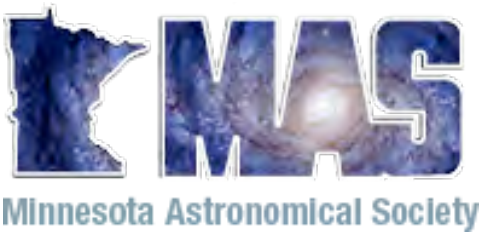
ASTRONOMER INFORMATION PACKAGE

10th Annual
Acadia Night Sky Festival
September 6 to 9, 2018



Thank you to all past, and a big welcome to all new participants!

2018 ANSF OBSERVING EVENTS SUMMARY

Friday, Sept. 7, 2018, Almanac, Bar Harbor, ME Sunset: 7:00 pm, Civil Twilight: 7:30 pm Nautical Twilight: 8:05 pm **Astronomical Twilight: 8:42 pm** Moonset: 6:01 pm	Village Green LAT 44° 23' 16.5"N LON 68° 12' 17.6"W **MAG DEC 16° 21'W** Seawall LAT 44° 14' 13.6"N LON 68° 18' 7.8"W **MAG DEC 16° 16'W**

1. 1:30 PM - 3:00 PM ***Celebration of the Sun*, Solar Viewing Bar Harbor Village Green**
suggested arrival time: 1:00 PM for setup, AC Power available at Gazebo
Note: allow 40 minutes travel time from Village Green to Seawall

2. 8:00 PM - 10:00 PM **Star Party at Seawall Picnic Area**, no AC power available
suggested setup time, any time after 4:30 PM & before 6:30 PM
4:00 PM South parking loop barricaded at Seawall for telescopes
8:00 PM Star Party program begins
10:00 PM Star Party Program ends
Astronomers are welcome to stay as long as they wish for viewing

Saturday, Sept. 8, 2018, Almanac, Bar Harbor, ME Sunset: 6:58 pm, Civil Twilight: 7:28 pm Nautical Twilight: 8:03 pm **Astronomical Twilight: 8:40 pm** Moonset: 6:40 pm	Jax Lab LAT 44° 21' 55"N LON 68° 11' 50"W **MAG DEC 16° 20'W** Cadillac LAT 44° 21' 13"N LON 68° 13' 28.7"W **MAG DEC 16° 20'W** Parking lot Elevation ~1,500'

3. 10:30 AM - 1:00 PM **Solar Viewing, The Jackson Laboratory**, no AC power available
Suggested arrival time: ~10:00 am for setup. And while lectures start at 11:00 am astronomers are welcome to observe as long as they wish.
11:00 am - Noon, Speaker: Kelly Beatty, Senior Editor for *Sky & Telescope* magazine
"Mysterious Mars" with 3-D imagery (glasses provided)
Noon – 1:00 pm, Speaker: Jon Thomas, ANP Astro VIP, "Our Active Sun"
1:00 – 2:00 pm, Speaker: Jan Hoey, ANP Astro VIP,
"The Great Celestial Bear: Ursa Major in Science, Culture, and Myth"
2:00 – 3:00 pm, Speaker: Richard Luecke, ANP Astro VIP "The Search for Planet 9",
Note: allow 25 minutes travel time from Jackson Lab to Cadillac Mtn.

4. 8:00 PM - 11:00 PM **Star Party on Cadillac Mountain**, no AC power available
suggested setup time, any time after 4:30 PM & before 6:30 PM
Note: Astronomers will not be allowed in parking area until after 4:30pm

4:00 pm The Cadillac inner parking lot will be closed off to all.
4:30 pm Astronomers will be allowed into the inner parking area for setup
6:30 pm Cadillac Mountain Road closed to public
7:00 pm First Shuttle departs from Mt. Desert Island H.S.
8:00 pm Star Party program begins
10:00 pm Last bus leaves Mt. Desert Island H.S.
11:00 pm Star Party Program ends, Please pause for 15 min while visitors leave.
Note: Astronomers are welcome to stay as long as they wish for viewing.
11:15 pm Last Shuttle leaves mountain, Cadillac Mountain Road opens

The full schedule is listed at: https://tinyurl.com/yaht2rbb or www.acadianightskyfestival.com

ASTRONOMER GENERAL INFORMATION

VILLAGE GREEN PARKING – You may use the loading zone located at the SE corner of green for unloading and loading your telescopes. You will need to move your car once you are through unloading. A volunteer will be provided to watch over equipment while you are moving your car. Under no circumstances try to utilize the marked Island Explorer bus parking area at the west end for unloading or loading.

CADILLAC MOUNTAIN PASS - The rangers find the "*I HAVE A TELESCOPE*" placards very helpful in controlling traffic up Cadillac. I haven't been able to get to all of the groups so I've attached a file. Just print it out and place it on your dash and you'll have easy access to Cadillac; colored paper makes it stand out even more but white is fine. If you forget, when the ranger stops you, just tell him the secret pass phrase: "I have a telescope". This applies to any assistants and helpers as well.

SEAWALL PICNIC AREA ENTRY - At Seawall, just drive into the picnic area, east off Route 102A and after a short driveway, turn right into the telescope field.
Park on the stone beach and set up your telescope nearby or adjacent on the roadway so that pedestrian traffic will only have to traverse flat ground.

LOCATING YOUR SCOPE - The crowd tends to bunch up at the entry point at the north end of both telescope fields (this is the bus drop off point on Cadillac). I'm expecting about 50 telescopes again this year for the Cadillac Mountain Star Party. Weather cooperating, I promise that you'll have plenty of visitors. You can utilize the pedestrian traffic pattern to adjust to your comfort level. If you set up in the North 1/3 of the telescope field, you're going to see the heaviest traffic. I prefer to setup in the middle and some may prefer even a little lighter duty by setting up at the South end of the two venues. We will be working to get a little more traffic at the South end this year to reduce the congestion at the North end. If you have a question about the expected pedestrian flow, ask a ranger or returning participants about the typical traffic flow.

