

**International Space Station  
Multilateral Medical Policy Board  
Transitions in Space Medicine  
25 Years in Photos**



**NASA-SP-2018-0641**

**Edited by Charles R. Doarn**





Library of Congress Cataloging-in-Publication Data

Names: Doarn, Charles, editor. | United States. National Aeronautics and Space Administration. Office of the Chief Health and Medical Officer, issuing body.

Title: Multilateral Medical Policy Board: Transitions in Space Medicine – 25 Years in Photos / editor: Charles R. Doarn.

Other titles: NASA SP (Series); 2018-0641

Description: Washington, DC : Office of the Chief Health and Medical Officer, NASA Headquarter, [2018] | Series SP ; 2018-0641 | Includes bibliographical references and index.

Identifiers: LCCN ##### | ISBN #####

Subjects: LCSH: International Space Station Multilateral Medical Policy Board | history | space station | OTHERS

Classification: LCC ##### | DDC ##### | SUDOC NAS #####

LC record available at [https:// #####](https://#####)

##### to be filled in later



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



## Multilateral Medical Policy Board: Transitions in Space Medicine

This collection of photographic highlights covers the past 25 years of international collaboration in human spaceflight. 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 we have grown accustomed too. 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 spaceflight.



## **ISS Multilateral Medical Policy Board Members**

### **CSA**

Gary Gray

Jean-Marc Comtois

### **ESA**

Heinz Oser

Volker Damann

Guillaume Weerts

### **NASDA/JAXA**

Chiharu Sekiguchi

### **Executive Secretary**

Charles R. Doarn (NASA) 1998-1999, 2008-2018

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

Kazuhito Shimada

Katsuhiko Ogata

Soichi Tachibana

### **NASA**

James Collier (Co-Chair)

Richard S. Williams (Co-Chair)

JD Polk (Co-Chair)

### **RSA/SC Roscosmos**

Anatoli Grigoriev (Co-Chair)

## Key Contributors

### CSA

Karen Breeck

Jean-Marc Comtois

Gary Gray

Raffi Kuyumjian

Joan Sarry (SP)

Robert Thursk

Dave Williams

### ESA

Filippo Castrucci

Volker Damann

Paul Kuklinski

Heinz Oser

Ulrich Straube

Guillaume Weerts

### JAXA

Masatsugu Higuchi

Yuu Koike

Takeo Miki

Tadashi Murai

Katsuhiko Ogata

Chiharu Sekiguchi

Kazuhito Shimada

Go Suzuki

Shoichi Tachibana

### NASA

John Allen

Roger Billica

Michael Barratt

Michael Chandler

John Charles

Nitza Cintron

James Collier

Jeffrey Davis

Joseph Dervay

Charles Doarn

Michael Duncan

Craig Fischer

Smith Johnston

Oleg Knowingkov

Desmond Lugg

Vince Michaud

Arnauld Nicogossian

Kae Parker

Edward Powers

JD Polk

Sam Pool

Ashot Sargsyan

Victor Schneider

Terry Taddeo

Richard Williams

### RSA/Roscomos

Valery Bogomolov

Igor Goncharov

Anatoli Grigoriev

Inessa Koslovyskia

Valery Morgun

Oleg Orlov

Vladimir Pochuev

Alexey Polyakov

Igor Ushakov

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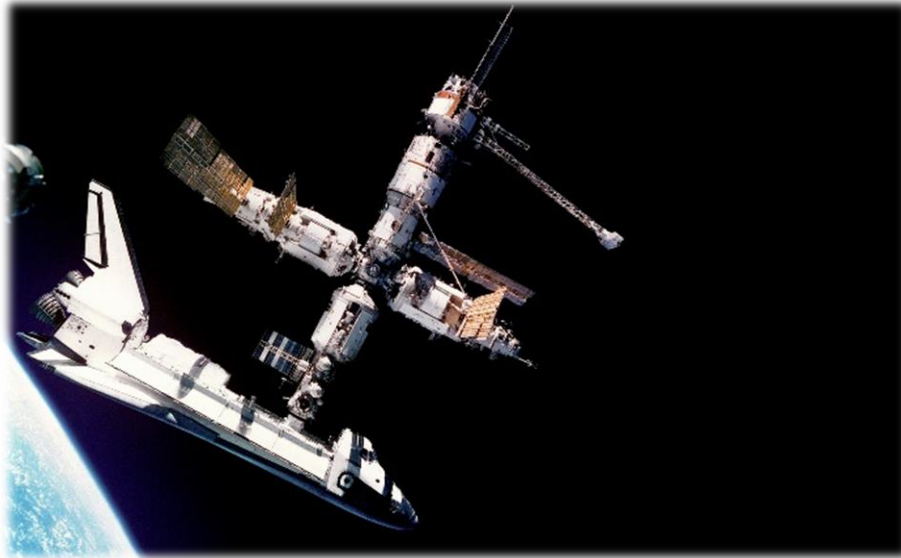
## Shuttle / Mir – Phase 1

