

KIC 005272571

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})
005272571-01	OBS	6550.01	1.288037	131.991011	21.8	4.129	12.3	10.8	3.87	5216	2.16	17819.24
005272571-03	OBS	No	144.085457	191.339533	121.9	21.752	8.6	6.8	3.87	5216	4.57	33.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005272571-01	OBS	FP	0.00	0	0	1	1	CENT_UNRESOLVED_OFFSET—EPHEM_MATCH
005272571-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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.

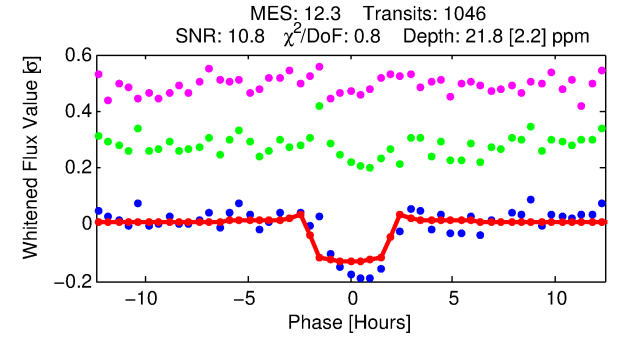
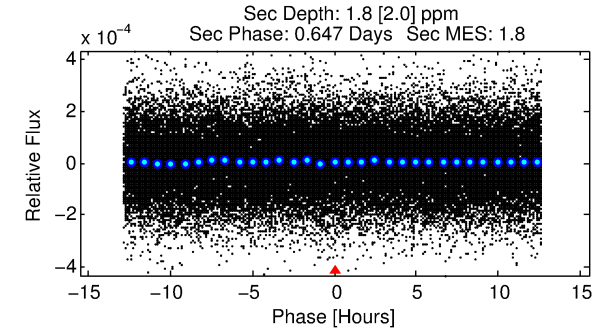
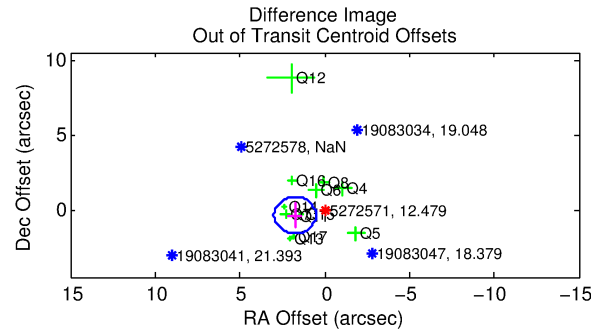
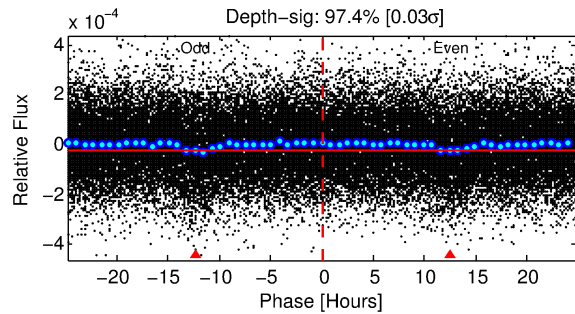
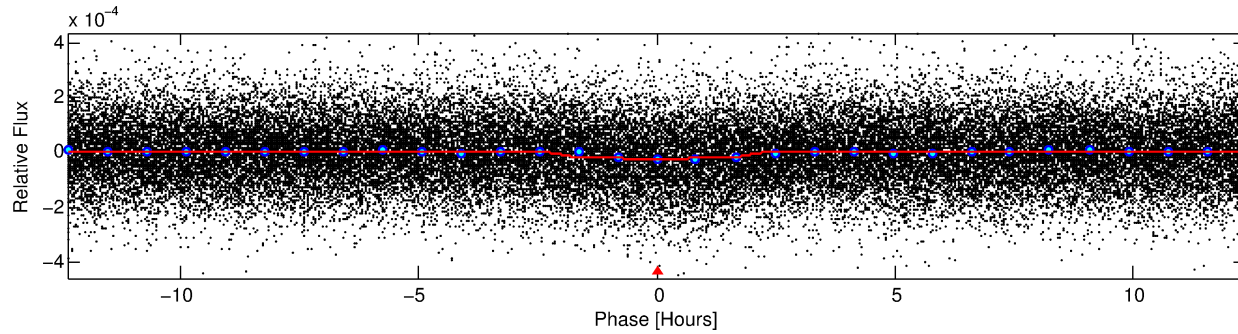
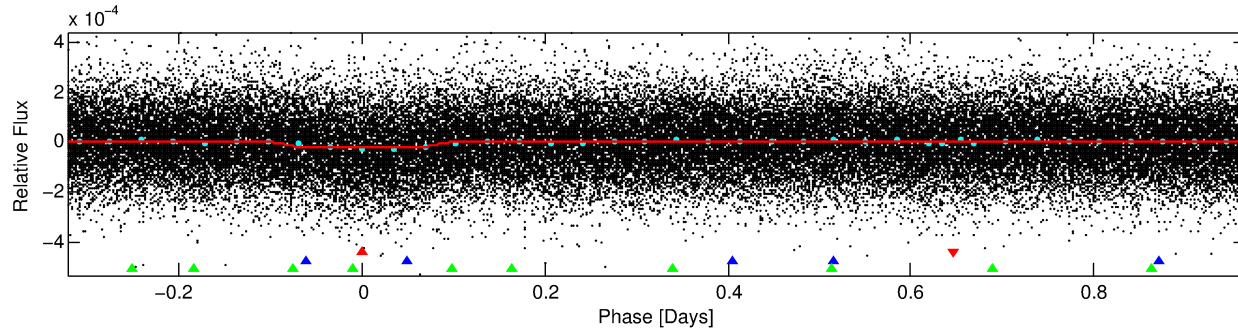
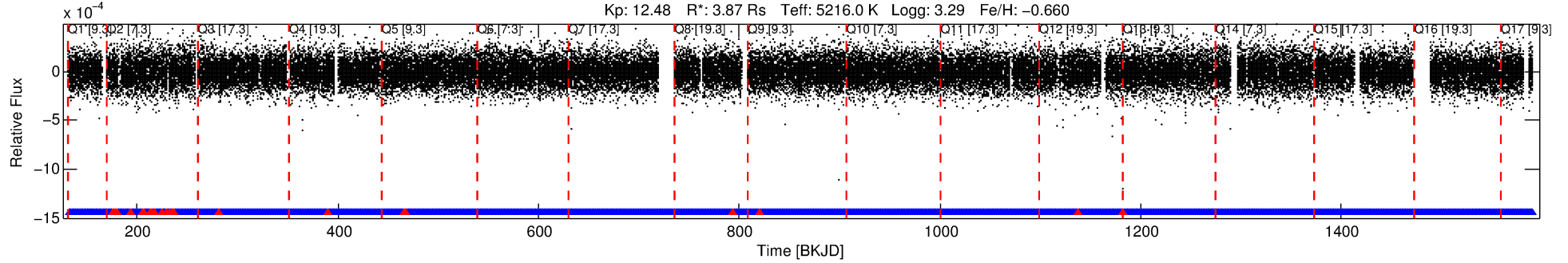
Ephemeris Match Information For 005272571-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	ΔRow	ΔCol	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
005272571-01	5272571	005097446-01	5097446	1:1	975.9	245	1	13.89	12.48	18598.00	Col-Anomaly	0	0.97	0.18

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 5272571 Candidate: 1 of 3 Period: 1.288 d
KOI: K06550.01 Corr: 0.765



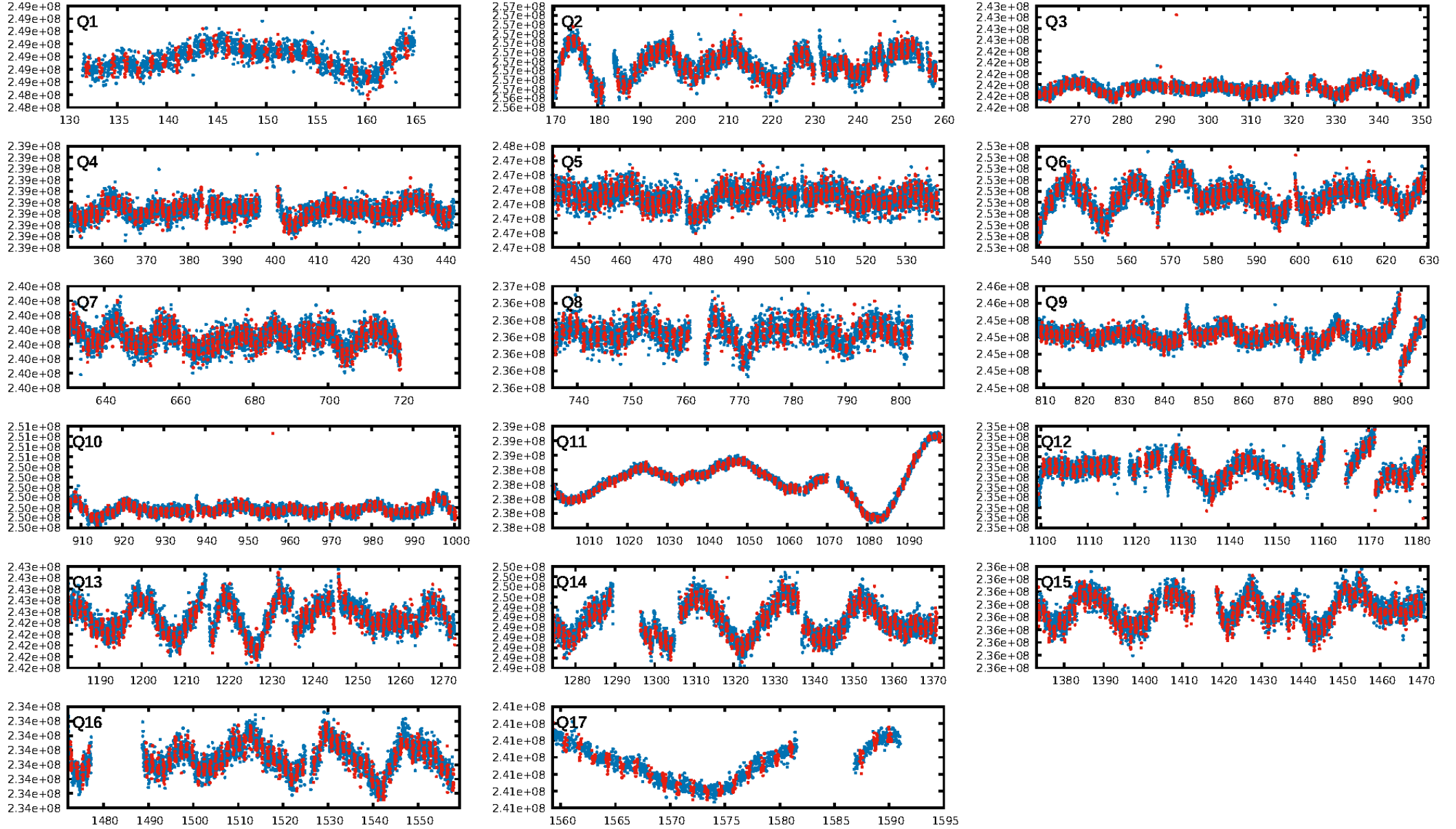
DV Fit Results:

Period = 1.28804 [0.00001] d
Epoch = 131.9910 [0.0034] BKJD
Rp/R* = 0.0051 [0.0018]
a/R* = 1.42 [1.14]
b = 0.90 [0.34]
Seff = 17819.24 [4773.23]
Teq = 2946 [197] K
Rp = 2.16 [0.88] Re
a = 0.0236 [0.0043] AU
Ag = 0.12 [0.16] [-5.55 σ]
Teffp = 2669 [883] K [-0.31 σ]

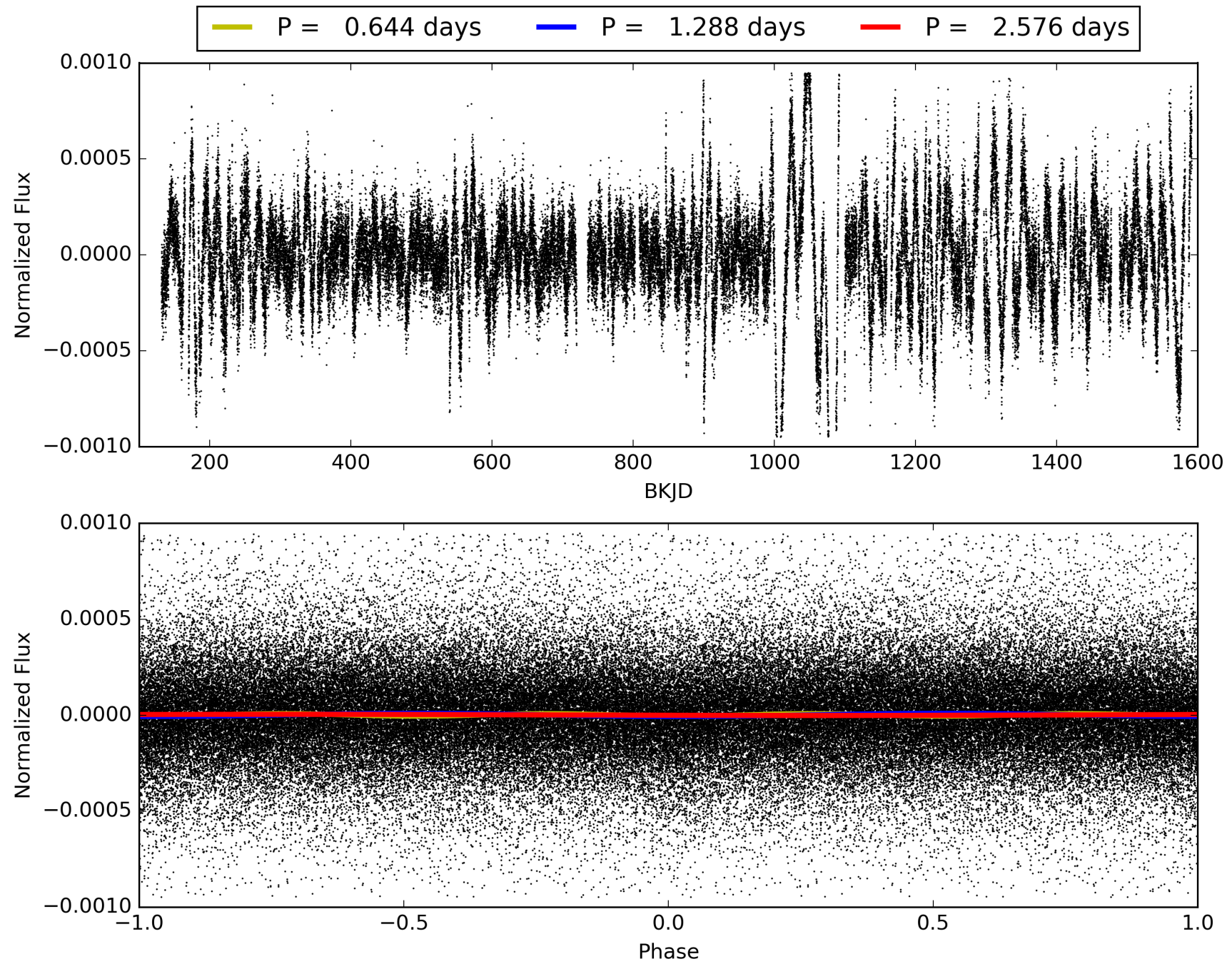
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [154.79 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.91e-29
RollingBand-fgt: 0.97 [975/1000]
GhostDiagnostic-chr: 3.702
Centroid-sig: 0.0%
Centroid-so: 2.224 arcsec [3.68 σ]
OotOffset-rm: 1.803 arcsec [4.36 σ]
KicOffset-rm: 1.785 arcsec [4.27 σ]
OotOffset-st: 2/3/4/3 [12]
KicOffset-st: 2/3/4/3 [12]
DiffImageQuality-fgm: 0.75 [9/12]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005272571-01, PDC Light Curves

