

# Gender-based Observing Proposal Statistics for the Spitzer Space Telescope

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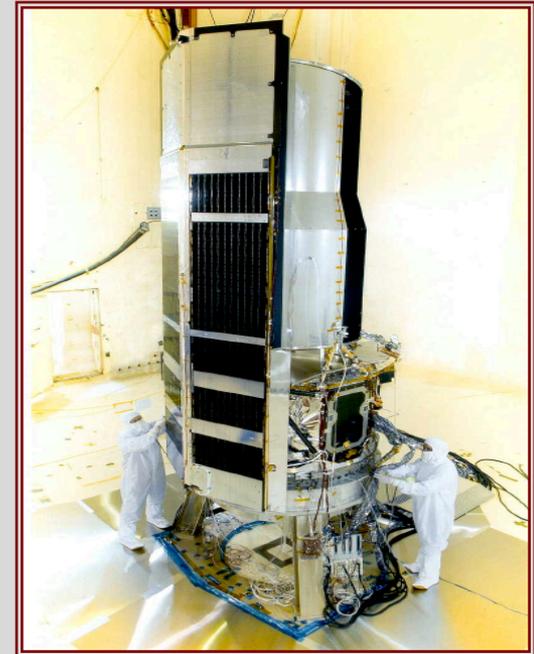
**Jet Propulsion Laboratory**  
California Institute of Technology

6 October 2018 • Maria Mitchell 2018 Women in Science Symposium

# Spitzer Space Telescope

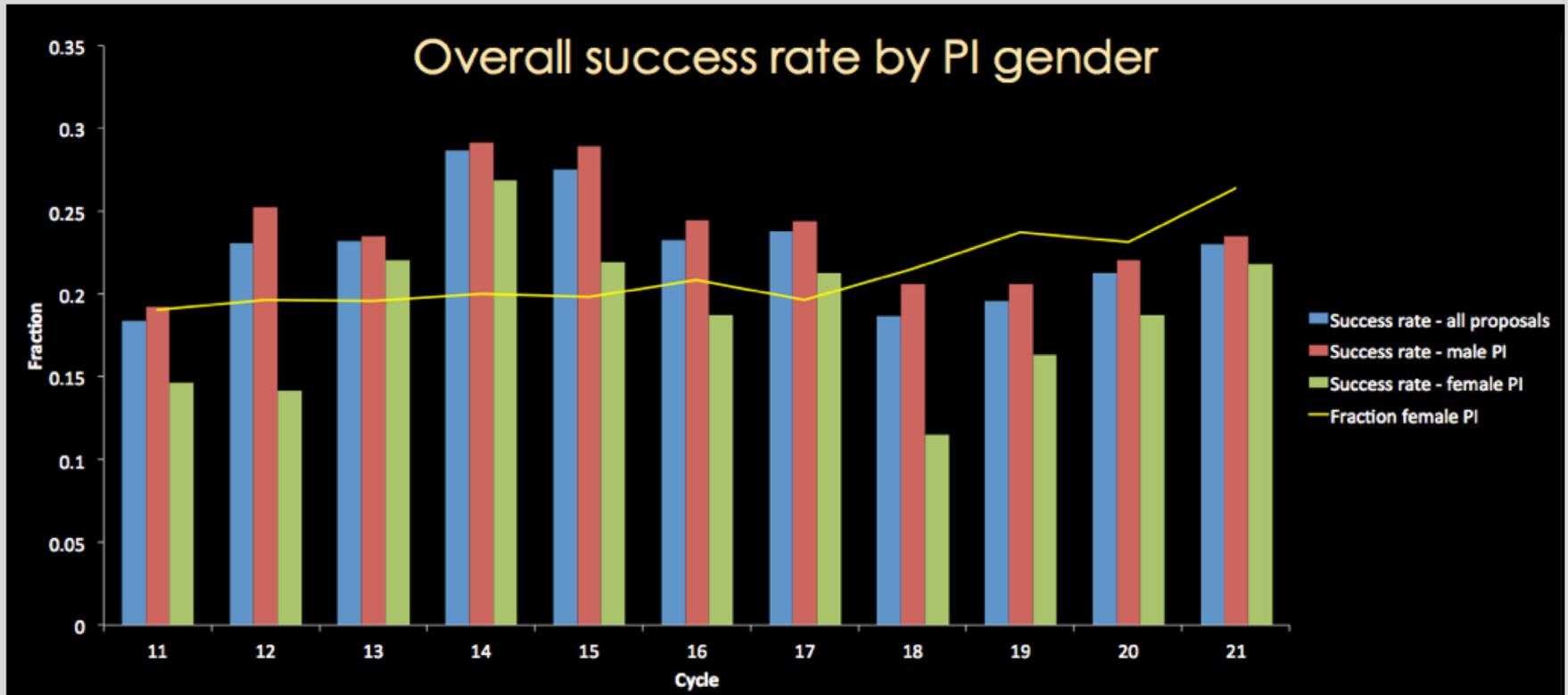
Final element in NASA's Great Observatories Program

