

*** NOVA ***

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ASSOCIAZIONE ASTROFILI SEGUSINI

SPACE SHUTTLE ATLANTIS (STS-132)



Per domani, 14 maggio, è previsto l'inizio della terz'ultima missione dello Space Shuttle (il 32esimo e ultimo volo della navetta Atlantis) con il lancio da Cape Canaveral alle 14:20, ora locale.

Il volo è singolare anche per altri motivi, ad esempio gli astronauti saranno 6 anziché 7 e sarà lanciato in orbita un modulo di produzione russa (chiamato Rassvet), ma che trasporta equipaggiamenti americani ed europei per la Stazione Spaziale.

Rassvet fungerà da porta d'attracco addizionale per le navette automatiche che usano il sistema di docking russo (APAS), usato sia dallo Shuttle che da ATV, oltre a Soyuz e Progress.

Tra gli equipaggiamenti, ricordiamo un pacco batterie di 170 kg per i pannelli solari, una grossa antenna in banda Ku per le trasmissioni e il robot europeo ERA per il modulo Columbus.

Il press kit della missione STS-132 è prelevabile dal link

http://www.nasa.gov/pdf/451029main_sts132_press_kit.pdf

LA MELA DI NEWTON SENZA GRAVITÀ

Dal sito INAF (www.inaf.it) riprendiamo – con autorizzazione – il seguente articolo su un aspetto insolito della missione STS-132 dello Shuttle Atlantis.

Sono passati tre secoli e mezzo da quando la celebre mela di Isaac Newton si staccò dal suo albero e cadde in testa a uno dei padri della scienza moderna, ispirandogli la legge della gravità (almeno così raccontò Newton stesso nelle sue memorie un anno prima di morire, nel 1727). In occasione del 350esimo anniversario della Royal Society, una delle più importanti istituzioni scientifiche al mondo, di cui Newton fu presidente, un ramo del melo sarà spedito nello spazio. Come già successo in una recente missione della Nasa con il cannocchiale di Galileo Galilei, così anche all'albero di Newton sarà riservato il privilegio di essere portato sulla Stazione Spaziale Internazionale.

Gli astronauti della Nasa che prendono parte alla missione STS-132, in partenza da Cape Canaveral, in Florida, il prossimo 14 maggio, porteranno con loro il cimelio, simbolo della scoperta della gravità, proprio là dove la gravità non c'è. Insieme al pezzo di legno, andrà in orbita un'immagine del venerato scienziato inglese: entrambi saranno esposti al pubblico al ritorno sulla Terra, prima nell'ambito della mostra celebrativa della fondazione dell'organizzazione e poi come parte di quella permanente.

La mela di Newton resterà nello spazio 12 giorni, quelli programmati per la missione STS-132, una delle ultime della Nasa con lo Space Shuttle, in procinto di andare in pensione. "Sono certo che Sir Isaac sarebbe stato contento di assistere a questo viaggio. E di constatare che, lassù, la sua mela non sarebbe mai caduta", ha detto l'astronauta britannico Piers Sellers, il membro dell'equipaggio a cui è stata affidata la responsabilità dei due simboli celebrativi.

CONDIZIONI DI VISIBILITÀ DELLA STAZIONE SPAZIALE INTERNAZIONALE (ISS)

Condizioni di visibilità dell'ISS dal sito: <http://www.heavens-above.com/>

e in particolare per il nostro Grange Observatory (previsione valida sostanzialmente per l'intera Valsusa):

<http://www.heavens-above.com/PassSummary.aspx?satid=25544&lat=45.142%20&lng=7.142&loc=476+Grange+Obs.&alt=0&tz=CET>

Date	Mag	Starts			Max. altitude			Ends		
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.
13 May	-2.7	22:11:54	10	WNW	22:14:46	46	SW	22:16:08	25	SSE
14 May	-3.1	21:01:25	10	WNW	21:04:22	67	NNE	21:07:18	10	ESE
14 May	-1.1	22:37:19	10	W	22:39:18	17	SW	22:39:55	16	SSW
15 May	-2.5	21:26:15	10	WNW	21:29:05	44	SW	21:31:54	10	SE
16 May	-0.9	21:51:40	10	W	21:53:34	16	SW	21:55:26	10	S
18 May	-0.7	21:05:54	10	W	21:07:42	15	SW	21:09:29	10	S

NASA STS-132 MISSION SUMMARY

Nelle due pagine seguenti riportiamo, dal sito della NASA, la presentazione, in lingua inglese, dell'equipaggio e delle varie fasi della missione:

http://www.nasa.gov/pdf/446577main_sts132-summary.pdf

NASA Mission Summary

National Aeronautics and
Space Administration
Washington, D.C. 20546
(202) 358-1100



STS-132 MISSION SUMMARY

May 2010

SPACE SHUTTLE ATLANTIS

Atlantis' 12-day mission will deliver the Russian-built Mini Research Module-1 that will provide additional storage space and a new docking port for Russian Soyuz and Progress spacecraft. MRM-1, also known as Rassvet, which means dawn in Russian, will be permanently attached to the bottom port of the station's Zarya module. MRM-1 will carry important hardware on its exterior including a radiator, airlock and a European robotic arm. Atlantis also will deliver additional station hardware stored inside a cargo carrier. Three spacewalks are planned to stage spare components outside the station, including six spare batteries, a Ku-band antenna and spare parts for the Canadian Dextre robotic arm. Shuttle mission STS-132 is the final scheduled flight for Atlantis.

