

Impressions of the Final Shuttle Launch

By Lawrence Taylor (NASA Engineer)

The launch was amazing, yet, again. It was very special.

STS-135 t-shirt... \$15

Weekly car rental, three nights at hotel, and meals... \$500

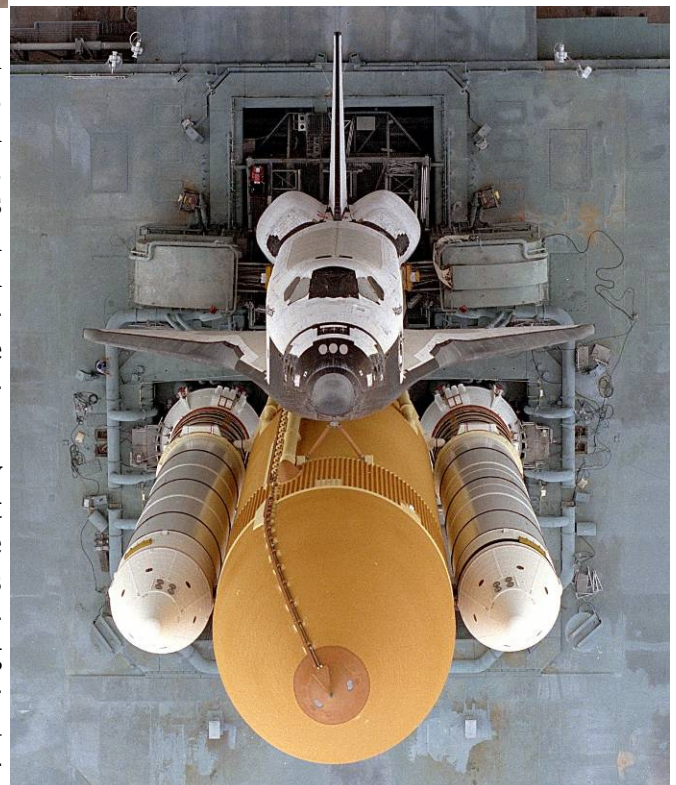
Viewing the Final Mission with family, friends, and several million people world wide... Priceless

We set up my two pairs of giant binoculars and shared views with several hundred new AstroBuddies on the NASA Causeway while we viewed the full up Atlantis on pad 39A. We got on the Cape so early that we actually had to do a half-an-hour circle around before they'd even let us on with our pass. The sky



was total overcast, but our hopes were high even with the 70% no-go weather forecast. Scott, Sara, Sammy, and their buddies were set up right in front of us on tarps and blankets. Since we had six of us in the car, there wasn't room for carpets and other gear besides the giants. I set up about half way up the slope from the water to the roadway. It afforded us a beautiful uninterrupted view of the launch pad across the water. The haze was thick, The lights illuminating the launch pad twinkled in the mist. It was surreal. Humorous, actually.

By that I mean, that everyone on the NASA Causeway had to be total optimists given the weather forecast and the time and energy required to attend even one launch. Just the expected one million observers was enough to keep many away. So there we were standing, waiting to see if it was going to start raining again, or if it would be okay to start setting up equipment. Since we only had the giants, I went ahead and set up the tripods and then the optics, with the knowl-



edge that I could easily throw a jacket or bag over them when the rain came. As it turns out, the expected rain didn't do anything more than a drop or two every now and then.

We did the souvenir run for hats, shirts, patches, and even a coin. My expectations were for a scrub on Friday due to weather, but that could mean one or even two more attempts before hitting the road and heading back home. As the countdown continued, we were constantly updated over the public address system. The NASA Causeway has got to be the world's greatest tailgate party, at least for this space enthusiast. As the scheduled launch time approached, blue skies started popping out from the clouds. We couldn't believe our luck. Thank you NASA for running the clock and getting everything ready to go for the Friday morning launch. Sure enough as the countdown reached the launch time, there was a buzz among the observers. Nothing but happy sounds and smiles. When the hold was imposed and passed the initial launch time, I sure didn't expect everything to come together in order to launch, but they did release the hold and finally launch, clouds and all, even with a last minute waiver for the external tank oxygen vent arm. Awesome!