- **Infrared Great Observatory**
- **Prime Mission: 2003 – 2009**
- **Extended Mission funded through 2019**
- **14 General Observing Proposal Cycles, 2004 - 2018**



# Hubble Space Telescope

## Gender-Correlated Systematics in HST Proposal Selection



Reid, N., 2014, PASP, 126, 923R

Success rates for male PIs systematically higher over 11 observing cycles.

# Comparing Spitzer and HST

## Similarities

- Observing communities are not identical but have substantial overlap ( $> 50\%$ )
- Proposal solicitation and selection processes are similar
- Both support a broad range of science disciplines

Process structure and communities are similar.

# Comparing Spitzer and HST

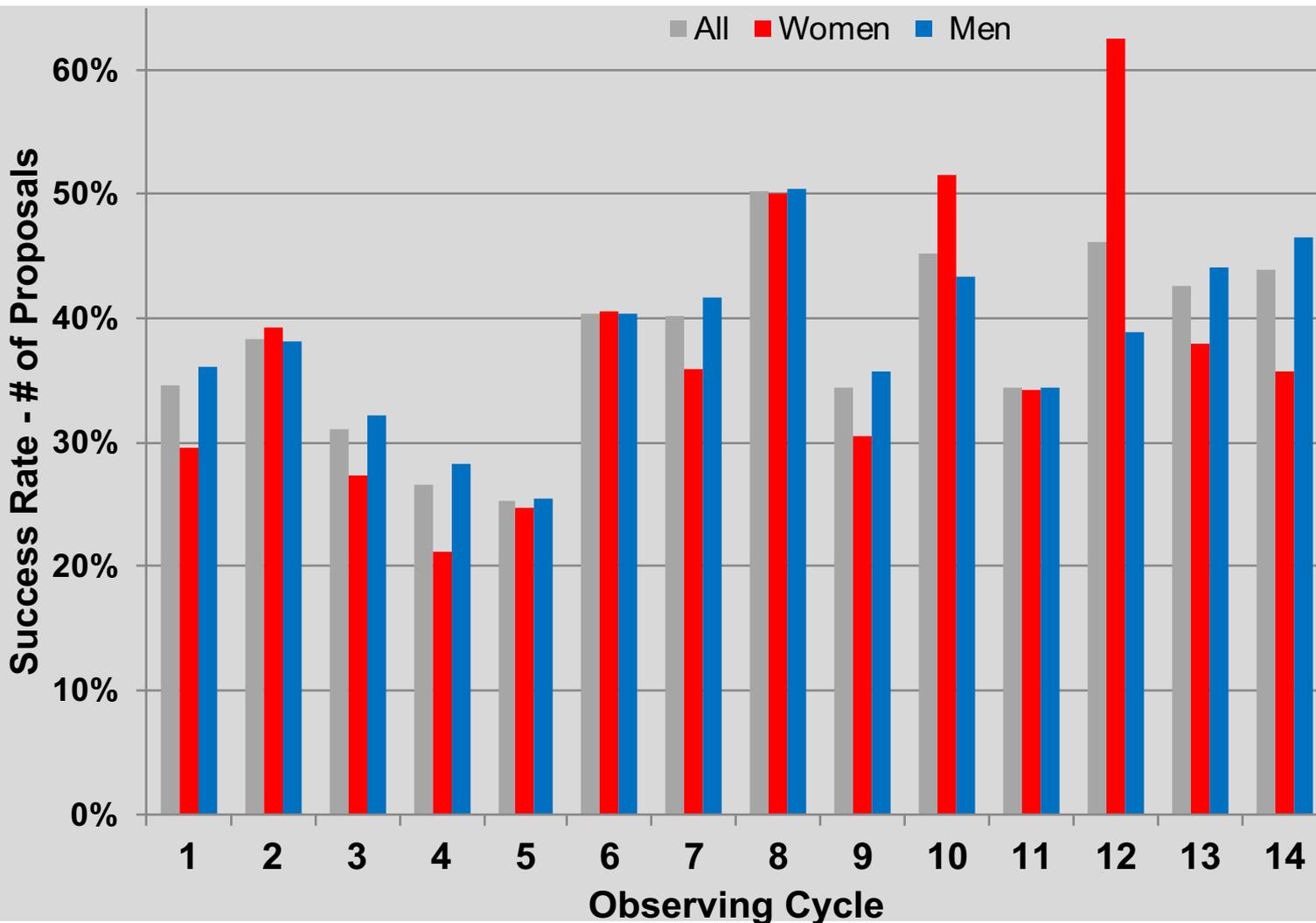
## Differences

- Spitzer's has about twice as much time available per year (due to earth-trailing orbit)
- Success Rates based on # of proposals
  - HST = 20 – 25%      Spitzer = 25 – 50%
- Amount of time awarded to 'large' programs
  - HST ~ 30%      Spitzer ~ 75%
- Program size range
  - HST orbits: 1-100's      Spitzer hours: 0.1 – 1000's

