

KIC 010229903

Q1-17 DR25 TCE Parameters

| TCE | Run Type | KOI? | Period (Days) | Epoch (BKJD) | Depth (ppm) | Duration (Hours) | MES | SNR | R_{\star} (R_{\odot}) | T_{\star} (K) | R_p (R_{\oplus}) | S_p (S_{\oplus}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 010229903-01 | OBS | No | 0.939752 | 131.538507 | 4.6 | 7.390 | 9.9 | 2.6 | 1.39 | 6468 | 0.31 | 7401.87 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 010229903-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED |

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

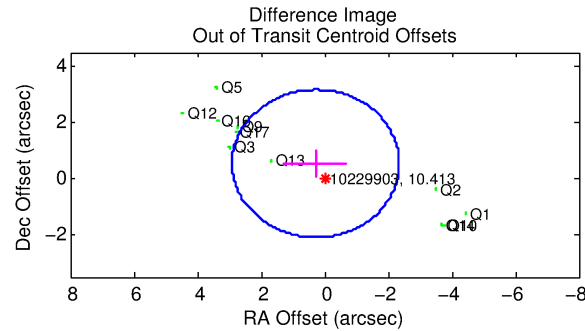
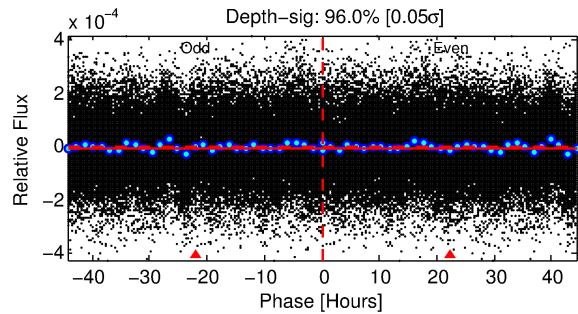
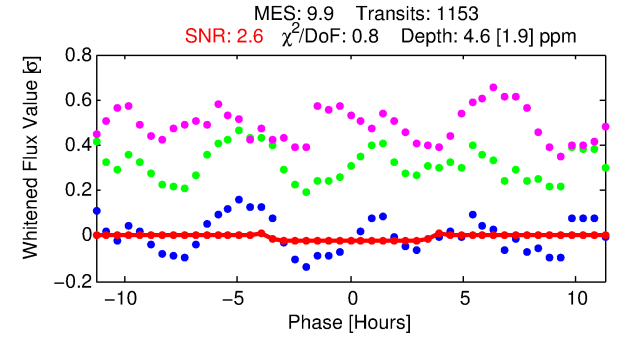
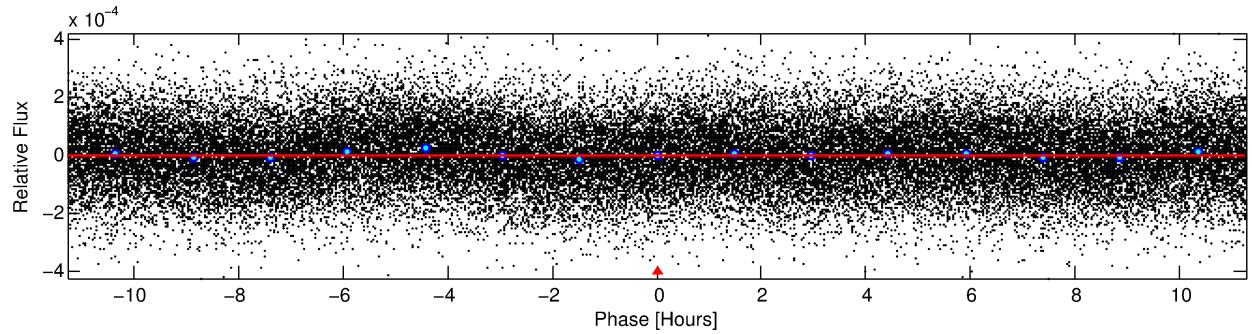
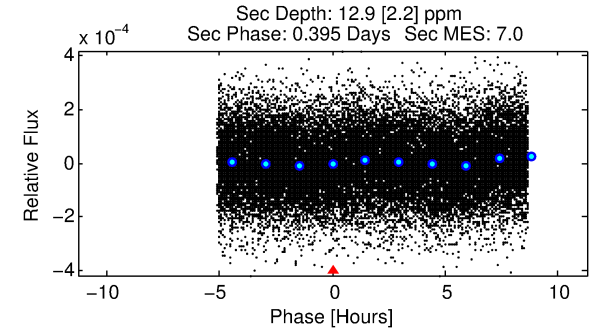
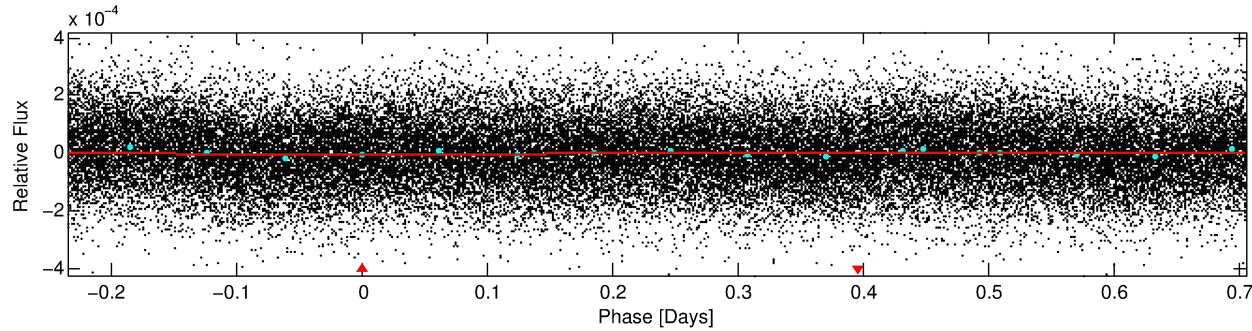
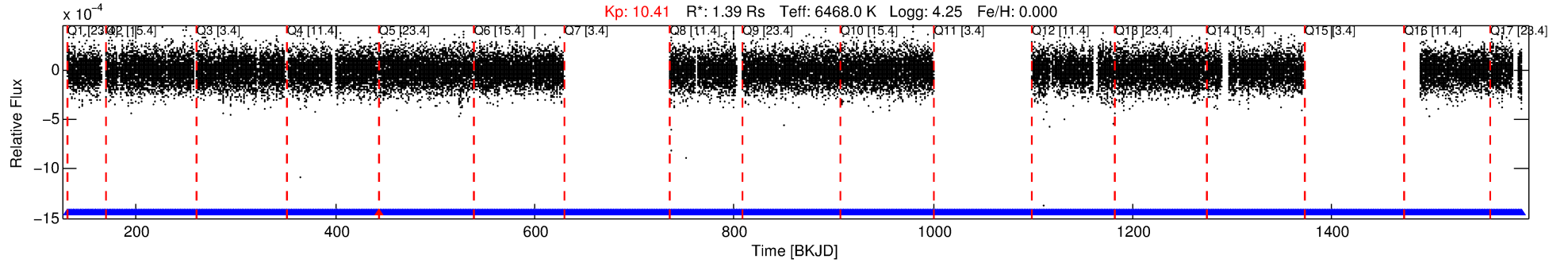
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010229903-01

No Significant Match Found

DV One-Page Summary

KIC: 10229903 Candidate: 1 of 1 Period: 0.940 d



DV Fit Results:

Period = 0.93975 [0.00005] d
Epoch = 131.5385 [0.0138] BKJD
Rp/R* = 0.0020 [0.0026]
a/R* = 1.13 [1.68]
b = 0.50 [10.41]
Seff = 7401.87 [2968.58]
Teq = 2365 [237] K
Rp = 0.31 [0.41] Re
a = 0.0202 [0.0053] AU
Ag = 30.43 [79.81] [0.37σ]
Teffp = 8588 [5585] K [1.11σ]