Initial phase of the ISS Program

October 1995, Houston, Texas

Multilateral Medical Operations Working Group

Initial Meetings



Shuttle / Mir Docking ca 1995 (Courtesy of NASA)



Entrance to the Johnson Space Center (Courtesy of NASA)



Representatives of each agency (Courtesy of NASA)

# Shuttle / Mir – Phase 1

## Multilateral Medical Operations Panel

### Initial Meetings

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



Foundation for multilateral cooperation

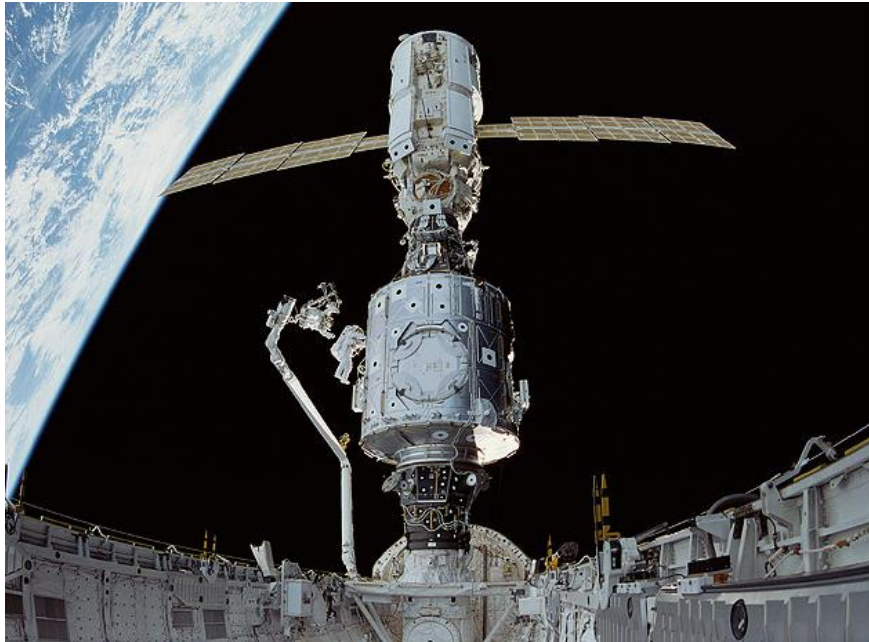


Entrance to the Johnson Space Center (Courtesy of NASA)

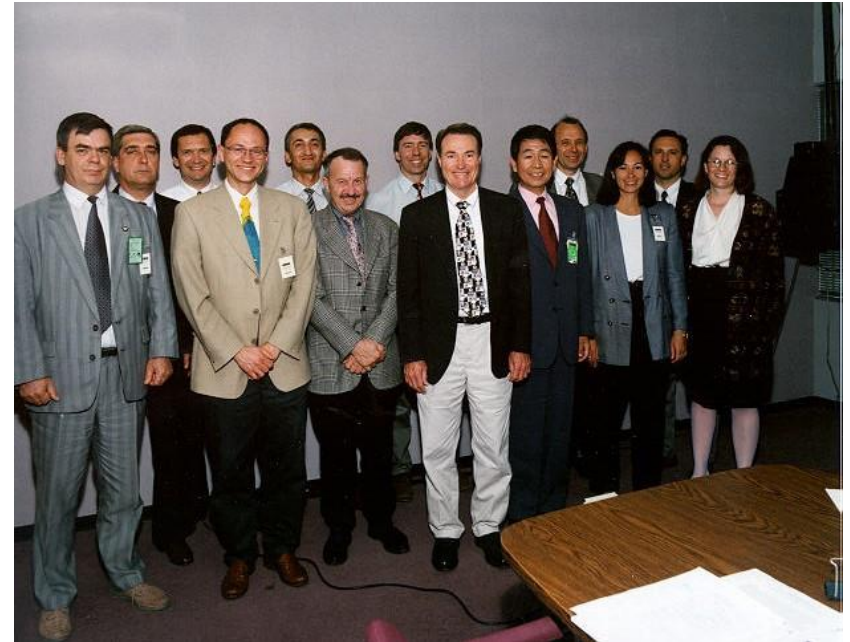


Representatives of each agency (ca 1996) (Courtesy of NASA)

