

To see when the International Space Station
will be flying over your town, go to:
<http://spaceflight.nasa.gov/realdata/sightings/index.html>.

www.nasa.gov/station

National Aeronautics and
Space Administration



2013

International
Space
Station
Calendar



A message from the Program Manager for the International Space Station



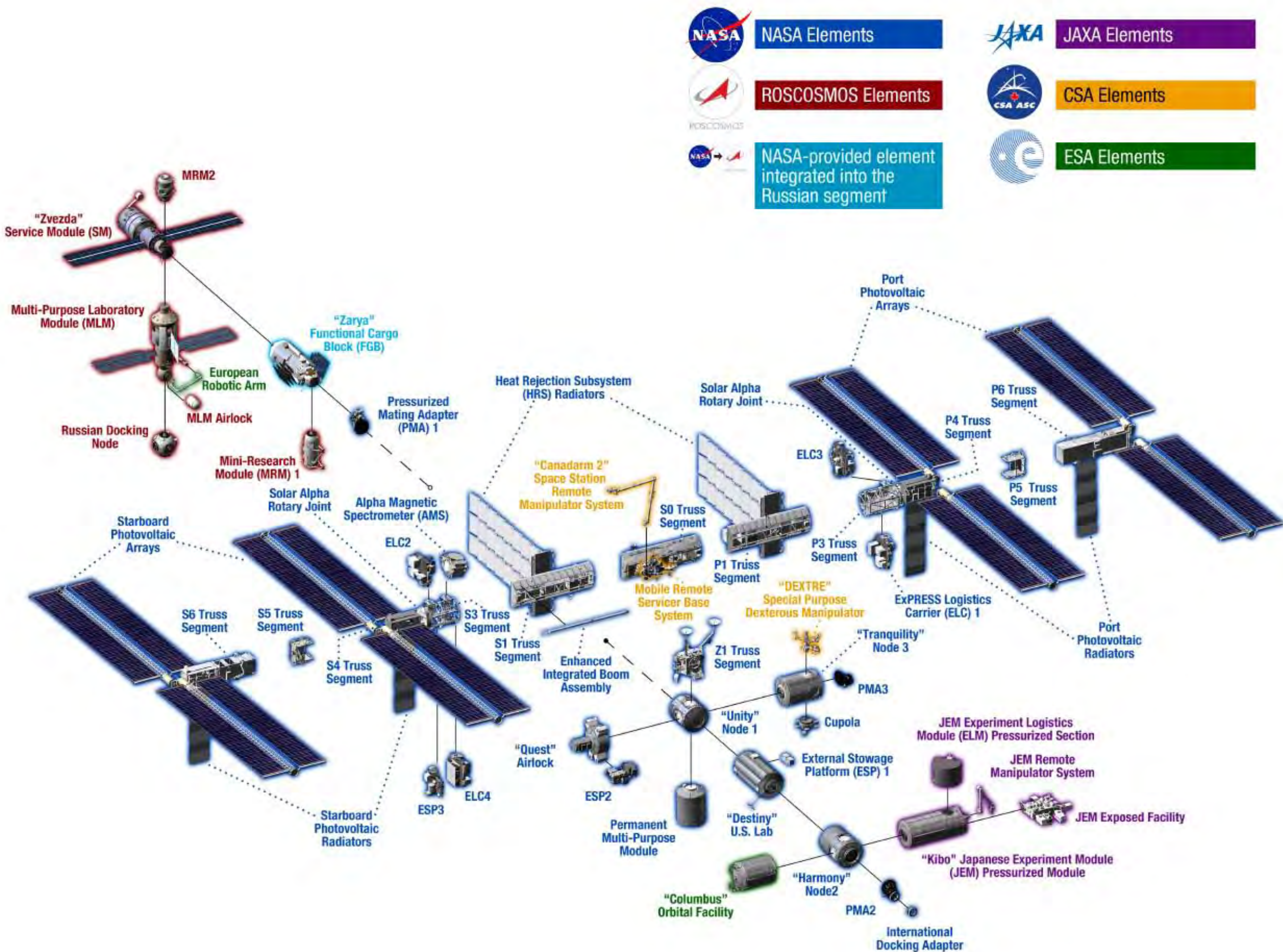
The International Space Station (ISS) is an unprecedented technological and political achievement in global human endeavors to build, operate, and utilize a unique science platform in space to benefit life here on Earth. It is the latest step in humankind's quest to explore and learn in order to improve life on Planet Earth.

As soon as the ISS was habitable, researchers began using it as a laboratory to study microgravity and the space environment and how phenomena studied in space can benefit our daily lives. This unique scientific platform continues to enable researchers from all over the world to put their talents to work on innovative experiments that cannot be performed anywhere else and we already have some amazing breakthroughs! In human health, telemedicine, education and observations of our Earth from space, there are already demonstrated benefits to human life. Research in vaccine development for salmonella and MRSA (a bacteria that is resistant to many forms of antibiotics), candidate treatments for Duchenne's Muscular Dystrophy, improvements in cancer treatment drug delivery, space station-generated images that assist with disaster relief and farming, and education programs that inspire future scientists, engineers and space explorers are just some examples of research benefits.

