

National Aeronautics and Space Administration

A photograph of the International Space Station (ISS) in orbit above Earth. The station's complex structure, including multiple large solar panel arrays, is clearly visible against the blue and white of the planet. The text "INTERNATIONAL SPACE STATION" is overlaid in large, bold, blue-outlined letters.

# INTERNATIONAL SPACE STATION

Multilateral Medical Policy Board  
Transitions in Space Medicine: 25 Years in Photos

Edited by Charles R. Doarn

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International Space Station 2011 (ISS027-E-036700)(*Courtesy of NASA*)



## Multilateral Medical Policy Board: Transitions in Space Medicine

This collection of photographic highlights covers the past 25 years of international collaboration in human space flight. Beginning in 1993, the international community came together to develop the medical systems for an international space station. Initially, this collaboration was bilateral in support of the Shuttle / Mir Space Station (Phase 1). However, the framework that was established to serve as the medical authority structure provided a foundation for the multilateral boards and panel, which were codified in the memoranda of understanding. The Multilateral Medical Policy Board, the Multilateral Space Medicine Board, and the Multilateral Medical Operations Panel were developed in a collegial and mutually beneficial environment by the men and women of the space agencies of Canada, Europe, Japan, Russia, and the United States.

This collection of photographs from official and personal collections captures the spirit and collegiality to which we have grown accustomed. They are also presented to commemorate the integrity, professionalism, tenacity, and dedication to human space exploration consistently demonstrated by individuals involved in this amazing effort.





## Dedication

This photographic collection is dedicated to the men and women who have supported the development and operation of unique international medical systems for human space exploration across the U.S. Space Shuttle, Mir, Soyuz, and the International Space Station programs. Through the vision, talent, and perseverance of these individuals, a highly successful framework has been developed to enable effective solutions for the healthy and productive human presence in conditions of space exploration missions.

We acknowledge those who have gone before us for their contributions and leadership during this remarkable period in human space flight.

# ISS Multilateral Medical Policy Board Members

## **CSA**

Gary Gray  
Jean-Marc Comtois

## **ESA**

Heinz Oser  
Volker Damann  
Guillaume Weerts

## **NASDA/JAXA**

Chiharu Sekiguchi  
Kazuhito Shimada  
Katsuhiko Ogata  
Soichi Tachibana

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James Collier (Co-Chair)  
Richard S. Williams (Co-Chair)  
JD Polk (Co-Chair)

## **RSA/SC Roscosmos**

Anatoli Grigoriev (Co-Chair)

## **Executive Secretary**

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Ashot E. Sargsyan (NASA/Krug Life Sciences/Wyle)  
1999–2008



# Key Contributors

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Alexey Polyakov  
Igor Ushakov



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# Shuttle / Mir – Phase 1

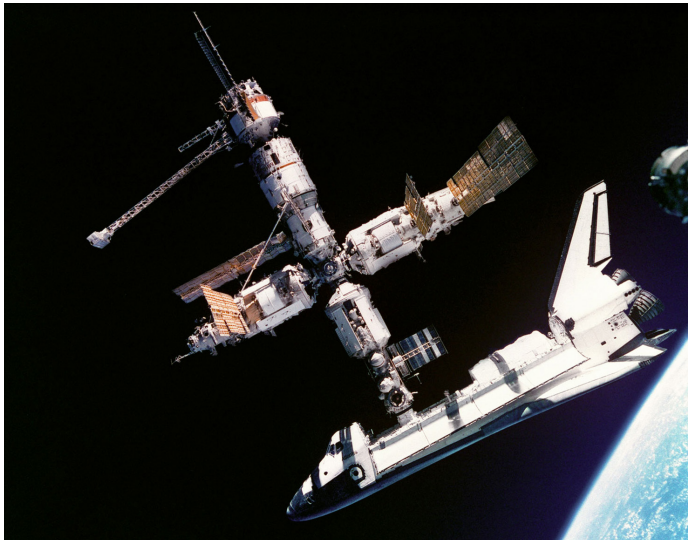
Initial phase of the ISS Program

*October 1995, Houston, Texas*

Multilateral Medical Operations Working Group

Initial Meetings

Clockwise from top right:  
Entrance to the Johnson Space Center  
*(Courtesy of NASA)*  
Representatives of each agency  
*(Courtesy of NASA)*  
Shuttle/Mir Docking ca. 1995  
*(Courtesy of NASA)*



