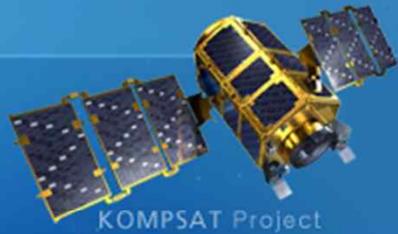


미래를 향한 새로운 도전

그리고, 우주강국의 꿈 실현

Korean Astronaut Program Overview



KOMPSAT Project



Korean Astronaut Program

Aeronautics

Space Development

Nov. 16, 2011

우주개발, 그곳에

우리의 미래가 열립니다.



Korean Astronaut Program



Soyeon Yi

KARI (Korea Aerospace Research Institute)

1. Introduction - Objective

▪ Objective

- Development of the manned space technology and implementation of space experiments by the Korean Astronaut
 - Selection & training of astronauts
 - H/W & S/W development for space experiments
- Increasing of interests and understanding on space development to the public through the Korean Astronaut Program
- Open up a new fields of manned space utilization through the selection & training of astronauts, space flight, scientific experiments in space

▪ Space Flight : April, 2008

▪ Background

- '00. 12 : Mid & Long Term National Space Development Plan
- '04. 09 : Conclusion of Joint Statement with Russian FSA
- '06. 04. 19 : Preliminary Contract with Russian FSA
- '06. 04. 21 : Kick-Off of the Korean Astronaut Program

1. Introduction – Plan & Schedule

■ Selection/Training/Flight Schedule

- Application for astronaut selection : Apr. 21 ~ Jul. 14, 2006
- Selection of Korean Astronauts : Sep. 2~ Dec. 25, 2006
- Basic & mission training at GCTC, Star City, Russia : Mar. 2007 ~ Mar. 2008
- Space flight using Soyuz spacecraft : Apr. 2008

■ Astronaut's Mission Development Plan

- Feasibility Research of missions : Dec. 2005~May. 2006
- Release of AO for space missions to the public including Korean institutions/ universities/ industrial companies : Jun. ~ Nov. 2006
- Mission (H/W, S/W) development : Nov. 2006 ~Dec. 2007
 - Including certification & test of equipment for flight

2. Selection – Criteria

- Evaluation Categories for Korean astronaut selection
 - General Suitability
 - Medical Suitability (including Psychological Suitability)
 - Behavioral Suitability
 - . Interpersonal and Communication Skills
 - . Situational Awareness
 - . Ability to Function as a Team Member
 - . High Moral Integrity
 - . Adaptability/Flexibility
 - . Motivation
 - Linguistic Ability
 - Adherence to the ISS Crew Code of Conduct

2. Selection - Process

Sep. 2006 (36,206)



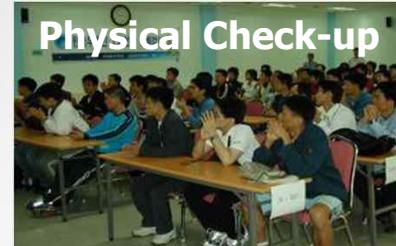
Screening the resumes



3.5km Marathon



Written Exam



Physical Check-up

245

Oct. 2006



Psycho. Checkup



Interview



Physical Check



Eng. Interview

30

Nov. 2006



Thorough Med. Checkup



Hypobaric Chamber



Team Work



Sci. Exp.

10

Dec. 2006



Camp training



Hydrolab.



