

KIC 009072011

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 009072011-01 | OBS | No | 0.922850 | 131.503248 | 208.9 | 11.074 | 11.4 | 14.4 | 2.18 | 6718 | 5.21 | 18890.87 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 009072011-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED |

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

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

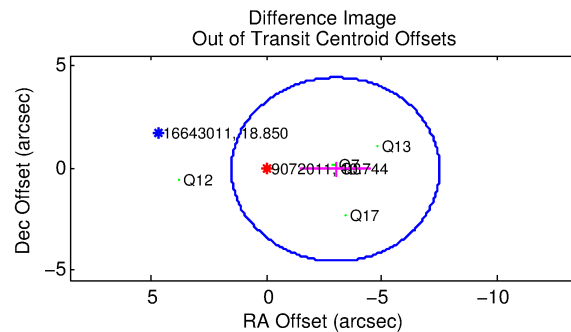
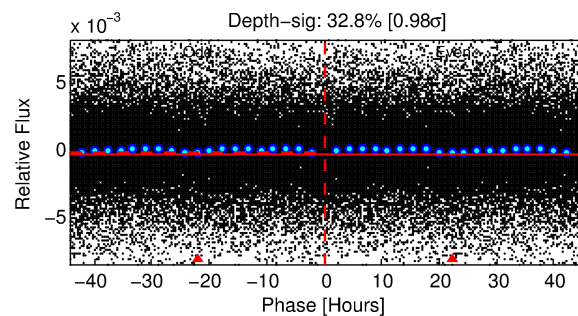
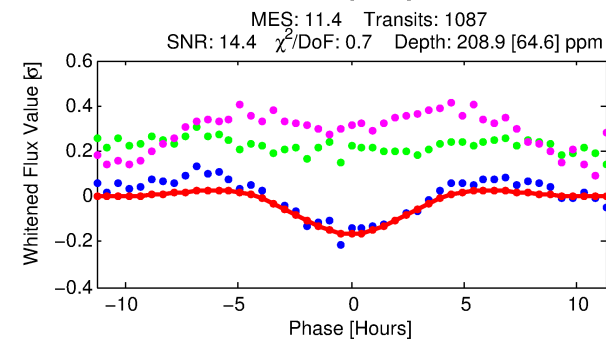
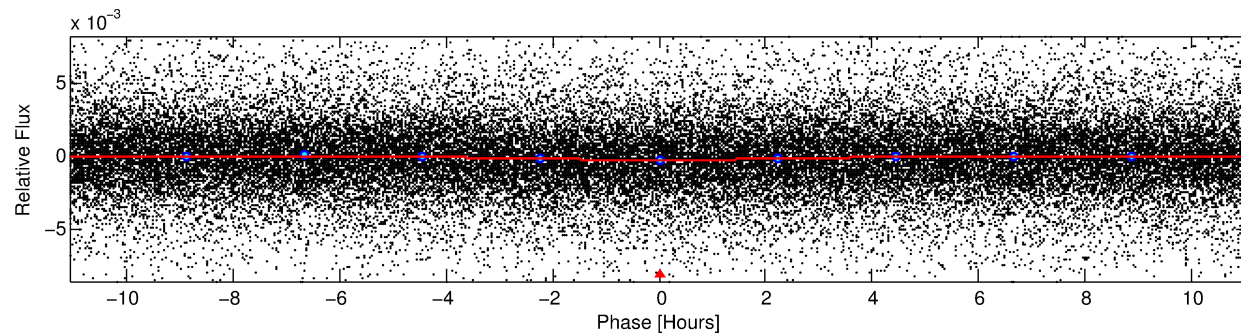
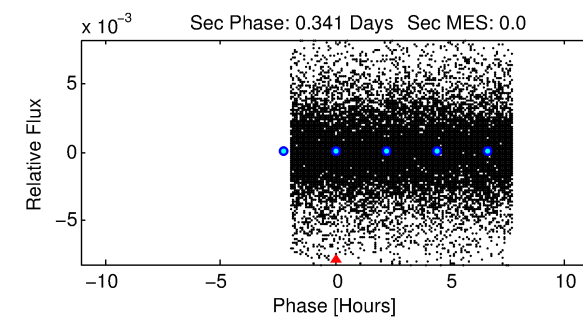
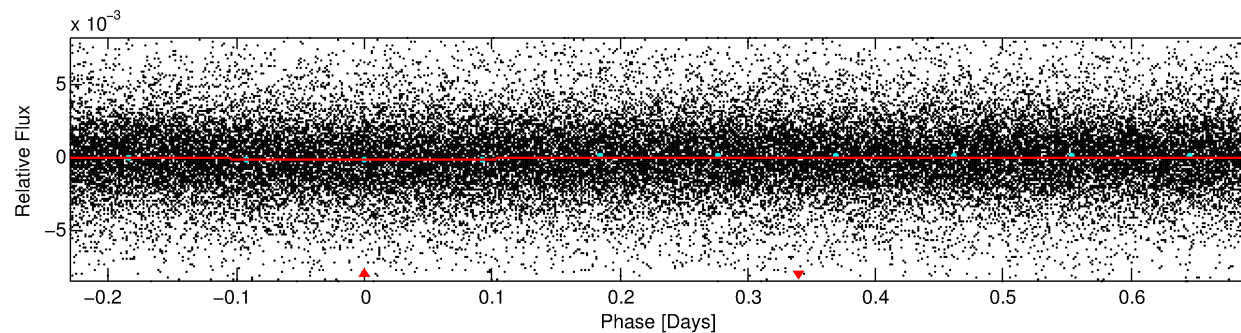
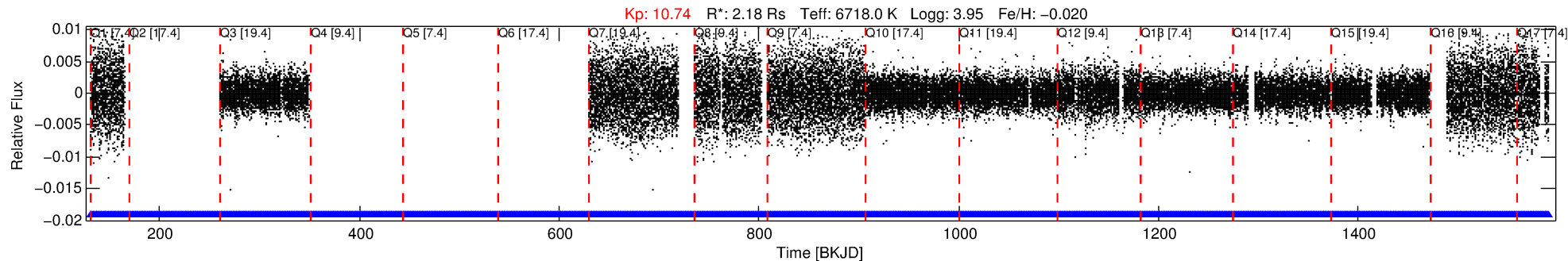
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009072011-01

No Significant Match Found

DV One-Page Summary

KIC: 9072011 Candidate: 1 of 1 Period: 0.923 d



DV Fit Results:

Period = 0.92285 [0.00002] d
Epoch = 131.5032 [0.0129] BKJD
Rp/R* = 0.0219 [0.0400]
a/R* = 1.02 [0.04]
b = 0.99 [0.07]
Seff = 18890.87 [11169.95]
Teff = 2989 [442] K
Rp = 5.21 [9.70] Re
a = 0.0214 [0.0077] AU
Ag = N/A
Teffp = N/A