75% of Spitzer time is awarded to 4.3% of submitted proposals

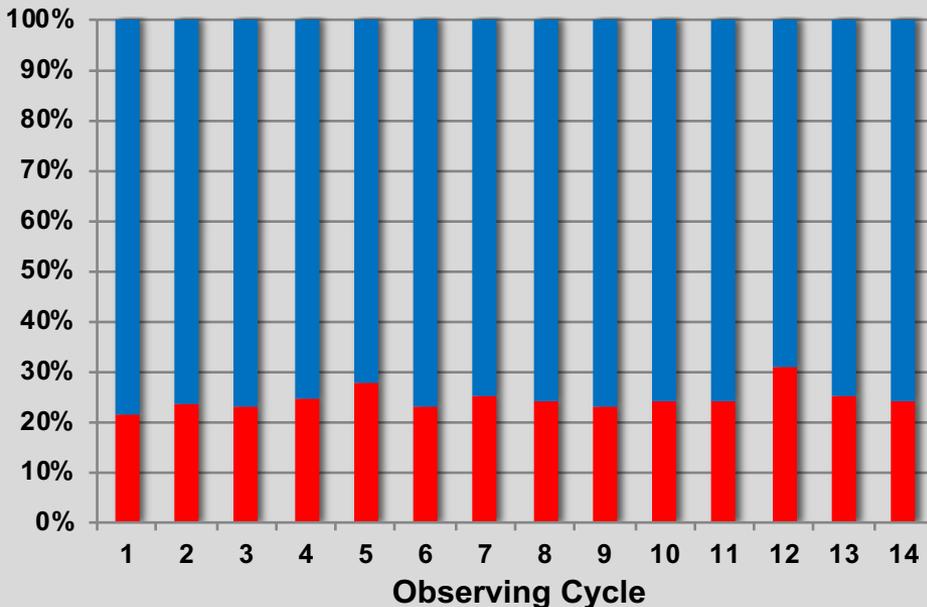
# Results by Number of Proposals

## Success Rate

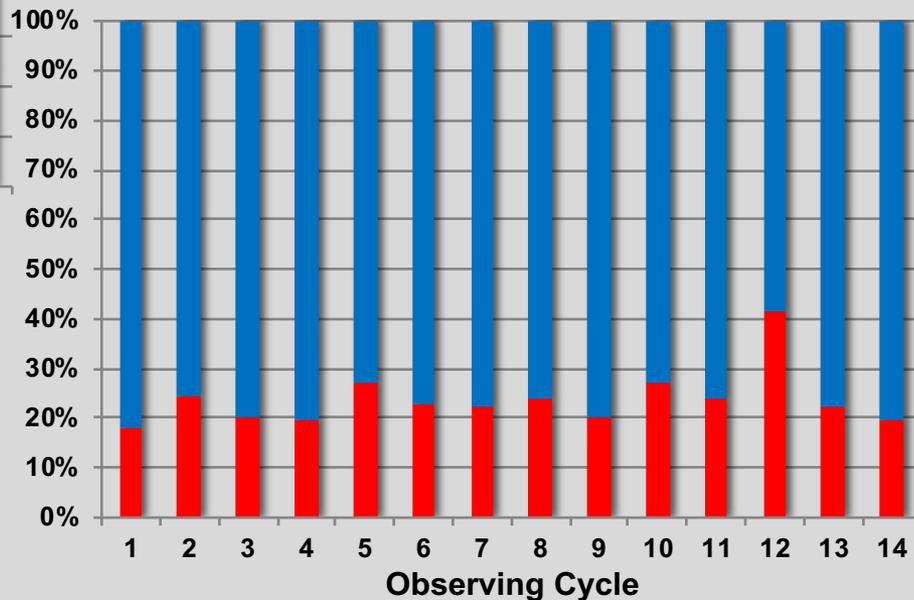


# Results by Number of Proposals Submitted & Selected by Gender

## Submitted



## Selected



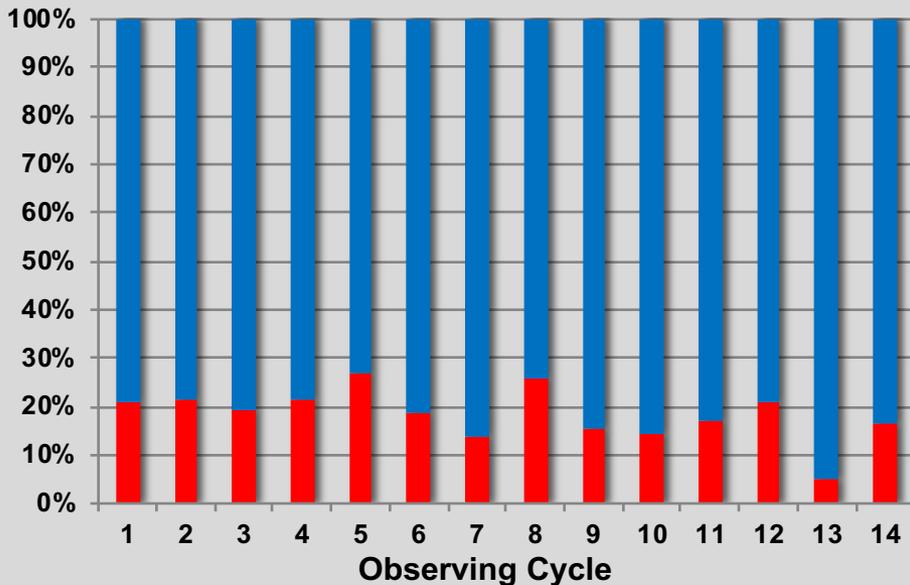
# Results by Number of Hours – All Proposals