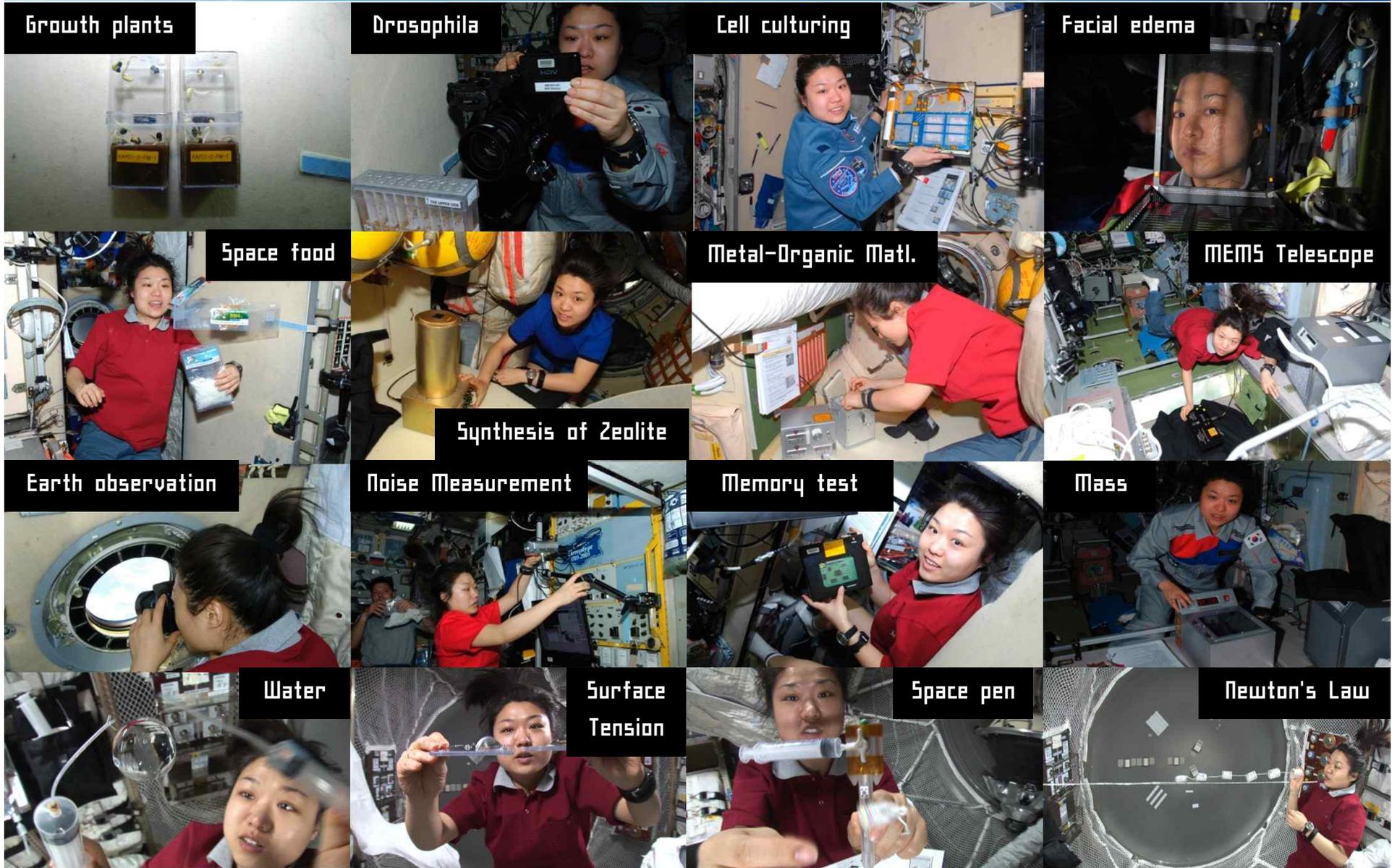
Zero-G



Final test

Final 2

2. Selection - Scientific experiments



3. Astronaut Training

- Training in GCTC, Russia and in JSC, U.S.A.



4. Preparation for Flight (in Baikonour)

Leave for Baikonour (26th March, 2006)

Arrival(3/26)



Check Soyuz(3/27)



Check Space Suit(3/27)



Raise National Flag(3/28)



Final Training(3/28)



Planting Tree

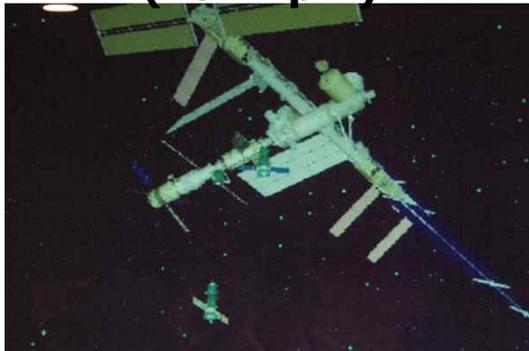


5. Flight for scientific experiments

Docking to ISS 11th, April 2008 (10days 1hr 4min stay)

13 basic scientific experiments and 5 educational experiments

**Approaching to ISS
(10th April)**



Docking (11th April)



