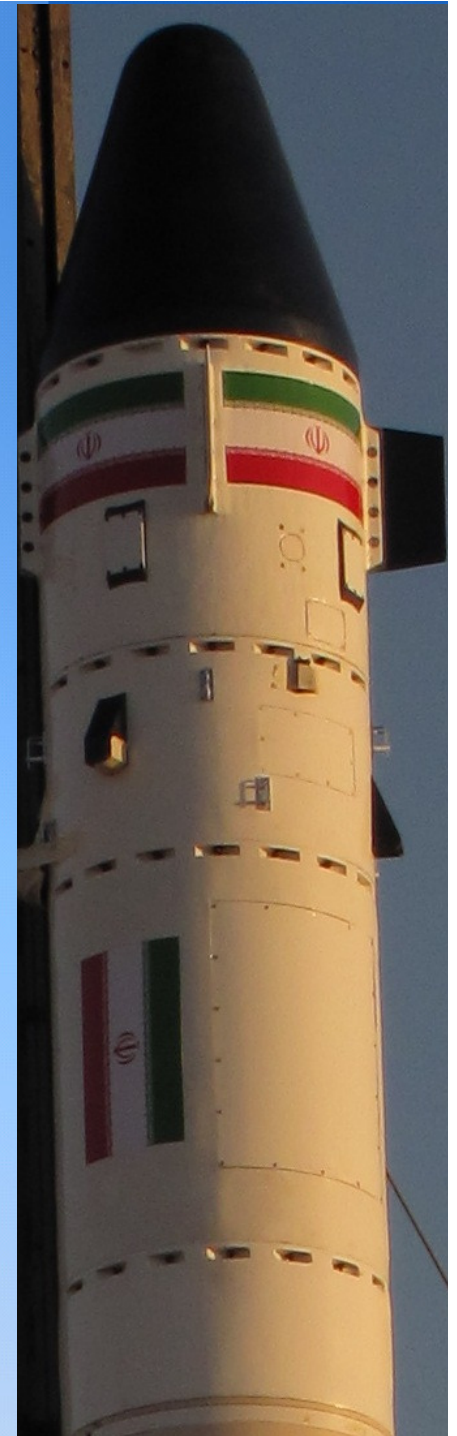
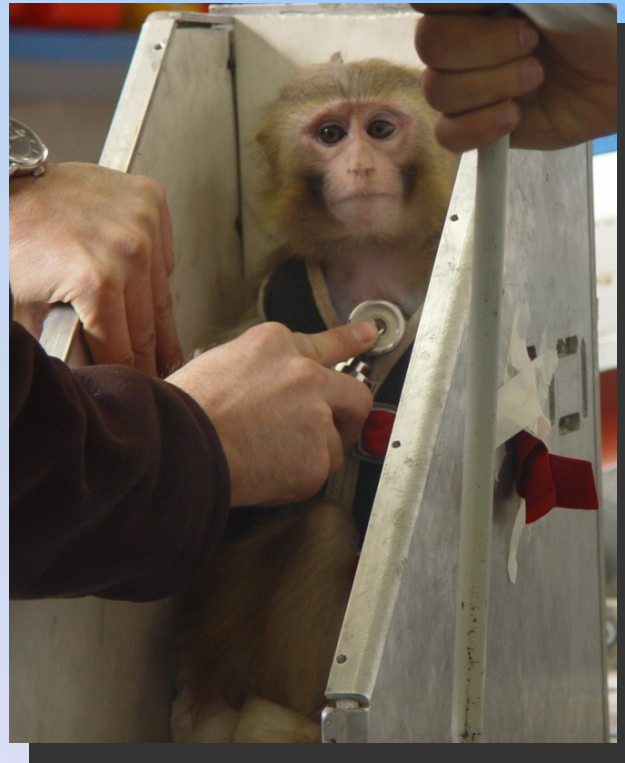