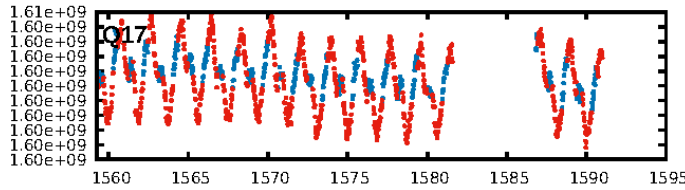
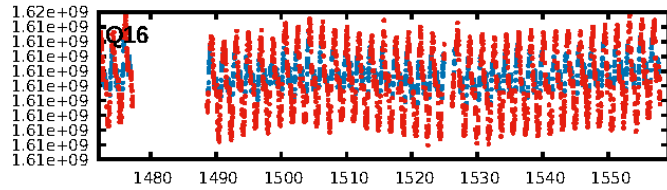
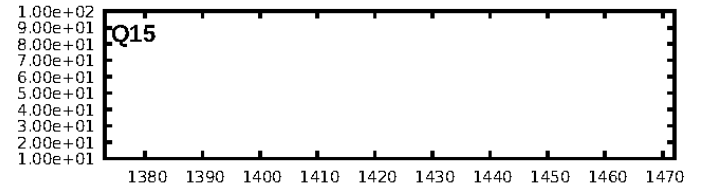
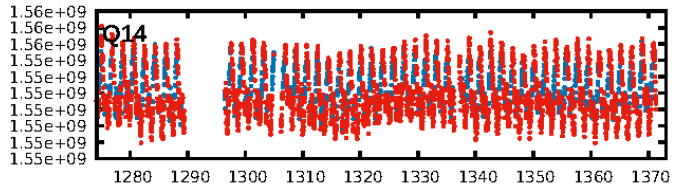
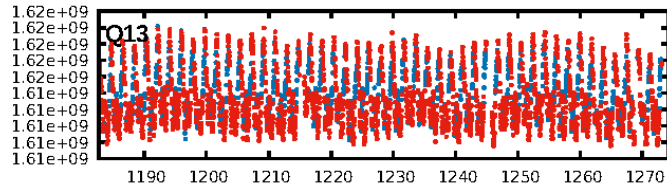
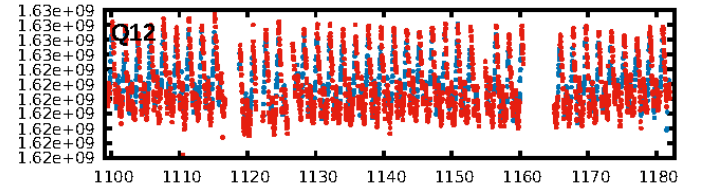
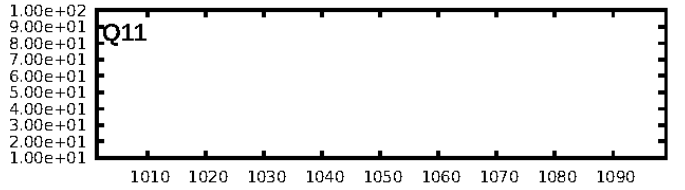
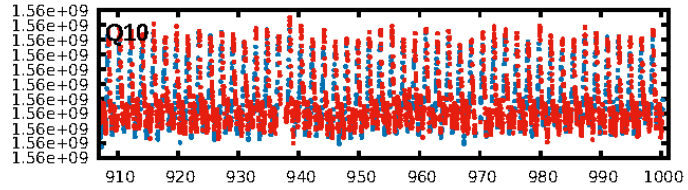
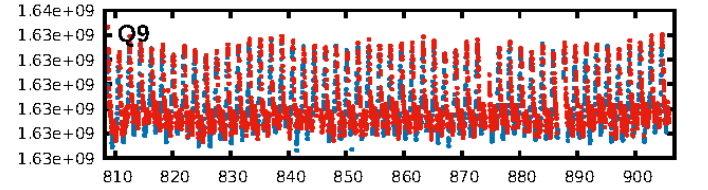
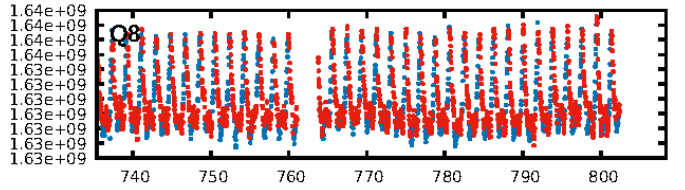
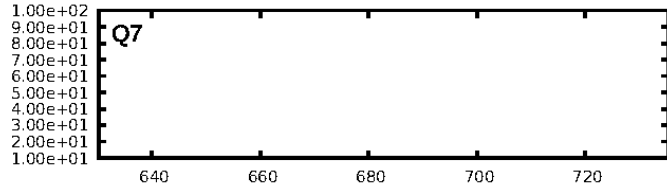
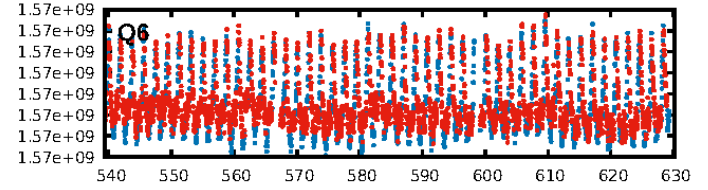
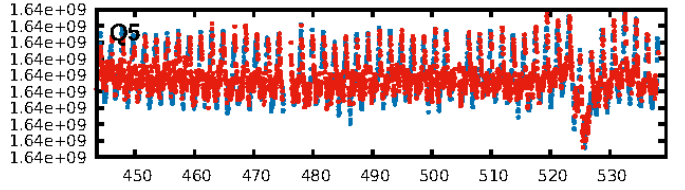
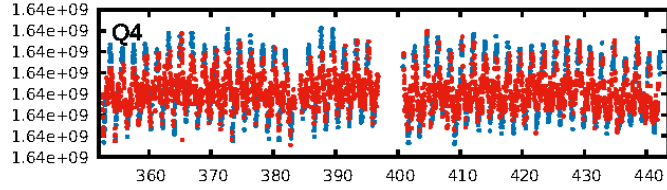
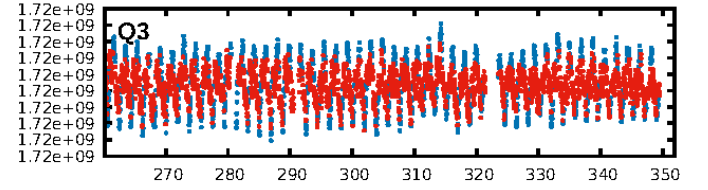
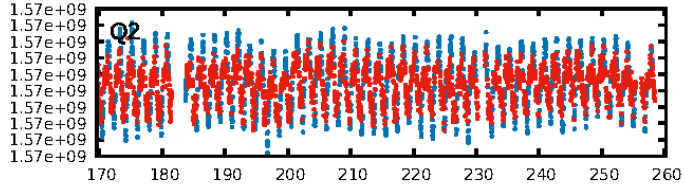
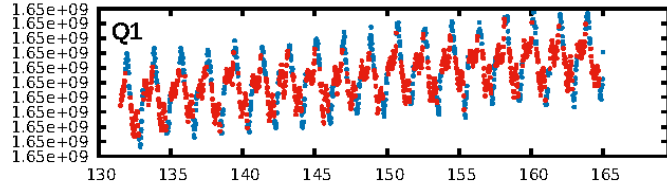
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1087/1088]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.609 arcsec [0.70σ]
KicOffset-rm: 1.283 arcsec [1.25σ]
OotOffset-st: 3/1/2/5 [11]
KicOffset-st: 3/1/2/5 [11]
DiffImageQuality-fgm: 0.64 [7/11]
DiffImageOverlap-fno: 1.00 [14/14]

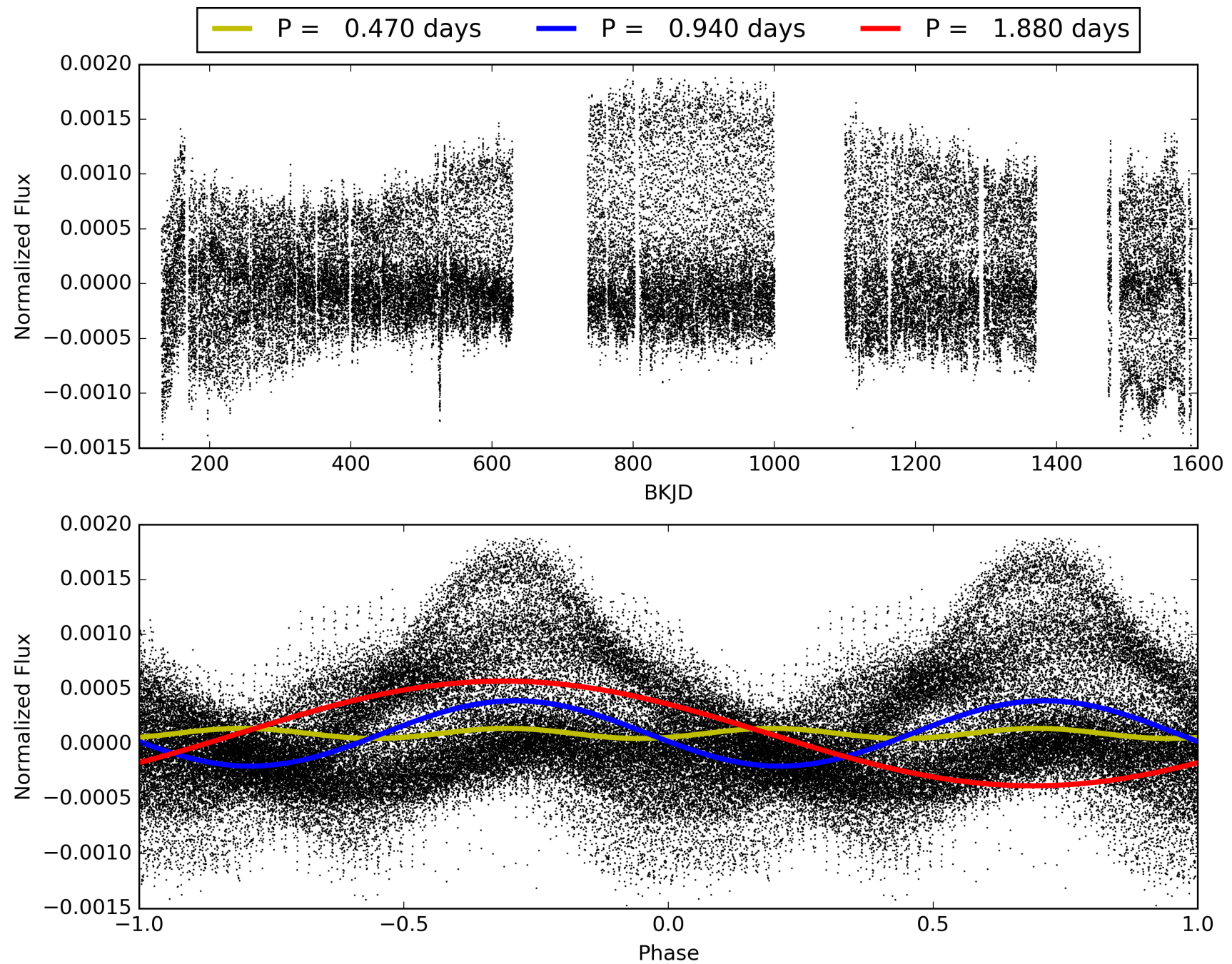
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 10:09:25 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010229903-01, PDC Light Curves