**Mission Control Center
in Moscow**



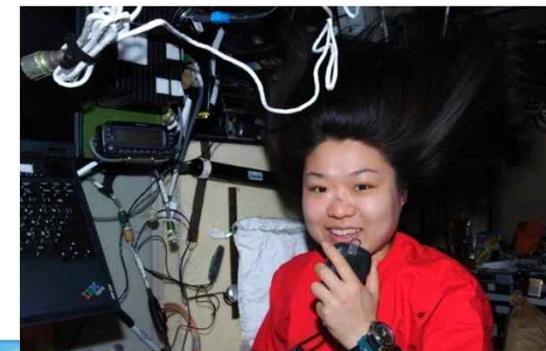
**Entering to ISS
(11th April)**



**Welcome Ceremony
(11th April)**



HAM radio communication



6. Scientific experiments during flight



Experiments on Growth and Variation of Plant Seeds

7. Descent

19th April 2008



11:00 Ceremony



14:30 Undocking



17:04 Separation



17:07 Entering to atmosphere



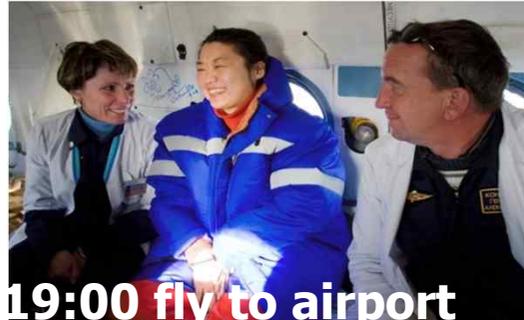
17:16 Open parachute



17:30 Descent upon plain in Kazakhstan



18:00 Search & rescue helicopter arrived

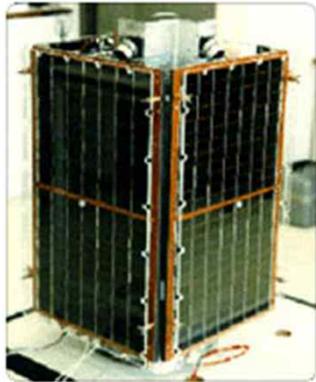


19:00 fly to airport by helicopter



24:00 Arrive in Moscow

8. Space activities in Korea



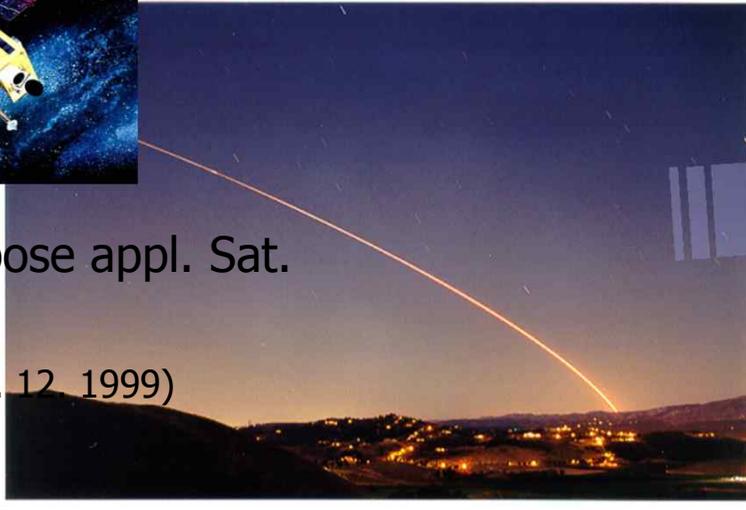
The very 1st
Korean satellite
Uribyeol 1
(launched on 11. 08. 1992)



1st Korean Astronaut
(launched on 08. 04. 2008)



1st Multipurpose appl. Sat.
Arirang 1
(launched on 21. 12. 1999)



1st liquid-fuel rocket
KSR-III
(launched on 28. 11. 2002)