# Pioneer Sounding Rocket

## Carrier of the First Iranian Biospace Capsule



سازمان فضایی ایران  
IRANIAN SPACE AGENCY

Iranian Space Research Center



Astronautics Research Institute

**Iranian Space Agency**

**Astronautics Research Institute**

**20 Feb 2013, Vienna**



# The Mission of Kavoshgar Project

## Development of Iranian Space Laboratory for:

- **Biospace Research**
- **Functional and Environmental  
Development Laboratory of the  
Iranian Spacecraft Subsystems**



# History of Kavoshgar Project

Name	Mission	Altitude (km)	Date	Result
Kavoshgar Class B (III)	Primary biospace research	55	February 2010	Successful recovery

Kavoshgar Class C (IV)	Biocapsule test and payload recovery	135	March 2011	Successful recovery of payload
Kavoshgar Class C (Pishgam)	Lunch the pishgam to space (suborbital)	120	January 2013	First Iranian Astronaut Monkey





# Kavoshgar III Class B

Beginning of biospace research

## The first biological payload contains:

- Rat
- Turtle
- Different types of cells





# History of Kavoshgar Project

Name	Mission	Altitude (km)	Date	Result
Kavoshgar Class B (III)	Primary biospace research	55	February 2010	Successful recovery
Kavoshgar Class C (IV)	Biocapsule test and payload recovery	135	March 2011	Successful recovery of payload

Kavoshgar Class C (Pishgam)	Lunch the pishgam to space (suborbital)	120	January 2013	First Iranian Astronaut Monkey
-----------------------------	---	-----	--------------	--------------------------------



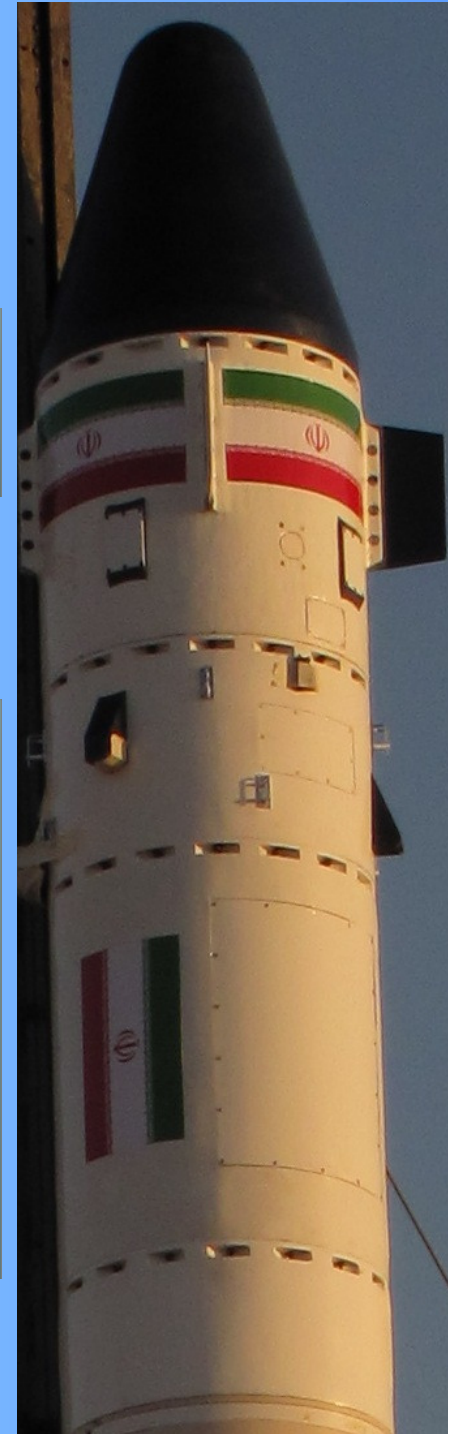
# Kavoshgar Class C

## Mission definition:

Sending life to the space and its recovery

## Mission requirements:

- ✓ Sending life to altitude 125 km
- ✓ Successful recovery
- ✓ Saving and sending all vital signs and environmental data to ground stations
- ✓ Developing of corresponding technology system such as, life supporting, recovery, telemetry, reentry and ...
- ✓ Study of challenges of sending man to space