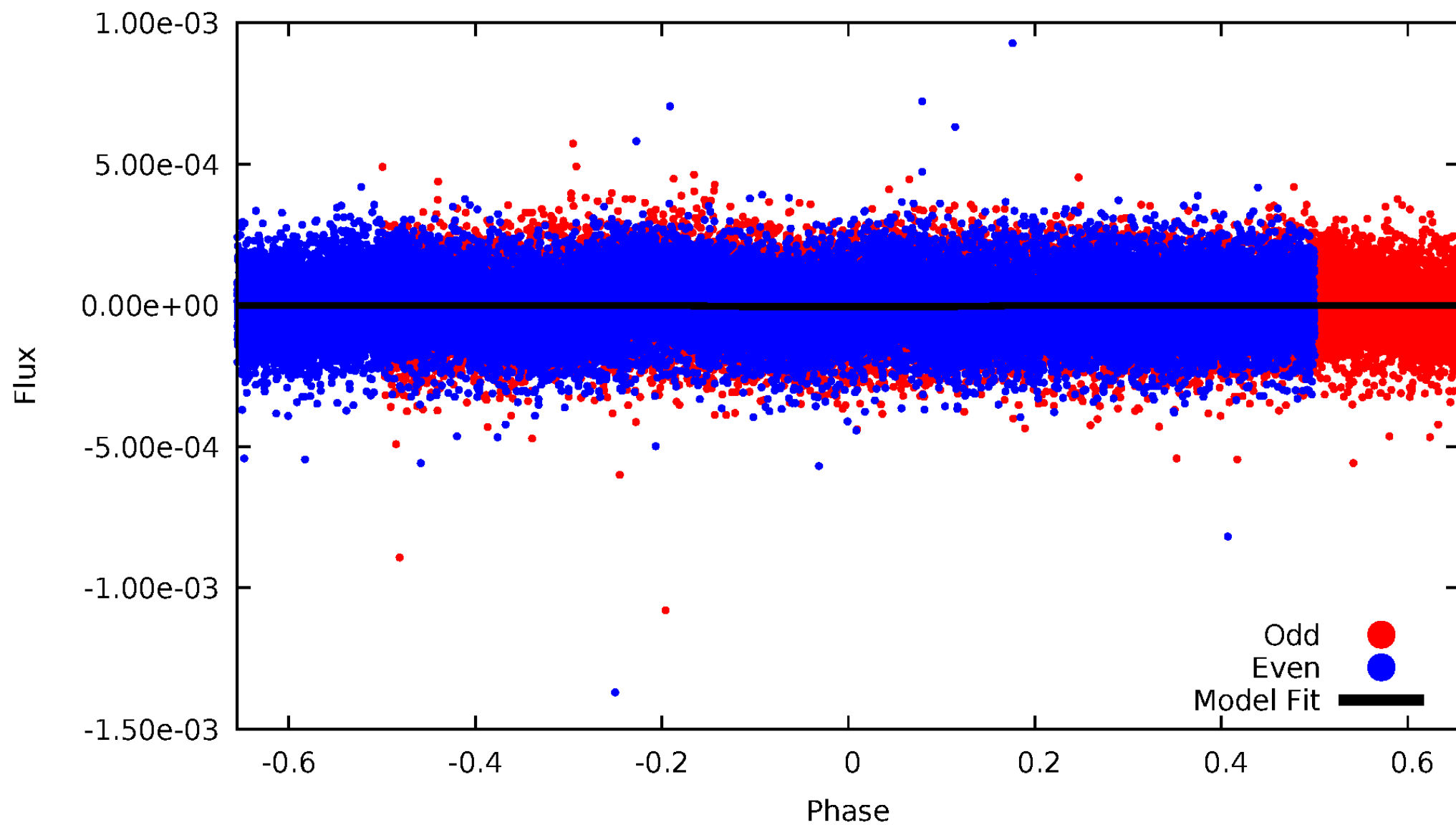


TCE 010229903-01



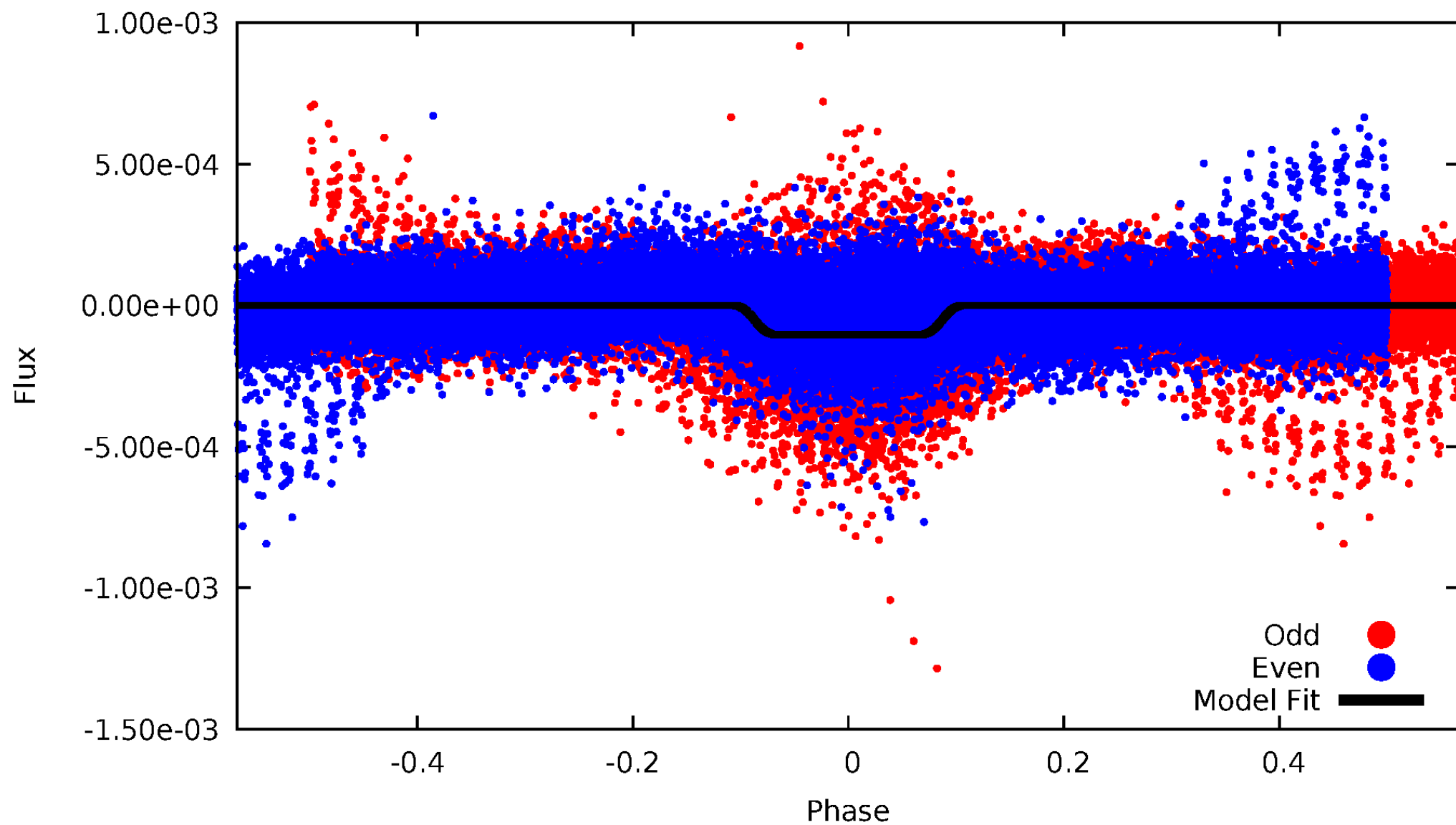
DV Odd/Even

TCE 010229903-01



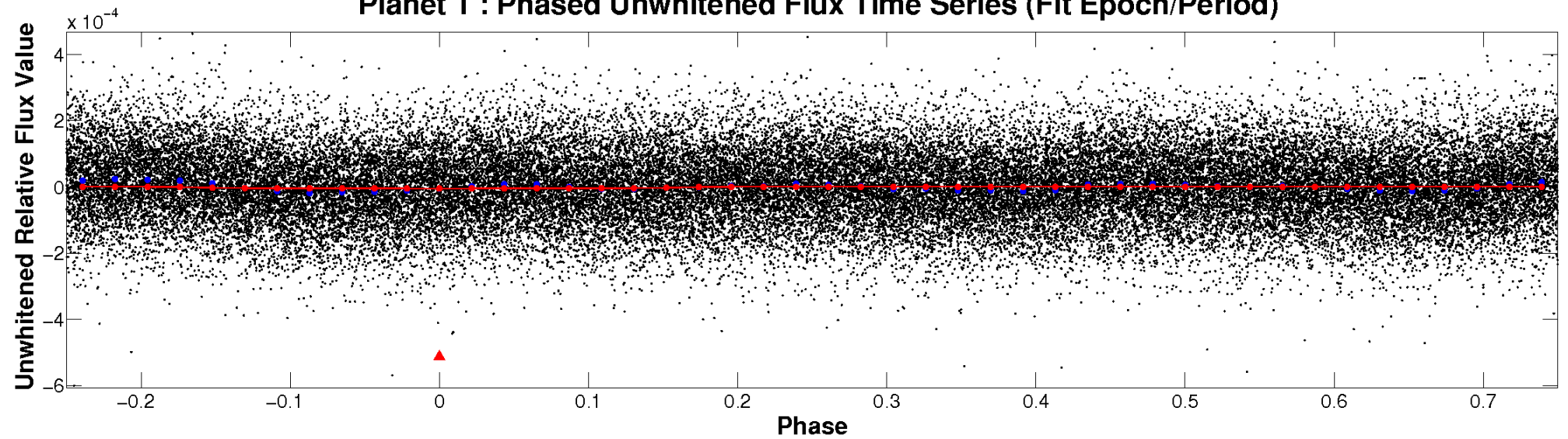
ALT Odd/Even

TCE 010229903-01

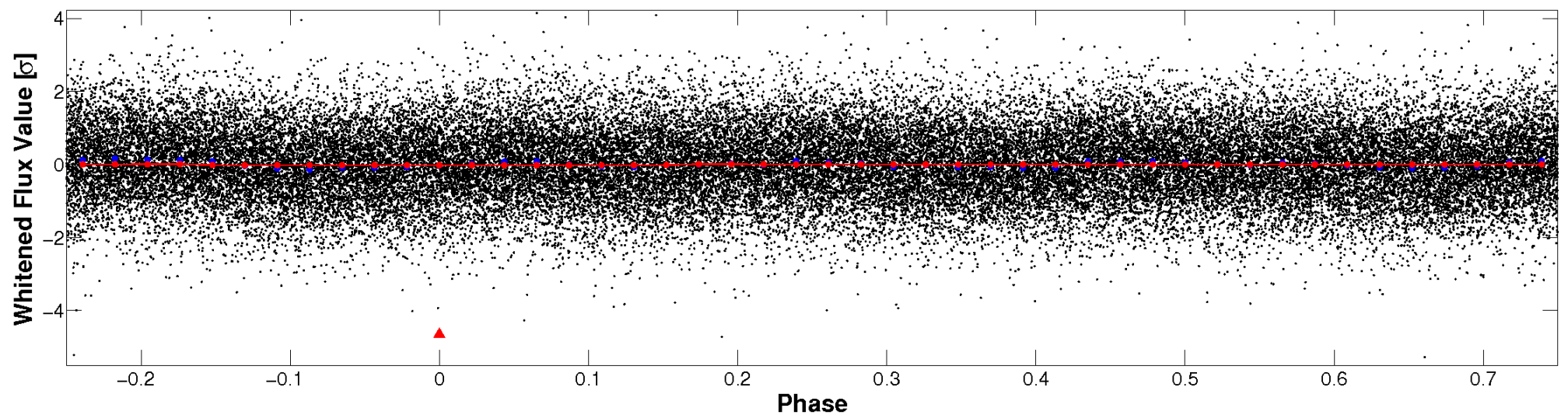


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

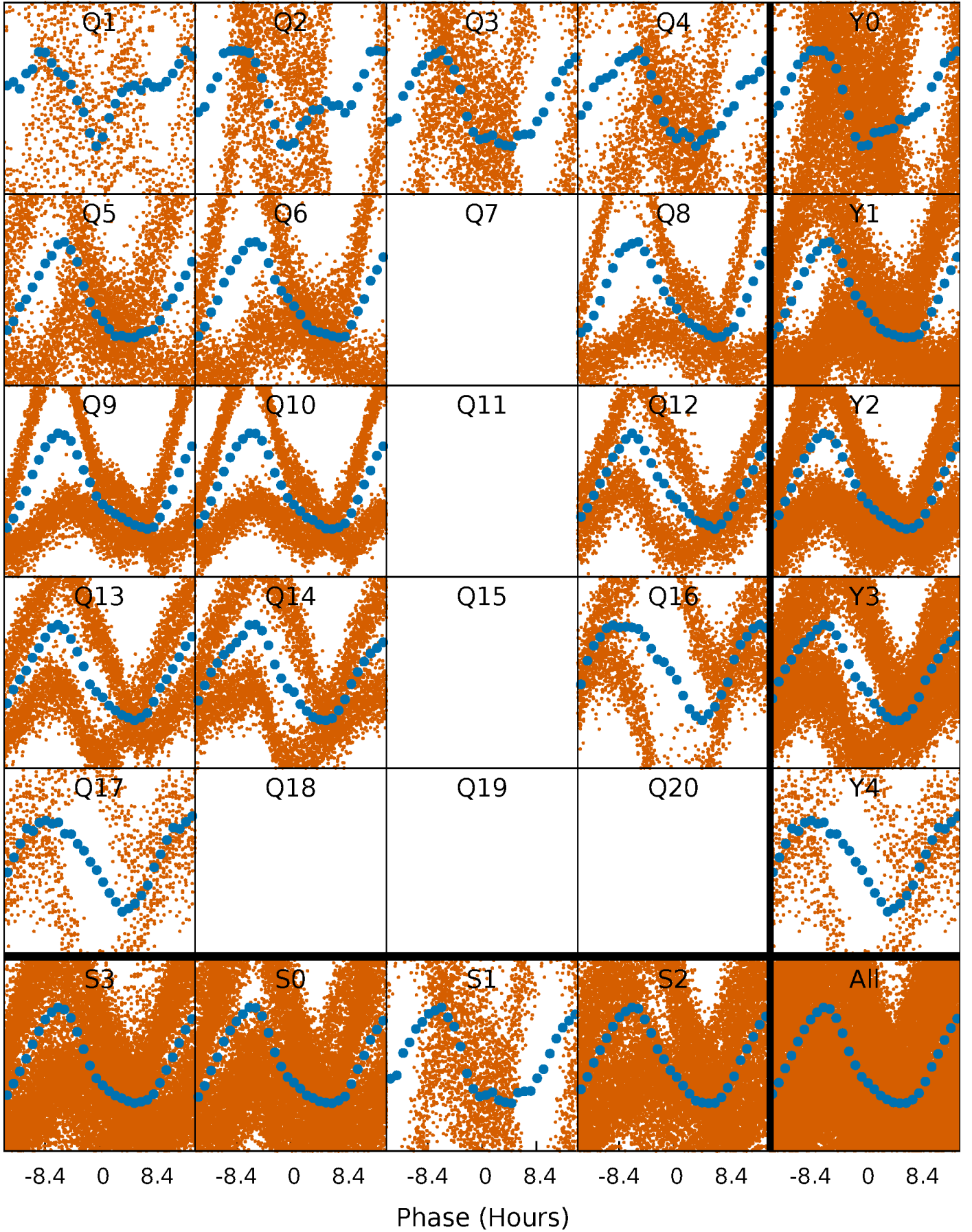