## Success Rate for Requested Hours



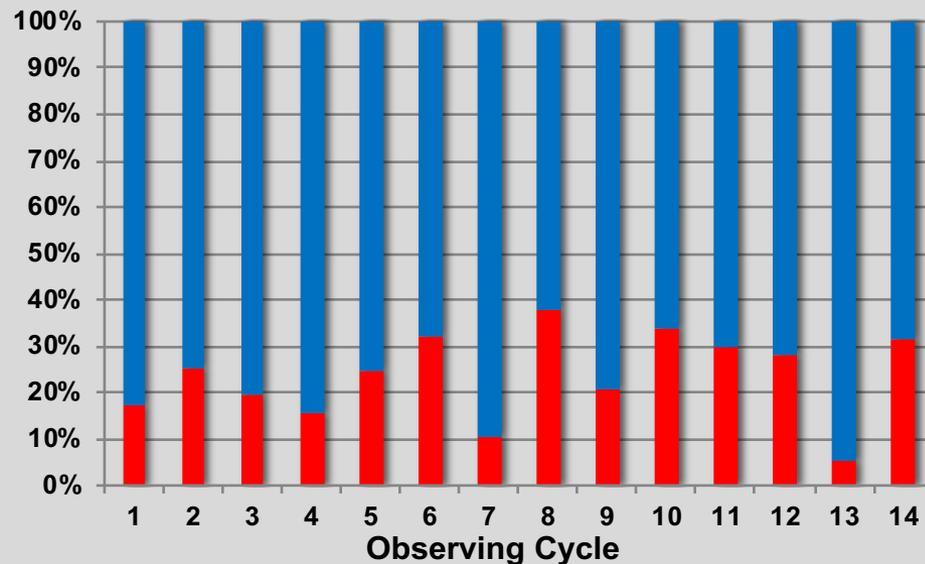
# Results by Number of Hours – All Proposals Submitted & Selected by Gender