HELPERS - If you're interested in coming without a telescope just to help out, that's great, too! We need people to assist beginning amateurs with their questions and setup. This star party isn't just for experienced observers. An assistant can tell people what object is being viewed and perhaps even explain a little bit about the object while people are waiting in line. If your line is getting long they can also advise people that they may wish to move a little further down the way where the telescopes aren't so congested and come back later. Remember, many of the park visitors will be amazed just to see the Milky Way the first time, so all experience levels are welcome.

Steps, Stools & Ladders – We hop[e that you understand that we are concerned about fall hazards when people use unfamiliar steps, stools or ladders, especially during our dark sky event. To reduce the potential of an incident during the Night Sky Festival all steps, stools, or ladders shall be:

- used for their intended purpose.
- in good condition, not damaged or dented.
- as supplied by the manufacturer and not modified.
- and supplied with a graspable handrail on each side if three or more steps in height.

The ultimate goal is no injuries, accidents, or injuries.

BUSES - This year's delivery of visitors will be the same as last year for the general public. Buses will be staged at Mt. Desert Island High School on Route 233, 1081 Eagle lake Road, Bar Harbor, ME. Exhibits and presentations will be held inside the lighted High School.

New this year, MD High School parking reservations are required, $5.00 fee. https://tinyurl.com/y82r3m85 (Reservations are only required for the general public. Astronomy volunteers should drive directly up Cadillac Mountain. No fee.)

TARGETS - My Meade handbox came up with the attached "2018 Tonight's Best Observing List". The objects are arranged in order of magnitude and will be viewable during the night (Jupiter sets about 10:00 PM). If you're looking for a few objects to prepare for, this might be a place to start. Look up a few interesting facts to share for objects you think you would like to show.

WEATHER - Clear Sky Chart Weather Prediction for Cadillac Mountain is at: http://cleardarksky.com/c/CdllcSmtMEkey.html?1 and at Seawall Campground: http://www.cleardarksky.com/c/SwCmpMEkey.html?1

CANCELLATIONS - Star Party weather cancellation determinations will be made by 2:00 PM on the day of the event and will be posted at the Acadia Night Sky Festival Facebook Page and by telephone answering machine (listen only) at the Acadia Night Sky Festival weather cancellation line (207) 619-0509.

DESCRIPTION OF THE EVENTS:

If you arrive early on Friday, September 7, please join us for solar viewing at the Bar Harbor Village Green. If you plan on participating in the Friday night Star Party, allow about 40 minutes to travel the 18 miles to the Seawall Picnic Area.

The Seawall parking area will be closed off to the general public at 4:00 PM. Arrive when you wish allowing time for your setup. Drive past the barricade; pick a spot and park on the stone beach adjacent to the southern roadway loop. You can setup your telescope on the pavement near your car. Restrooms are located on the northern loop of the parking area driveway.

This star party is a good warm-up for Saturday night. If the weather cooperates, expect crowds of 300-500 people. Last year you provided 24 telescopes for viewing on Friday night. If you would like assistance with finding objects or help with your telescope, there will be plenty of willing astronomers nearby. So beginners with telescopes or tripod mounted binoculars are all welcome. If you just want to come, without equipment, to help out as an experienced observer, you're welcome too! Seawall has some of the darkest skies on Mt. Desert Island, ~Bortle class 2+ although with its proximity to the ocean, the seeing can be more easily affected by haze and fog. But, if the ocean is especially calm, it's sometimes possible to see the reflection of the Milky Way in the water… a truly magical experience.

On Saturday, we start the events with solar viewing on the front lawn of the Jackson Laboratory, just 1.6 miles south on Route 3 from the downtown Bar Harbor corner of Cottage and Main Street. This is our fourth year observing at this pleasant venue and the auditorium is conveniently nearby providing easy access to the many lectures. (One note of caution, the Laboratory does not allow pets on their grounds due to the small risk of transmitting pathogens to their large research mouse colony. Also, Security will not allow leaving animals in vehicles because of heat. Please make other arrangements for pets.) Depending on your interests, you can either continue Solar Viewing with the public during the afternoon or attend any of the lectures at the site.
The same as last year, the Cadillac Mountain parking lot and viewing field will not open for astronomers until 4:30 pm. The lot will be closed at 4:00 pm to allow it to empty out so that

groups can more easily park together. Allow at least 25 minutes to travel the 7.2 miles from The Jackson Laboratory to the top of Cadillac Mountain. Visitors may start arriving before 8:00 pm so be prepared. There could be a brief orientation around 6:30 pm if something comes up at the last minute but this was skipped last year. Also, pre-assigned objects have been abandoned; but, if you would like assistance picking targets, just ask for help. There could be several people observing the same object. You might query the crowd to see if they have seen your object in several other telescopes. So prepare for a few different targets in case you want to select a more unique object. You might want to be ready for visitor questions and prepare some interesting facts on index cards for your objects. In the past, the suggestion was to leave your telescope on one object for the first hour or so and then you were invited to switch to other objects of your choosing for the rest of the evening. This may seem silly at first, but when suddenly you discover that you have a never-ending line of 20 people queued up to look through your scope, it makes a lot of sense. Last year the final count was 1,682 people observing on Cadillac. We had 44 telescopes and 4 binocular stations with 64+ operators. I can guarantee that you'll meet people from all across the country and likely a few from other countries around the world that are anxious to see what you have to show. And remember many of them are excited just to see the Milky Way the first time.