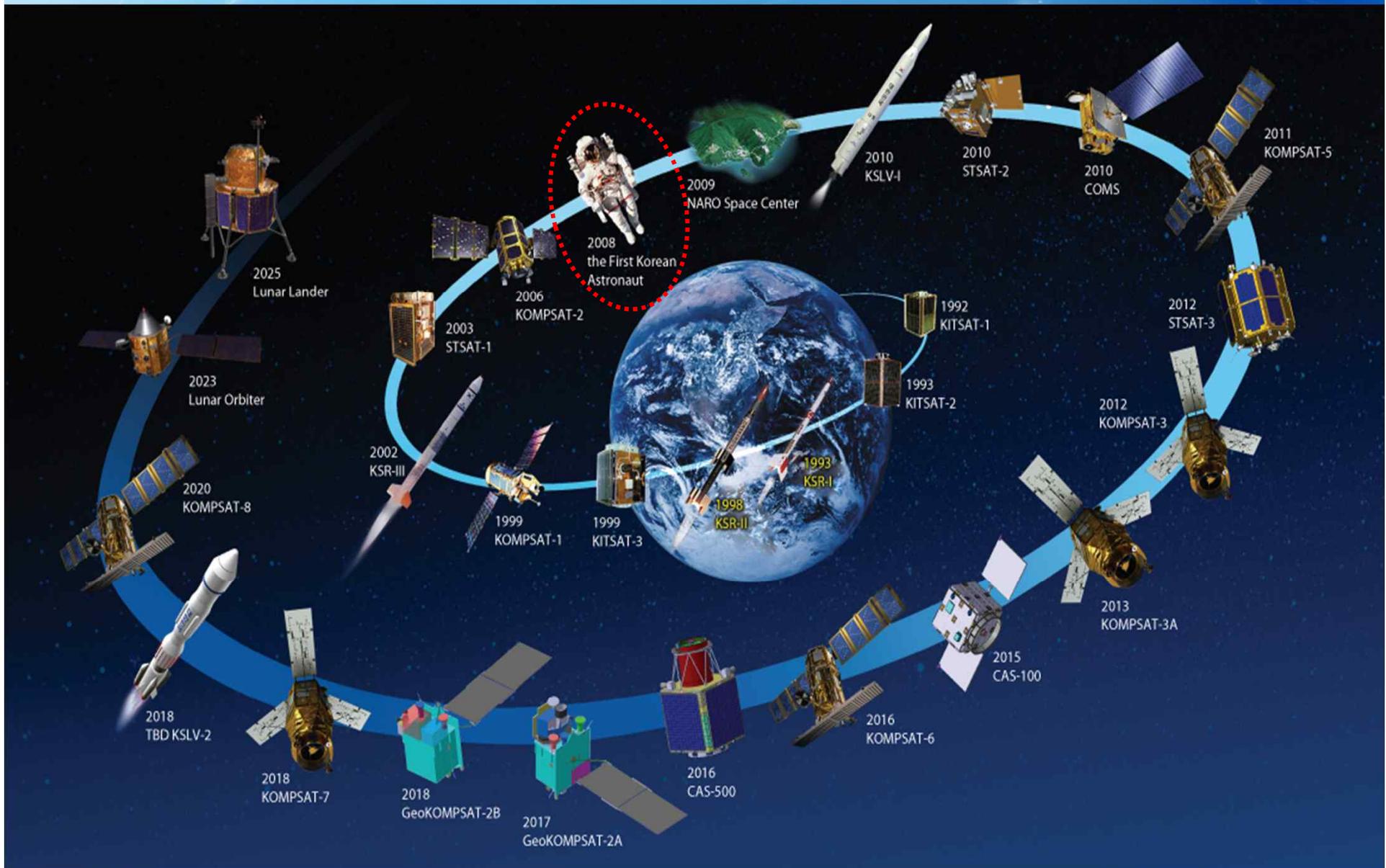
8. Space activities in Korea



Launched on 25th Aug. 2009

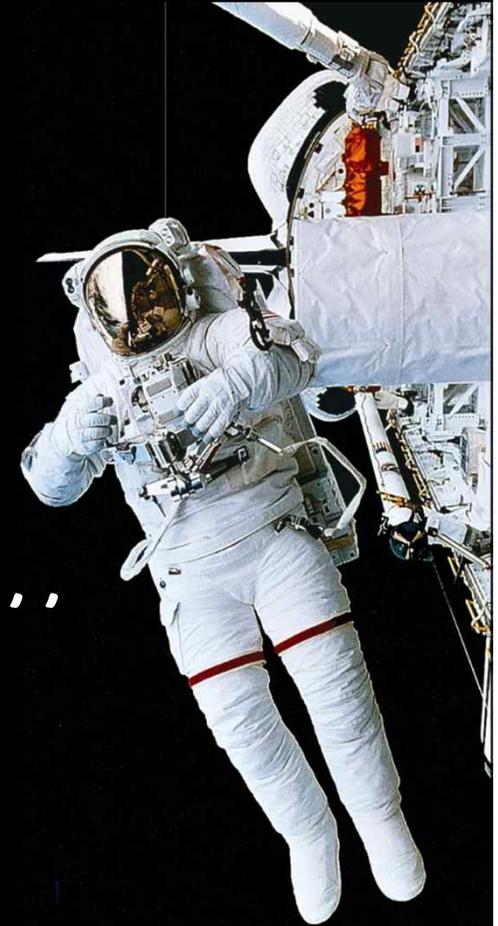
- **Partially successful**
- **2nd Trial in 2010**
- **Now, investigating the cause of failure with Russian technicians**
- **Planning to launch again in 2012**