As we watched Atlantis roar to life and lift off into the sky on pillars of fire and smoke, our hearts swelled with pride at the magnificence and grace of such pure power and engineering marvel. Zero to orbital in eight and a half minutes. It was such an impact on me that tears rolling down my face knowing that this is the last time that we'll ever see such a magnificent machine fly into space, at least in my lifetime. The end of winged space flight will be over in under two weeks. It was and is a very bittersweet event.

It's very difficult for me to accept that this nation can no longer launch their own people into Low Earth Orbit which is what we've been doing for fifty years. And we as a nation did this by choice. No direction ahead. For someone that designs future launch vehicles, this is a very, very, sad time.

I do have hope that this nation continues to support the commercial companies that are slowly moving toward manned orbital spaceflight. It can't come soon enough. I only trust that it does come at some point. Very, very, sad. I'm a very strong believer in human spaceflight and human exploration of space. For me the human space experience is critical. As a species, we must continue to explore the universe first hand.

Sorry for the sad perspective there, but I'm pretty down about it all. Time cures all, but not this week. I will be following our brave astronauts throughout their flight and on into their final landing in a little over a week.

Okay, back on track, please... The drive back home was uneventful and my ears are still ringing from the never ending iPod tunes at too high of a volume. Thank you, Judy, for supporting my obsessions and allowing me the time away from home to experience these once in a lifetime, and one in a million, events. Good bye Space Shuttle. It's been good to know you. Thanks for all the memories. The museums and history books await.



Astronomy on a Smart Phone?

By Belinda Lee

Got a “Smart” phone? Tired of doing dumb things with it, here are some astronomy based “apps” that make the grade as compiled Belinda Lee. As always be sure to check compatibility with your device and OS to assure the “app” will work on your phone.

Program: NASA Astronomy Picture of the Day

Works on: Android devices

What it does: Daily photos related to astronomy sent to your phone with options to display image as background.

Program: Google Sky

Works on: Android devices

What it does: Turns your cell phone into a window on the night sky.

Program: Messier Objects – no longer available

Program: Emerald Observatory Works on: Iphone and Ipad

What it does: sky charts beginning at twilight and more

Program: Moon Phase Pro

Works on: Android devices

What it does: Interactive Moon chart including Moon phases

Cost: There is a free version and a full version for \$.99

Program: Clear Sky Clock and Clear Sky Droid

Works on: any device with email or web access as well as Android devices

What it does: gives observing conditions for any given area

Program: Flyby

Works on: Apple and android devices

What it does: it sends alerts telling you when a satellite is over head

Program: Heavens Above

What it works on: Android devices

What it does: it sends alerts telling you when a satellite is over head

Program: Solar Max

What it works on: Android devices

What it does: solar and heliospheric observatory

Program: Solaris

What it works on: Android devices

What it does: solar storms and aurora predictor

Program: Skeye

What it works on: Android devices

What it does: advanced planetarium that can be used as a PUSHTO guide for telescopes

Program: Go Sky Watch

Works on: Ipad

What it does: Planetarium program.