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



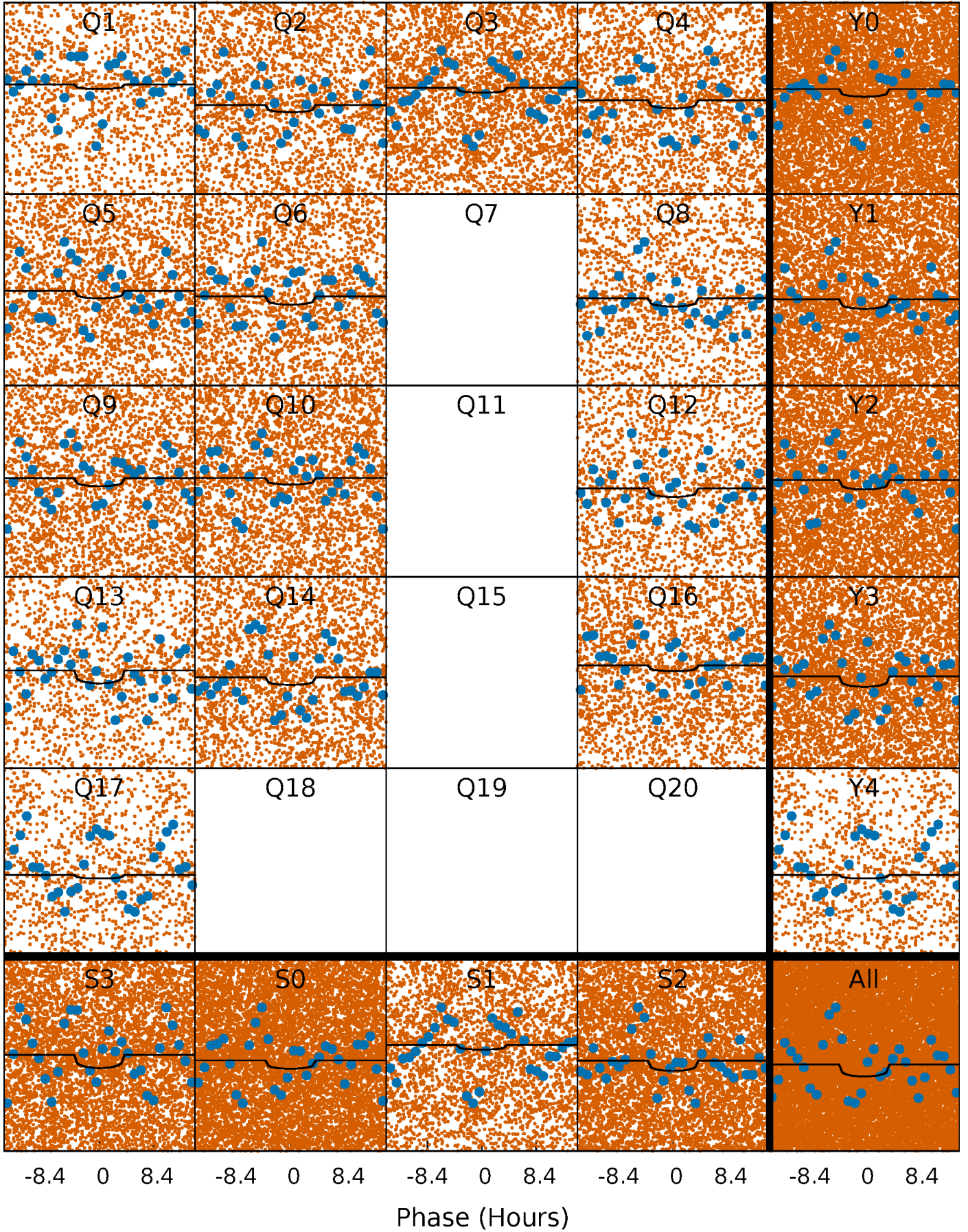
PDC Quarter-Phased Transit Curves

TCE 010229903-01 P= 0.939752 Days $T_0=131.538507$ (BKJD)



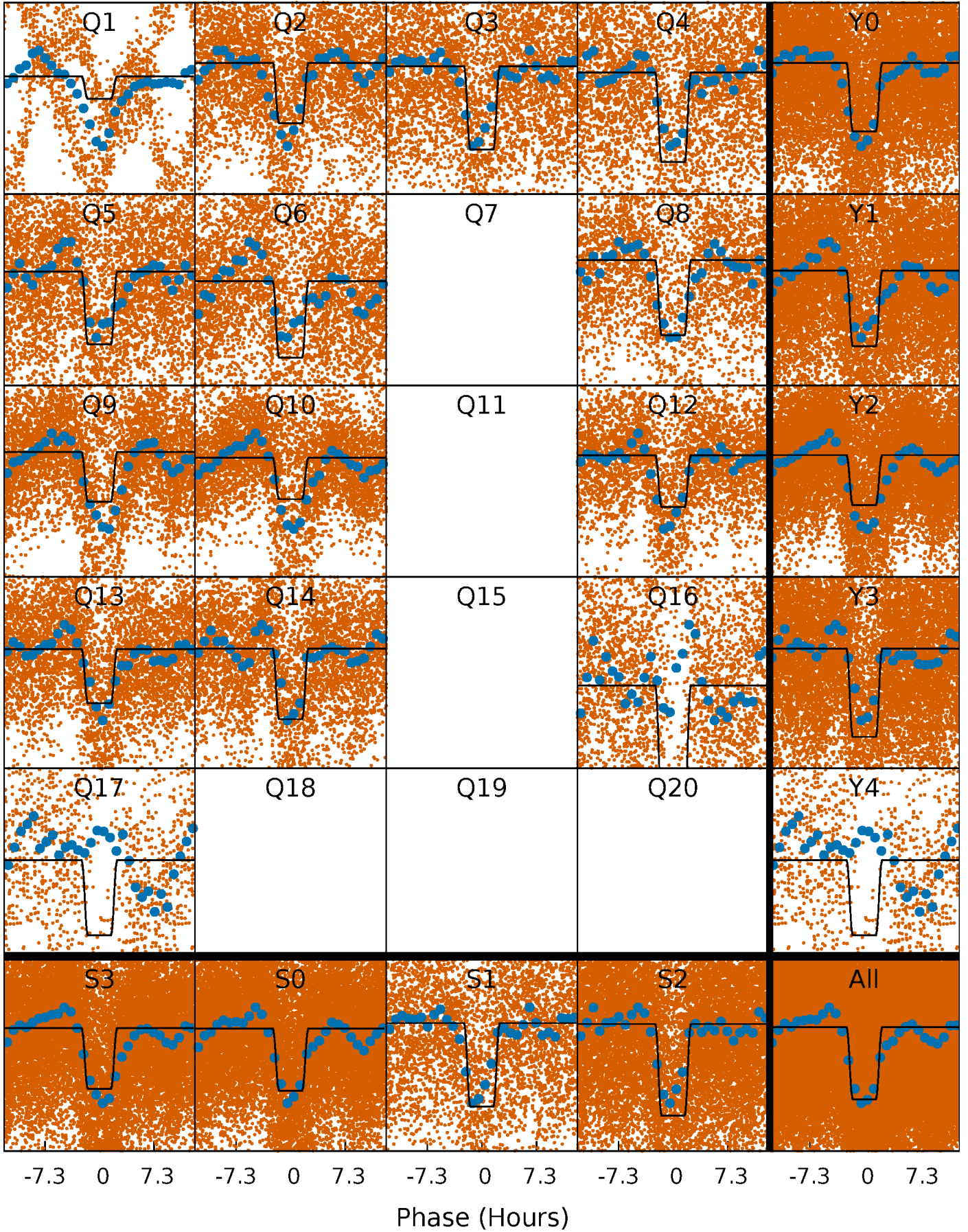
DV Quarter-Phased Transit Curves

TCE 010229903-01 P= 0.939752 Days $T_0=131.538507$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