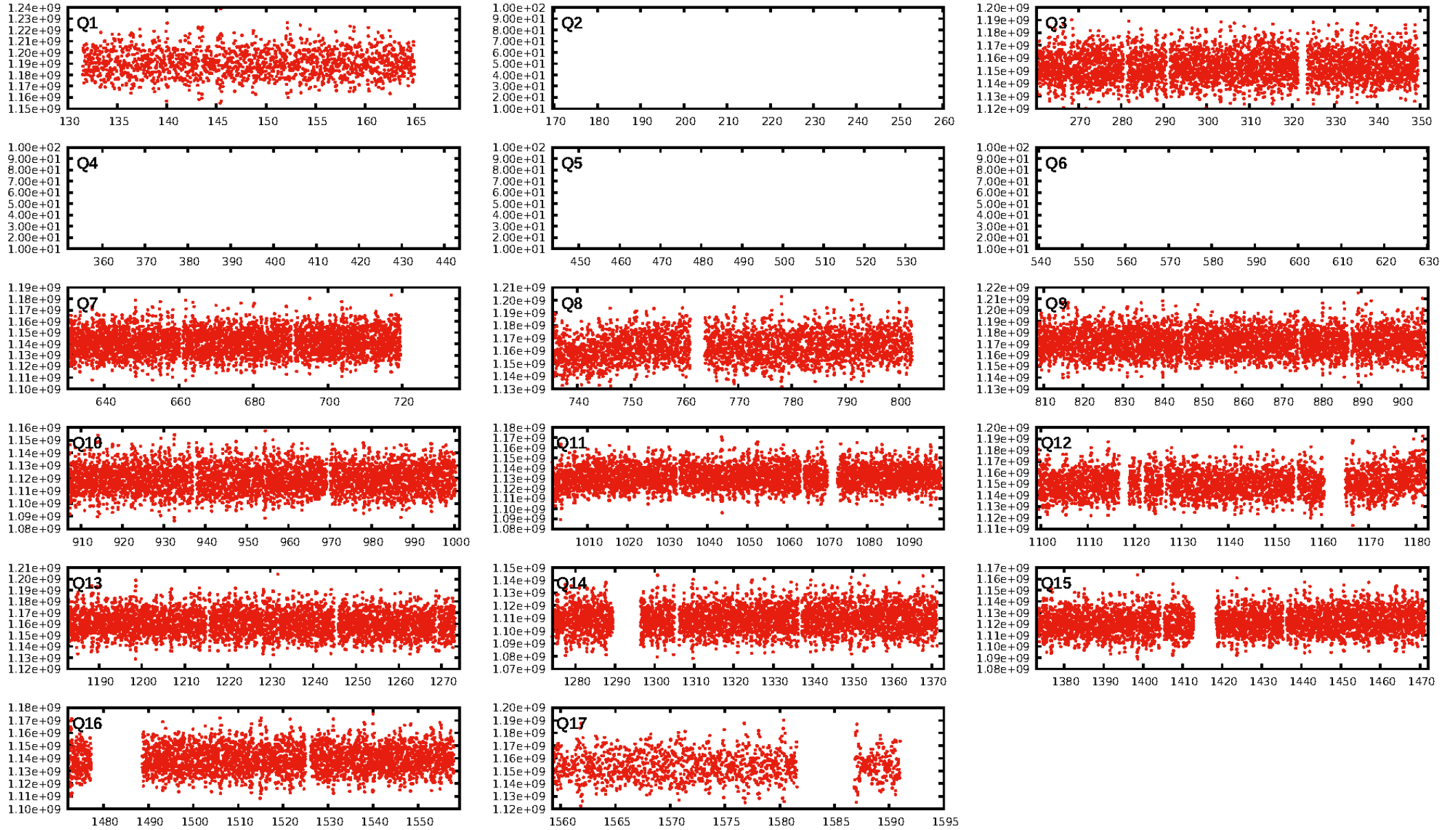
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-ftg: 1.00 [1020/1020]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 2.993 arcsec [2.00σ]
KicOffset-rm: 3.056 arcsec [3.52σ]
OotOffset-st: 0.2/1/2 [5]
KicOffset-st: 0.2/1/2 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 1.00 [13/13]

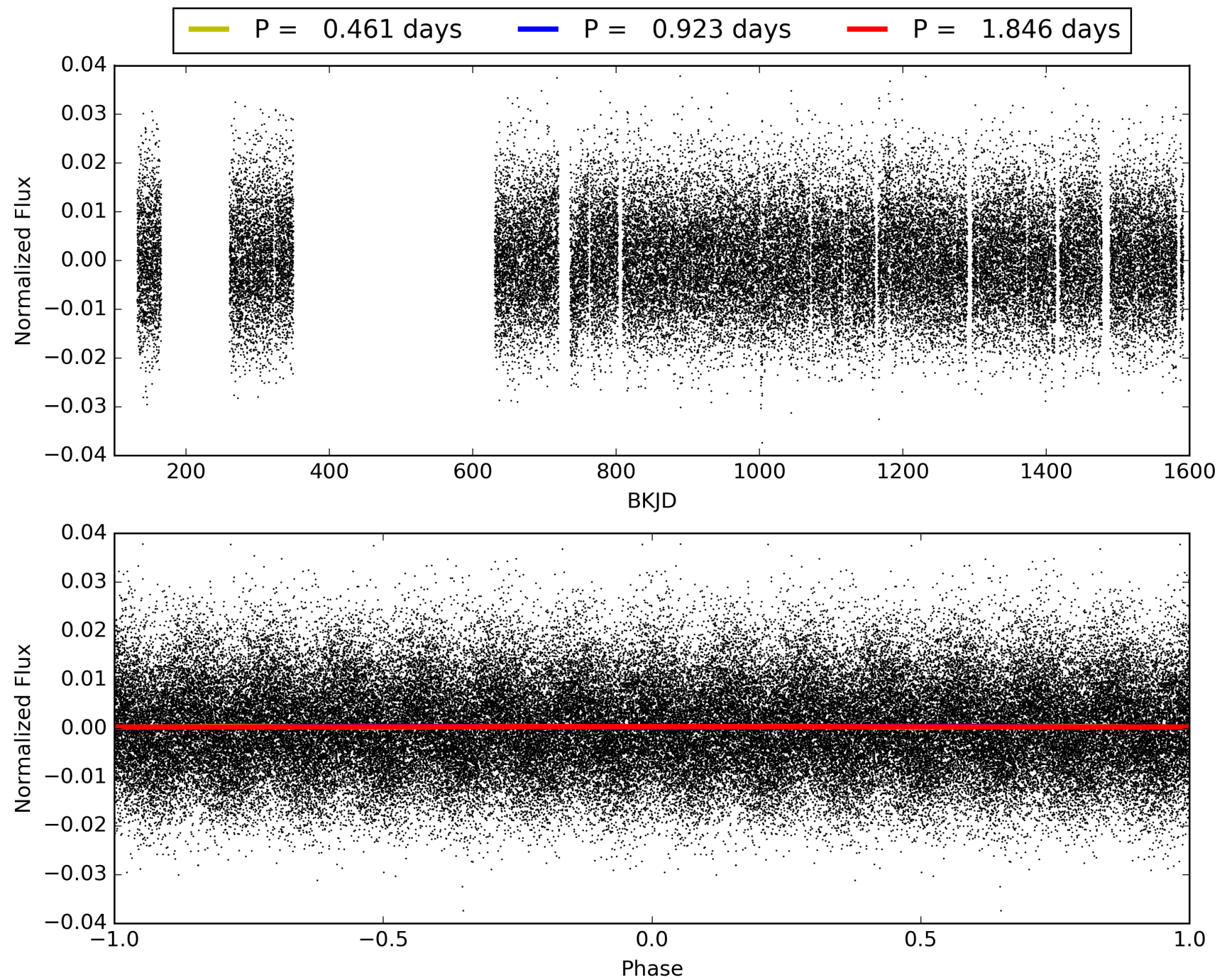
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:06:52 Z