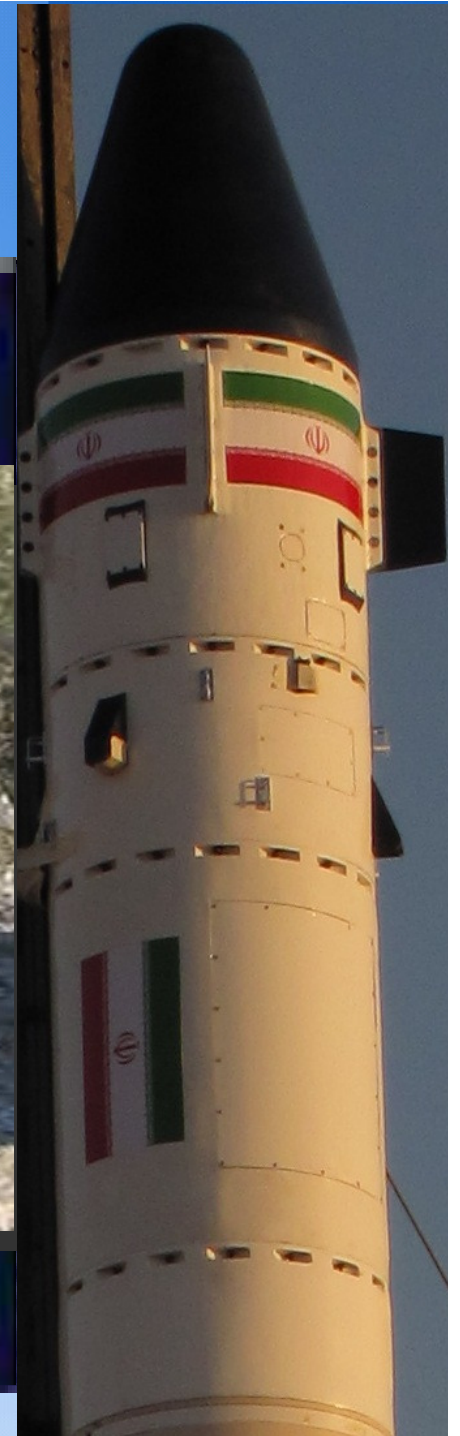


Iranian Space Research Center



Astronautics Research Institute

# Kavoshgar IV Class C



Iranian Space Research Center



Astronautics Research Institute

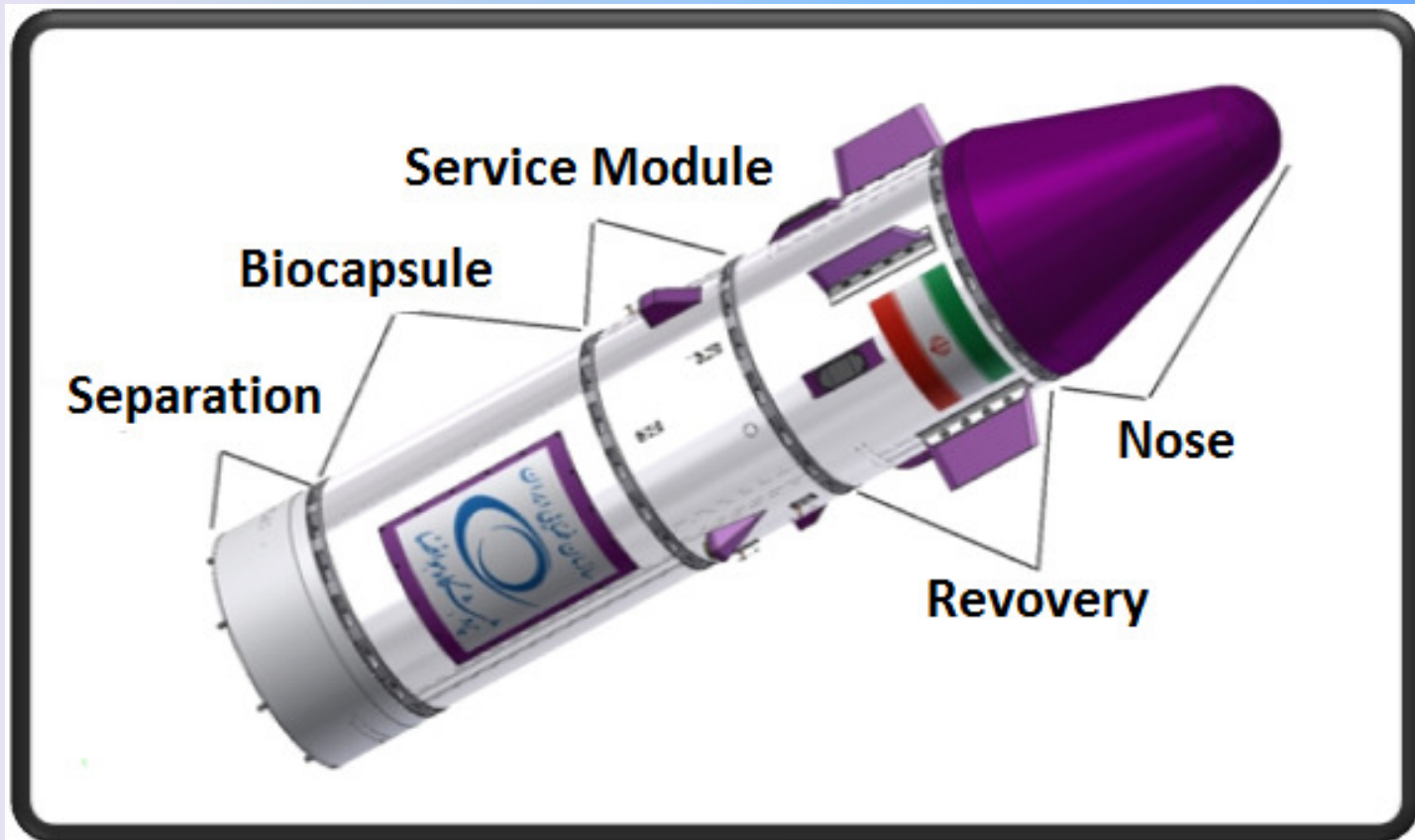
# History of Kavoshgar Project

Name	Mission	Altitude (km)	Date	Result
Kavoshgar Class B (III)	Primary biospace research	55	February 2010	Successful recovery
Kavoshgar Class C (IV)	Biocapsule test and payload recovery	135	March 2011	Successful recovery of payload
Kavoshgar Class C (Pishgam)	Lunch the pishgam to space (suborbital)	120	January 2013	First Iranian Astronaut Monkey



