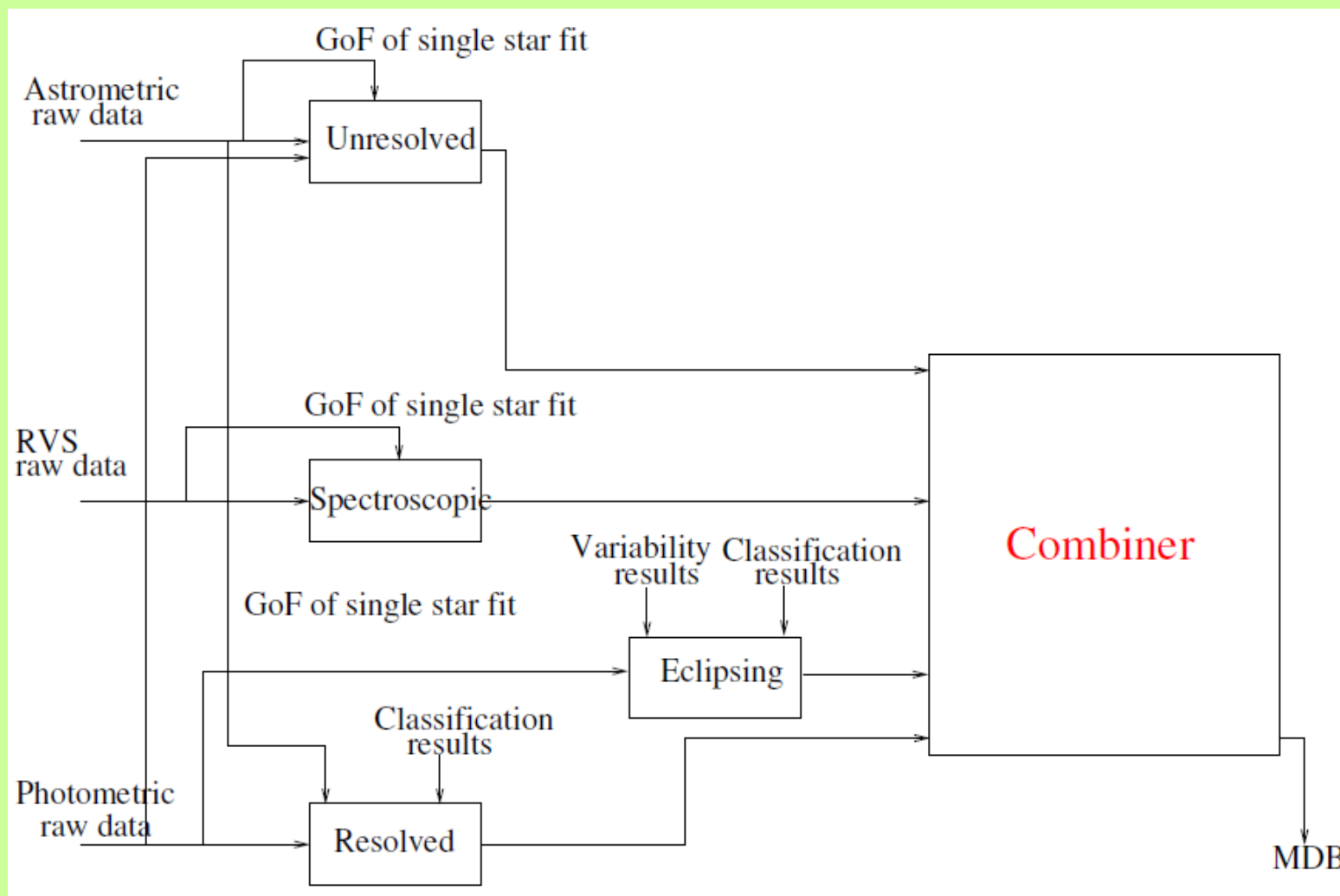


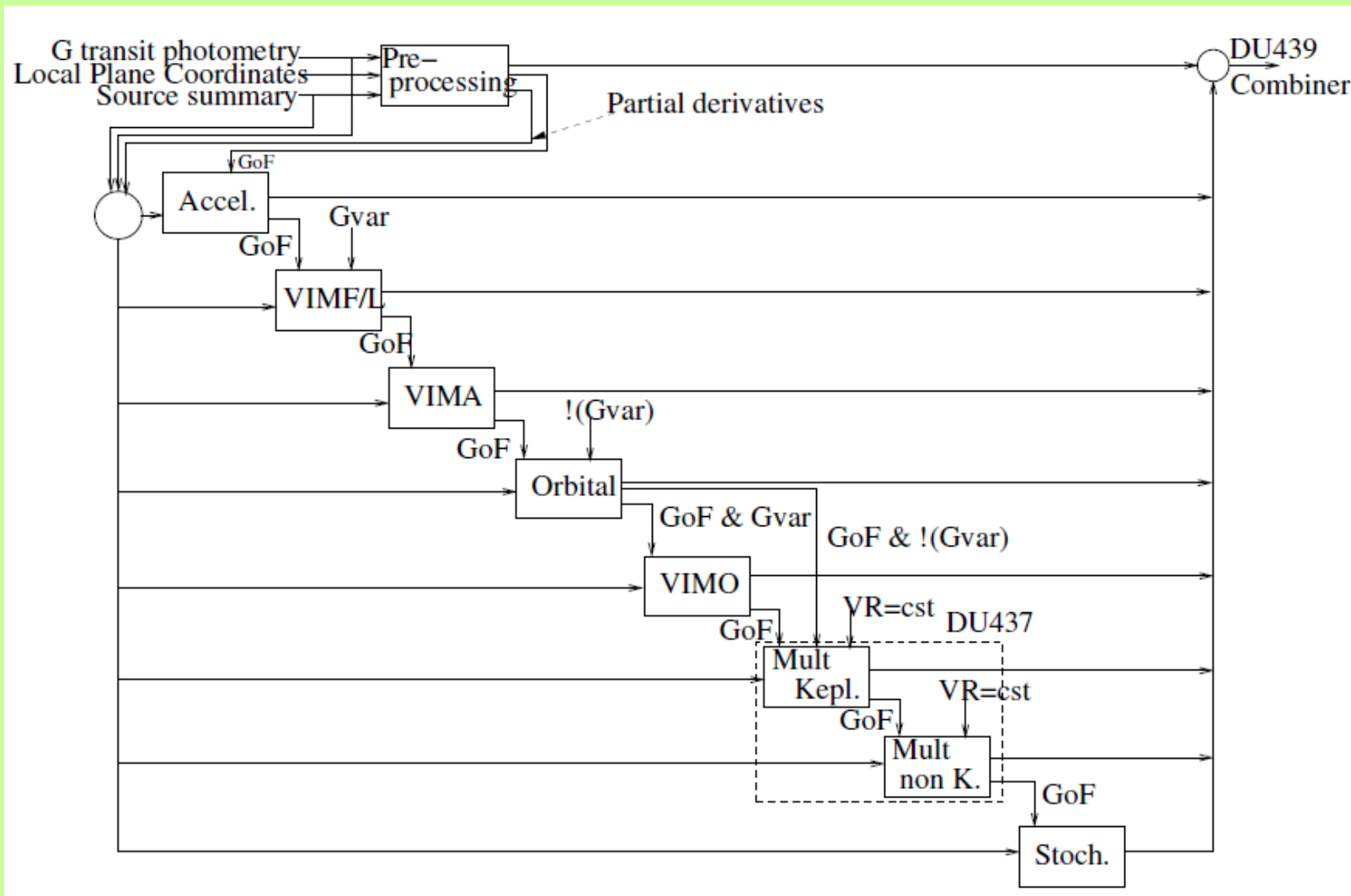
- **Errors on orbital parameters: covariance matrix vs.  $\chi^2$  surface mapping vs. bootstrapping procedures**
- **Confidence in an n-component orbital solution: FAPs, F-tests, MLR tests, statistical properties of the errors on the model parameters, others?**
- **Importance of consistency checks between different solution algorithms**
- **Memento lessons learned from RV surveys, with disagreement on orbital solution details, and sometime number of planets!!**



