

The WASP-12b sample fits files have already been plate-solved, at a guess, using the Astrometry.net on-line astrometry engine. If you open one of the WASP fits headers, entry 'WCSAXES' denotes the start of plate solve data.

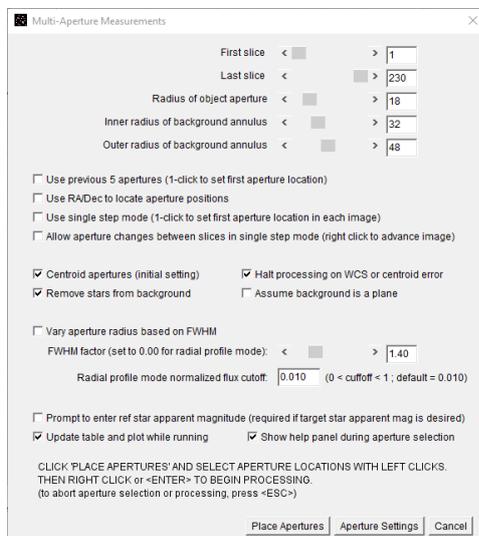
While there are some advantages to running AIJ with plate-solved images, AIJ will work with image sequences which have not been plate-solved. Short form instructions for both options below.

Plate solve software options:

- Local astrometry software such as Image Link (TheSkyX) or Pinpoint (DC3), good but expensive unless you happen to have them already..
- AIJ employs astrometry.net for on-line plate-solve, free but can be slow for large data sets
- current version AIJ supports [ansvr](#) which is a local copy of the astrometry.net plate solve engine. Free. Catalog download can be rather large (several GB), especially for small field telescopes. Taking the plate-solved approach, first try the astrometry.net to get started with plate solving images for AIJ photometry, then maybe look at installing ansvr which should run noticeably quicker.

Steps for AIJ photometry with plate solved images, assumes aperture diameters already selected .. Apertures should track frame-to-frame drift and meridian flip image rotation.

1. AIJ Toolbar / Import / Image Sequence .. and select the first reduced fits file
2. Seq options - accept defaults with Sort names & Use visual stack options selected.
3. In Image Display window, select Multi-aperture then set up Multi-Aperture dialog with top 4 options unchecked as below. Object and annulus radii already set.

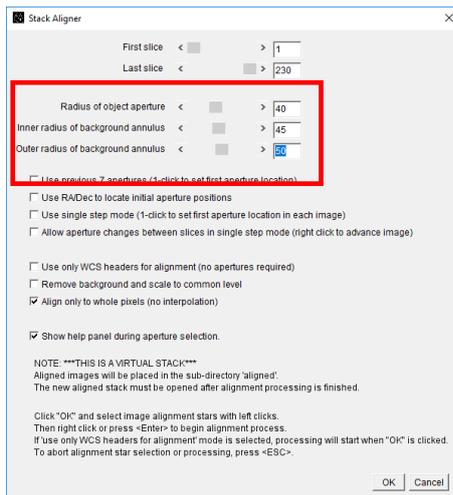


4. Click Place Apertures
5. Left click image to select target star (T1) and comparison stars (C2 ..) as standard
6. When all apertures are placed press <Enter> to start photometry analysis.
7. When photometry analysis is complete, in the Image Display window, select File / Export apertures to RA/Dec list .. and save file as eg radec.txt.
8. To use the same apertures in subsequent runs, check the first 2 check boxes (Use previous .. and Use RA/Dec ..) in the Multi-Aperture Measurements dialog

AIJ Photometry + Align Stack

Refer to Dennis Conti's Exoplanet guide <http://www.astrodennis.com/Guide.pdf> for more detailed procedures.

1. If necessary, split image sequence into pre- & post-meridian flip image sets and import image sequence as above
2. In Image Display, click on Align stack to open Stack Aligner dialog and clear all but the last two check boxes
3. **Increase aperture radii**, eg from 18 / 32 / 48 to 40 / 45 / 50 to track frame-to-frame shifts



4. Select T1 and comp stars are standard and <Enter> to start alignment. When complete, aligned images are stored in **aligned** subfolder.
5. **Reset apertures to original sizes (18/32/48)** and select File / Save apertures .. save file as e.g. aligned.apertures
6. Import Image Sequence from aligned subfolder, select Multi-aperture, select top check box (Use previous ..), click Place Apertures. Click on T1 star in image to place apertures on image and <Enter> to start photometry analysis.