## Submitted



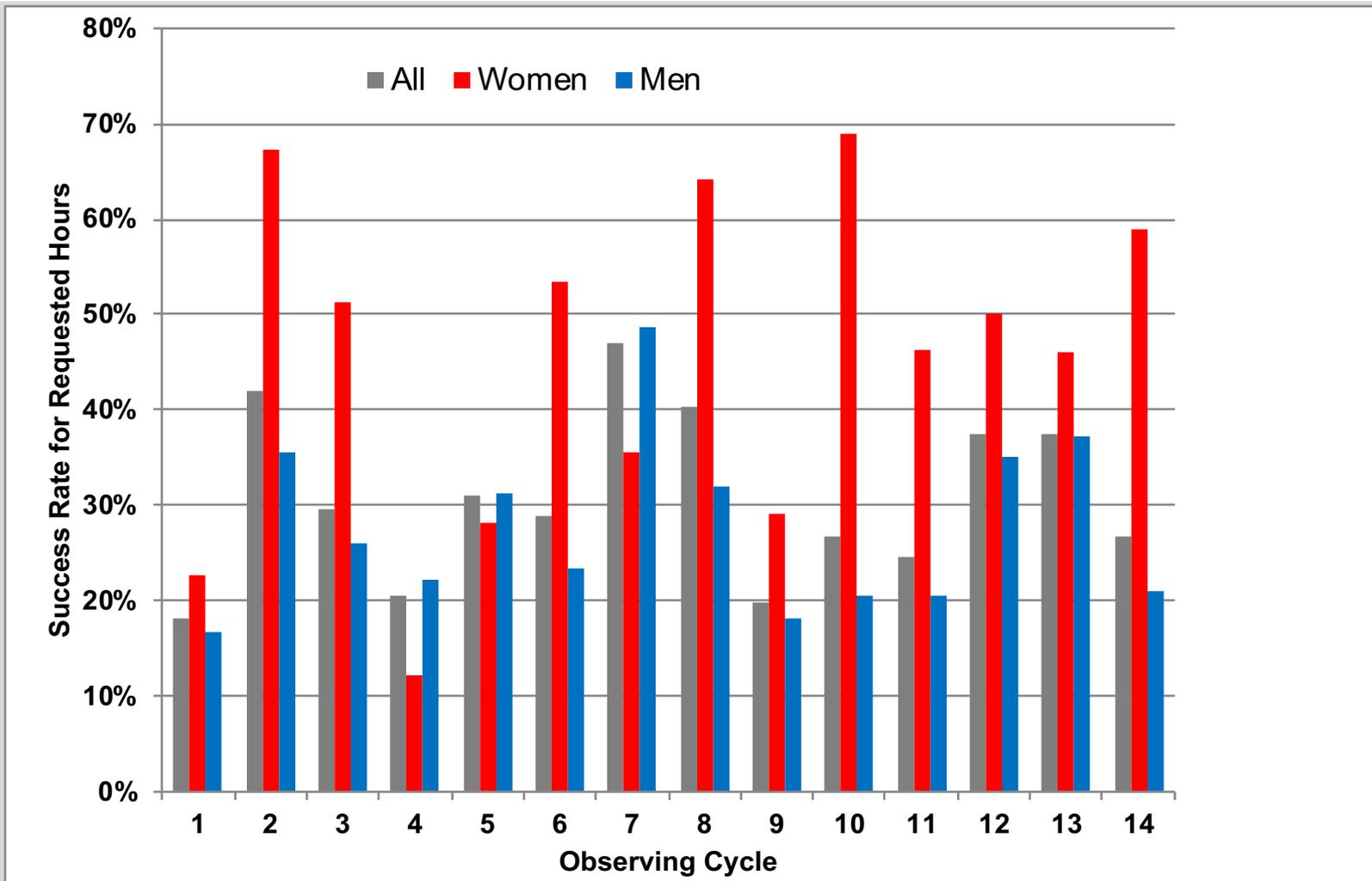
■ Men  
■ Women

## Selected