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

TCE 009072011-01, PDC Light Curves

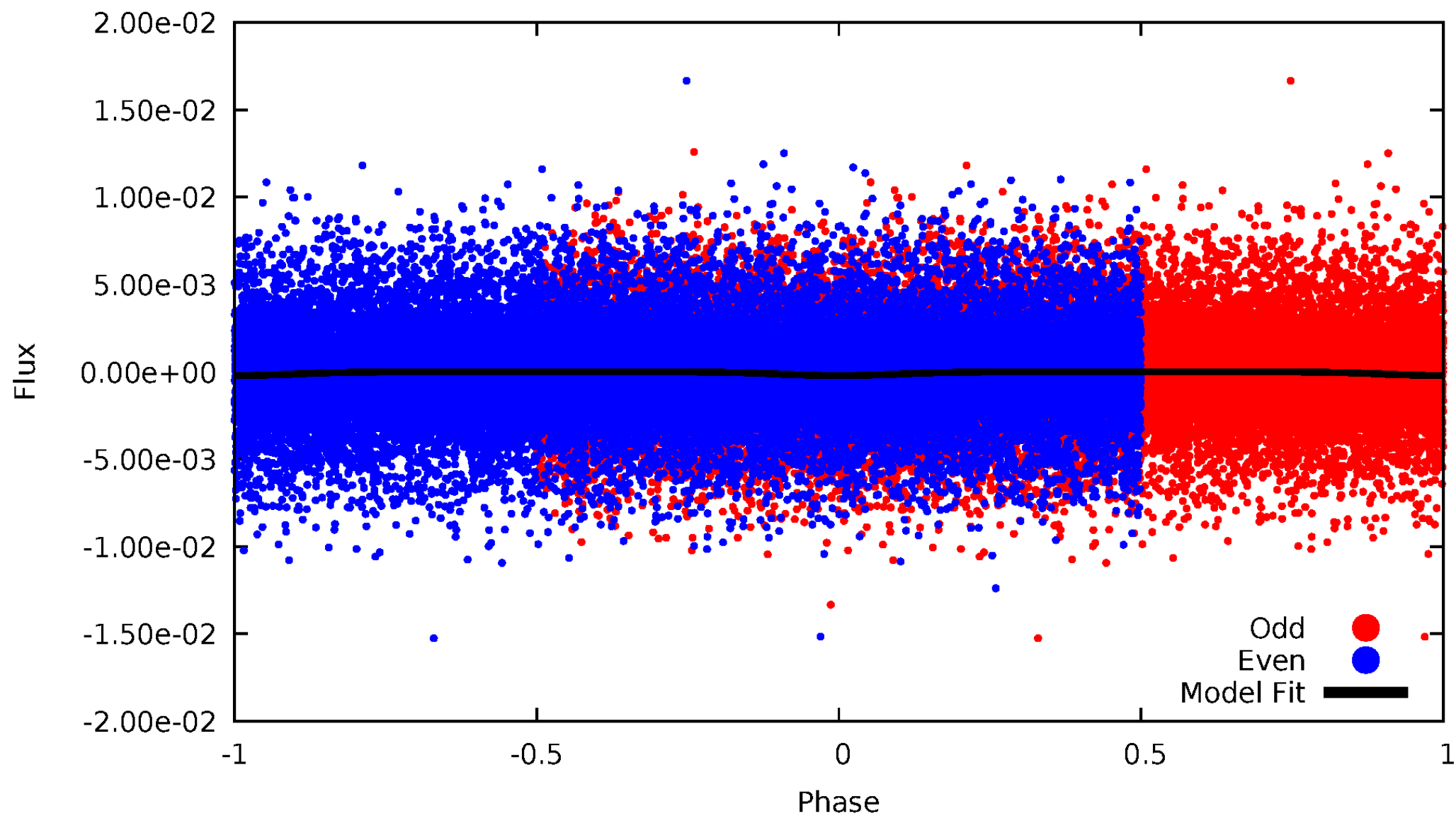


TCE 009072011-01



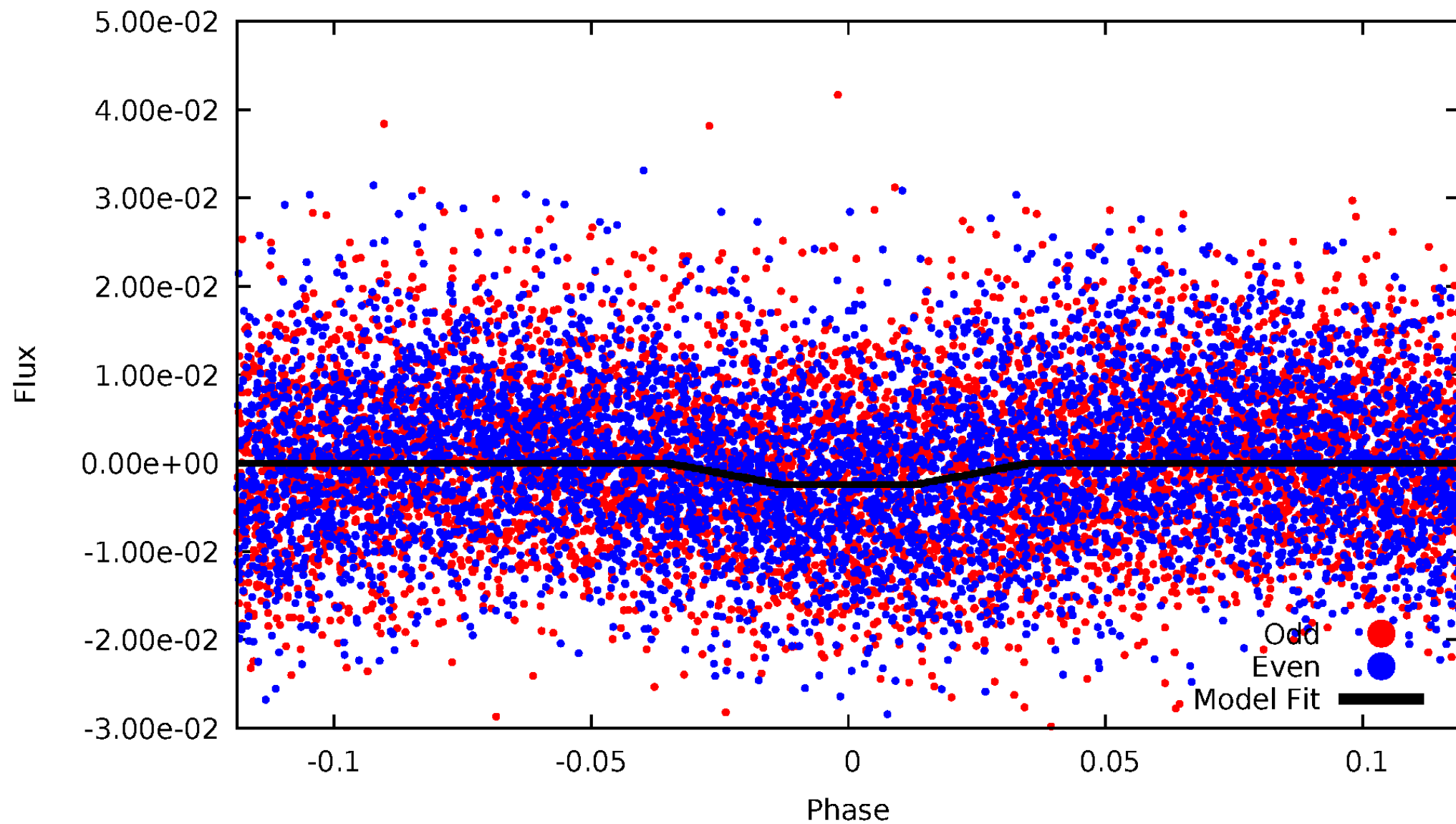
DV Odd/Even

TCE 009072011-01



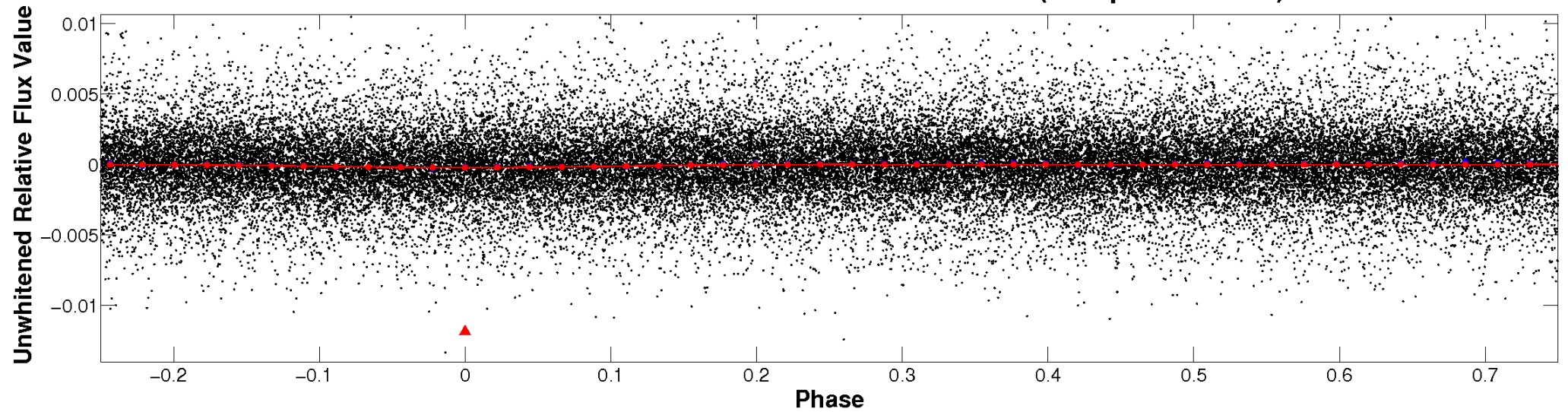
ALT Odd/Even

TCE 009072011-01

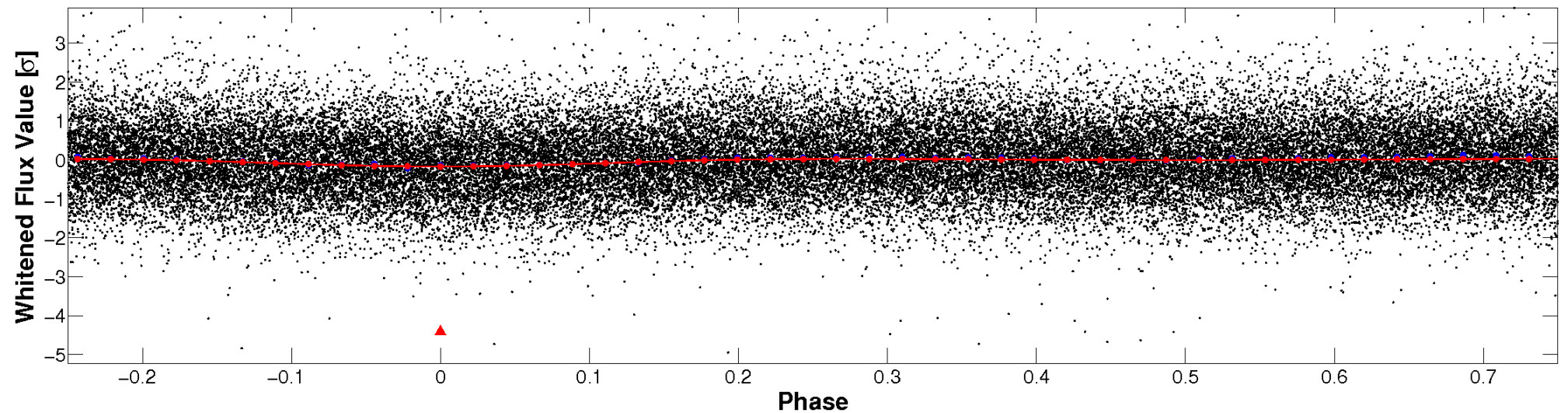