## MMPB-A – April 16, 1998, VTC



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)

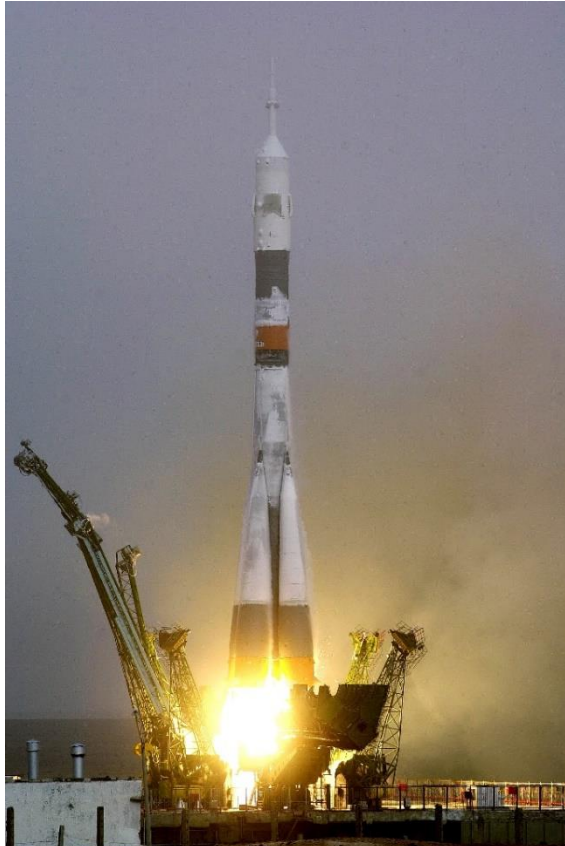


Representatives for each agency (Courtesy of NASA)

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-conferencing always considering time zones.

**MMPB#1 – March 15-16, 2001, NASA JSC Houston, TX**



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)

Mission 5a.1 0 Leonardo MPLM delivery



MMPB#2 – May 10, 2002, VTC



Expedition 8A (Courtesy of NASA)

Destiny Module and Mobile Transporter installed

Meeting held by videoteleconferencing

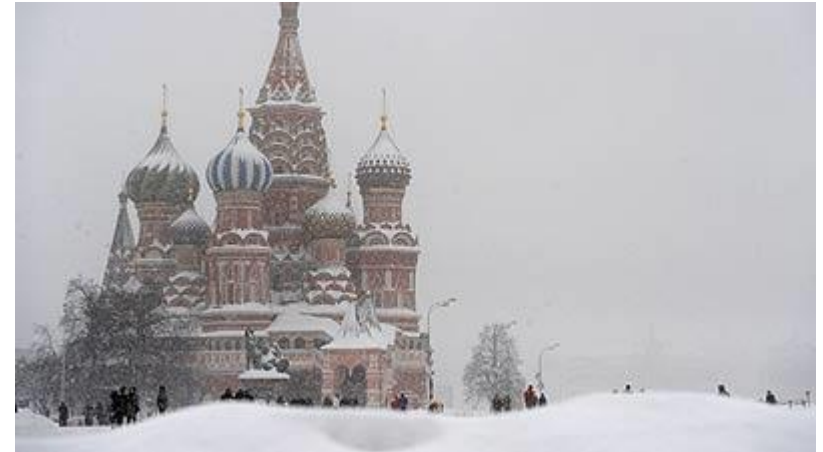
## MMPB#3 – December 4, 2003, IBMP, Moscow, Russia



Expedition 7 (Courtesy of NASA)

