

KIC 010615125

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})
010615125-01	OBS	No	2.961057	133.683747	81.3	10.718	7.3	7.1	3.18	7216	2.90	9165.64
010615125-02	OBS	No	1.974353	131.559383	134.2	9.532	9.2	10.6	3.18	7216	3.72	15734.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010615125-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010615125-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_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.

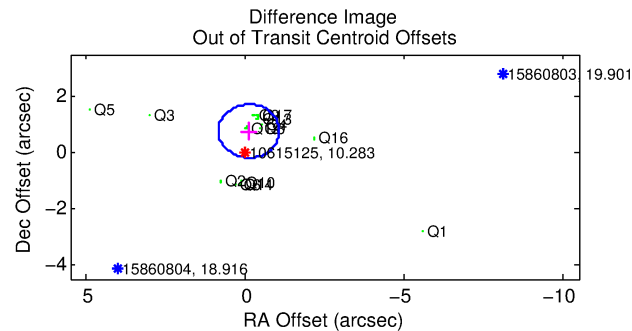
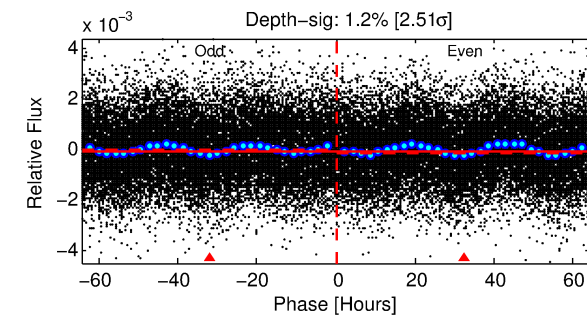
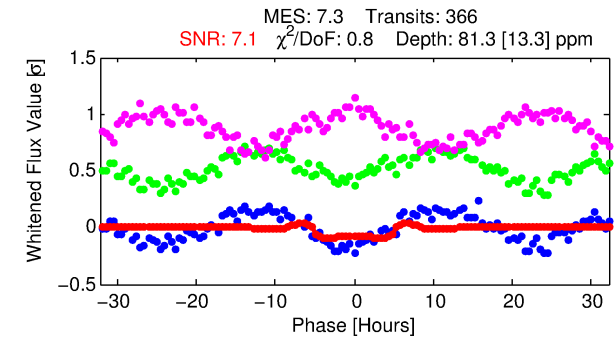
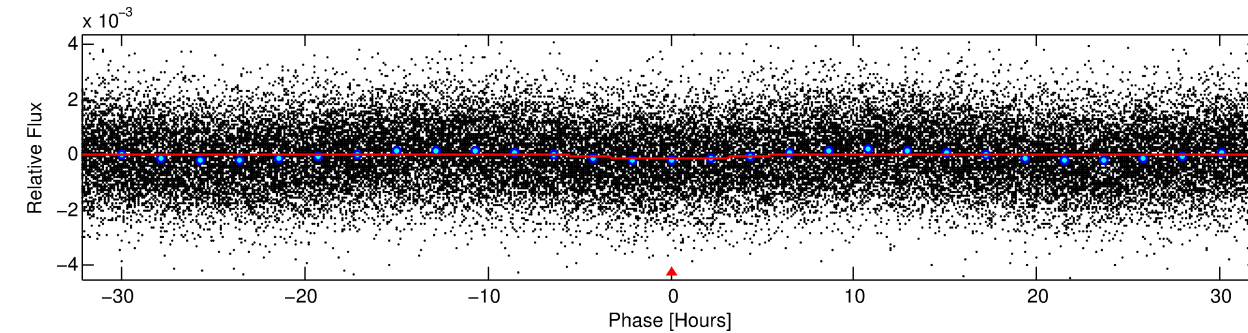
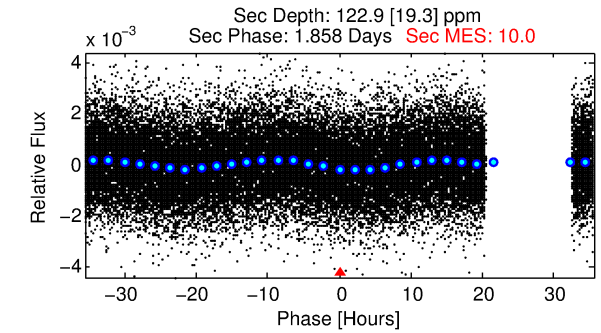
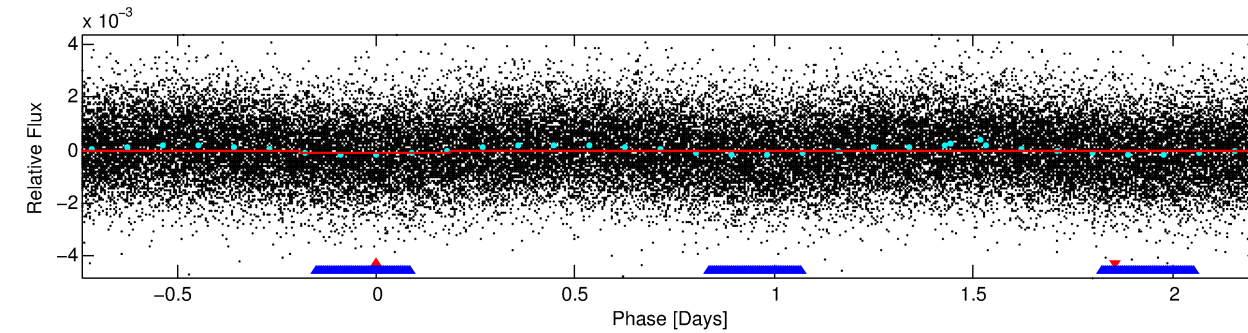
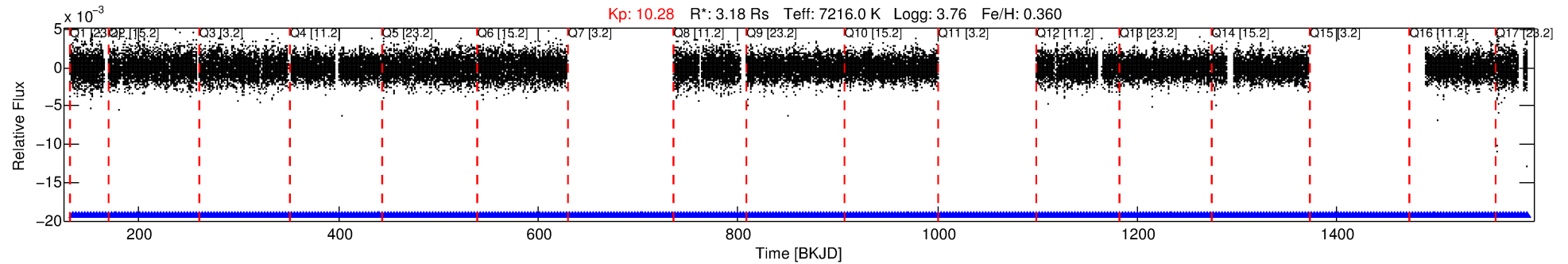
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010615125-01

No Significant Match Found

DV One-Page Summary

KIC: 10615125 Candidate: 1 of 2 Period: 2.961 d



DV Fit Results:

Period = 2.96106 [0.00006] d
Epoch = 133.6837 [0.0141] BKJD
Rp/R* = 0.0084 [0.0093]
a/R* = 2.21 [11.24]
b = 0.00 [7272.73]
Seff = 9165.64 [3222.93]
Teq = 2495 [219] K
Rp = 2.90 [3.30] Re
a = 0.0517 [0.0120] AU
Ag = 21.57 [48.52] [0.42 σ]
Teffp = 8313 [4621] K [1.26 σ]

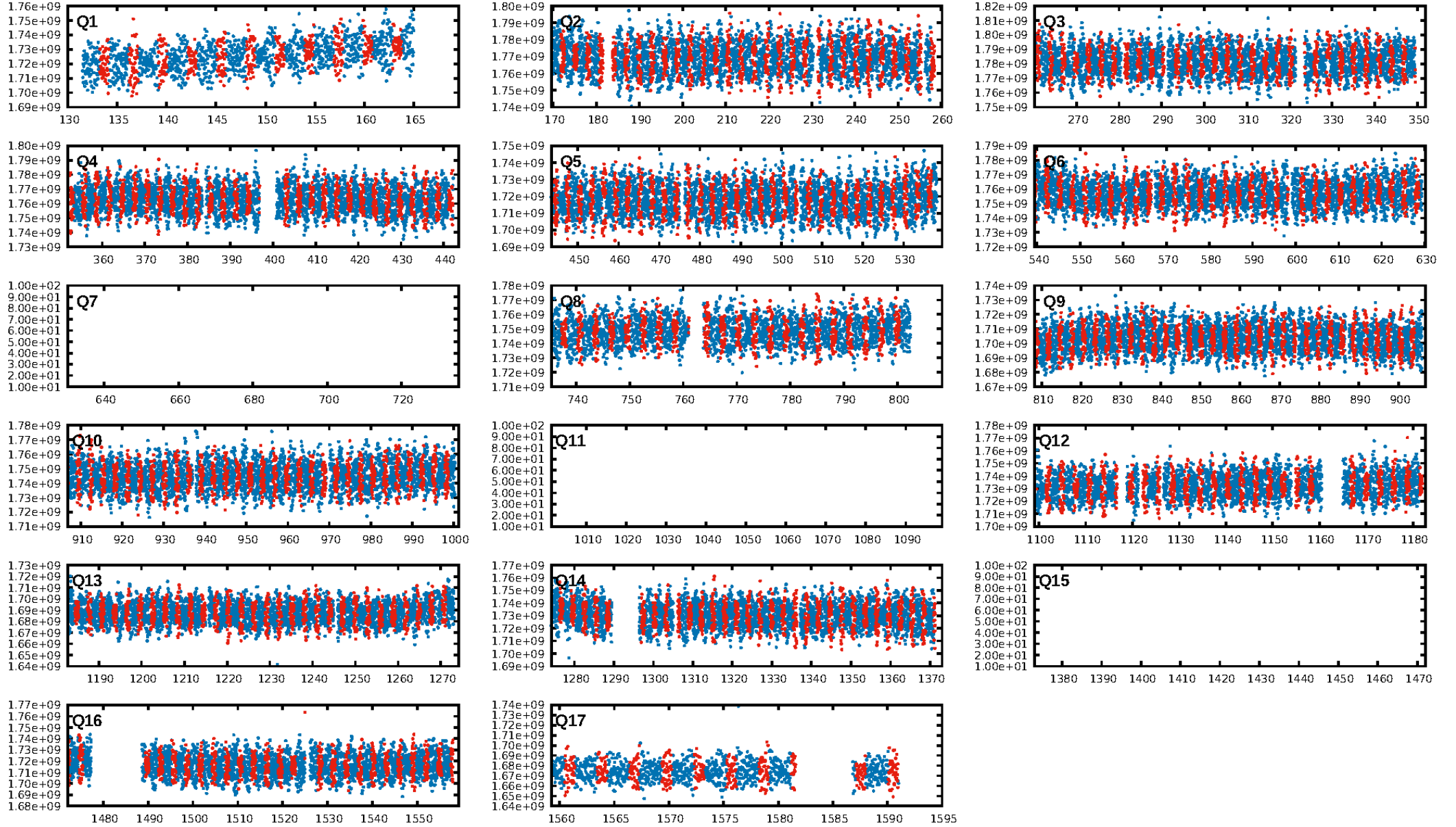
DV Diagnostic Results:

ShortPeriod-sig: 90.1% [1.65 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.43e-07
RollingBand-fgt: 1.00 [345/345]
GhostDiagnostic-chr: 2.92
Centroid-sig: N/A
Centroid-so: 0.155 arcsec [0.39 σ]
OotOffset-rm: 0.773 arcsec [2.44 σ]
KicOffset-rm: 0.759 arcsec [1.52 σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.00 [0/14]
DiffImageOverlap-fno: 0.00 [0/14]

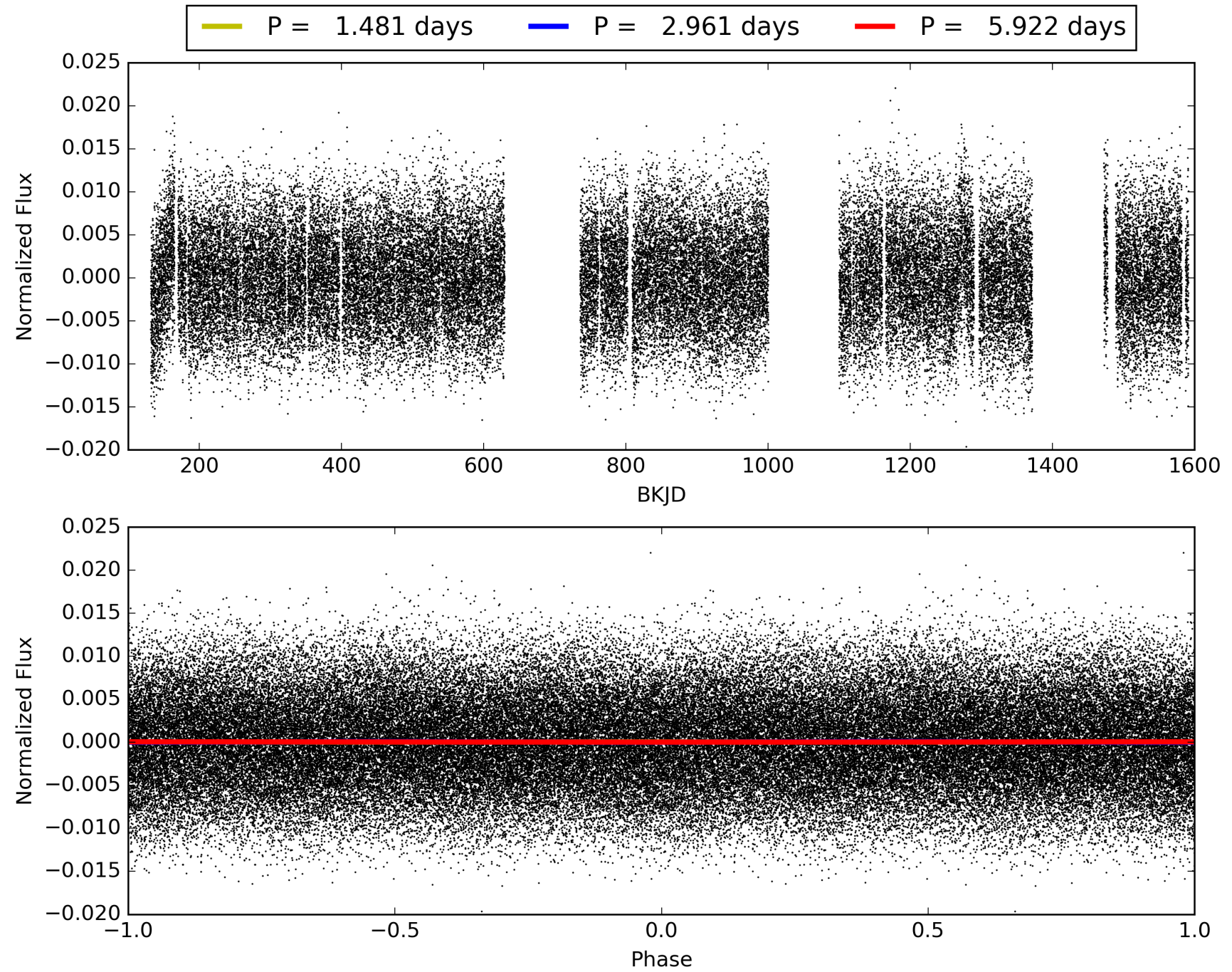
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010615125-01, PDC Light Curves