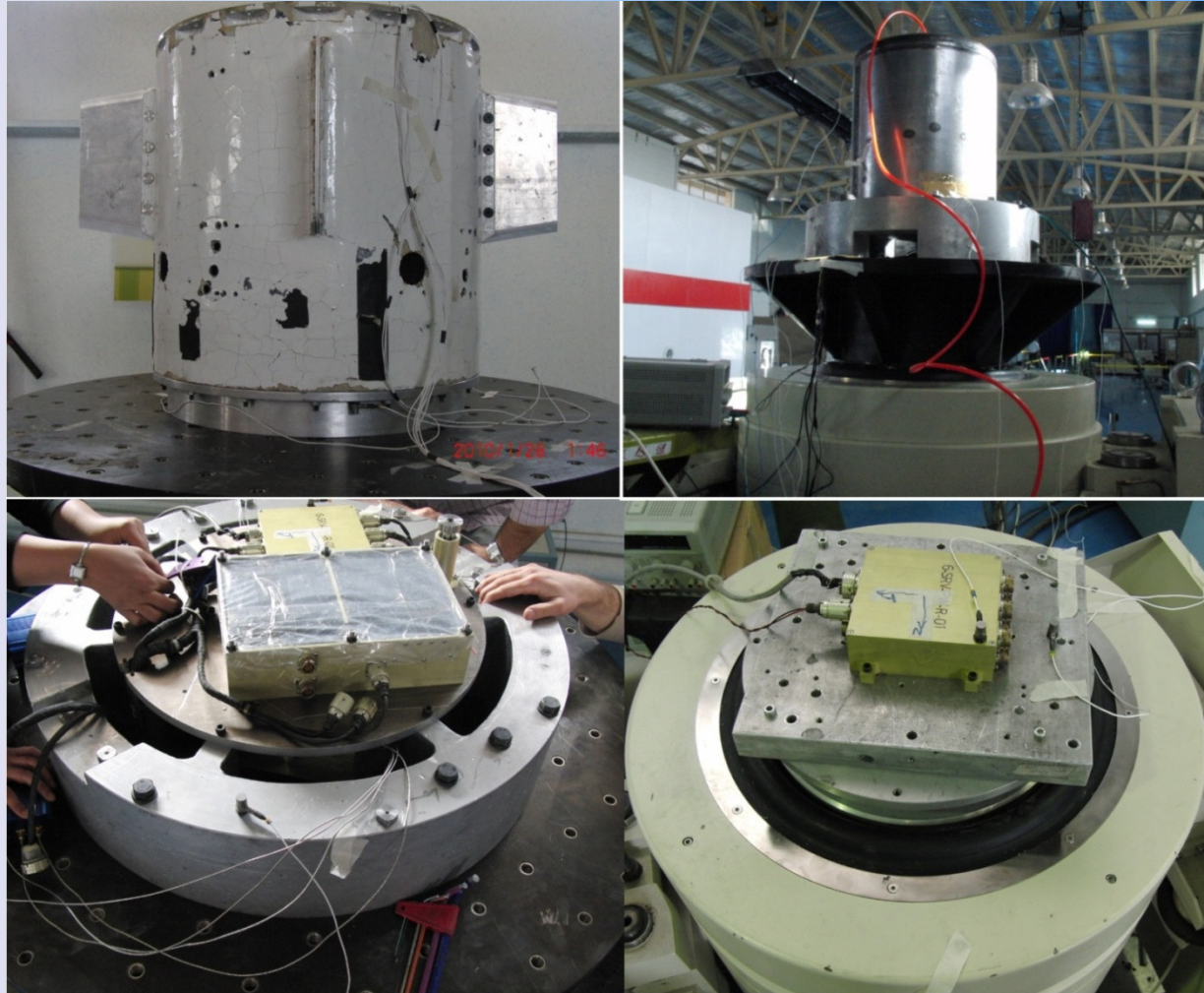


# Kavoshgar Pishgam





# Environmental Testing of subsystems





# Recovery System Testing

## ➤ Ground testing

- Parachute moving out mechanism
- Rife cutter test

## ➤ Field testing

- Vehicle test
- Flight test