NASA recognizes the importance of leveraging space station as an educational platform to encourage and motivate today's youth to pursue careers in math, science, engineering and technology (STEM). The agency has an appreciation for all of America's educators who commit themselves to motivating young students to pursue STEM careers and guiding them to become our future innovators, explorers and leaders. I hope you enjoy this calendar featuring astounding imagery of our Earth from the International Space Station, and that it will inspire you to learn more about the space station's benefits to humanity.

Regards,

MICHAEL T. SUFFREDINI
ISS Program Manager





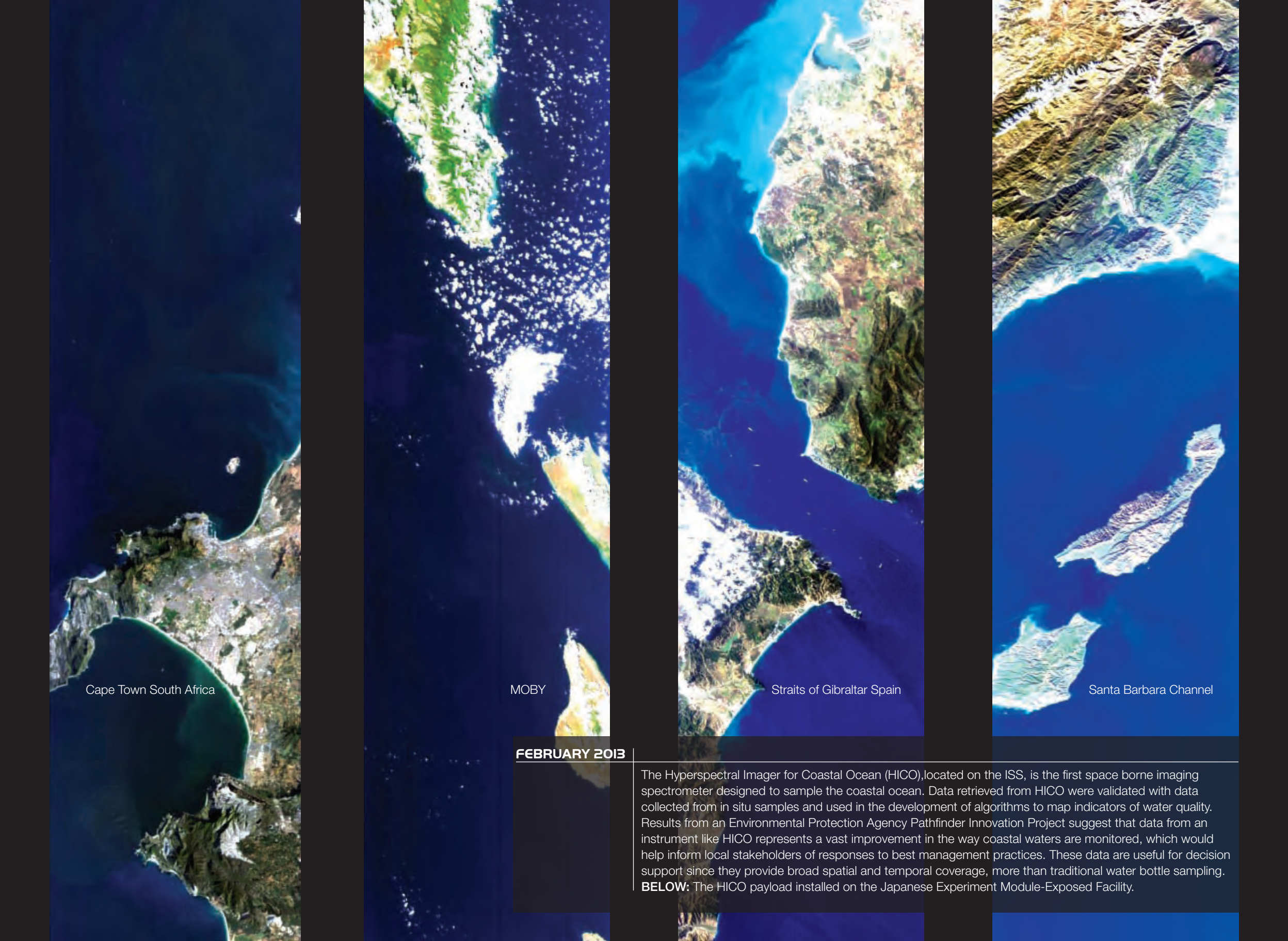
JANUARY 2013

Large metropolitan areas and other easily recognizable sites from the Virginia/Maryland/ Washington, D.C. areas are visible in this image that spans almost to Rhode Island. Boston is just out of frame on the right. Long Island and New York City are visible in the lower right, with Philadelphia and Pittsburgh near the center. Parts of two Russian vehicles parked at the orbital outpost are seen in the left foreground. **BELOW:** View of Earth from the Cupola, the International Space Station's window.