8. Space activities in Korea



Space is everywhere...

Space Actually is all around...



9. Science Culture Diffusion Activity

- Lectures

- 158 Invited Lectures (Gov., Public Org., Co.s)



- 37 Planned Lectures for the Youth & Students



9. Science Culture Diffusion Activity

- Science Events



9. Science Culture Diffusion Activity

• Media

- 2258 articles on



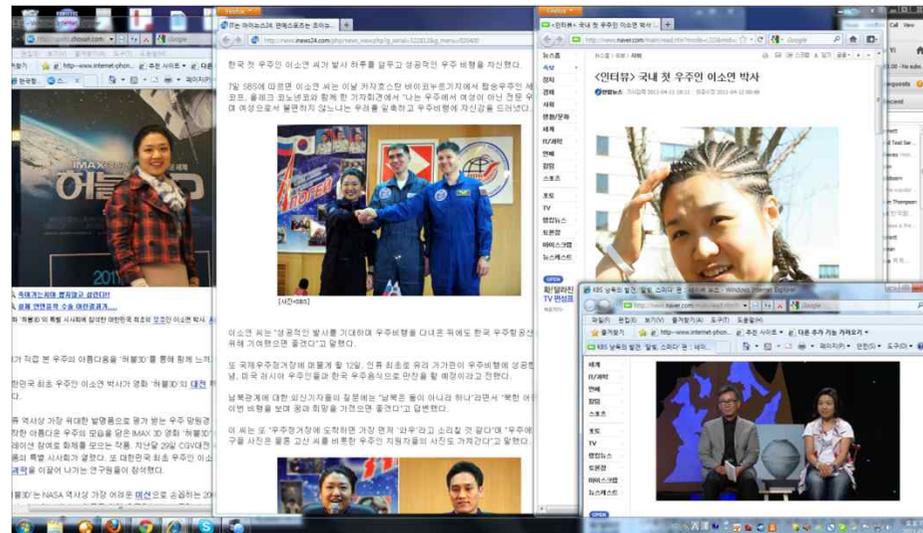
- 63 articles on Magazines



- 837 times on TV



- 87 times on Radios



- 1073 times exposures on internet

9. Science Culture Diffusion Activity

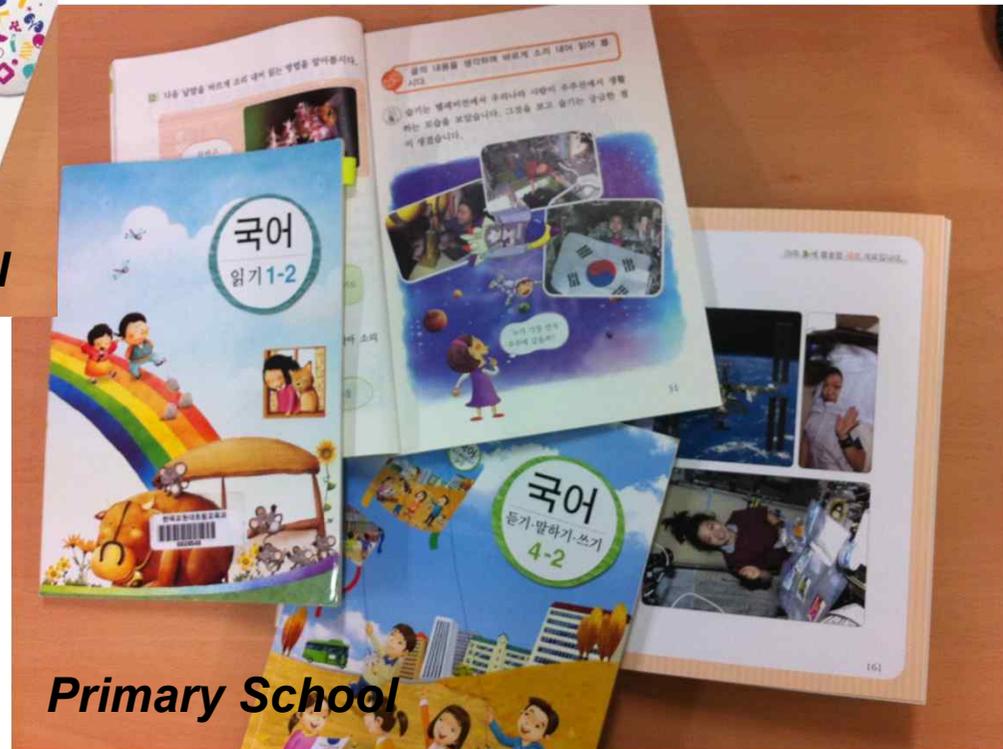
- Books

- Officially Assigned by KARI



9. Science Culture Diffusion Activity

- In Text Books



9. Science Culture Diffusion Activity

- **DVDs**
 - **Documentary DVD (12,500 copies distributed)**



- **Lecture DVD (13,000 copies distributed)**



- **Space Exp. Edu. DVD (13,000 copies distributed)**

10. Analysis through the surveys

- **Contents of the surveys**
 - **Whether the interest in Space Development was boosted or not**
 - **Whether the KAP and Astronaut were recognized or not**
 - **Whether the Korean Astronaut was influential or not**
 - **An access route to the Science Culture**
 - **Opinions about Astronaut's Activities**
 - **Influence on preference for the natural sciences and engineering**
 - **Social and Economical influence**
- **Sample : 500 Adults, 500 Youths
and 300 participants of the Astronaut's Activities**

10. Analysis through the surveys

- **Results**
 - **27.1% of adults and 43.8% of Youths : Interested in Space Activities**
 - **90.5% of adults recognize KAP and 50.8% of them know Astronaut**
94.2% of Youths recognize KAP and 95.7% of them know Astronaut
 - **54.9% of adults are more interested in space development than before,**
65.8% think KAP and Astronaut's activities have positive social influence