CREW

 <p>Ken Ham Commander (Captain, U.S. Navy) <ul style="list-style-type: none"> • Veteran of one spaceflight, STS-124 pilot • Age: 45, Born: Plainfield, N.J. • Married with two children • Logged 5,000+ hours in 40 different aircraft • Call sign: Hock </p>	 <p>Tony Antonelli (an-tuh-NEL-lee) Pilot (Commander, U.S. Navy) <ul style="list-style-type: none"> • Veteran of one spaceflight, STS-119 pilot • Born: Detroit • Married with two children • Logged 3,200+ hours in 41 different aircraft • Interests include snow boarding and NASCAR </p>
 <p>Garrett Reisman (REESE-man) Mission Specialist-1 <ul style="list-style-type: none"> • Veteran flight engineer on Expedition 16 & 17 • Launched on STS-123; returned STS-124 • Age: 42, Hometown: Parsippany, N.J. • Ph.D. in mechanical engineering, Caltech, 1997 • Enjoys flying, mountaineering & canyoneering </p>	 <p>Michael Good Mission Specialist-2 (Col., U.S. Air Force, Ret.) <ul style="list-style-type: none"> • Veteran of one spaceflight, STS-125 • Age: 47, Hometown: Broadview Heights, Ohio • Married with three children • Logged 2,650+ hours in 30 different aircraft • Enjoys running, golf and family activities </p>
 <p>Steve Bowen (bo-en) Mission Specialist-3 (Captain, U.S. Navy) <ul style="list-style-type: none"> • Veteran of one spaceflight, STS-126 • U.S. Naval Academy graduate, 1986 • Age: 46, Born: Cohasset, Mass. • Married with three children • First submarine officer selected as an astronaut </p>	 <p>Piers Sellers (peers) Mission Specialist-4 <ul style="list-style-type: none"> • Veteran of two spaceflights, STS-112 & 121 • Age: 55; Born: Crowborough, Sussex, UK • Married with two children • Ph.D. in biometeorology, Leeds University, UK • Enjoys sailing, diving and fixing things </p>

The crew patch features Atlantis flying off into the sunset as the end of the Space Shuttle Program approaches. However the sun also is heralding the promise of a new day as it rises for the first time on a new space station module, the MRM-1.



Shuttle Atlantis

Atlantis lifted off on its maiden voyage on Oct. 3, 1985, on mission 51-J. Later missions included the launch of the Magellan probe to Venus on STS-30 in May 1989, Galileo interplanetary probe to Jupiter on STS-34 in October 1989, the first shuttle docking to the Mir Space Station on STS-71 in June 1995 and the final Hubble servicing mission on STS-125 in May 2009. Atlantis is named after a two-masted sailing ship that was operated for the Woods Hole Oceanographic Institute from 1930 to 1966. STS-132 is Atlantis' 32nd flight and its 11th flight to the station.

SPACEWALKS Each will last approximately 6.5 hours.

- On flight day 4, Reisman and Bowen will install a spare space-to-ground Ku-band antenna on the station's truss, or backbone. Then they will install a new tool platform on Dextre. The spacewalkers will break the torque on bolts holding batteries in place on the truss, in preparation for their removal and replacement on the second and third spacewalks. Battery preparation work was deferred from STS-131 to this flight.
- On flight day 6, Bowen and Good will remove and replace three of the six batteries on the port truss to store electricity from the solar arrays on that truss. The used batteries will be installed on the cargo carrier for return to Earth on Atlantis.
- On flight day 8, Good and Reisman will install the final three new batteries on the truss and put the old batteries on the carrier. Next, if time permits, they will retrieve a grapple fixture from Atlantis' payload bay and bring it inside the station for use as a spare.



The Russian MRM-1 Credit: Spacehab



The Russian Orbital Segment



The Cargo Carrier on STS-127



Commemorative Patch

FACTS & FIGURES

- Two flights to the station remain after STS-132 before the shuttles are retired at the end of the year. STS-132 is the 132nd shuttle mission and the 34th shuttle flight to the station.
- MRM-1 is about 23 feet long and weighs 17,147 pounds. It will be attached on flight day 5 to the Earth-facing side of the Zarya module.
 - A spare elbow joint for the European Robotic Arm, a portable external work platform, an airlock and radiator that are mounted on the MRM-1 will be used to outfit the Russian Multi-purpose Laboratory Module, which will be launched on a Russian rocket in December 2011.
 - The MLM, also known as Nauka, will be the last piece of the Russian segment.
 - Inside the MRM-1, there will be Russian and U.S. cargo, including food containers, cargo transfer bags, spare parts, experiment hardware and medical supplies.
 - MRM-1's refueling system will enable Progress cargo vehicles docked to it to transfer their propellants to the Zarya module's fuel tank.
 - MRM-1 hatch opening and ingress is scheduled for flight day 7.
- Atlantis also will carry in its payload bay the Integrated Cargo Carrier-Vertical Light Deployable, which holds hardware that will be installed on the station's exterior.
 - On flight day 3, the station's robotic arm will unberth the carrier and install it on a spare parts platform. On flight day 9, after the hardware is transferred to the station, the robotic arm will return the carrier to Atlantis' payload bay.
- A compact disk containing the digital copies of all entries submitted to NASA's Space Shuttle Program Commemorative Patch Contest will be flown on STS-132. The contest was held to mark the end of the shuttle era. The winning patch was designed by Blake Dumesnil of Hamilton Sundstrand, Johnson Space Center. A panel of NASA judges selected the winning patch from 85 entries submitted by NASA employees and contractors.