JANUARY2013

December														February						
													1				1	2		
2	3	4	5	6	7	8								3	4	5	6	7	8	9
9	10	11	12	13	14	15								10	11	12	13	14	15	16
16	17	18	19	20	21	22								17	18	19	20	21	22	23
23 _{/30}	24 _{/31}	25	26	27	28	29								24	25	26	27	28		

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		<div>1</div> <div>New Year's Day</div>	<div>2</div> <div>1959: Luna 1, first spacecraft to reach escape velocity and orbit the sun</div>	<div>3</div> <div>2004: Spirit lands on Mars</div>	<div>4</div>	<div>5</div>
<div>6</div>	<div>7</div>	<div>8</div>	<div>9</div>	<div>10</div>	<div>11</div>	<div>12</div> <div>1997: STS-81, Shuttle - Mir</div>
<div>13</div>	<div>14</div>	<div>15</div>	<div>16</div>	<div>17</div>	<div>18</div>	<div>19</div>
<div>20</div>	<div>21</div> <div>1986: STS-51L, Space Shuttle Challenger accident</div>	<div>22</div> <div>1998: STS-89 Shuttle - Mir</div>	<div>23</div>	<div>24</div> <div>1986: Voyager 2 - first spacecraft to observe Uranus; 2004: Opportunity lands on Mars</div>	<div>25</div> <div>1984: President Ronald Reagan announces U.S. plans to build a space station</div>	<div>26</div>
<div>27</div> <div>1967: Apollo 1 fire</div>	<div>28</div> <div>1986: STS-51L, Space Shuttle Challenger accident</div>	<div>29</div> <div>1998: Intergovernmental Agreement on Space Station Cooperation signed</div>	<div>30</div>	<div>31</div> <div>1958: Explorer 1, first U.S. satellite</div>		



FEBRUARY 2013

The Hyperspectral Imager for Coastal Ocean (HICO),located on the ISS, is the first space borne imaging spectrometer designed to sample the coastal ocean. Data retrieved from HICO were validated with data collected from in situ samples and used in the development of algorithms to map indicators of water quality. Results from an Environmental Protection Agency Pathfinder Innovation Project suggest that data from an instrument like HICO represents a vast improvement in the way coastal waters are monitored, which would help inform local stakeholders of responses to best management practices. These data are useful for decision support since they provide broad spatial and temporal coverage, more than traditional water bottle sampling. **BELOW:** The HICO payload installed on the Japanese Experiment Module-Exposed Facility.

FEBRUARY2013

January												March											
		1	2	3	4	5										1	2						
6	7	8	9	10	11	12						3	4	5	6	7	8	9					
13	14	15	16	17	18	19						10	11	12	13	14	15	16					
20	21	22	23	24	25	26						17	18	19	20	21	22	23					
27	28	29	30	31								24/31	25	26	27	28	29	30					

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					12003: STS-107, Space Shuttle Columbia accident	2
31995: STS-63, Eileen Collins first female space shuttle pilot	4	5	6	71984: STS-41B, first untethered spacewalks; 2001: STS-98/5A, U.S. - Destiny Laboratory launched; 2008: STS-122/1E, ESA-Columbus launched	82010: STS-130/20A, U.S.- Tranquility Connecting Module and ESA-Cupola launched	9
10	11	12	13	14	15	16
17	18Washington's Birthday 1977: Space Shuttle Enterprise first flight test atop Boeing 747 Shuttle Carrier Aircraft	19	20Inauguration Day 1962: Friendship 7, John Glenn first American to orbit Earth	21	22	23
242011: STS-133/ULF5, ELC4, PMM launched	25	261966: Apollo/Saturn 201, first flight of the Saturn 1B launch vehicle with an Apollo command and service module attached	27	28		

The municipality of Dubai is the largest city in the Persian Gulf and has built a global reputation for large-scale developments and architectural works. Among the most visible of these developments are three human-made archipelagos. Palm Jumeirah (bottom left) appears as a stylized palm tree when viewed from above. The World Islands (middle right) evoke a rough map of the world from a space-borne perspective. **BELOW:** The City of Dubai—the largest metropolitan area within the emirate of Dubai—is a favorite subject of astronaut photography. The city presents an eye-catching appearance at night that vividly displays an urban development pattern.



MARCH2013

February									April						
							1	2		1	2	3	4	5	6
3	4	5	6	7	8	9			7	8	9	10	11	12	13
10	11	12	13	14	15	16			14	15	16	17	18	19	20
17	18	19	20	21	22	23			21	22	23	24	25	26	27
24	25	26	27	28					28	29	30				

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1	2
3 <div>1959: Pioneer 4, first successful lunar mission by U.S. spacecraft; 1969: Apollo 9, first manned flight of the Command/Service Module along with the Lunar Module</div>	4 	5	6	7	8 <div>2001: STS-102/5A.1, first MPLM flight, ESP-1 launched, & ISS Expedition 2, first crew rotation</div>	9 <div>2008: First ESA ATV</div>
10	11 <div>2008: STS-123/1JA, JAXA-ELM-PS launched</div>	12	13	14	15 <div>2009: STS-119/15A, S6 truss and solar arrays launched</div>	16 <div>1926: First liquid-fueled rocket; 1966: Gemini VIII, first docking of two spacecraft in orbit; 2011: ISS Expedition 27</div>
17	18 <div>1965: Cosmonaut Alexei Leonov, first person to spacewalk; 2010: ISS Expedition 23</div>	19 	20 <div>Spring Begins</div>	21	22	23 <div>1965: Gemini III, first crewed mission of Gemini Project</div>
24/31	25	26 <div>2009: ISS Expedition 19</div>	27 	28	29 <div>2006: ISS Expedition 13</div>	30