Policy Directive #1 – Crew Health Maintenance on the International Space Station

Shuttle grounded – Columbia and crew (STS-107) lost

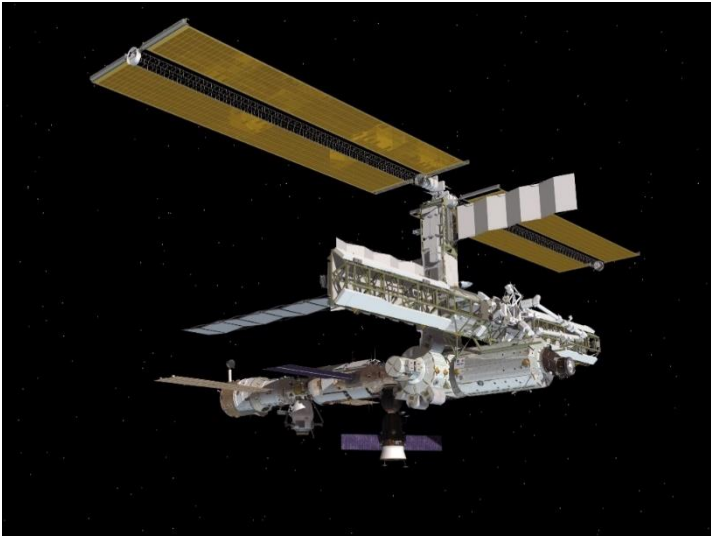


St Basil's Cathedral on Red Square in the winter



Representatives for each agency and invited guests

MMPB#4 – April 5-7, 2004, NASA HQ, Washington, DC



Expedition 8/9 (Courtesy of NASA)