# Shuttle/Mir – Phase 1

Multilateral Medical Operations Panel  
Initial Meetings  
Foundation for multilateral cooperation

TREATIES AND OTHER INTERNATIONAL ACTS SERIES 12927

## SPACE STATION

Agreement Between the  
UNITED STATES OF AMERICA  
and OTHER GOVERNMENTS

Signed at Washington January 29, 1998

with

Annex

and

Arrangement Between the  
UNITED STATES OF AMERICA  
and OTHER GOVERNMENTS

Signed at Washington January 29, 1998



Top left: Face page of the MOU between NASA and other governments  
*(Courtesy of NASA)*

Top right: Entrance to the Johnson Space Center *(Courtesy of NASA)*

Bottom right: Representatives of each agency *(ca 1996) (Courtesy of NASA)*



---

# MMPB-A – April 16, 1998

## VTC

ISS MMPB Charter signed May 1998 (J. Collier, A. Grigoriev, H. Oser, G. Gray, and C. Sekiguchi)

When we did not meet face-to-face, we met virtually by video teleconferencing with consideration for differing time zones.



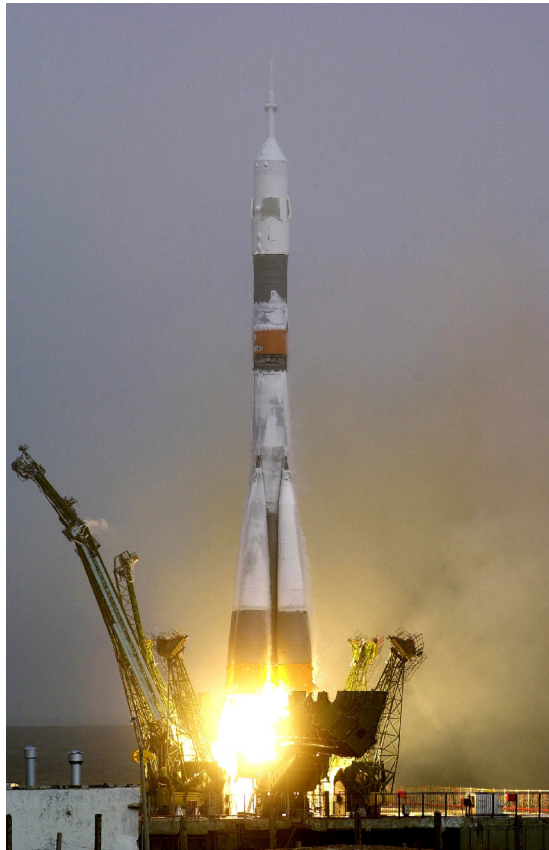
Left: Mission 2A - Zarya FGB control module – launched on a Proton rocket November 18, 1998 (*Courtesy of NASA*). Node 1 – launched on STS-88 December 6, 1998 (*Courtesy of NASA*).