Non-Whitened Vs. Whitened Light Curve

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

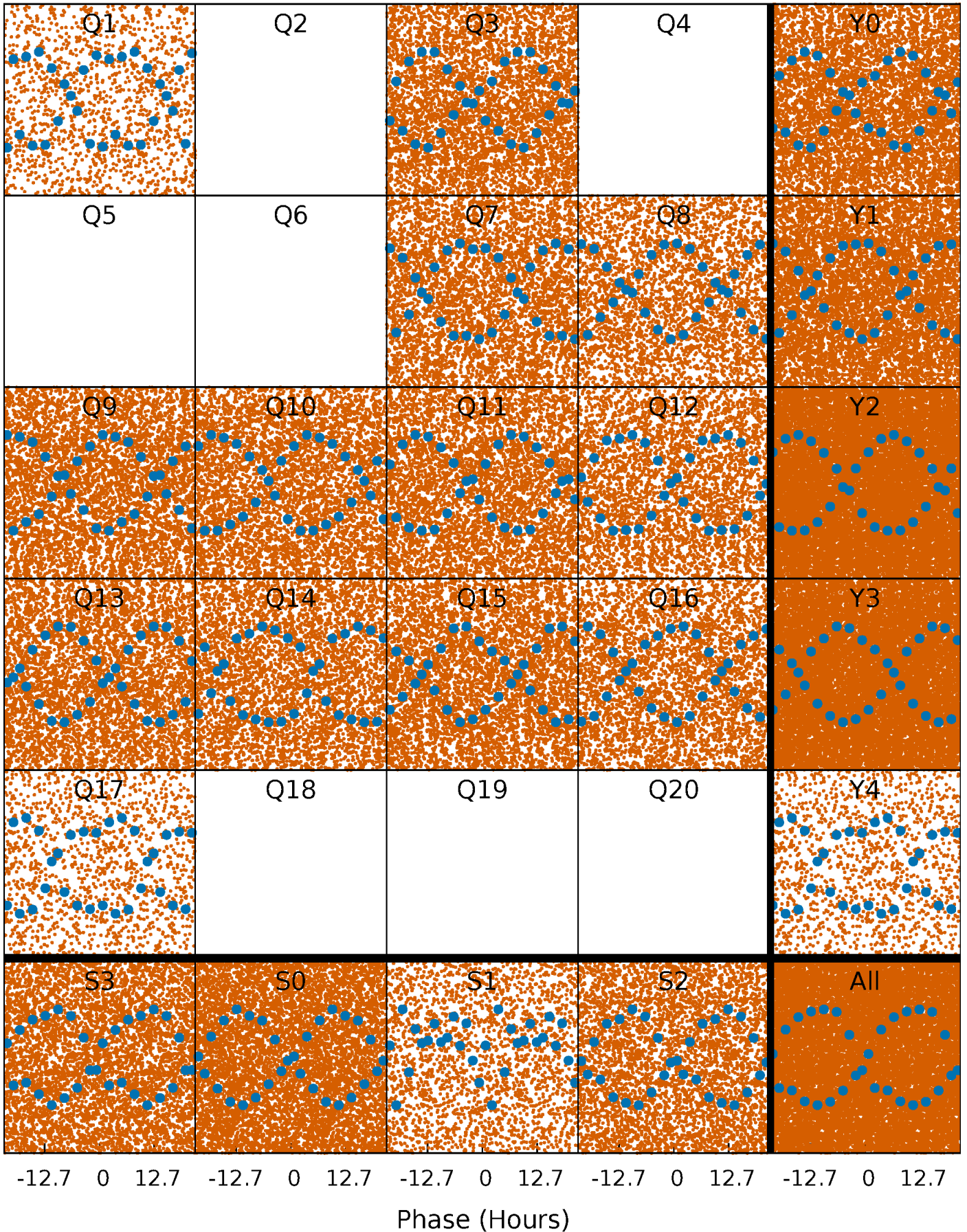


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



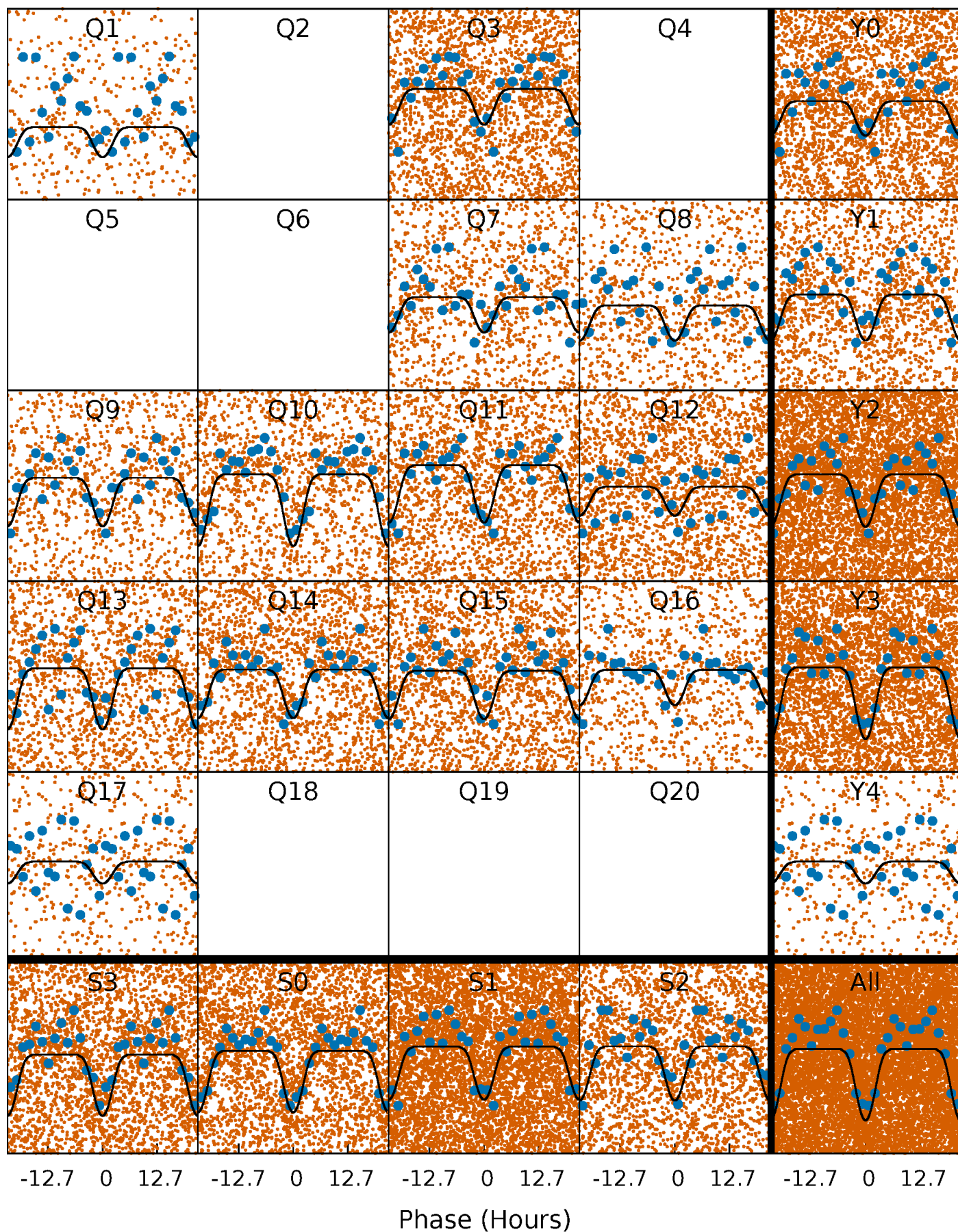
PDC Quarter-Phased Transit Curves

TCE 009072011-01 P= 0.922850 Days $T_0=131.503248$ (BKJD)



