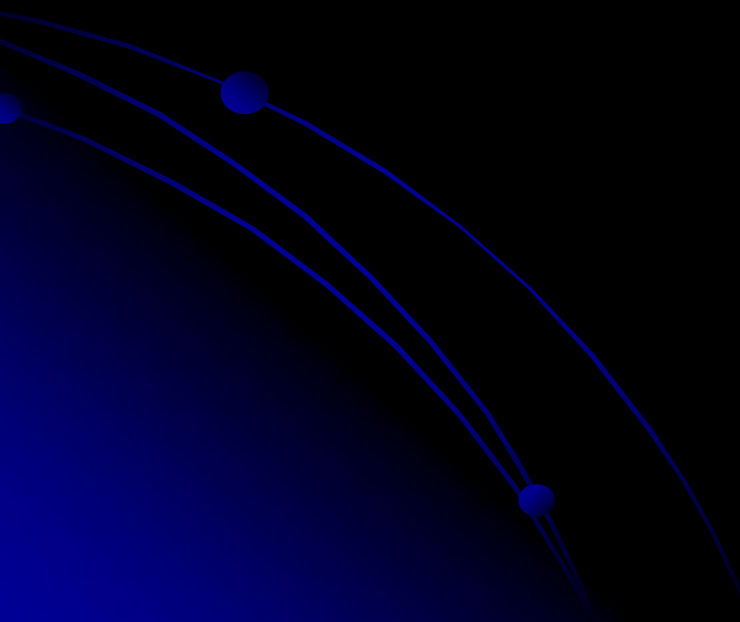


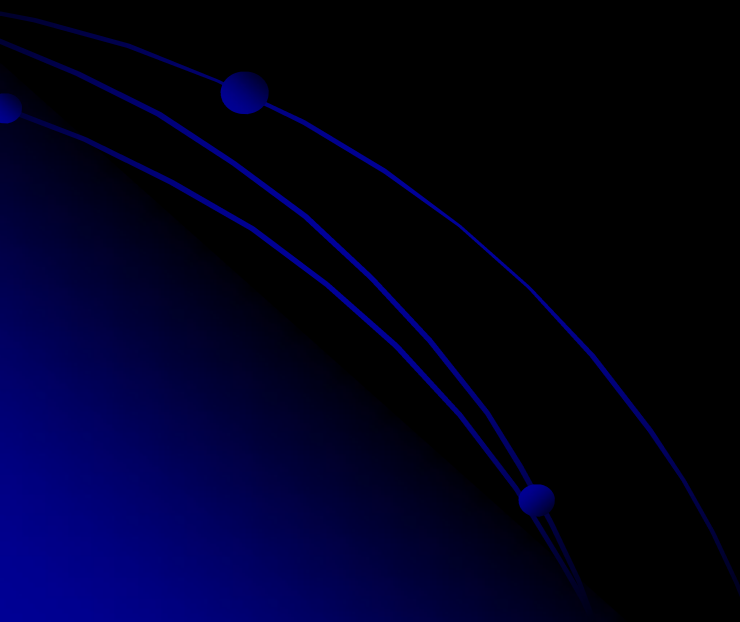
Planning for

# A Night of Astronomy



# A Night of Astronomy

- **Checking the Weather**
- **Site Selection**
  - **Planning your Session**
  - **Equipment**
    - **Setting Up**
      - **It's Fun to Share**





# A Night of Astronomy

## Checking the Weather

<http://cleardarksky.com/c/UmaOb1ORkey.html?1>

Ursa Major Observatory Clear Sky Chart - Microsoft Internet Explorer

Address: <http://cleardarksky.com/c/UmaOb1ORkey.html?1>

### Ursa Major Observatory Clear Sky Chart

legend page

Last updated 2009-03-23 10:15:27. No Image below? [Read this.](#)

**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:

**Other Charts**

[All](#)

Oregon: [List Map](#)

Within 60 mi: [List Map](#)

Within 120 mi: [List Map](#)

**Telescopes Sale**

Huge Telescopes Selection.  
Low Prices, 30% Off & Free SHI  
[www.Telescopes.com](http://www.Telescopes.com)

Ads by Google

2009-03-23	Monday	Tuesday	Wednesday
Local Time (PST)	11111111112222	11111111112222	0123456789012301234567890123012345
Cloud Cover:	[Grid]	[Grid]	[Grid]
Transparency:	[Grid]	[Grid]	[Grid]
Seeing:	[Grid]	[Grid]	[Grid]
Darkness:	[Grid]	[Grid]	[Grid]
Wind:	[Grid]	[Grid]	[Grid]
Humidity:	[Grid]	[Grid]	[Grid]
Temperature:	[Grid]	[Grid]	[Grid]

© 2009 A.Danko. Created with data from: [Environment Canada](#) [Environment France](#) [Click for Help](#)

A private observatory in Cottage Grove.

**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 full maps?**

**How can I put the Chart on my web**

**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 Ursa Major Observatory, OR, will have good weather for astronomical observing.

The forecast data comes from those very cool guys at 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 \(Atilla Danko\)](#) wrote a script to generate the images like the one above which summarizes CMC's forecast images just for Ursa Major Observatory and the surroundings out to about 10 miles.

There are also charts for [3659 other locations](#).

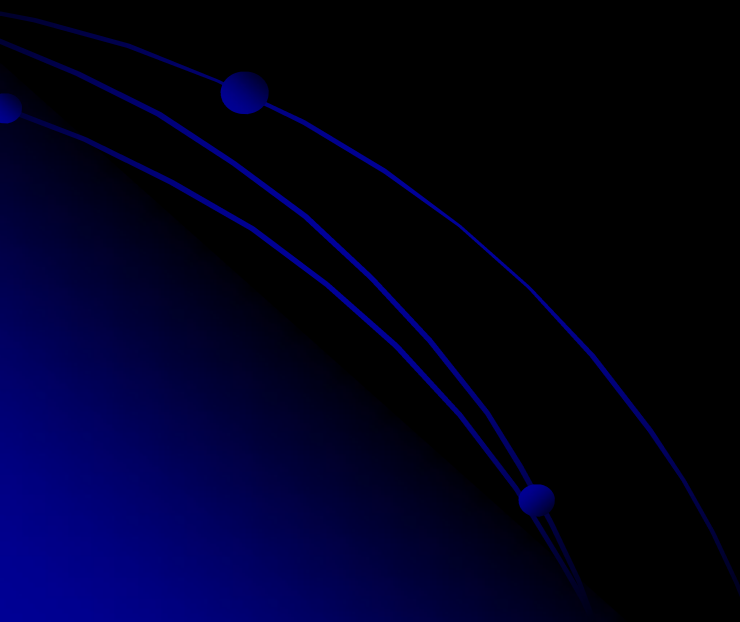
**How do I read it?**

**Summary:** In the rows labeled "sky conditions", find a column of blue blocks. You can probably observe then.



# A Night of Astronomy

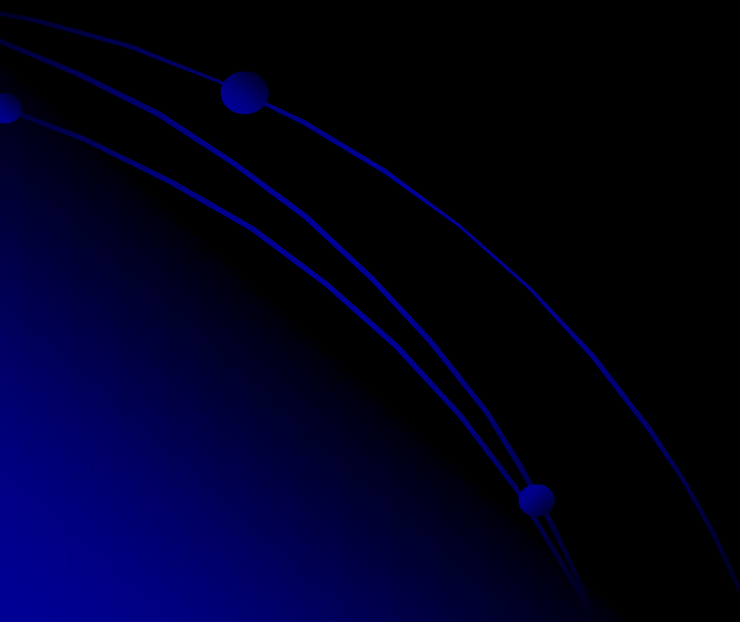
- Checking the Weather
- **Site Selection**
  - Planning your Session
  - Equipment
    - Setting Up
      - It's Fun to Share