Right: Representatives for each agency (*Courtesy of NASA*)

# MMPB#1 – March 15–16, 2001

## NASA JSC Houston, TX

Mission 5a.1 0  
Leonardo MPLM delivery



Clockwise from left:  
Expedition One launch – October 31, 2000  
(William Shepherd, Sergei Krikalev,  
and Yuri Gidzenko) *(Courtesy of NASA)*  
Entrance to JSC *(Courtesy of NASA)*  
Crew of Expedition One,  
Expedition Two, and STS-102  
*(Courtesy of NASA)*



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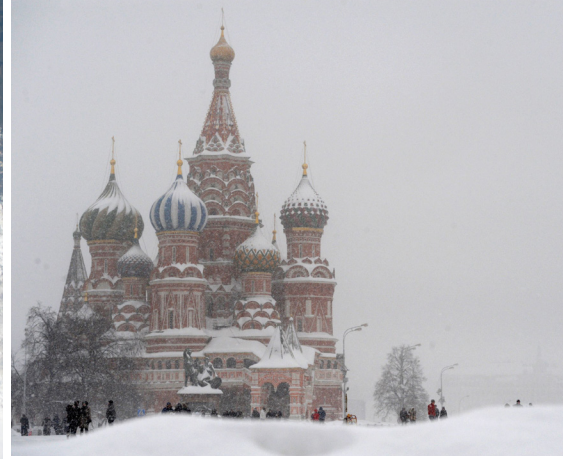
# MMPB#2 – May 10, 2002

## VTC



Destiny Module and Mobile Transporter were installed. This meeting was held by video teleconferencing.

Expedition 8A (Courtesy of NASA)



## MMPB#3 – December 4, 2003 **IBMP, Moscow, Russia**

Policy Directive #1 – Crew Health Maintenance on the International Space Station  
Shuttle grounded – Columbia and crew (STS-107) were lost.

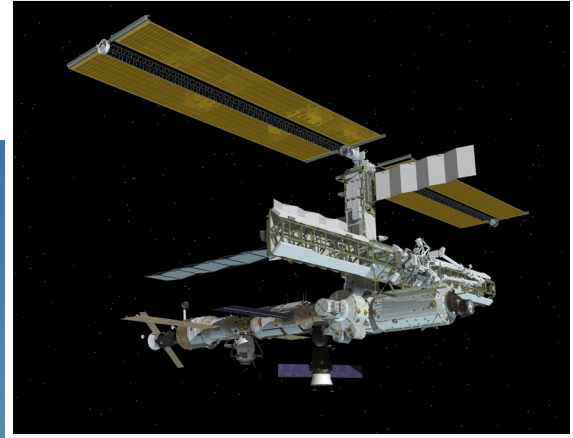
Clockwise from top left:  
Expedition 7 (*Courtesy of NASA*)

St. Basil's Cathedral on Moscow's Red Square in the winter (*Michael Eckels*)

Representatives from each agency and invited guests (*Courtesy of NASA*)