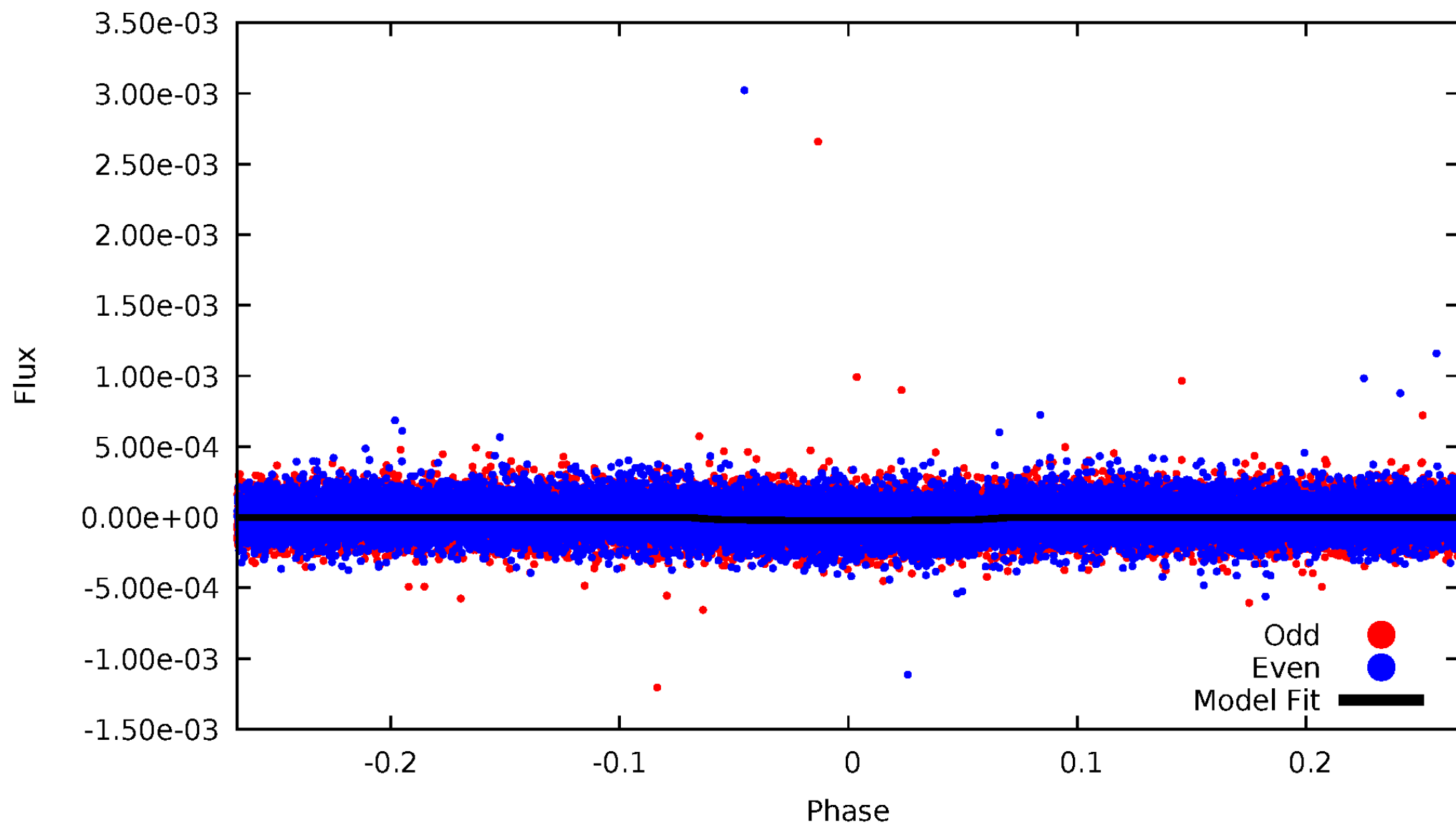


TCE 005272571-01



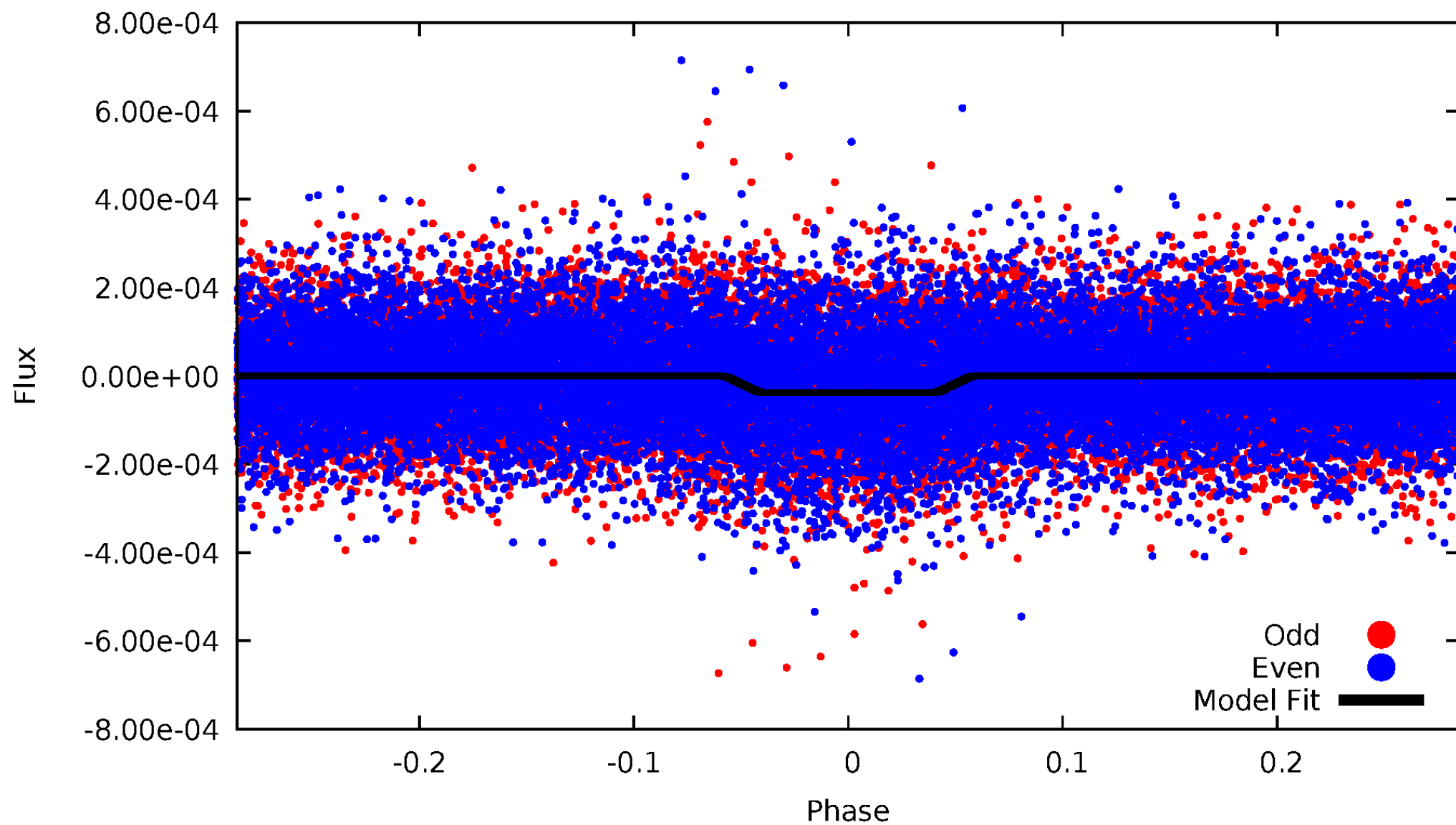
DV Odd/Even

TCE 005272571-01

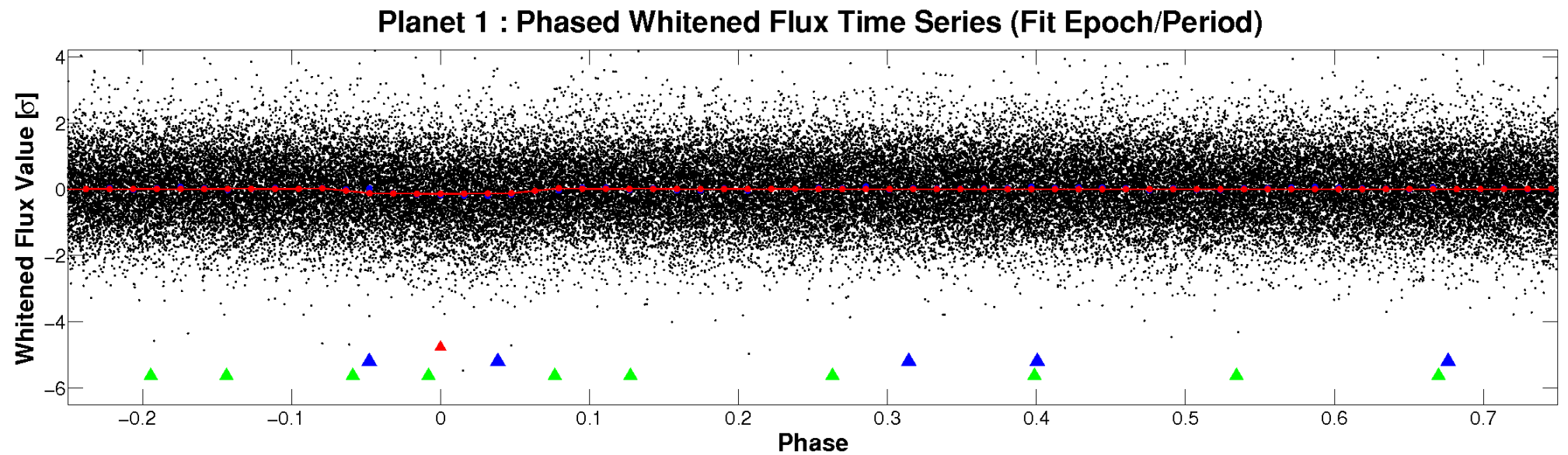
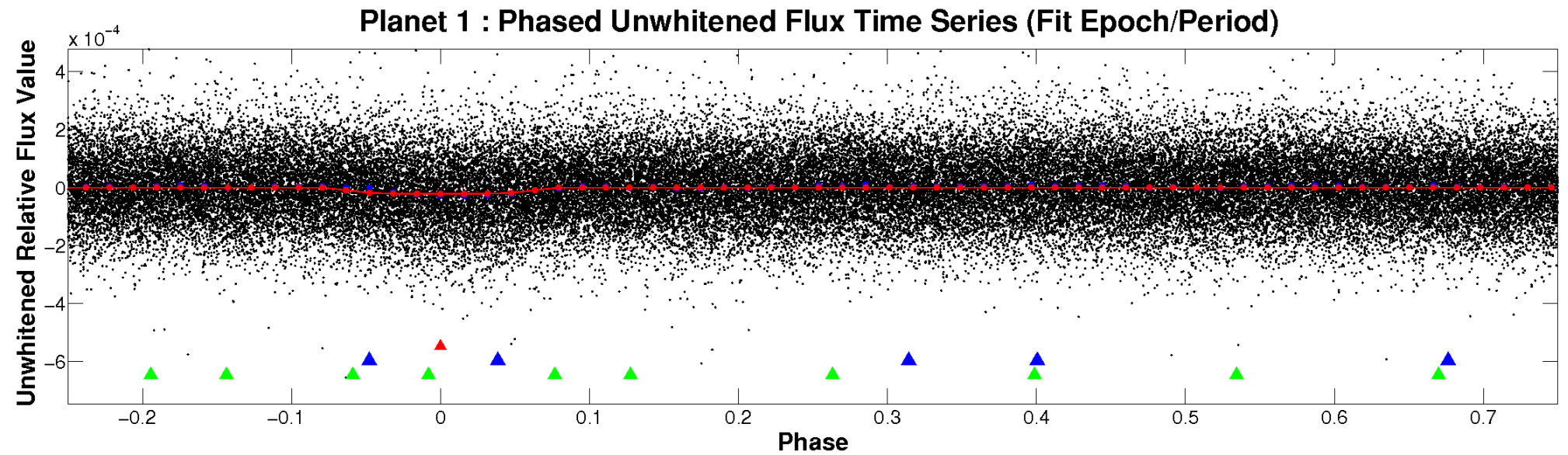


ALT Odd/Even

TCE 005272571-01

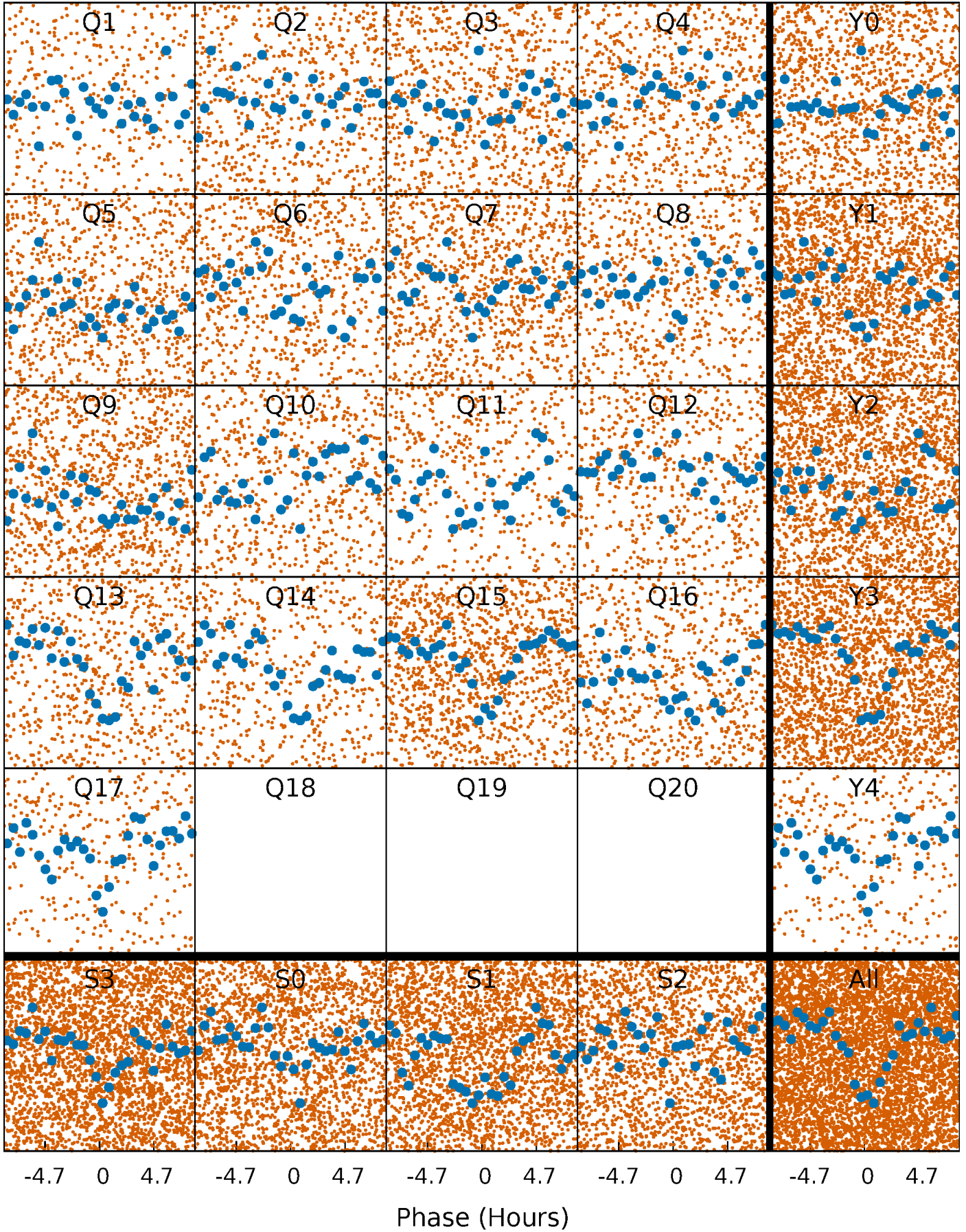


Non-Whitened Vs. Whitened Light Curve



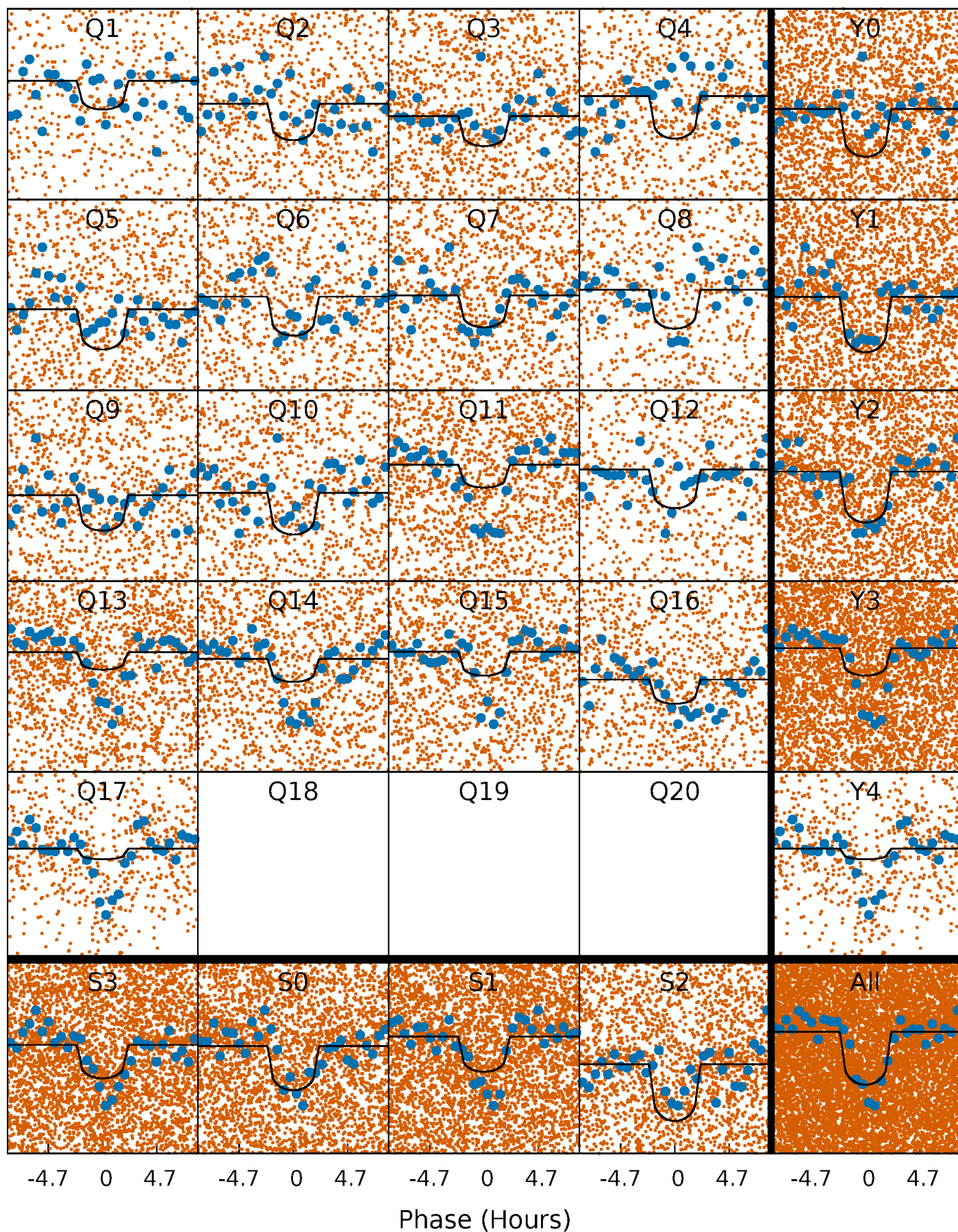
PDC Quarter-Phased Transit Curves

TCE 005272571-01 P= 1.288037 Days $T_0=131.991011$ (BKJD)



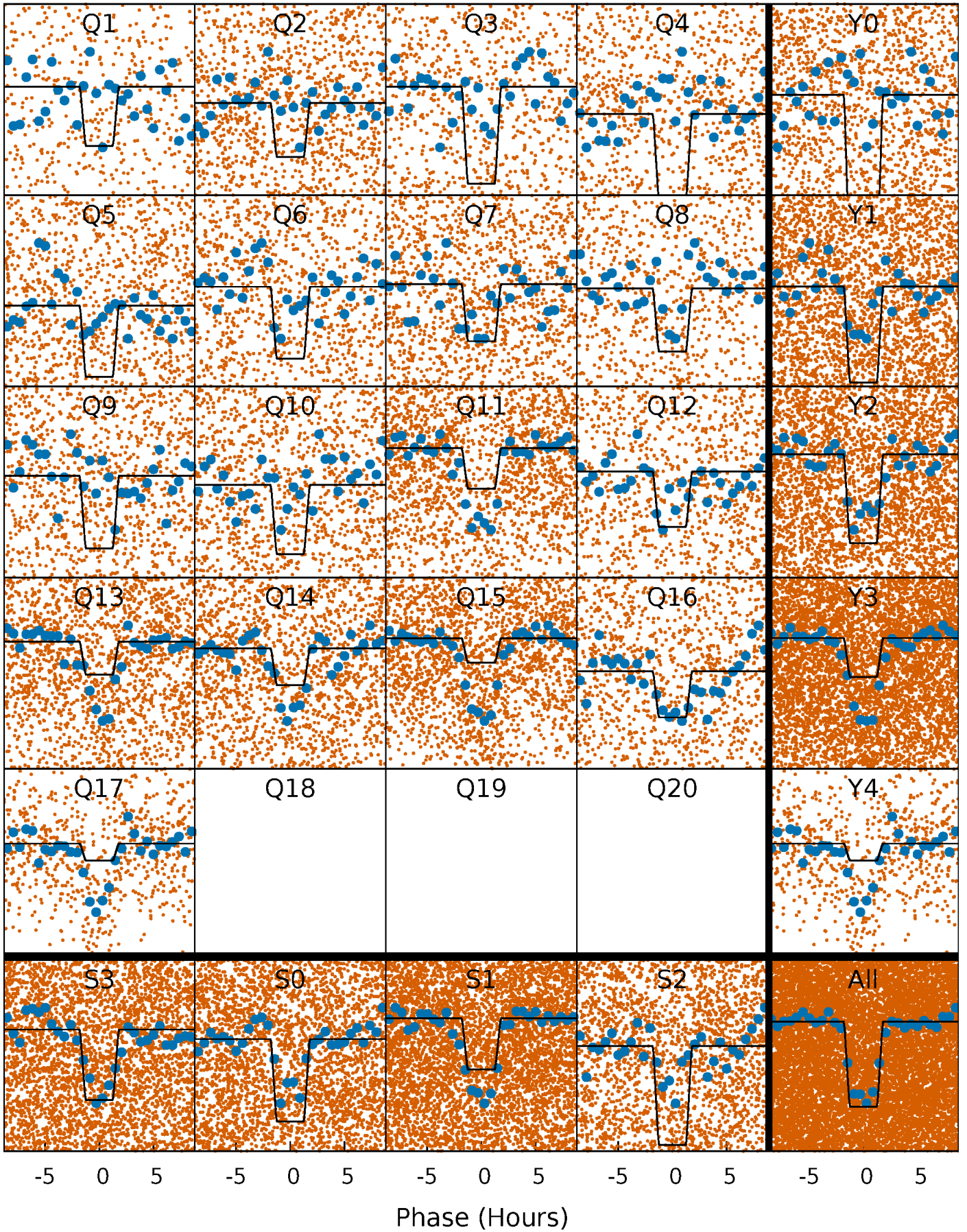
DV Quarter-Phased Transit Curves

TCE 005272571-01 P= 1.288037 Days $T_0=131.991011$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

