



# **HST OPERATIONS**

Faith Abney



# Linux / MSSQL Migration

- Migrated all data processing and archive operations from Solaris / Sybase to Linux / MSSQL
  - Allows for faster processing
  - Uses modern hardware
    - Old hardware reached end of life
  - MAST and HST databases now all on MSSQL



# Linux / MSSQL Migration

- Did extensive testing and operations to verify products and databases
  - Ran in parallel operations mode for 5 months
  - Months of database verification checks
  - Differenced data between two systems
  - Ran completeness checks between two systems
  - Had instruments groups verify data
  - Involved beta testers to look over archive searches and retrievals



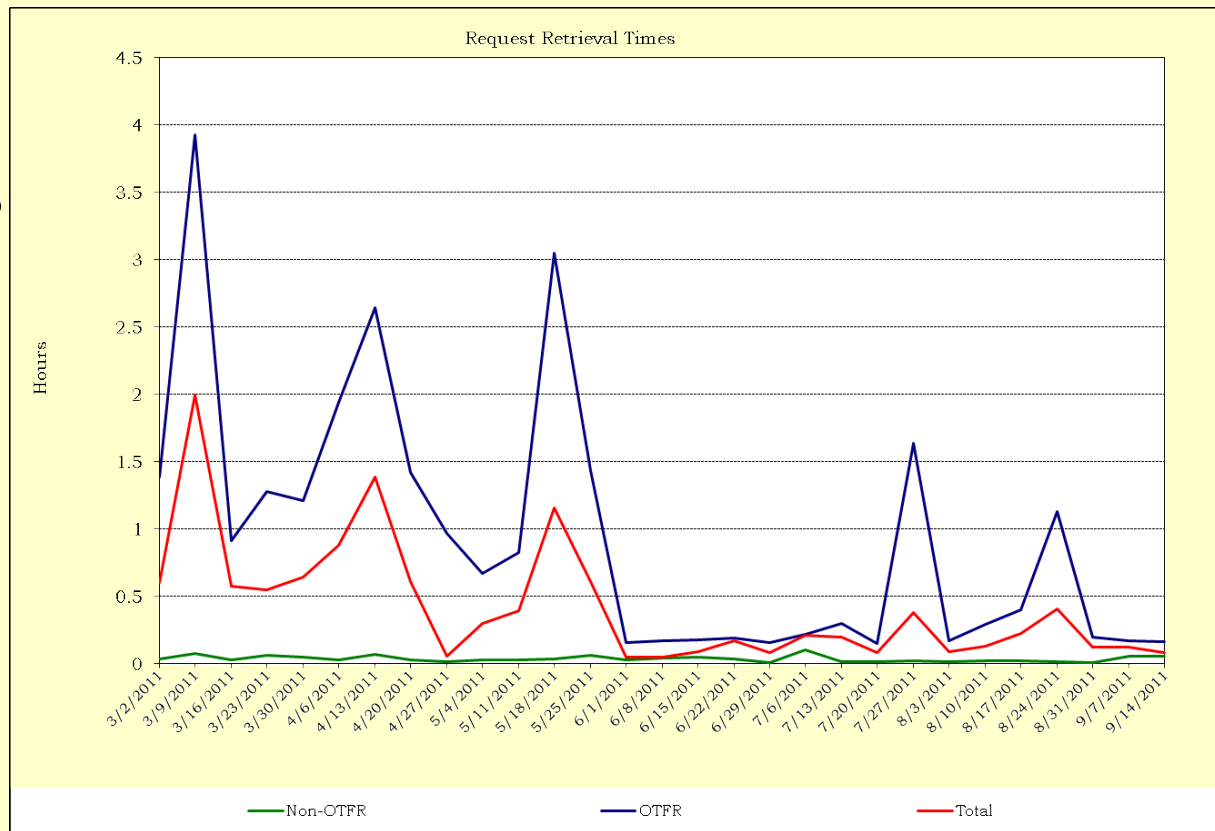
# Linux / MSSQL Migration

- Ported related tools
  - Now replicating MSSQL databases to mirror sites
  - Reference file system ported
  - Metrics processing ported
  - PI notification tools ported



- Archive distribution retrieval times have significantly improved

- Solaris 2011, median time to complete a request was 43.8 minutes.
- *Post-Linux transition it is now 7.1 minutes.*





# *Operational Highlights*

- *Archived the millionth HST science observation on July 4*
- Migrated Archive Helpdesk to “Footprints” on June 28
  - Allows for easy categorization of issues and faster response to users
  - All of the Institute helpdesks now using Footprints
    - Allows for better transfer of questions between helpdesks
    - Allows for more uniform answers throughout the Institute





# Operational Highlights

- Reprocessed the first year of WFC3 data to better populate the database
- Reprocessed and statically archived all pre-SM4 NICMOS data
- Repaired UPS backing up many critical components
  - Caught fire in January, bringing datacenter down for half a day



# HST DEVELOPMENT

Mark Kyprianou





# Development Highlights

- Migration to Linux/Microsoft SQL
- Impact evaluation of Pacor Automated OPS
- Instrument/pipeline Support
  - CALWF3 update
  - STIS pipeline failures
  - Flight Software Changes (STIS)
  - CALACS with no IRAF



# Future Development



# Instrument Highlights

- Instrument/pipeline Support
  - STIS flight software problem with time tag data
  - Continued science data processing improvements
    - Astrodrizzle
    - CALACS w/CTE
    - COS reprocessing/cataloging enhancements
    - CALxxx with no IRAF



# Future of OPUS (FOO)

- Upgrade workflow processing
- JWST study is complete
- Condor, open source high-throughput computing software framework has been selected
- Test Case: HLA ACS Multidrizzle pipeline via Condor



# Background Automated Reprocessing (BAR)

- Online cache of latest calibrated products
- Improvement in product delivery, direct and immediate access
- FOO/BAR: Presented to HST Mission Office, awaiting decision



# Infrastructure

- Replace DADS Operator Interface
  - Web based UI
- Deploy Database clustering technologies to DADS
  - Internal and Public databases
  - Improve uptime, reliability and performance
  - Enhance db metrics and tracking
    - Leveraging capabilities in MS SQL