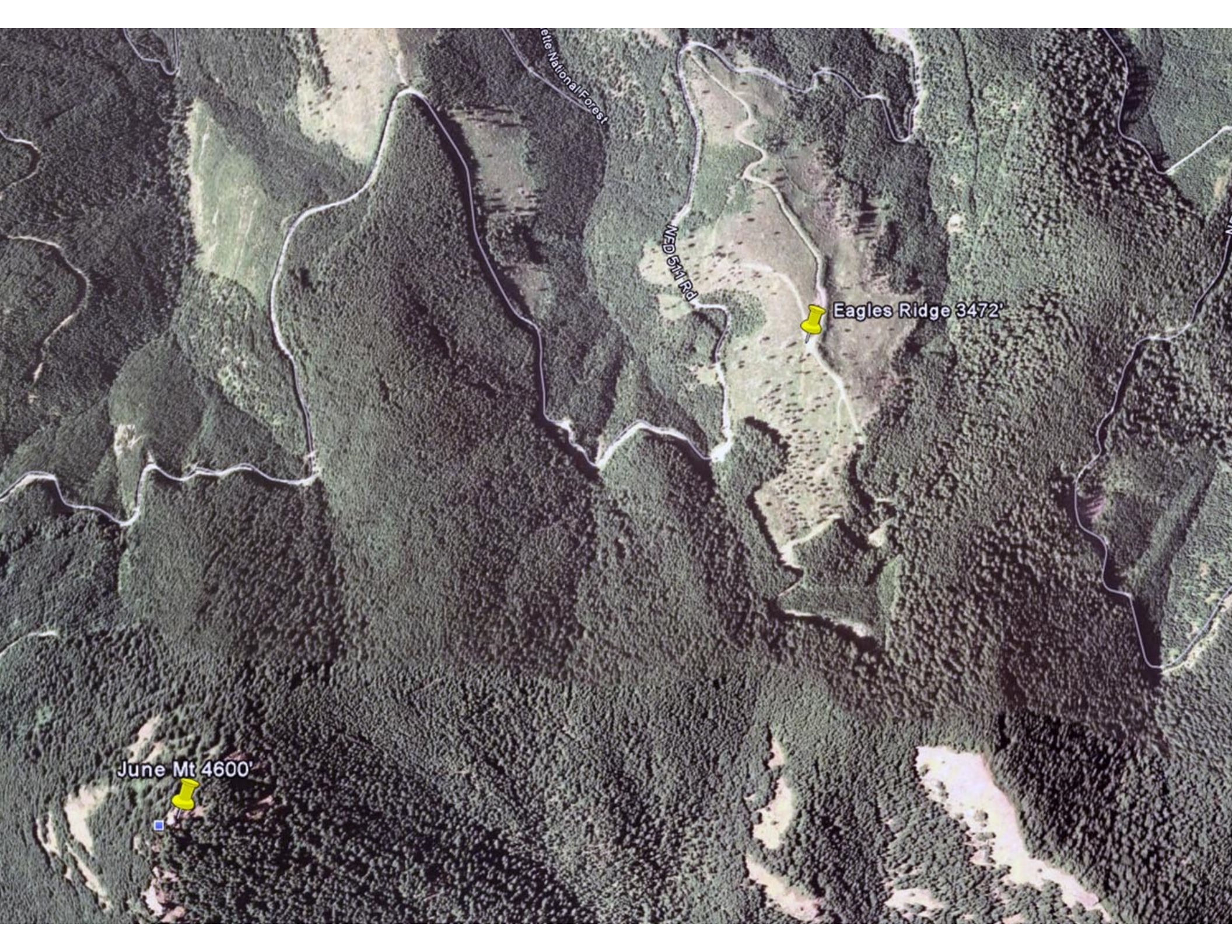
# A Night of Astronomy

## Site Selection

- Horizons
- Seeing Conditions
  - Safety
  - Distance
  - Vehicle Limitations







Pete National Forest

Madsen Rd

Eagles Ridge 3472'

June Mt 4600'



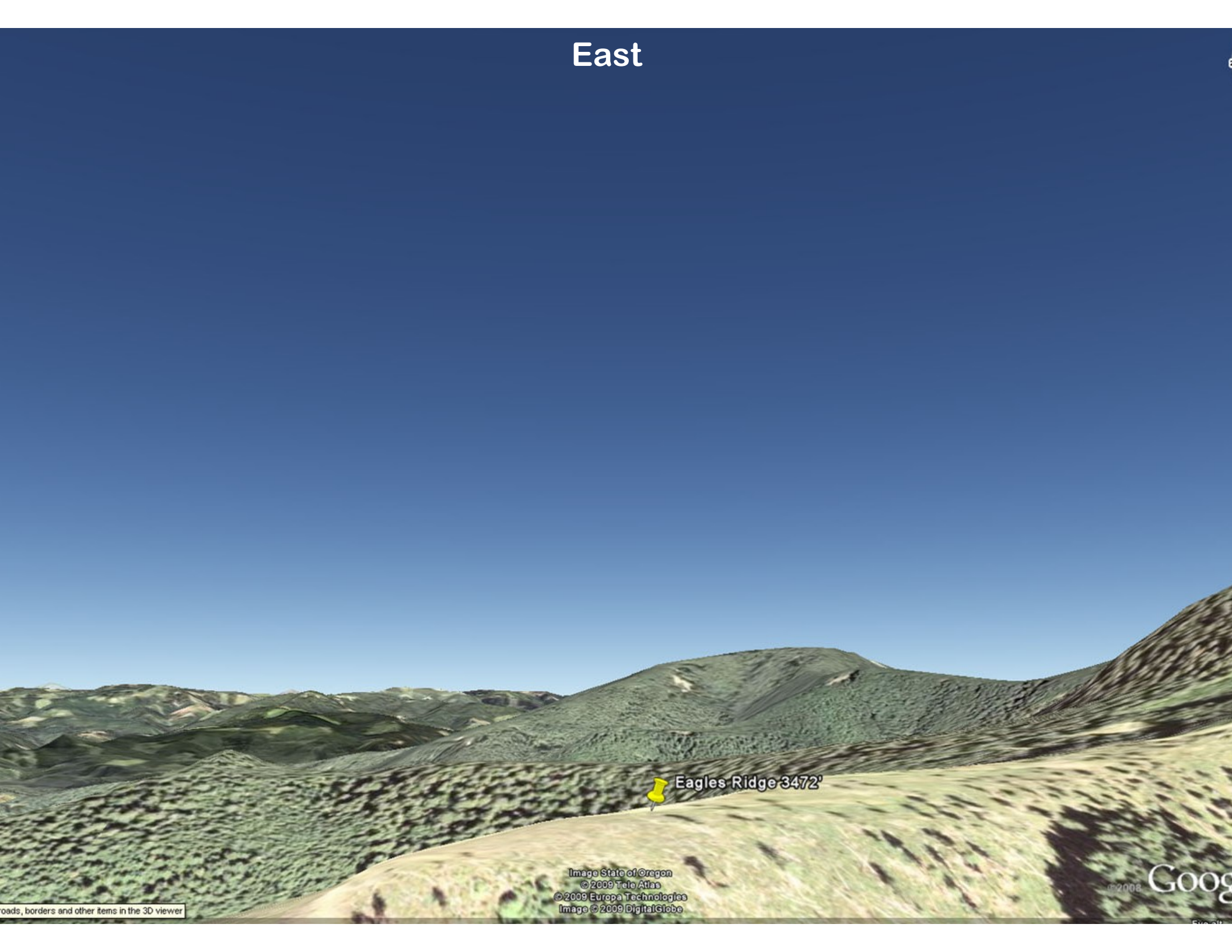
North



**Eagles Ridge 3472'**



# East



Eagles Ridge 3472'

Image State of Oregon  
© 2009 Tele Atlas  
© 2009 Europa Technologies  
Image © 2009 DigitalGlobe

© 2008 Google

roads, borders and other items in the 3D viewer



# South

 **Eagles Ridge 3472'**

Image State of Oregon  
© 2009 Tele Atlas  
Image © 2009 DigitalGlobe  
Image © 2009 Jackson County GIS

© 2008 Google



West

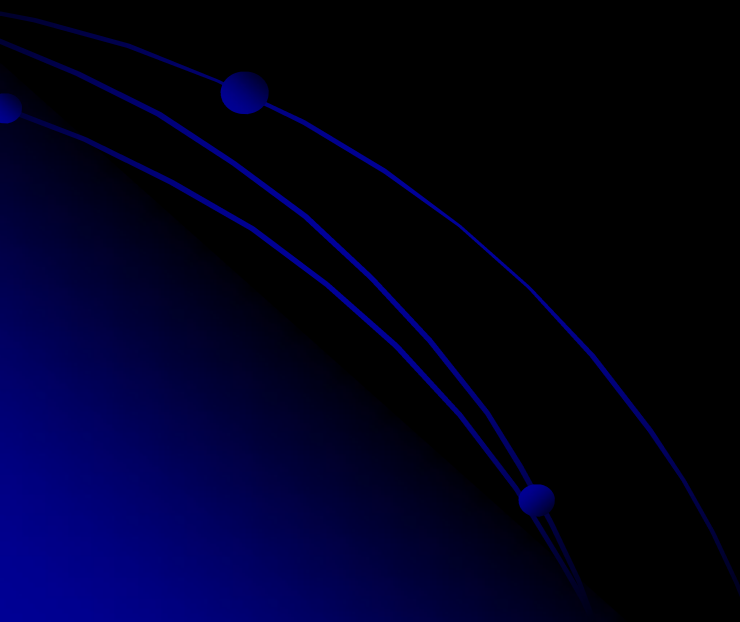
 Eagles Ridge 3472'