# MMPB#4 – April 5–7, 2004

## NASA HQ, Washington, DC



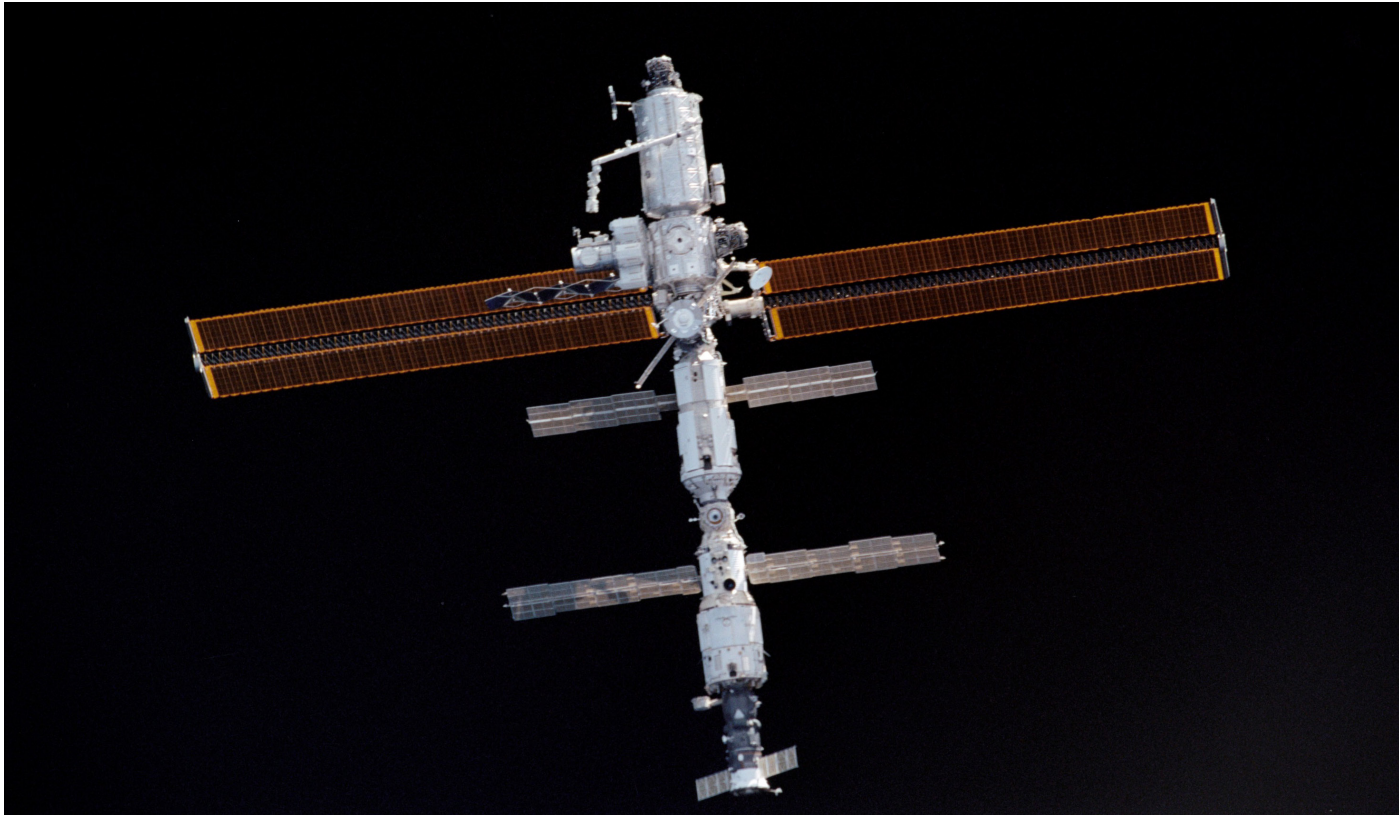
Clockwise from top right:  
Expedition 8/9 (*Courtesy of NASA*)  
MMPB guests with Rich Williams  
and his airplane (*Courtesy of NASA*)  
U.S. Capitol Building  
(*Doarn personal collection*)

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MMPB#5 – July 15, 2004, **VTC**

MMPB#6 – October 28, 2004, **VTC**

Meetings held by video teleconferencing

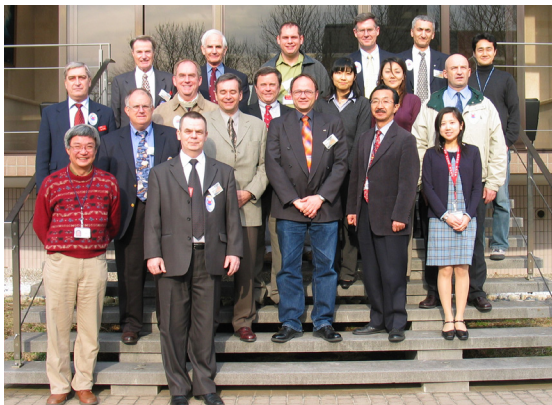


ISS in 2004 (Courtesy of NASA)

# MMPB#7 – March 14–15, 2005

## JAXA, Tsukuba, Japan

Policy Directive #2 – Multilateral Medical Policy Board Dispute Resolutions



Top left: ISS in 2005 (Courtesy of NASA)