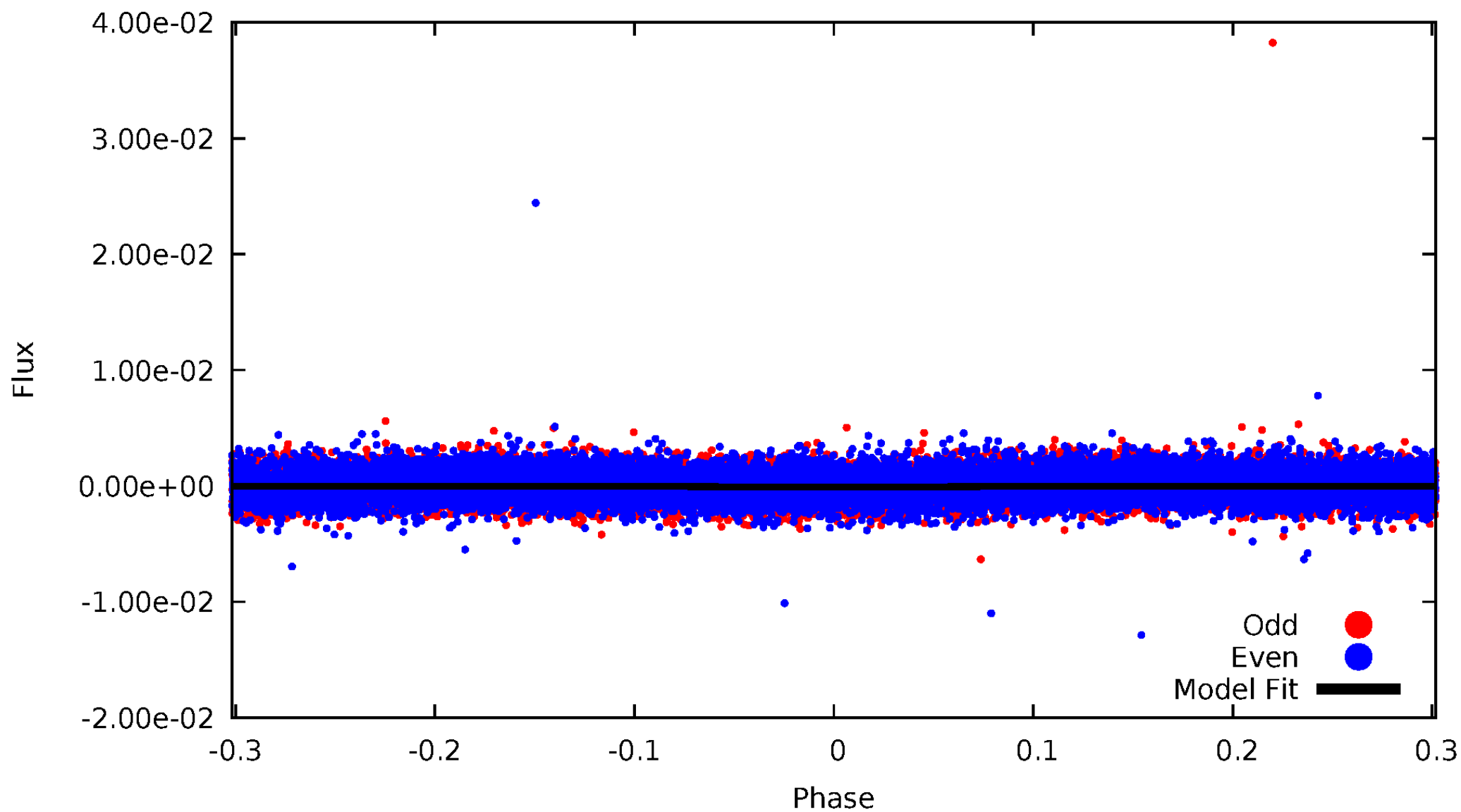


TCE 010615125-01



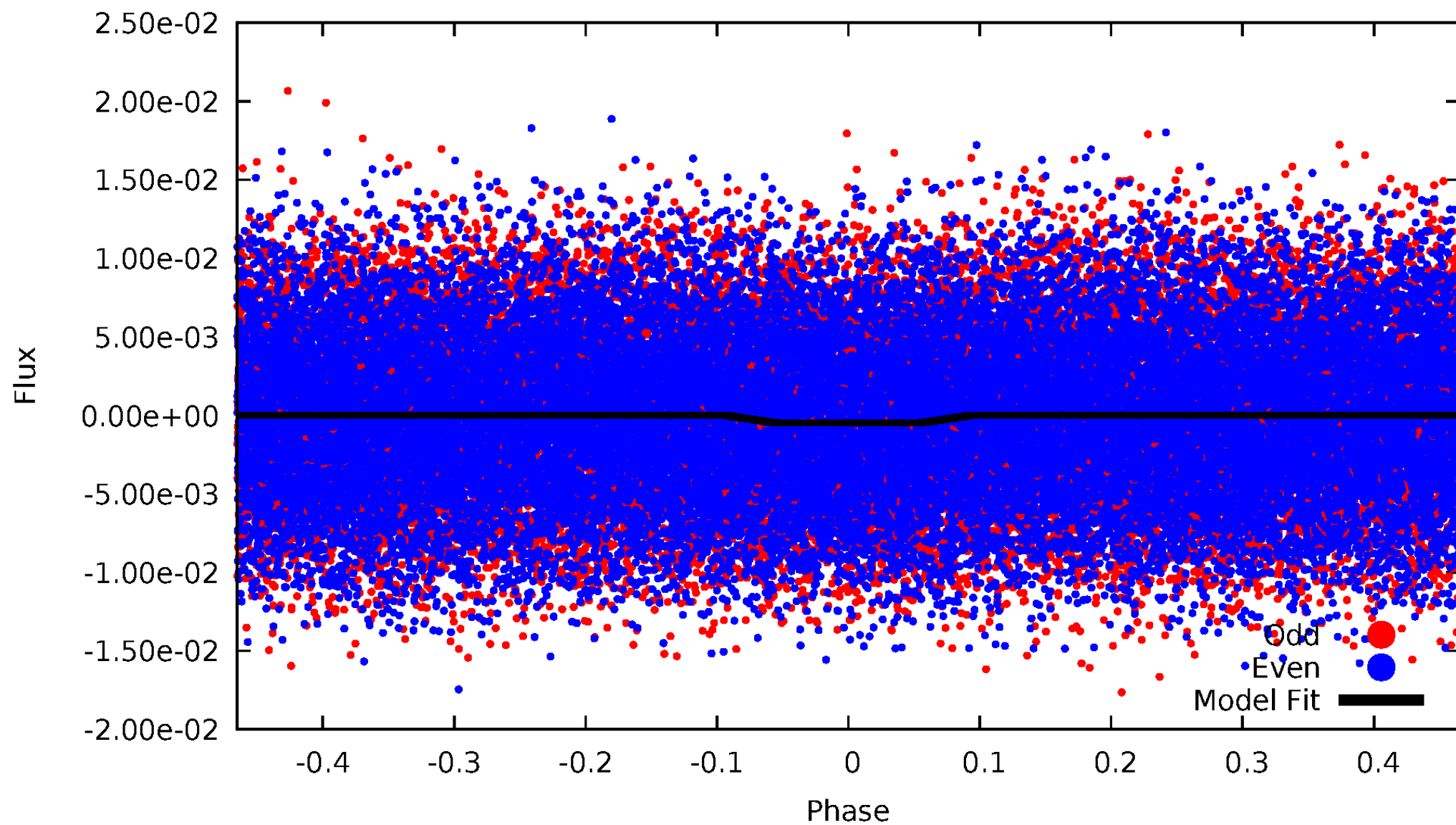
DV Odd/Even

TCE 010615125-01

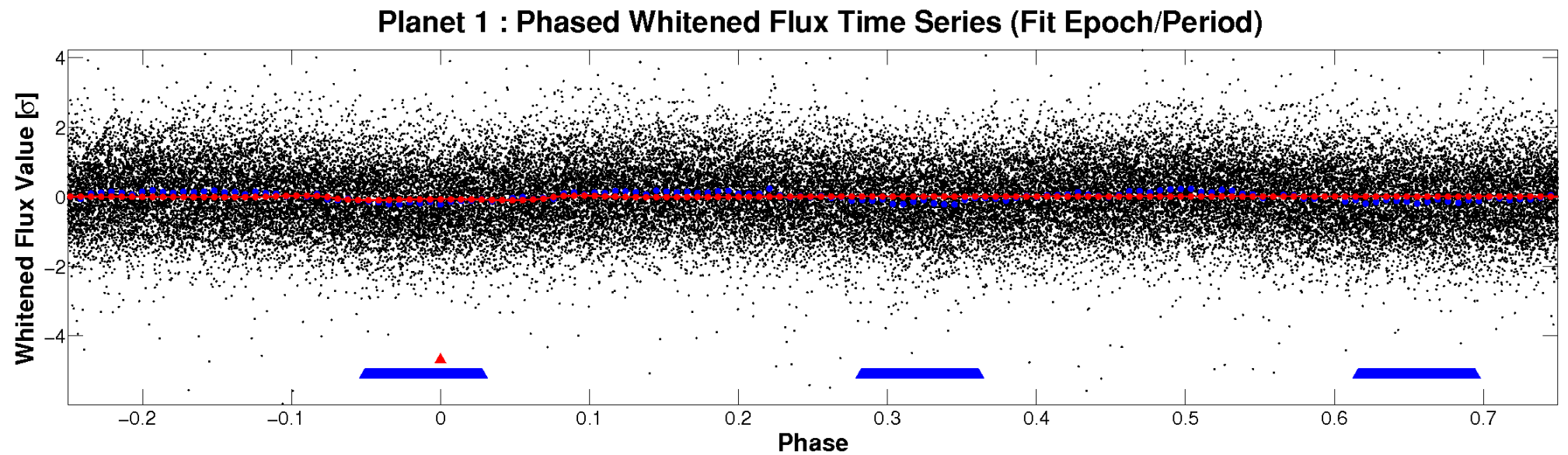
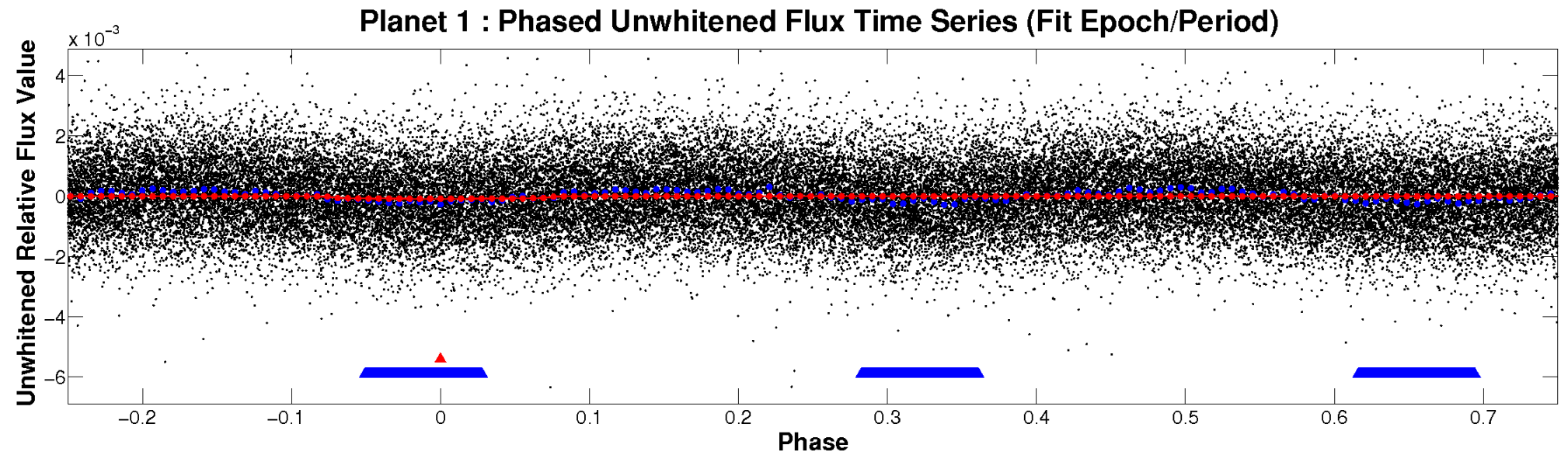


ALT Odd/Even

TCE 010615125-01

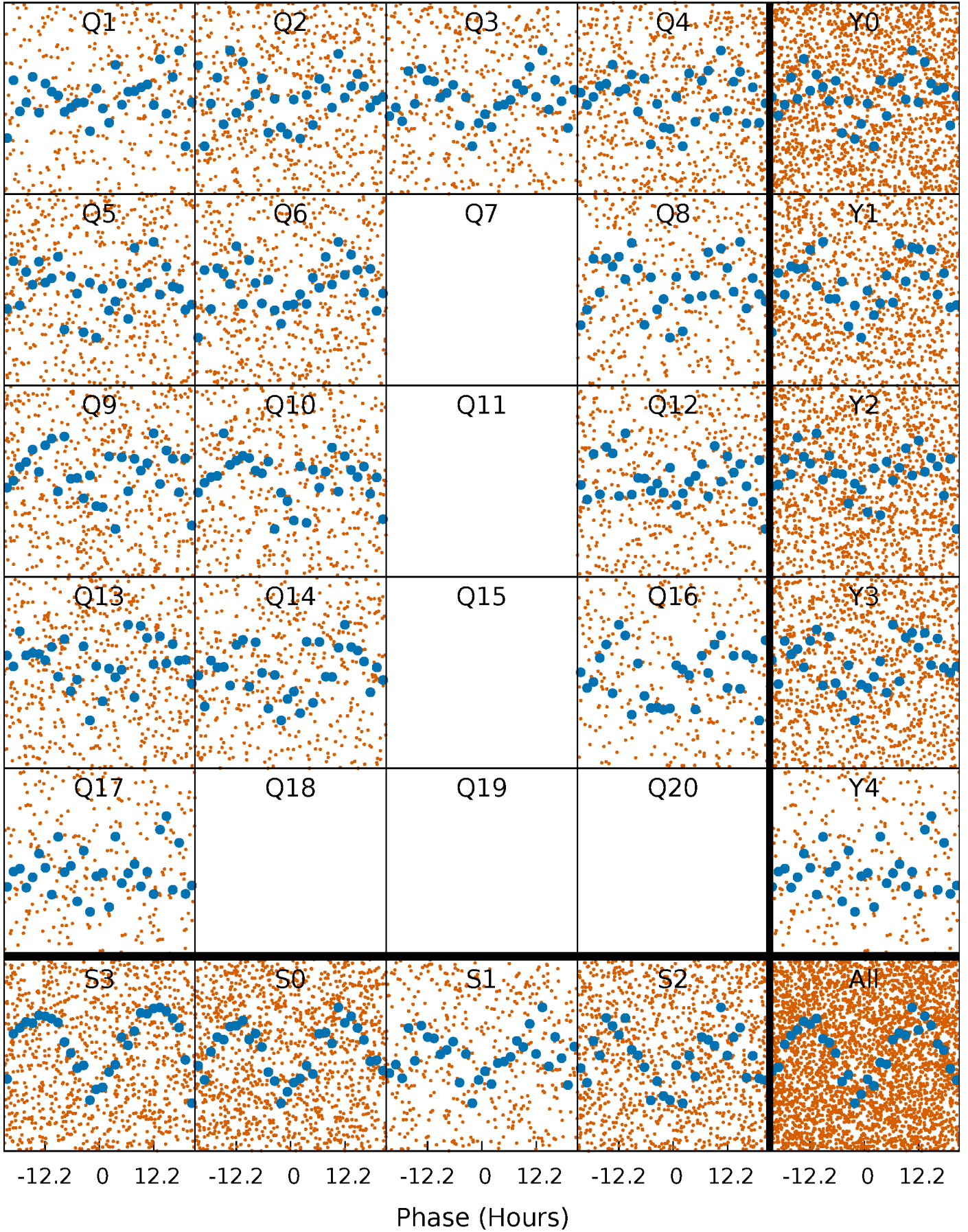


Non-Whitened Vs. Whitened Light Curve



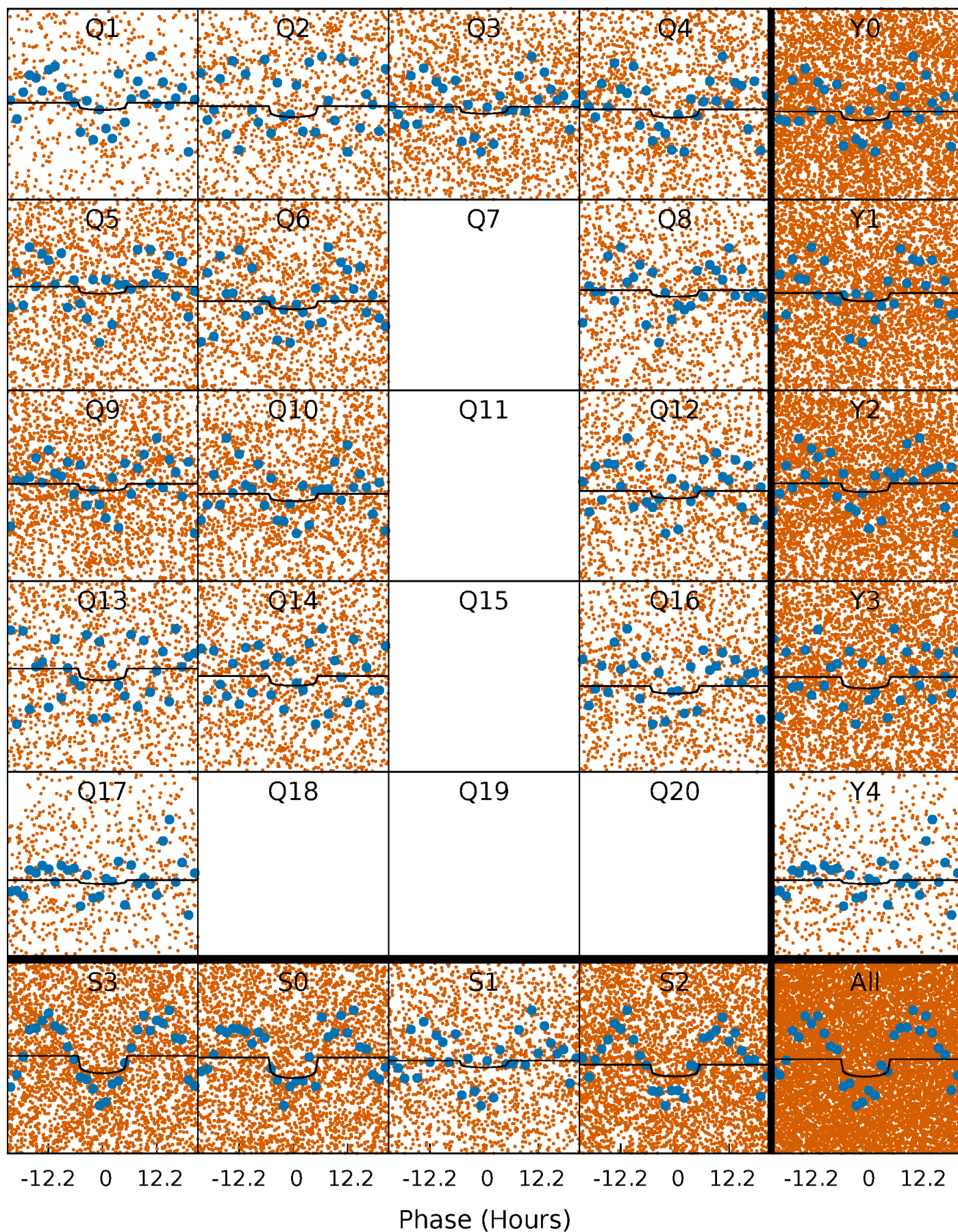
PDC Quarter-Phased Transit Curves

TCE 010615125-01 P= 2.961057 Days $T_0=133.683747$ (BKJD)



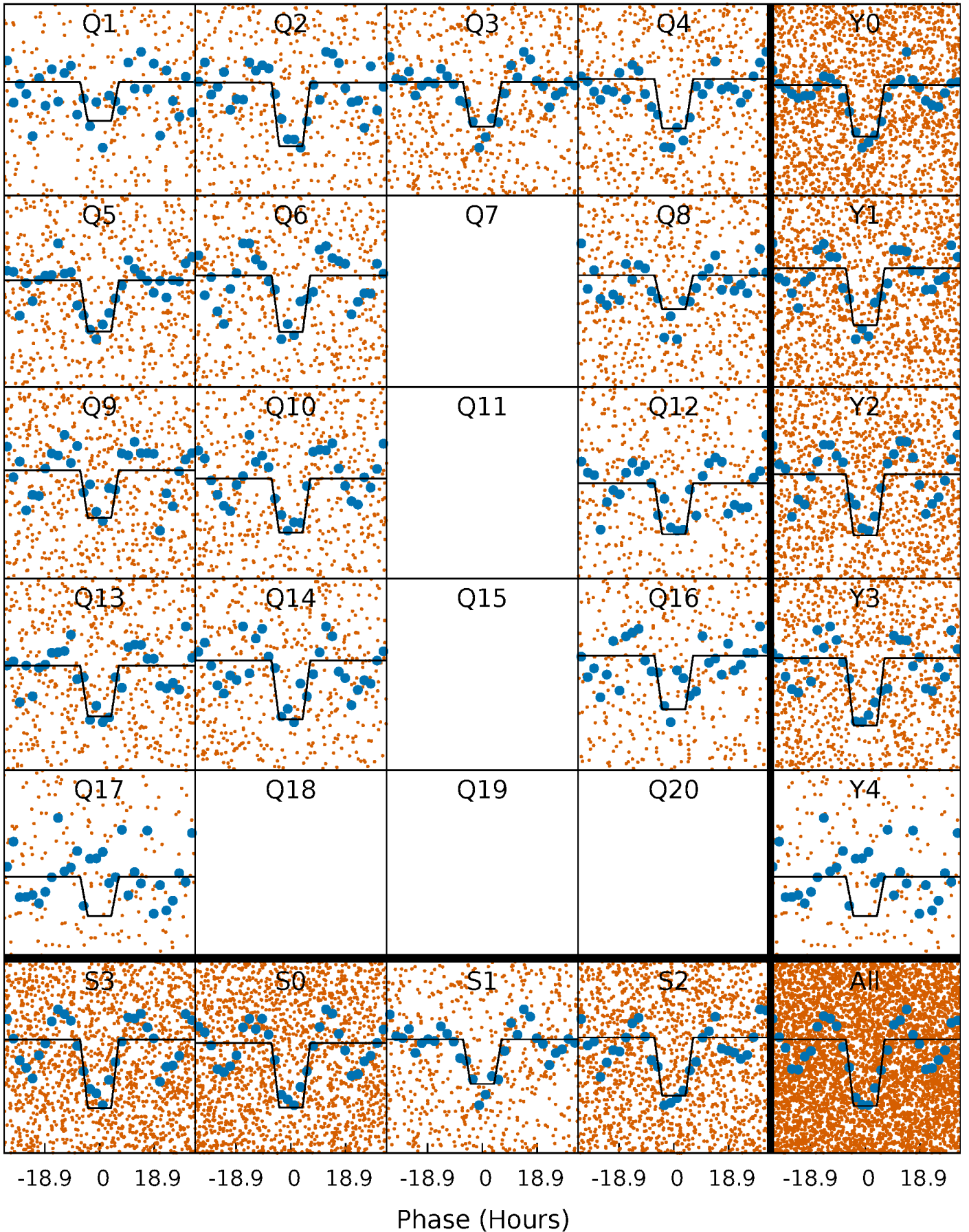
DV Quarter-Phased Transit Curves

TCE 010615125-01 P= 2.961057 Days $T_0=133.683747$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