# A Night of Astronomy

## Site Selection

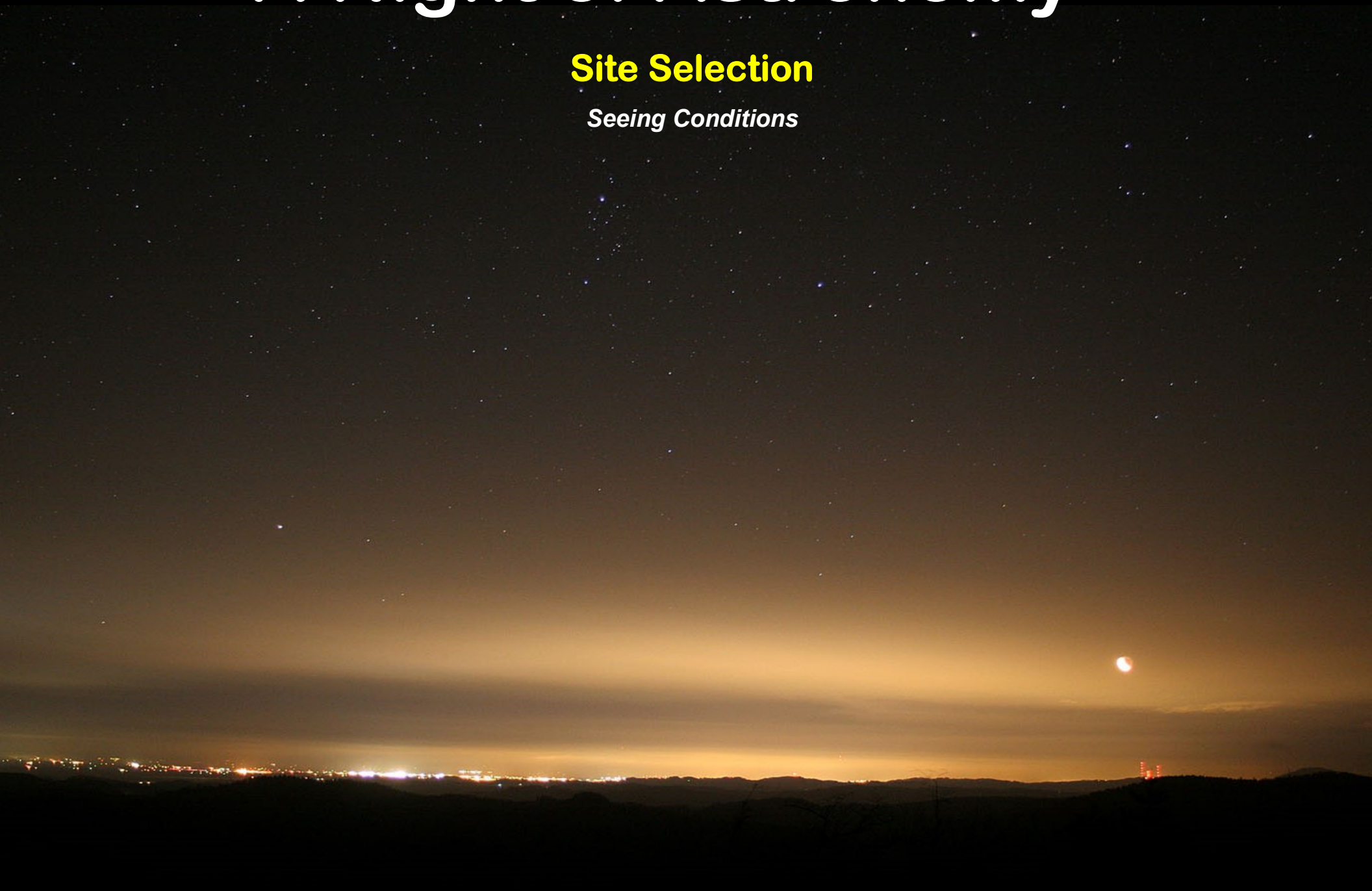
- Horizons
  - Seeing Conditions
    - Safety
      - Distance
        - Vehicle Limitations



# A Night of Astronomy

## Site Selection

*Seeing Conditions*





# A Night of Astronomy

## Site Selection

*Seeing Conditions*

Good seeing on a clear night 3-4 arc seconds

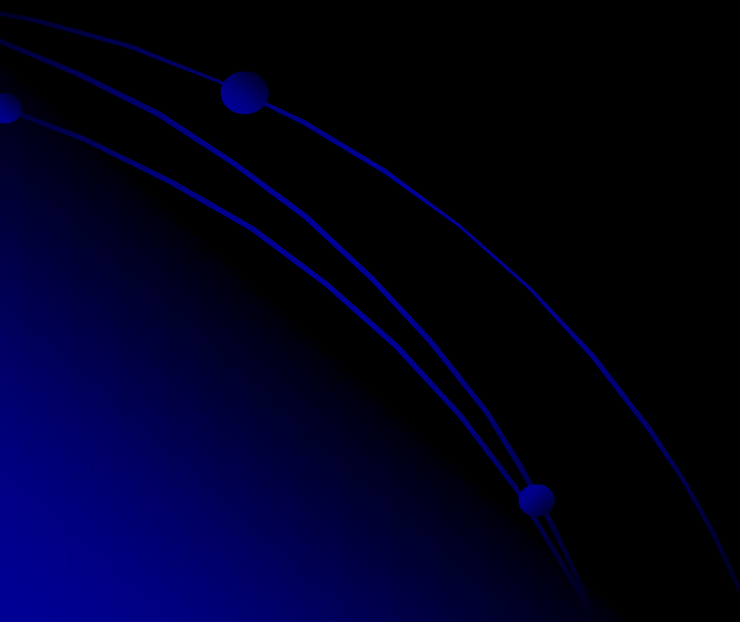
Very Good 2-3 arc seconds

Excellent < 2 seconds

# A Night of Astronomy

## Site Selection

- Horizons
- Seeing Conditions
  - Safety
  - Distance
  - Vehicle Limitations



# A Night of Astronomy

## Site Selection

### *Safety*

Going observing with a few other amateurs is always safer and also more fun

Always let someone know where you are and length of stay

Try to caravan to a Dark Sky Site

A cellular telephone has now become an invaluable item to make your observing trips safer

Keep a list of phone numbers for the local police, ambulance, and towing company handy

Keep an eye on each other and make sure everyone arrives safely

# A Night of Astronomy

## Site Selection

### *Safety*

Chose parking and setup area with care

Be cognizant of sloped areas, drop offs, nests, etc.

Police the area for litter, rocks and obstacles

Be prepared for visitations by local wildlife and know what to do

Always be prepare for adverse weather

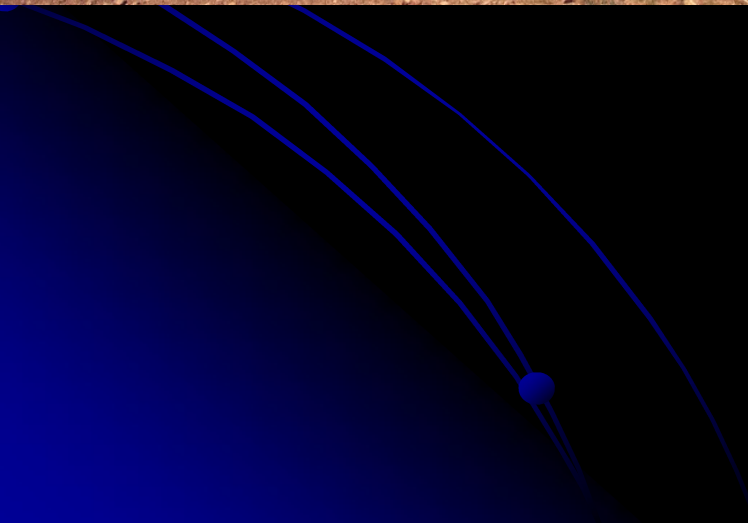
Keep a Survival Pack and First Aid Kit in your vehicle





# A Night of Astronomy

## Site Selection





# A Night of Astronomy

## Site Selection

### *Safety*

Chose parking and setup area with care

Be cognizant of sloped areas, drop offs, nests, etc.

Police the area for litter, rocks and obstacles

Be prepared for visitations by local wildlife and know what to do

Always be prepare for adverse weather

Keep a Survival Pack and First Aid Kit in your vehicle

# A Night of Astronomy



## Site Selection

### *Safety*

If contact is made, or about to be made, drop to the ground and play dead. Lay on your stomach, clasp your hands behind your neck, and use your elbows and toes to avoid being rolled over. If the bear does roll you over, keep rolling until you land back on your stomach. Remain still and try not to struggle or scream. A defensive bear will stop attacking

once it feels the threat has been removed. Do not move until you are absolutely sure the bear has left the area.

Give bears a chance to identify you as human, and not a threat. If the bear stands up, it is trying to see, hear and smell you better. Talk firmly in a low-pitched voice while backing away. Avoid direct eye contact as bears may perceive this as a challenge or threat.

Continue to back away slowly and cautiously, retreating to a place of safety. Monitor the animal's response, and adjust your actions accordingly



[www.centerforwildlifeinformation.org](http://www.centerforwildlifeinformation.org)

# A Night of Astronomy

## Site Selection

### *Safety*

**All cougar close encounters should be considered confrontational and predatory.**

**Be prepared to aggressively fight back.**



Even at a distance a brief glimpse should be cause for alarm. Though the cougar is most likely to leave the area, you should group together and travel with great caution. If there are repeated sightings, be prepared to aggressively defend yourself and others.

Cougars are secretive and elusive. They can jump 30 feet from a standstill and 20 feet up a cliffside. They mark their territory by urinating on scratch piles usually made of grass, dirt, pine needles and leaves. They often hide behind bushes, logs or rock outcroppings, and usually leave an area when they hear people approaching.



[www.centerforwildlifeinformation.org](http://www.centerforwildlifeinformation.org)

# A Night of Astronomy

## Site Selection

### *Safety*

Chose parking and setup area with care

Be cognizant of sloped areas, drop offs, nests, etc.

Police the area for litter, rocks and obstacles

Be prepared for visitations by local wildlife and know what to do

Always be prepare for adverse weather

Keep a Survival Pack and First Aid Kit in your vehicle

# A Night of Astronomy

## Site Selection

### *Safety*

Do Not operate equipment from your vehicle's battery

On public land be prepared for wanted or un-wanted human visitors

Don't advertise your location with noise or excessive use of laser pointers

Be especially wary of people under the influence of alcohol or drugs

Stay together and don't play the worth of your equipment

Tell un-wanted visitors this is your first and last time at this location

# A Night of Astronomy

## Site Selection

### *Safety*

Tell un-wanted visitors you always come in large groups

Avoid confrontations, leave the area or lock yourself in your vehicle

Chemical agents or firearms require specialized training

Don't drink and drive

Make sure you are wide awake when you drive home

Caravan down the hill and make sure everyone makes it down



# A Night of Astronomy

## Site Selection

- Horizons
  - Seeing Conditions
    - Safety
    - Distance
    - Vehicle Limitations
- 



# A Night of Astronomy

## Site Selection

### *Distance*

Don't pick a location that is too far for a single night

The longer the distance the more planning is necessary

Distances that require more than 3 hours of travel may require time for sleep

When driving any distances at night stop for fresh air and stretch often

Caravan and use hand held radios to communicate

Have some wait to make sure everyone makes it down the hill safely

Have adequate supplies for longer trips

# A Night of Astronomy

## Site Selection

- Horizons
  - Seeing Conditions
    - Safety
    - Distance
    - Vehicle Limitations
- 