Bottom left: MMPB members and guests (Courtesy of NASA)

Above: JAXA Headquarters (Courtesy of NASA)

# MMPB#8 – November 9–11, 2005

## ESA, European Astronaut Center, Cologne, Germany

Clockwise from top left:  
MMPB Board Members V. Damann (l),  
J-M. Comtois (c), and G. Gray (r) (Courtesy of NASA)  
Dome of St. Michael, Cathedral Square, Cologne (Victor Chapa)  
Expedition 11 – STS-114 (Courtesy of NASA)



# MMPB#9 – April 24–25, 2006

## NASA HQ, Washington, DC

Below: NASA Headquarters, Washington DC  
*(Courtesy of NASA)*

Top right: J-M. Comtois (l), V. Damann, V. Bogomolov,  
R. Williams, S. Tachibana (r) *(Courtesy of NASA)*

Bottom right: Expedition 12/13 EVA work on Columbus  
*(Courtesy of NASA)*



# MMPB#10 – November 3, 2006

## ESA, European Astronaut Center, Cologne, Germany



Clockwise from top left:  
European Astronaut Center, Cologne ( *Courtesy of ESA* )  
Expedition 14 ( *Courtesy of NASA* )  
Multilateral representatives ( *Courtesy of NASA* )



MMPB#11 – May 11, 2007

**NASA JSC, Houston, Texas**

Expedition 15 – Russian EVA to install Service  
Module Debris Protection Panel

Policy Directive #3 – ISS Medical Data Security Policy



Top Right: EVA from the ISS  
(*Courtesy of NASA*)

Left: Building 1, NASA JSC  
(*Courtesy of NASA*)

Right: Multilateral reps at work  
at USRA site (*Courtesy of NASA*)

# MMPB#12 – November 15, 2007

## JAXA, Tokyo, Japan

Clockwise from below:  
Expedition 16 - Taken from  
STS 120 (Discovery)  
after undocking  
(*Courtesy of NASA*)  
Downtown Tokyo  
(*Yu Kato on Unsplash*)  
Multilateral representatives  
(*Courtesy of NASA*)



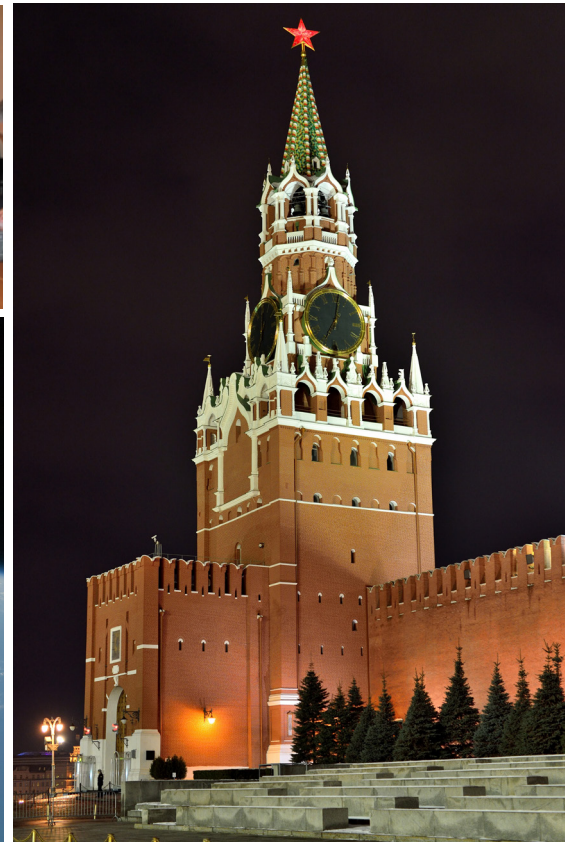
# MMPB#13 – June 5–6, 2009

## IBMP, Moscow, Russia

Below: Expedition 20 - Taken from STS 127 (Discovery) ARED delivered, MPLM delivered, and HTV delivered (*Courtesy of NASA*)