# Desensitization and Adaptation



***acceleration***



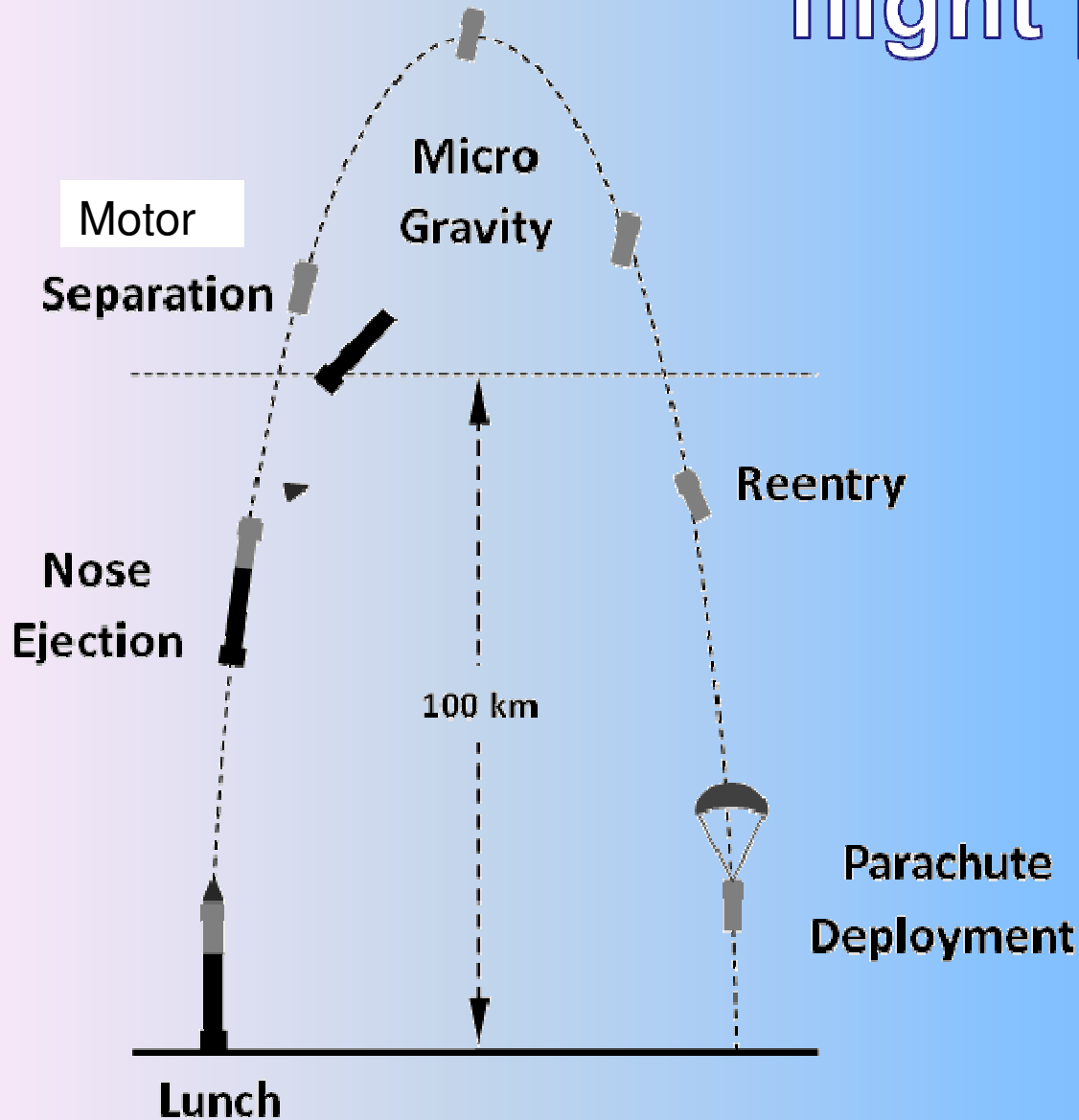
***Free Fall***



***Vibration***



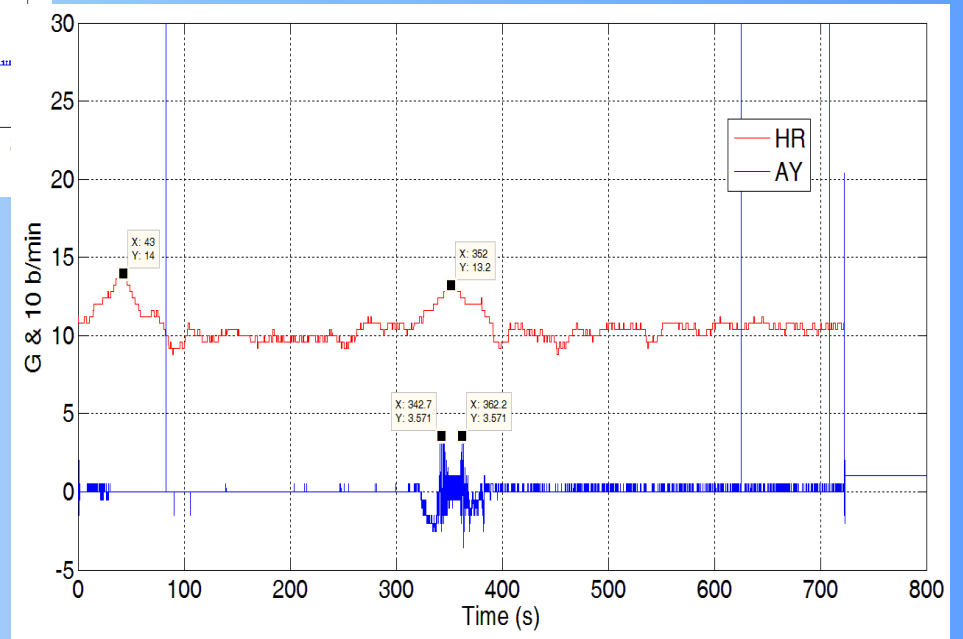
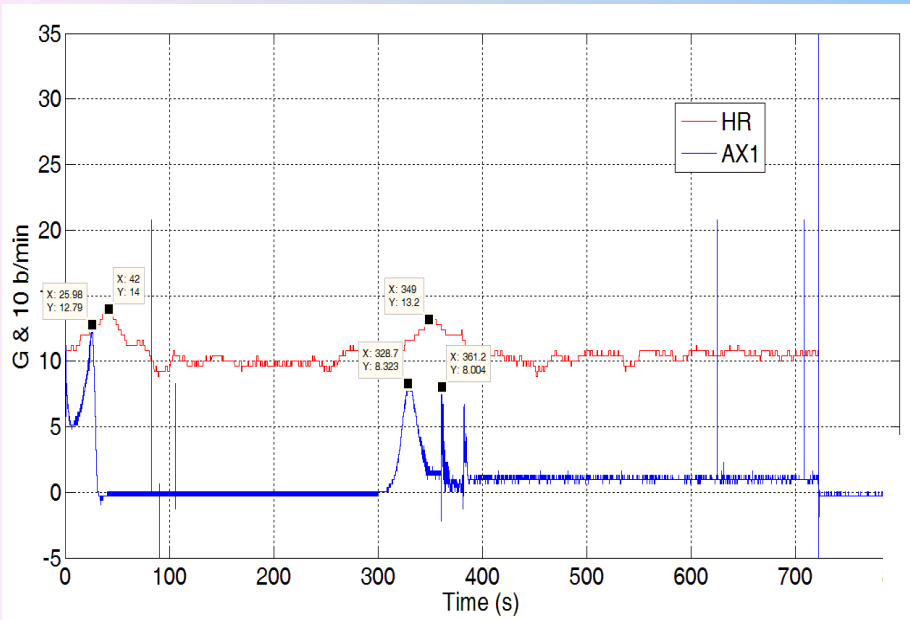
# Kavoshgar Pishgam flight profile





# Launch data analysis

## Heart rate vs. steady state acceleration





Iranian Space Research Center



Astronautics Research Institute

Iranian Space Research Center



Astronautics Research Institute

# Launch

(Fast Motion ×2)



Thank you for your  
attention