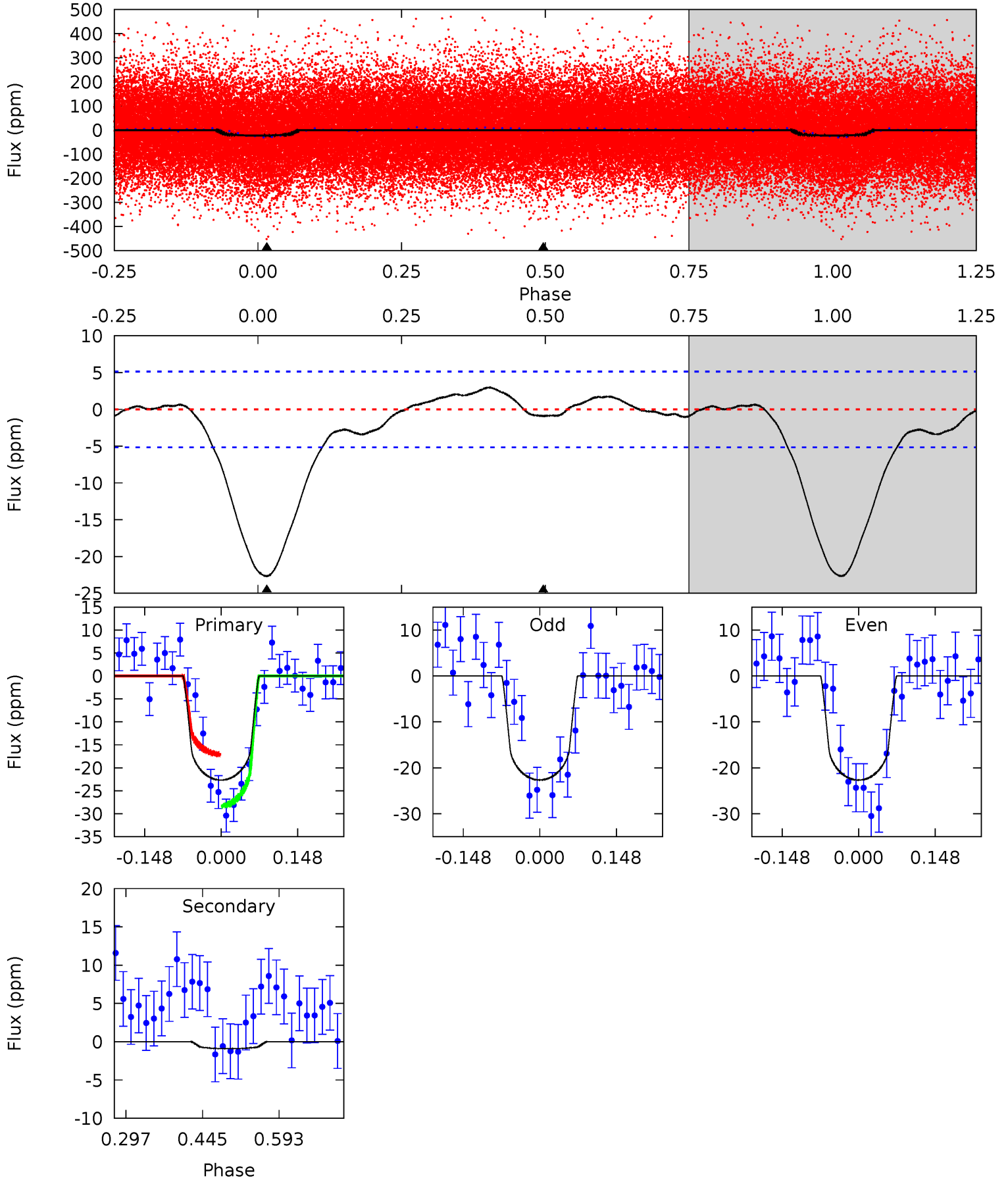
TCE 005272571-01 P= 1.288063 Days $T_0=131.986515$ (BKJD)



DV Model-Shift Uniqueness Test

005272571-01, P = 1.288037 Days, E = 130.702974 Days

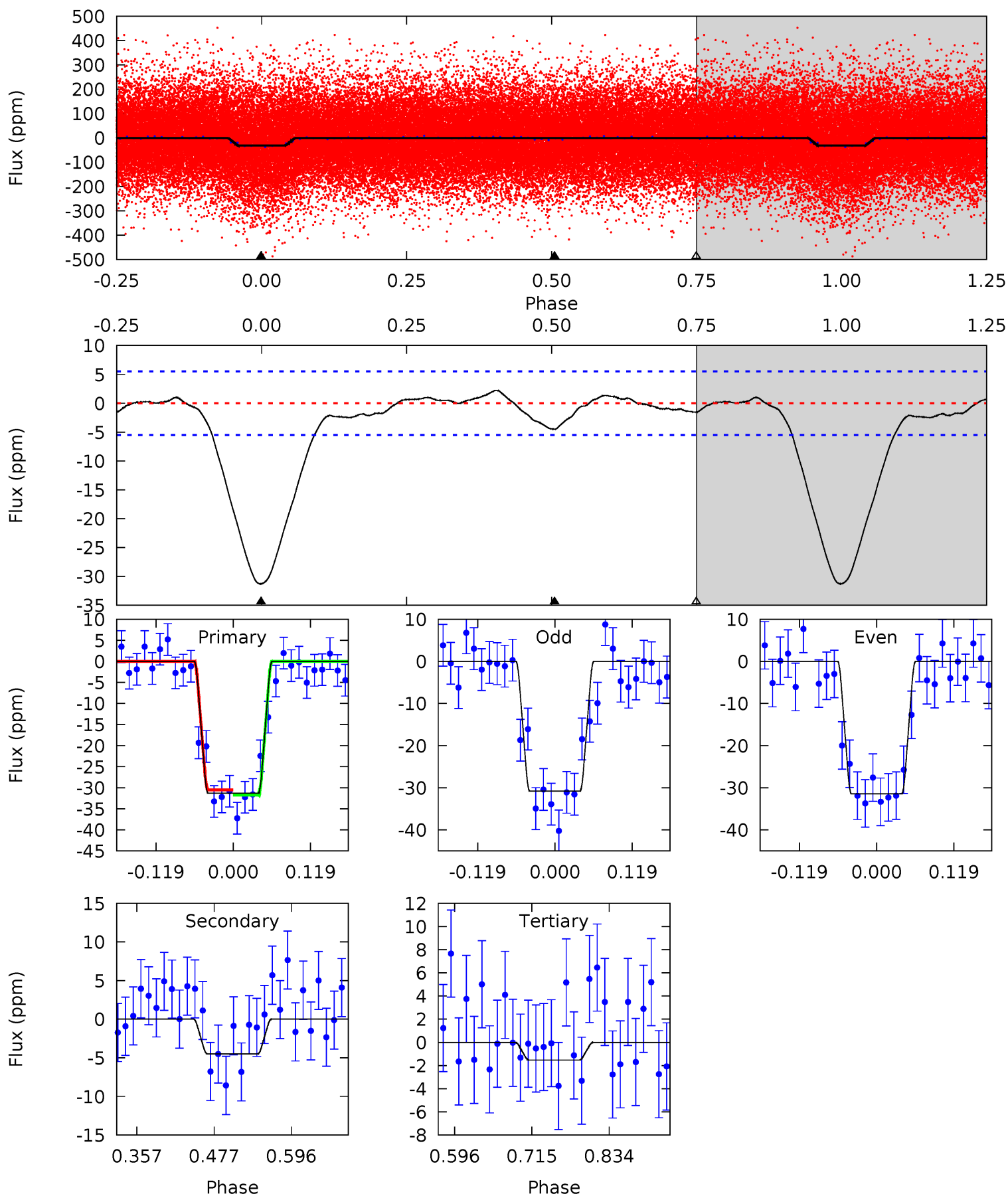
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	0.79	0	0	4.48	1.45	1.16	19.7	19.7	0.79	0.79	0.01	1.09	0.12	4.90



Alt Model-Shift Uniqueness Test

005272571-01, P = 1.288063 Days, E = 130.698452 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.7	3.69	1.25	0	4.53	1.56	0.87	24.4	25.7	2.44	3.69	0.26	1.21	0.07	0.51



Stellar Parameters For KIC 005272571

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5216^{+67}_{-62}	$3.287^{+0.143}_{-0.130}$	$-0.660^{+0.150}_{-0.100}$	$3.871^{+0.840}_{-0.688}$	$1.058^{+0.215}_{-0.176}$	$0.026^{+0.018}_{-0.010}$
	+1%/-1%	+4%/-4%	+23%/-15%	+22%/-18%	+20%/-17%	+71%/-39%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 005272571-01 / KOI 6550.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1 ± 1	$2.14^{+0.80}_{-0.76}$	4110^{+201}_{-198}	-3607^{+442}_{-225}	$0.053^{+0.136}_{-0.072}$
Alt.	-5 ± 1	$2.51^{+0.88}_{-0.72}$	4103^{+231}_{-198}	-3040^{+6303}_{-465}	$0.221^{+0.225}_{-0.108}$

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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

DV Centroid Data

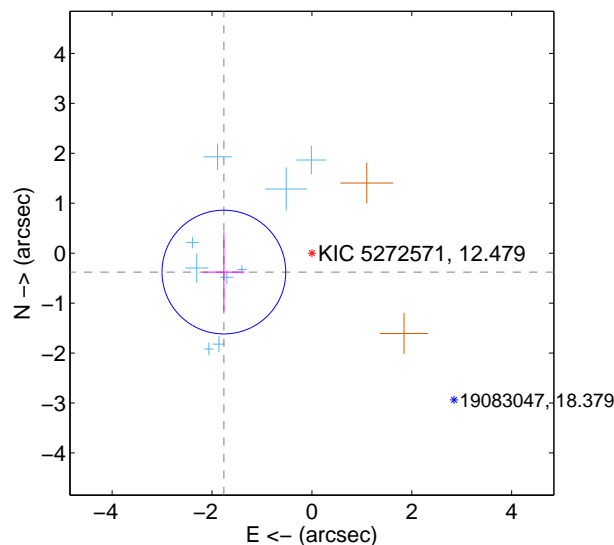
Supplemental centroid analysis for 005272571-01. Kepler magnitude: 12.48. Transit SNR 10.75

There are 9 quarters with good PRF difference image offsets

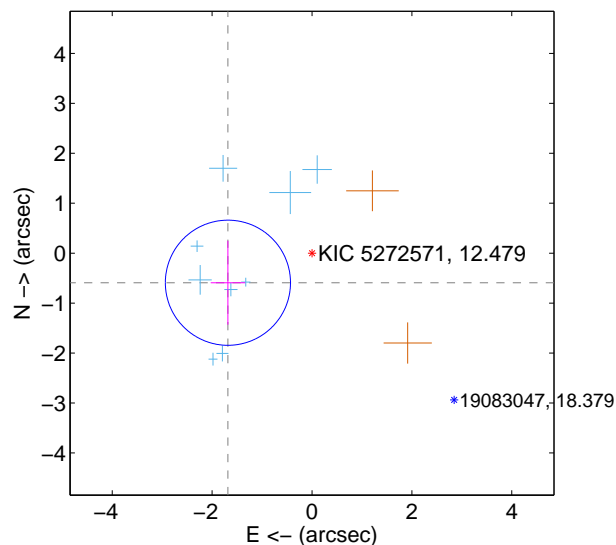
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.803 ± 0.413	4.36	1.762 ± 0.412	-0.378 ± 0.792
PRF-fit source offset from KIC position	1.785 ± 0.418	4.27	1.684 ± 0.345	-0.592 ± 0.840
photometric centroid source offset	2.22 ± 0.60	3.68	2.22 ± 0.60	0.01 ± 0.59

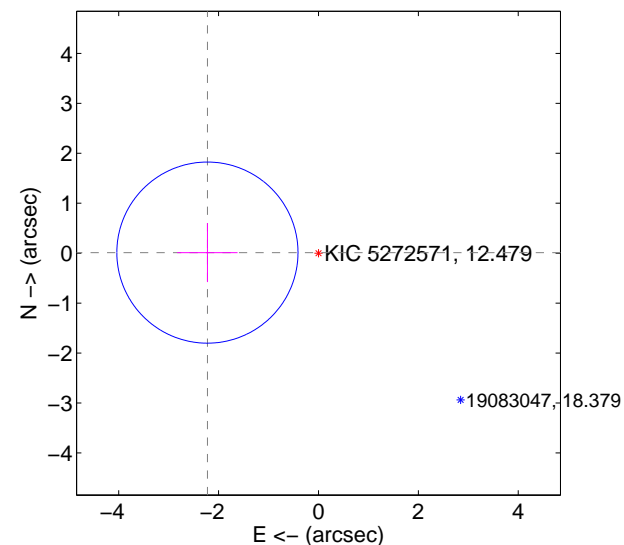
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