Restrooms are nearby at the gift shop as will be hot chocolate if it's a cold evening. Bring a range of clothes. Some years I've shivered in a heavy coat and others I spent the whole night in shorts. I can't promise a repeat, last year the weather was in the 60°s with a 5 MPH breeze to keep the dew off the scopes. You are welcome to stay as late as you wish on Cadillac for personal viewing. The moon sets at 6:40 pm on Saturday so you'll have dark skies until the end of astronomical twilight at 4:23 am.

SIGNUP - https://tinyurl.com/y7svssd4

We're currently at 48 amateur astronomer active participants now for the 2018 ANSF. If you haven't signed up yet please do. This information helps with our planning. If you think you may come, please sign up. You can edit your entry at any time.

GENERAL NUMBERS – (207) 288-5103 BH Chamber of Commerce
(207) 288-3338 Acadia National Park HQ

EMERGENCY NUMBERS –

(207) 288-8791 Acadia National Park Dispatch
(207) 288-3391 Bar Harbor Police or 911 for emergencies
(207) 244-7911 Southwest Harbor Police or 911 for emergencies
(207) 276-5111 Northeast Harbor Police or 911 for emergencies
(207) 288-5081 Mt. Desert Island Hospital & 24 hour ER (207) 288-8439

A live astronomer event location map can be found at https://tinyurl.com/y6u622hc

Thanks to all of you for your tremendous support! It should be a really great time.

Acadia Night Sky Festival
Star Party Etiquette

Because of the main purpose of public outreach and the size of this event, the rules of etiquette may be a little different than some other star parties.

- **Don't use white lights**. Visitors will be given red cellophane to put over their flashlights. If for some reason you MUST use a white light, warn others in the area before you turn it on. Please advise visitors with red headlamps that shining their lights directly into the eyes of others also disrupts night vision. The intensity of the light outweighs the fact that it's red!
- **Parking** - Astronomers are encouraged to park their cars nearby their scopes in the designated parking areas. But please be careful of your lights. Set automatic door switches to "OFF" when you arrive so that we won't be blinded by interior and door lights should you need to access your car later. (Red LED bulb replacements for automobile dome & courtesy lights are available from http://www.astrogizmos.com/Bulbs.htm)
- **Setup** - There will be a lot of scopes in a large telescope area. Try to set up allowing adequate space for the crowds of people, you, and your neighbor.
- **Pack-up** - At the end of the evening, teardown and transporting equipment should be done under red light unless you have the permission of all of the people in range of your lantern. Several astronomers are planning on spending all night observing and we don't want to compromise their adapted vision.
- Wires - Be especially careful if you use extended wiring for power or remote computer/camera connections. If you do run wires on the ground, try to locate the wires as safely as possible. Placing glow sticks next to the wires can help avert an accident to people and your equipment.
- Laser Pointers - Unless you are planning to do demonstrations, this is not the best venue for astrophotography. Green laser pointers will be allowed and there will be regular star tours for the public painting the sky.
- Alignment - Check that your scope is still pointing at your object, often! Even if you have a tracking drive, visitors sometimes knock it out of alignment using your scope to steady themselves. I once discovered that a half dozen people had been looking at a virtually empty star field instead of my intended view of M92!

- Advise visitors what they can and cannot touch on your scope. Perhaps suggest holding the tripod instead of the eyepiece if they must steady themselves. Show them the location of the focuser if they ask. A dim red light for pointing out the eyepiece and focuser can be helpful.
- Children – Children are welcome and will be accompanied by adults. Small children should be advised never to touch any glass surface. A step stool with a handle can be extremely helpful (including for adults) as you can tell them to grip the handle instead of shaking the scope.
- Pets – With the large crowds and congestion, this will be an uncomfortable situation for pets. Pets will not be allowed on the buses to Cadillac. or on the grounds of the Jackson Laboratory. You may not leave them unattended in cars in the parking lot. Park regulations require that pets be leashed and firmly under control at all times on National Park property.
- Music – Music has never been an issue in the past. But, there will be plenty of activity and we encourage conversations with the guests. With the congestion of telescopes and people, music would only add to the din of the crowd noise, especially for those with hearing impairments.
- Smoking – you should refrain from smoking in the telescope field. If you must take a break to smoke, please move several hundred feet downwind of the people and telescopes. There is no smoking allowed on the Jackson Laboratory Grounds.
- Alcohol – This is a public star party in a national park. Public consumption of alcohol is not permitted at Solar or Star Party events.
- Avoid loud and boisterous behavior. But a little bit of carnival barking is probably appropriate to alert the crowds of what you are looking at.
- Don't litter. Find a garbage can or take it out with you. Cadillac and Seawall have animal proof garbage cans. Insert you hand into the receptacle to release the lid.
- This star party is for beginning as well as experienced astronomers. If you would like some assistance, try to arrive early and let the rangers know your situation. We're trying to have people available to assist. There are many good targets that can be easily located. Learn how your finder works and try to make sure that your finder is properly aligned before you arrive. (Hint – this is best done in the daylight, sighting your main scope on a distant target first and then aligning the finder.)

