Tokyo Institute of Technology Lab. For Space Systems ARLISS Project 2007









Nishida, Maeno, Ashida, Fujihashi, Hagiwara, Inagawa, Miura



Flyback mission by using wings and propellers
■Wings should be deployed after release from the rocket
■Attitude control and turning by the unbalancement of thrusts



### **Overview of Phoenix**





Phoenix has the weight of 500g
 Wing is made of styrofoam
 Thrust of each propeller is 30g
 Wing shape is determined by computer simulation



## Overview of Phoenix Tokyo Institute of T



## Initial Flight Sequence System





## 1<sup>st</sup> Flight

• Mike's Rocket

#### – Thank You !!

- 1640m from the target point
- Successfully deployed wings and cut away the parachute
- GPS didn't output correct data, so we couldn't judge whether Phoenix could fly or not
- But all functions worked well

GPS data acquisition, Gyro data acquisition, Communication with GS, Motor control by gyro data feedback, save data to EEPROM





# 2<sup>nd</sup> flight

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- Launched by Gary's rocket
- 1160m from target point
- Propeller tangled with parachute's tether after release from the rocket
- Phoenix could not cut the parachute







#### It was very hard project







We have tried many design of CanSat, and after one experiment, one Phoenix had been broken. So we have made a lot of Phoenix. ARLISS flight model was Phoenix XX.