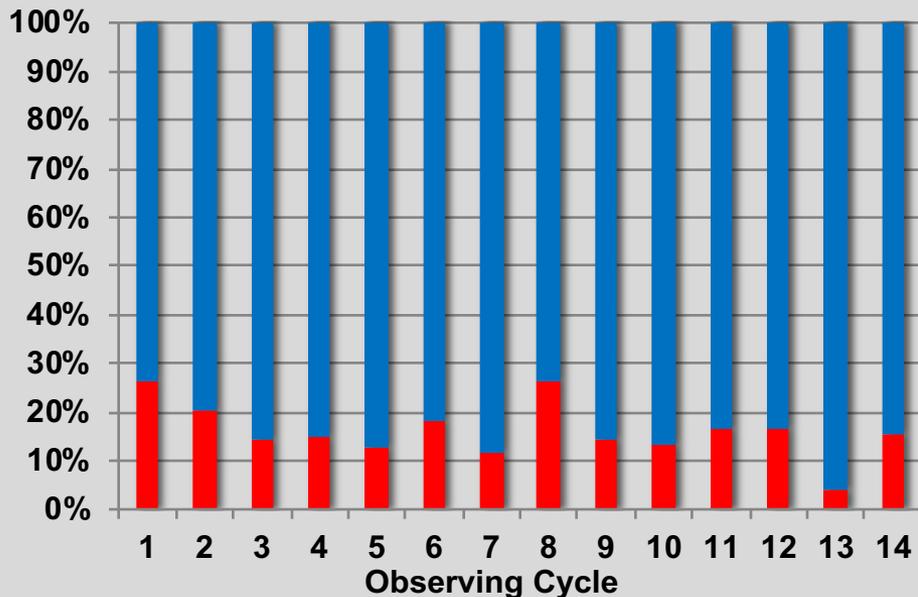
# Results by Number of Hours, >99 hr Proposals