---Dwight

-- Celebrating the starlit skies of Maine & New England --

Dwight M. Lanpher, *Club Liaison*
P.O. Box 472, 1 Summit Road
Northeast Harbor, ME 04662

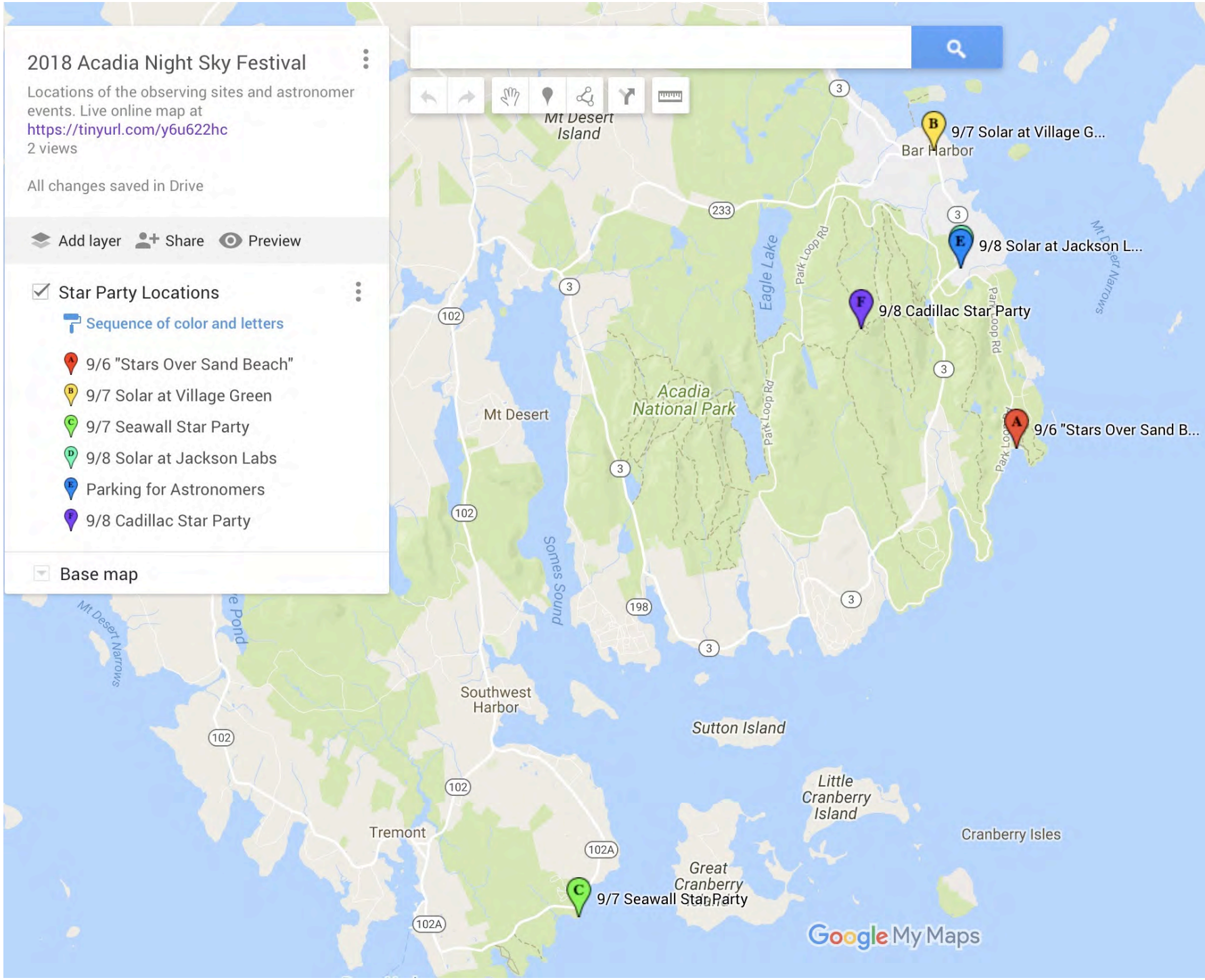
President: Penobscot Valley Star Gazers
member: IDA, IES, AAS, ACAC, ASNNE, ATMoB, CMAS, COG, DEAA, GAAC, NHAS, NSAAC, PVSG, SMA
Telephone: (207) 276-5350, FAX 276-4067