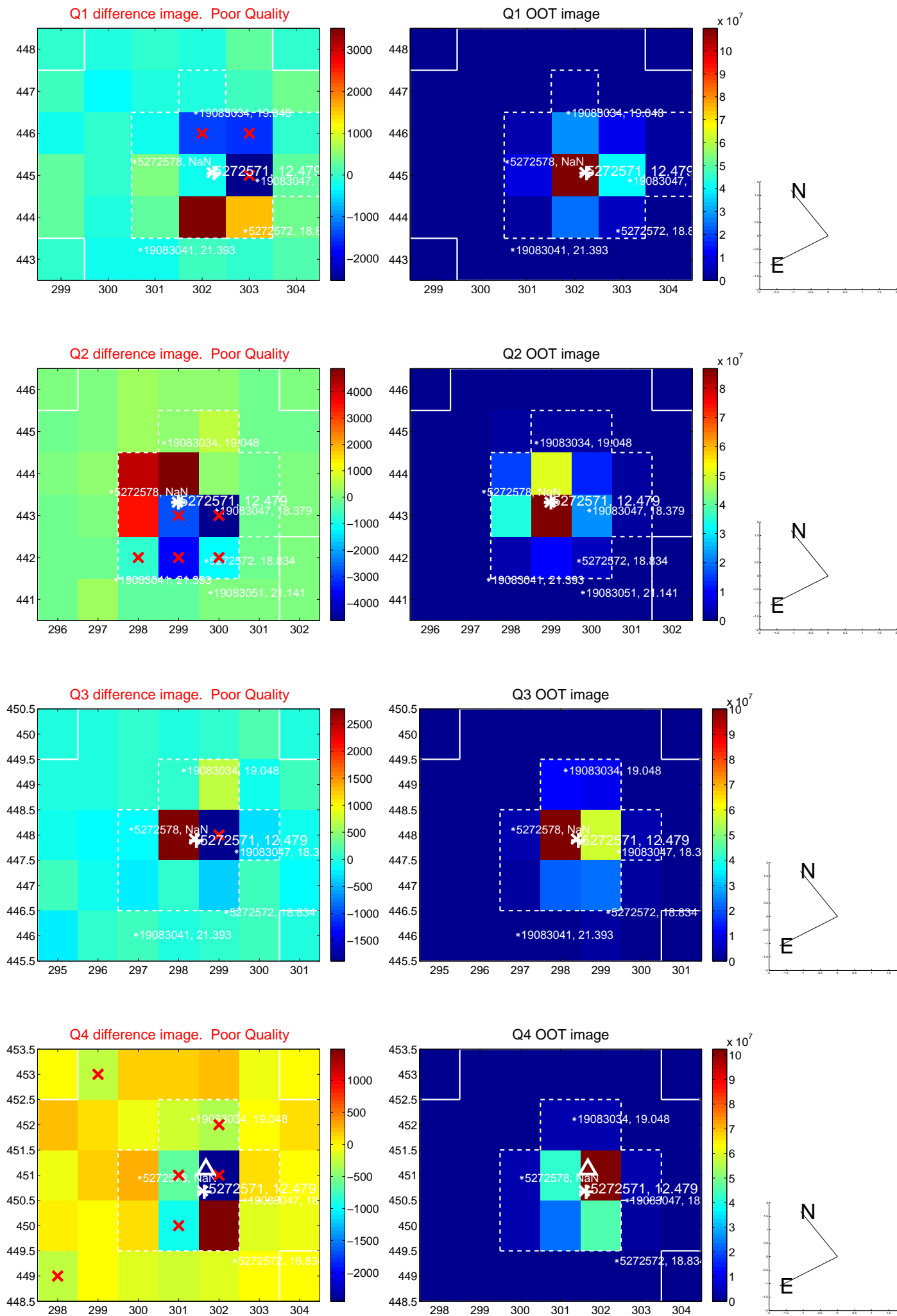


offset from photometric centroids

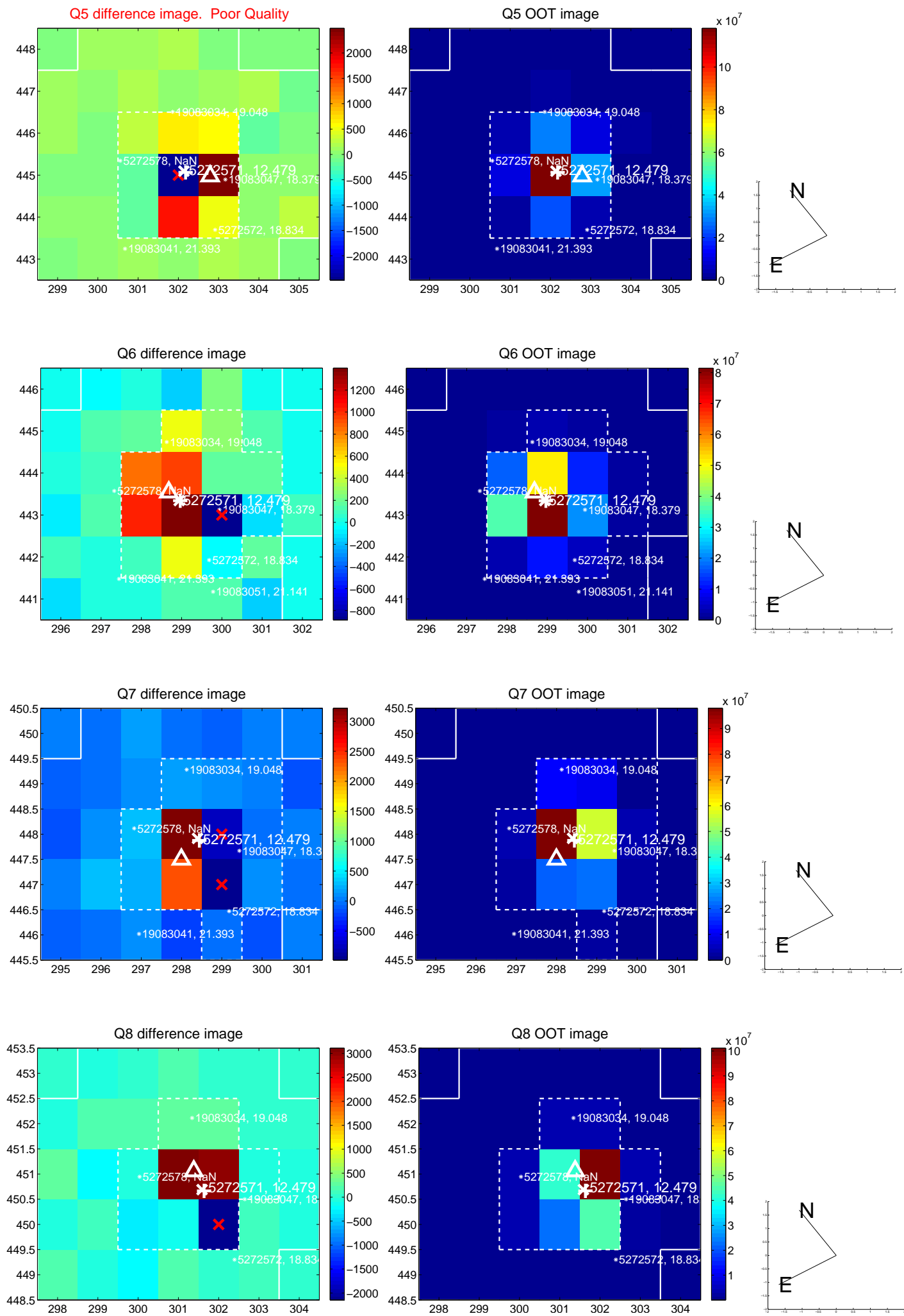


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

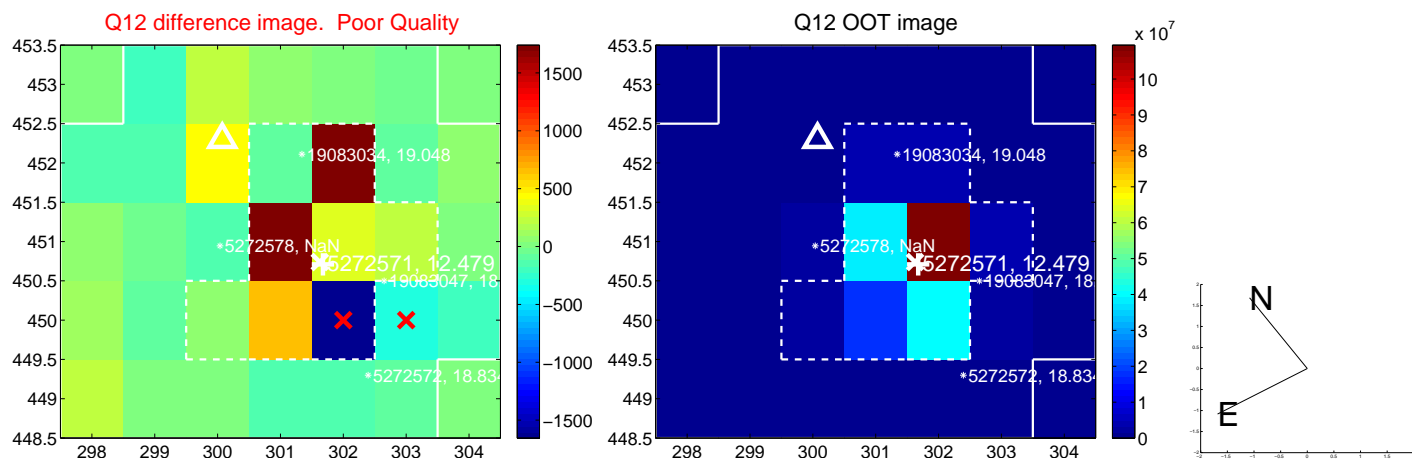
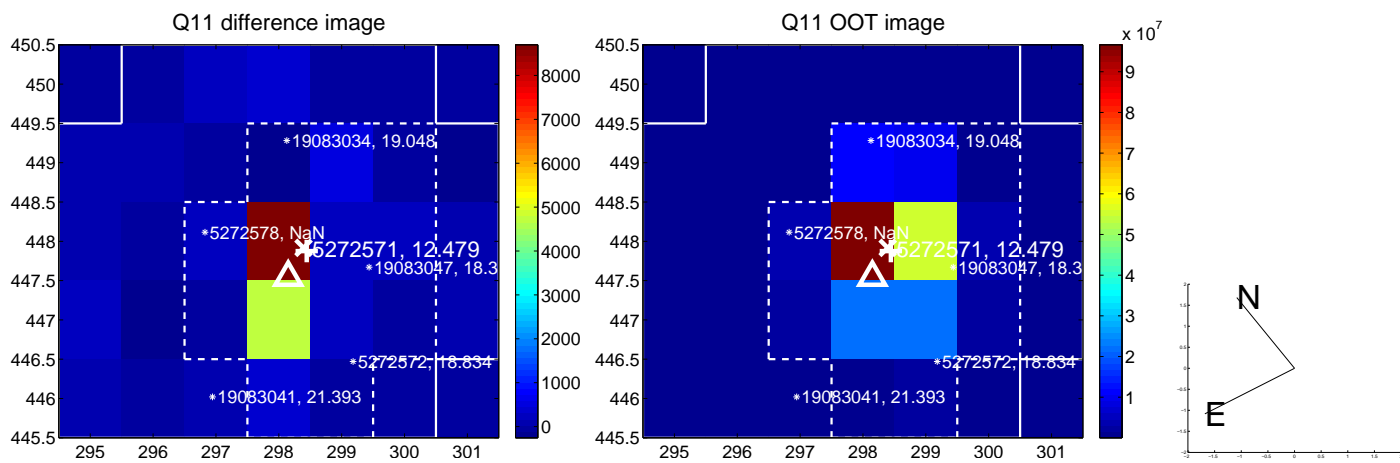
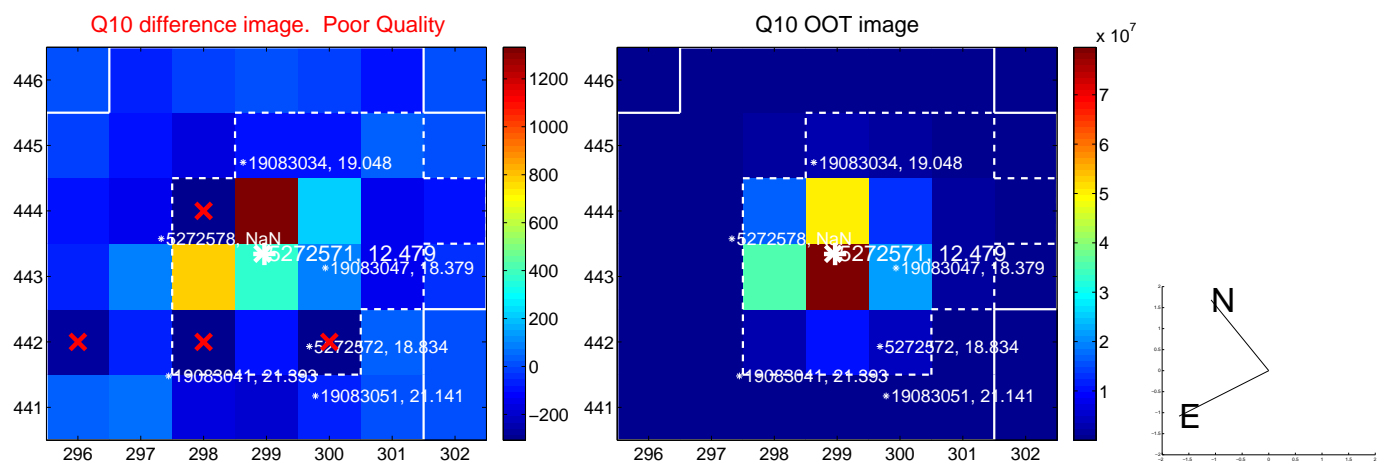
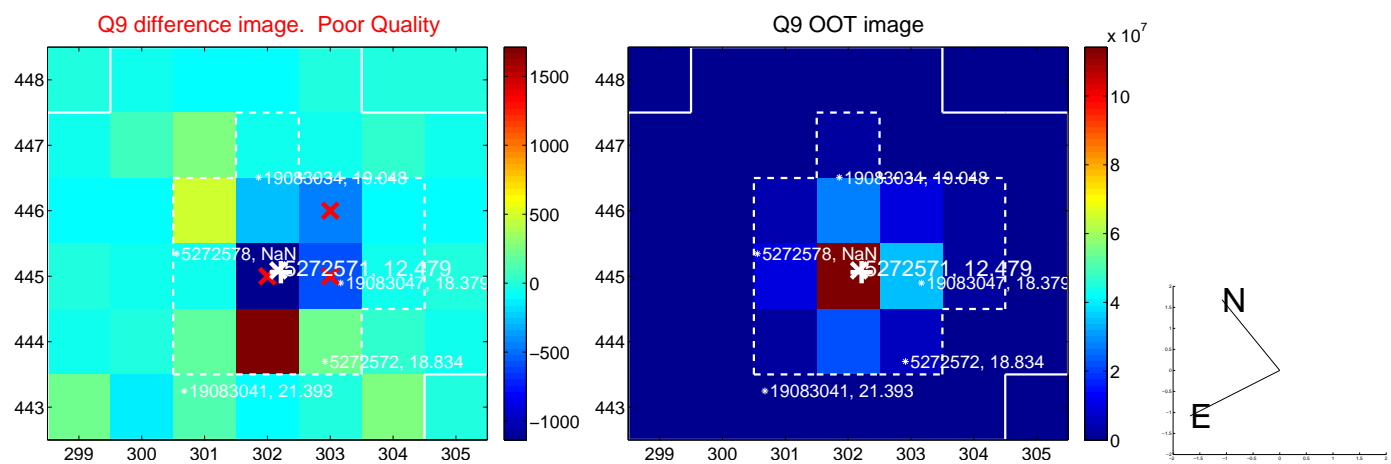
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



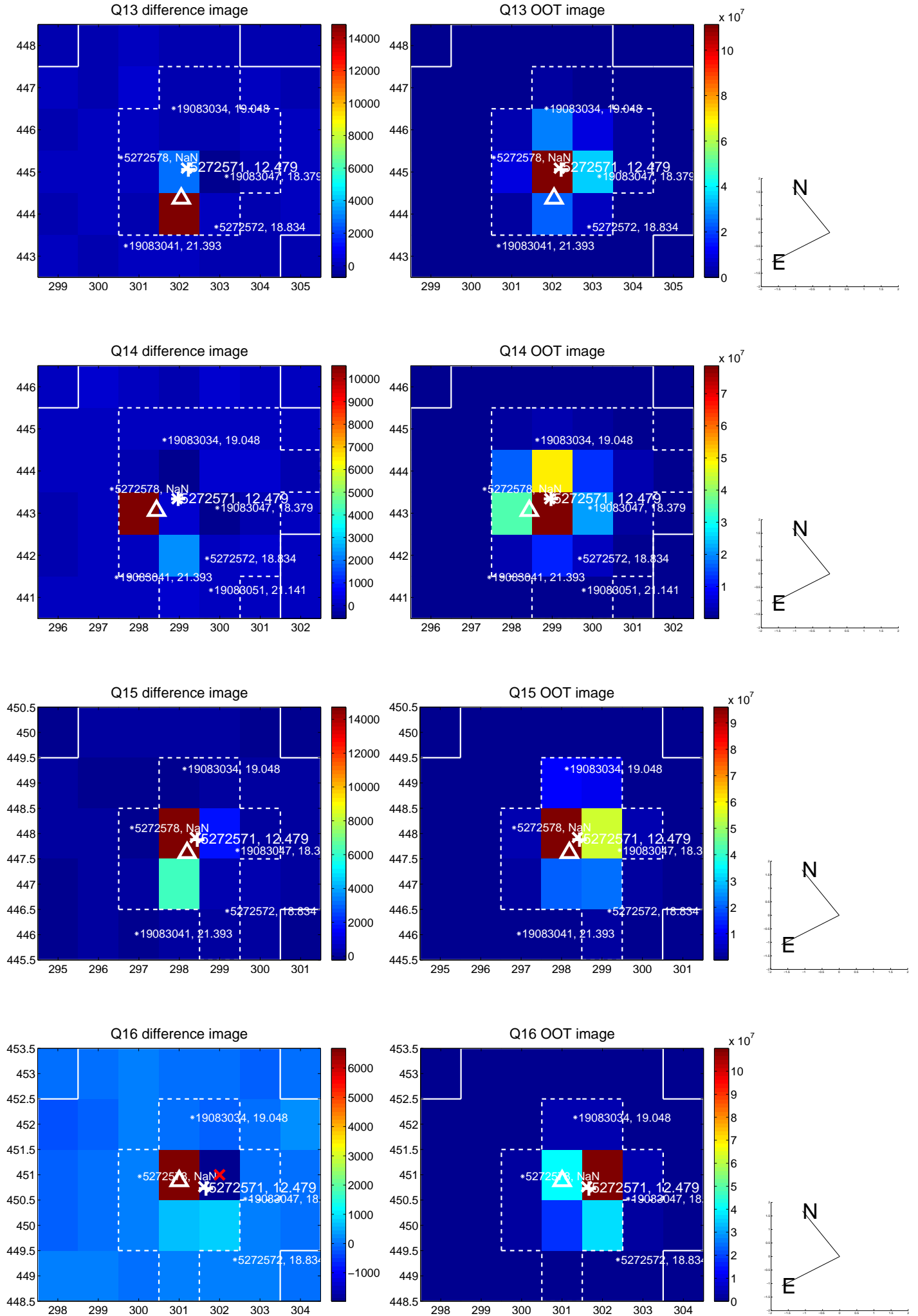
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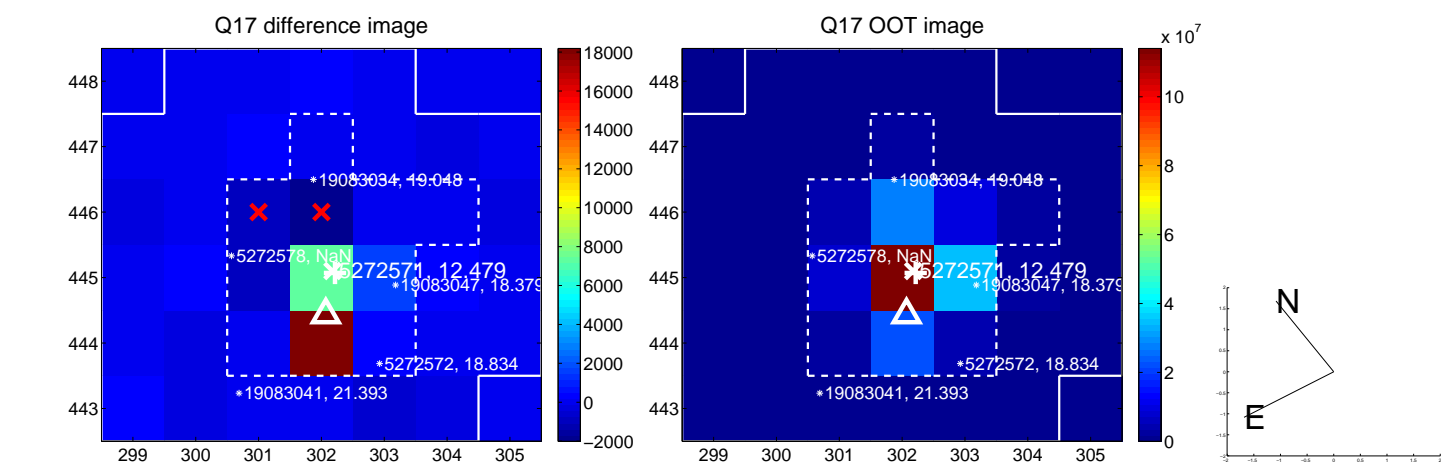
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