## Success Rate for Requested Hours

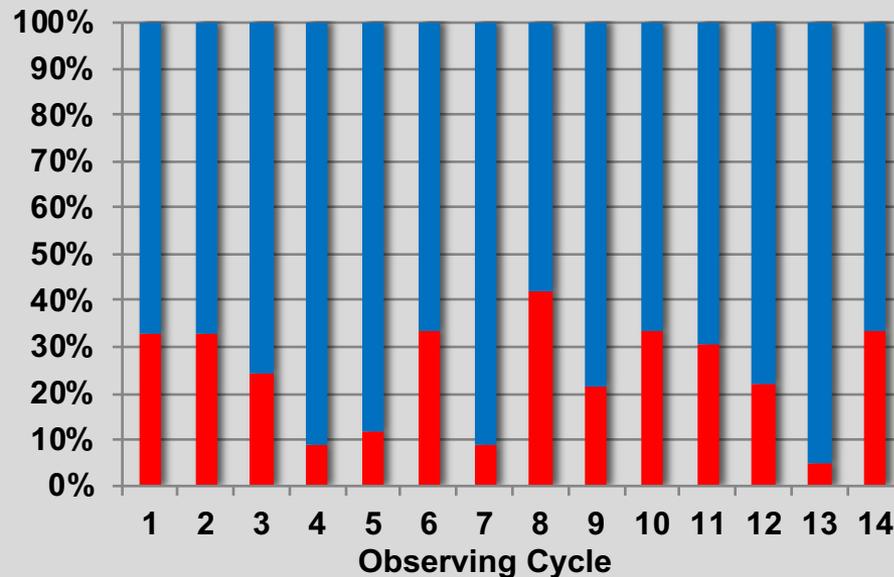


# Results by Number of Hours, > 99 hr Proposals Submitted & Selected by Gender

## Submitted

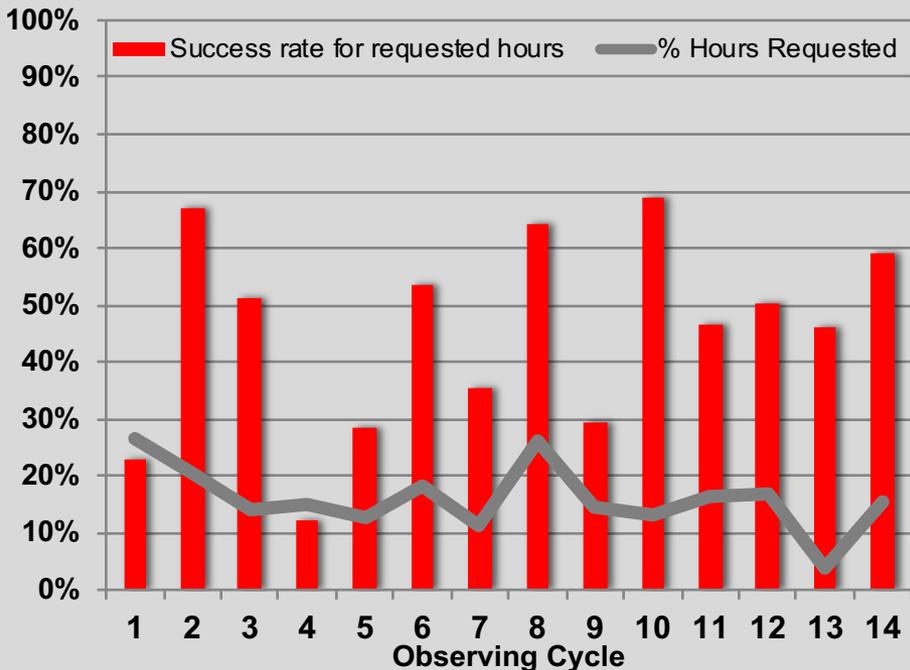


## Selected



# Results by Number of Hours, > 99 hr Proposals Submitted & Selected by Gender

## Women



## Men



- 75% of Spitzer time is awarded to large programs

Women request fewer hours than men, but are more successful at getting the hours they request.

# Summary

- **Success rates in terms of the number of proposals selected show no systematic difference for male and female PIs.**
- **For the large programs, that make up 75% of the time awarded, female PIs request far fewer hours than male PIs but have a higher success rate in being awarded the hours.**