Locations of the observing sites and

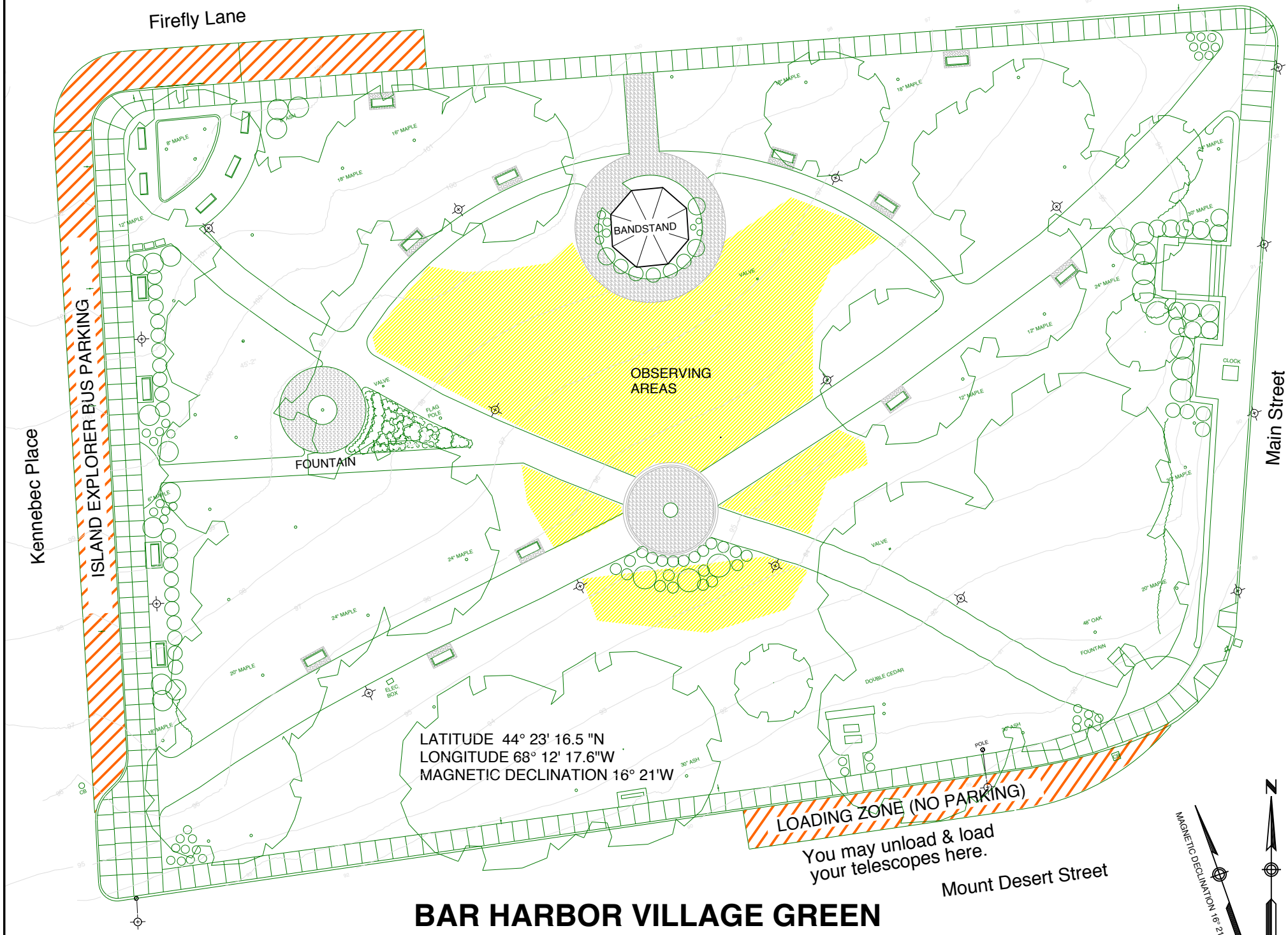
astronomer events live online map at

https://tinyurl.com/y6u622hc

Note: The following page is a static image
Links are not active



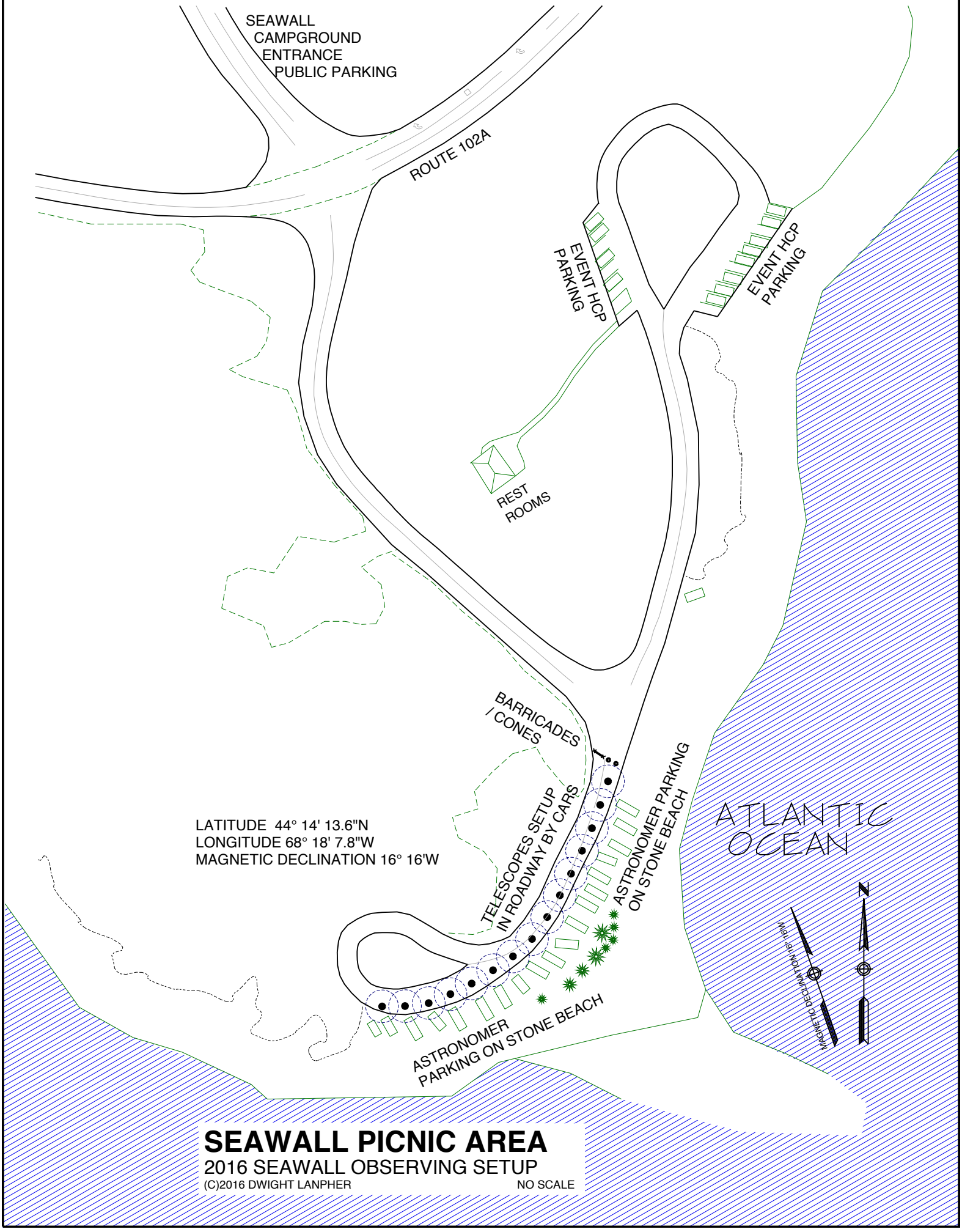
2018 Acadia Night Sky Festival
Observing Events Location Map