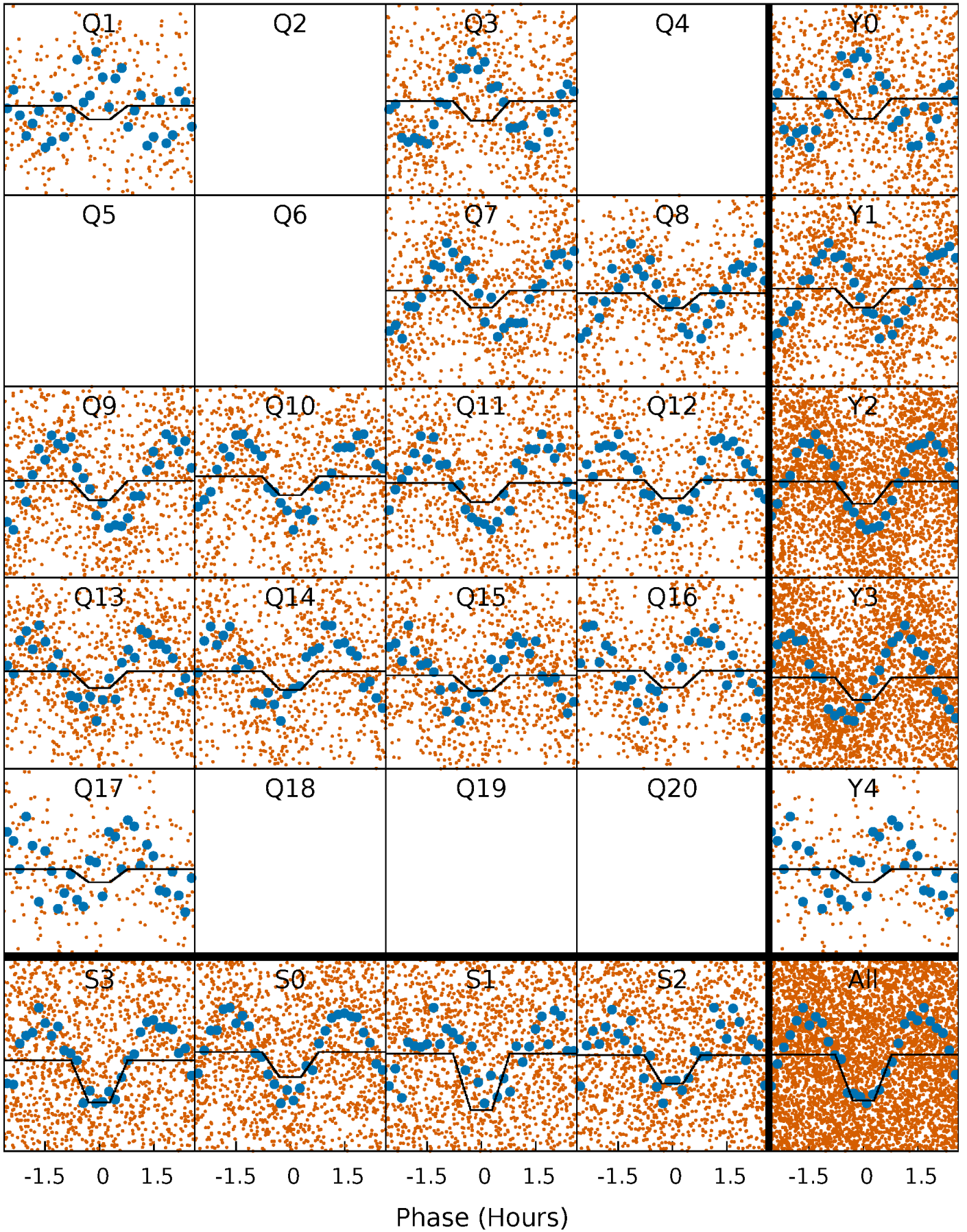
DV Quarter-Phased Transit Curves

TCE 009072011-01 P= 0.922850 Days $T_0=131.503248$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

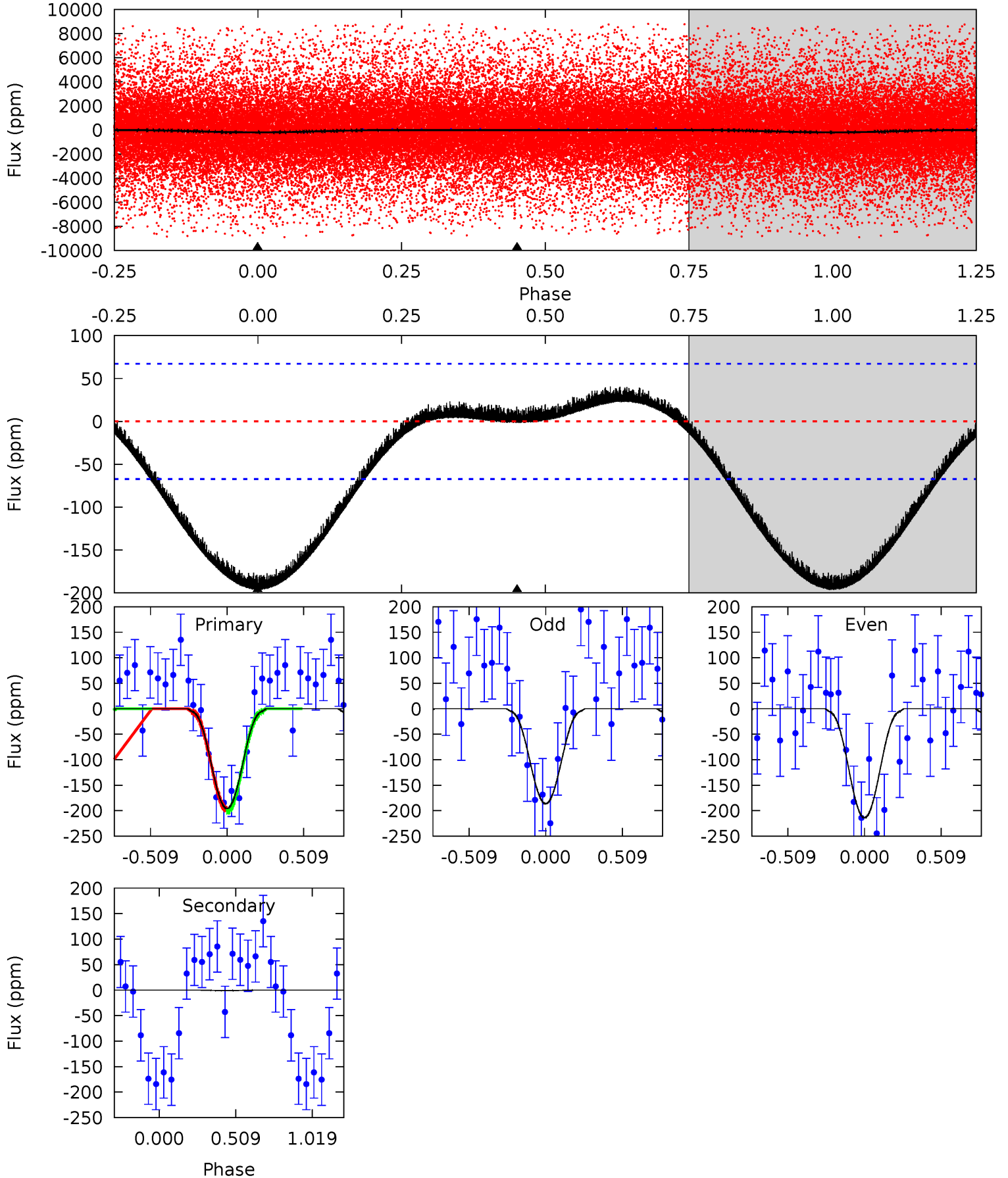
TCE 009072011-01 P= 0.922836 Days $T_0=131.587802$ (BKJD)