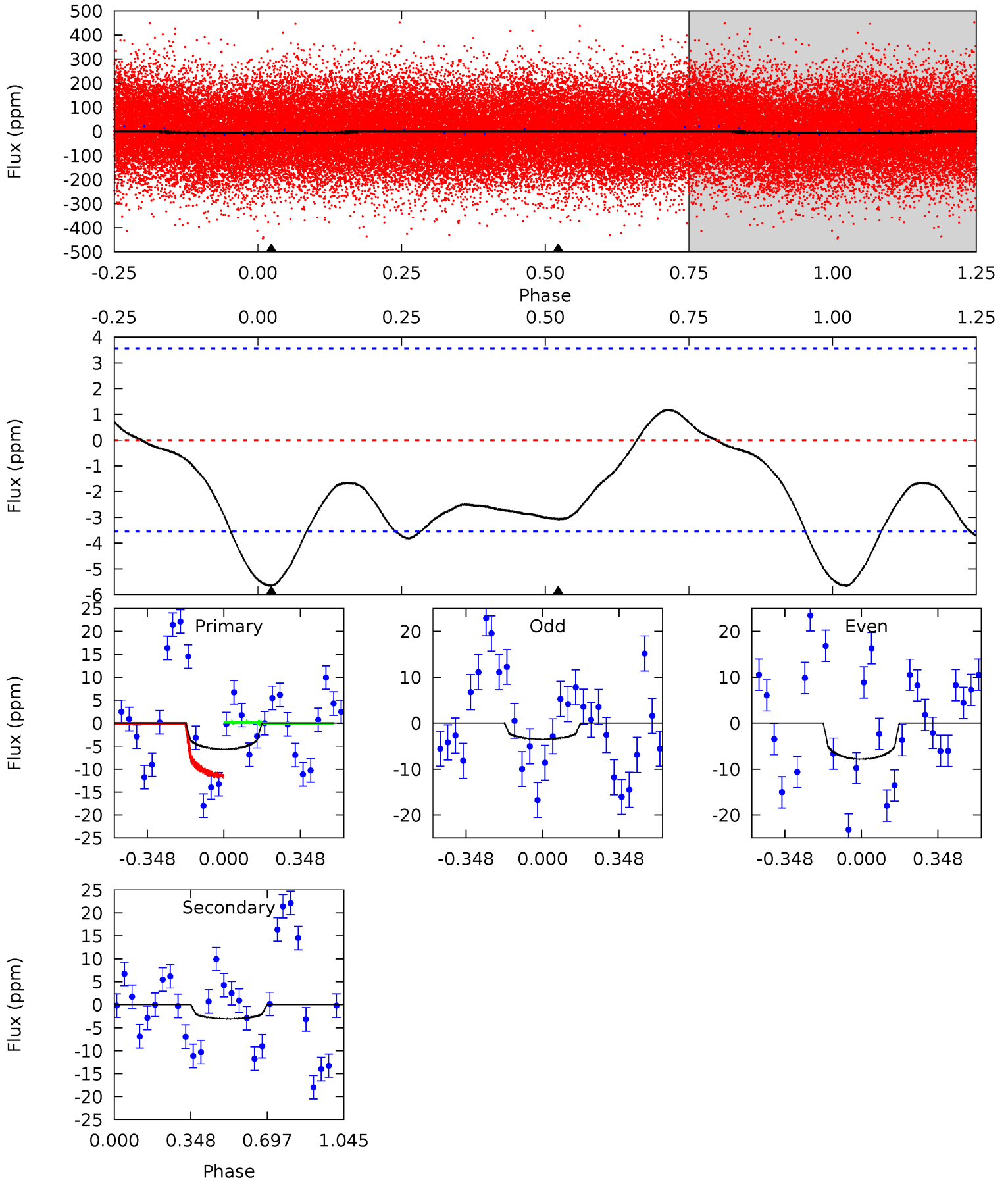
TCE 010229903-01 P= 0.939710 Days $T_0=131.515631$ (BKJD)



DV Model-Shift Uniqueness Test

010229903-01, P = 0.939752 Days, E = 130.598755 Days

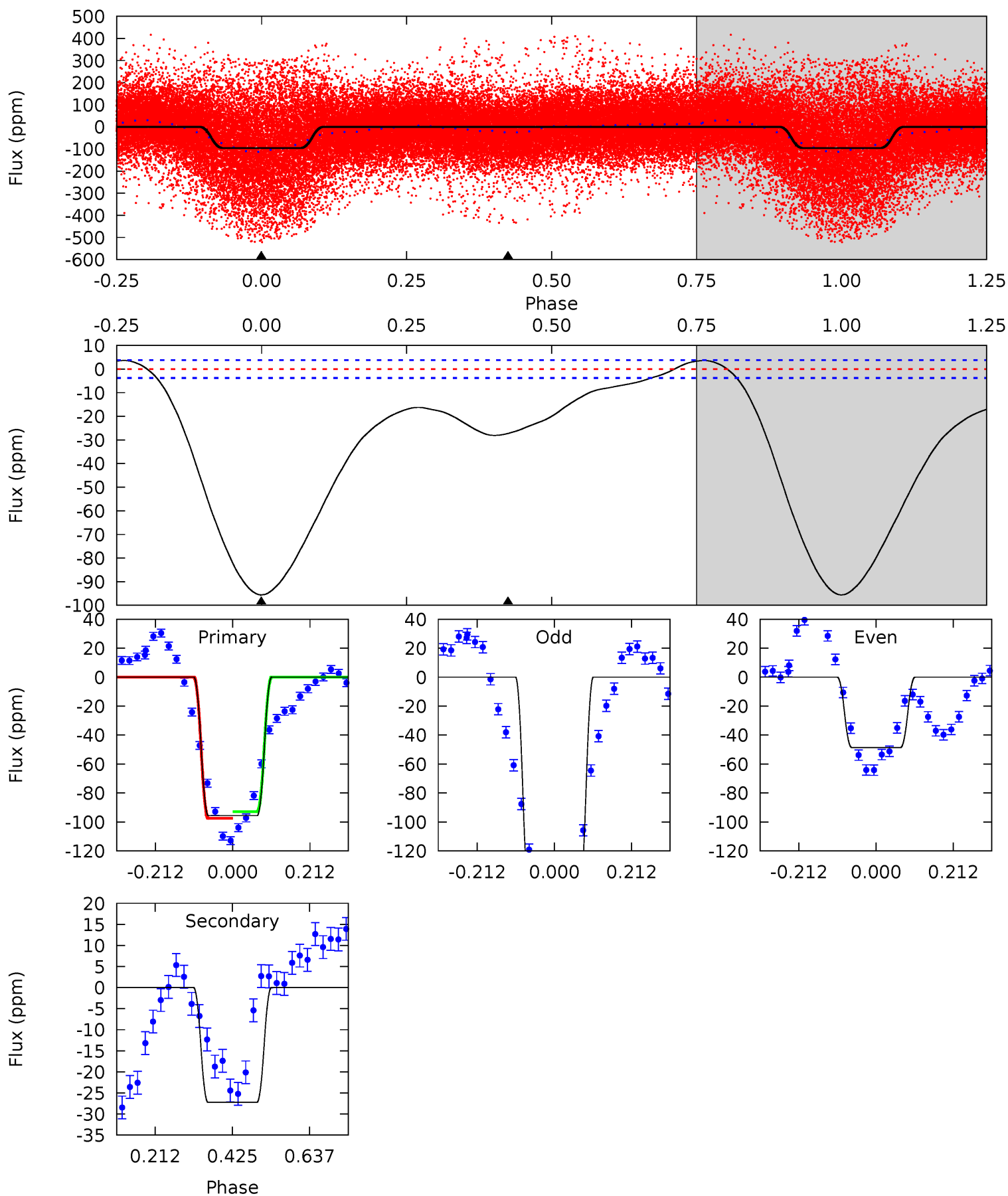
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.85 | 3.72 | 0 | 0 | 4.30 | 0.94 | 2.40 | 6.85 | 6.85 | 3.72 | 3.72 | 2.62 | 1.18 | 0.17 | 6.81 |



Alt Model-Shift Uniqueness Test

010229903-01, P = 0.939710 Days, E = 130.575921 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 111.3 | 31.7 | 0 | 0 | 4.40 | 1.25 | 4.31 | 111.3 | 111.3 | 31.7 | 31.7 | 60.8 | 1.06 | 0.04 | 2.65 |



Stellar Parameters For KIC 010229903

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 6468^{+179}_{-247} | $4.248^{+0.115}_{-0.198}$ | $0.000^{+0.250}_{-0.300}$ | $1.387^{+0.442}_{-0.258}$ | $1.243^{+0.192}_{-0.192}$ | $0.656^{+0.428}_{-0.350}$ |
| | +3%/-4% | +3%/-5% | +inf%/-inf% | +32%/-19% | +15%/-15% | +65%/-53% |
| Source | PHO54 | PHO54 | PHO54 | DSEP | | |

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010229903-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|------------------------|----------------------------|
| DV | -3 ± 1 | $0.45^{+0.38}_{-0.29}$ | 3336^{+265}_{-202} | 4940^{+3682}_{-1223} | $3.273^{+23.182}_{-2.360}$ |
| Alt. | -27 ± 1 | $1.58^{+0.47}_{-0.43}$ | 3330^{+234}_{-191} | 4610^{+658}_{-459} | $2.448^{+1.987}_{-0.979}$ |

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

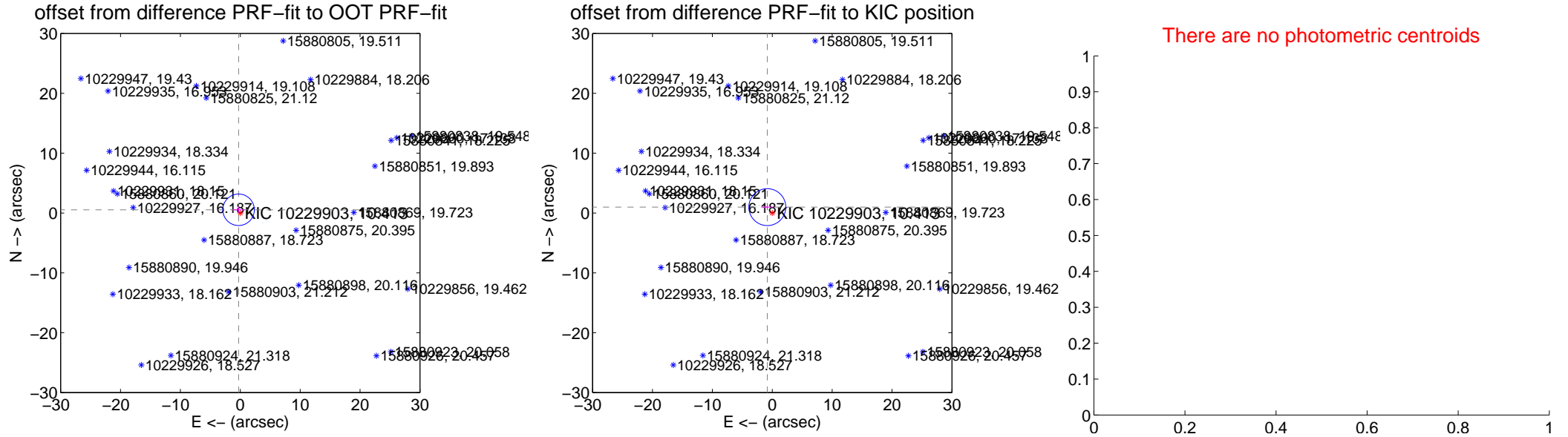
DV Centroid Data

Supplemental centroid analysis for 010229903-01. **Kepler magnitude: 10.41.** Transit SNR 2.63