BAR HARBOR VILLAGE GREEN

SOLAR OBSERVING SETUP

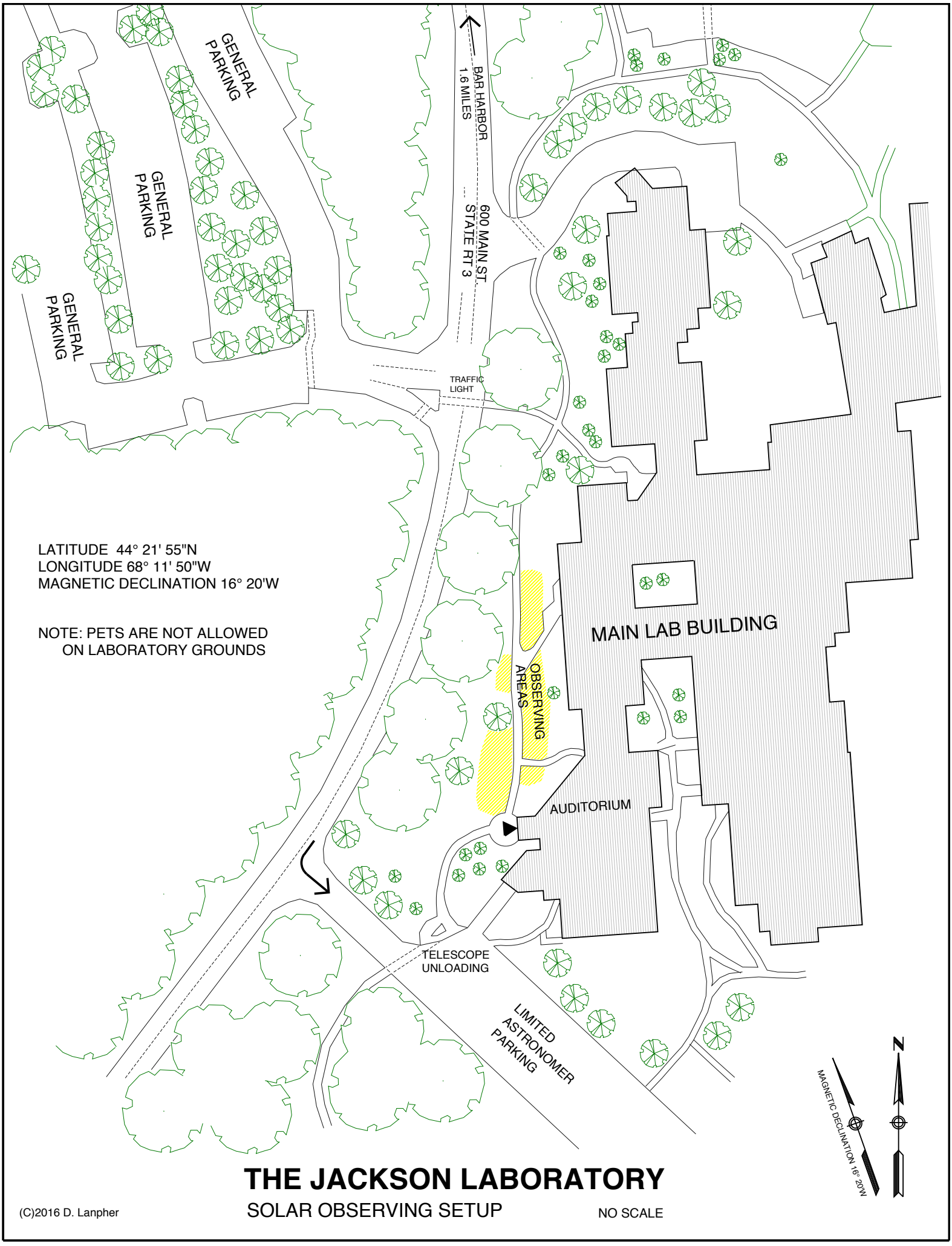
NO SCALE



SEAWALL PICNIC AREA

2016 SEAWALL OBSERVING SETUP

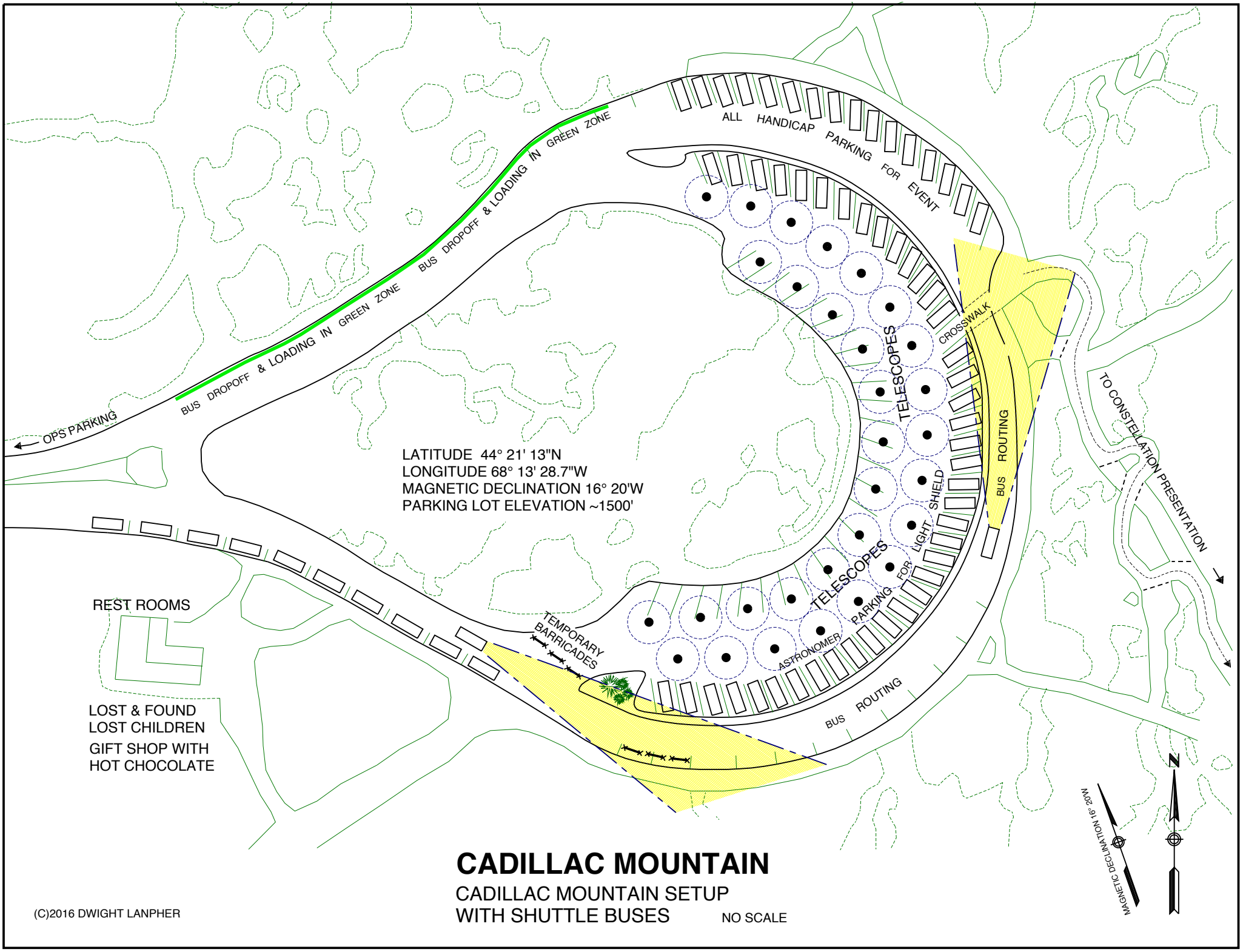
NO SCALE



THE JACKSON LABORATORY

SOLAR OBSERVING SETUP

NO SCALE



CADILLAC MOUNTAIN

CADILLAC MOUNTAIN SETUP
WITH SHUTTLE BUSES NO SCALE

I HAVE A TELESCOPE

September 2018

Bar Harbor, Maine

Latitude, Longitude: 44 23.2′ N, 68 12.2′ W Time zone: -5:00 (Eastern) DST observance: North America

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
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2 Twi A: 4:12am Twi N: 4:50am Twi: 5:26am Sunrise: 5:56am Moonset: 1:10pm Sunset: 7:09pm Twi: 7:39pm Twi N: 8:15pm Twi A: 8:53pm Last Qtr: 10:39pm Moonrise: 11:11pm	3 Twi A: 4:14am Twi N: 4:52am Twi: 5:28am Sunrise: 5:57am Moonset: 2:17pm Sunset: 7:07pm Twi: 7:37pm Twi N: 8:13pm Twi A: 8:51pm Moonrise: 11:57pm	4 Twi A: 4:16am Twi N: 4:53am Twi: 5:29am Sunrise: 5:59am Moonset: 3:23pm Sunset: 7:05pm Twi: 7:35pm Twi N: 8:11pm Twi A: 8:48pm Moonrise: none	5 Moonrise: 12:52am