joined 2005

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**BETA**

# Bashar Dahabra

Freelance Photographer

3,671 Affection

30,196 Photo Views

12 Followers

79 Following

Montreal, Canada



**PHOTOS** 223

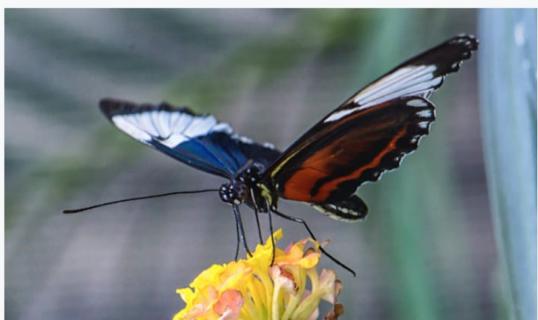
GALLERIES 16

GROUPS 12

MARKETPLACE 135

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PRO OPTIONS





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dahabra

Edit Profile

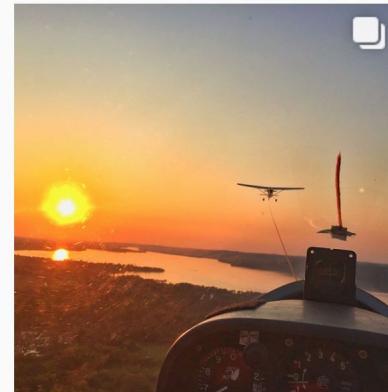


113 posts

870 followers

7,072 following

Bashar Dahbra



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18.7K Tweets

**#CJDLTV**

**Claggett**

**Johnson**

54.1K Tweets

**Mueller**

First charges filed in Mueller investigation, CNN reports

**#StrangersThings2**

76.1K Tweets

**Ortiz**

11.4K Tweets

**#BoxeTVASports**

**#CFLGameDay**

1,077 Tweets

**Stephen Harper**

## Bashar Dahabra

@dahabra

Freelance Commercial Photographer specializing in Nature, Events and Documentary Photography. Former Founder CEO of Info2cell leading VAS provider in ME region.

Montréal, Québec

Followed by Montreal Soaring and 86 others



Bashar Dahabra @dahabra · Oct 2

End of another great Soaring day at @MontrealSoaring #montreal #hawkesbury  
#dahabra #Cessna\_L19 #montreal Soaring Council



# Thank you

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