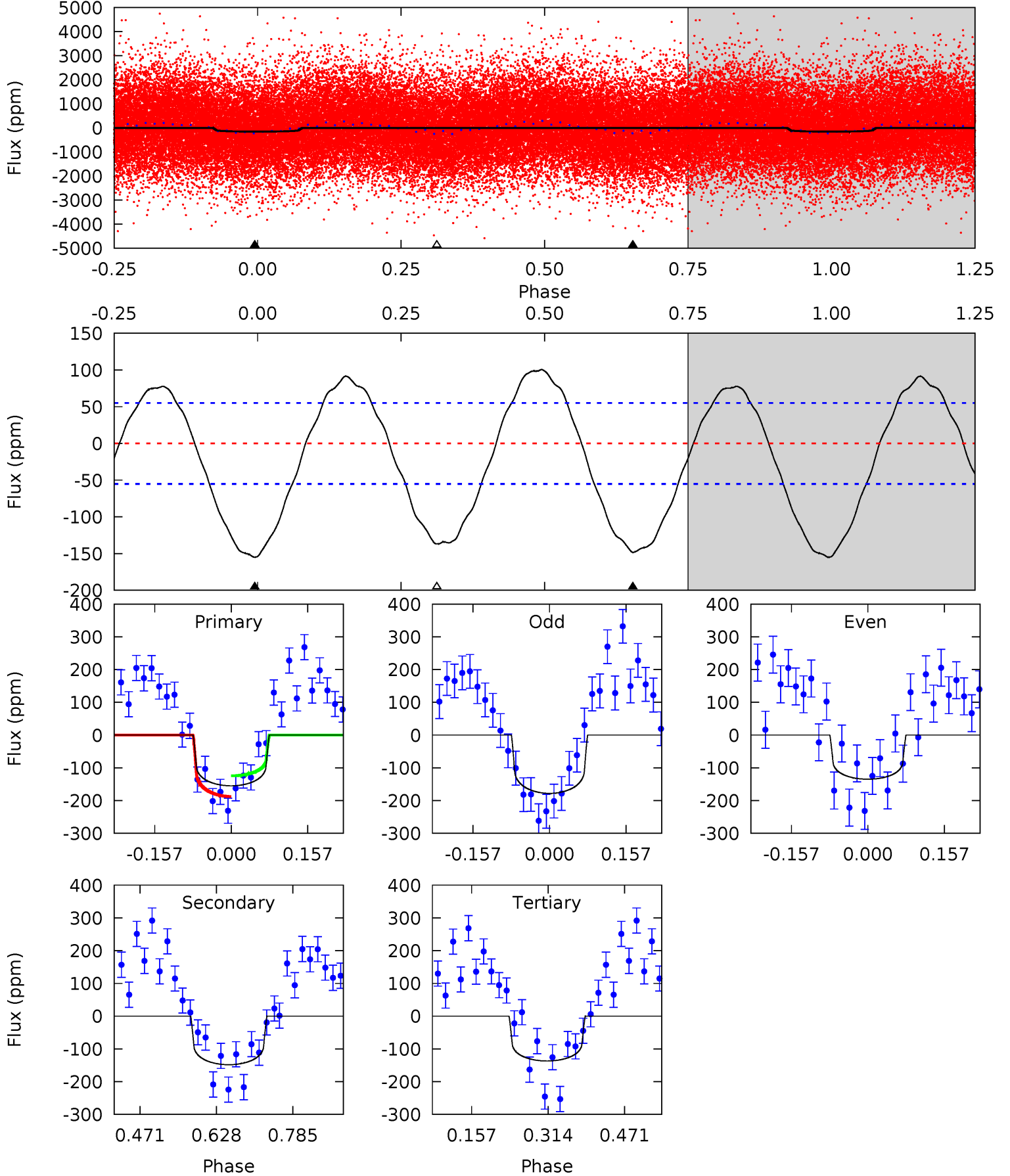
TCE 010615125-01 P= 2.961093 Days $T_0=133.662703$ (BKJD)



DV Model-Shift Uniqueness Test

010615125-01, P = 2.961057 Days, E = 130.722690 Days

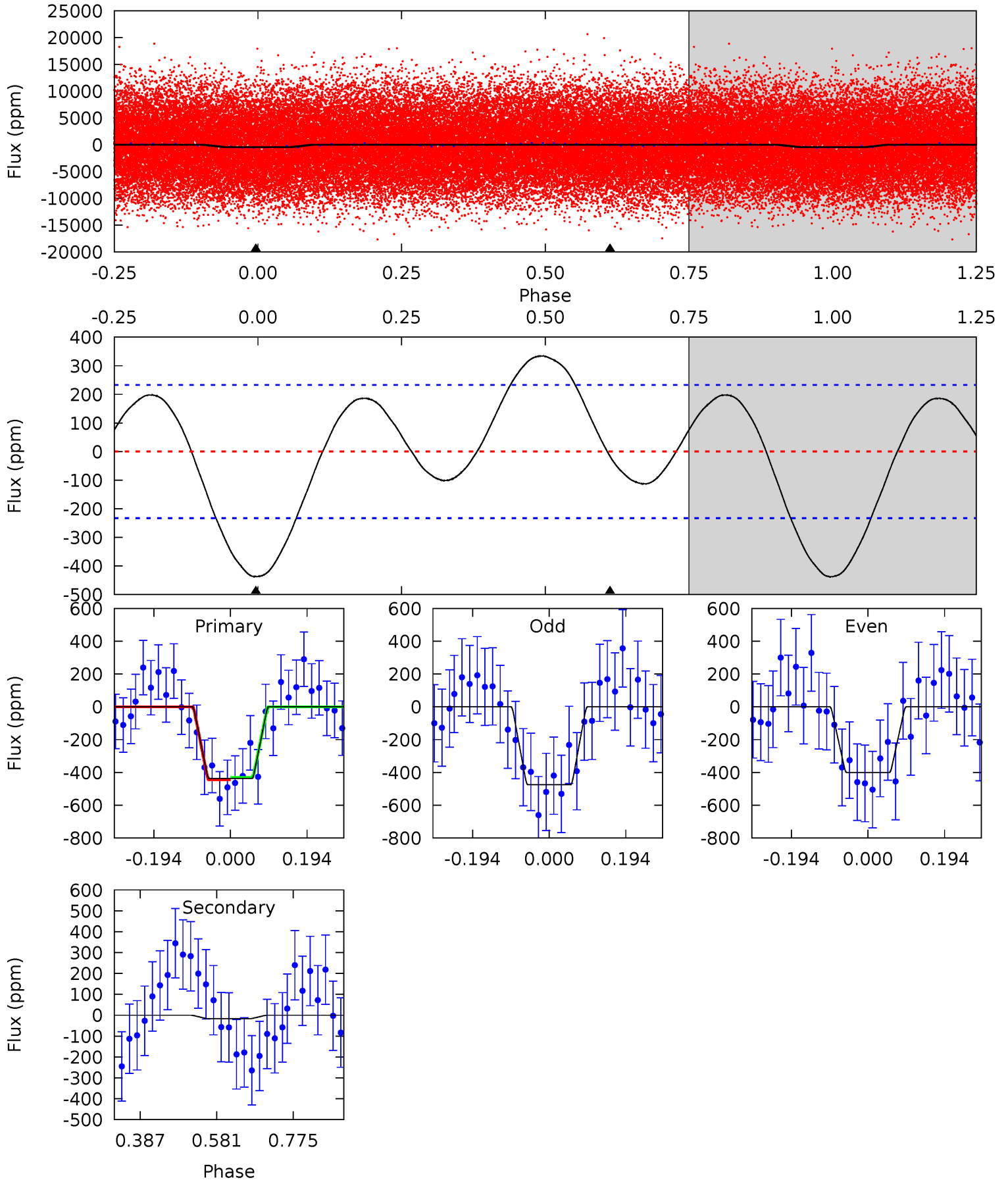
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	12.0	11.1	0	4.47	1.42	6.82	1.47	12.6	0.92	12.0	1.76	1.07	0.39	2.57



Alt Model-Shift Uniqueness Test

010615125-01, P = 2.961093 Days, E = 130.701610 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.32	0.31	0	0	4.42	1.30	1.79	8.32	8.32	0.31	0.31	0.71	0.96	0.43	0.12



Stellar Parameters For KIC 010615125

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7216^{+75}_{-86}	$3.757^{+0.196}_{-0.084}$	$0.360^{+0.050}_{-0.150}$	$3.177^{+0.359}_{-0.837}$	$2.106^{+0.153}_{-0.284}$	$0.092^{+0.107}_{-0.024}$
	+1%/-1%	+5%/-2%	+14%/-42%	+11%/-26%	+7%/-13%	+116%/-26%
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 010615125-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-148 ± 12	$3.42^{+3.05}_{-2.27}$	3462^{+134}_{-194}	8000^{+10723}_{-2369}	18^{+136}_{-13}
Alt.	-16 ± 53	$7.23^{+3.14}_{-2.81}$	3469^{+142}_{-194}	3000^{+1838}_{-7158}	$0.444^{+2.216}_{-1.207}$

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 $A_{\text{obs}} \gg 1.0$

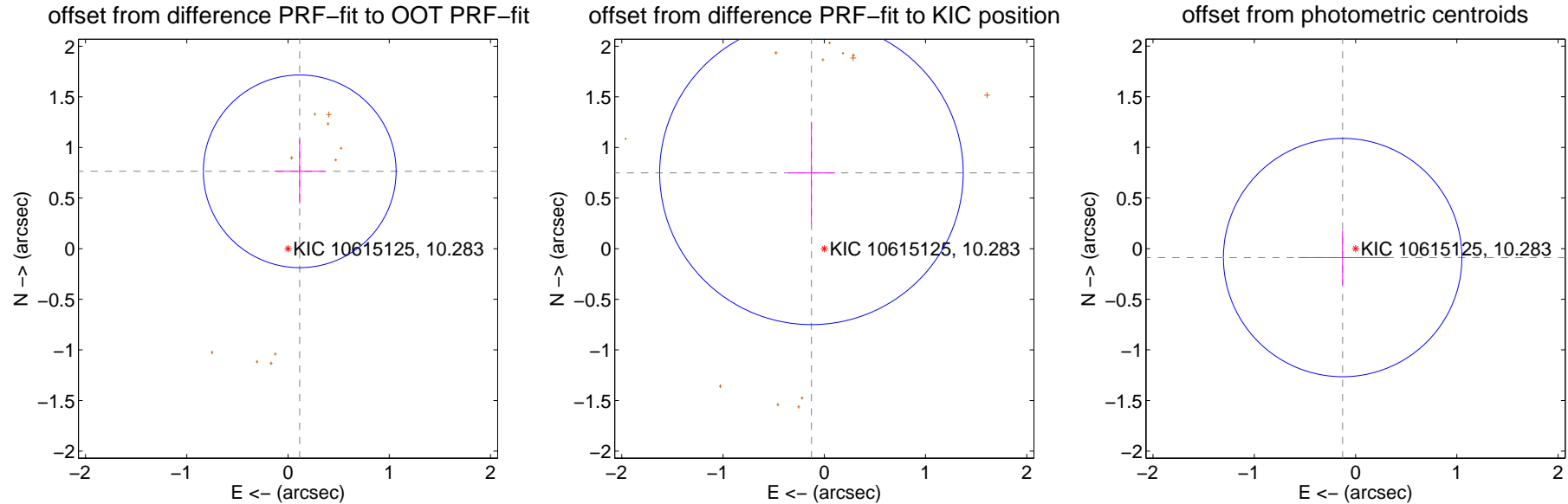
DV Centroid Data

Supplemental centroid analysis for 010615125-01. **Kepler magnitude: 10.28.** Transit SNR 7.09

There are 0 quarters with good PRF difference image offsets

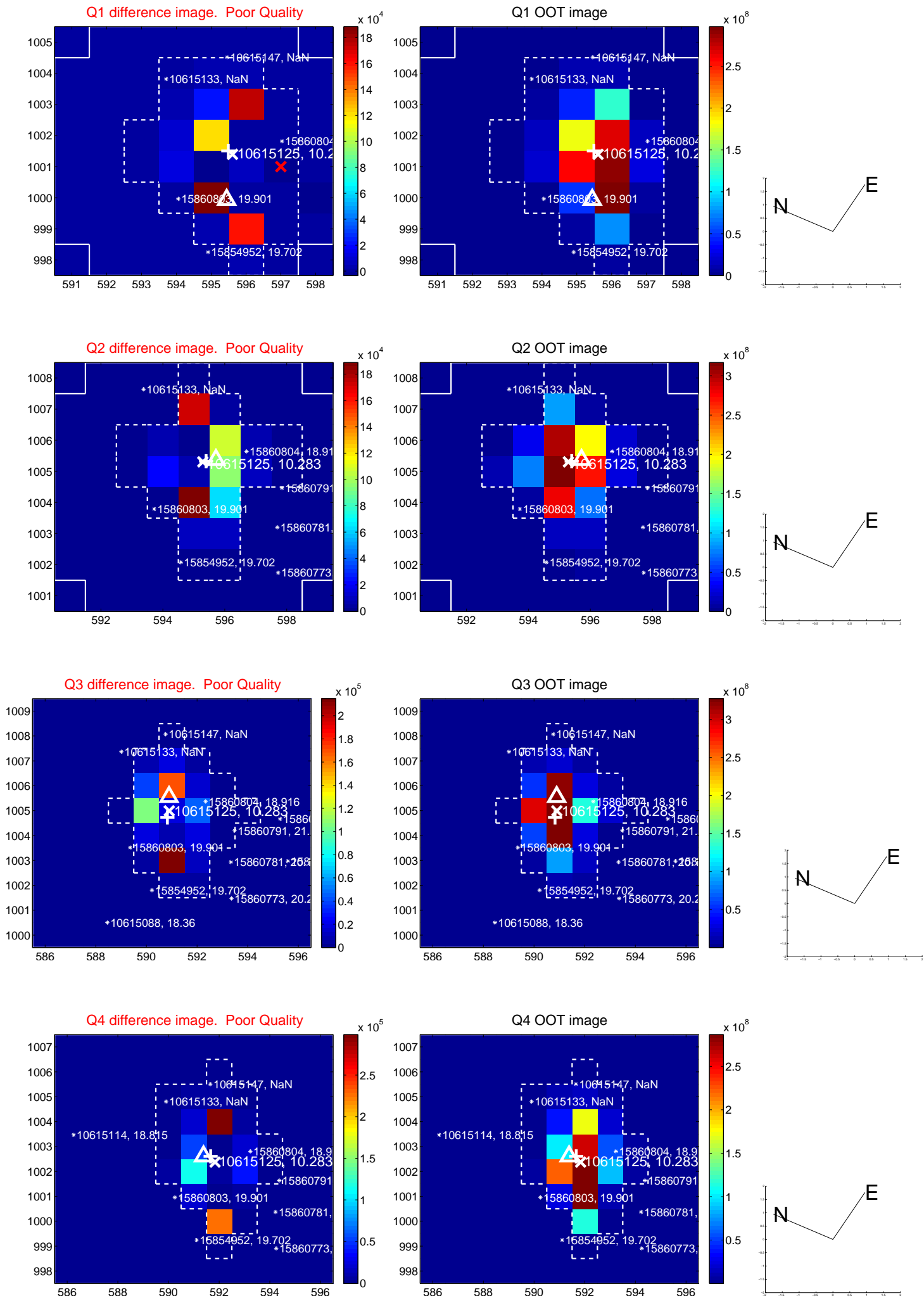
The direct PRF centroid is offset from the target star catalog position by about 0.57 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.773 ± 0.317	2.44	-0.115 ± 0.248	0.764 ± 0.319
PRF-fit source offset from KIC position	0.759 ± 0.500	1.52	0.127 ± 0.231	0.749 ± 0.505
photometric centroid source offset	0.15 ± 0.39	0.39	0.13 ± 0.44	-0.09 ± 0.27

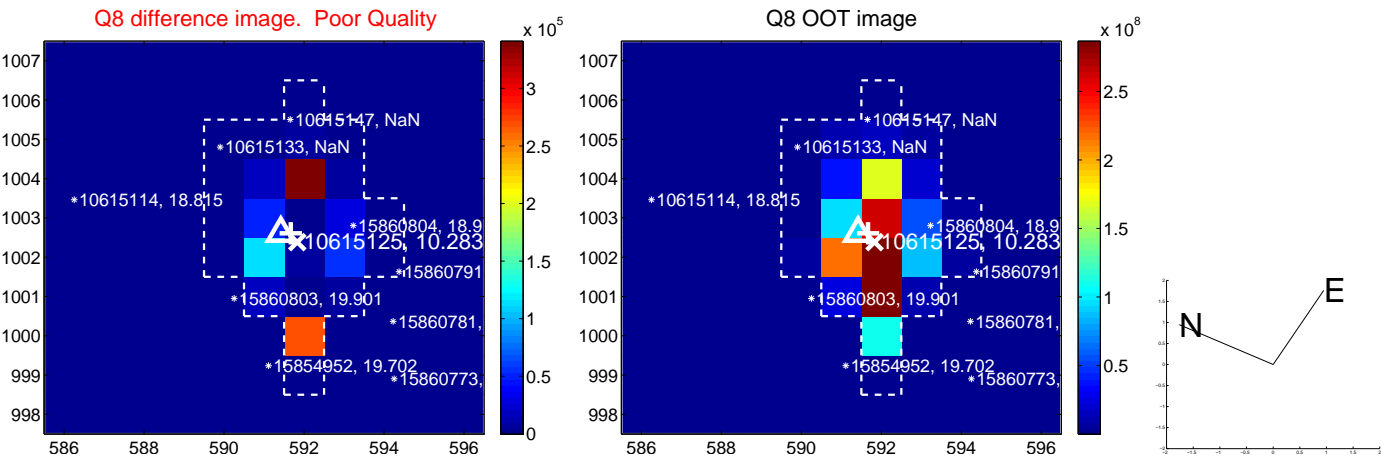
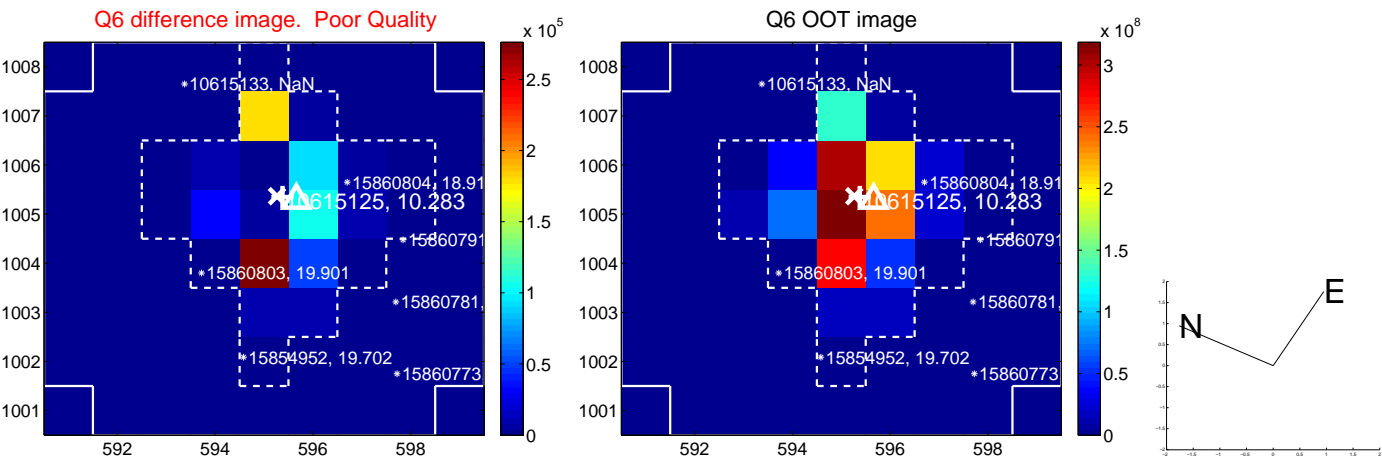
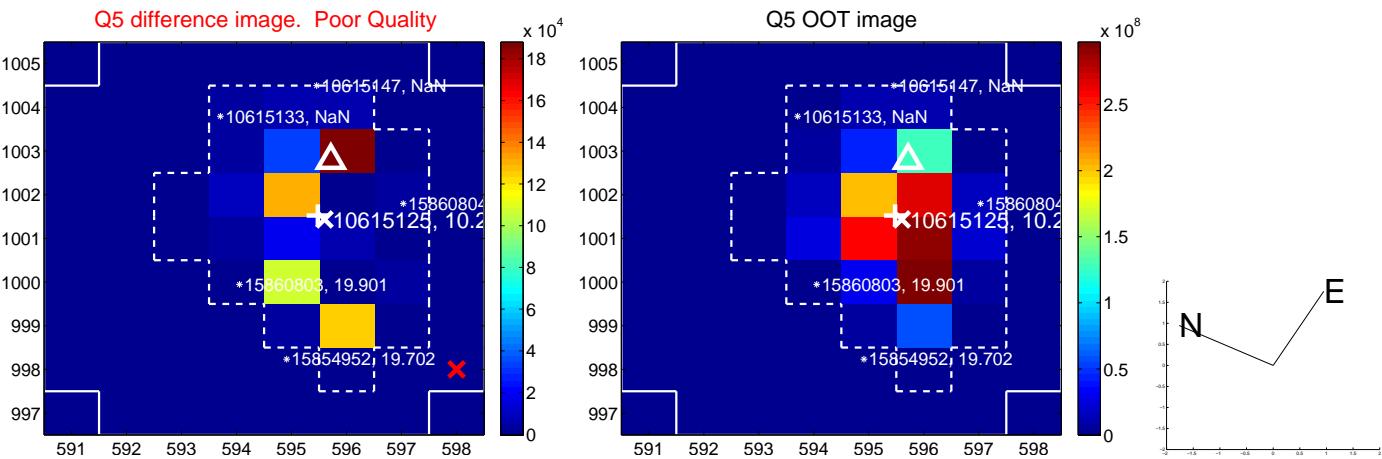