Cost: Free and paid versions

2011 Lowbrow Astronomers Schedule of Events

- **Saturday, August 6, 2011.** *May be cancelled if it's cloudy.* (Starting at Sunset). Open House at Peach Mountain.
- **Friday, August 19, 2011.** (7:30PM). Monthly Club Meeting. Guest Speaker: Tom Trusock (Cloudy Nights Telescope Reviews): "Observing the Hubble Sequences in the Fall Northern Sky."
- **Saturday, August 27, 2011.** *May be cancelled if it's cloudy.* (Starting at Sunset). Open House at Peach Mountain.
- **Saturday, September 3, 2011.** *May be cancelled if it's cloudy.* (Starting at Sunset). Open House at Peach Mountain.
- **Friday, September 9 & Saturday, September 10, 2011.** (6:00 PM to Midnight). The 15th Annual "Astronomy at the Beach" at Kensington Metropark. Hosted by GLAAC (the Great Lakes Association of Astronomy Clubs). There is no admission fee to attend but a Metropark vehicle pass is required. (Vehicle pass can be purchased at the gate for a fee of \$5.00).
- **Friday, September 16, 2011.** (7:30PM). Monthly Club Meeting. Guest Speaker: Bob Berman (Astronomy Magazine's "Strange Universe" Columnist, Adjunct Professor of Astronomy at Marymount Manhattan College): Skype Virtual Meeting: "Light and Color in the Universe."
- **Saturday, September 24, 2011.** *May be cancelled if it's cloudy.* (Starting at Sunset). Open House at Peach Mountain.
- **Saturday, October 1, 2011.** *May be cancelled if it's cloudy.* (Starting at Sunset). Open House at Peach Mountain.
- **Friday, October 21, 2011.** (7:30PM). Monthly Club Meeting. Guest Speaker: Jack Newton (Supernovae Hunter/Discoverer and Astrophotographer): Skype Virtual Meeting: "Supernovae Hunting" and "Astrophotography using DSLR cameras."
- **Saturday, October 22, 2011.** *May be cancelled if it's cloudy.* (Starting at Sunset). Open House at Peach Mountain.
- **Saturday, October 29, 2011.** *May be cancelled if it's cloudy.* (Starting at Sunset). Open House at Peach Mountain.
- **Friday, November 18, 2011.** (7:30PM). Monthly Club Meeting. Guest Speaker: Pamela Gay (Astronomy Cast, StarStryder.com, Southern Illinois University Edwardsville and Astrosphere New Media Association): Skype Virtual Meeting: "New Media: Its Impact on Science & Technology."
- **Saturday, November 19, 2011.** *May be cancelled if it's cloudy or too cold.* (Starting at Sunset). Open House at Peach Mountain.
- **Saturday, November 26, 2011.** *May be cancelled if it's cloudy or too cold.* (Starting at Sunset). Open House at Peach Mountain.
- **Friday, December 16, 2011.** (7:30PM). Monthly Club Meeting. Guest Speaker: Xianzhe Jia (University of Michigan Department of Atmospheric, Oceanic and Space Sciences): "The Mysterious Rotating Signal from Saturn."

15th Annual Astronomy at the Beach

Friday and Saturday, **September 9th and 10th** at Maple Beach, inside Kensington Metropark, **from 6 p.m. - midnight** (rain or shine)



What's New in Our Universe?

Dave Elcher, Editor-in-Chief of **ASTRONOMY Magazine**, is a widely recognized astronomy enthusiast who will share with us some of the advances we've made in the past 15 years.

To Kensington Metropark: Take I-96 to exit 153 (Kent Lake Road). Then follow the signs to Maple Beach. **\$5 Vehicle Entry Permit** required to enter Park. Event is Free!



Learn about astronomy first hand by:

- View dozens of exciting objects through our telescopes and binoculars
- Children's scavenger hunt with prizes, and visiting the Starlab Planetarium
- Tour the constellations.
- Plus much more! (food and beverages available for purchase)

What's New in Our Universe?

For more information call the Kensington Nature Center at 248-665-0603 or visit the GLAAC web site at: www.glaac.org/kensington



EMU Planetarium



Ford Amateur Astronomy Club
Warren Astronomical Society
University Lowbrow Astronomers