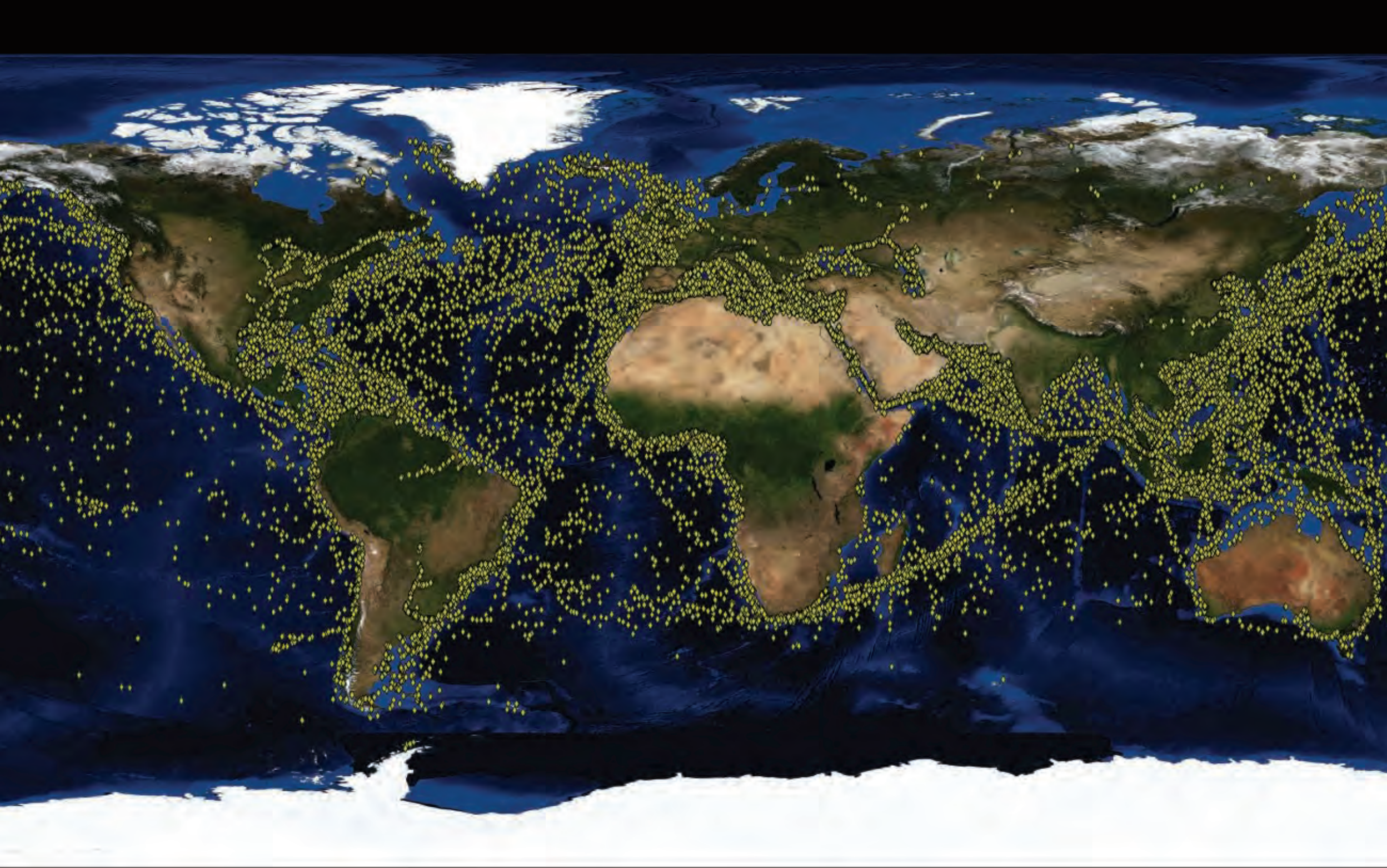
APRIL 2013

Nighttime photo featuring the bright lights of Cairo and Alexandria, Egypt, on the Mediterranean coast, with the Nile River and its delta standing out clearly. **BELOW:** A daytime photograph of the Nile River Delta and Cairo, Egypt.

APRIL 2013

March								May									
1 2								1 2 3 4									
3 4 5 6 7 8 9									5 6 7 8 9 10 11								
10 11 12 13 14 15 16									12 13 14 15 16 17 18								
17 18 19 20 21 22 23									19 20 21 22 23 24 25								
24/31 25 26 27 28 29 30									26 27 28 29 30 31								

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	2	3 	4	5 2010: STS-131/19A, MPLM launched	6 1984: STS-41C, first orbital satellite repair mission
7 2007: ISS Expedition 15	8 1964: Gemini I test flight; 2002: STS-110/8A, SO truss launched; 2008: ISS Expedition 17	9 1959: NASA announces Mercury 7, NASA's first astronaut class	10 	11	12 1961: Cosmonaut Yuri Gagarin, first human in space; 1981: STS-1, first space shuttle (Columbia) mission	13
14 2005: ISS Expedition 11	15	16	17	18 	19 2001: STS-100/6A, CSA-Canadarm2 & MPLM launched	20
21	22	23	24 1967: Soyuz 1 accident; 1990: STS-31, Hubble Space Telescope launched	25 	26	27 2012: ISS Expedition 31
28	29	30				



MAY 2013

The Vessel ID system on the International Space Station tracks an individual ship's speed, position, course, cargo, and voyage information in open waters. Results have already led to improvements in ship travel safety by predicting travel pattern behaviors or different vessel types. *Photo courtesy of Norwegian FFI (Defence Research Establishment)* **BELOW:** Astronaut Randolph Bresnik seen during *Atlantis* EVA-2 on Nov. 21, 2009 with the unfurled AIS (Automatic Identification System) antenna, attached to Columbus to be used for experimental tracking of VHF signals of ships at sea.