# A Night of Astronomy

## Site Selection

### *Vehicle Limitations*

Keep required maintenance on your vehicle current

Make sure you have a full tank of fuel

Keep a vehicle emergency repair kit

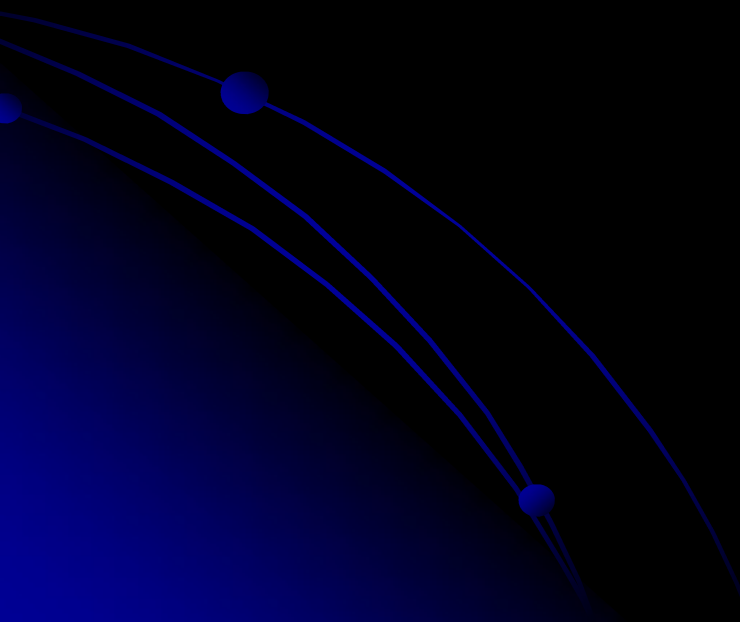
Make sure tires and spare are in good condition

Check all fluids and do a walk around inspection before your leave

Make sure everything is packed safely, check your list

# A Night of Astronomy

- Checking the Weather
- Site Selection
  - **Planning your Session**
  - Equipment
    - Setting Up
      - It's Fun to Share



# A Night of Astronomy

## Planning your Session

Make a wish list of objects you wish to observe or image for the night

Make a sequence of observing objectives

Print star charts

Choose the equipment that will meet your goals

Have a back-up plan do to seeing conditions

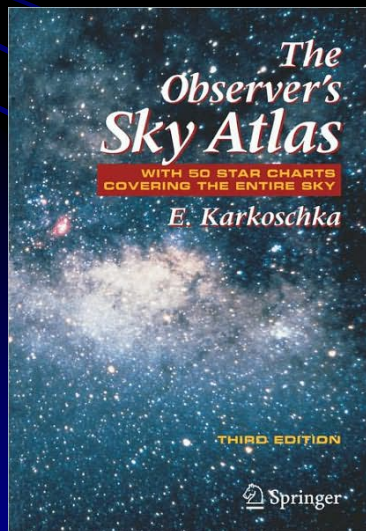
Make sure your planned session is fun and what you want to do

Sometimes it is nice just to cruise with no plan

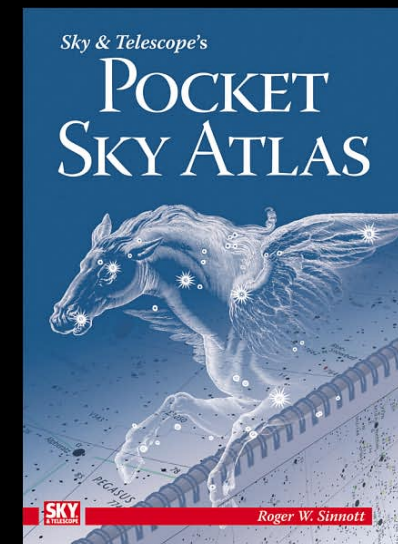


# A Night of Astronomy

## Planning your Session



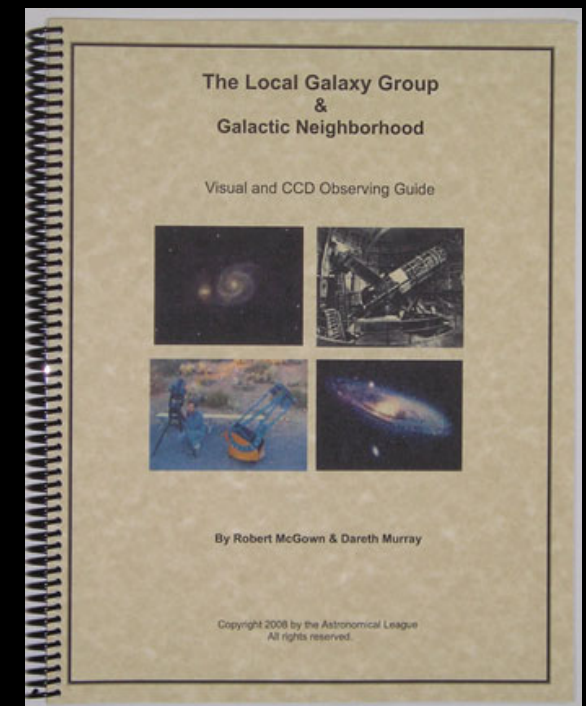
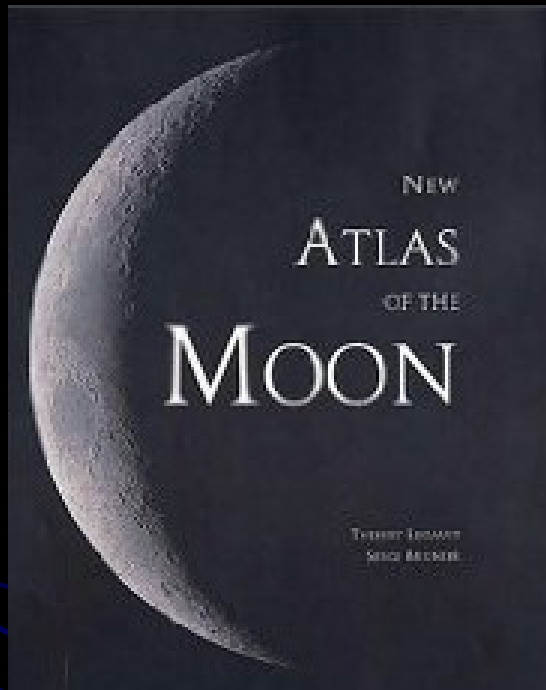
Good Star Charts





# A Night of Astronomy

## Planning your Session







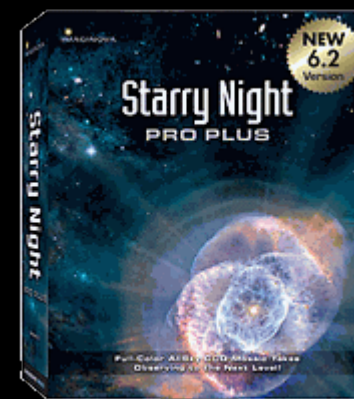
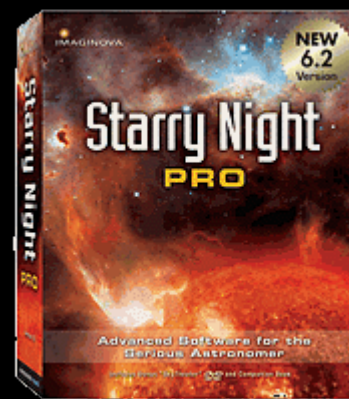
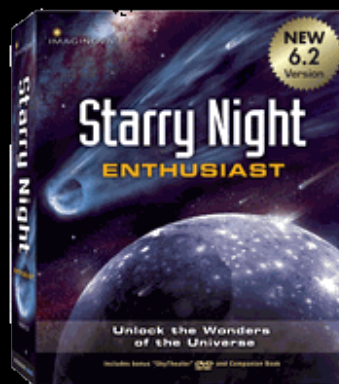
# A Night of Astronomy