Oakland Astronomy Club
Seven Ponds Astronomy Club
Sunset Astronomical Society

The Astronomy Club at Eastern Michigan University

Observing at Low Power & Wide Field

by Mark S Deprest

2FER #	Objects			Center Point			Magnitude		Object Type		NOTES
	1st	2nd	CON	R.A.	DEC	SEP'	1st	2nd	1st	2nd	
1	NGC 6712	IC 1295	SCT	18h 53m 52s	s08d 45' 43"	24.0	8.1	n/a	GC	PN	blink a UHC filter
2	NGC 6946	NGC 6939	CEP	20h 32m 57s	n60d 24' 05"	38.8	9.7	7.8	GX	OC	face-on spiral w/low SB
3	M97	M108	UMA	11h 13m 25s	n55d 19' 26"	48.3	n/a	10.6	PN	GX	
4	M13	NGC 6207	HER	16h 42m 28s	n36d 38' 12"	27.7	5.8	12.1	GC	GX	
5	M46	NGC 2438	PUP	07h 41m 47s	s14d 48' 36"	4.1	6.1	10.1	OC	PN	
6	NGC 6543	NGC 6552	DRA	17h 59m 15s	n66d 37' 46"	9.3	8.8	14.6	PN	GX	NGC 6552 is challenging
7	NGC 7129	NGC 7142	CEP	21h 44m 09s	n65d 57' 06"	24.2	11.5	9.3	OCN	OC	
8	M52	NGC 7635	CAS	23h 22m 47s	n61d 24' 26"	38.4	6.9	11.0	OC	EN	
9	NGC 246	NGC 255	CET	00h 47m 28s	s11d 40' 20"	26.3	8.0	12.4	PN	GX	
10	M57	IC 1296	LYR	18h 53m 28s	n33d 02' 54"	4.0	9.7	14.9	PN	GX	IC 1296 is very challenging
11	M38	NGC 1907	AUR	05h 28m 30s	n35d 35' 35"	32.6	6.4	8.2	OC	OC	
12	M35	NGC 2158	GEM	06h 08m 15s	n24d 13' 13"	26.5	5.1	8.6	OC	OC	
13	M51	NGC 5195	CVN	13h 29m 54s	n47d 14' 05"	4.3	8.9	10.5	GX	GX	Connected
14	M81	M82	UMA	09h 55m 23s	n69d 23' 26"	36.7	7.8	9.2	GX	GX	
15	NGC 5985	NGC 5981	DRA	15h 38m 40s	n59d 21' 23"	13.3	11.9	13.9	GX	GX	with NGC 5982, 3 in a row Spiral, Elliptical and Edge-on
16	NGC 6445	NGC 6440	SGR	17h 49m 02s	s20d 10' 40"	21.5	12.2	9.4	PN	GC	NGC 6445 reveals a squared double lobed at 200x
17	NGC 6822	NGC 6818	SGR	19h 44m 18s	s14d 26' 22"	40.0	9.3	9.8	GX	PN	Very interesting pair
18	NGC 6522	NGC 6528	SGR	18h 04m 12s	s30d 02' 50"	16.3	8.3	9.6	GC	GC	Easy to find
19	M8	NGC6530	SGR	18h 04m 05s	s24d 21' 29"	10.0	5.0	4.6	DN	OC	M8 complex
20	M20	M21	SGR	18h 03m 25s	s22d 45' 24"	35.6	6.8	5.9	DN	OC	A Wide Field Treat

Above is my own personal list of "2-fers", that is two deep sky objects that fit in the same low power, wide field of view. In order to qualify as a "2-fer" on my list the two objects must be less than 50 arc minutes apart. Also, they must be different types of objects or be different enough in appearance as to make them visually appealing. Yes, I realize that this is subjective and you might have lots of potential candidates, but since this is my list, I have the final say.

If you have any suggestions to this list please pass them on, I will observe them and if they qualify, I'll add them to the list. In the mean time enjoy these treats. Some of them will take a scope of 12" in aperture to see both components but most of them are pretty bright and should be visible in scopes as small as 4".



Here are two of my favorite "2-fers": M38 & NGC 1907 and of course M51 & NGC 5195.

Comet Comments

By Mark S Deprest

Yes, its time for another installment of Comet Comments, because we have another “bright” comet crossing our night skies. Comet C/2009 P1 (Garradd) is now well placed in our night skies and is very bright as comets go. Current magnitude estimates put in at 8.1 to 7.9 m1 (m1 = the total magnitude of the comet) and it should continue to brighten to near naked eye visibility of 6.0 m1 by mid-October.

Its current visual position is in the constellation of Pegasus and over the next 3 months it will move thru Delphinus, Sagitta, Vulpecula, and Hercules. In other words crossing the galactic plane of the Milky Way, this means that it will pass nearly in front of a number of deep sky objects, which should make for some very cool images.



This image of Comet C/2009 P1 (Garradd) and M15 was taken by one of my favorite comet photographers, Michael Jager

Another highlight will be on the night of August 26th & 27th as it passes by M71 and then again on the night of September 2nd & 3rd when it passes just south of Collinder 399, more commonly referred to as the “Coat Hanger”.