There are 7 quarters with good PRF difference image offsets

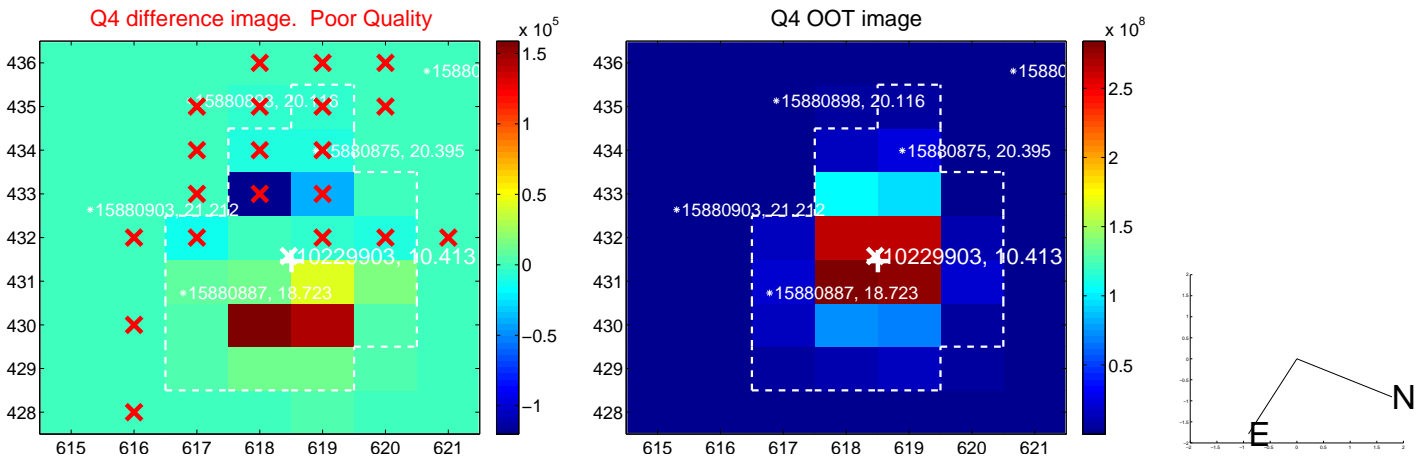
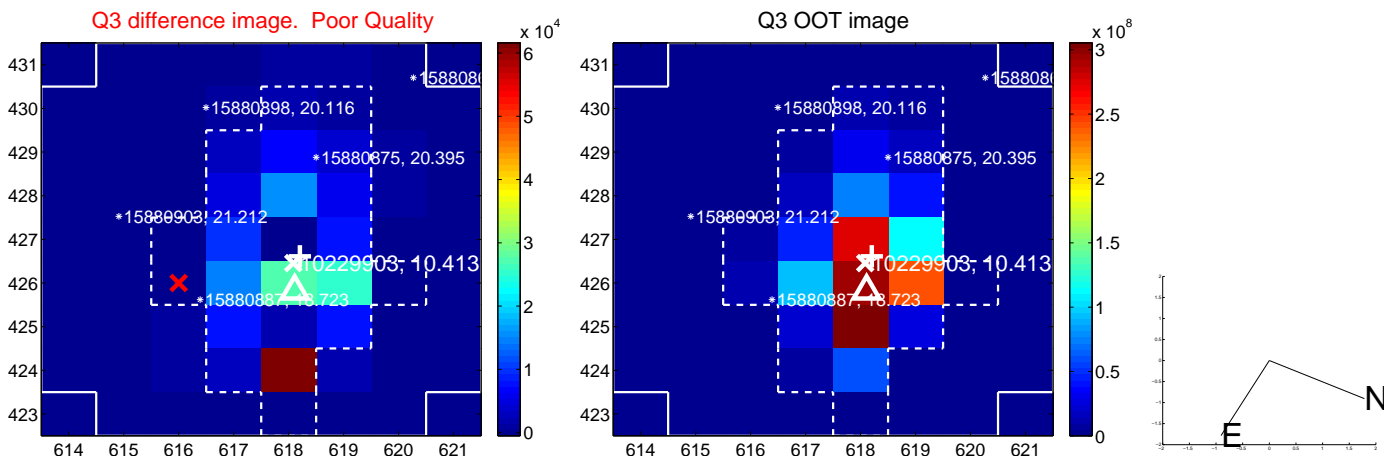
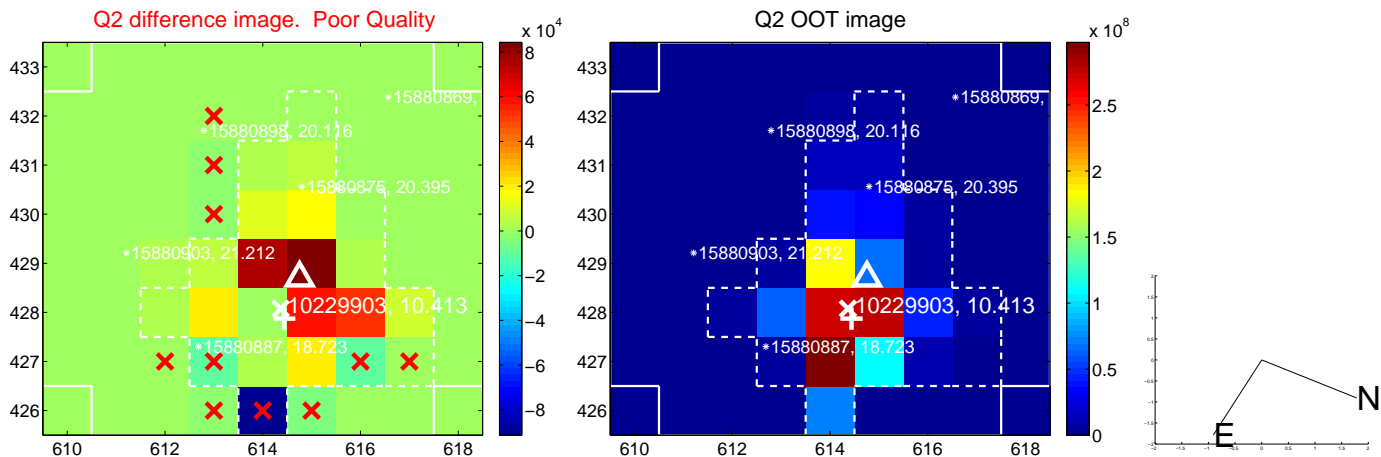
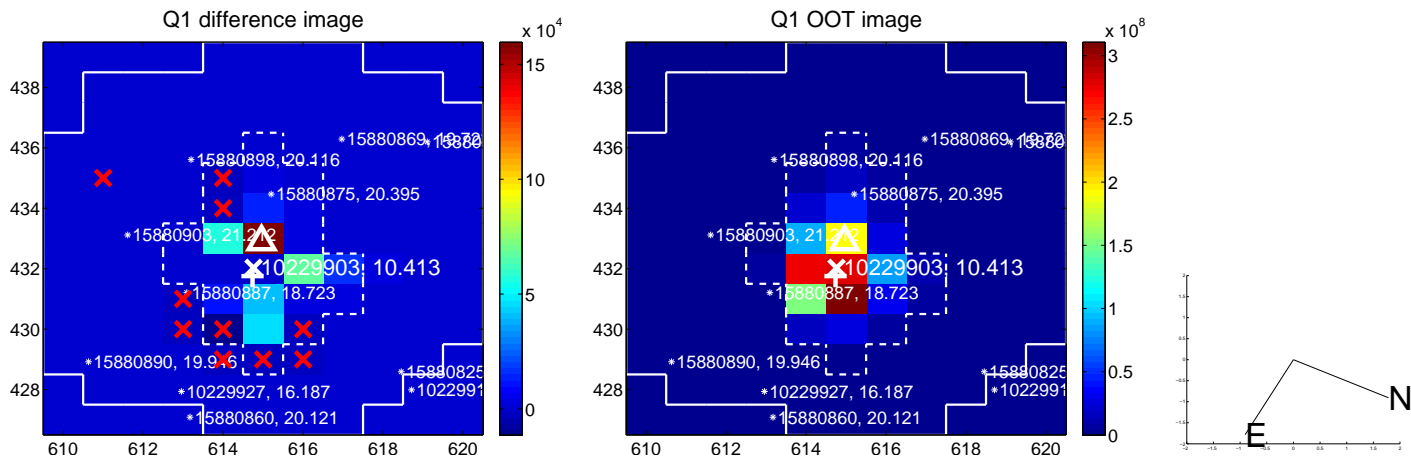
The direct PRF centroid is offset from the target star catalog position by about 0.93 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 0.609 ± 0.877 | 0.70 | 0.284 ± 0.988 | 0.539 ± 0.489 |
| PRF-fit source offset from KIC position | 1.283 ± 1.027 | 1.25 | 0.825 ± 1.027 | 0.982 ± 0.499 |
| photometric centroid source offset | — | — | — | — |