MAY2013

April

June

1	2	3	4	5	6		
7	8	9	10	11	12	13	1
14	15	16	17	18	19	20	2
21	22	23	24	25	26	27	3
28	29	30					4

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1	2	3	4
5 1961: Freedom 7, Alan Shepard Jr., first American in space	6	7	8	9	10	11
12	13	14 1973: Skylab space station launched; 2010: STS-132/ULF4, MRM1 launched	15	16 2011: STS-134/ULF6 launched	17	18
19 2000: STS-101/2A.2a, Spacehab launched	20	21	22 2012: Launch of Space-X/Dragon, first commercial craft to launch to the space station	23 2011: Expedition 28	24	25 1973: Skylab 2, first U.S. space station crew; 2012: Docking of SpaceX/Dragon capsule, first docking of a commercial craft to the space station
26	27 Memorial Day; 1999: STS-96/2A-1 launched, first space shuttle to dock with ISS; 2009: ISS Expedition 20	28	29	30	31 2008: STS-124/1JA, JAXA- JEM-PM, JEM-RMS launched	



JUNE 2013

The lights of the cities of Ireland (foreground) and the United Kingdom (back and to the right) are contrasted by the bright sunrise in the background. The greens and purples of the Aurora Borealis are seen along the rest of the horizon. **BELOW:** The Aurora Borealis taken by an Expedition 23 crew member.

JUNE2013

May												July											
1 2 3 4												1 2 3 4 5 6											
5 6 7 8 9 10 11												7 8 9 10 11 12 13											
12 13 14 15 16 17 18												14 15 16 17 18 19 20											
19 20 21 22 23 24 25												21 22 23 24 25 26 27											
26 27 28 29 30 31												28 29 30 31											

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1 2010: ISS Expedition 24
2 1966: Surveyor I, first U.S. spacecraft to soft land on the moon	3	4 2010: SpaceX Falcon 9 Block 1, first successful flight	5 2002: STS-111/UF-2, MBS & MPLM launched & ISS Expedition 5	6	7	8 2007: STS-117/13A, S3/S4 truss and solar arrays launched
9	10	11	12	13	14	15
						
16 1963: Cosmonaut Valentina Tereshkova, first female in space	17	18 1983: STS-7, Sally Ride, first U.S. female in space	19	20	21 Summer Begins	22
						
23/30 1971: Soyuz 11 accident	24	25	26	27	28	29 1995: STS-71 Atlantis, first shuttle to dock with Russian Mir space station



The Moderate Resolution Imaging Spectroradiometer (MODIS) instrument on NASA's Terra satellite captured this image of Tropical Storm Isaac on Aug. 28, 2012, at 12:30 p.m. EDT as it was moving northwest through the Gulf of Mexico. Isaac's large reach is seen by its eastern cloud cover over the Gulf of Mexico. **BELOW:** The Visible Infrared Imaging Radiometer Suite (VIIRS) on the Suomi-NPP satellite captured this nighttime view of Tropical Storm Isaac and the cities near the Gulf Coast of the United States early on Aug. 28. The image was acquired just after local midnight by the VIIRS "day-night band," which detects light in a range of wavelengths from green to near-infrared and uses light intensification to enable the detection of dim signals. In this case, the clouds of Isaac were lit by moonlight.

<i>June</i>								<i>August</i>							
1								1 2 3							
2	3	4	5	6	7	8		4	5	6	7	8	9	10	
9	10	11	12	13	14	15		11	12	13	14	15	16	17	
16	17	18	19	20	21	22		18	19	20	21	22	23	24	
²³ / ₃₀	24	25	26	27	28	29		25	26	27	28	29	30	31	






20 **1969:** Apollo 11, first manned lunar landing; **1976:** Viking 1, first U.S. spacecraft to land on Mars

AUGUST 2013

This is an image of the solar transit of the International Space Station taken during the partial solar eclipse from the area of Muscat in the Sultanate of Oman. The image shows the sun (150 million km from Earth), the moon (400,000 km from Earth), and the station (500 km from Earth). **BELOW:** Following a solar flare eruption, the upper of a pair of new solar active regions offers a beautiful profile view of cascading loops spiraling above it. These loop structures are made of superheated plasma, just one of which is the size of several Earths.