Twi A: 4:17am Twi N: 4:54am Twi: 5:30am Sunrise: 6:00am Moonset: 4:22pm Sunset: 7:04pm Twi: 7:33pm Twi N: 8:09pm Twi A: 8:46pm	6 Moonrise: 1:56am Twi A: 4:19am Twi N: 4:56am Twi: 5:31am Sunrise: 6:01am Moonset: 5:15pm Sunset: 7:02pm Twi: 7:31pm Twi N: 8:07pm Twi A: 8:44pm	7 Moonrise: 3:07am Twi A: 4:20am Twi N: 4:57am Twi: 5:32am Sunrise: 6:02am Moonset: 6:01pm Sunset: 7:00pm Twi: 7:30pm Twi N: 8:05pm Twi A: 8:42pm	8 Twi A: 4:22am Moonrise: 4:22am Twi N: 4:58am Twi: 5:34am Sunrise: 6:03am Moonset: 6:40pm Sunset: 6:58pm Twi: 7:28pm Twi N: 8:03pm Twi A: 8:40pm
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Meade Autostar "Tonight's Best" for September 7, 2018

Edited by d. lanpher

Seawall Picnic Area Parking Lot Elevation ~5'
Lat: 44° 14' 13.6" N Lon: 68° 18' 7.8" W
Friday, Sept 7, 2018 Declination: 16° 16' W
Moon Sets: 18:01 hrs Sunset: 19:00 Twi N: 20:05 A: 20:42

Cadillac Mountain Parking Lot Elevation ~1500'
Lat: 44° 21' 13" N Lon: 68° 13' 28.7" W
Saturday, Sept 8, 2018 Declination: 16° 20' W
Moon Sets: 18:40 hrs Sunset: 18:56 Twi N: 20:03 Twi A: 20:40