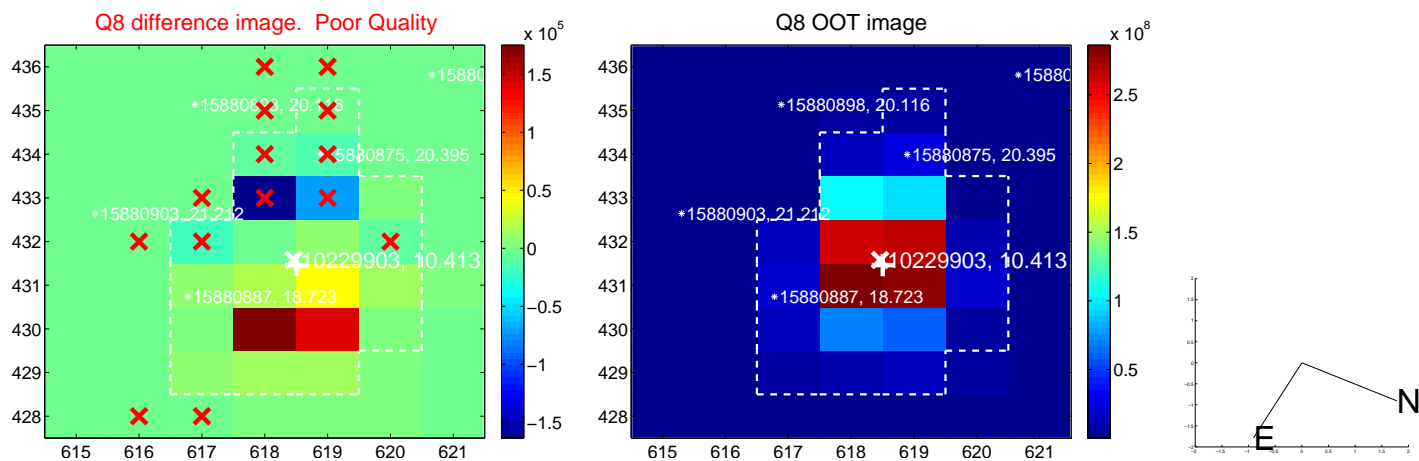
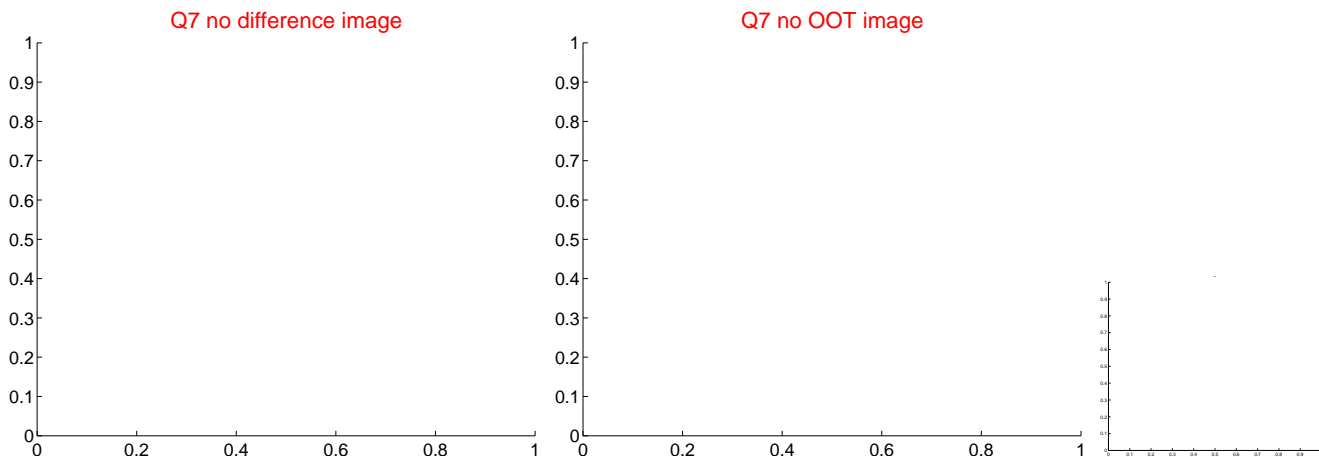
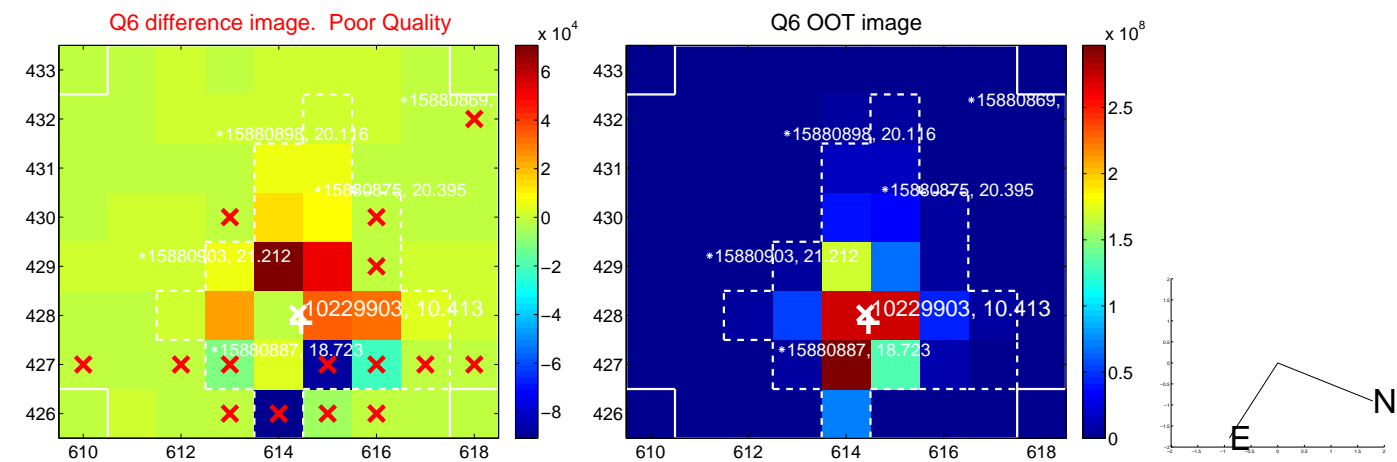
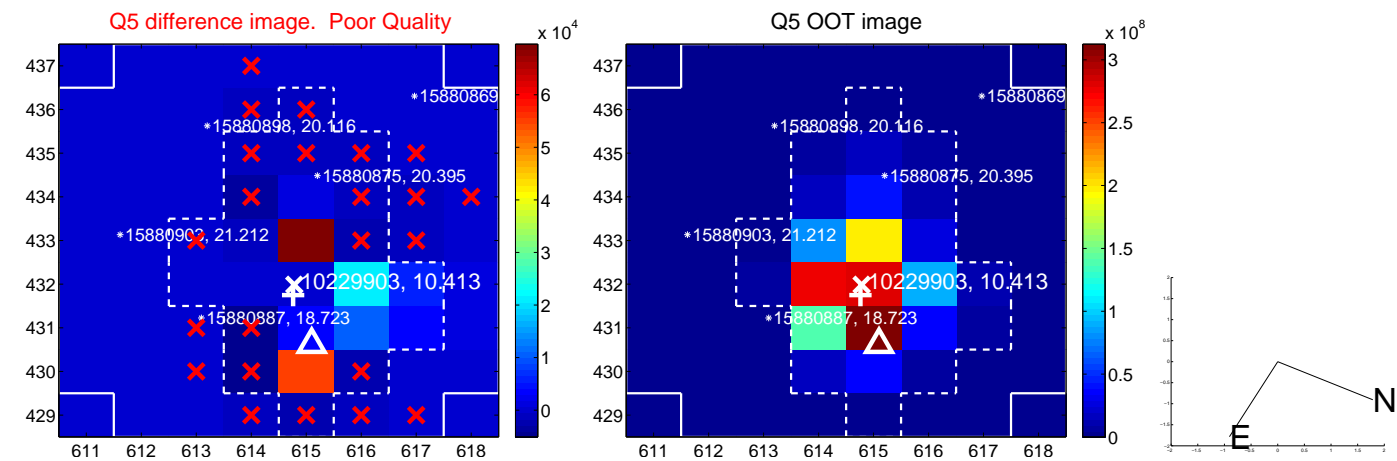


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

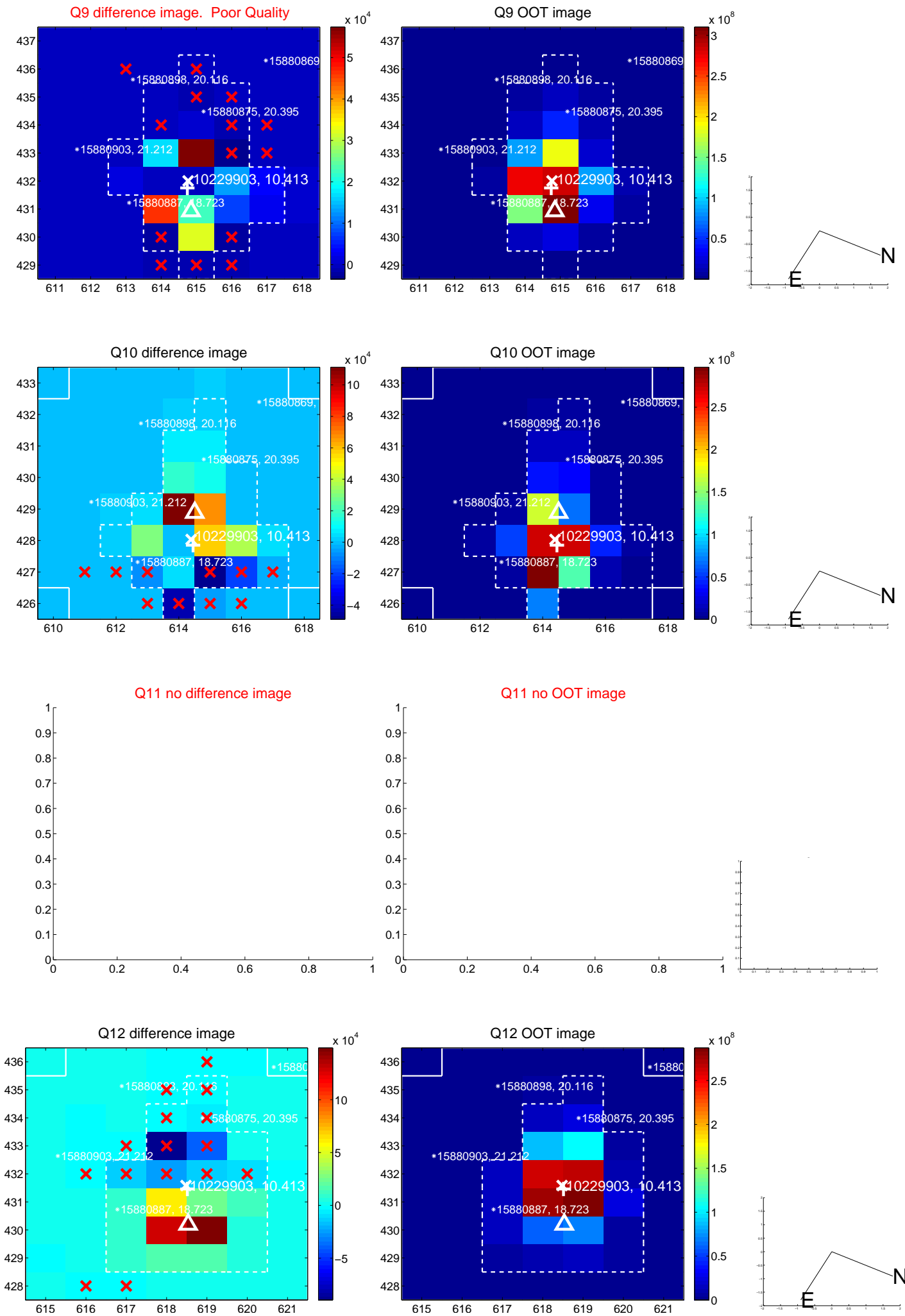
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