DV Model-Shift Uniqueness Test

009072011-01, P = 0.922850 Days, E = 131.503248 Days

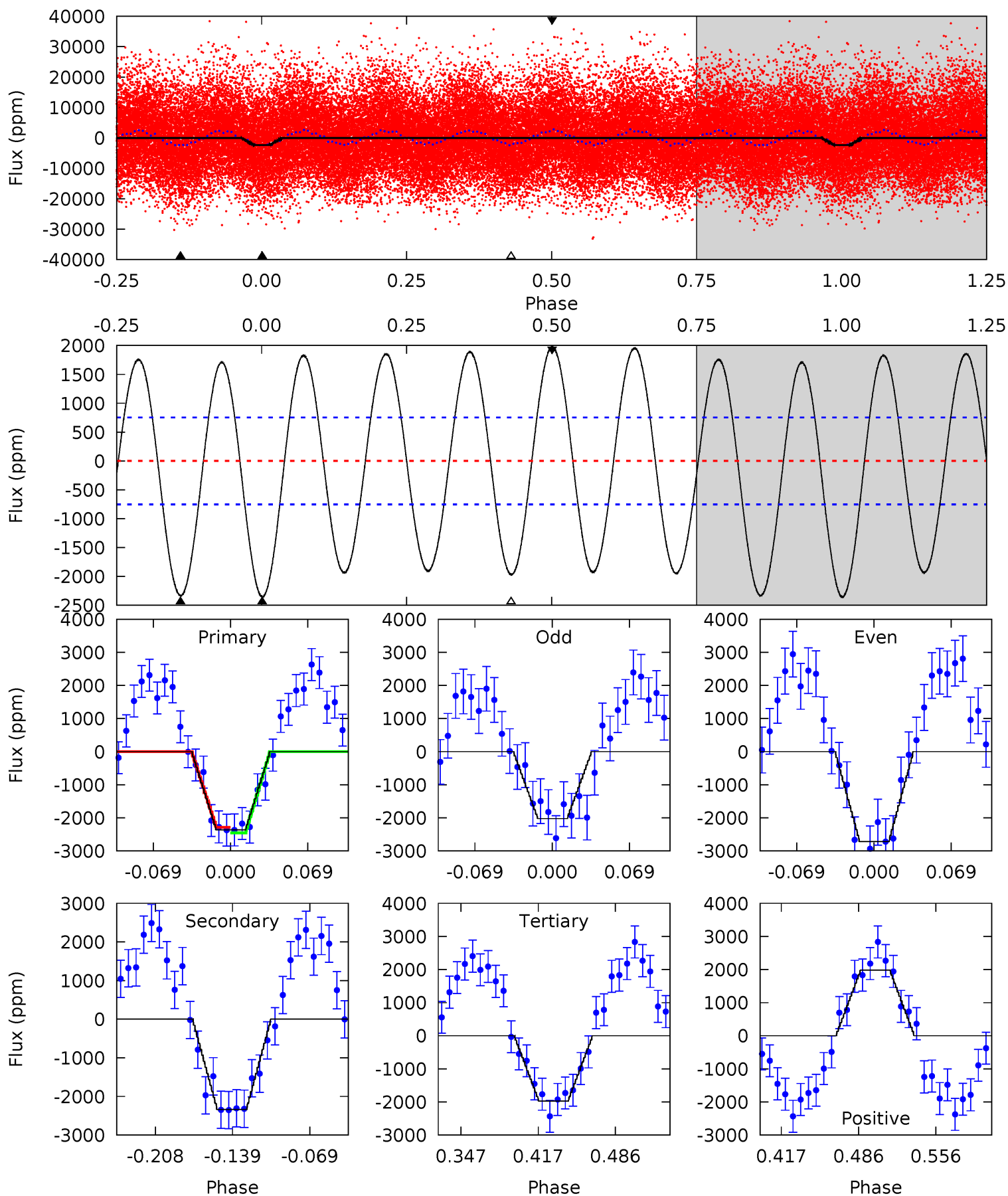
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 12.3 | 0.05 | 0 | 0 | 4.21 | 0.66 | 1.05 | 12.3 | 12.3 | 0.05 | 0.05 | 0.89 | 2.16 | 0.17 | 0.13 |



Alt Model-Shift Uniqueness Test

009072011-01, P = 0.922836 Days, E = 130.664966 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 14.6 | 14.4 | 12.2 | 12.2 | 4.64 | 1.82 | 8.38 | 2.43 | 2.37 | 2.27 | 2.21 | 2.14 | 1.02 | 0.46 | 0.53 |



Stellar Parameters For KIC 009072011

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6718^{+189}_{-283} | $3.948^{+0.329}_{-0.164}$ | $-0.020^{+0.250}_{-0.300}$ | $2.177^{+0.560}_{-0.840}$ | $1.531^{+0.207}_{-0.336}$ | $0.209^{+0.458}_{-0.098}$ |
| | +3%/-4% | +8%/-4% | +1250%/-1500% | +26%/-39% | +14%/-22% | +219%/-47% |
| 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 009072011-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-----------------|-------------------------|----------------------|------------------------|----------------------------|
| DV | -1 ± 16 | $8.42^{+7.64}_{-5.52}$ | 4116^{+340}_{-432} | -3752^{+475}_{-326} | $0.001^{+0.106}_{-0.088}$ |
| Alt. | -2339 ± 162 | $12.31^{+9.59}_{-7.65}$ | 4084^{+343}_{-426} | 6106^{+5134}_{-1514} | $3.888^{+23.879}_{-2.639}$ |

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 $A_{obs} \gg 1.0$

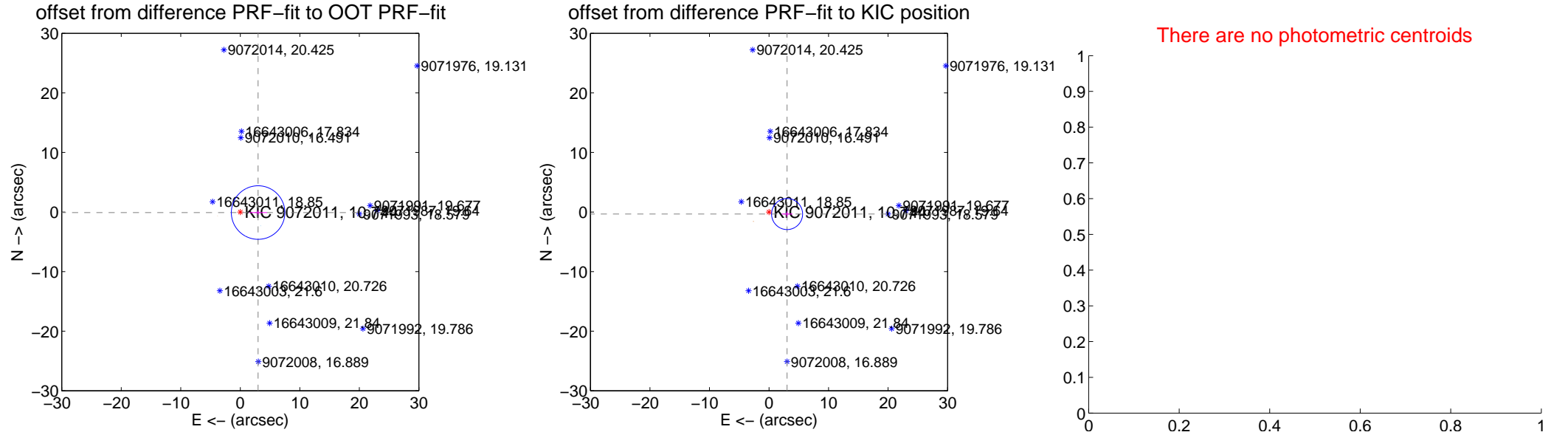
DV Centroid Data

Supplemental centroid analysis for 009072011-01. **Kepler magnitude: 10.74.** Transit SNR 14.38