## Planning your Session



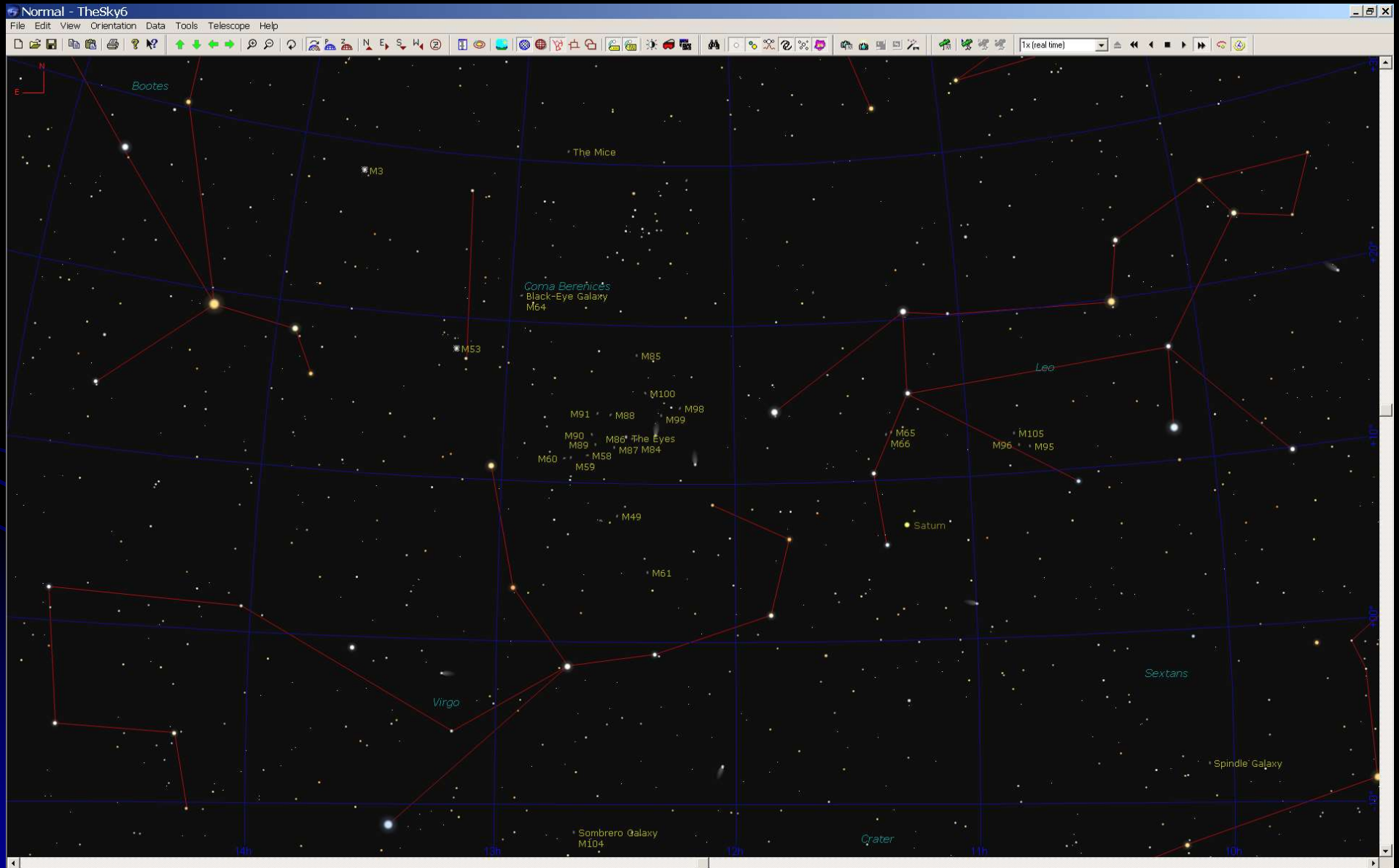
**CARTES DU CIEL  
SKY CHARTS**

**FREE ASTRONOMY SOFTWARE**



# A Night of Astronomy

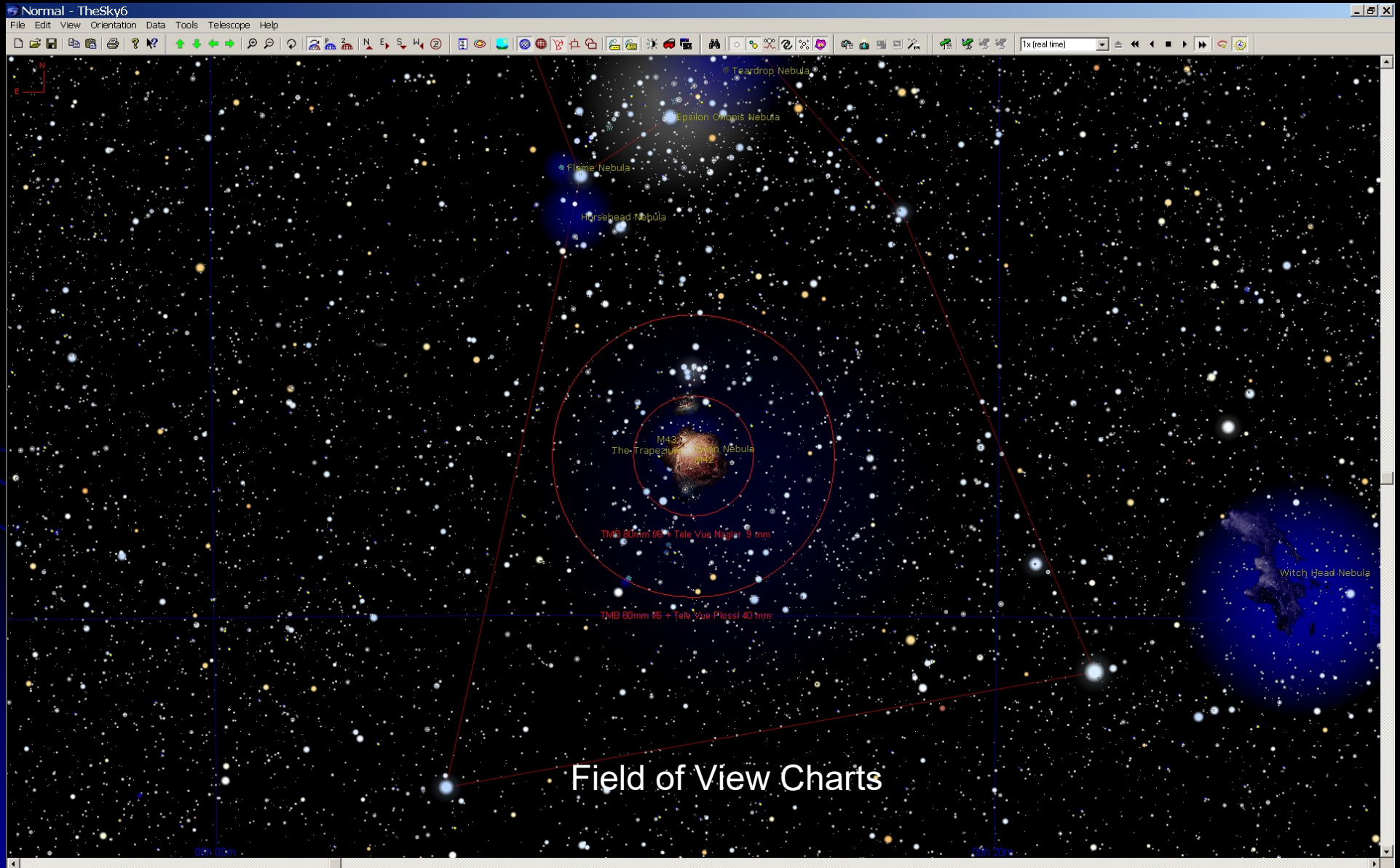
## Planning your Session





# A Night of Astronomy

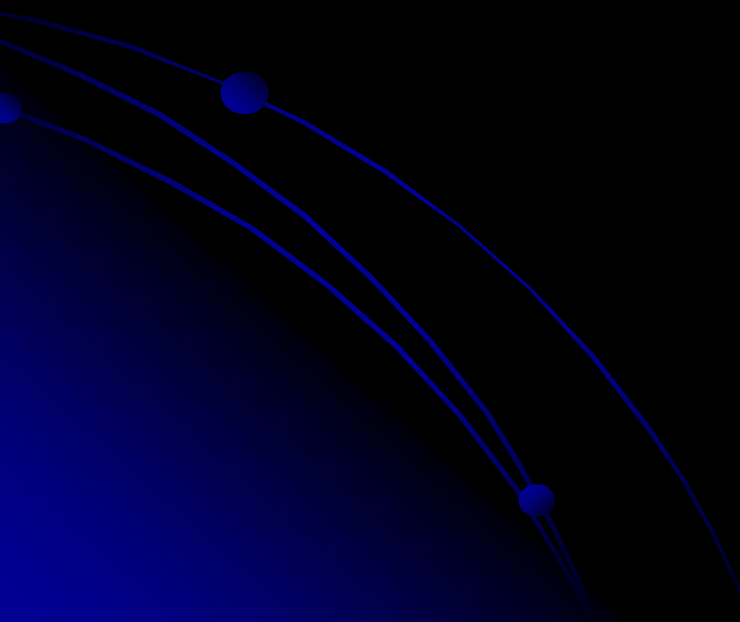
## Planning your Session





# A Night of Astronomy

- Checking the Weather
- Site Selection
  - Planning your Session
  - **Equipment**
    - Setting Up
    - It's Fun to Share





# A Night of Astronomy

## Equipment

Make an equipment list for packing

Everything should have a home

Use cases or plastic totes to store your astronomy gear

Keep all equipment together

Keep all batteries charged and always have extra

Before you leave go over your list and inventory your packed equipment

It's no fun to setup for an evening to learn a vital piece of equipment was left behind