AUGUST 2013

<i>July</i>							<i>September</i>						
1	2	3	4	5	6		1	2	3	4	5	6	7
7	8	9	10	11	12	13	8	9	10	11	12	13	14
14	15	16	17	18	19	20	15	16	17	18	19	20	21
21	22	23	24	25	26	27	22	23	24	25	26	27	28
28	29	30	31				29	30					

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1	2	3
4	5	 6 2012: Curiosity Rover lands on Mars	7	8 1978: Pioneer 13-Venus, first U.S. spacecraft to study Venus in detail; 2007: STS-118/13A.1, S5 truss, Spacehab and ESP-3 launched	9	10 2001: STS-105/7A.1, MPLM launched & ISS Expedition 3
11	12 1977: Space Shuttle Enterprise, first free-flight test	13	 14	15	16	17
18	19	20	 21	22	23	24
25 1989: Voyager 2, reaches closest approach to Neptune	26	27	 28 2009: STS-128/17A, MPLM launched	29	30	31



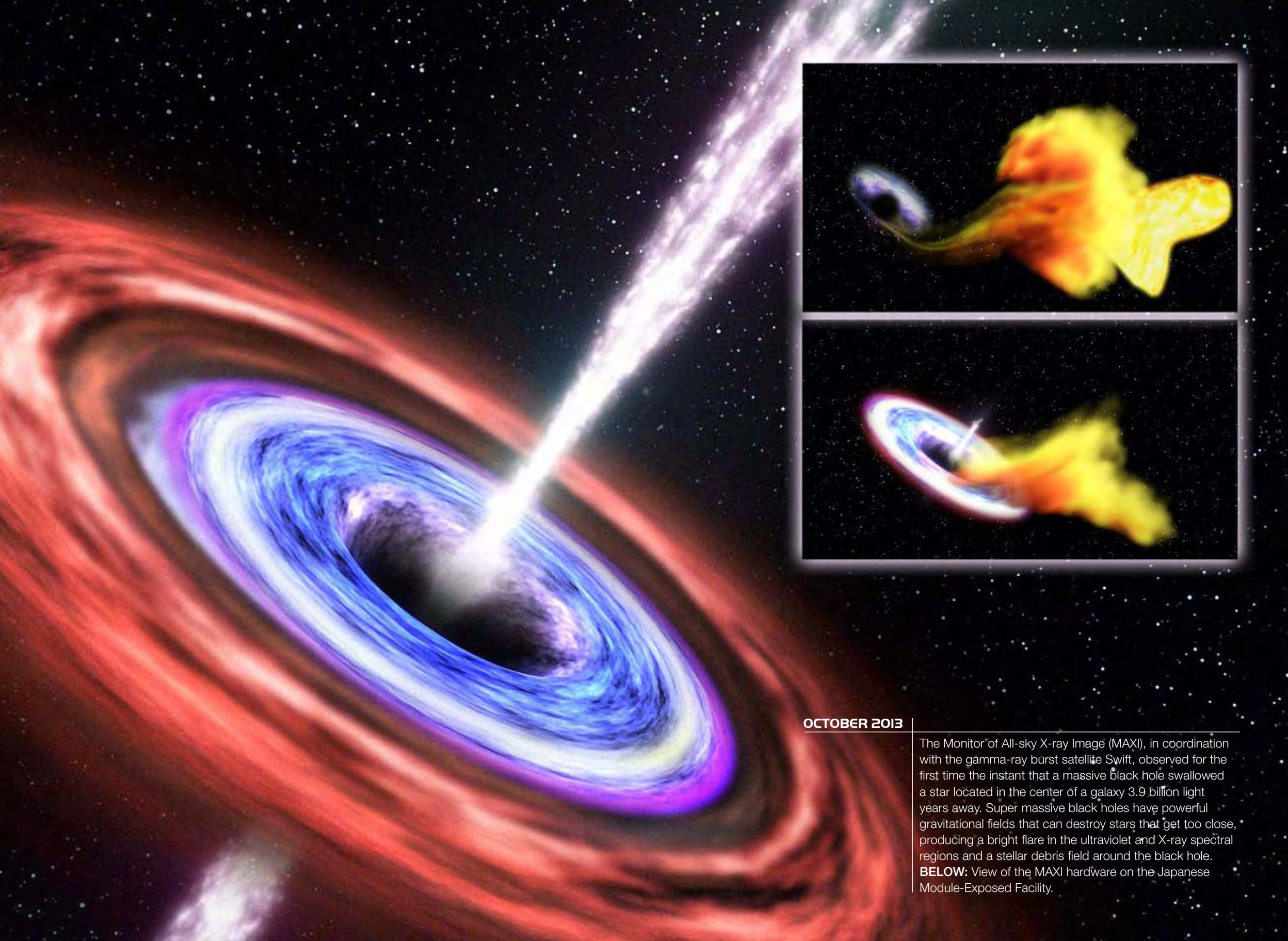
SEPTEMBER 2013

This picture of the active Soufriere Hills volcano on Montserrat Island was photographed on Oct. 11, 2009, by the Expedition 21 crew members onboard the International Space Station. Soufriere Hills is identified as a “stratovolcano” by geologists because it is built of layers (the “strato” part of the name) of both lavas and pyroclastic flows from older eruptions. **BELOW:** The Hawaiian islands are the exposed peaks of a great undersea mountain range known as the Hawaiian-Emperor seamount chain, formed by volcanic activity over a hotspot in the Earth’s mantle.

