CHIRON data journey: From scheduling to wav. calib. data. (2017.0524)

- Scheduling done by SMARTS following user's setups requires (http://chiron.astro.yale.edu/)
  - Targets
  - Setup
    - ThAr or Iodine
    - Fiber, Slicer, Slit, Narrow
  - SNR limit or exposure time limit
    - Uses Exposure meter or exposure time curve in Tokovinin et al. 2013
    - Does Yale has internal tool for it?
  - Arrangement and additional calibrations during night (user request)
    - Number of ThAr calibrations for each target
    - Iodine-target high SNR template observation
    - Telluric standards
    - Spectrophotometric standards
    - RV standards
- Beginning of night calibration
  - Done every day remotely from Yale at around lunch time in Chile.
  - Does not require staff on the mountain to prepare, except for LN2 fill.
  - Calibrations done for every setup using a script.
- Observations in telescope
  - Done by telescope operator (TO)
  - Starts around -12º Sun altitude
  - Follows target list provided or scheduling in http://chiron.astro.yale.edu/
  - Web interface sends target coordinates to TCS
  - Web interface sends instrument setup for target to CCD torrent controller
  - TO set up guiding.
- End of night calibrations
  - Done by TO only when night observations took place.
  - Sent by script in web interface or done by Torrent script.
  - Done for every setup.
  - Done after LN2 fill by TO.
- Yale pipeline reduction
  - Done by Yale and delivered in http://chiron.astro.yale.edu/ for each user to access.
  - Includes raw data, nightly bon/eon calibrations, reduced data
  - Yale pipeline provides data:
    - bias calibrated
    - flat-field calibrated
    - order extraction
    - wavelength calibration using closest ThAr exposure (even for Iodine cell setup?)
  - Yale pipeline does not include
    - sky subtraction — (???)
    - barycentric correction
    - blaze correction
    - flux calibration
  - Fits headers include
    - Instrument telemetry

        - Weather station telemetry
        - GPS time telemetry (for barycentric corrections)
- Yale instrument control at https://sites.google.com/site/yalechiron/
    - Data acquisition
    - Data quality control
    - Data reduction
    - Documentation
- People
    - Andrei Tokovinin (CTIO - Instrument design and construction, tip-tilt guider)
    - Marco Bonati (CTIO - Torrent controller)
    - Matt Giguere (past / Yale - control interface, data reduction pipeline)
    - Debra Fischer (Yale)
    - John Brewer (Yale - control interface, data reduction pipeline)
    - Emily McPherson (Yale - Scheduling, data pipeline manager)
    - Fred Walter (past SMARTS - Fiber mode data reduction expert)
- Websites
    - CHIRON at Yale
        - http://chiron.astro.yale.edu/
        - https://sites.google.com/site/yalechiron/
    - CHIRON at CTIO (Andrei Tokovinin)
        - http://www.ctio.noao.edu/~atokovin/echelle/
        - http://www.ctio.noao.edu/noao/content/chiron