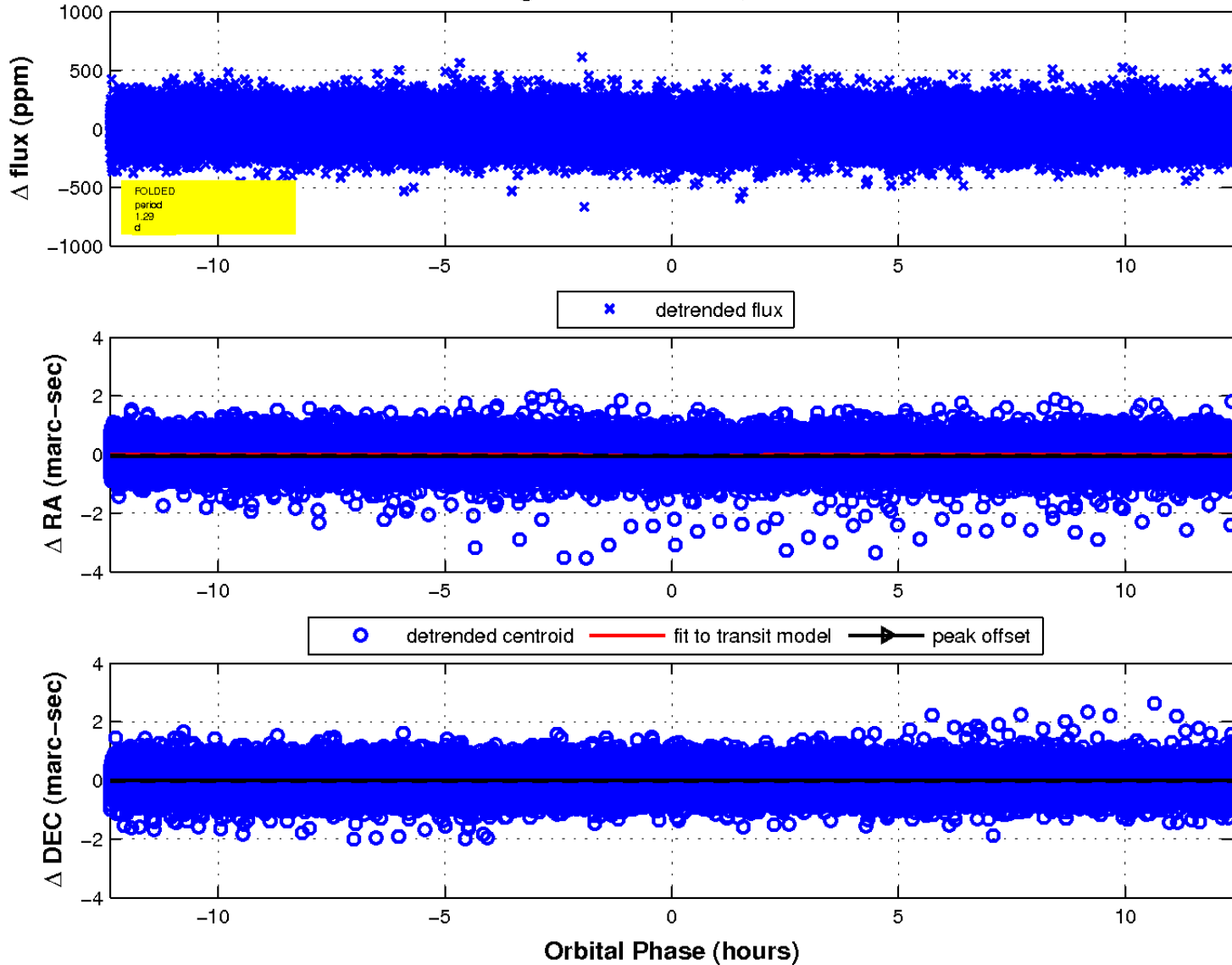
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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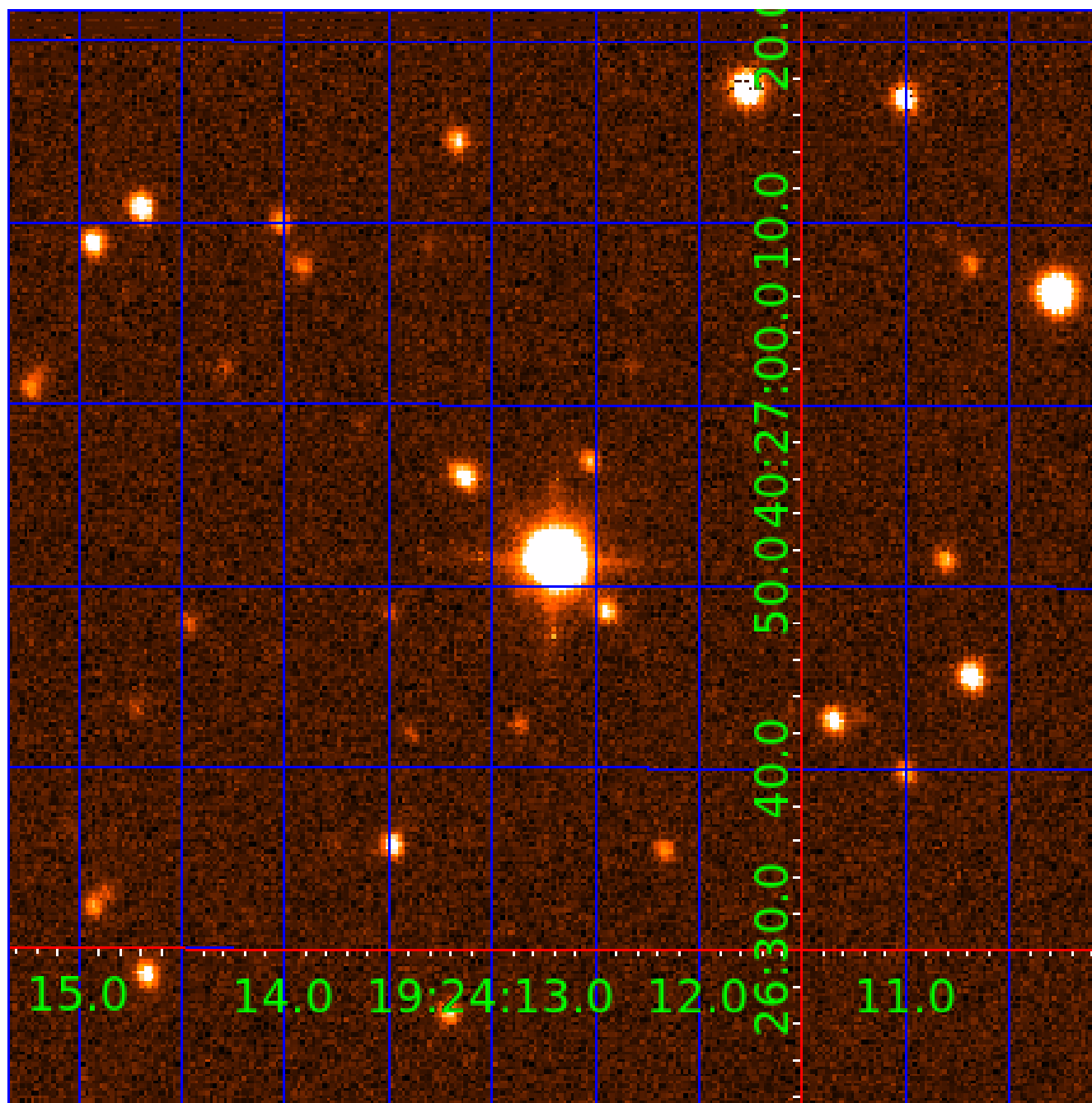


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 005272571

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})
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005272571-03	OBS	No	144.085457	191.339533	121.9	21.752	8.6	6.8	3.87	5216	4.57	33.06

Robovetter Results

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005272571-01	OBS	FP	0.00	0	0	1	1	CENT_UNRESOLVED_OFFSET—EPHEM_MATCH
005272571-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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 005272571-03

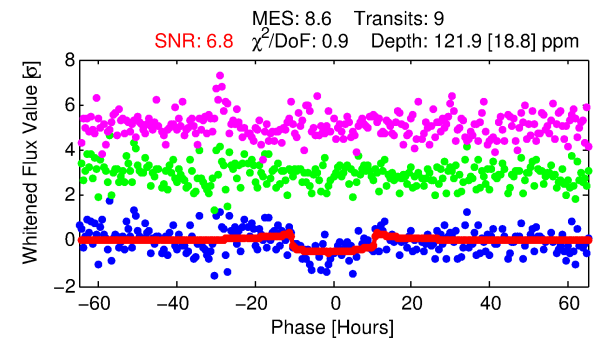
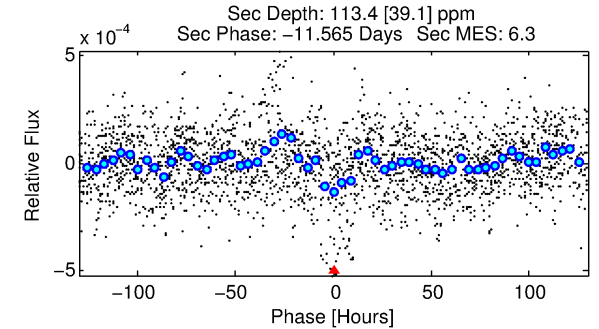
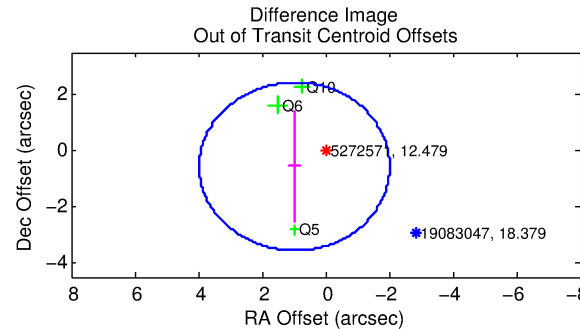
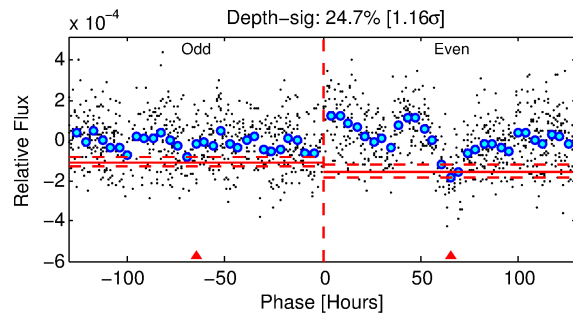
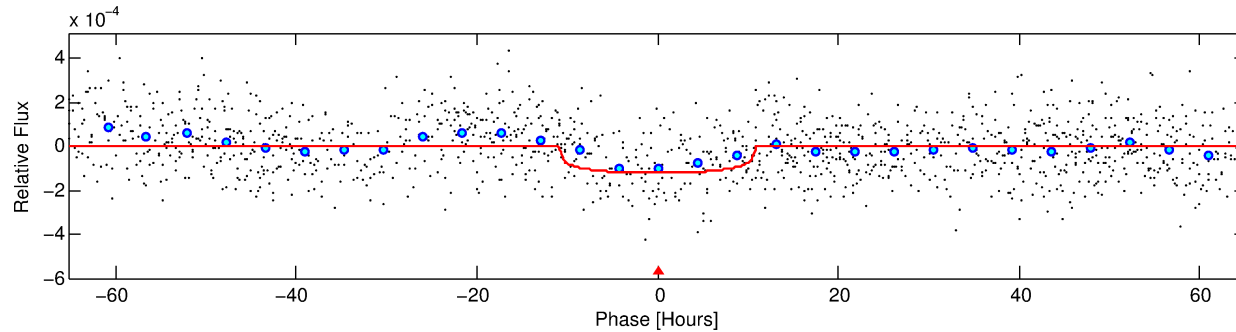
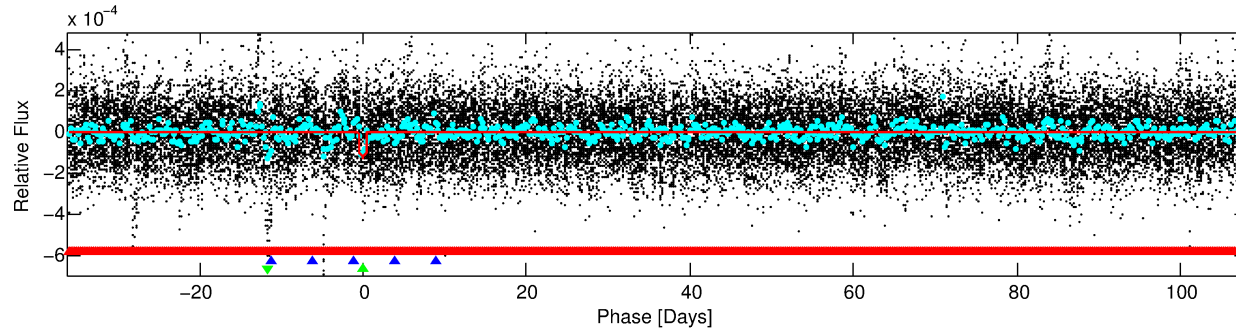
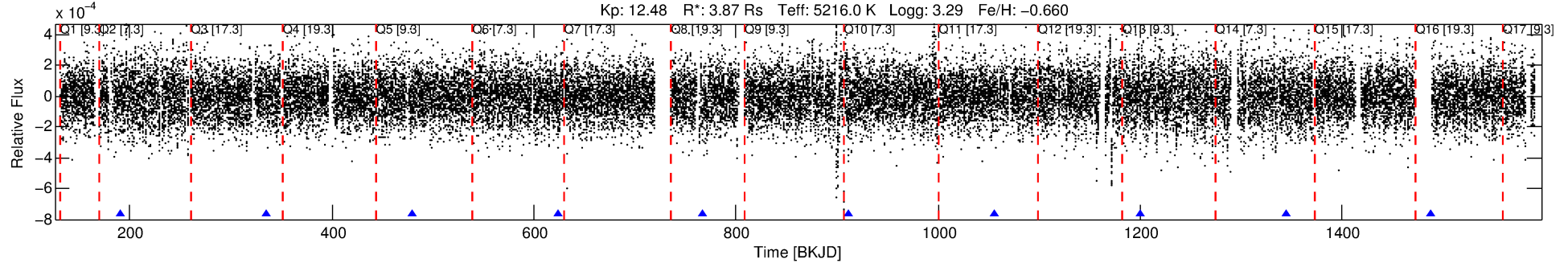
No Significant Match Found

DV One-Page Summary

KIC: 5272571 Candidate: 3 of 3 Period: 144.085 d

KOI: K06550 Corr: No Ephemeris Match

Kp: 12.48 R*: 3.87 Rs Teff: 5216.0 K Logg: 3.29 Fe/H: -0.660



DV Fit Results:

Period = 144.08546 [0.00419] d
Epoch = 191.3395 [0.0199] BKJD
Rp/R* = 0.0108 [0.0035]
a/R* = 36.66 [47.92]
b = 0.71 [0.94]
Seff = 33.06 [8.86]
Teq = 611 [41] K
Rp = 4.57 [1.77] Re
a = 0.5483 [0.0996] AU
Ag = 899.67 [697.61] [1.29σ]
Teffp = 5177 [947] K [4.82σ]

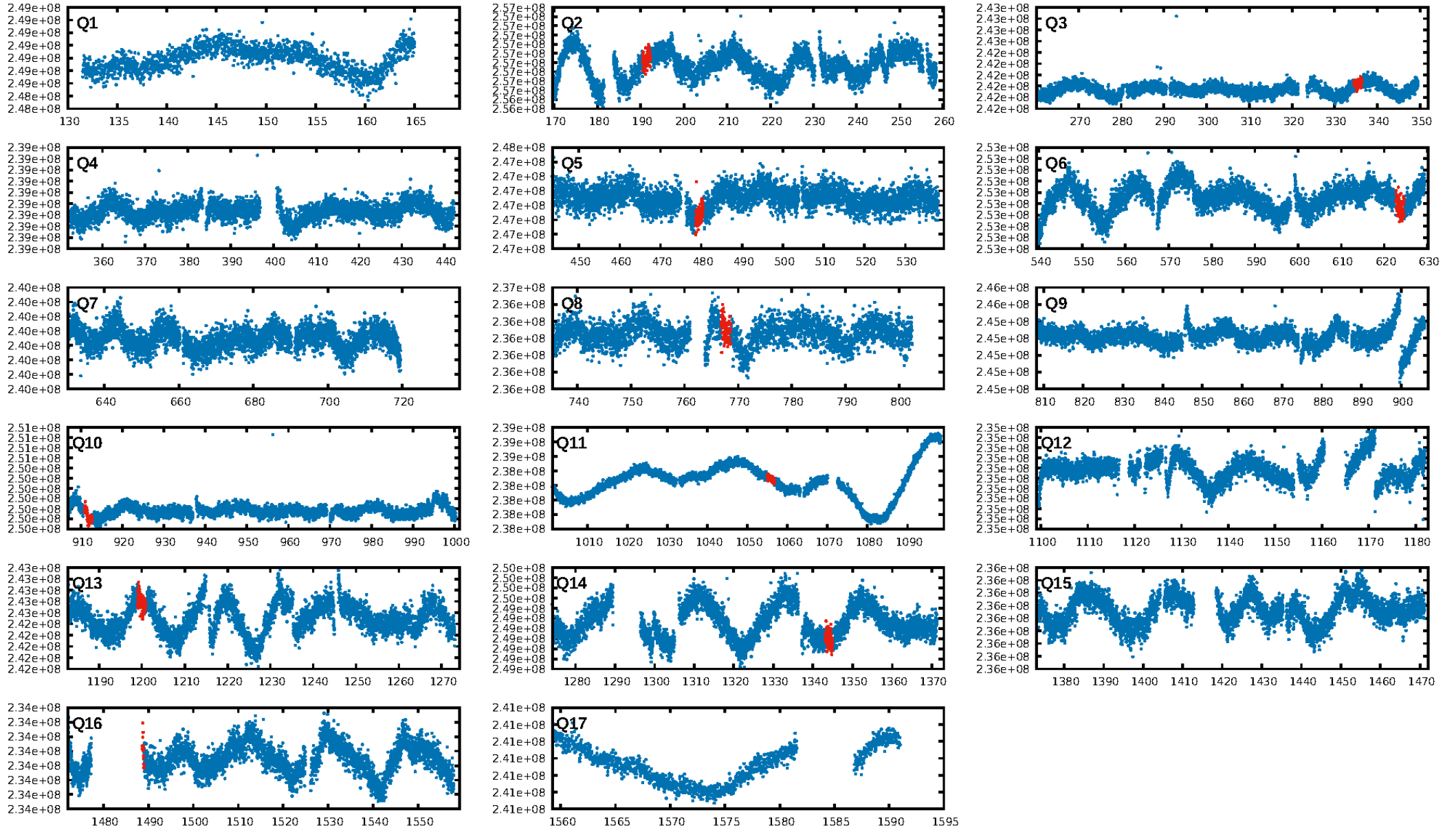
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [154.79σ]
LongPeriod-sig: 100.0% [156.09σ]
ModelChiSquare2-sig: 3.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.29e-12
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 0.7384
Centroid-sig: 8.0%
Centroid-so: 0.812 arcsec [1.02σ]
OotOffset-rm: 1.129 arcsec [1.13σ]
KicOffset-rm: 1.157 arcsec [0.92σ]
OotOffset-st: 2/0/0/1 [3]
KicOffset-st: 2/0/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.00 [0/8]

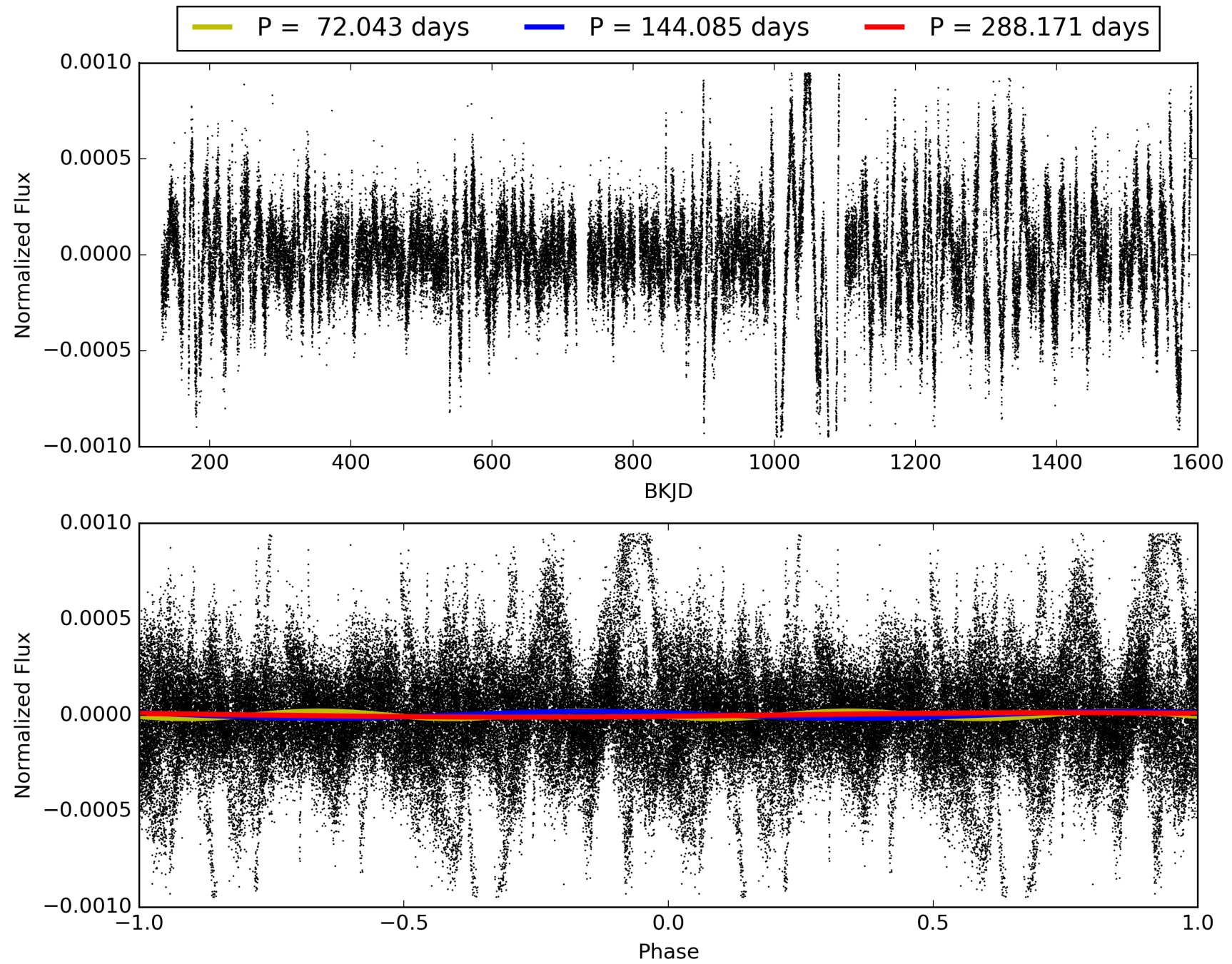
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:57:03 Z