SEPTEMBER2013

August														October									
				1	2	3									1	2	3	4	5				
4	5	6	7	8	9	10								6	7	8	9	10	11	12			
11	12	13	14	15	16	17								13	14	15	16	17	18	19			
18	19	20	21	22	23	24								20	21	22	23	24	25	26			
25	26	27	28	29	30	31								27	28	29	30	31					

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2Labor Day	3	4	51977: Voyager 1 returns first spacecraft photo of Earth and Moon	6	7
82000: STS-106/2A.2b, Spacehab launched	91975: Viking 2 launched, first spacecraft to successfully land on Mars; 2006: STS-115/12A, P3/P4 truss launched; 2011: ISS Expedition 29	102009: First JAXA HTV launched	11	12	13	142001: Soyuz/4R, Pirs docking compartment launched
15	16	172012: ISS Expedition 33	182006: ISS Expedition 14	19	20	212003: Galileo, first spacecraft to enter Jupiter's atmosphere
22Autumn Begins	23	24	25	26	27	28
291988: STS-26, first shuttle flight following the Space Shuttle Challenger accident	302005: ISS Expedition 12					








OCTOBER 2013

The Monitor of All-sky X-ray Image (MAXI), in coordination with the gamma-ray burst satellite Swift, observed for the first time the instant that a massive black hole swallowed a star located in the center of a galaxy 3.9 billion light years away. Super massive black holes have powerful gravitational fields that can destroy stars that get too close, producing a bright flare in the ultraviolet and X-ray spectral regions and a stellar debris field around the black hole. **BELOW:** View of the MAXI hardware on the Japanese Module-Exposed Facility.

OCTOBER2013

September							November						
1	2	3	4	5	6	7					1	2	
8	9	10	11	12	13	14	3	4	5	6	7	8	9
15	16	17	18	19	20	21	10	11	12	13	14	15	16
22	23	24	25	26	27	28	17	18	19	20	21	22	23
29	30	31					24	25	26	27	28	29	30

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		11958: NASA officially begins operations	2	3	41957: Sputnik 1 (U.S.S.R.), first satellite	5 
6	72002: STS-112/9A, S1 truss launched; 2010: ISS Expedition 25	8	9	102007: ISS Expedition 16, Peggy Whitson, first female ISS commander	11  1958: Pioneer 1, first NASA Launch; 1968: Apollo 7, first crewed Apollo mission; 2000: STS-92/3A, Z1 truss launched; 2009: ISS Expedition 21	121964: Voskhod 1 (U.S.S.R.), first flight with multiple crew members; 2008: ISS Expedition 18
13	14Columbus Day	15	16	17	18  2003: ISS Expedition 8	19
20	21	22	232007: STS-120/10A, ESA- Harmony Connecting Module launched	24	25	26 
27	282009: Ares - 1X launch	29	30	312000: Expedition 1 launched, start of permanent human presence on the ISS		