There are 3 quarters with good PRF difference image offsets

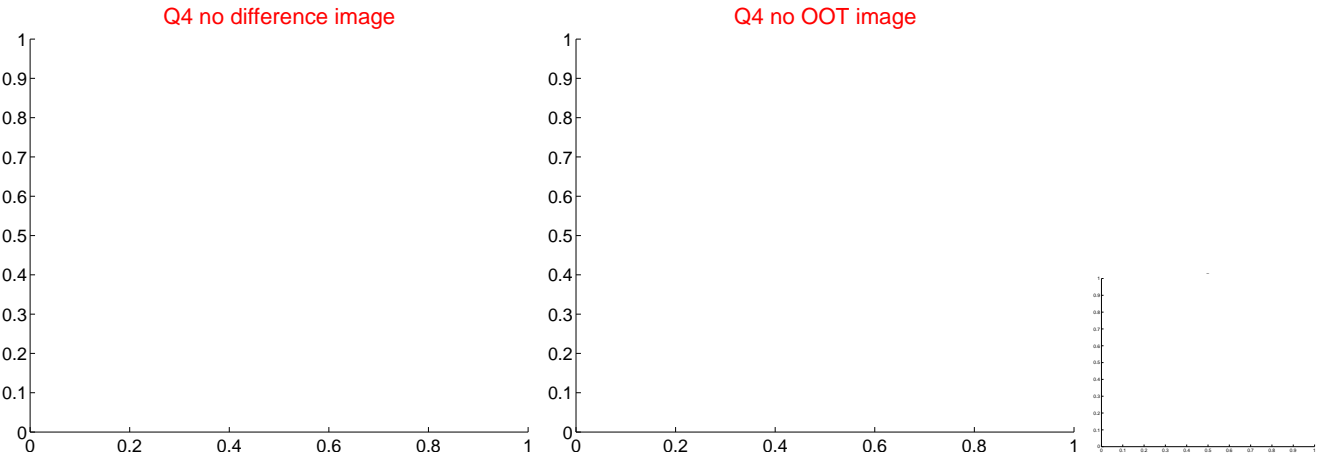
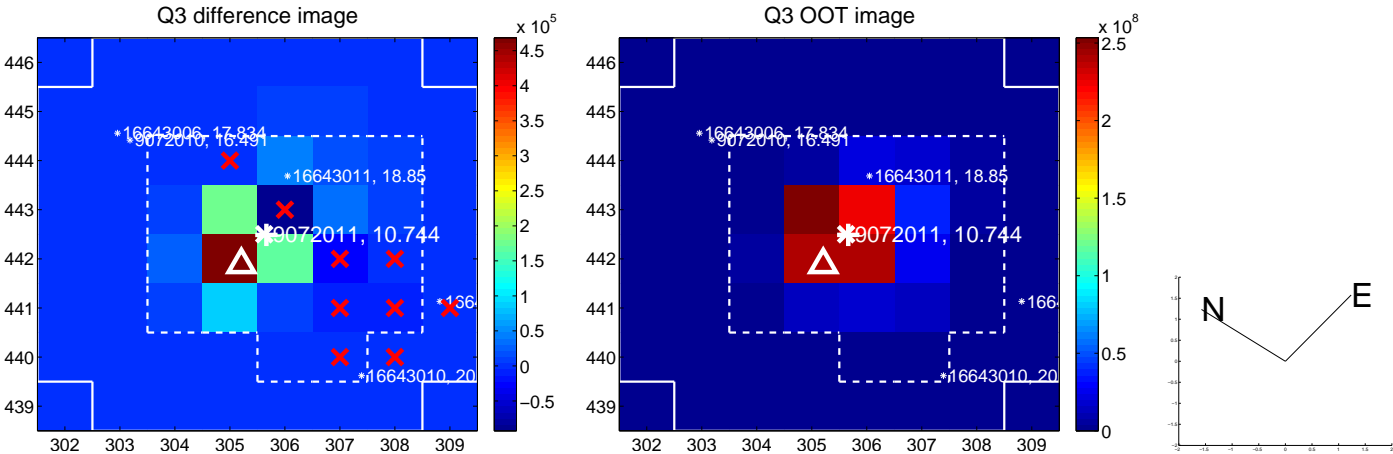
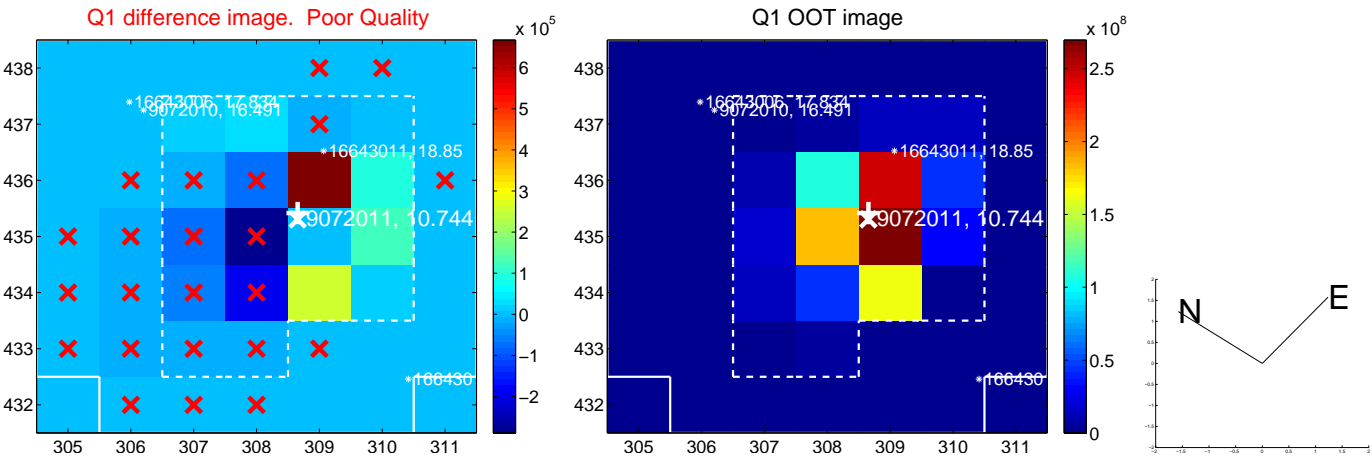
The direct PRF centroid is offset from the target star catalog position by about 0.43 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-------------------------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 2.993 ± 1.498 | 2.00 | -2.992 ± 1.501 | -0.085 ± 0.354 |
| PRF-fit source offset from KIC position | 3.056 ± 0.868 | 3.52 | -3.037 ± 0.898 | -0.337 ± 0.426 |
| photometric centroid source offset | — | — | — | — |

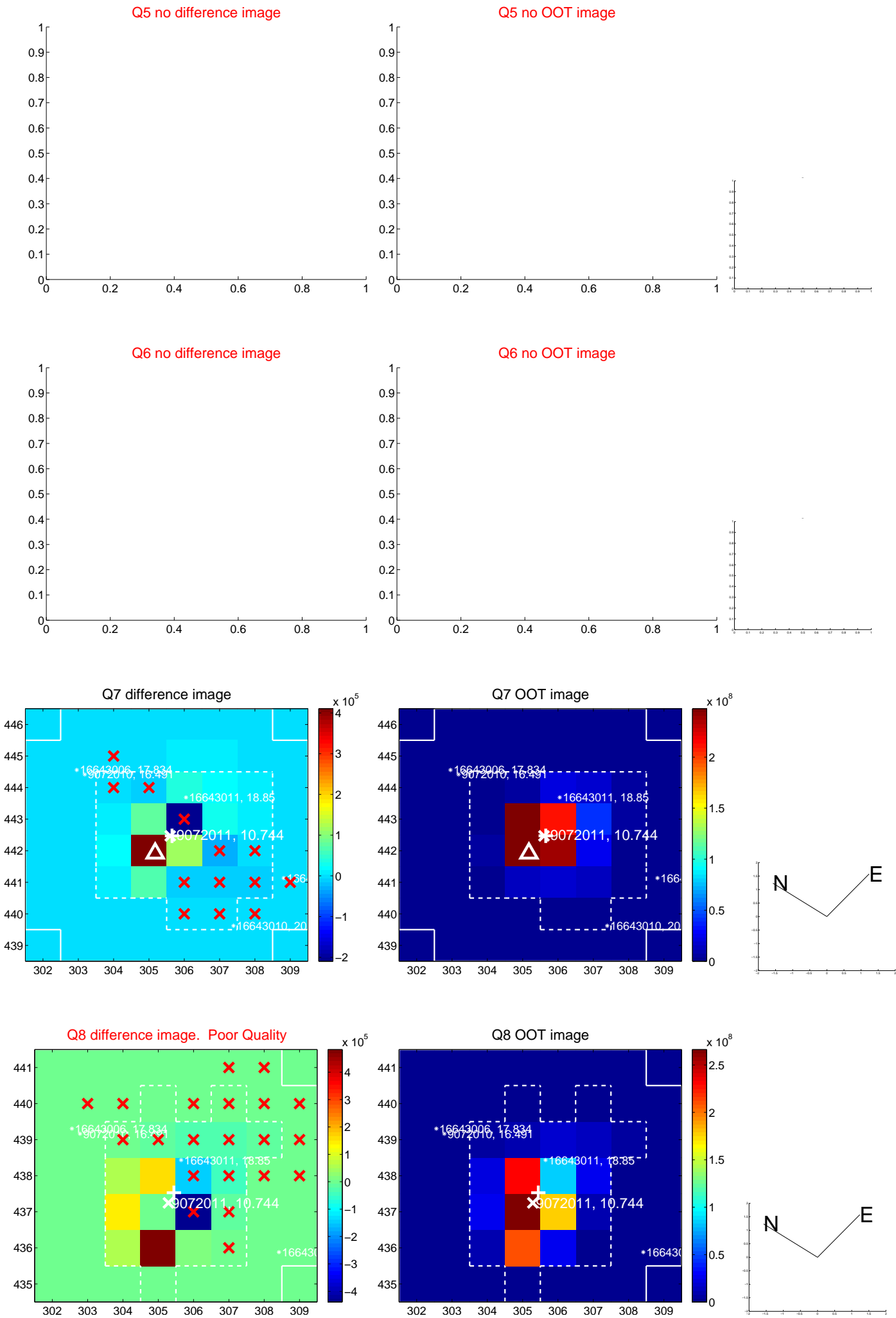


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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.