# A Night of Astronomy

## Equipment





# A Night of Astronomy

## Equipment





# A Night of Astronomy

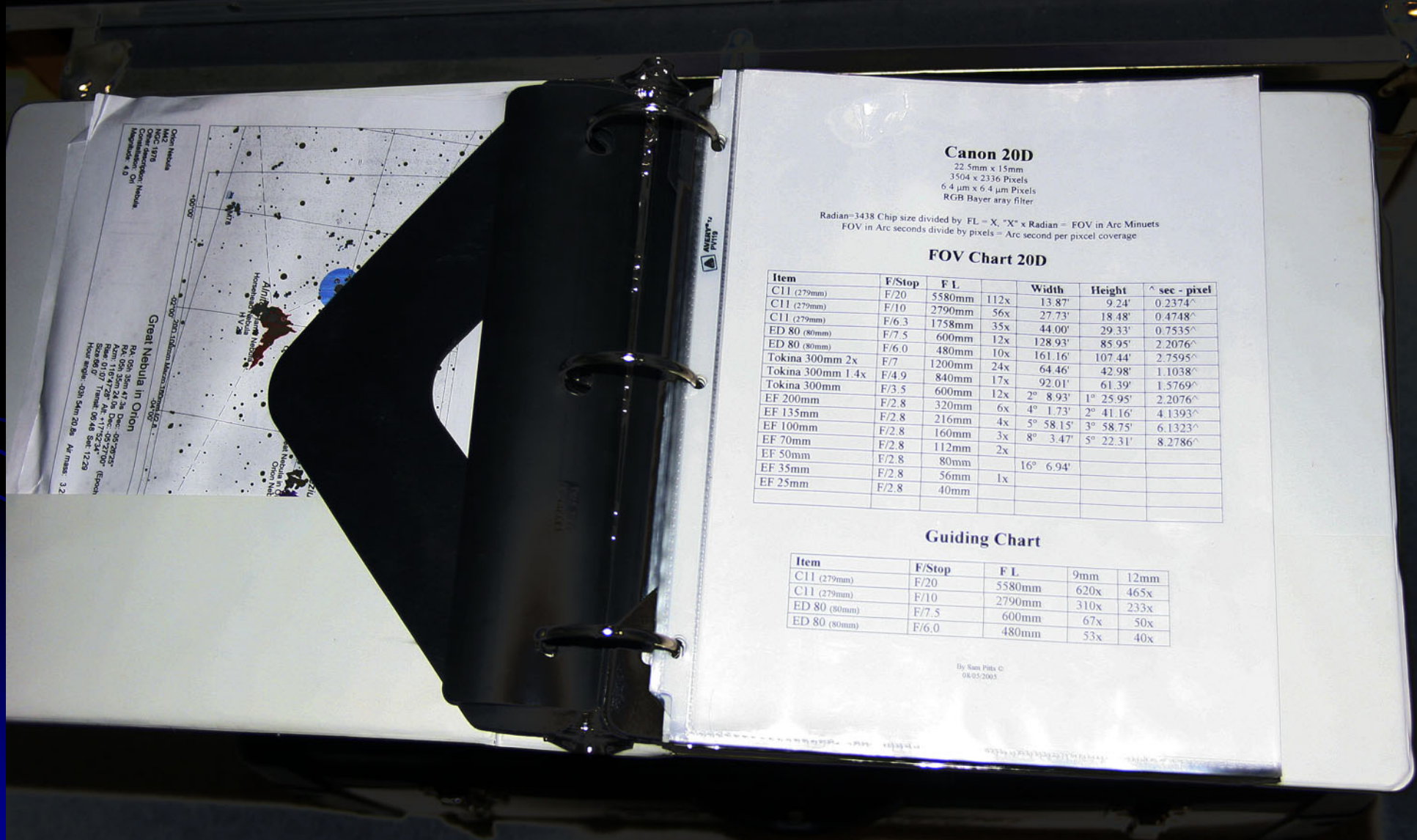
## Equipment





# A Night of Astronomy

## Equipment



### Canon 20D

22.5mm x 15mm  
3504 x 2336 Pixels  
6.4 µm x 6.4 µm Pixels  
RGB Bayer array filter

Radian = 3438 Chip size divided by FL = X, "X" x Radian = FOV in Arc Minutes  
FOV in Arc seconds divide by pixels = Arc second per pixel coverage

### FOV Chart 20D

Item	F/Stop	F L		Width	Height	sec - pixel
C11 (279mm)	F/20	5580mm	112x	13.87'	9.24'	0.2374^
C11 (279mm)	F/10	2790mm	56x	27.73'	18.48'	0.4748^
ED 80 (80mm)	F/6.3	1758mm	35x	44.00'	29.33'	0.7535^
ED 80 (80mm)	F/7.5	600mm	12x	128.93'	85.95'	2.2076^
Tokina 300mm 2x	F/6.0	480mm	10x	161.16'	107.44'	2.7595^
Tokina 300mm 1.4x	F/7	1200mm	24x	64.46'	42.98'	1.1038^
Tokina 300mm	F/4.9	840mm	17x	92.01'	61.39'	1.5769^
EF 200mm	F/3.5	600mm	12x	2° 8.93'	1° 25.95'	2.2076^
EF 135mm	F/2.8	320mm	6x	4° 1.73'	2° 41.16'	4.1393^
EF 100mm	F/2.8	216mm	4x	5° 58.15'	3° 58.75'	6.1323^
EF 70mm	F/2.8	160mm	3x	8° 3.47'	5° 22.31'	8.2786^
EF 50mm	F/2.8	112mm	2x			
EF 35mm	F/2.8	80mm		16° 6.94'		
EF 25mm	F/2.8	56mm	1x			
EF 25mm	F/2.8	40mm				

### Guiding Chart

Item	F/Stop	F L	9mm	12mm
C11 (279mm)	F/20	5580mm	620x	465x
C11 (279mm)	F/10	2790mm	310x	233x
ED 80 (80mm)	F/7.5	600mm	67x	50x
ED 80 (80mm)	F/6.0	480mm	53x	40x

By Sam Pitts ©  
08/03/2005

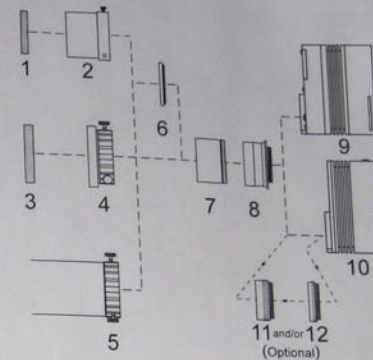
# A Night of Astronomy

## Equipment

### Observing Site Coordinates

224 Chimney Rock, Eugene:	123° 8.8' W	44° 7.3' N
College Hill 25 <sup>th</sup> & Larence, Eugene:	123° 5.9' W	44° 1.9' N
Eagles Rest, Dexter, OR:	122° 44.6 W	43° 50.2' N
Wolf Creek MP 11	123° 26.6 W	43° 53.9' N
Panther Creek Site A	123° 24.5 W	43° 56.3' N
PMO		
Oregon Star Party		

### ASTRO-PHYSICS CCD TELECOMPRESSOR (CCDT67)



1. Rear cell on 9.25" SCTs and under.
2. 2" visual back for 9.25" SCTs and under. Consider our ADASCT with brass locking ring and two screws (shown).
3. Rear cell on 10" and larger SCTs.
4. 2" visual back for 10" and larger SCTs. Consider our ADASCTLC (Celestron) and ADASCTLM (Meade), which feature a brass locking ring and three screws (shown).
5. 2" slip-in-type opening. If you have an Astro-Physics focuser, consider our ADA2003 (shown) or ADA2013 with three brass locking screws.
6. 48 mm Filter (optional).
7. CCD Telecompressor (CCDT67).
8. 2"/T2 Tapered Nosepiece (AP16T) or any other 2" nosepiece with 48mm threads that is designed for CCD cameras.
9. CCD camera with Color Filter Wheel (compression is approximately 0.67x for a refractor - may vary with other designs.)
10. CCD camera (compression is approximately 0.75x for a refractor - may vary with other designs.)
11. 15mm T-2 / T-2 Extension made by Baader Planetarium (BP25A) } optional
12. 7.5mm T-2 / T-2 Extension made by Baader Planetarium (BP25C) }

Feb. 6, 2006



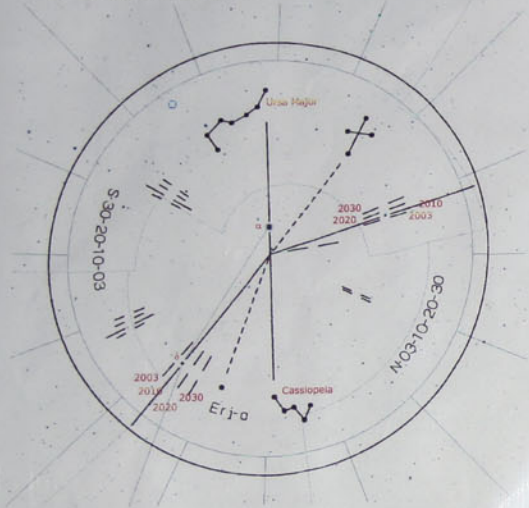
# A Night of Astronomy

## Equipment

Kenko Polar Finder Instructions  
Rev. 2 - 14 Mar. 2005

### Northern Hemisphere

The updated northern hemisphere alignment points remain essentially as previously described, with the same three stars used for alignment purposes. The text 'N-03-10-20-30' is a reminder that the lock marks for the second and third stars are for 2003, 2010, 2020, and 2030, respectively.



Hutech Corporation and ScienceCenter Net. © 2000-2005

4

### Gemini Bright Star List

STAR/CONSTELLATION	RA	DEC	DRIFT ALIGN
Albali Agr.	20:47:40,	-09:29:45#	X
Albireo b Cyg.	19:30:43,	+27:57:35#	
Alcor UMa,	13:25:13,	+54:59:17#	
Alcyone Plei,	03:47:29,	+24:06:18#	
Aldebaran a Tau,	04:35:55,	+16:30:33#	
Alderamin a Cep,	21:18:34,	+62:35:08#	
Algenib Peg.	00:13:14,	+15:11:01#	
Algol b Per,	03:08:10,	+40:57:20#	
Alloth UMa,	12:54:01,	+55:57:35#	
Almach And,	02:03:54,	+42:19:47#	
Alnilam Ori,	05:36:12,	-01:12:07#	X
Alnitak Ori,	05:40:45,	-01:56:34#	X
Alphard a Hya,	09:27:35,	-08:39:31#	
Alphecca a CrB,	15:34:41,	+26:42:53#	
Alpheratz a And,	00:08:23,	+29:05:26#	
Alphirk b Cep,	21:28:39,	+70:33:39#	
Alrai Cep,	23:59:20,	+77:37:57#	
Alsham b Aql,	19:55:18,	+06:24:24#	X
Altair a Aql,	19:50:46,	+08:52:06#	X
Antares a Sco,	16:29:24,	-26:25:55#	
Arcturus a Boo,	14:15:39,	+19:10:57#	
Arneb a Lep,	05:32:43,	-17:49:20#	
Atlas Plei,	03:49:09,	+24:03:12#	
Baten Cet,	01:51:27,	-10:20:06#	
Bellatrix Ori,	05:25:07,	+06:20:59#	
Benetnasch UMa,	13:47:32,	+49:18:48#	
Betelgeuse a Ori,	05:55:10,	+07:24:25#	X
Cam a,	04:54:02,	+66:20:34#	
Cap a,	20:17:38,	-12:30:30#	
Capella a Aur,	05:16:41,	+45:59:53#	
Caph b Cas,	00:09:10,	+59:08:59#	
Castor a Gem,	07:34:35,	+31:53:18#	
Cnc a,	08:58:29,	+11:51:28#	X
Com a,	13:09:59,	+17:31:46#	
Cor Caroli CVn,	12:56:01,	+38:19:06#	
Cursa b Eri,	05:07:50,	-05:05:11#	
Cyg Delta,	19:44:58,	+45:07:51#	
Deneb a Cyg,	20:41:25,	+45:16:49#	
Denebola b Leo,	11:49:03,	+14:34:19#	
Diphda b Cet,	00:43:35,	-17:59:12#	
Dubhe a UMa,	11:03:43,	+61:45:03#	

# A Night of Astronomy

## Equipment

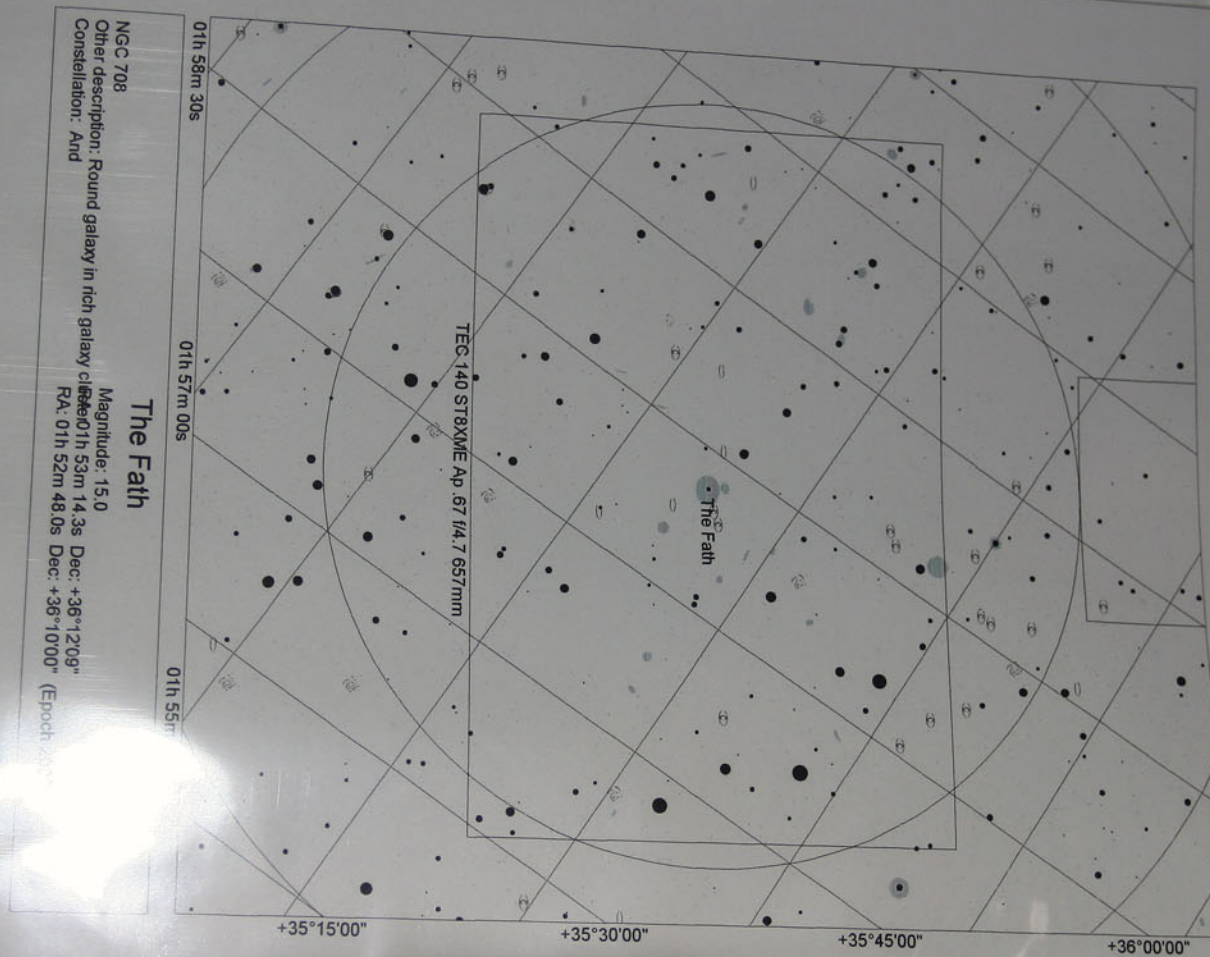
Bright  
STARS  
Fall 89.2





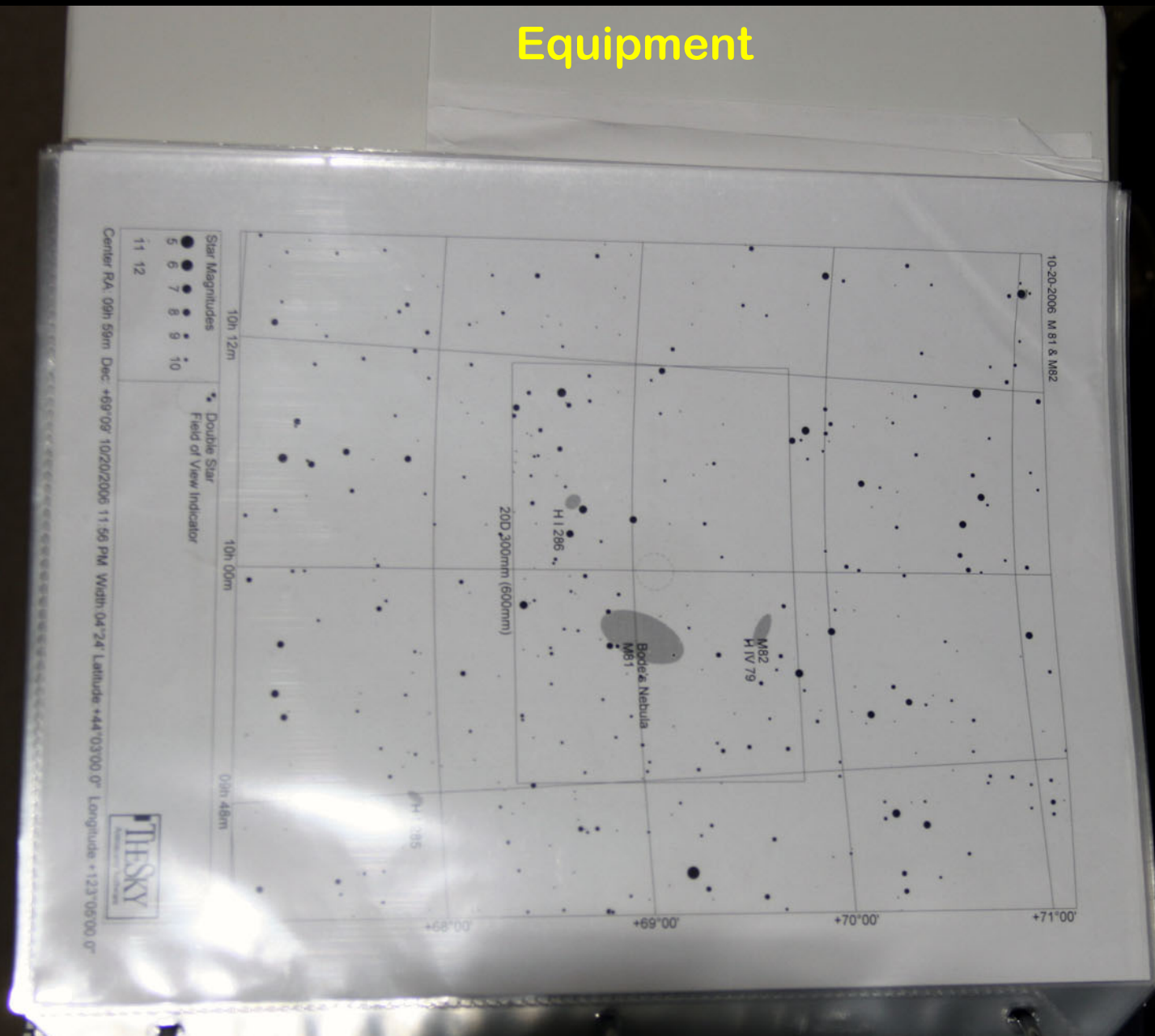
# A Night of Astronomy

## Equipment



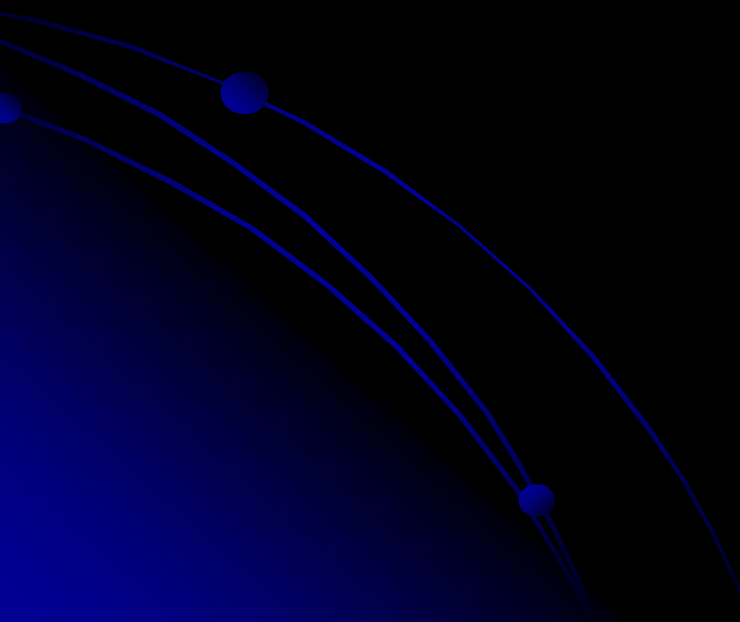
# A Night of Astronomy

## Equipment



# A Night of Astronomy

- Checking the Weather
- Site Selection
  - Planning your Session
  - Equipment
    - **Setting Up**
      - It's Fun to Share



# A Night of Astronomy

## Setting-Up

Arrive early and setup while the sun is still up

Pick your site with care

Make sure it is level and police debris and large rocks

Take your time don't risk tripping or damaging you or your equipment

A large piece of carpet is great to setup on and it keeps the dust down

Protect sensitive or fragile areas with cones or reflective tape

Don't setup too close to a road or drop-off



# A Night of Astronomy

## Setting-Up

Setting up for a long stay



# A Night of Astronomy

## Setting-Up

Protecting Equipment





# A Night of Astronomy

## Setting-Up



A Night at Eagle's Ridge



# A Night of Astronomy

## Setting-Up



Setting up Early

# A Night of Astronomy

## Setting-Up



Long way to go



# A Night of Astronomy

## Setting-Up



What's Next



# A Night of Astronomy

## Setting-Up



Just starting



# A Night of Astronomy

## Setting-Up



Is it level ?