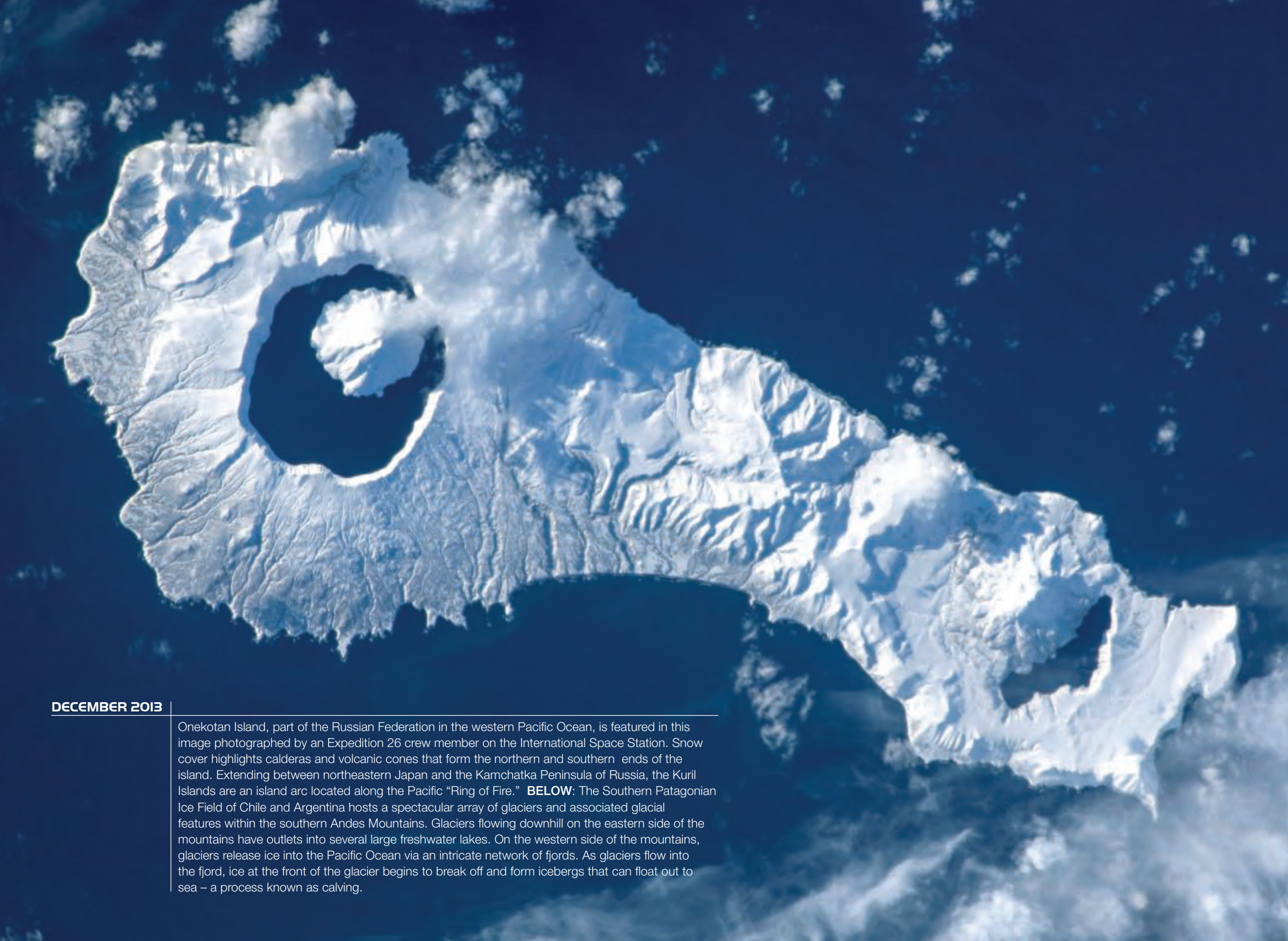
NOVEMBER 2013

A picture of Comet Lovejoy taken by an Expedition 30 crew member from about 240 miles above the Earth's horizon. **BELOW:** Flyaround view of the zenith (top) of the station taken onboard the space shuttle *Atlantis* during the STS-135 mission.

NOVEMBER2013

October												December						
		1	2	3	4	5						1	2	3	4	5	6	7
6	7	8	9	10	11	12						8	9	10	11	12	13	14
13	14	15	16	17	18	19						15	16	17	18	19	20	21
20	21	22	23	24	25	26						22	23	24	25	26	27	28
27	28	29	30	31								29	30	31				

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1	2 2000: Expedition 1 arrives at ISS. Continuous human occupation of ISS begins.
3 1973: Mariner 10, first spacecraft to explore Mercury	4	5	6	7	8	9
	11 Veterans Day; 1982: STS-5, first space shuttle operational mission	12	13 1971: Mariner 9-Mars, first spacecraft to orbit another planet	14 2008: STS-126/ULF2, MPLM launched	15 2010: ISS Expedition 26	16 1973: Skylab 4; 2009: STS-129/ULF3, ELC1, and ELC2 launched; 2011: ISS Expedition 30
	17	18	19	20 1998: Proton – Russia, Zarya Control Module, ISS first element launch	21	22
		26	27	28 Thanksgiving Day; 1983: STS-9, First international agency participates in U.S. mission	29	30 2000: STS-97/4A, P6 truss, first set of solar arrays launched; 2009: ISS Expedition 22



DECEMBER 2013

Onkotan Island, part of the Russian Federation in the western Pacific Ocean, is featured in this image photographed by an Expedition 26 crew member on the International Space Station. Snow cover highlights calderas and volcanic cones that form the northern and southern ends of the island. Extending between northeastern Japan and the Kamchatka Peninsula of Russia, the Kuril Islands are an island arc located along the Pacific “Ring of Fire.” **BELOW:** The Southern Patagonian Ice Field of Chile and Argentina hosts a spectacular array of glaciers and associated glacial features within the southern Andes Mountains. Glaciers flowing downhill on the eastern side of the mountains have outlets into several large freshwater lakes. On the western side of the mountains, glaciers release ice into the Pacific Ocean via an intricate network of fjords. As glaciers flow into the fjord, ice at the front of the glacier begins to break off and form icebergs that can float out to sea – a process known as calving.

DECEMBER2013

November									January								
							1	2				1	2	3	4		
3	4	5	6	7	8	9			5	6	7	8	9	10	11		
10	11	12	13	14	15	16			12	13	14	15	16	17	18		
17	18	19	20	21	22	23			19	20	21	22	23	24	25		
24	25	26	27	28	29	30			26	27	28	29	30	31			

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						
1 1973: Pioneer 10-first flyby of outer planet (Jupiter)	2	3	4 1998: STS-89/2A, Unity Connecting Module, first U.S. component launched	5 2001: STS-108/UF-1, MPLM launched & ISS Expedition 4	6	7 1972: Apollo 17, final Apollo mission
						
8	9 2006: STS-116/12A.1, Spacehab & P5 truss launched	10	11	12	13	14 1962: Mariner 2, first flyby of Venus
15 1965: Gemini VI-A and VII, first manned rendezvous between two spacecrafts; 1970: Venera 7 (U.S.S.R.), first man-made spacecraft to successfully land on another planet (Venus) and to transmit data from there back to Earth;	16					
		17	18	19	20	21 Winter Begins
						
22	23	24 1968: Apollo 8, first crewed mission to orbit the moon	25 Christmas Day	26	27	28
						
29	30	31				