Group Discussion

Requirements for Attitude Determination and Control System of university satellites

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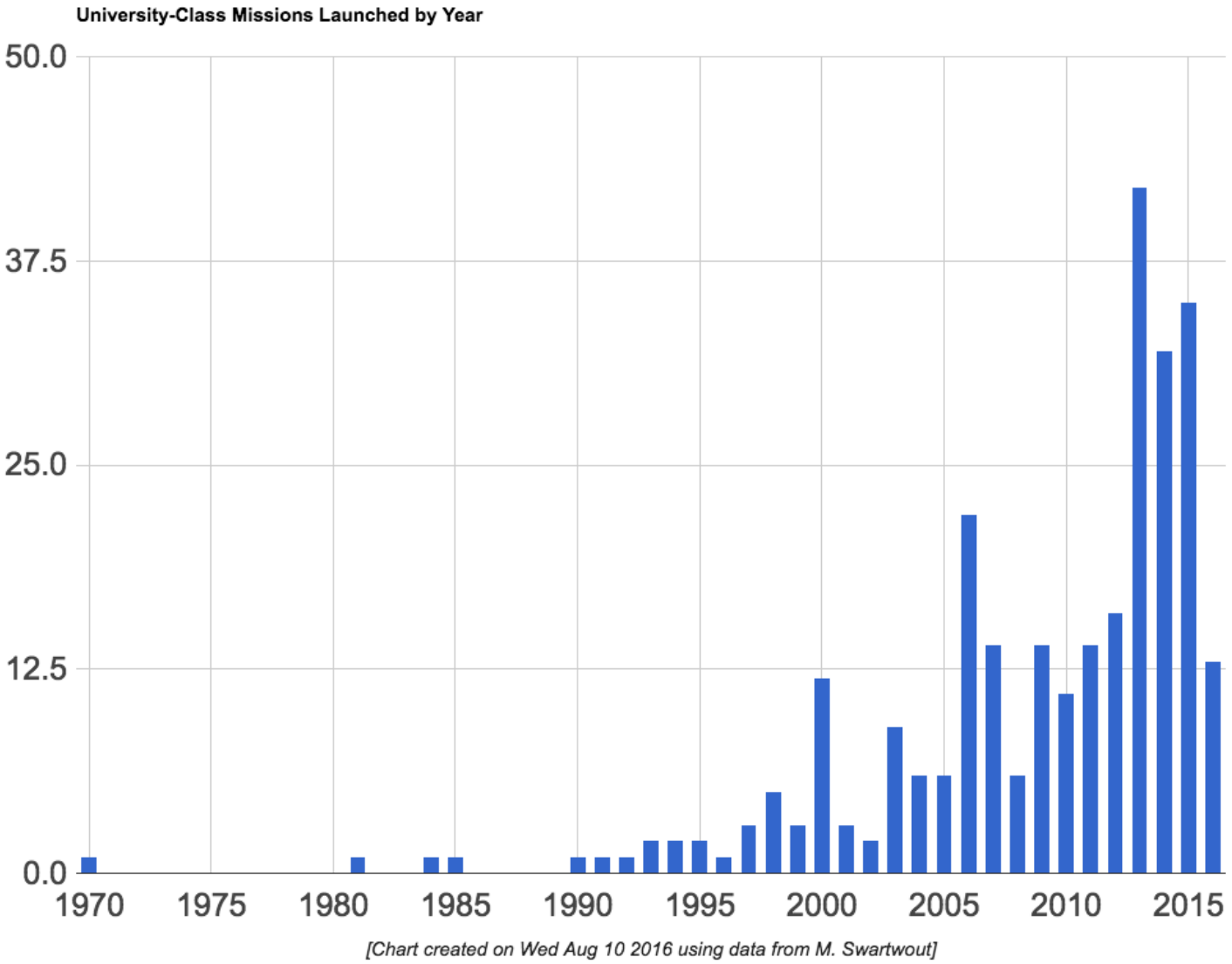
University satellites

- Mostly built by students
- Educational process is important as spacecraft's mission
- Usually represented by pico-, nano- and micro-satellites
- Low cost satellites
- Success of a satellite is measured by all functional subsystems (not only main missions)

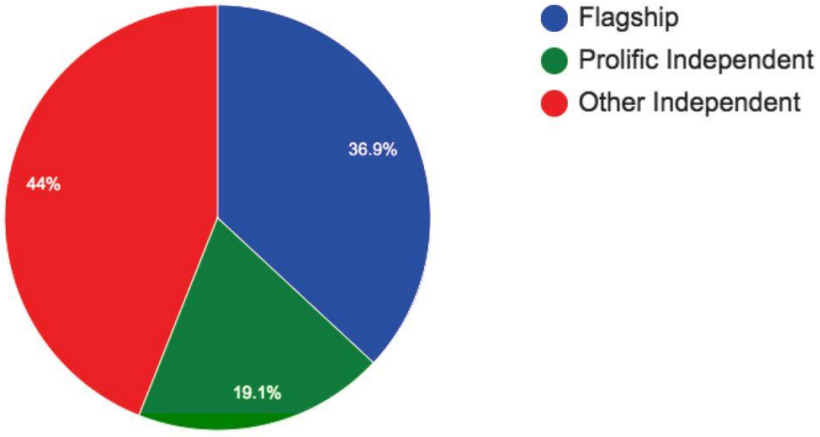
Statistics related to university satellites



Source: *Swartwout SSC16-XIII-1*

Statistics related to university satellites

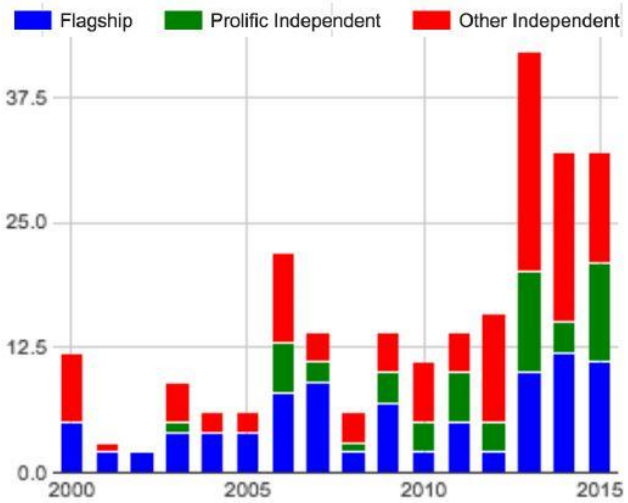
Type of school	Number
All	128
Flagships	38
Prolific independent	9
Other independent	81



University-class missions by type of school

74 of 128 schools produced only one mission

Type of school	Failure rate
Flagships	25%
Prolific independent	40 %
Other independent	65%



University-class missions by years

Source: *Swartwout SSC16-XIII-1*

Will be discussed

- Sensors for attitude determination
- Active/passive attitude control
- Configuration of ADCS and its accuracy for different mission types
- Flexibility of ADCS for onboard reprograming and sensors calibration
- The place for self-developed ADCS for such kind of projects
- The possible role of UNISEC and its network for increasing efficiency of university satellite design

Expectations from the discussion

- Defining configurations of ADCS for different types of missions
- Ways of decreasing satellites failure rates for future satellites which are either going to be built by new teams or teams with limited experience (using ADCS example)