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

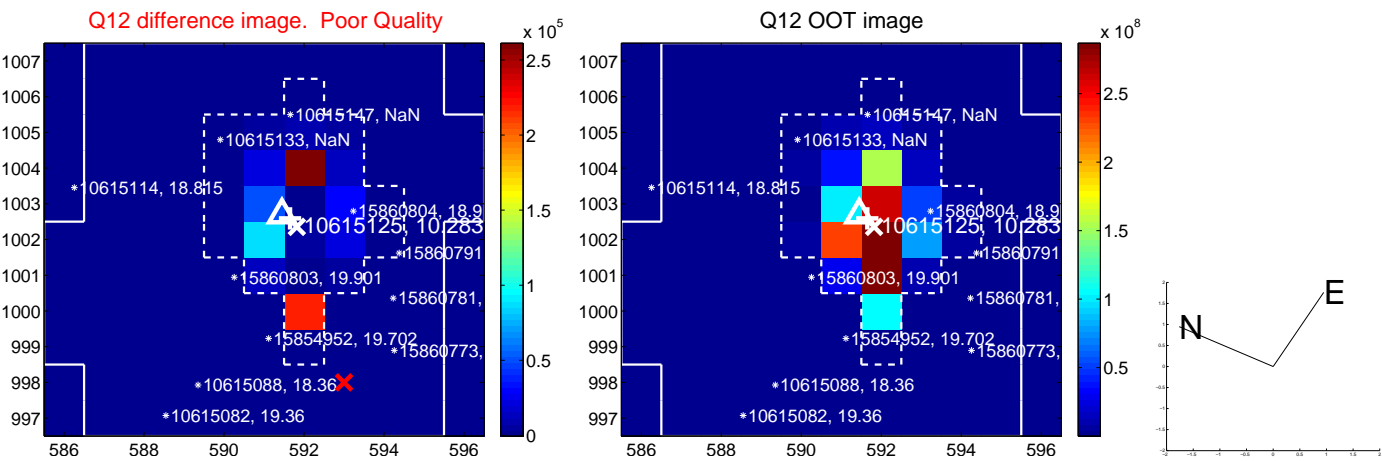
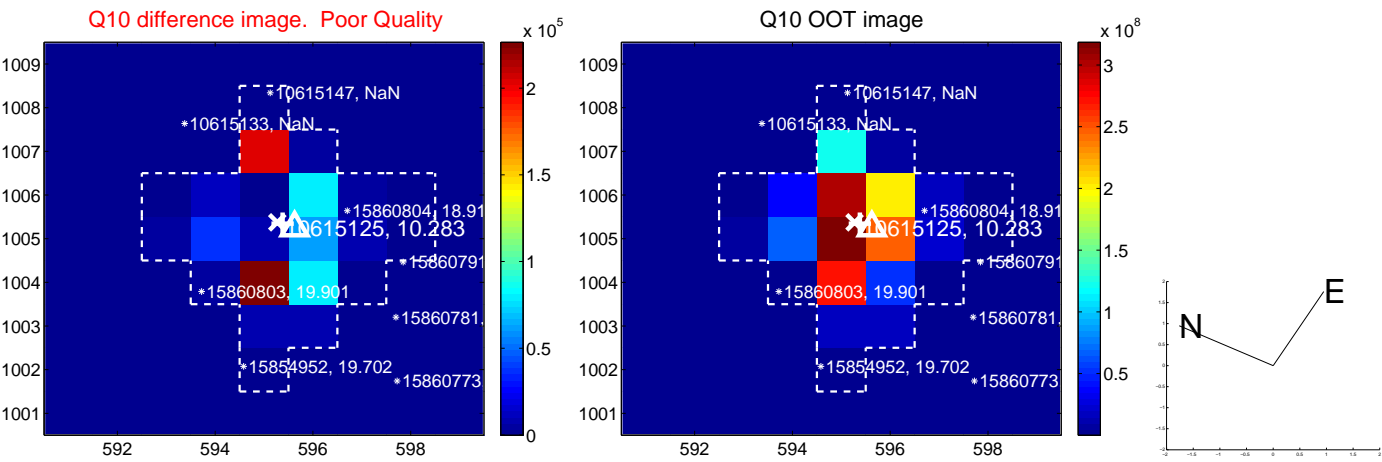
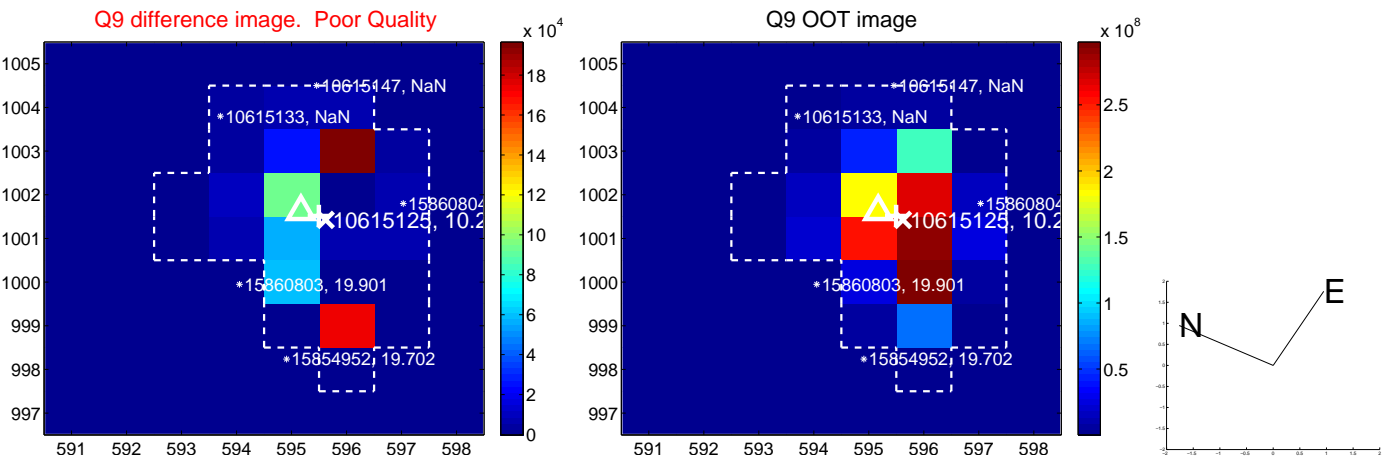
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



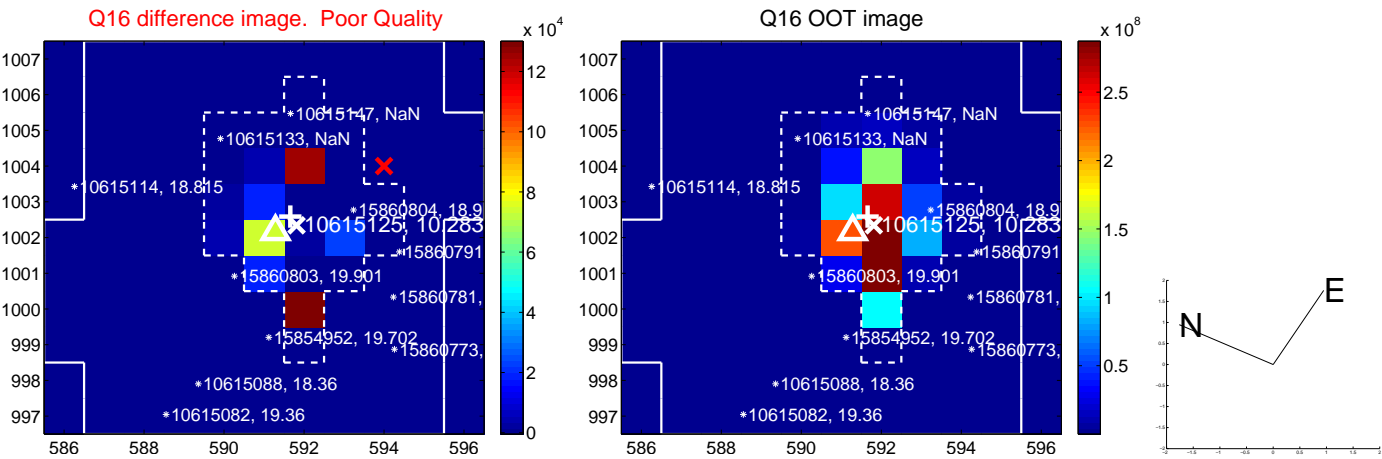
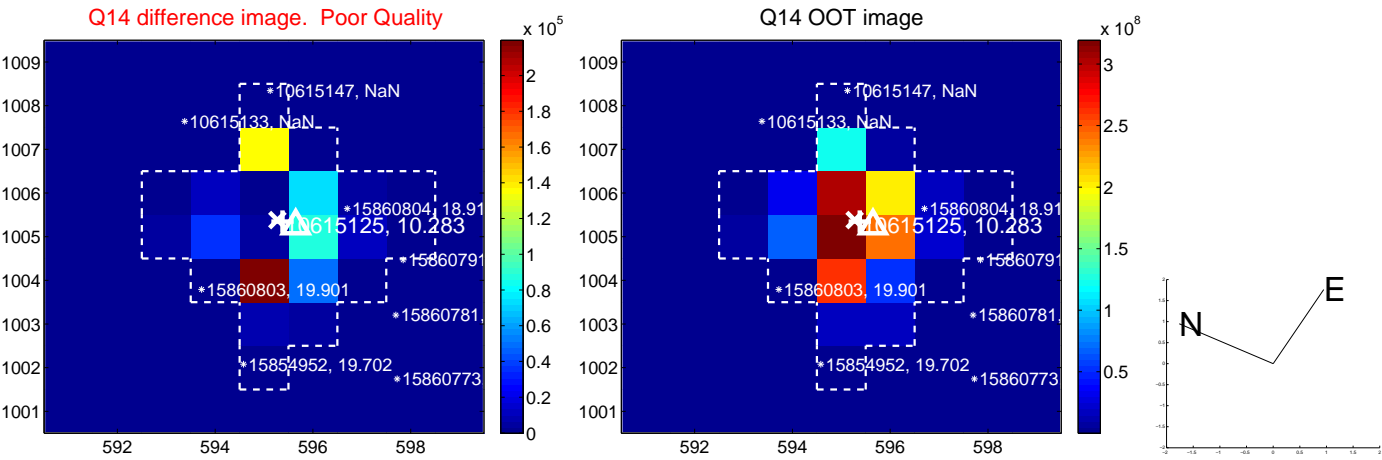
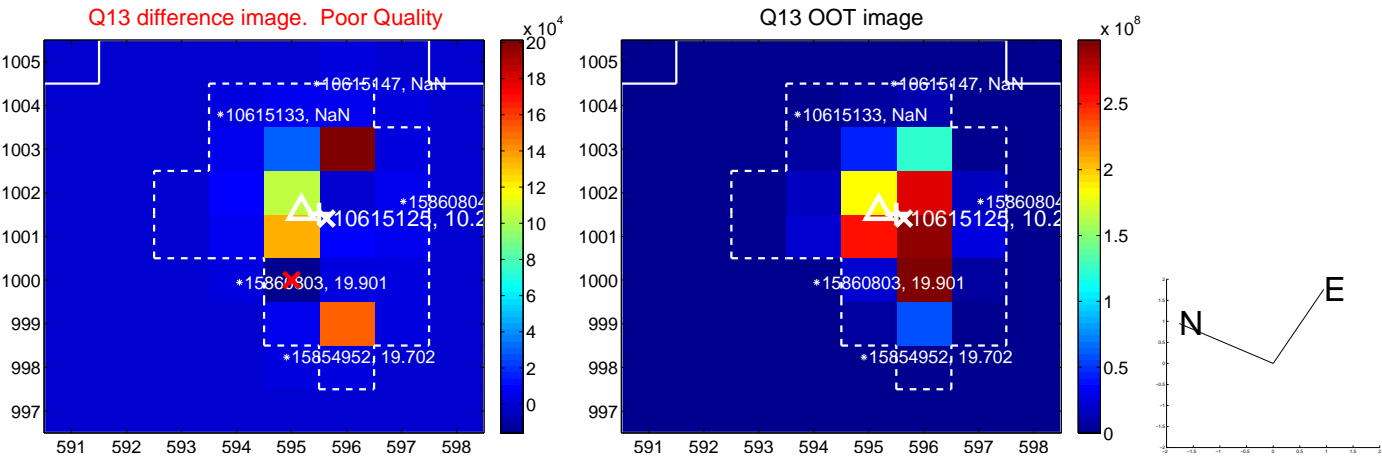
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



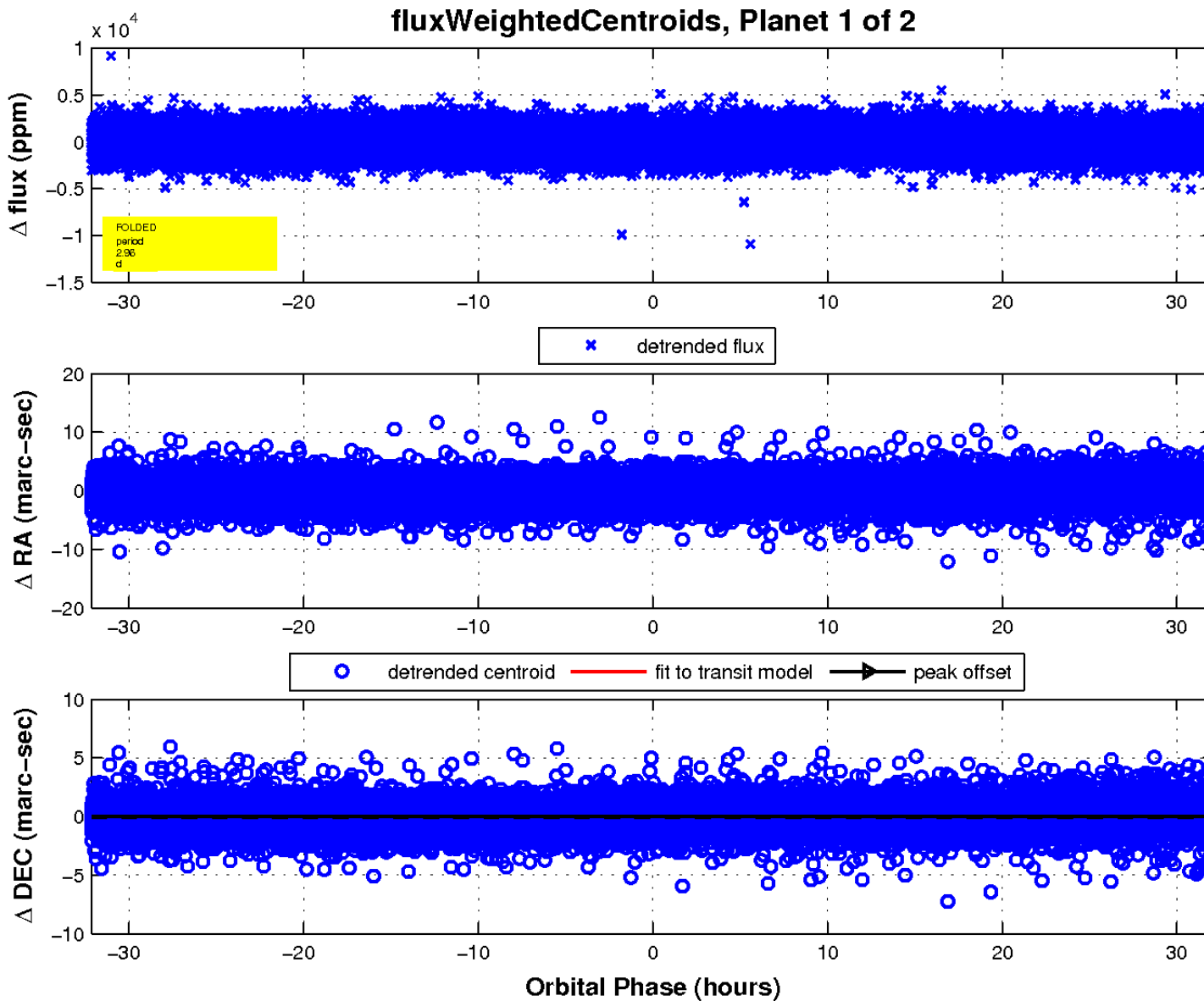
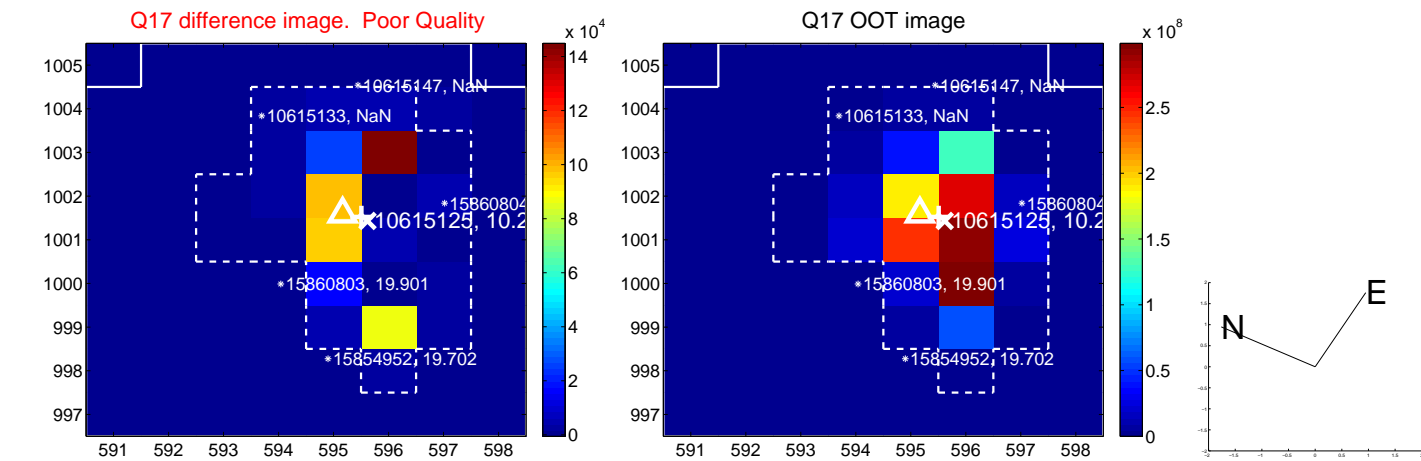
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

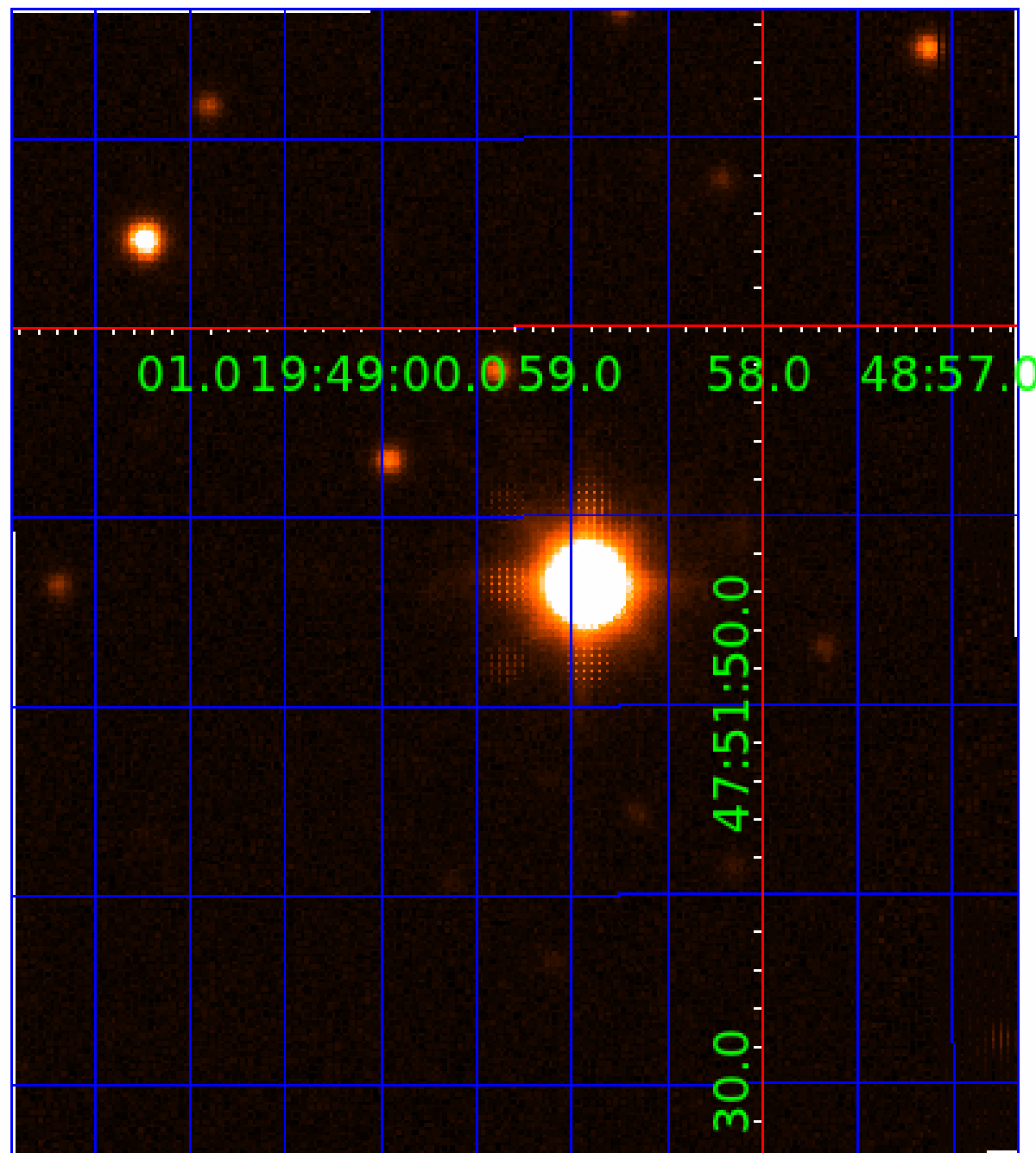


white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010615125

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})
010615125-01	OBS	No	2.961057	133.683747	81.3	10.718	7.3	7.1	3.18	7216	2.90	9165.64
010615125-02	OBS	No	1.974353	131.559383	134.2	9.532	9.2	10.6	3.18	7216	3.72	15734.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010615125-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010615125-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_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.