# A Night of Astronomy

## Setting-Up

Where did it go





# A Night of Astronomy

## Setting-Up

This is too much  
work





# A Night of Astronomy

## Setting-Up



Lifting Weighs



# A Night of Astronomy

## Setting-Up



Hooking up to power

More Weight Lifting





# A Night of Astronomy

## Setting-Up



## Computer Setup

# A Night of Astronomy

## Setting-Up

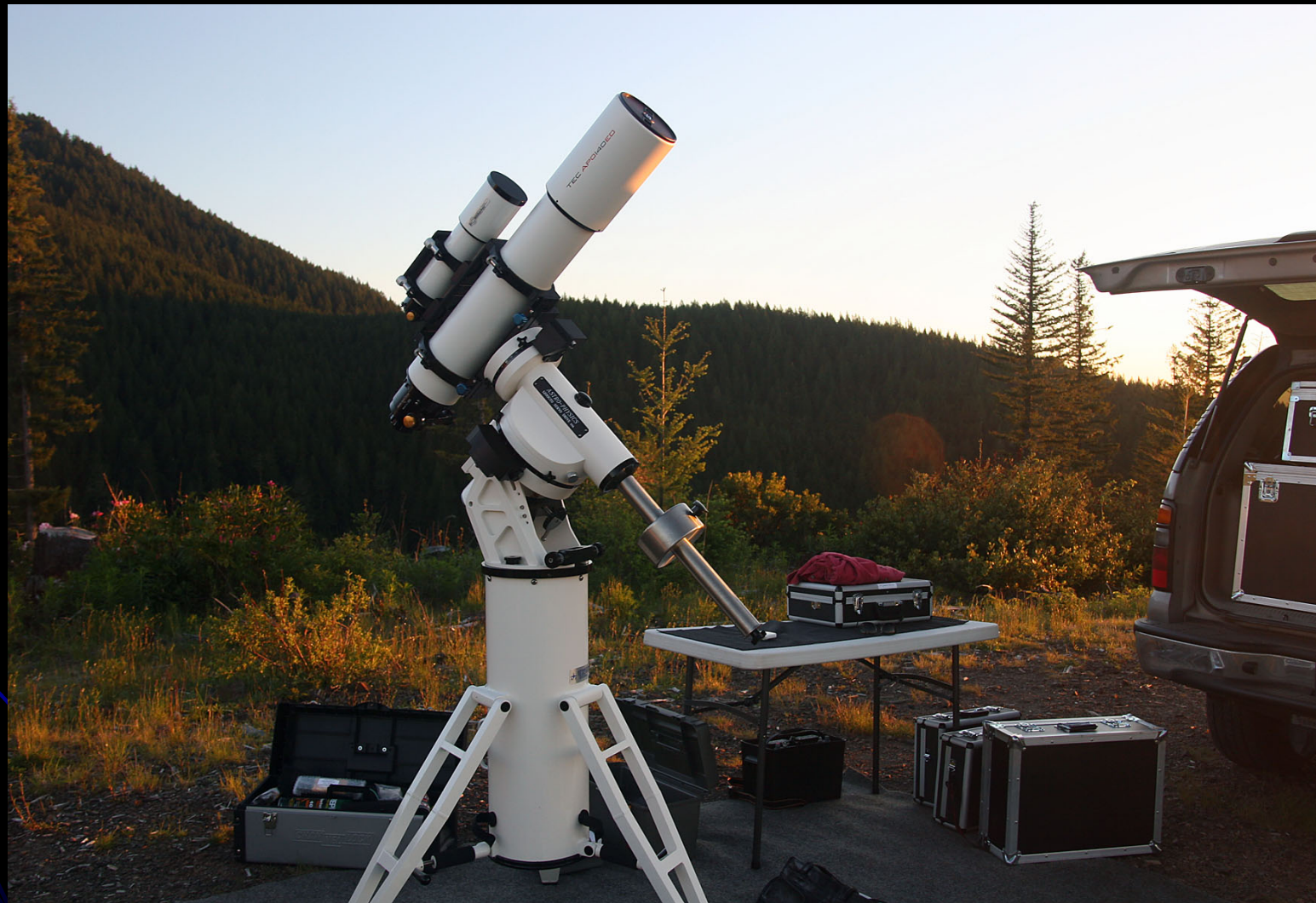


Ready for Cables



# A Night of Astronomy

## Setting-Up

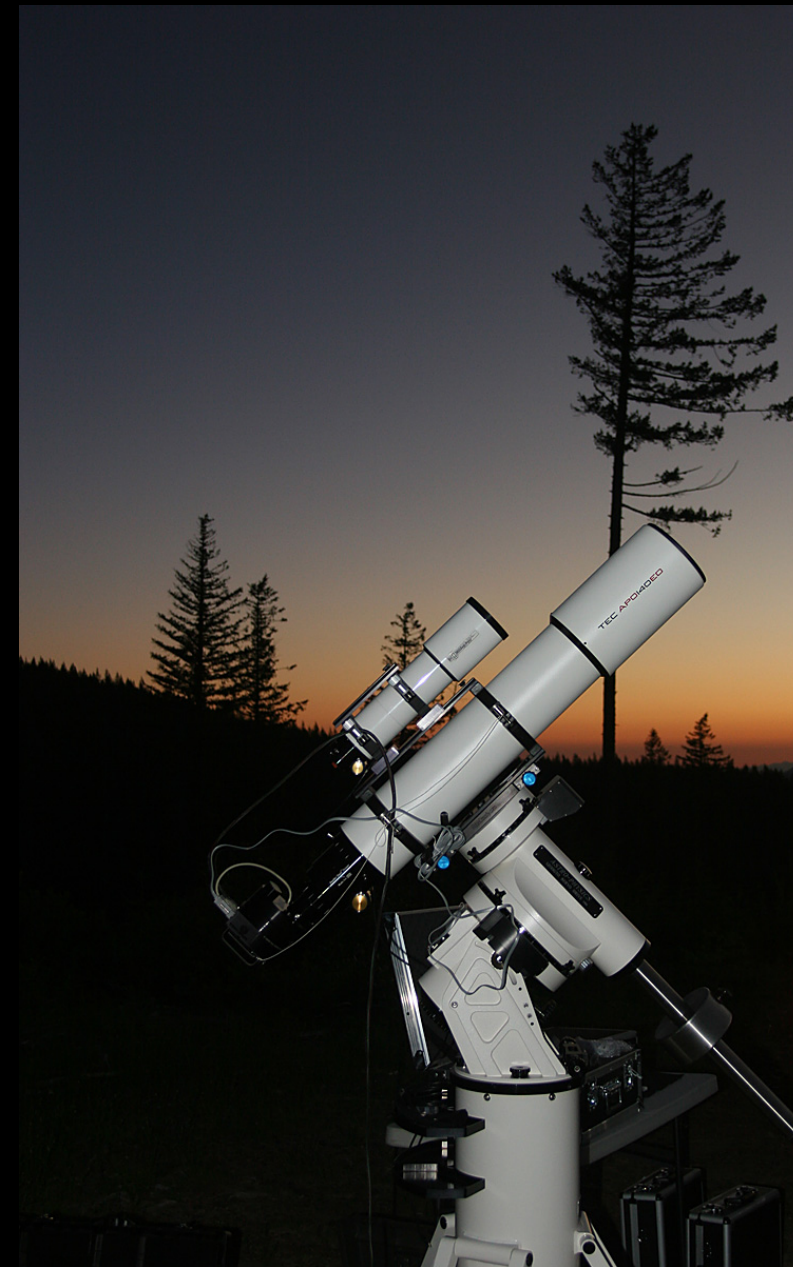


Taking a Break



# A Night of Astronomy

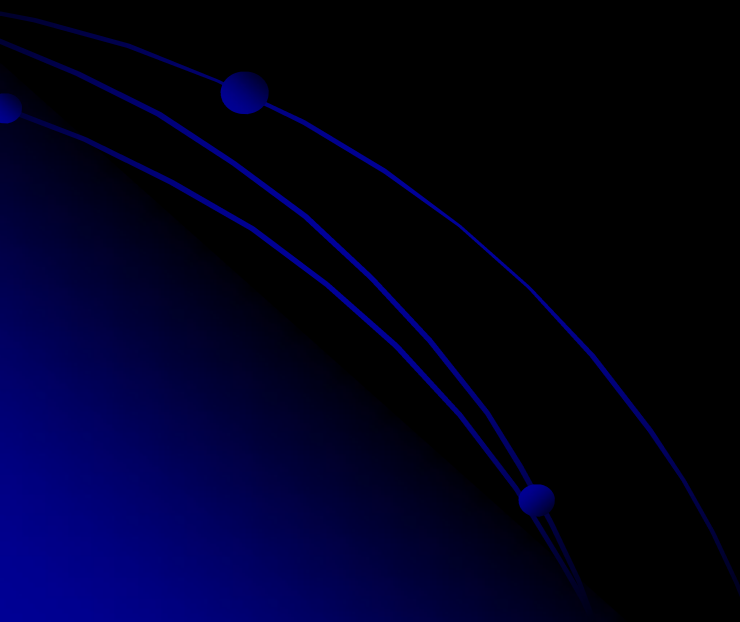
## Setting-Up



All setup and awaiting astronomical twilight

# A Night of Astronomy

- Checking the Weather
- Site Selection
  - Planning your Session
  - Equipment
    - Setting Up
      - **It's Fun to Share**





# A Night of Astronomy

It's Fun to Share