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

TCE 005272571-03, PDC Light Curves

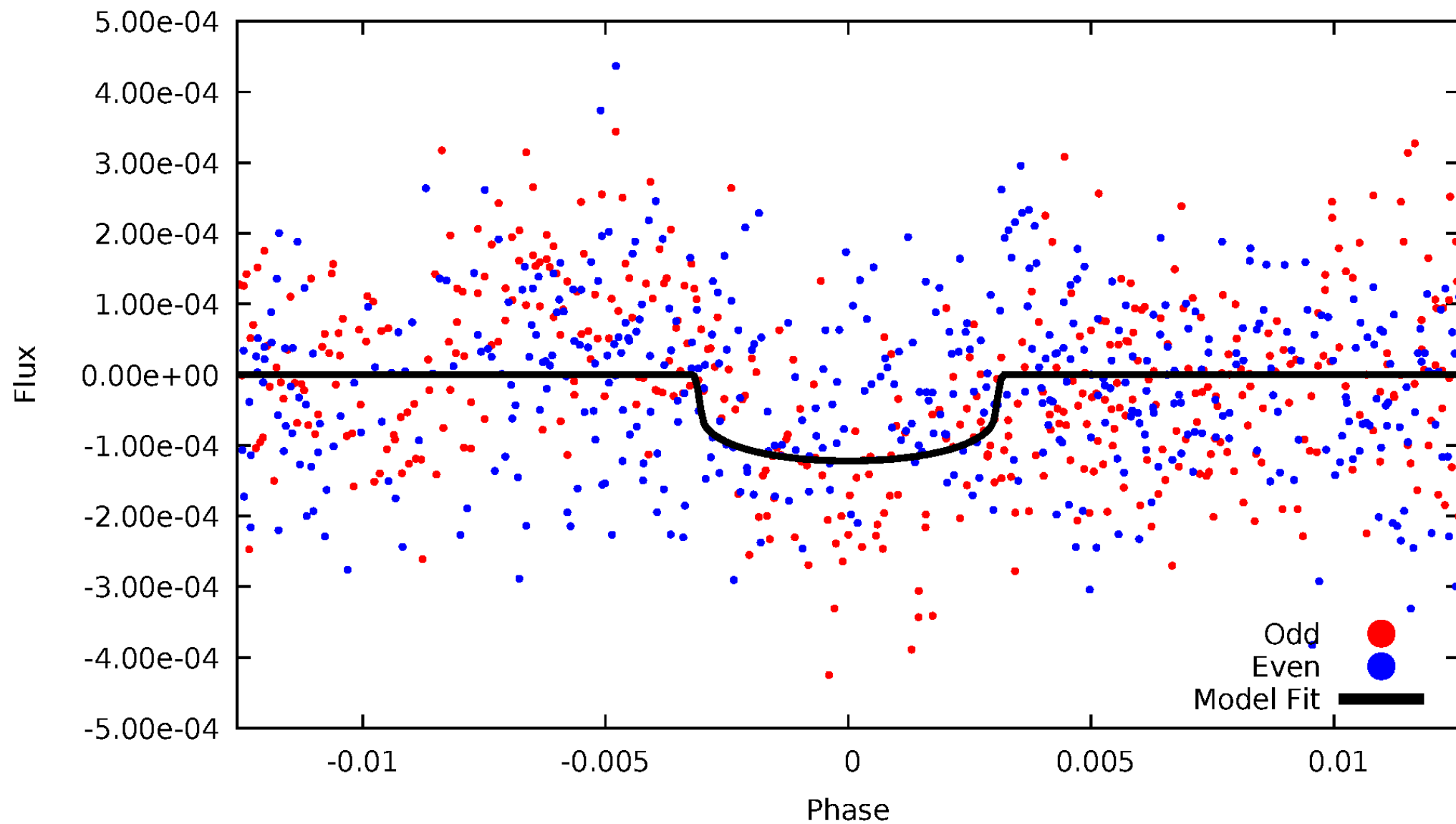


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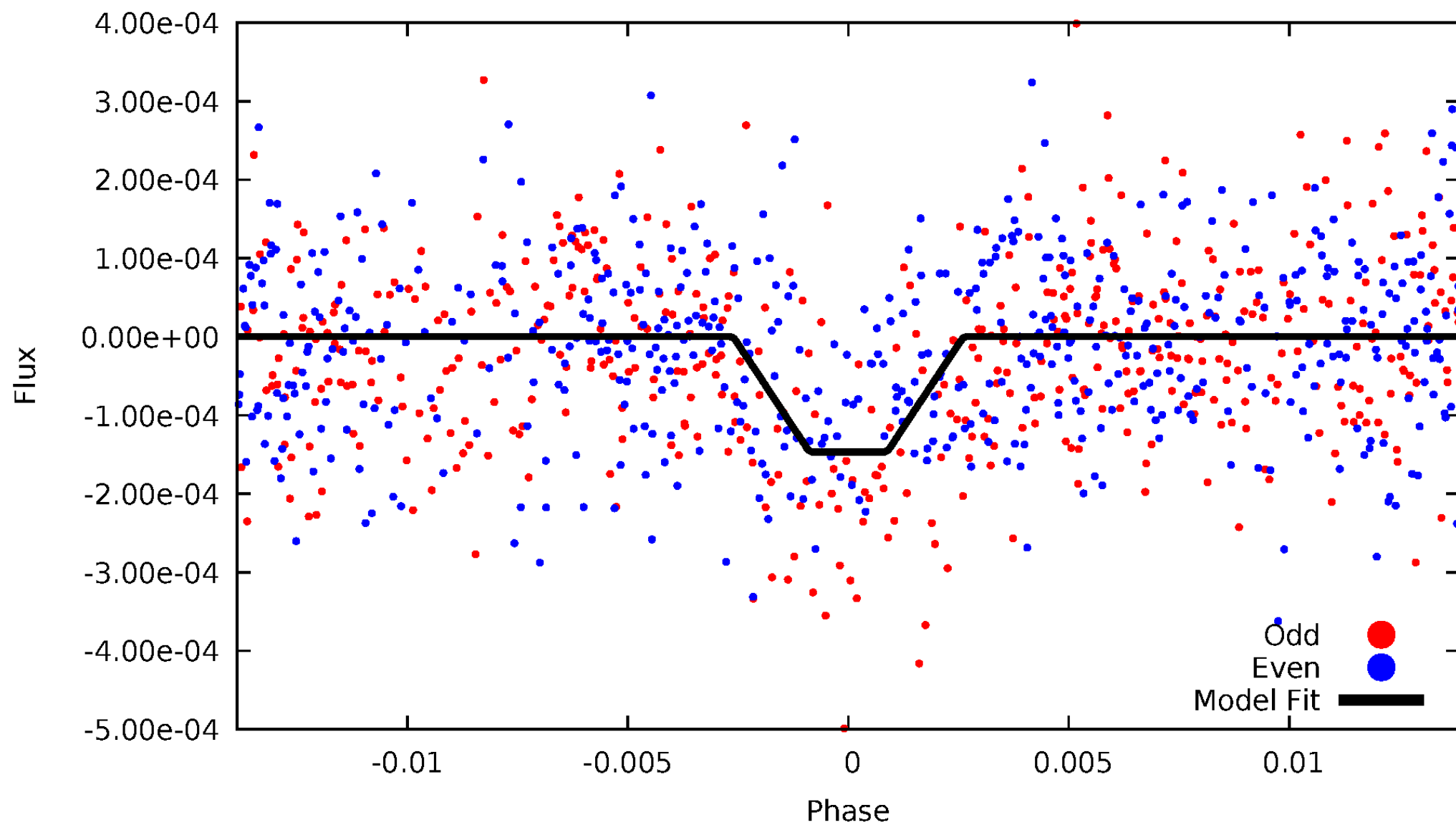
DV Odd/Even

TCE 005272571-03



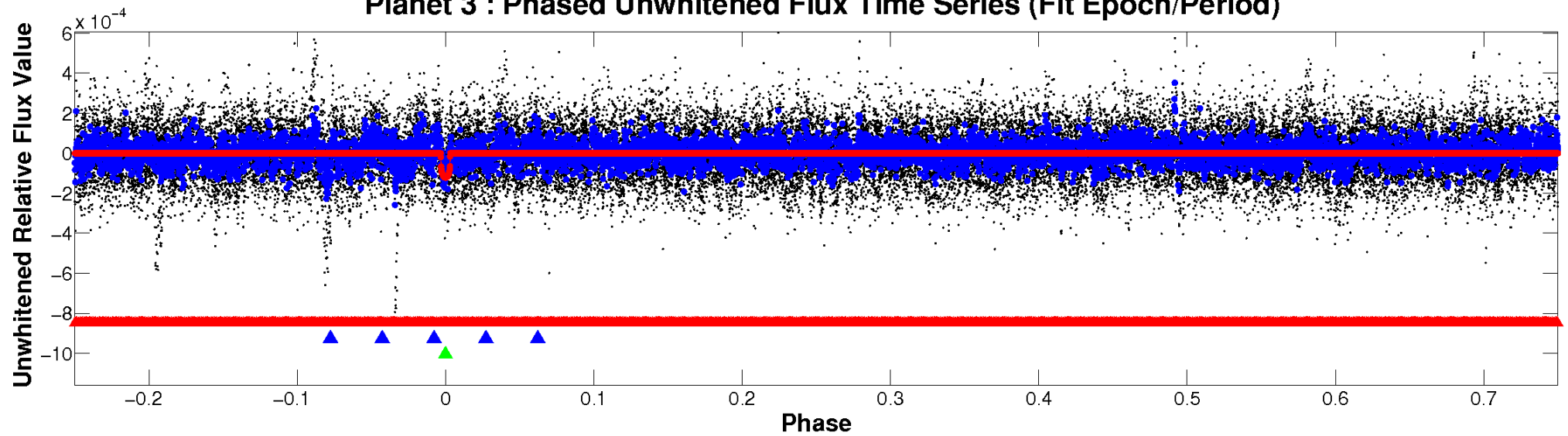
ALT Odd/Even

TCE 005272571-03

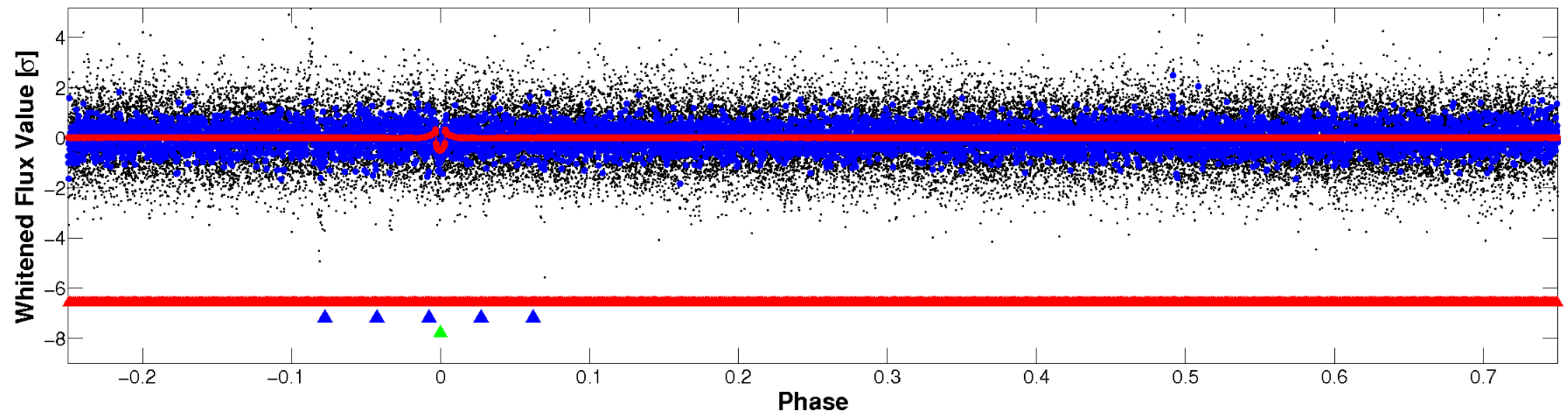


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

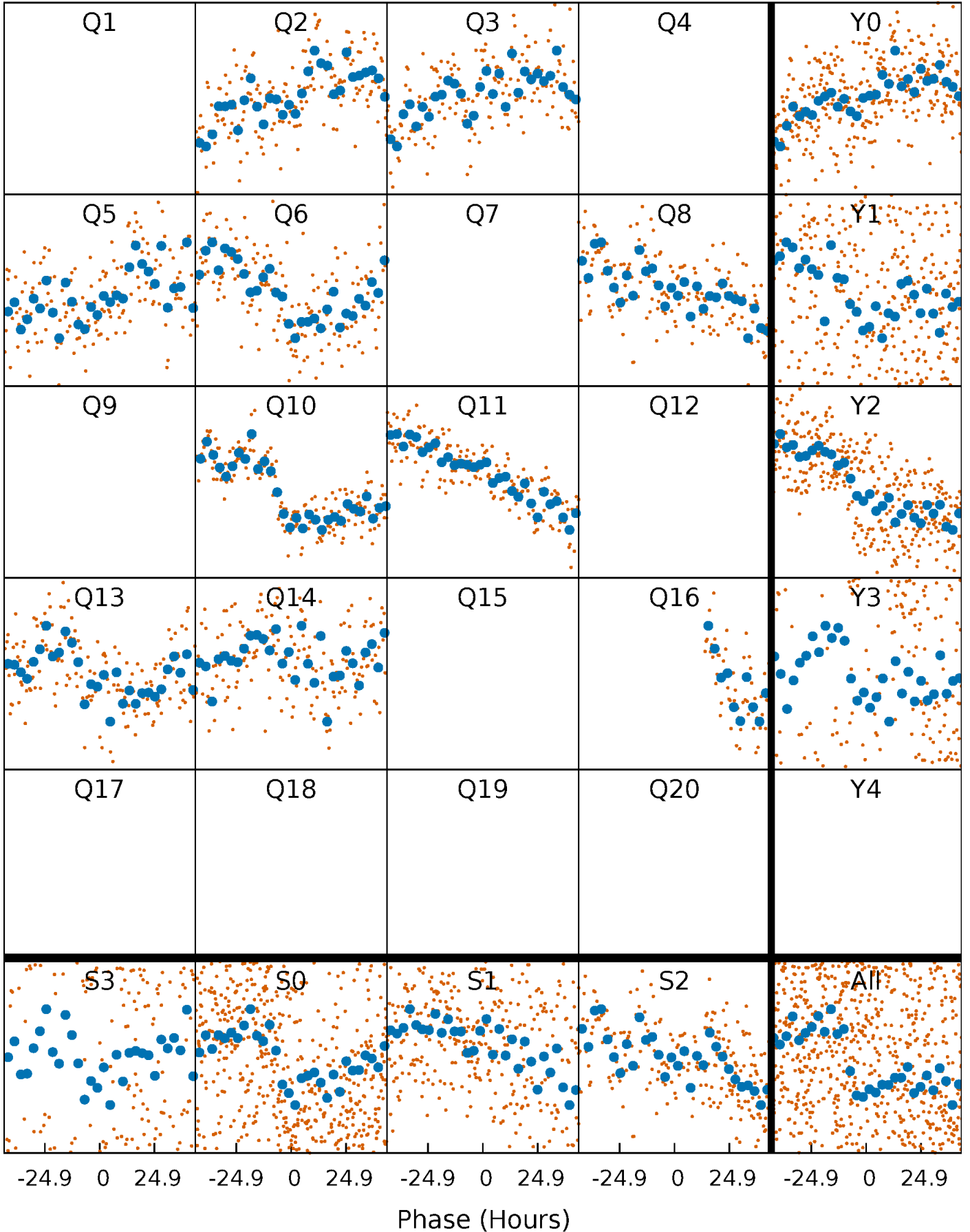


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



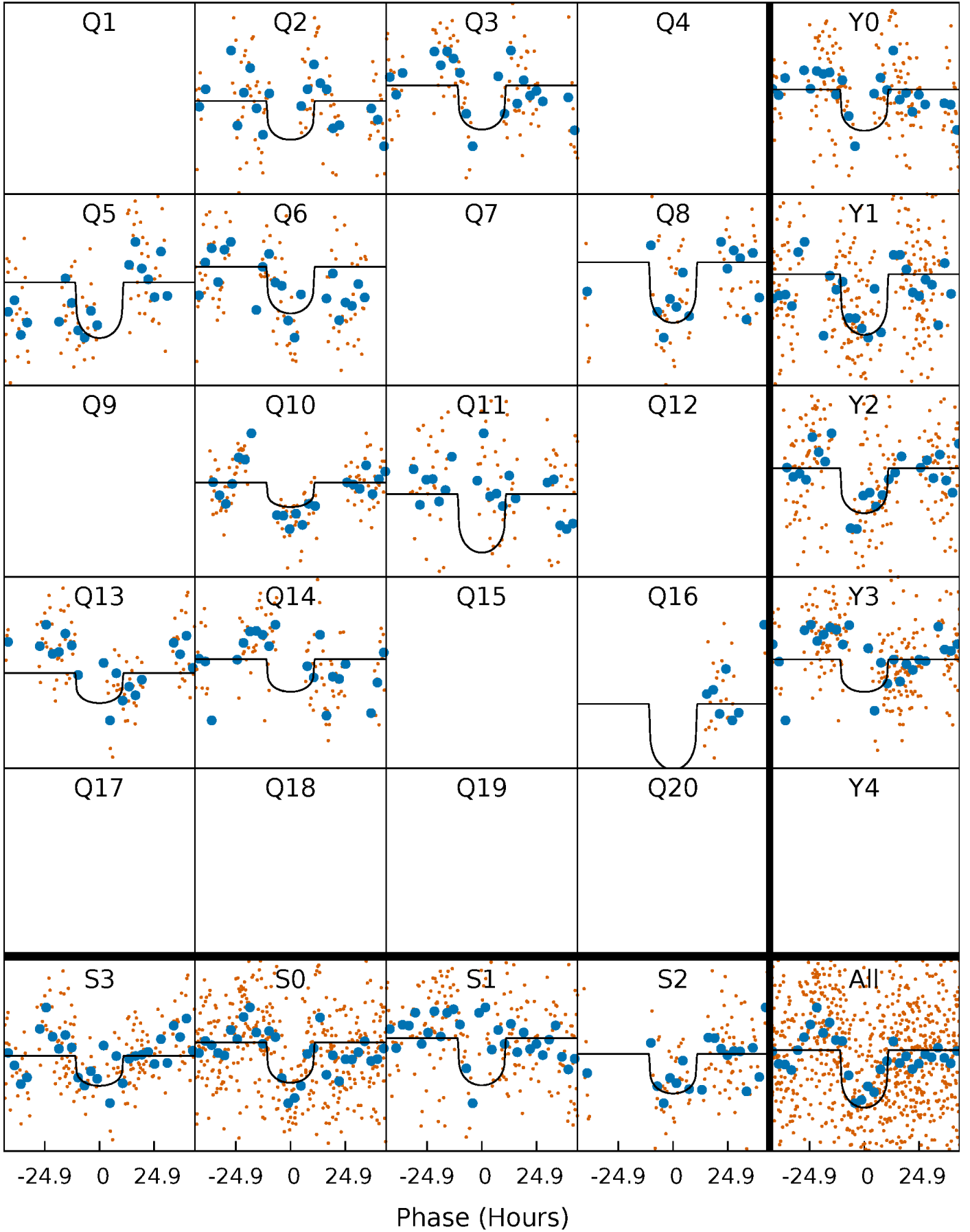
PDC Quarter-Phased Transit Curves

TCE 005272571-03 P=144.085457 Days $T_0=191.339533$ (BKJD)