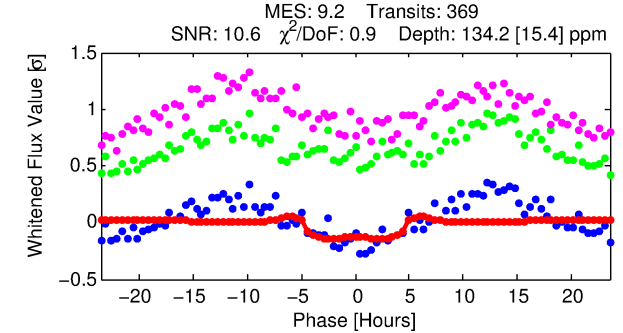
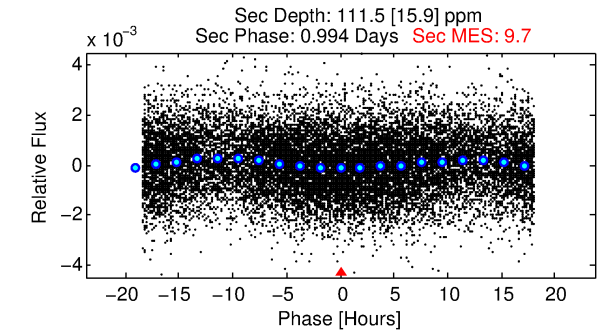
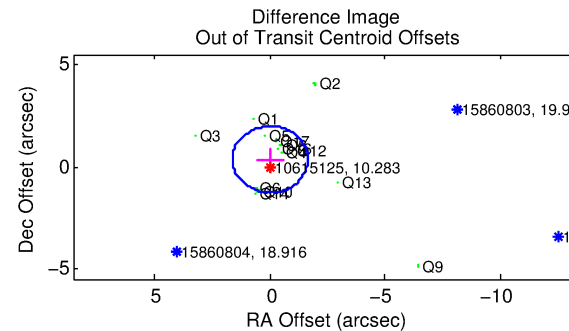
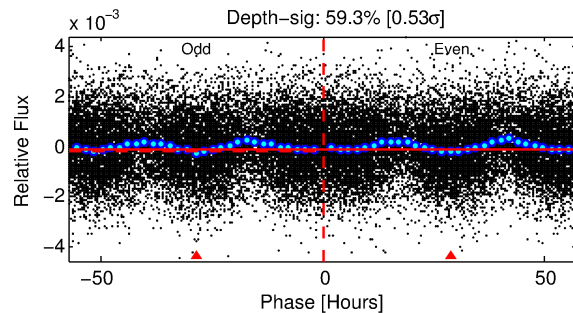
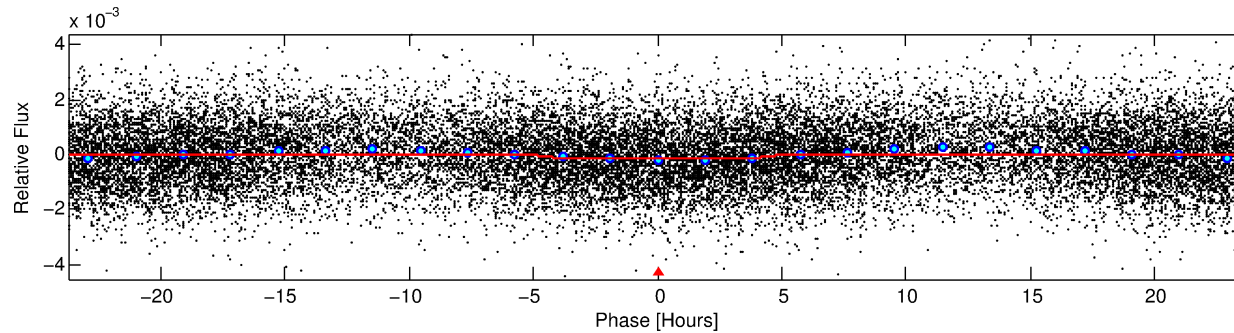
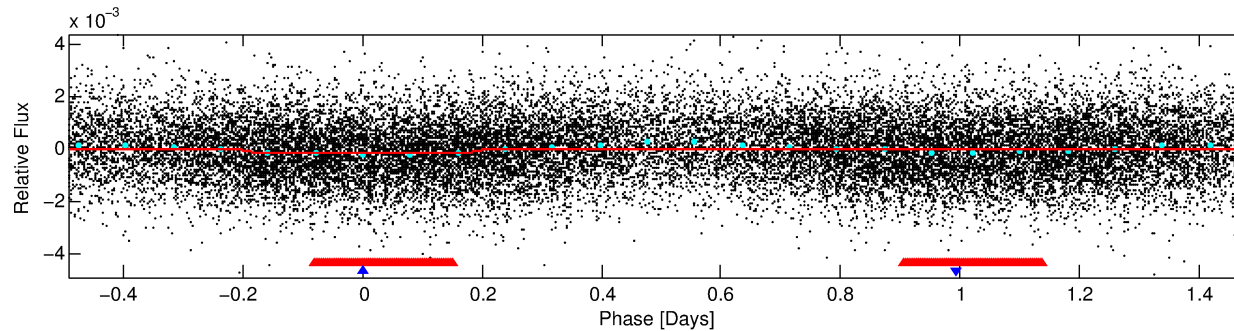
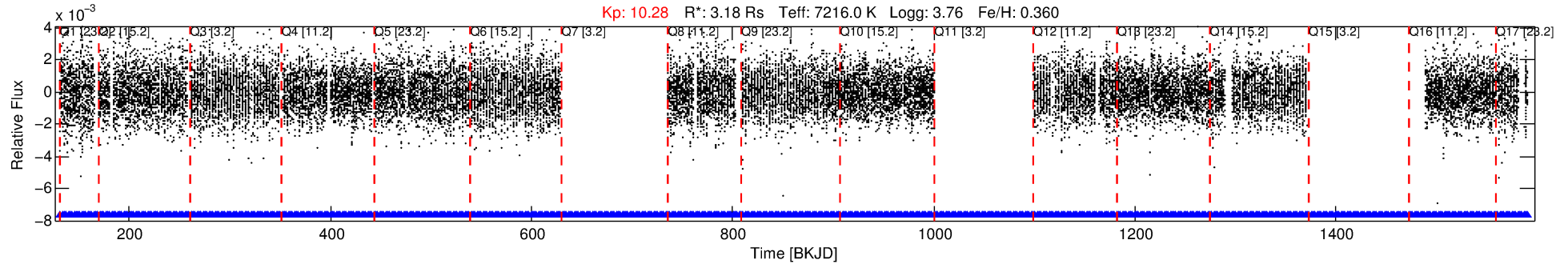
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010615125-02

No Significant Match Found

DV One-Page Summary

KIC: 10615125 Candidate: 2 of 2 Period: 1.974 d



DV Fit Results:

Period = 1.97435 [0.00003] d
Epoch = 131.5594 [0.0091] BKJD
 $R_p/R^* = 0.0107$ [0.0095]
 $a/R^* = 1.71$ [5.71]
 $b = 0.00$ [5210.60]
 $\text{Seff} = 15734.72$ [5532.82]
 $T_{\text{eq}} = 2856$ [251] K
 $R_p = 3.72$ [3.44] R_e
 $a = 0.0395$ [0.0091] AU
 $\text{Ag} = 6.91$ [12.53] [0.47 σ]
 $T_{\text{eff}} = 7158$ [3187] K [1.35 σ]

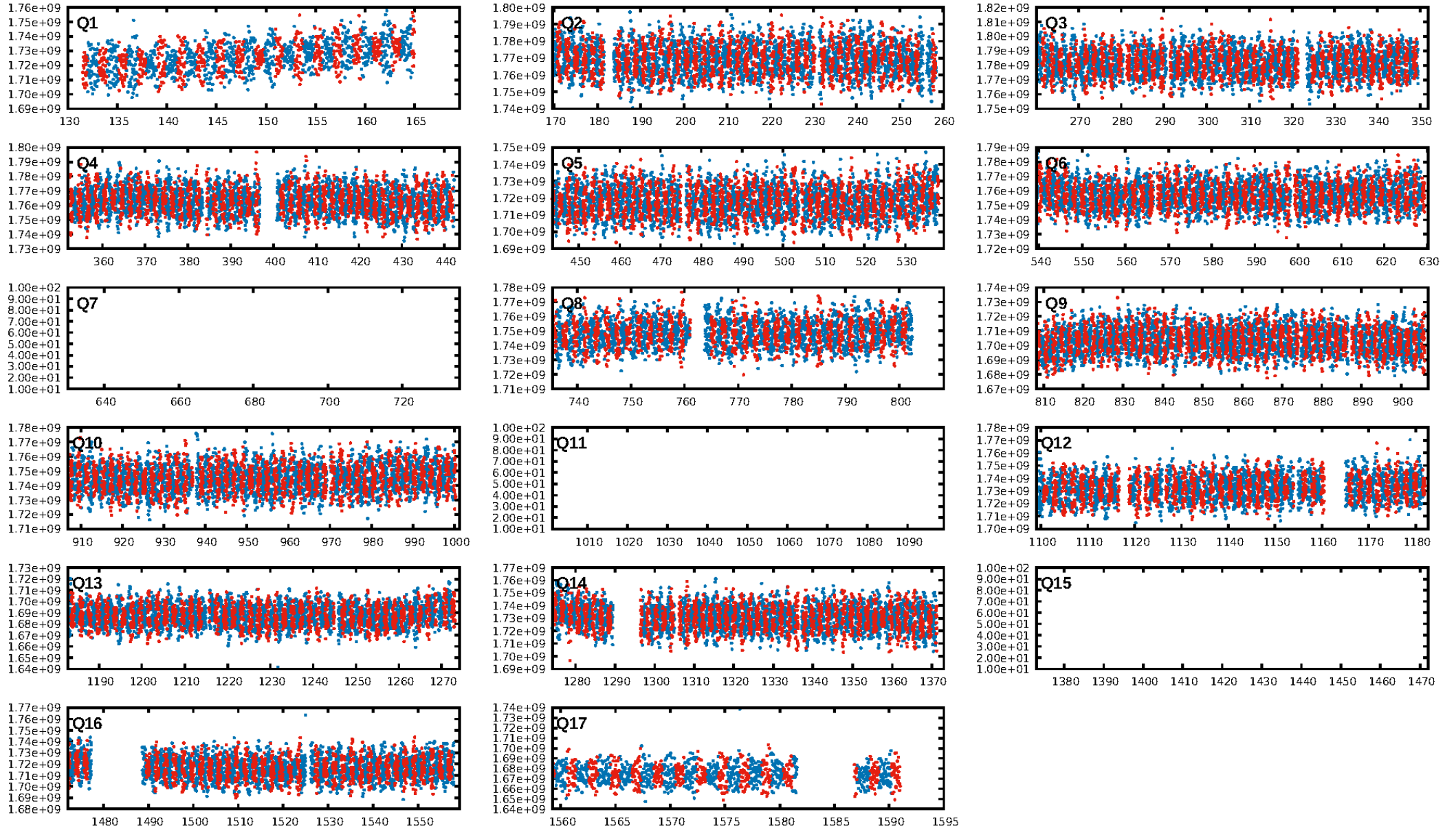
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 90.1% [1.65 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.45e-14
RollingBand-fgt: 1.00 [348/348]
GhostDiagnostic-chr: 1.235
Centroid-sig: N/A
Centroid-so: 0.854 arcsec [4.31 σ]
OotOffset-rm: 0.351 arcsec [0.65 σ]
KicOffset-rm: 0.967 arcsec [1.56 σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.07 [1/14]
DiffImageOverlap-fno: 1.00 [14/14]

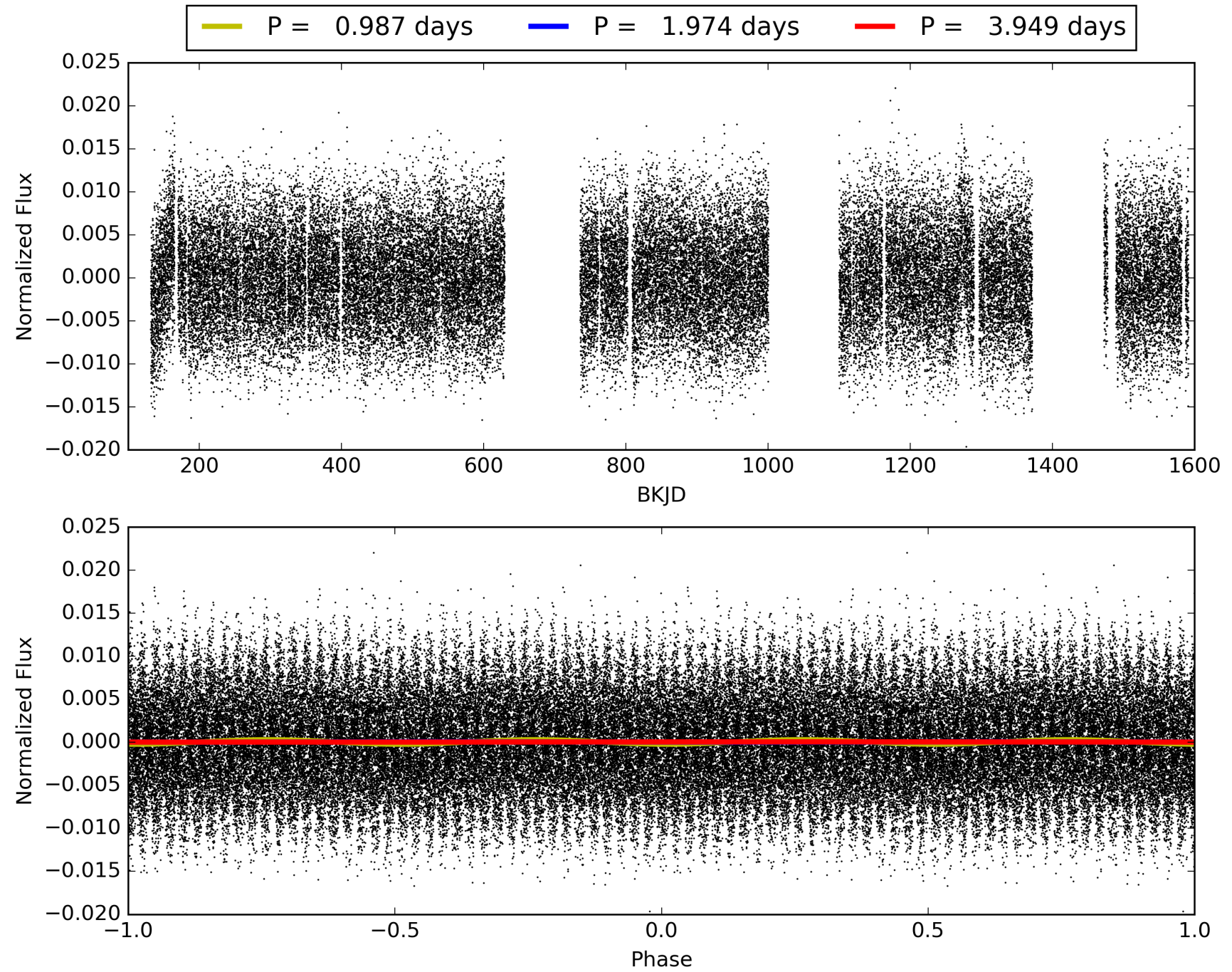
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010615125-02, PDC Light Curves