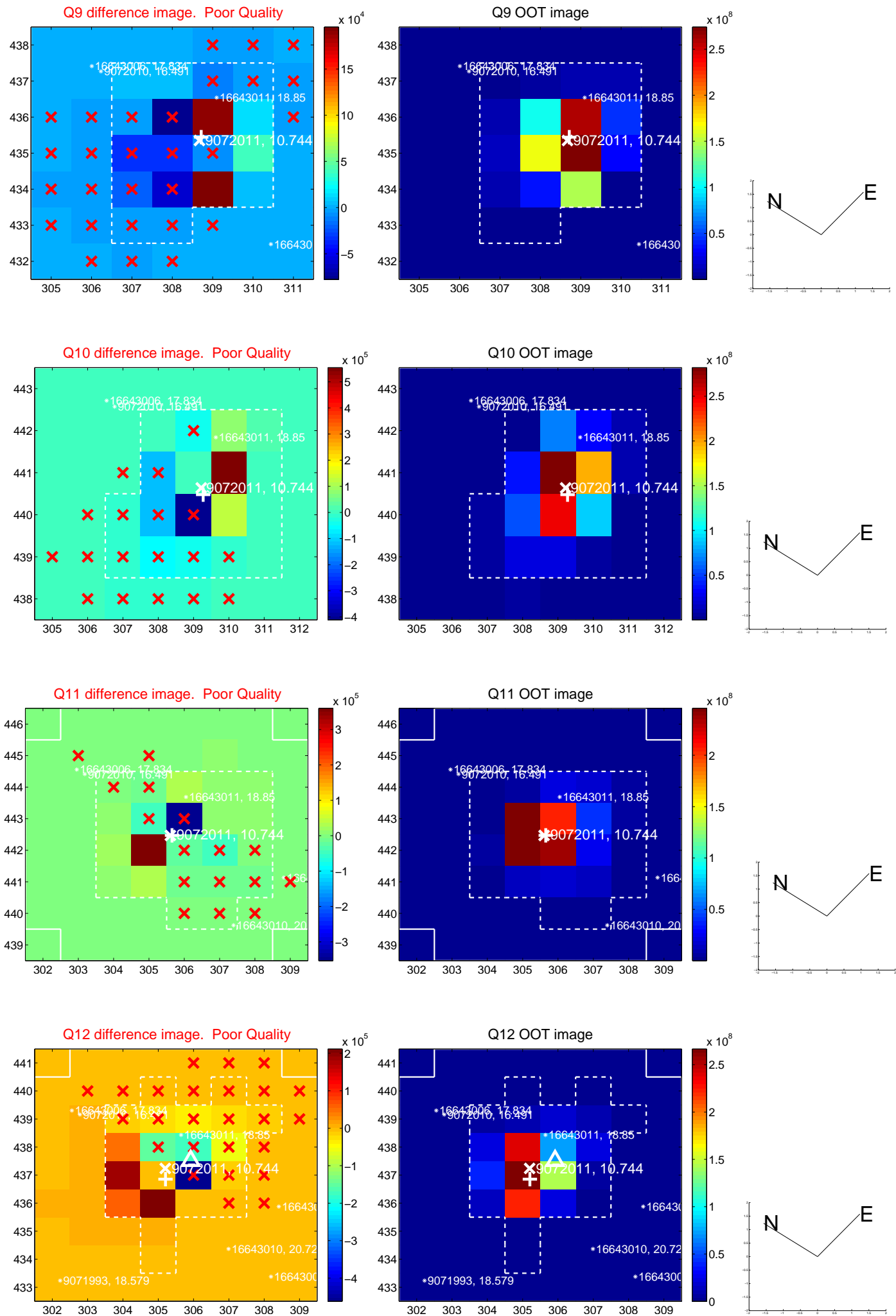
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



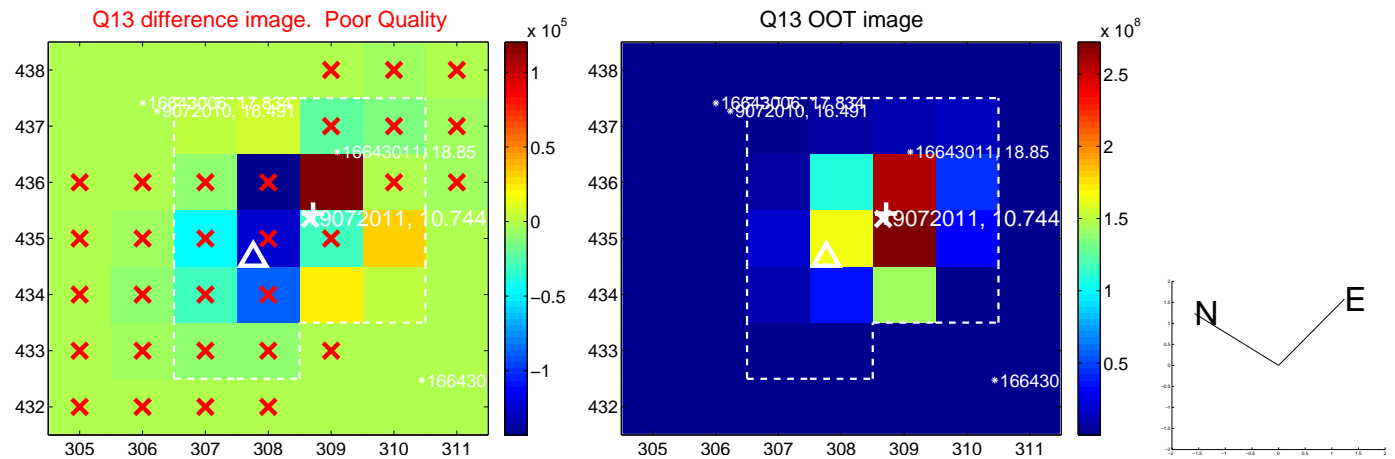
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



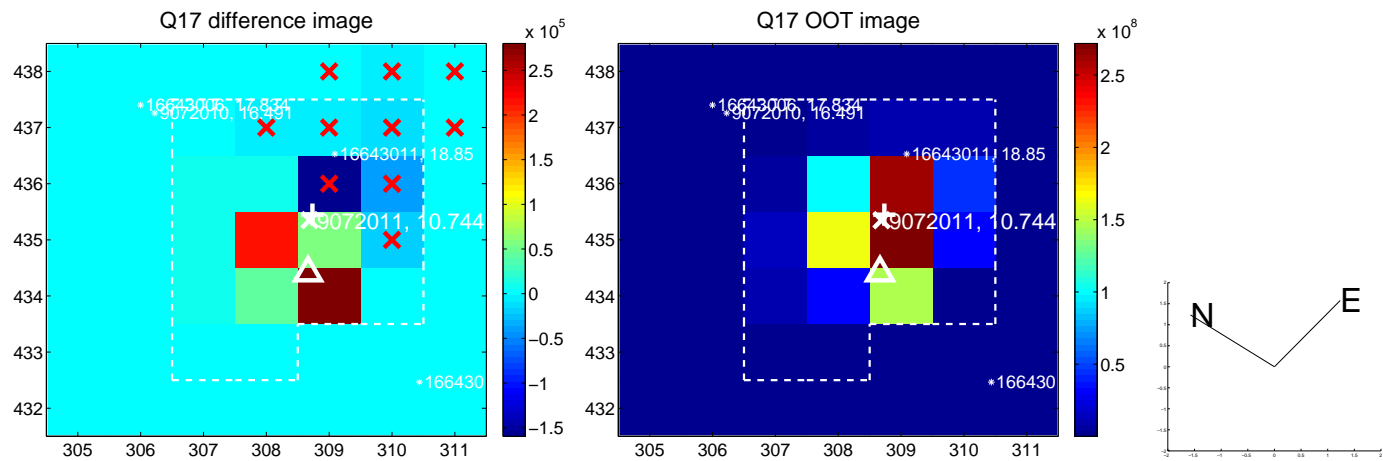
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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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