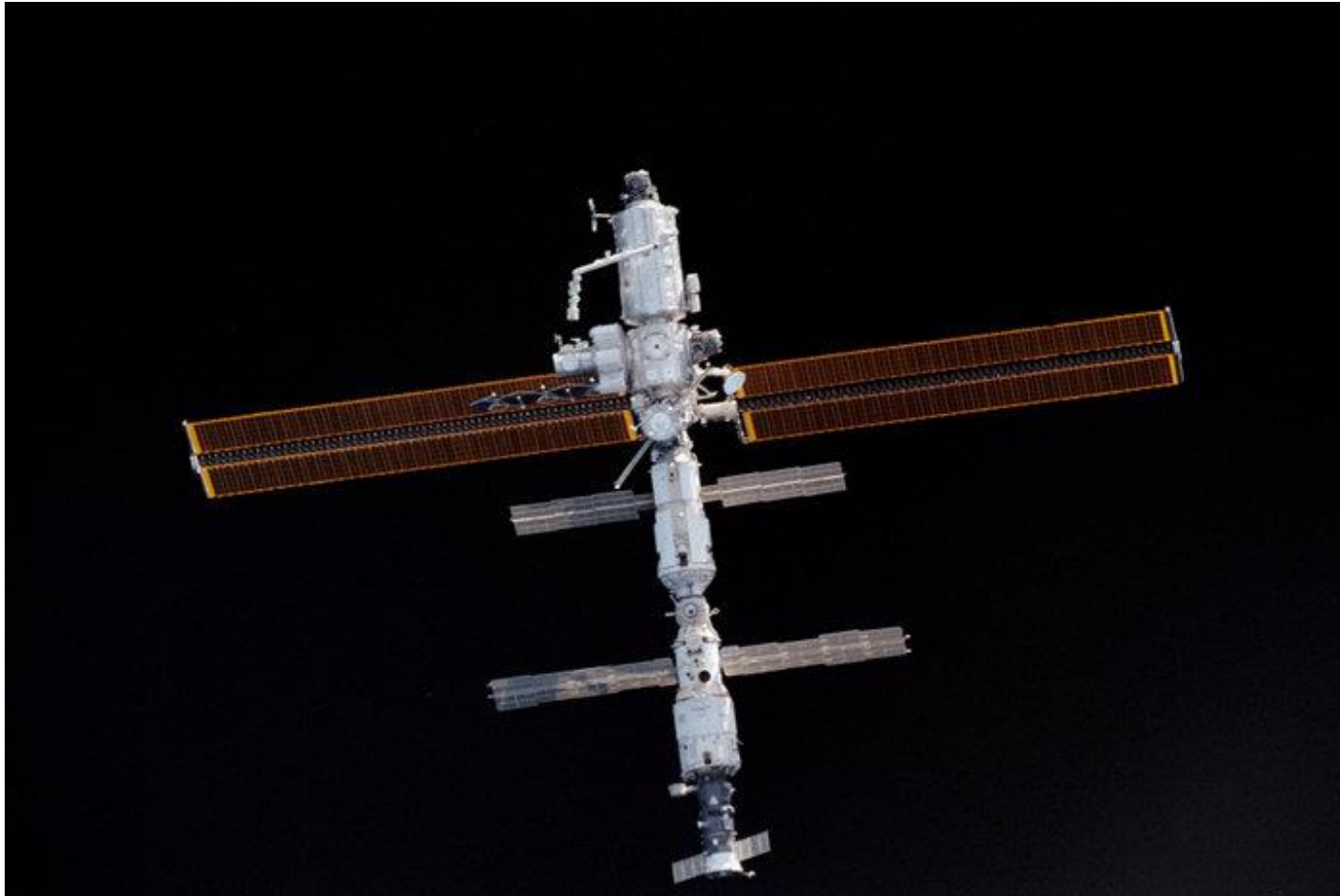
U.S. Capitol Building



MMPB guests with Rich Williams and his airplane

MMPB#5 – July 15, 2004, VTC

MMPB#6 – October 28, 2004, VTC



Meetings held by videoteleconferencing

**MMPB#7 – March 14-15, 2005, JAXA, Tsukuba, Japan**



Expedition 10 (Courtesy of NASA)

**Policy Directive #2 – Multilateral Medical Policy Board Dispute Resolutions**

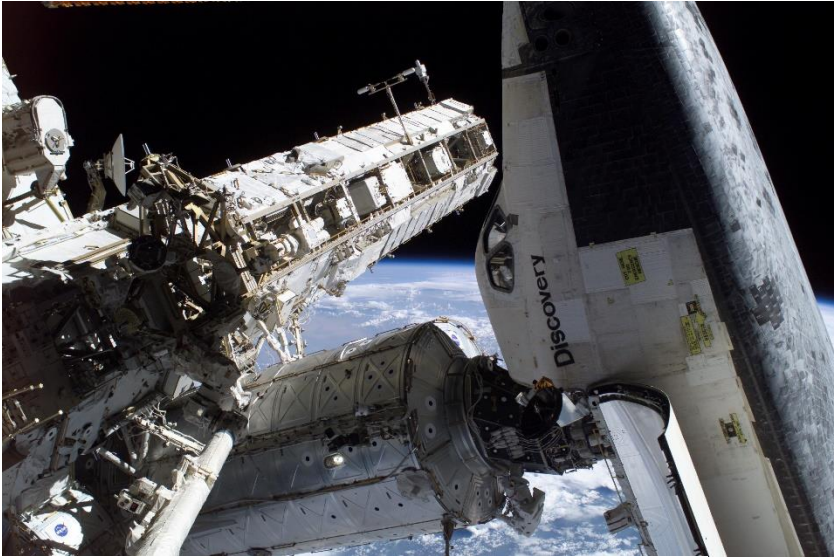


JAXA Headquarters

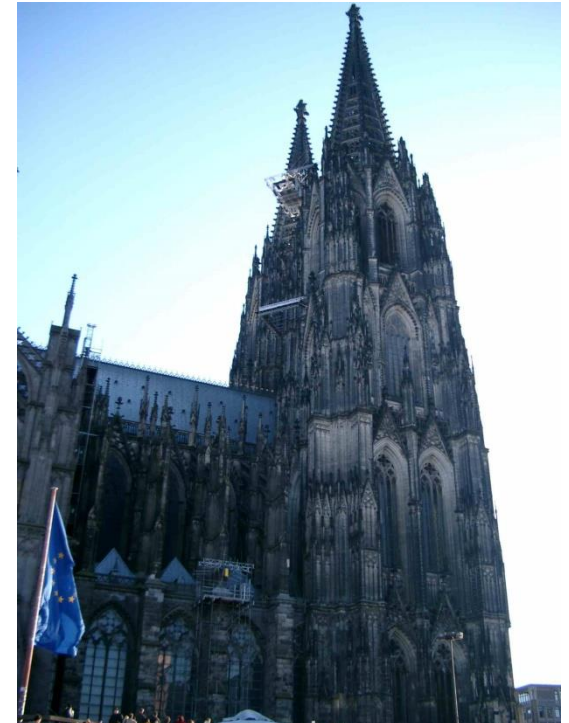


MMPB members and guests

**MMPB#8 – November 9-11, 2005, ESA, European Astronaut Center, Cologne, Germany**



Expedition 11 – STS-114 (Courtesy of NASA)



Dom of St Michael, Cathedral Square, Cologne



MMPB Board Members V. Damann (l), J-M. Comtois (c), and G. Gray (r)