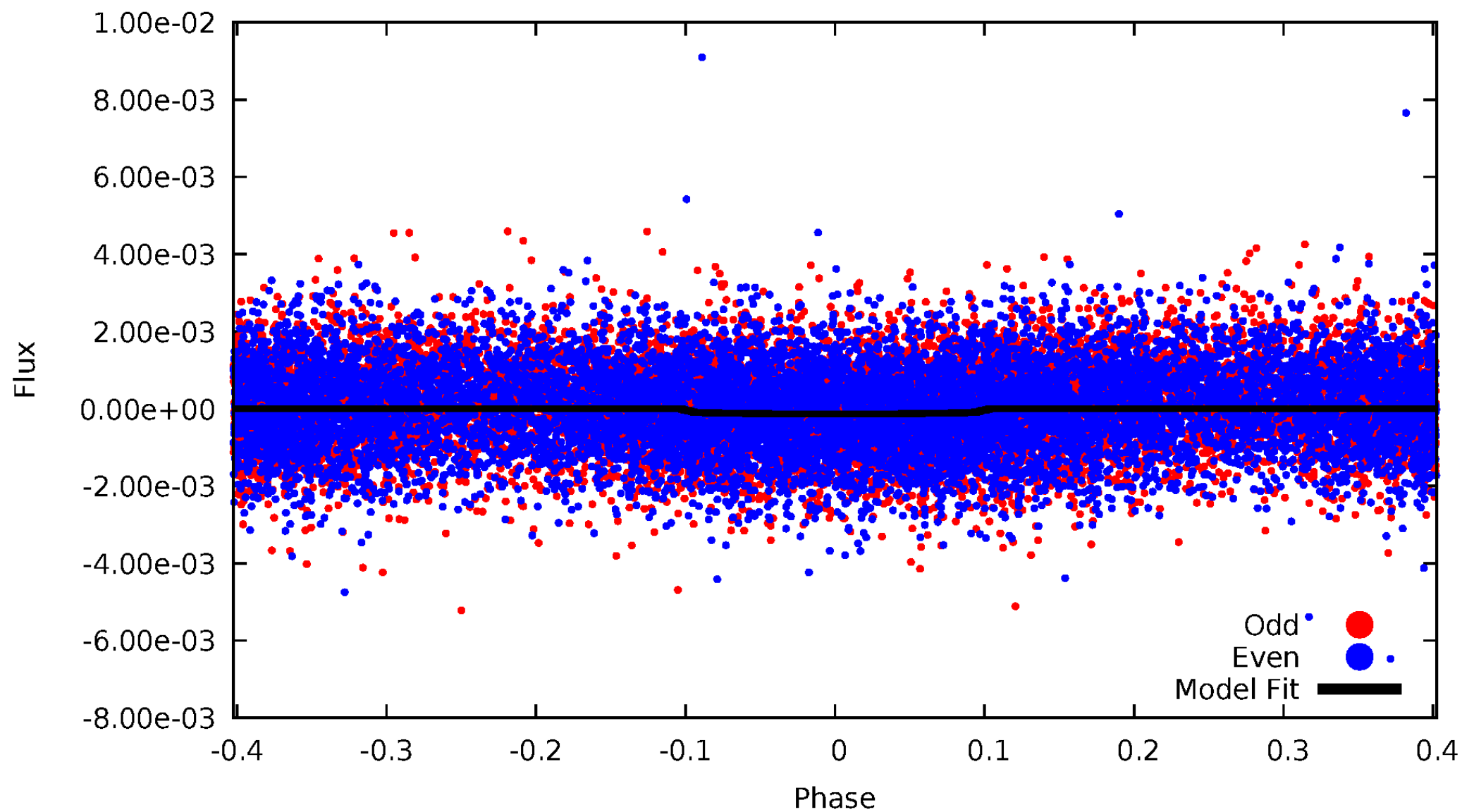


TCE 010615125-02



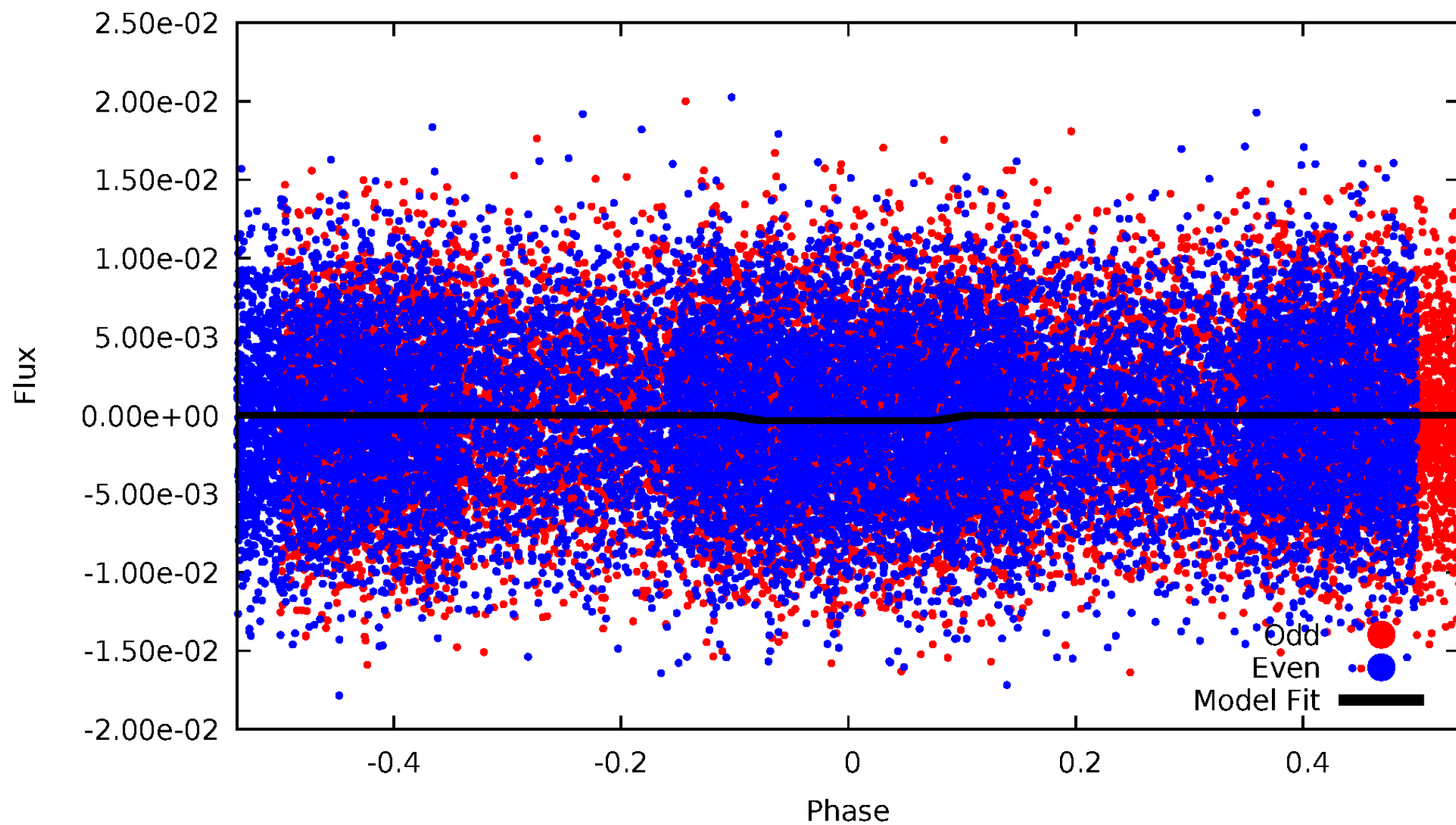
DV Odd/Even

TCE 010615125-02



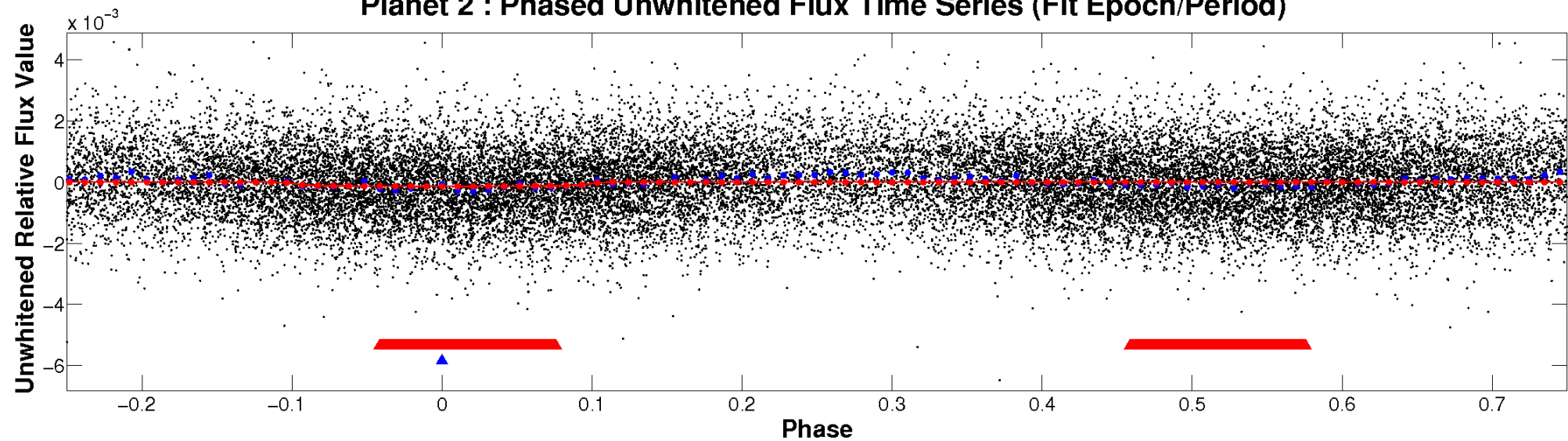
ALT Odd/Even

TCE 010615125-02

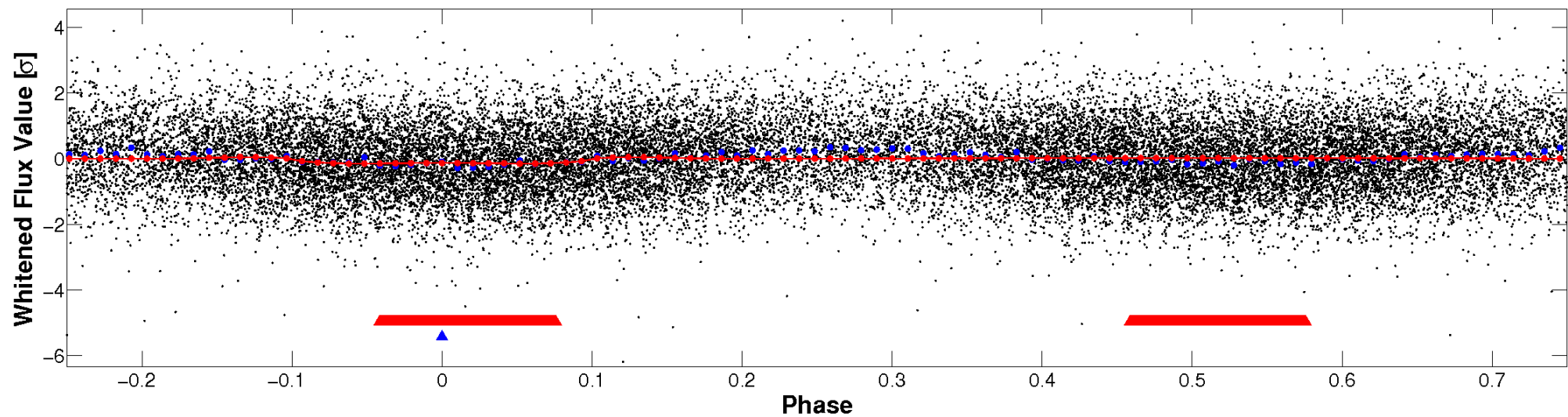


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

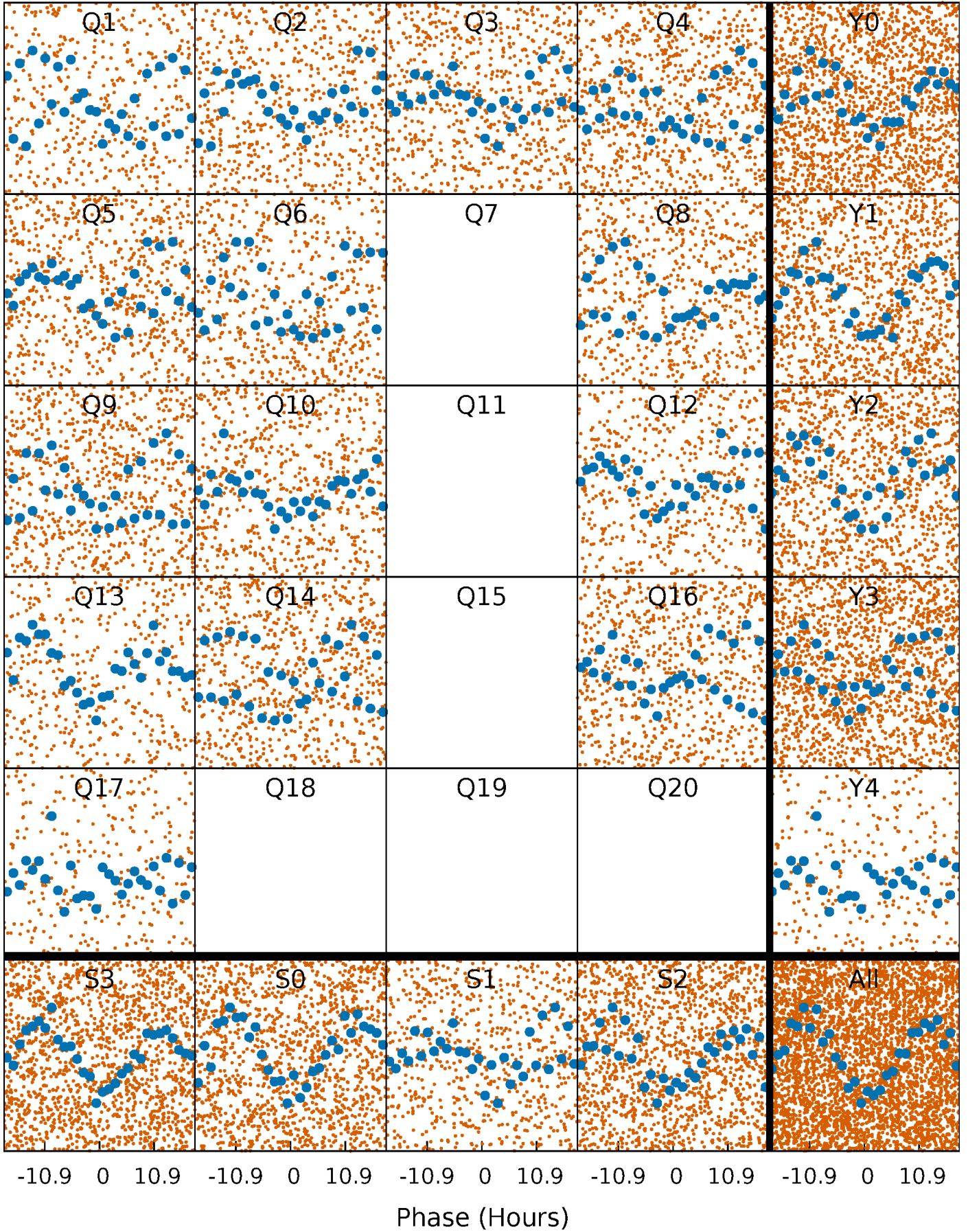


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



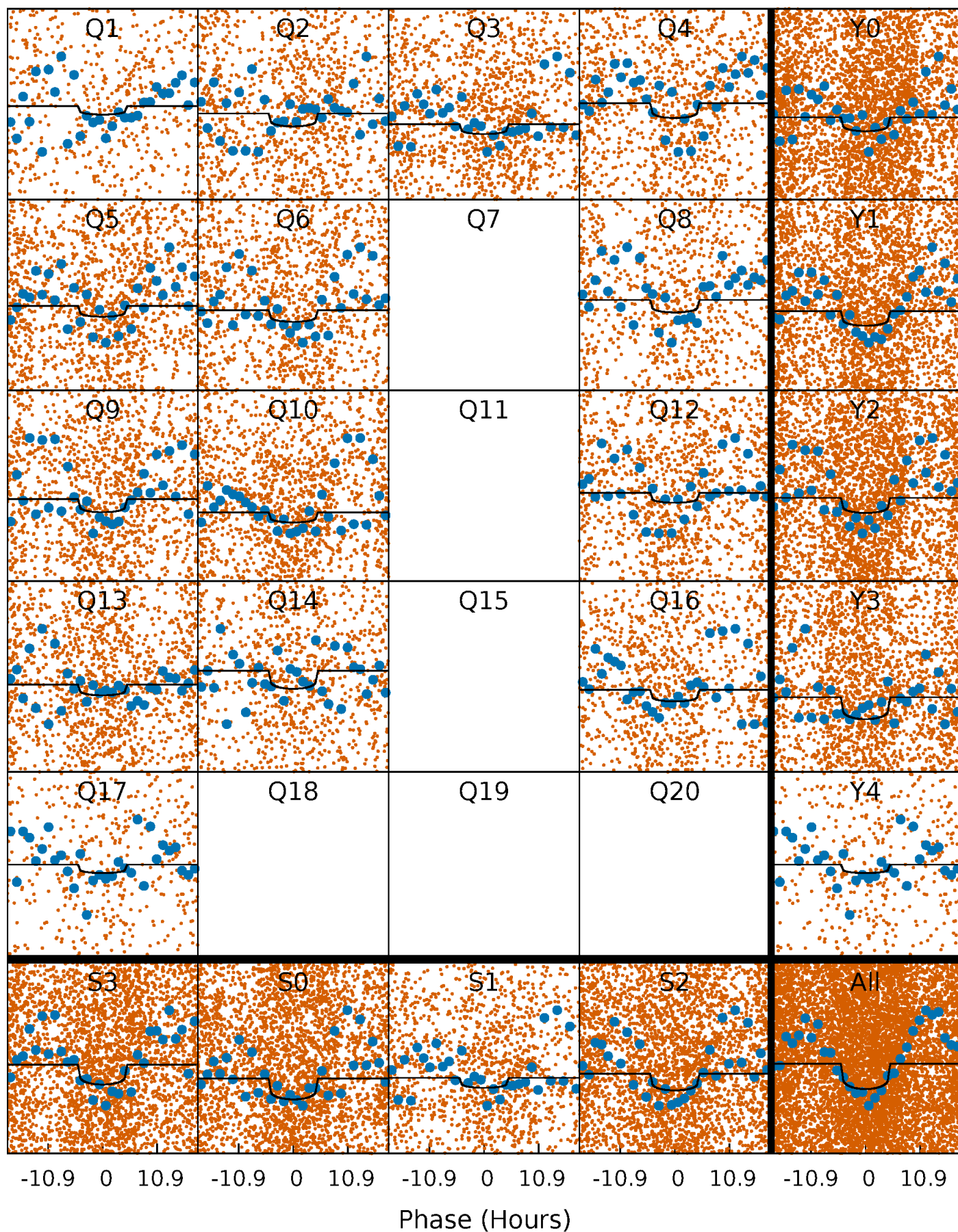
PDC Quarter-Phased Transit Curves

TCE 010615125-02 P= 1.974353 Days $T_0=131.559383$ (BKJD)



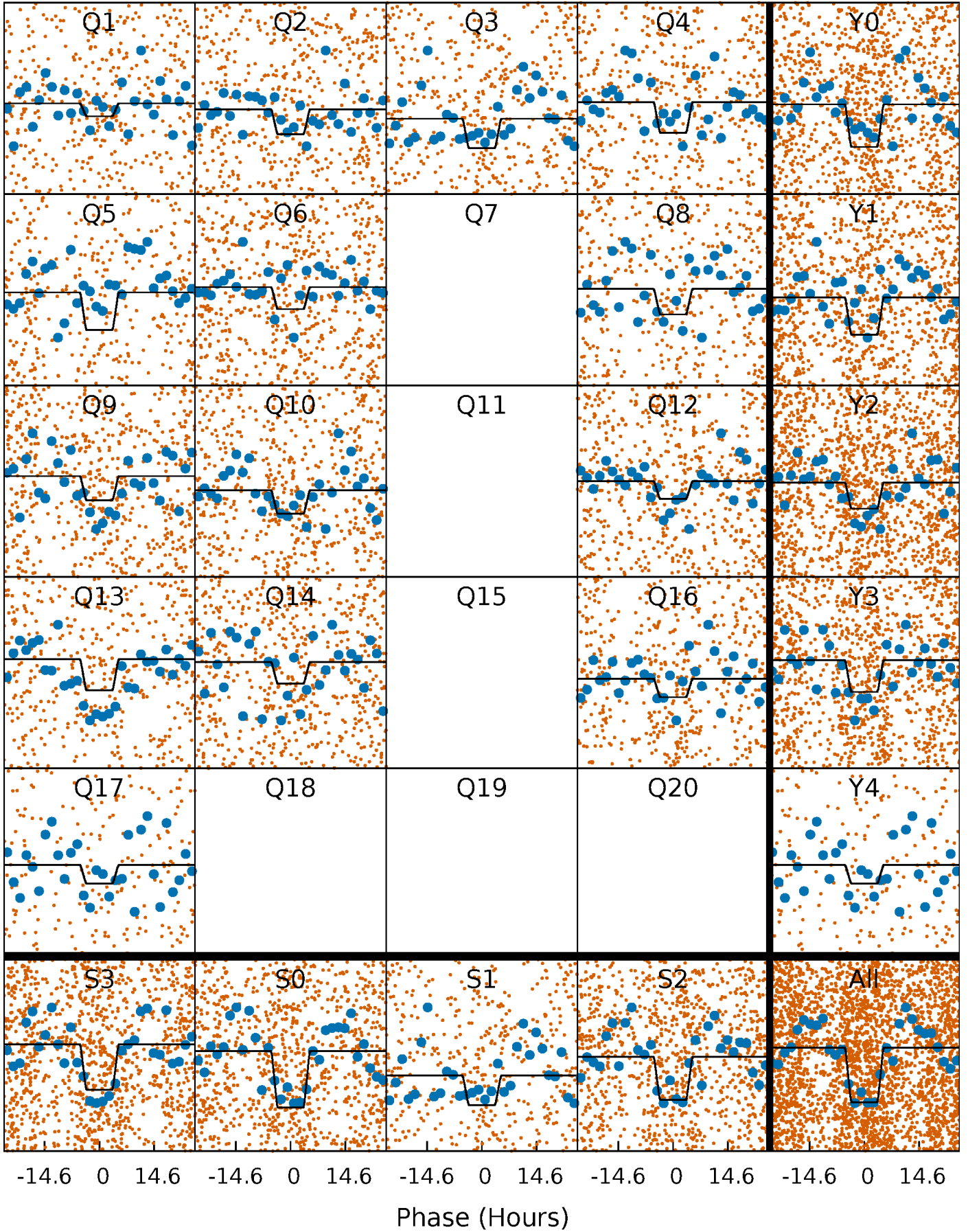
DV Quarter-Phased Transit Curves

TCE 010615125-02 P= 1.974353 Days $T_0=131.559383$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