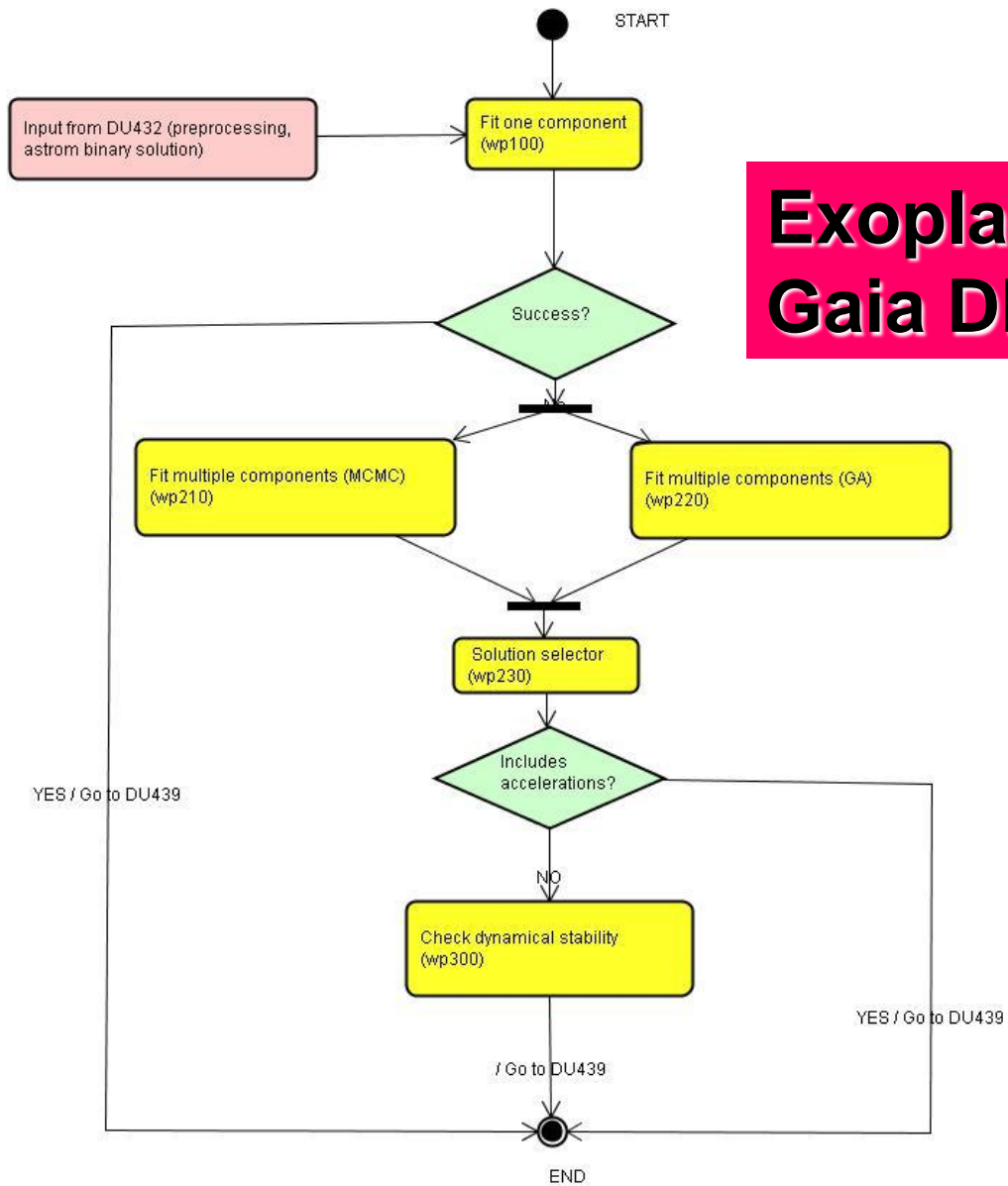


gaia

# Gaia CU4 – Astrometric NSS Treatment



actDU437 Activity Diagram



# Exoplanets in the Gaia DPAC Pipeline

# The Italian Contribution

- **DU 437: A. Sozzetti (Leader), M.G. Lattanzi, R. Morbidelli, A. Spagna (INAF-OATo)**  
tasks: single- and multiple-keplerian orbit fitting

## The Others

- **DU 437: Obs. Geneva, IMCCE Paris**  
tasks: alternate multiple-Keplerian orbit fitting, dynamical stability

analysis

# Gaia transiting candidates?

- Low-cadence of the observations a serious limitation
- It's not hopeless if you have the right tools! (Dzigan & Zucker 2012)
- It can work for early detections of (1000?) short-period transiting Jupiters, BUT:
  - A) It will depend upon the actual content of Gaia early data releases
  - B) It will require the definition of transit candidates as Science Alerts (TBD)
  - C) It will require a dedicated follow-up network
  - D) Confirmation efforts will be limited by  $V$  mag (typically,  $V > 14$  mag)