 - **69.2% of adults and 55.4% of Youths think Astronaut's activities**
Influenced on their preference for the natural sciences and engineering.
 - **34% of Univ. students and 21% of Youth answered Astronaut's lecture**
influenced their choice of career
 - **91% of adults, 83% of Univ. students and 64.2% of Youth think**
attending the Astro's lecture influence positively on their own life
 - **76.1% of the participants think Astronaut's activities have positive social**
influence

11. Quantitative Anal. of the Economic Effects

- **Economic Value of Lectures**

- **Invited Lectures** : First-class Lecturer's fee x No. of lectures
- **Planned Lectures** : 1st-class Lecturer's fee (700 aud.) x No. of lectures
- **Science Events** : Cost of inviting 1st-class celebrity x No. of attending

- **Media Exposures**

- **Willingness-to-pay** according to the PR impact x No. of exposures

- **Educational activities**

- **Calculation** by the scales of the distributions and the market prices of the DVDs and boos

11. Quantitative Anal. of the Economic Effects

Activities	Economic Value	
	1,000₩	~ M \$
Lectures & Events	597,000	0.5
Media	49,265,000	45
Educational Matl.	1,513,000	1.4
	51,375,000	~ 47

- **Less than estimated returns (~\$435M) but already more than total cost (~\$25M), even though economic value of the space experiment result and potential economic value from the cultivation technology related to astronaut selection, training, space flight, management and manned space technology was not included.**

"A planet is the cradle of mind (humanity),
but one cannot live in a cradle forever."

Konstantin Eduardovich Tsiolkovsky



“Планета есть колыбель разума,
но нельзя вечно жить в колыбели”

К. Э. Циолковский

미래를 향한 새로운 도전

그리고, 우주강국의 꿈 실현

Thank you ~



KOMPSAT Project



Korean Astronaut Program

Space Development

우주개발, 그곳에

Aeronautics

Korean Astronaut Program

우리의 미래가 열립니다.