Right: MMPB at work at IBMP (*Doarn personal collection*)

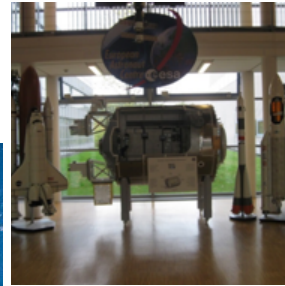
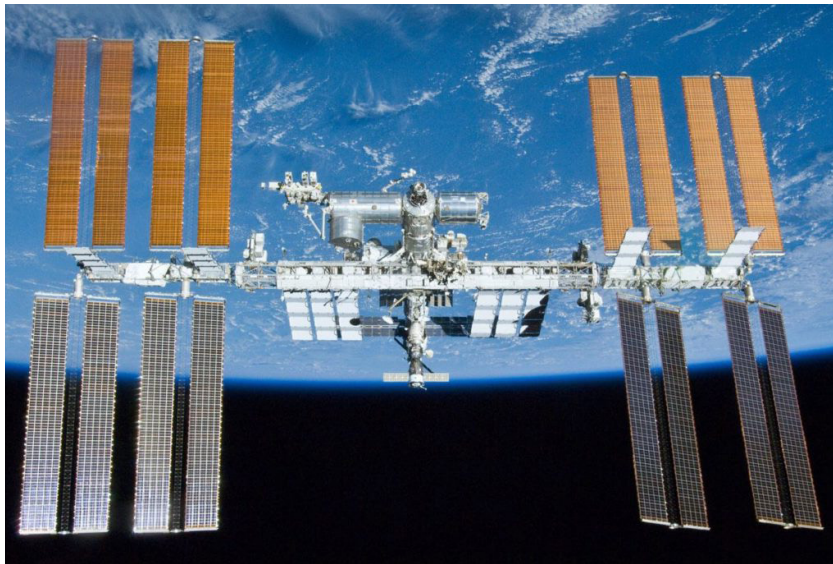
Far right: Spasskaya Tower of the Kremlin. Red Square (*Doarn personal collection*)



# MMPB#14 – October 22, 2010

## ESA, European Astronaut Center, Cologne, Germany

ISS Medical Policy Framework Document - Baseline



Clockwise from above:

Expeditions 24/25 ISS as seen from STS-132 (*Courtesy of NASA*)

Lobby of the EAC (*Doarn personal collection*)

V. Schneider (l), V. Michaud, J. Allen, O Navinkov, C. Doarn (r)  
(*Doarn personal collection*)

# MMPB#15 – November 1–2, 2011

## IBMP, Moscow, Russia

Expedition 28/29 Landing (Courtesy of NASA)

STS-135 (Atlantis) Shuttle Program retired

Policy Directive #4 – Prevention of Infectious Disease Transmission to ISS Crewmembers

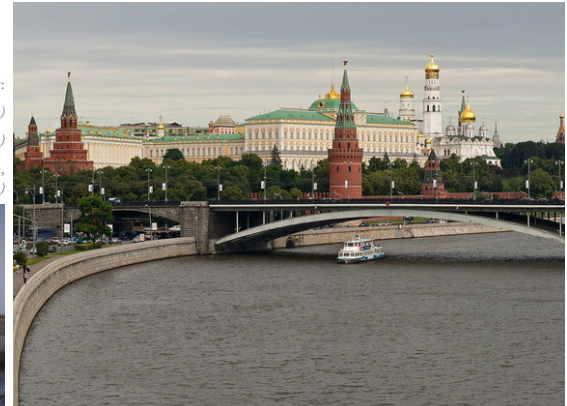
Policy Directive #7 – ISS Healthcare System Improvement

Clockwise from below:

Expedition 28/29 Landing (Courtesy of NASA)

Kremlin, Moscow (Doarn personal collection)