Mag	Size	L.Y.	Catalog	Name	Comment	Rise/set	Constellation	RA	Dec
Planets:									
-2.5	19"	1.5 AU	Mars	4th Planet	24.8hr day, 1.88yr orb	Sets 02:41	Capricornus	20h 08.6'	-25°29'
-2.0	34"	5.2 AU	Jupiter	5th planet	9.9 hr day, 11.9 yr orb	Sets 22:17	Libra	15h 02.2'	-16°20'
1.0	16"	9.5 AU	Saturn	6th planet	rings 185,000 mi dia.	Sets 00:56	Sagitarius	18h 09.1'	-22°44'
5.7	3"	19 AU	Uranus	7th planet	Grey turq disc, 84 yr or	Rises 21:30	Aries	02h 02.9'	11°54'
7.8	2"	30 AU	Neptune	8th planet	Blue disc, 165 yr orbit	Rises 19:38	Aquarius	23h 02.6'	-07° 11'
Double Stars:									
2/4	12'	78/81	Mizar/Alcor	Double Star	Roman Eye Test		Ursa Major	13h 24'	54° 55.3'
2.3/4.8	10"	350	Almaak	Double Star	Blue/Gold closely spaced		Andromeda	02h 04'	42° 19.8'
3.2/5.8	35"	380	Albireo	Double Star	Blue/Gold		Cygnus	19h 30.6'	27° 57'
4.7	2.3"	162	Epsilon Lyrae	The Double Double	Perpendicular to each other		Lyra	18h 44.3'	39° 38'
Globular Clusters									
5.1	16'	9600	M22	100K stars 50 LY Dia.	Globular Cluster	Sets 01:17	Sagitarius	18h 36.4'	-23° 54'
5.8	16'	25000	M5	100 LY in Dia.	Globular Cluste	Sets 23:44	Serpens	15h 18.6'	2° 4.9'
5.9	26'	7200	M4	Early resolved stars	Globular Cluster	Sets 22:52	Scorpius	16h 23.6'	-26° 32'
5.9	10'	23400	M13	Great Hercules Cluster	Brightest 160 LY dia.		Hercules	16h 41.6'	36° 27.4'
6.4	6'	39000	M15	130 LY in Dia.	Globular Cluster		Pegasus	21h 30.0'	12° 10'
6.5	12'	50000	M2	100K stars 150 LY Dia.	Globular Cluster		Aquarius	21h 33.4'	- 0° 49'
6.5	8'	25400	M92	North Hercules Cluster	Globular Cluster		Hercules	17h 17.0'	43° 8.2'
Open Clusters									
1.2	110'	444	M45	Pleiades	Open Cluster	Rises 22:20	Taurus	03hr 47.0"	24°07'
3.3	80'	980	M7	Ptolemy Cluster	Open Cluster	Sets 23:32	Scorpius	17h 53.8'	-34° 49'
4.2	14'	1585	M6	Butterfly Cluster	Open Cluster	Sets 23:36	Scorpius	17h 40.0'	-32° 13'
4.3	30'	7.6/6.8K	C14	The Double Cluster	Open Cluster NGC869/884		Perseus	02h 20.0"	57° 08'
5.5	34'	1500	M34	Open Cluster	Open Cluster		Perseus	02hr 42.0'	42° 47'
5.8	14'	5460	M11	Wild Duck Cluster	Open Cluster		Scutum	18h 51.1'	- 6° 16'
6.9	12'	5000	M52	Open Cluster	Open Cluster		Cassiopia	23h 24.2'	61° 35'
Nebulae									
6.4	24'	9000	M16	Eagle Nebula	with "Pillars of creation"		Serpens	18h 18.8'	-13° 47'
6.8	80'	14'	M8	Lagoon Nebula	2nd Brightest	Sets 00:42	Sagitarius	18h 03.8'	-24° 23.2'
7.5	46'	`	M17	Omega/Swan Nebula	(Upside down)		Sagitarius	18h 20.5'	-16° 10.6'
7.6	25'	714	C63	Helix Nebula	"Eye of God"	Rises 20:00	Aquarius	22h 29.6'	-20° 48'
7.6	8'	815	M27	Dumbbell Nebula	Near Casiopia		Vulpecula	19h 59.6'	22° 43.3'
8.8	76"	1140	M57	Ring Nebula	smoke ring, "The big Cheerio"		Lyra	18h 53.6'	33° 1.8'
9.0	28'	5000	M20	Trifid Nebula	Dust band in center	Sets 0:48	Sagitarius	18h 02.6'	-23° 1.8'
Galaxies									
4.8	160'	2.2M	M31	Andromeda Galaxy	Spiral Galaxy		Andromeda	00h 42.6'	41°16'
8.4	10'	15 M	M51	Whirlpool Galaxy	2 galaxies interacting		Canes Venatici	13h 29.8'	47° 11.8'
6.9	18'	4.5 M	M81	Bode's Galaxy	Spiral Galaxy		Ursa Major	09h 55.6'	69° 3.9'
8.4	8'	17 M	M82	Irregular (Cigar) Galaxy	0.6° separation from M81		Ursa Major	09h 55.8'	69° 40.8'
8.7	2'	2.2 M	M32	Elliptical Galaxy	Near Andromeda M31		Andromeda	00h 42.6'	40°52'
Stars:									
0.0	--	26.5	SAO67174	Vega	Alpha Lyrae		Lyrae	18hr 36.9'	38° 47'
-0.1	--	36.2	SAO100944	Arcturus	Alpha Bootes	Sets 23:49	Bootes	14hr 15.6'	19° 10'
0.7	--	16.7	SAO125122	Altair	Alpha Aquila		Aquila	19h 50.7'	8° 52'
0.9	--	135.8	SAO 184415	Antares	883X dia of Sun	Sets 22:58	Scorpius	16h 29.4'	-26° 25'
1.1	--	24.8	SAO 191524	Fomalhaut	Alpha Piscis Austrini	Rises 21:16	Piscis Austrini	22h 57.6'	-29° 37.3'
1.2	--	543	SAO 49941	Deneb	Tail of Cygnus the Swan		Cygnus	20h 41.4'	45° 16.7'
2.3	--	690	SAO127029	Enif	Epsilon Pegasi		Pegasus	21h 44.1'	09° 52.5'
4.0	--	1086	SAO33693	Hershel's Garnet Star	Mu Cephei		Cepheus	21h 43.4"	58° 46.8'