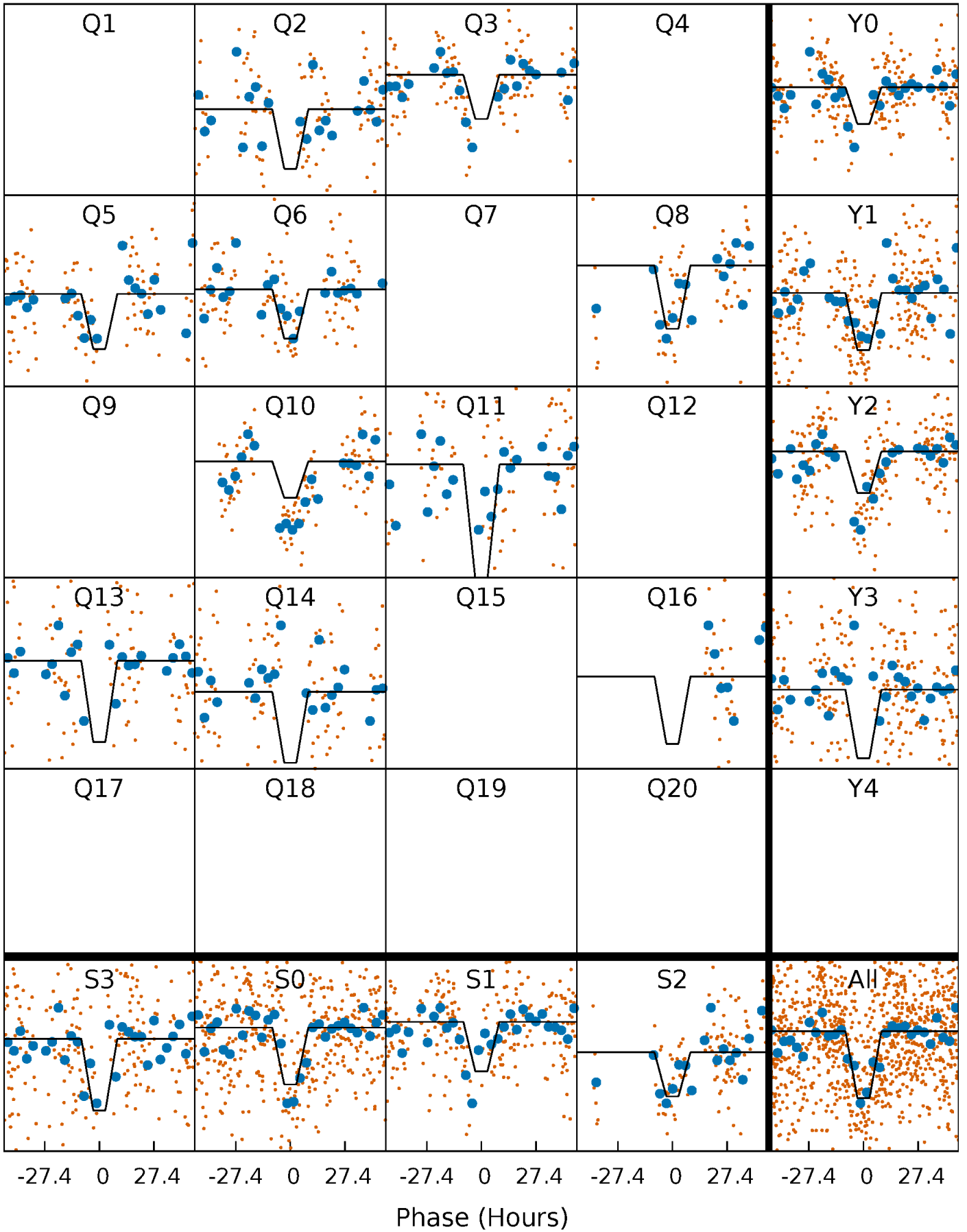
DV Quarter-Phased Transit Curves

TCE 005272571-03 P=144.085457 Days $T_0=191.339533$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

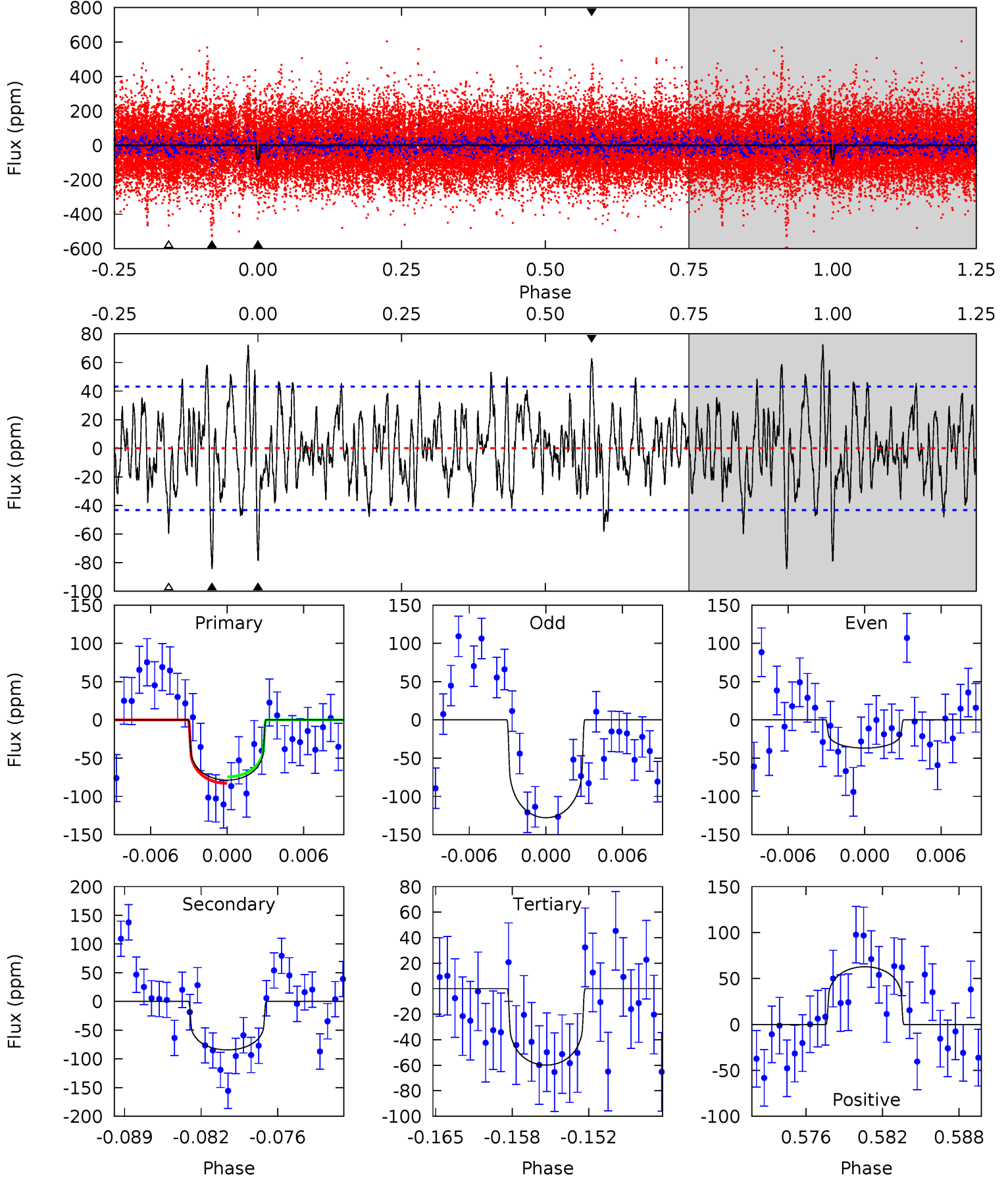
TCE 005272571-03 P=144.070220 Days $T_0=191.371766$ (BKJD)



DV Model-Shift Uniqueness Test

005272571-03, P = 144.085457 Days, E = 47.254076 Days

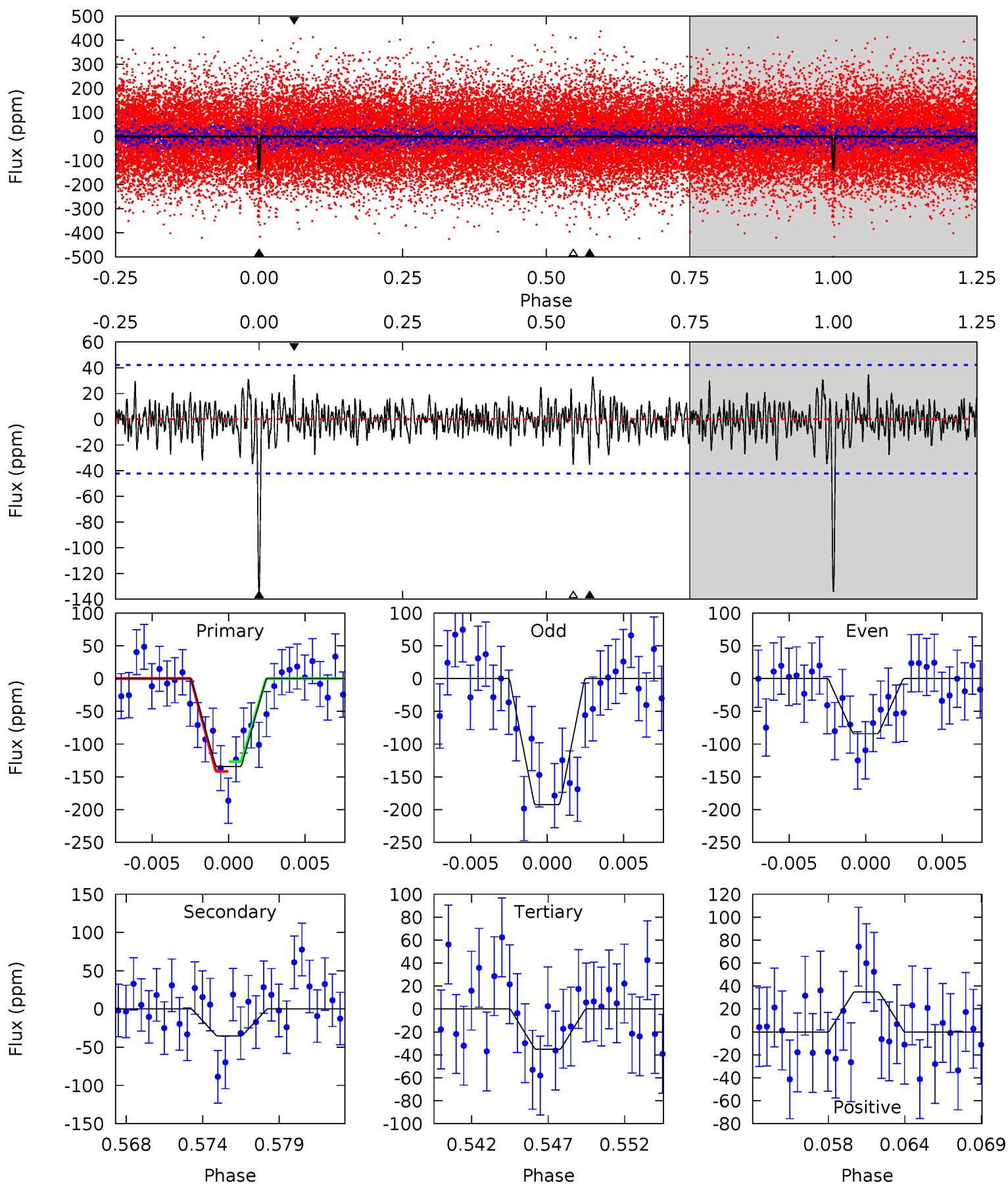
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.32	10.00	7.09	7.44	5.11	2.73	2.53	2.23	1.89	2.91	2.56	5.30	0.74	0.46	0.50



Alt Model-Shift Uniqueness Test

005272571-03, P = 144.070220 Days, E = 47.301546 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.4	4.31	4.29	4.25	5.15	2.79	1.14	12.1	12.1	0.02	0.06	6.56	1.24	0.21	0.91



Stellar Parameters For KIC 005272571

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5216^{+67}_{-62}	$3.287^{+0.143}_{-0.130}$	$-0.660^{+0.150}_{-0.100}$	$3.871^{+0.840}_{-0.688}$	$1.058^{+0.215}_{-0.176}$	$0.026^{+0.018}_{-0.010}$
	+1%/-1%	+4%/-4%	+23%/-15%	+22%/-18%	+20%/-17%	+71%/-39%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 005272571-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-84 ± 8	$4.59^{+1.59}_{-1.57}$	855^{+44}_{-43}	4863^{+955}_{-509}	680^{+809}_{-310}
Alt.	-35 ± 8	$5.07^{+1.63}_{-1.62}$	855^{+46}_{-46}	3969^{+589}_{-382}	230^{+269}_{-109}

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 $A_{obs} \gg 1.0$

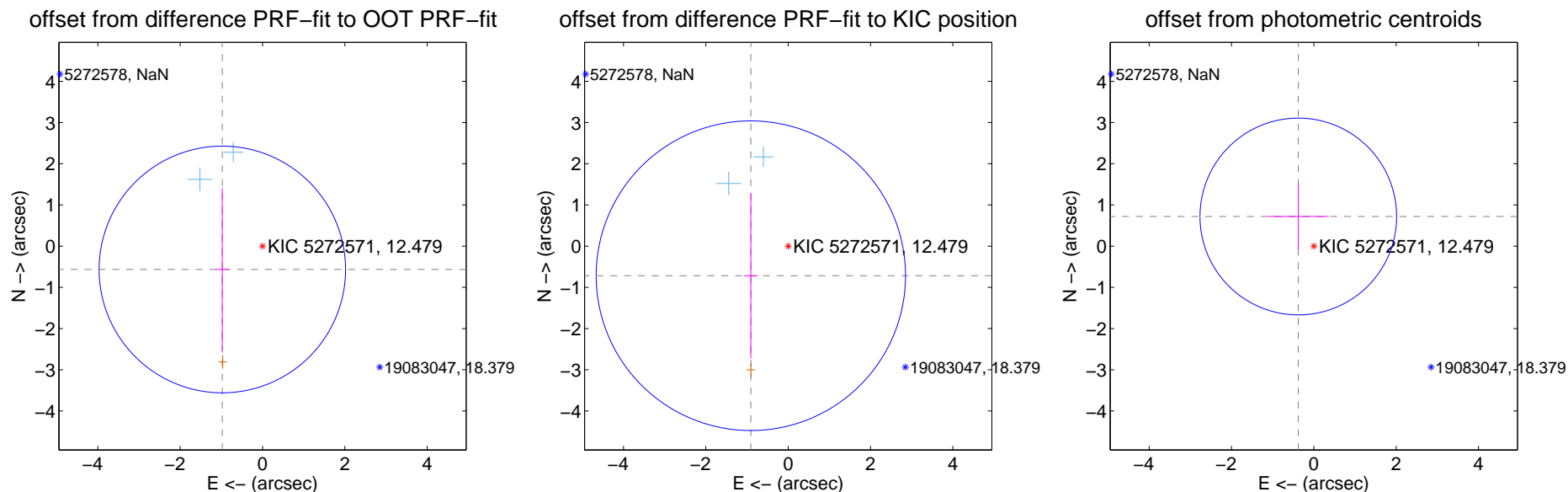
DV Centroid Data

Supplemental centroid analysis for 005272571-03. Kepler magnitude: 12.48. Transit SNR 6.81

There are 2 quarters with good PRF difference image offsets

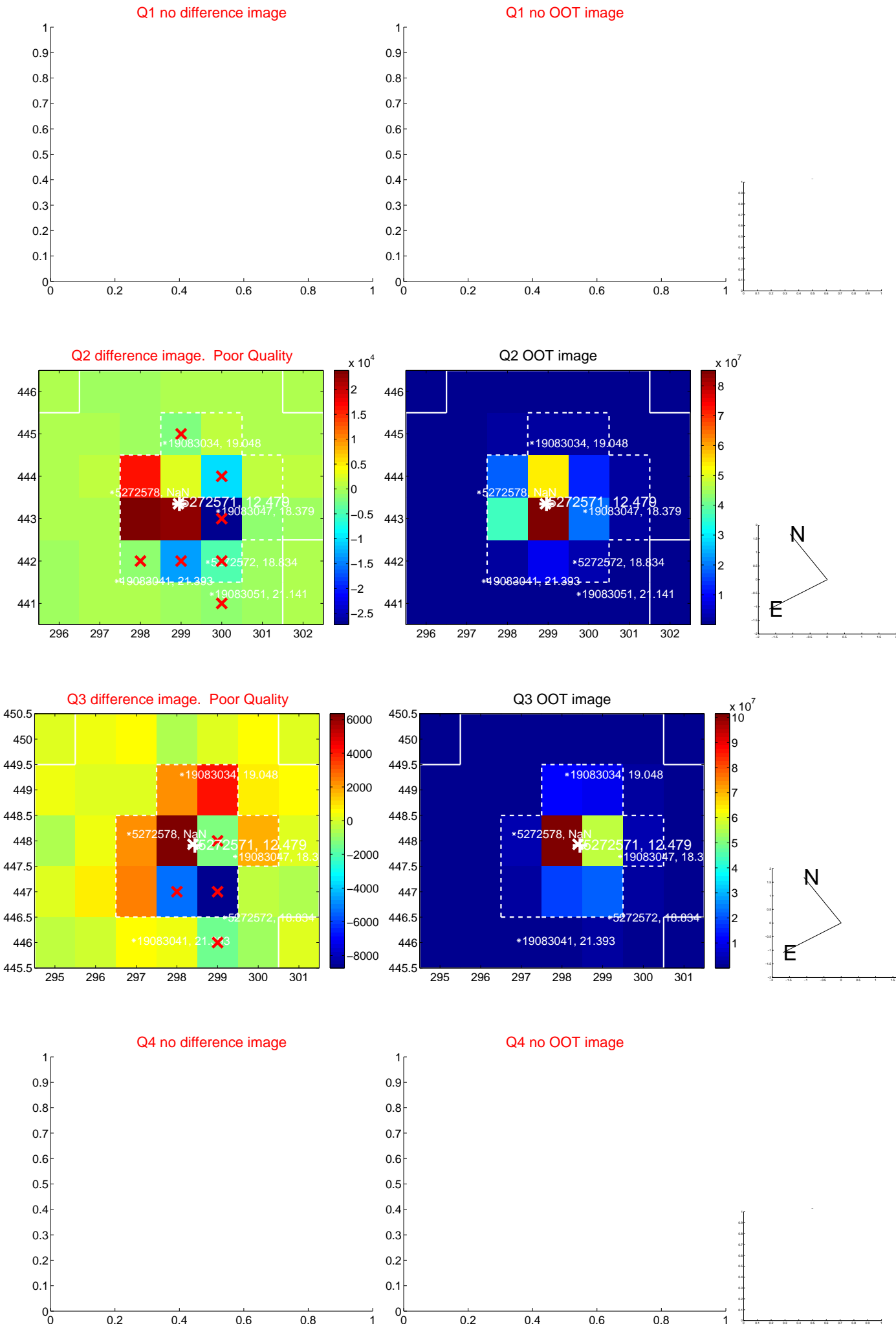
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.129 ± 0.998	1.13	0.977 ± 0.168	-0.566 ± 1.970
PRF-fit source offset from KIC position	1.157 ± 1.252	0.92	0.907 ± 0.170	-0.718 ± 2.007
photometric centroid source offset	0.81 ± 0.80	1.02	0.38 ± 0.74	0.72 ± 0.81