**MMPB#9 – April 24-25, 2006, NASA HQ, Washington, DC**



Expedition 12/13 EVA work on Columbus (Courtesy of NASA)



NASA Headquarters, Washington DC (Courtesy of NASA)



J-M. Comtois (l), V. Damann, V. Bogomolov, R. Williams, S. Tachibana (r)

**MMPB#10 – November 3, 2006, ESA, European Astronaut Center, Cologne, Germany**



Expedition 14



European Astronaut Center, Cologne



Multilateral representatives



**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



Building 1, NASA JSC (Courtesy of NASA)



Multilateral reps at work – USRA site. (Courtesy of NASA)

**MMPB#12 – Nov 15, 2007, JAXA, Tokyo, Japan**



Expedition 16 - Taken from STS 120 (Discovery) after undocking  
(Courtesy of NASA)



Downtown Tokyo



Multilateral representatives

**MMPB#13 – June 5-6, 2009, IBMP, Moscow, Russia**



Expedition 20 - Taken from STS 127 (Discovery) (Courtesy of NASA)

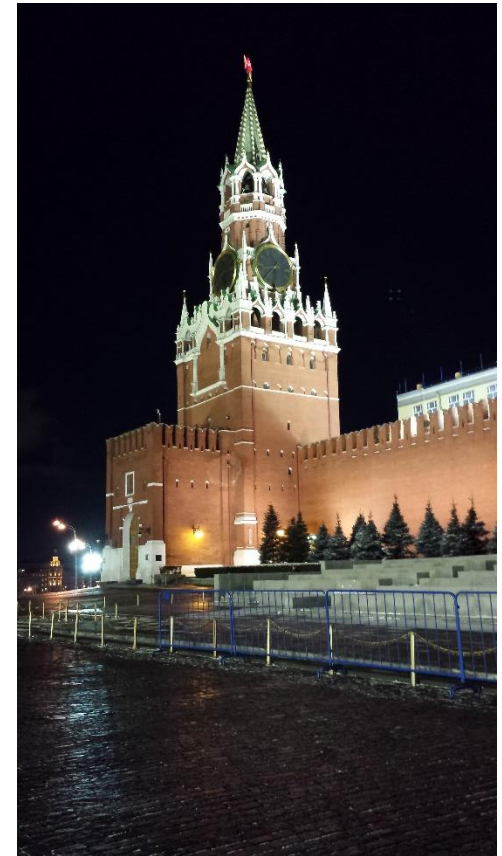
ARED delivered

MPLM delivered

HTV delivered

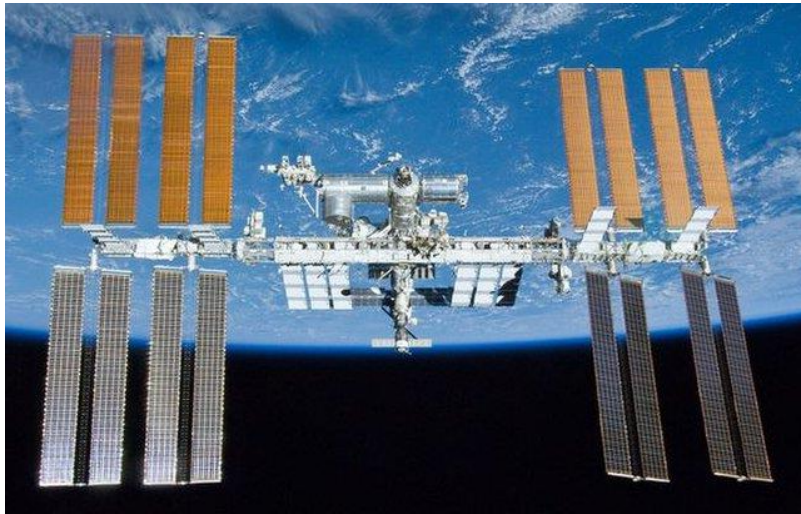


MMPB at work at IBMP (Doarn personal collection)



Spasskaya Tower of the Kremlin. Red Square (Doarn personal collection)

**MMPB#14 – October 22, 2010, ESA, European Astronaut Center, Cologne, Germany**



Expeditions 24/25. ISS as seen from STS-132



Lobby of the EAC (Doarn personal collection)