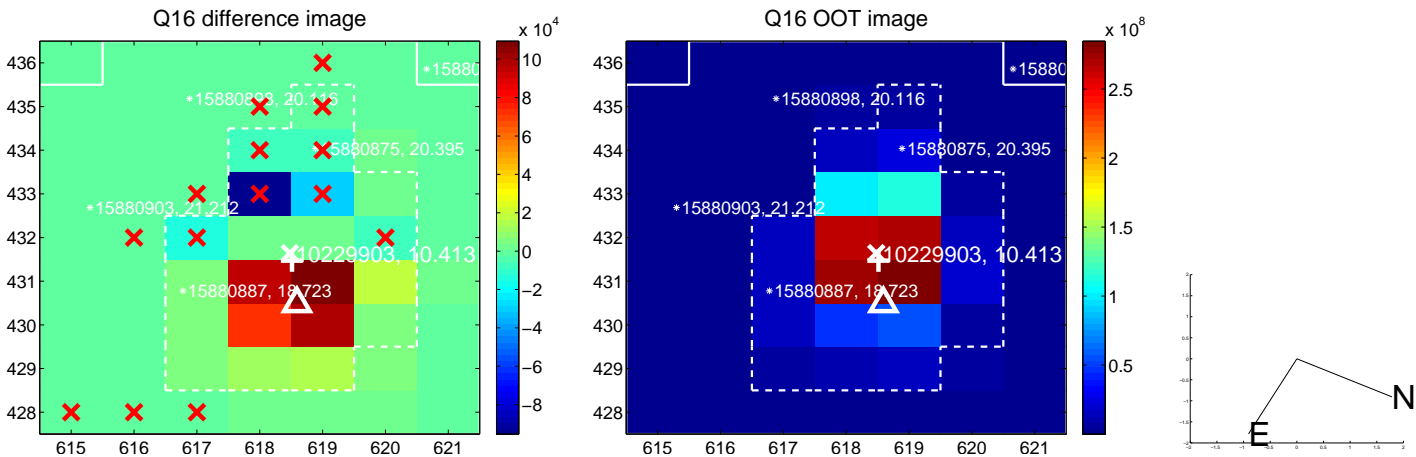
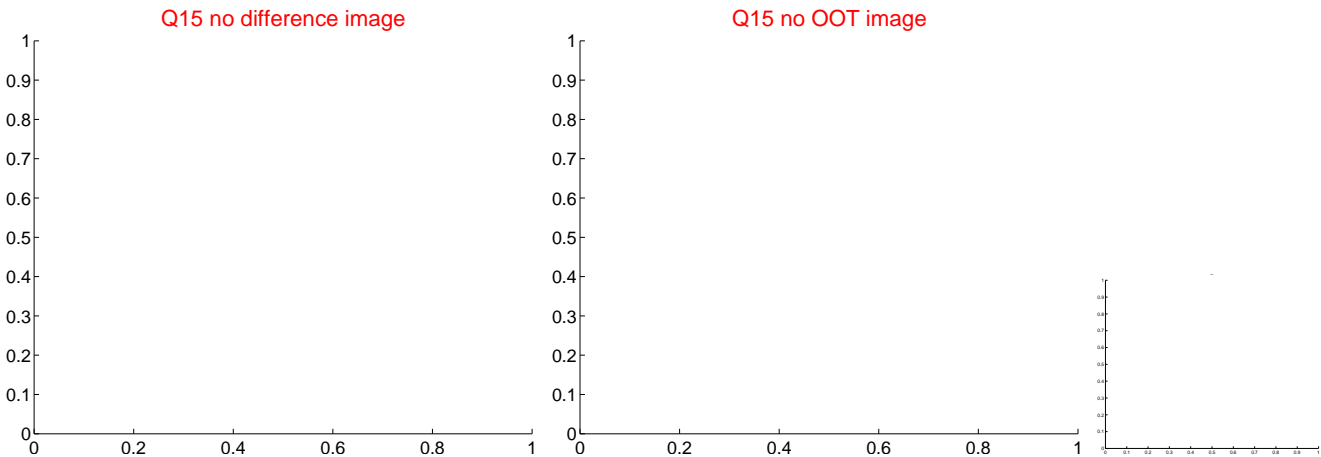
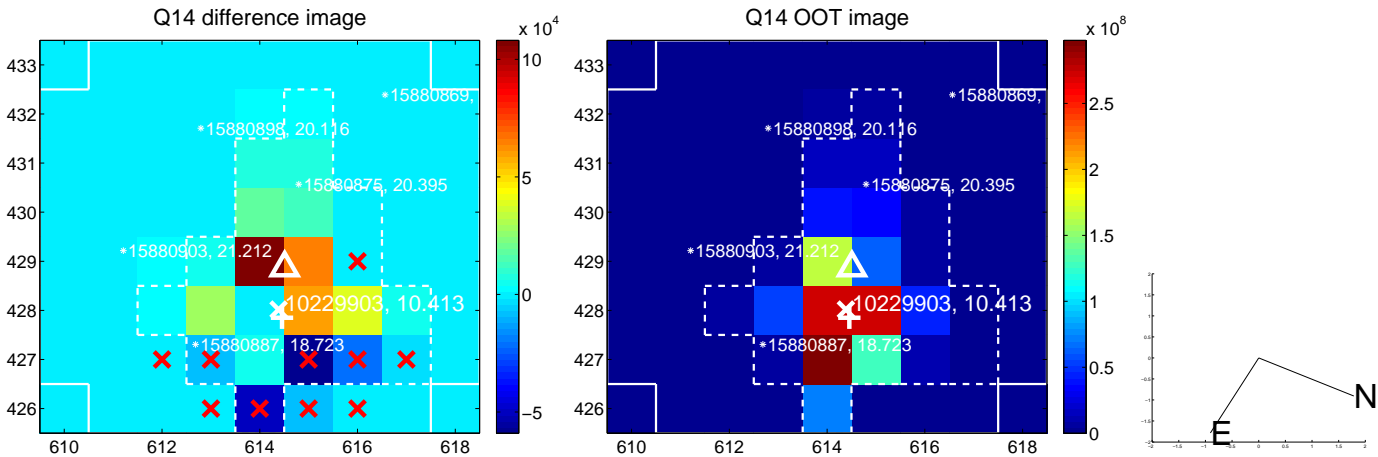
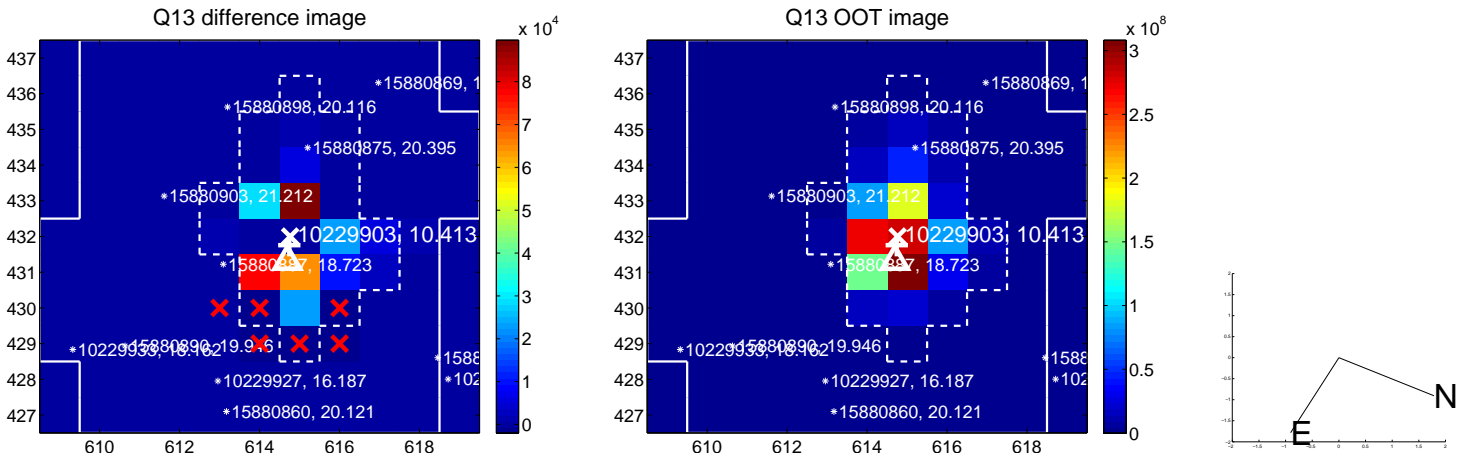
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



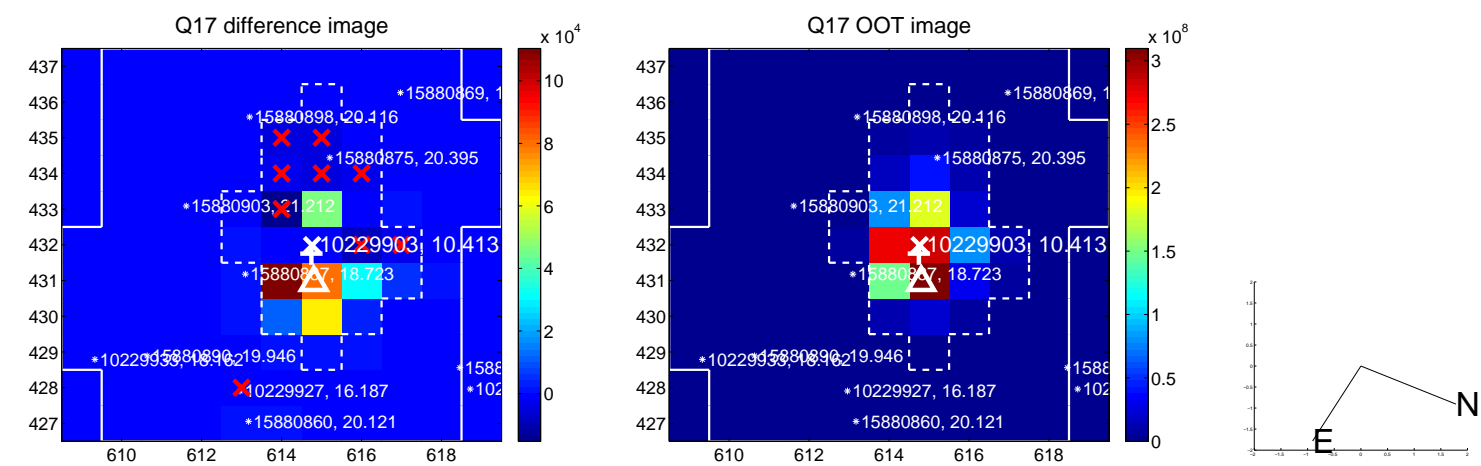
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination