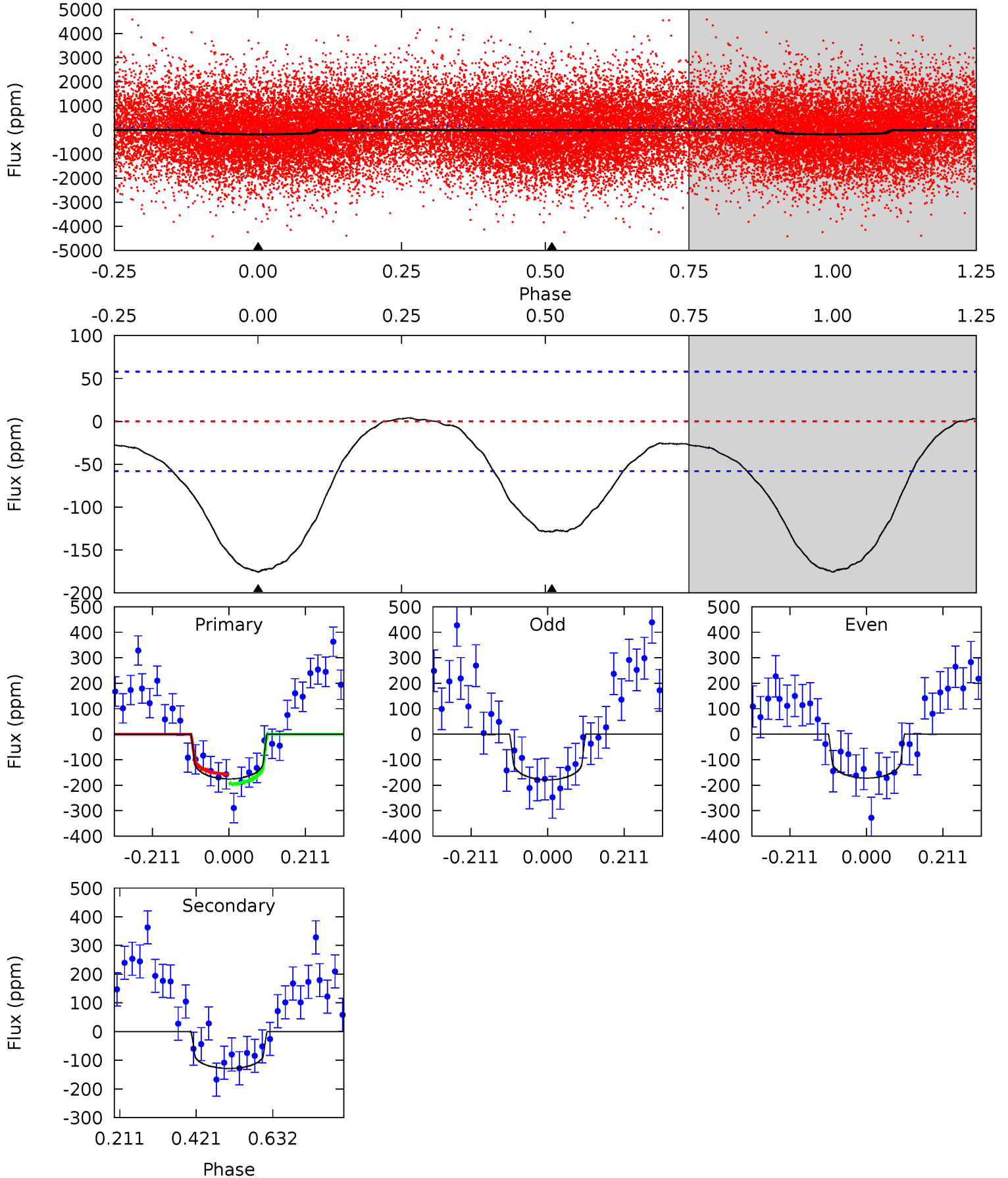
TCE 010615125-02 P= 1.974048 Days $T_0=131.702784$ (BKJD)



DV Model-Shift Uniqueness Test

010615125-02, P = 1.974353 Days, E = 129.585030 Days

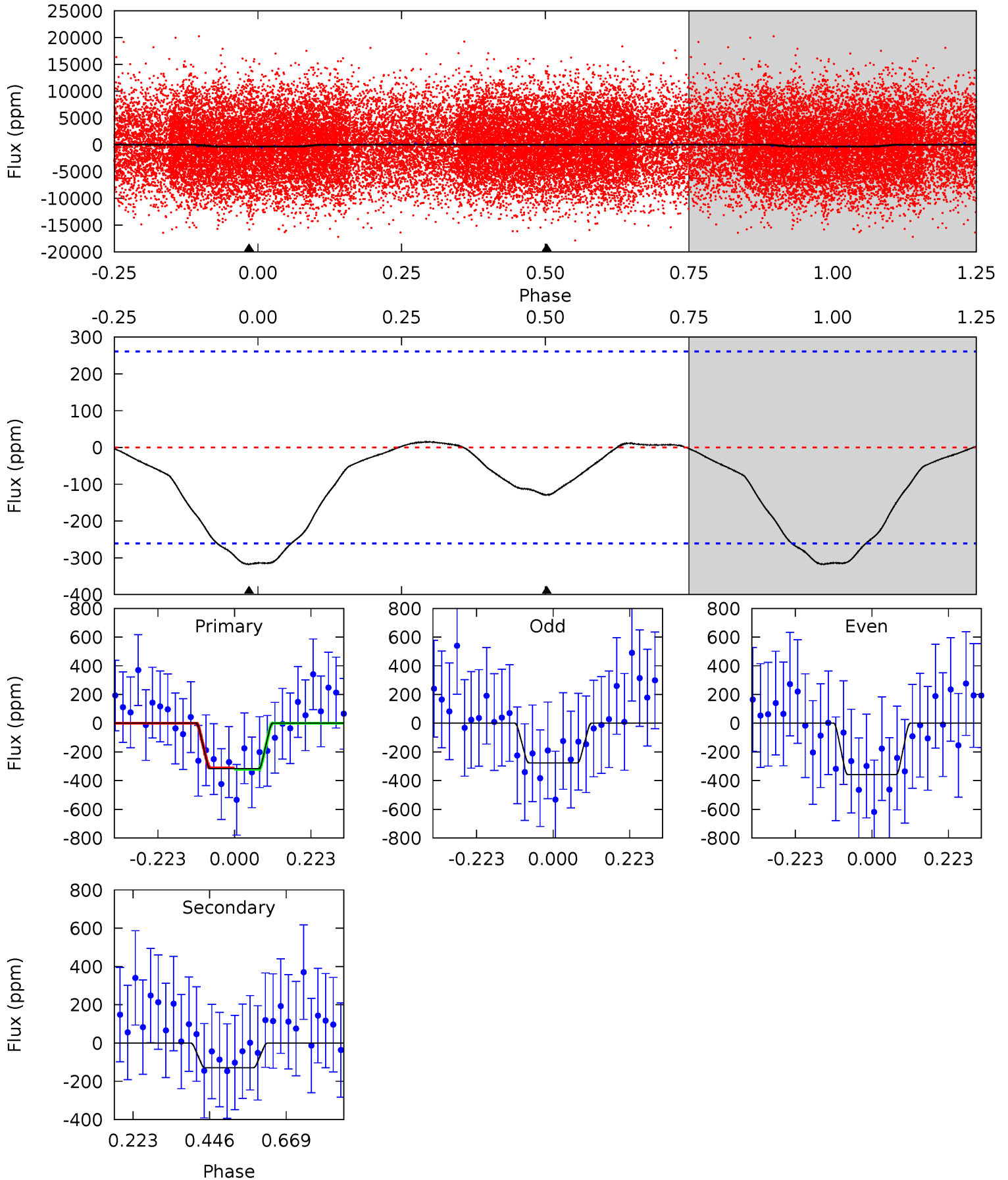
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	9.78	0	0	4.41	1.25	1.13	13.3	13.3	9.78	9.78	0.26	1.05	0.02	1.45



Alt Model-Shift Uniqueness Test

010615125-02, P = 1.974048 Days, E = 129.728736 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.34	2.17	0	0	4.39	1.22	0.21	5.34	5.34	2.17	2.17	0.68	1.28	0.05	0.09



Stellar Parameters For KIC 010615125

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7216^{+75}_{-86}	$3.757^{+0.196}_{-0.084}$	$0.360^{+0.050}_{-0.150}$	$3.177^{+0.359}_{-0.837}$	$2.106^{+0.153}_{-0.284}$	$0.092^{+0.107}_{-0.024}$
	+1%/-1%	+5%/-2%	+14%/-42%	+11%/-26%	+7%/-13%	+116%/-26%
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 010615125-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-129 ± 13	$4.17^{+2.98}_{-2.55}$	3970^{+154}_{-242}	6768^{+5890}_{-1697}	$6.295^{+34.605}_{-4.185}$
Alt.	-129 ± 59	$6.29^{+3.19}_{-3.06}$	3978^{+145}_{-242}	5364^{+2677}_{-1267}	$2.554^{+8.042}_{-1.619}$

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 $A_{\text{obs}} \gg 1.0$

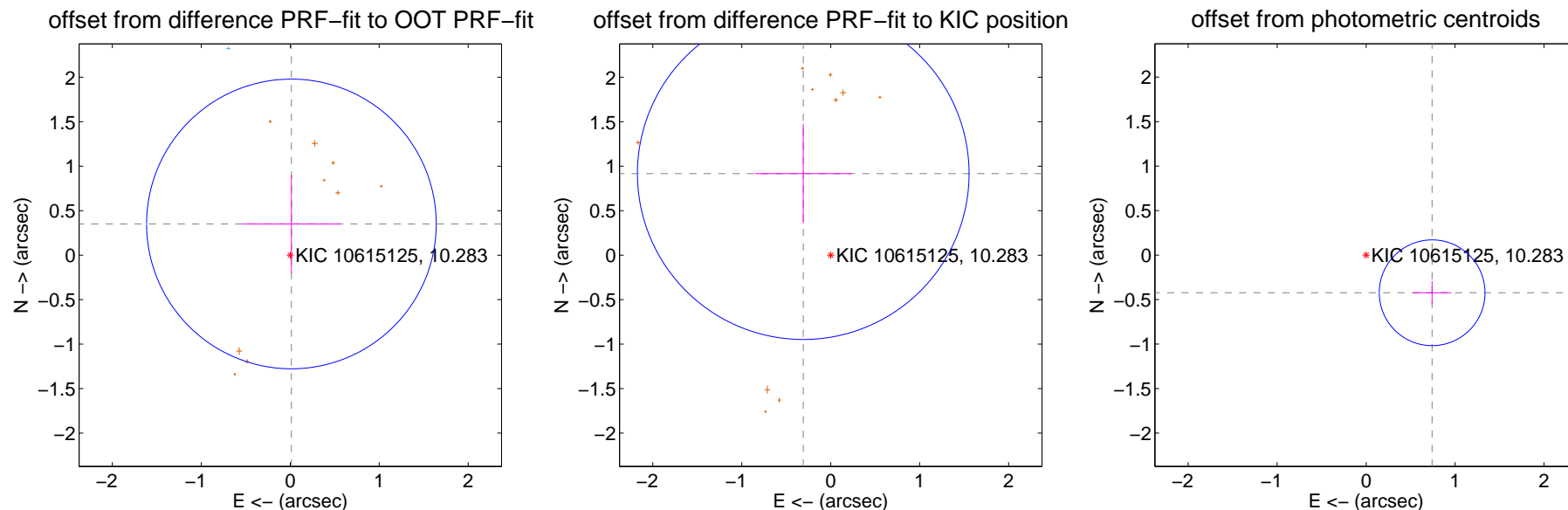
DV Centroid Data

Supplemental centroid analysis for 010615125-02. **Kepler magnitude: 10.28.** Transit SNR 10.64

There are 1 quarters with good PRF difference image offsets

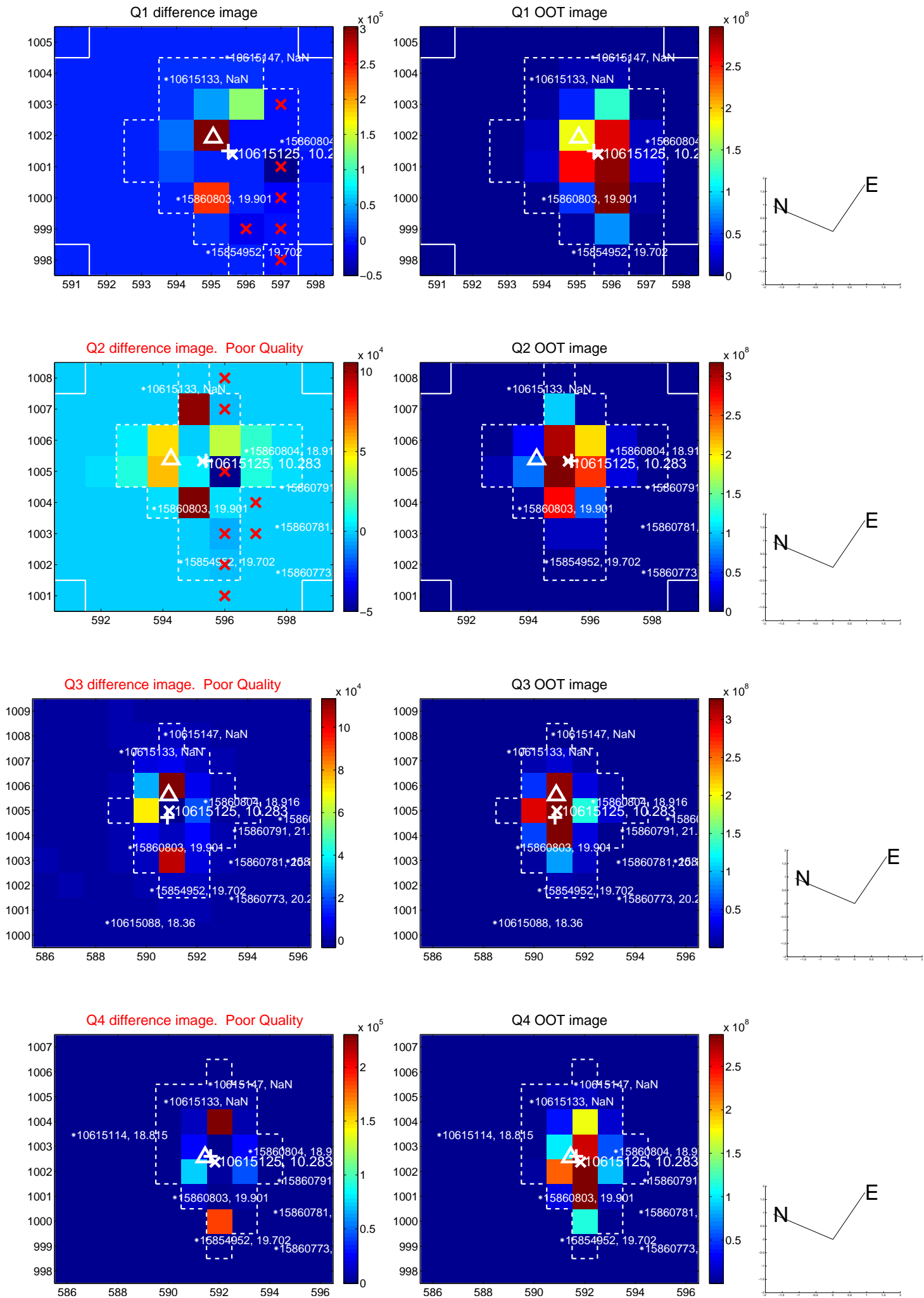
The direct PRF centroid is offset from the target star catalog position by about 0.59 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.351 ± 0.543	0.65	-0.013 ± 0.552	0.351 ± 0.553
PRF-fit source offset from KIC position	0.967 ± 0.621	1.56	0.309 ± 0.545	0.916 ± 0.558
photometric centroid source offset	0.85 ± 0.20	4.31	-0.74 ± 0.22	-0.42 ± 0.13

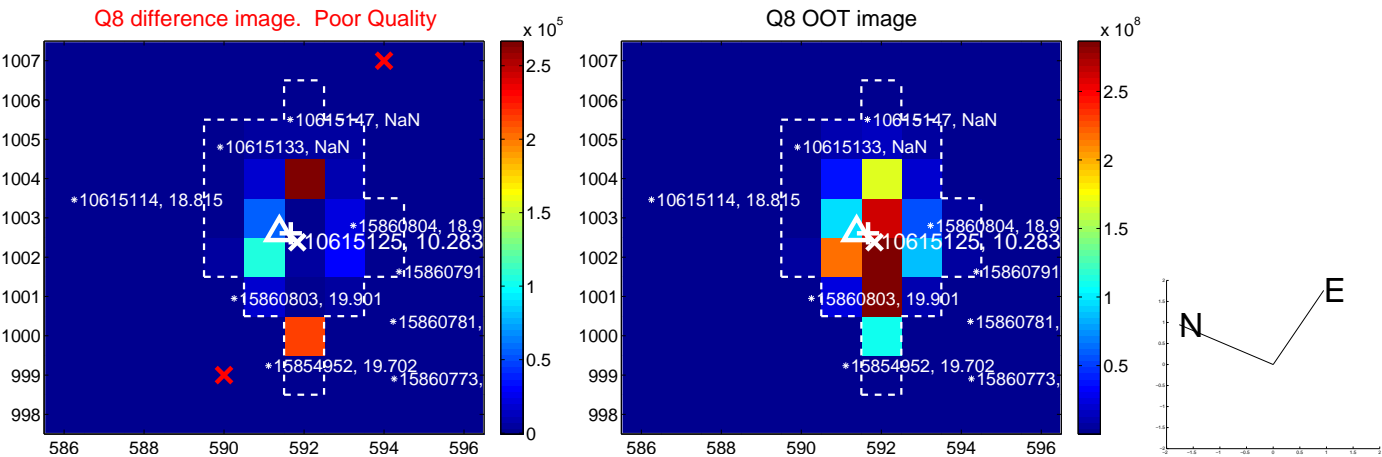
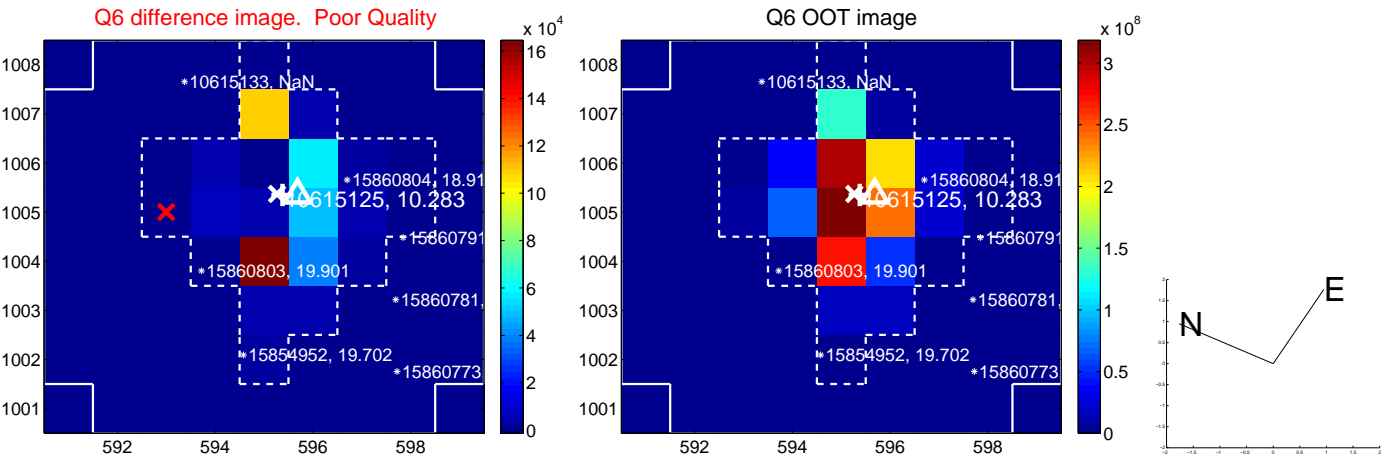
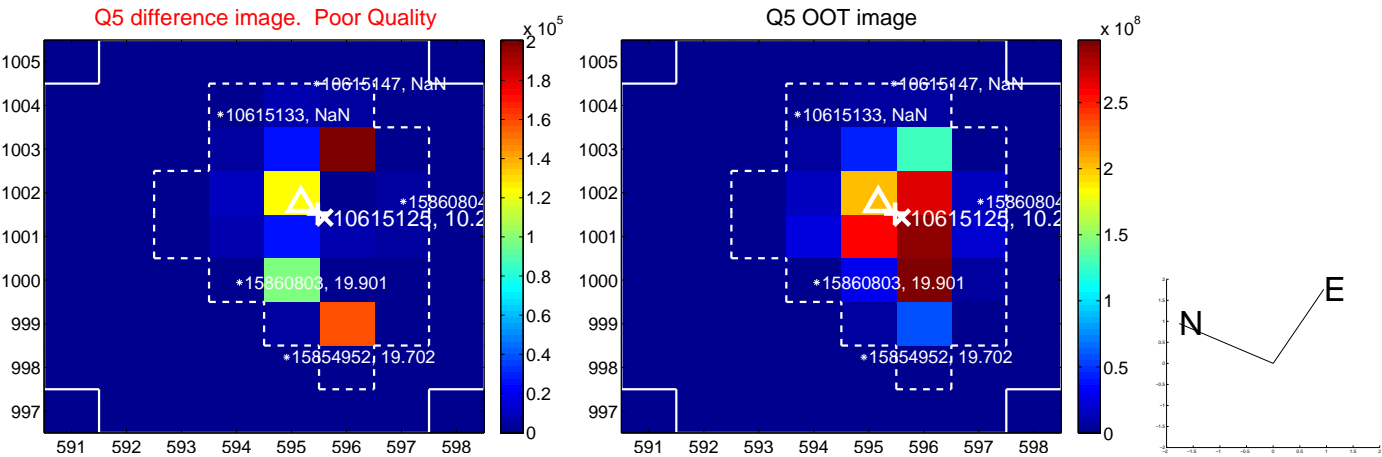