**ISS Medical Policy Framework Document - Baseline**



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

**MMPB#15 –November 1-2, 2011, IBMP, Moscow, Russia**

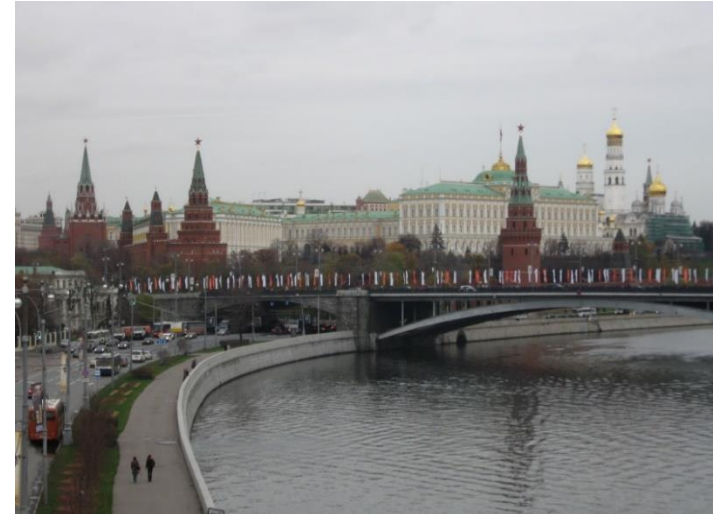


Expedition 28/29 Landing (Courtesy of NASA)

STS-135 (Atlantis) Shuttle Program retired

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

Policy Directive #7 – ISS Healthcare System Improvement



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. Aurora Australis in the right corner (ISS030-E-126555). Courtesy of NASA.

**MMPB#17 – October 26, 2012, NASA JSC, Houston, Texas**



Expedition 33 – (Courtesy of NASA)

**Space X Dragon Capsule docking (October 10, 2012)**



Aerial view of USRA Center

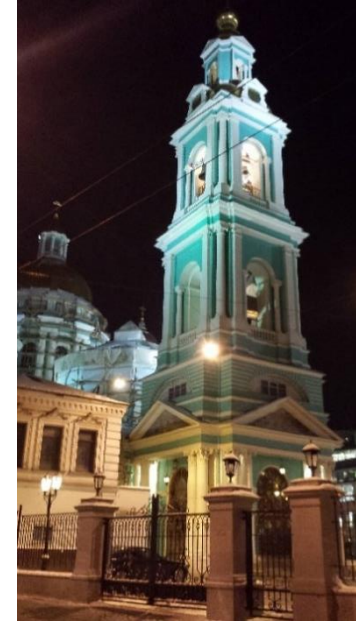


Multilateral representatives (Courtesy of NASA)

**MMPB#18 – January 24, 2014, IBMP, Moscow, Russia**



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



Alexander Gerst viewing Earth (Courtesy of NASA)



Mission Control Center (Courtesy of NASA)

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



Multilateral representatives (Courtesy of NASA)

**MMPB#20 – December 19, 2014, NASA JSC, Houston, Texas**



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**



One year mission of Kelly and Kornienko (Courtesy of NASA)

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

Twin study (Scott and Mark Kelly)



Catherdral Square, Cologne, Germany

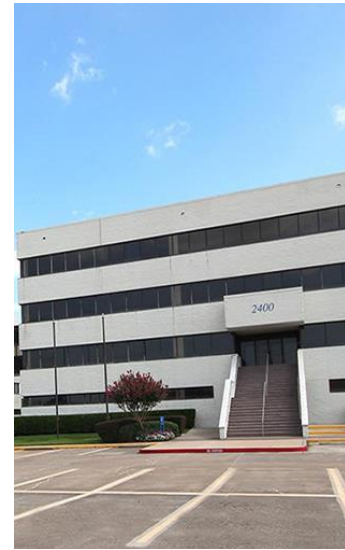


MMPB members and guests (Courtesy of ESA)

**MMPB#22 – June 9, 2017, NASA JSC, Houston, Texas**



Expedition 50 - Peggy Whitson on ISS (Courtesy of NASA)



KBRwyle Facility (Courtesy of KBRwyle)

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



MMPB members and guests (Courtesy of NASA)

**MMPB#23 – October 2017, NASA JSC, Houston, Texas**



Expedition 53 EVA (Courtesy of NASA)



Entrance to NASA Johnson Space Center (Courtesy of NASA)



MMPB members and guests (Courtesy of NASA)

**MMPB#24 – May 2018, NASA JSC, Houston, Texas**



Expedition 55 ISS (Courtesy of NASA)



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



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