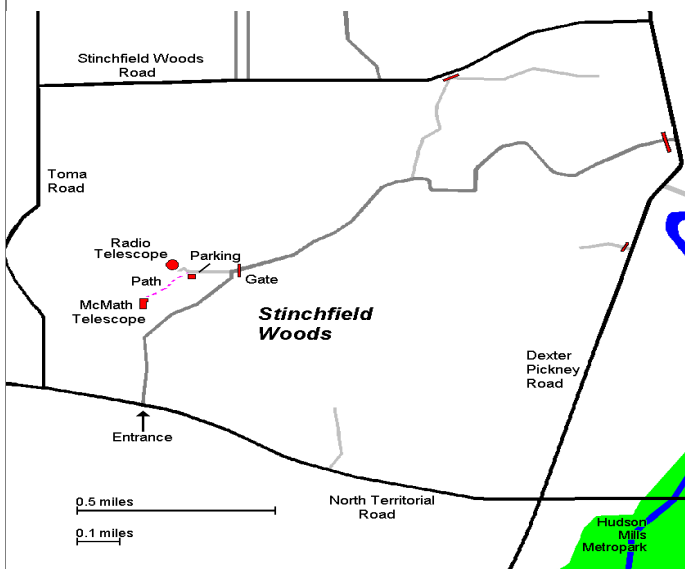
On the next page is a finder chart for the next 30 days (the index points are listed for mid-night of the date labeled).

The comet is currently on its way thru the inner solar system and is 1.4 AU from Earth, it will reach Perihelion on December 25, 2011. Although the comet doesn't get much closer to us than it is right now, it will continue to brighten over the next few months.

Places & Times

Dennison Hall, also known as The University of Michigan's Physics & Astronomy building, is the site of the monthly meeting of the University Lowbrow Astronomers. Dennison Hall can be found on Church Street about one block north of South University Avenue in Ann Arbor, MI. The meetings are usually held in room 130, and on the 3rd Friday of each month at 7:30 pm. During the summer months and when weather permits, a club observing session at the Peach Mountain Observatory will follow the meeting.

Peach Mountain Observatory is the home of the University of Michigan's 25 meter radio telescope as well as the University's McMath 24" telescope which is maintained and operated by the Lowbrows. The observatory is located northwest of Dexter, MI; the entrance is on North Territorial Rd. 1.1 miles west of Dexter-Pinckney Rd. A small maize & blue sign on the north side of the road marks the gate. Follow the gravel road to the top of the hill and a parking area near the radio telescopes, then walk along the path between the two fenced in areas (about 300 feet) to reach the McMath telescope building.



Public Open House / Star Parties

Public Open Houses / Star Parties are generally held on the Saturdays before and after the New Moon at the Peach Mountain observatory, but are usually cancelled if the sky is cloudy at sunset or the temperature is below 10 degrees F. For the most up to date info on the Open House / Star Party status call: (734)332-9132. Many members bring their telescope to share with the public and visitors are welcome to do the same. Peach Mountain is home to millions of hungry mosquitoes, so apply bug repellent, and it can get rather cold at night, please dress accordingly.

Membership

Membership dues in the University Lowbrow Astronomers are \$20 per year for individuals or families, \$12 per year for students and seniors (age 55+) and \$5 if you live outside of the Lower Peninsula of Michigan.

This entitles you to the access to our monthly Newsletters on-line at our website and use of the 24" McMath telescope (after some training).

A hard copy of the Newsletter can be obtained with an additional \$12 annual fee to cover printing and postage. Dues can be paid at the monthly meetings or by check made out to University Lowbrow Astronomers and mailed to:

The University Lowbrow Astronomers

c/o Doug Scobel

P.O. 131446

Ann Arbor, MI 48105

Membership in the Lowbrows can also get you a discount on these magazine subscriptions:

Sky & Telescope - \$32.95 / year

Astronomy - \$34.00 / year or \$60.00 for 2 years

For more information contact the club Treasurer. Members renewing their subscriptions are reminded to provide the renewal notice along with your check to the club Treasurer. Please make your check out to: "University Lowbrow Astronomers"

Newsletter Contributions

Members and (non-members) are encouraged to write about any astronomy related topic of interest.

Call or Email the Newsletter Editor: **Mark S Deprest (734)223-0262 or msdeprest@comcast.net** to discuss length and format. Announcements, articles and images are due by the 1st day of the month as publication is the 7th.

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Lowbrow's Home Page

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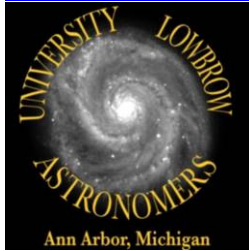


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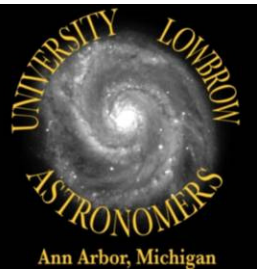
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