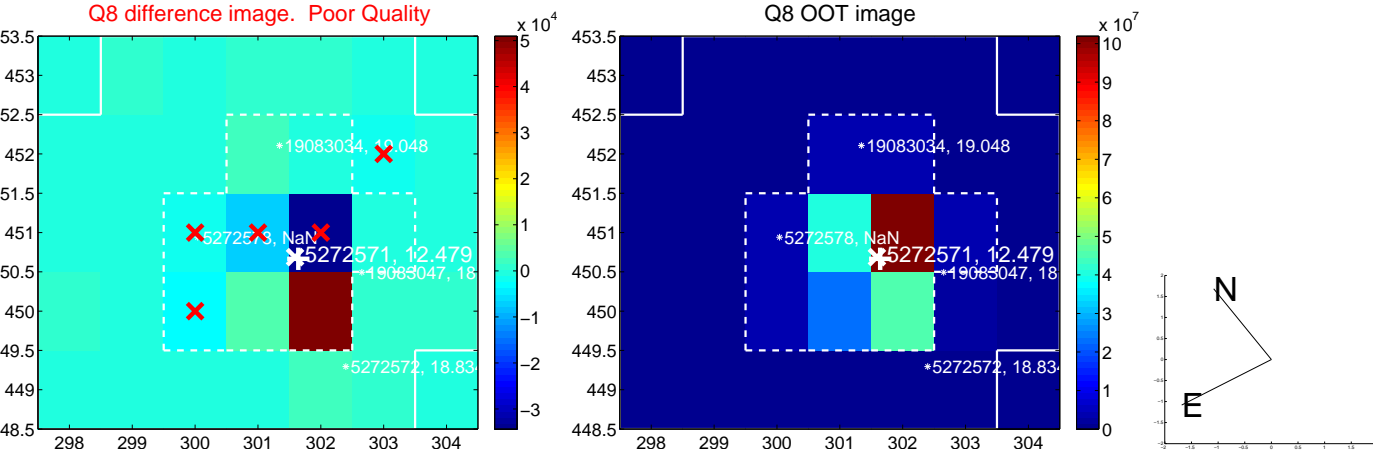
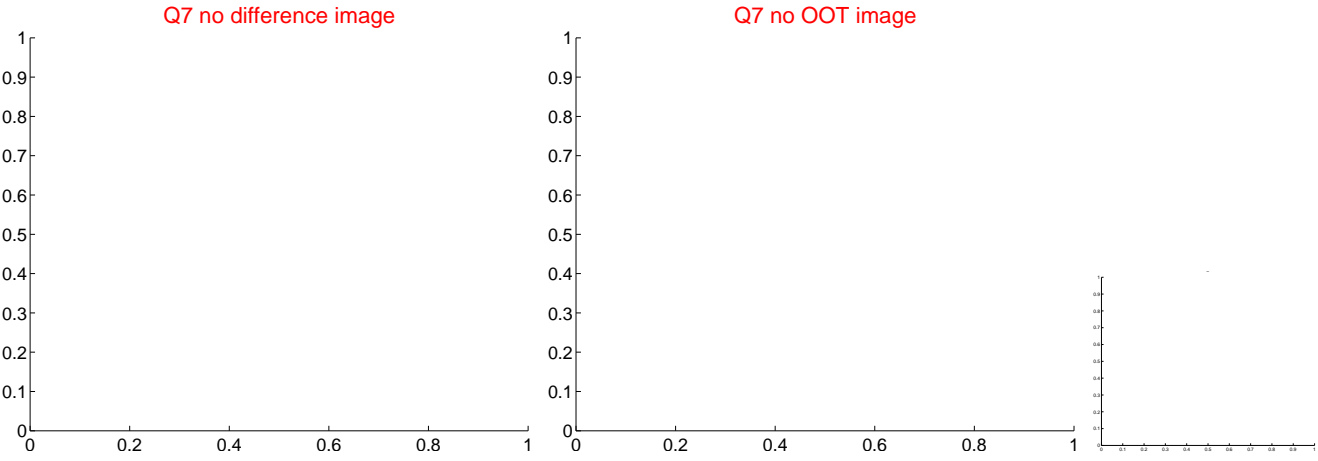
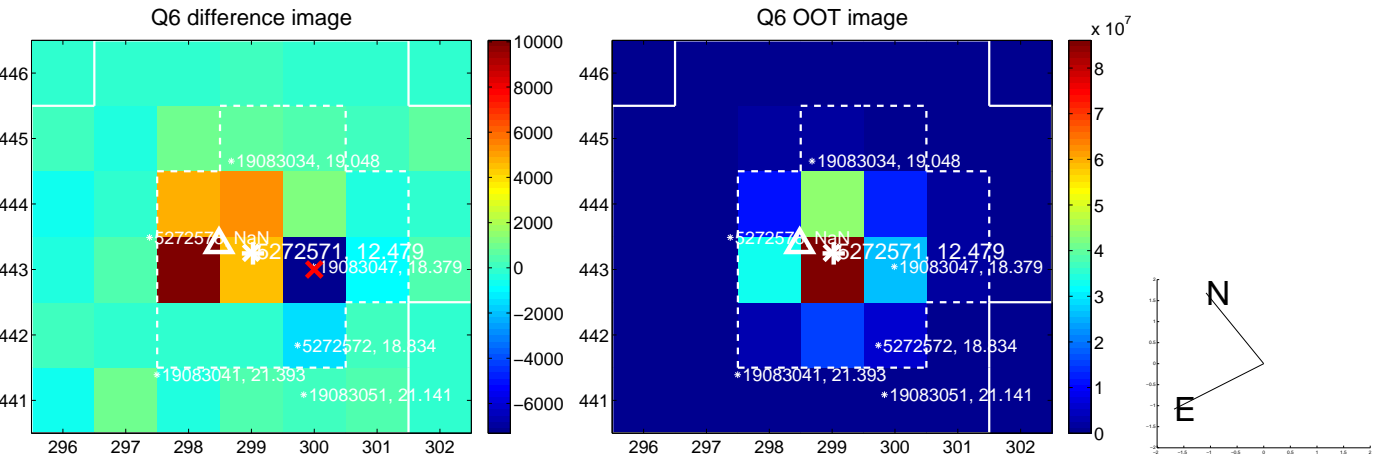
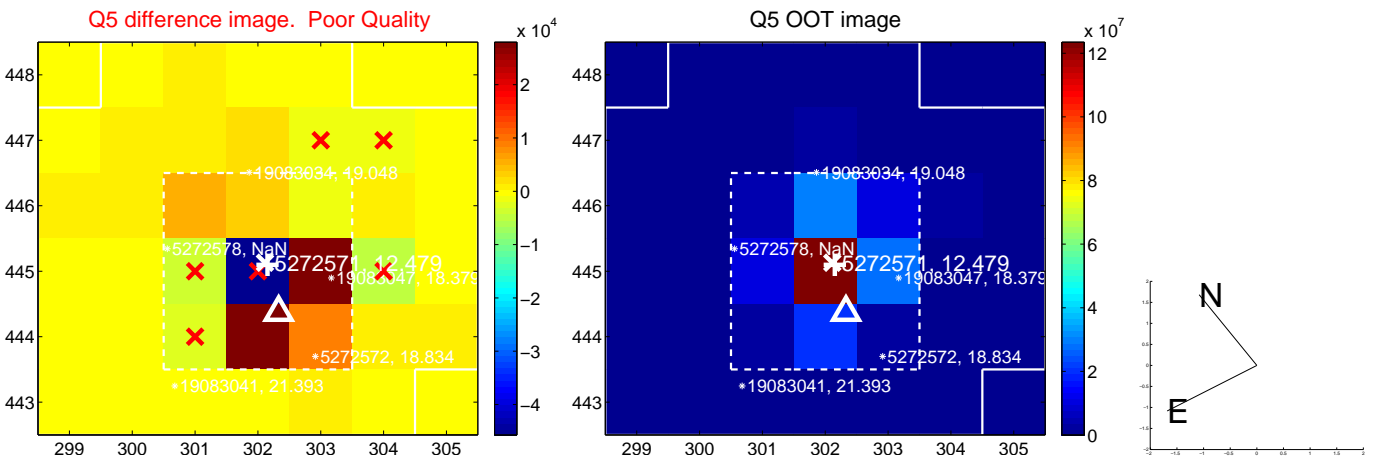


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

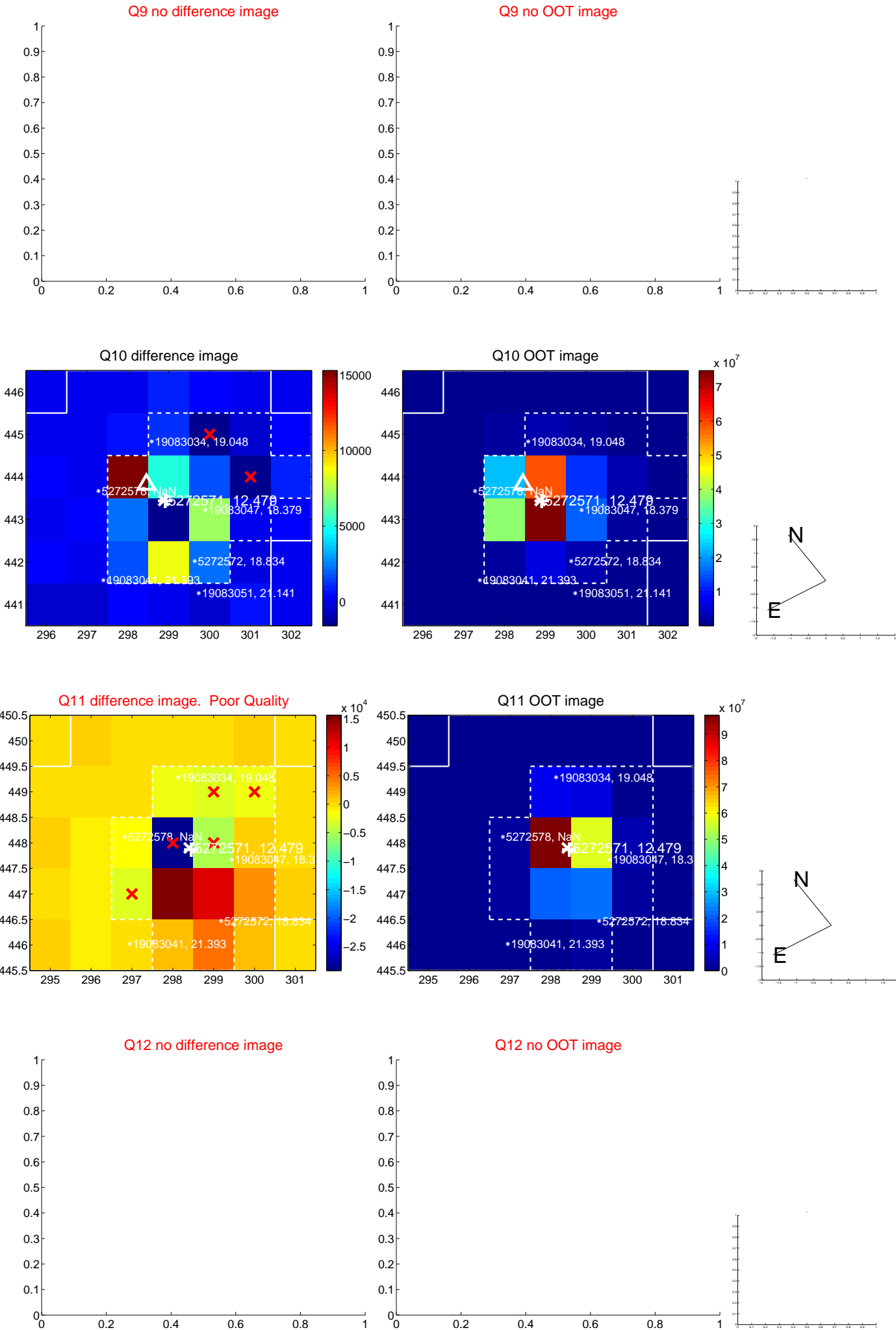
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



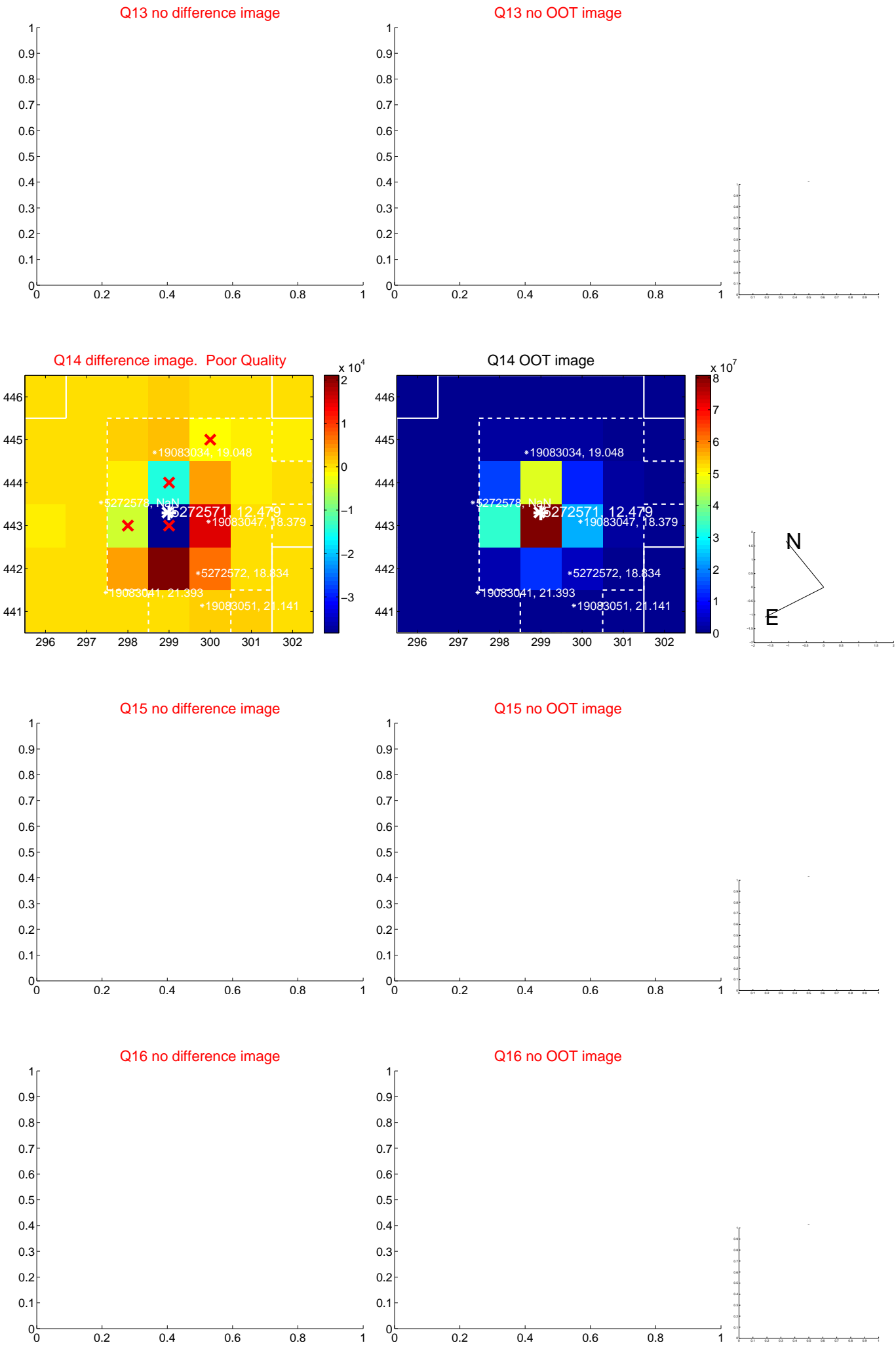
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



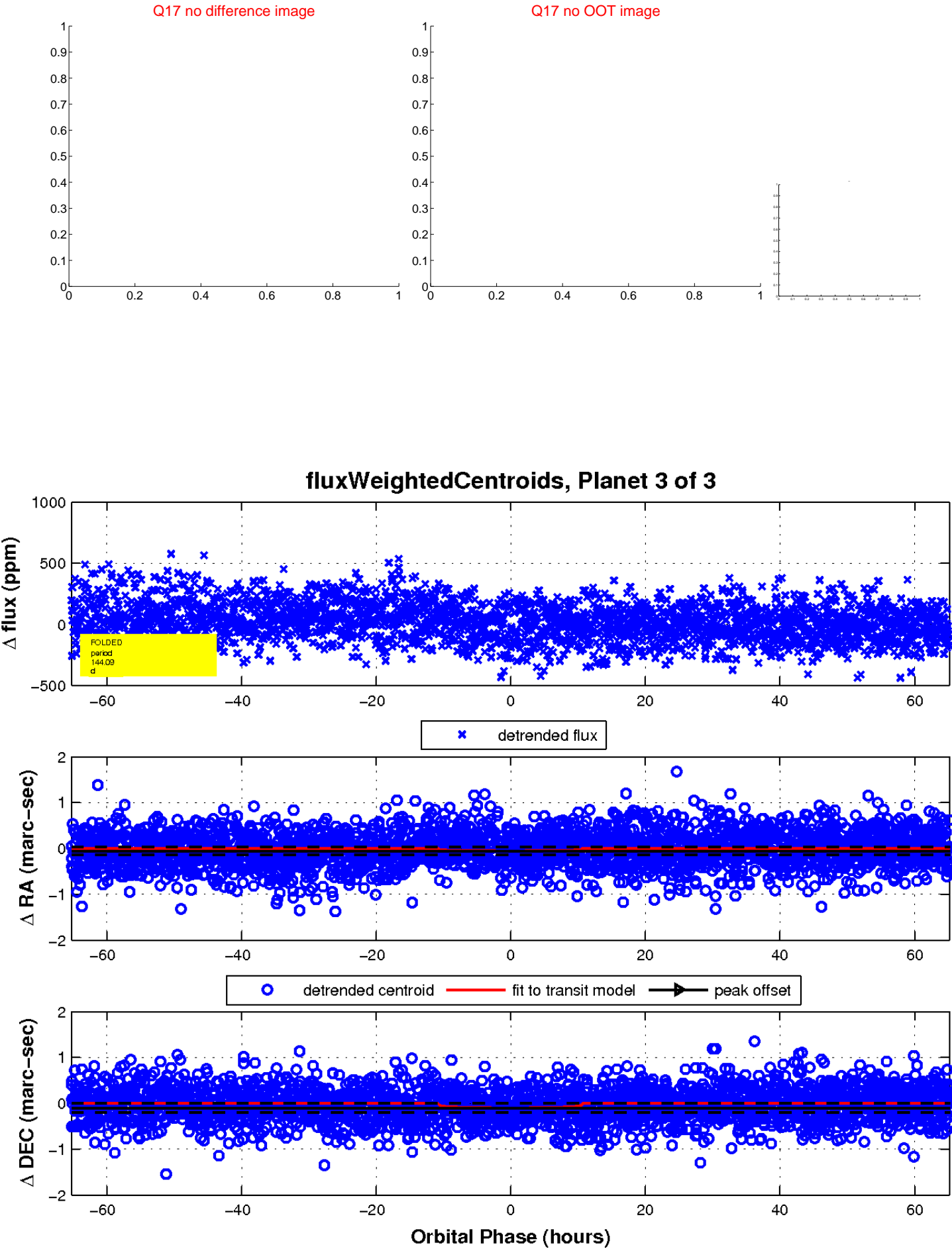
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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.



UKIRT Image

Declination