Shimada (l), J-M. Comtois, V. Damann, R. Williams,  
A. Grigoriev, I. Ushakov (r) (Doarn personal collection)



MMPB#16 – March 16, 2012  
Phone Conference



Soyuz modules during Expedition 30, with Aurora Australis in the right corner (ISS030-E-126555). (Courtesy of NASA)

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# MMPB#17 – October 26, 2012

## NASA JSC, Houston, Texas

Space X Dragon Capsule docking (October 10, 2012)



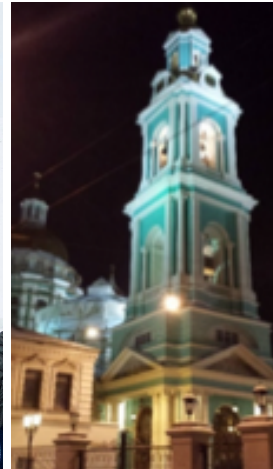
Left: Expedition 33 – *(Courtesy of NASA)*

Top right: Aerial view of USRA Center

Bottom right: Multilateral representatives *(Courtesy of NASA)*

# MMPB#18 – January 24, 2014

## IBMP, Moscow, Russia



Clockwise from left:  
Crew recovery in Kazakhstan  
*(Courtesy of NASA)*  
Church in central Moscow  
*(Doarn personal collection)*  
Multilateral representatives  
*(Doarn personal collection)*



# MMPB#19 – June 13, 2014

## NASA JSC, Houston, Texas

Policy Directive #6 – Environmental Health Regarding Crew in Aging Spacecraft



Clockwise from left:  
Alexander Gerst  
viewing Earth  
(*Courtesy of NASA*)  
Multilateral  
representatives  
(*Courtesy of NASA*)  
Mission Control Center  
(*Courtesy of NASA*)



---

# MMPB#20 – December 19, 2014

## NASA JSC, Houston, Texas



Clockwise from left:  
Soyuz on return to Earth  
*(Courtesy of NASA)*  
ISS Conference Center,  
Houston, TX *(Courtesy of NASA)*  
Multilateral representatives  
*(Courtesy of NASA)*

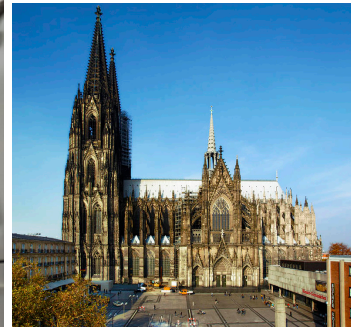


# MMPB#21 – October 9, 2015

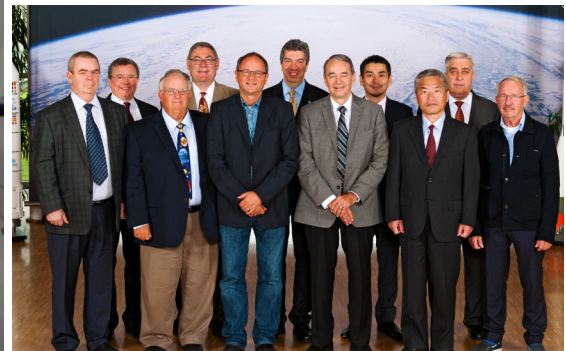
## ESA, European Astronaut Center, Cologne, Germany

First one-year mission with Scott Kelly and Mikhail Kornienko (March 27, 2015 – March 2, 2016)

Twin study (Scott and Mark Kelly)



Clockwise from left:  
One-year mission of Kelly  
and Kornienko  
*(Courtesy of NASA)*  
Cathedral Square,  
Cologne, Germany  
*(Andreas Moeltgen Fotografie)*  
MMPB members and guests  
*(Courtesy of ESA)*



# MMPB#22 – June 9, 2017

## NASA JSC, Houston, Texas

Peggy Whitson spent 289 days on ISS, a world record for a female. She spent 665 total days in space over her career, a record among American astronauts.