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

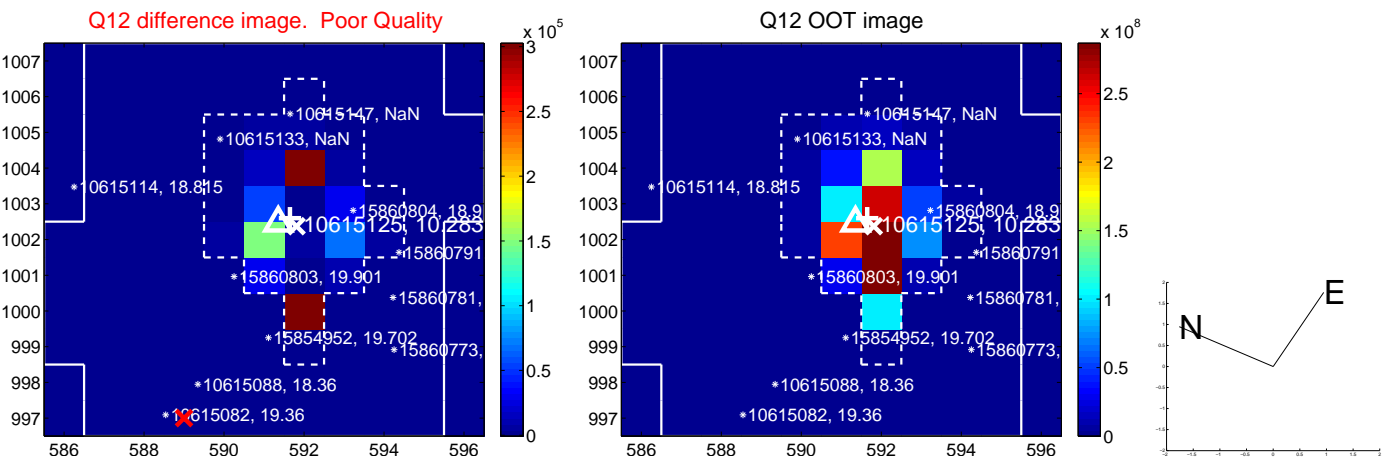
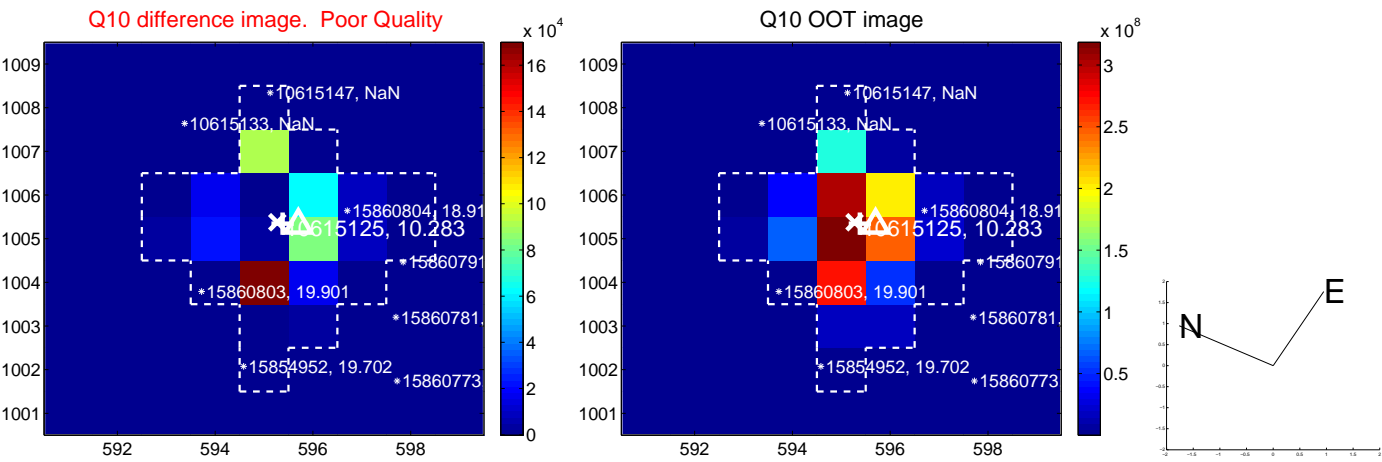
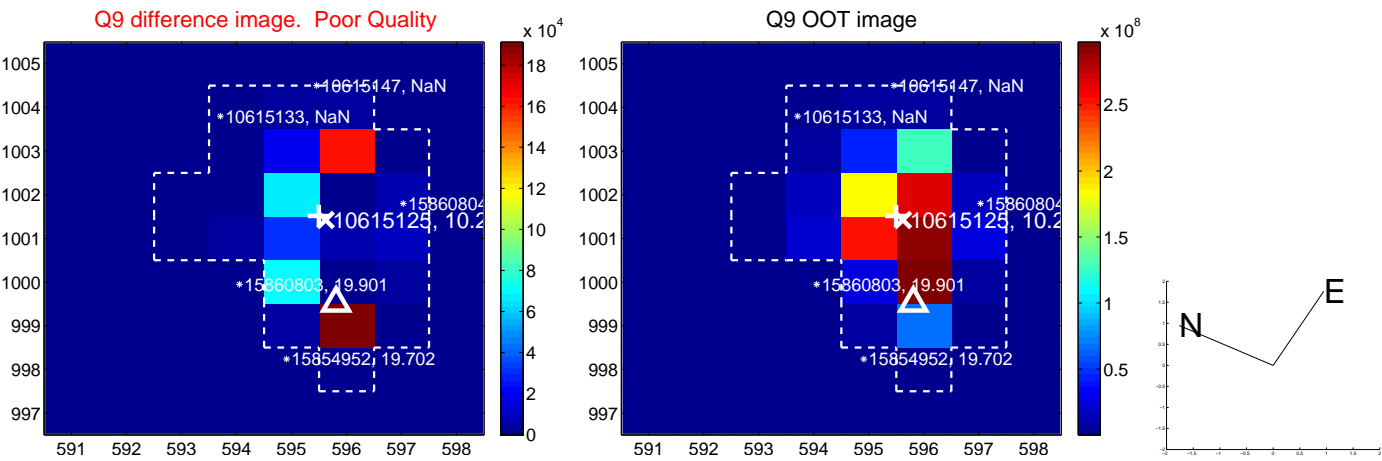
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



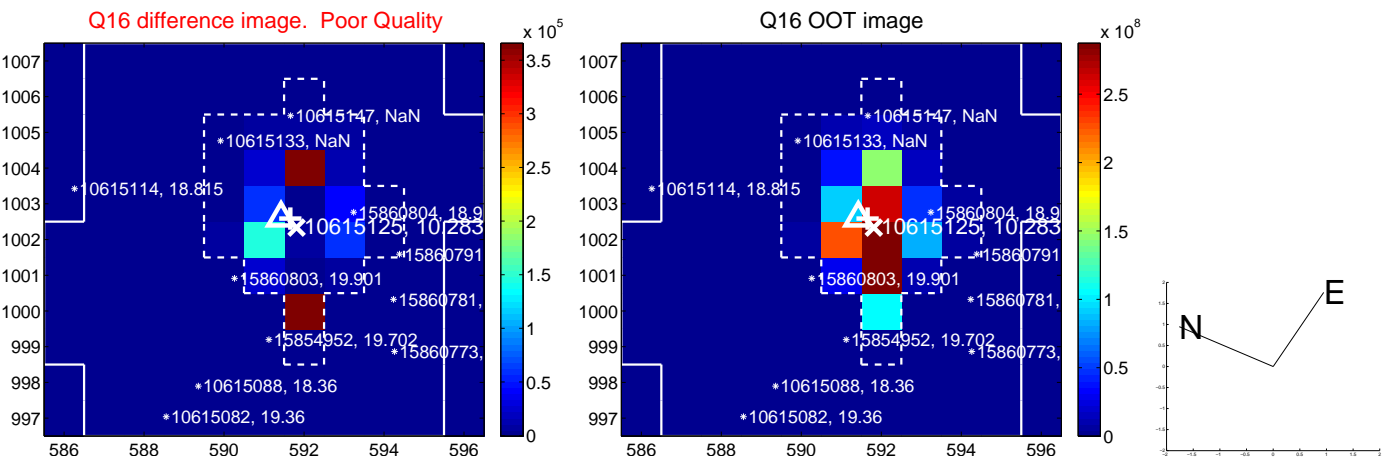
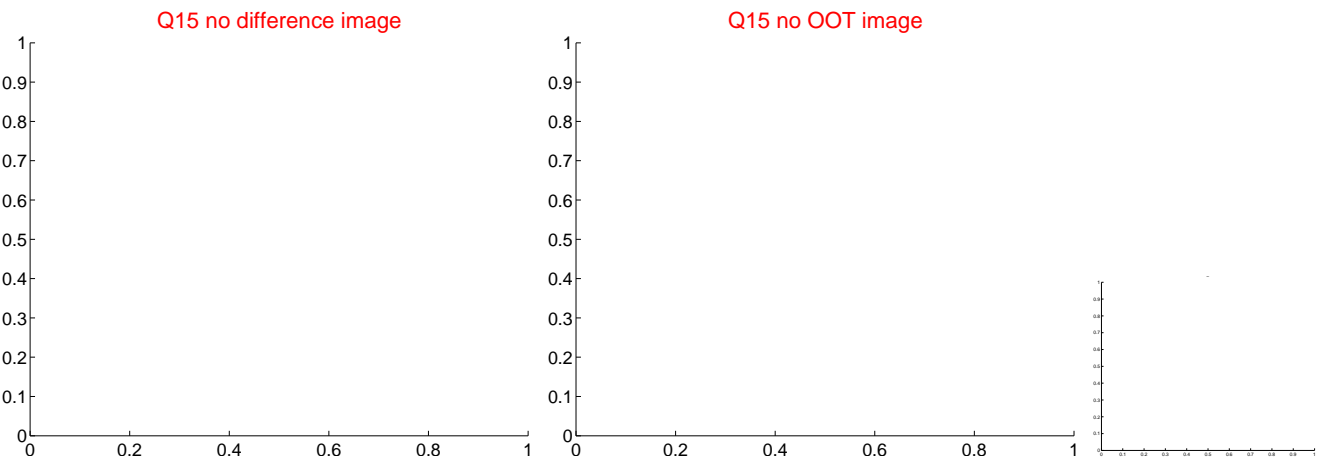
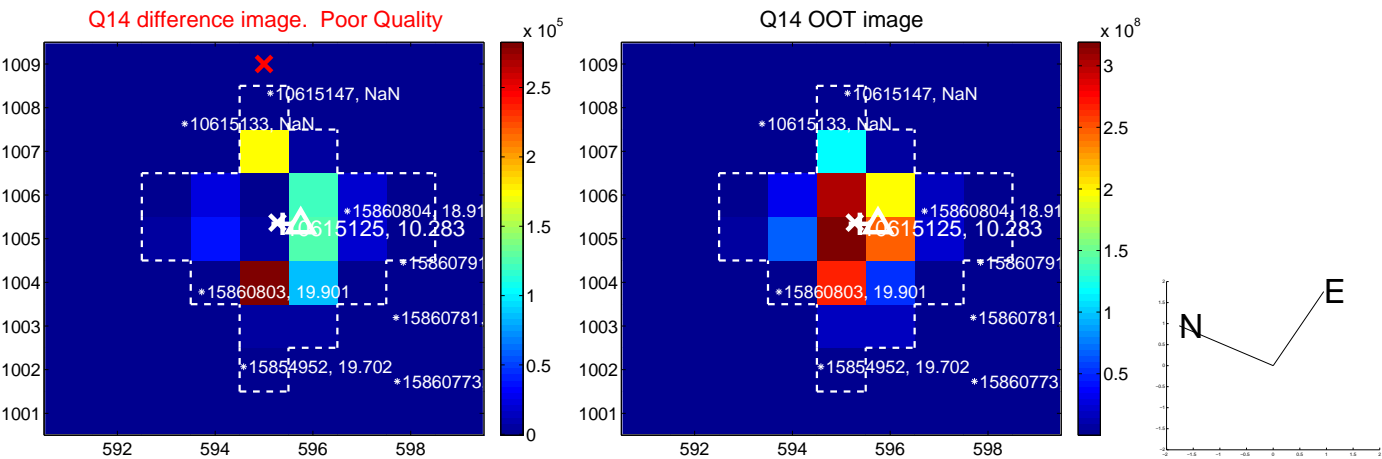
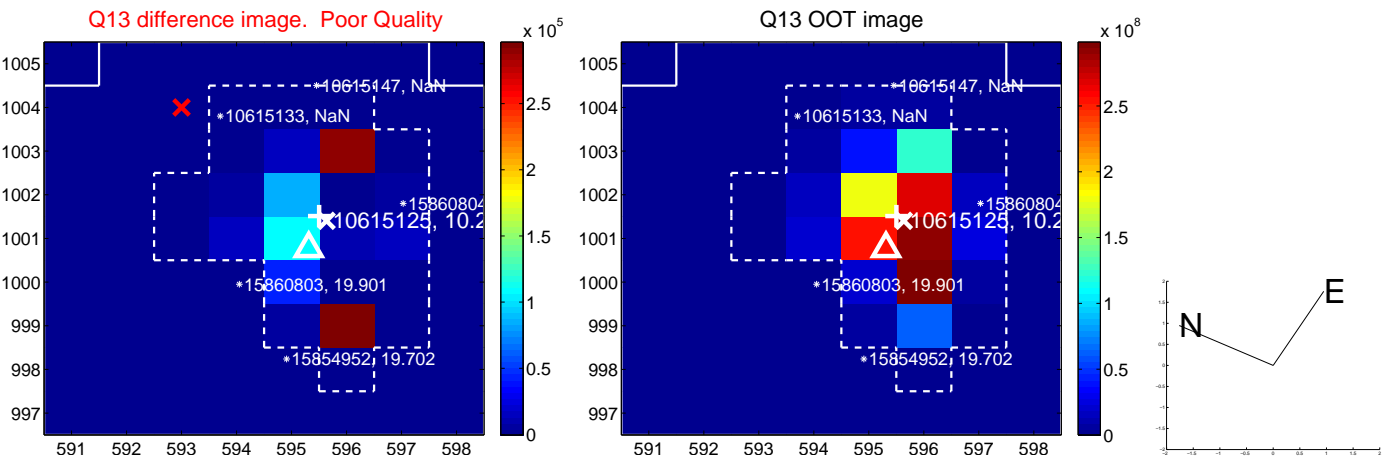
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



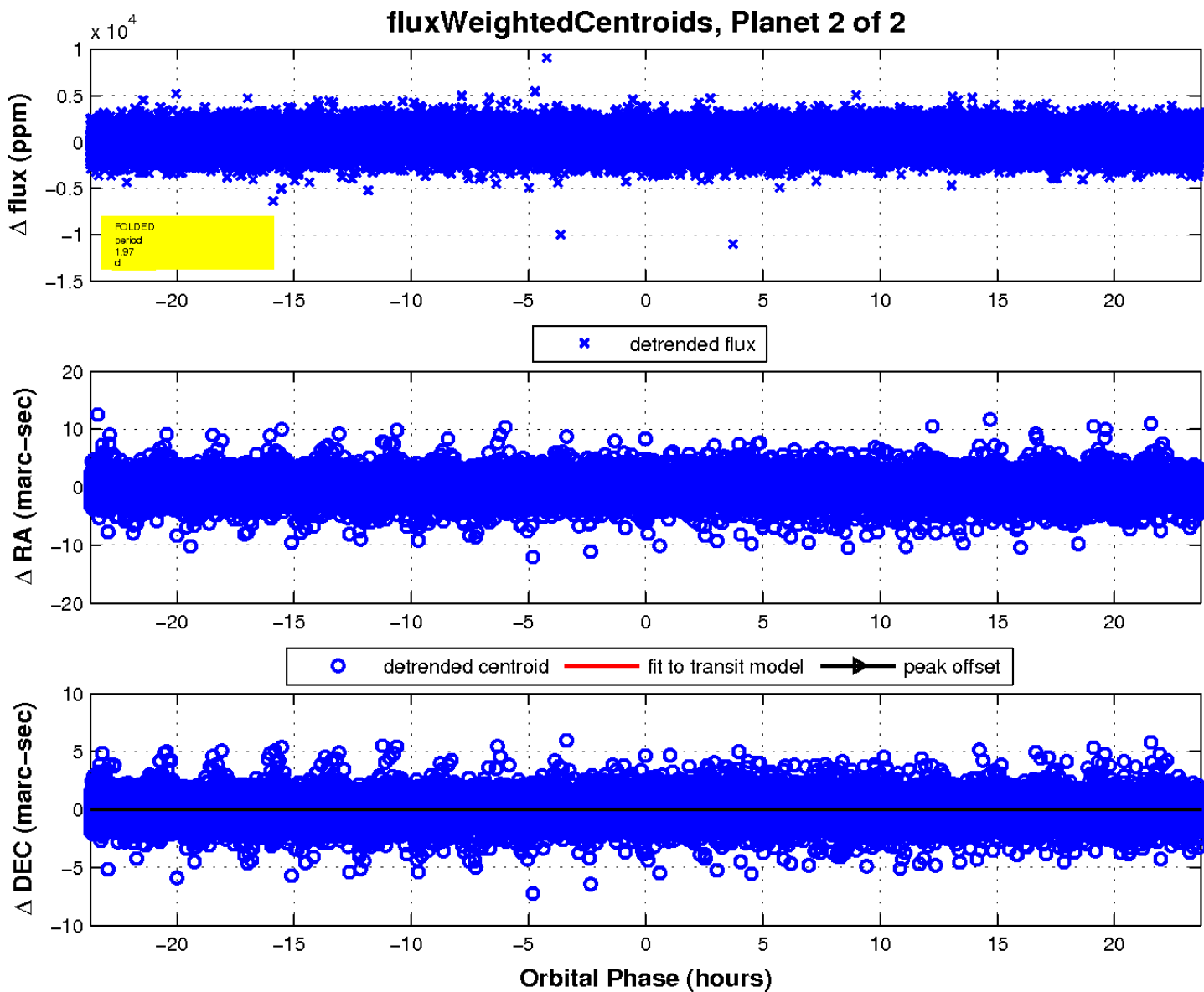
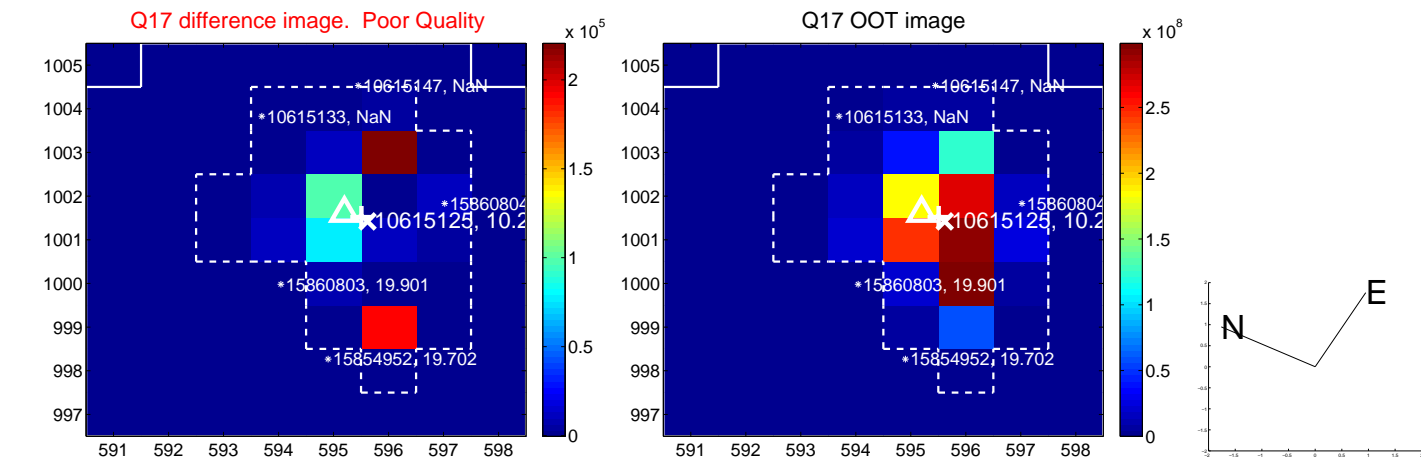
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white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