Clockwise from left:  
Expedition 50:  
Peggy Whitson on ISS  
*(Courtesy of NASA)*  
MMPB members and guests  
*(Courtesy of NASA)*  
KBRwyle Facility  
*(Courtesy of KBRwyle)*

# MMPB#23 – October 19-20, 2017

## NASA JSC, Houston, Texas

Clockwise from below:

Expedition 53 EVA *(Courtesy of NASA)*

Entrance to NASA Johnson Space Center  
*(Courtesy of NASA)*

MMPB members and guests  
*(Courtesy of NASA)*



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# MMPB#24 – May 19, 2018

## NASA JSC, Houston, Texas



Clockwise from left:

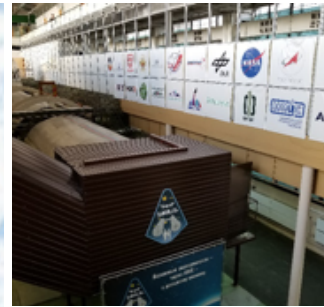
Expedition 55 ISS *(Courtesy of NASA)*

G. Weerts (l), JD. Polk, V. Bogomolov, V. Pouchev, J-M. Comtois (r) *(Courtesy of NASA)*

Human Health and Performance Laboratory (Building 21) *(Courtesy of NASA)*

# MMPB#25 – October 19, 2018

## IBMP, Moscow, Russia

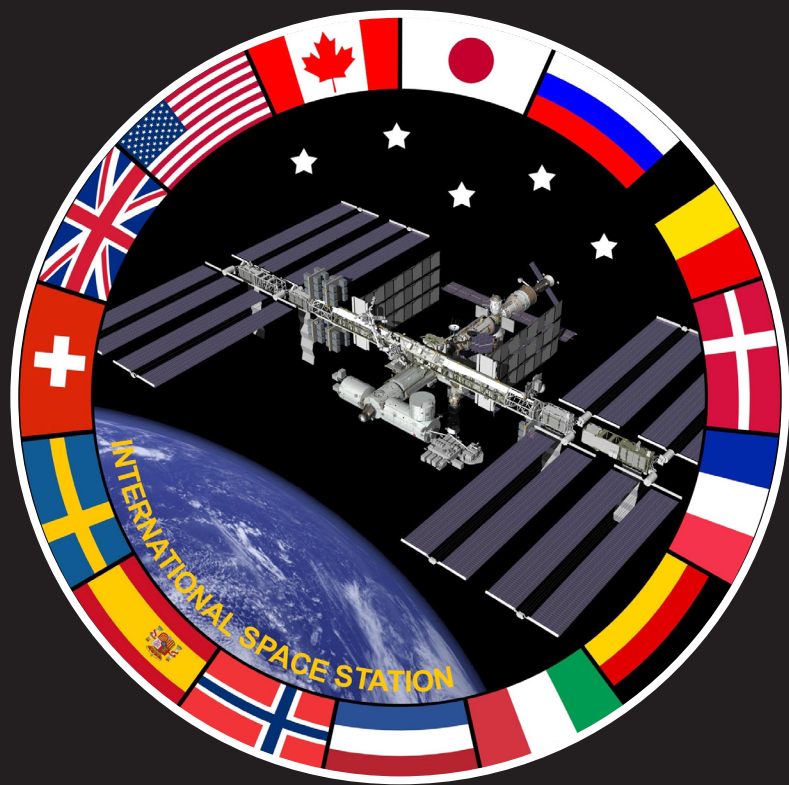


Clockwise from left:  
ISS in October 2018 *(Courtesy of NASA)*  
MARS 500 Analog facility at IBMP *(Doarn Personal Collection)*  
Back row - G. Weerts (l-r), K. Shimada  
Front row - A. Grigoriev (l-r), J.D., J.-M. Comtois  
*(Courtesy of NASA)*









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