

KIC 007848288

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})
007848288-01	OBS	No	0.968664	131.684768	38.0	3.932	9.2	9.4	3.87	7578	2.80	76368.33
007848288-02	OBS	No	1.937291	133.155248	45.8	6.679	8.3	8.3	3.87	7578	2.77	30307.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007848288-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
007848288-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

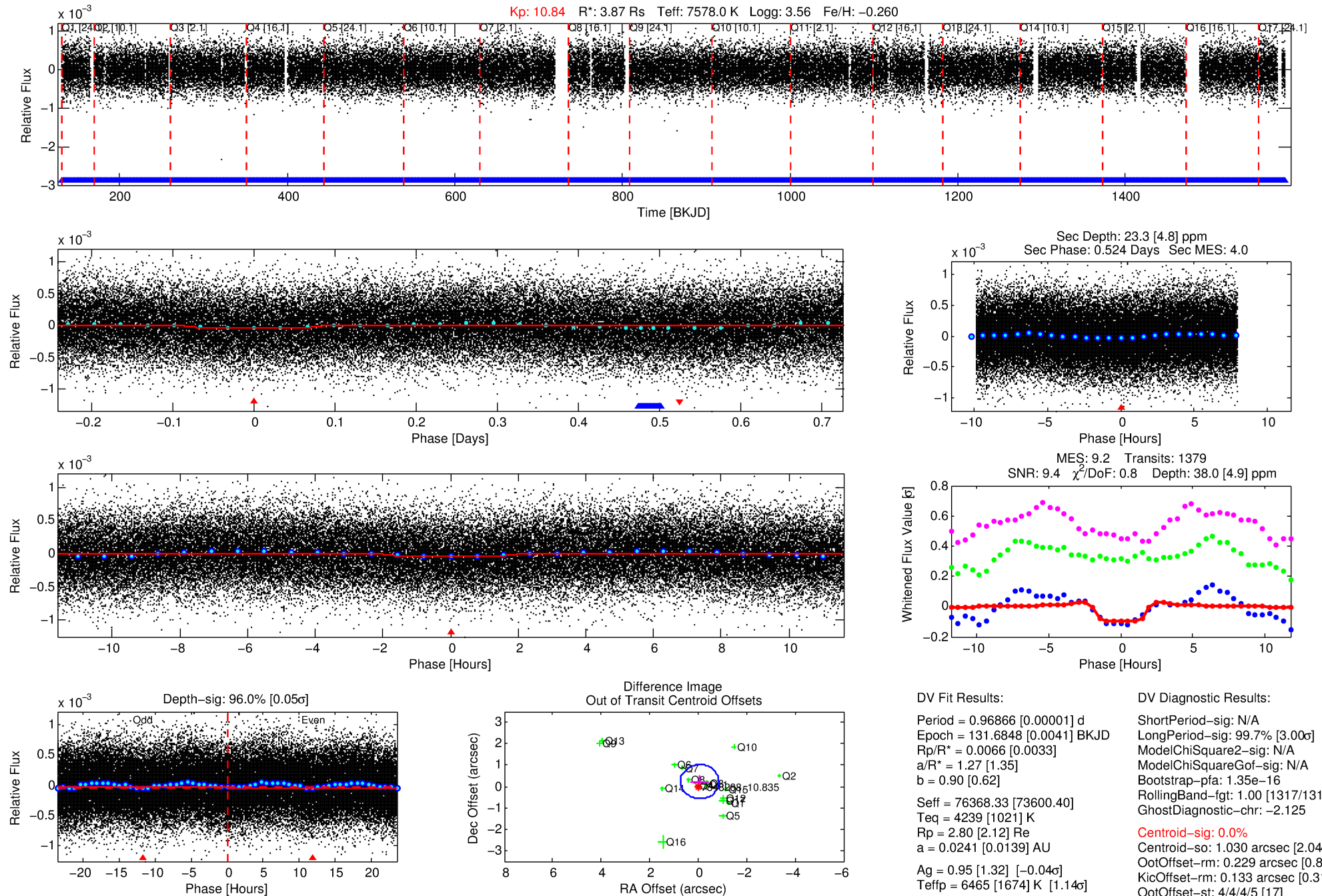
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007848288-01

No Significant Match Found

DV One-Page Summary

KIC: 7848288 Candidate: 1 of 2 Period: 0.969 d



DV Fit Results:

Period = 0.96866 [0.00001] d
Epoch = 131.6848 [0.0041] BKJD
 $R_p/R^* = 0.0066$ [0.0033]
 $a/R^* = 1.27$ [1.35]
 $b = 0.90$ [0.62]
 $S_{\text{eff}} = 76368.33$ [73600.40]
 $T_{\text{eq}} = 4239$ [1021] K
 $R_p = 2.80$ [2.12] R_e
 $a = 0.0241$ [0.0139] AU
 $A_g = 0.95$ [1.32] [-0.04 σ]
 $T_{\text{effp}} = 6465$ [1674] K [1.14 σ]

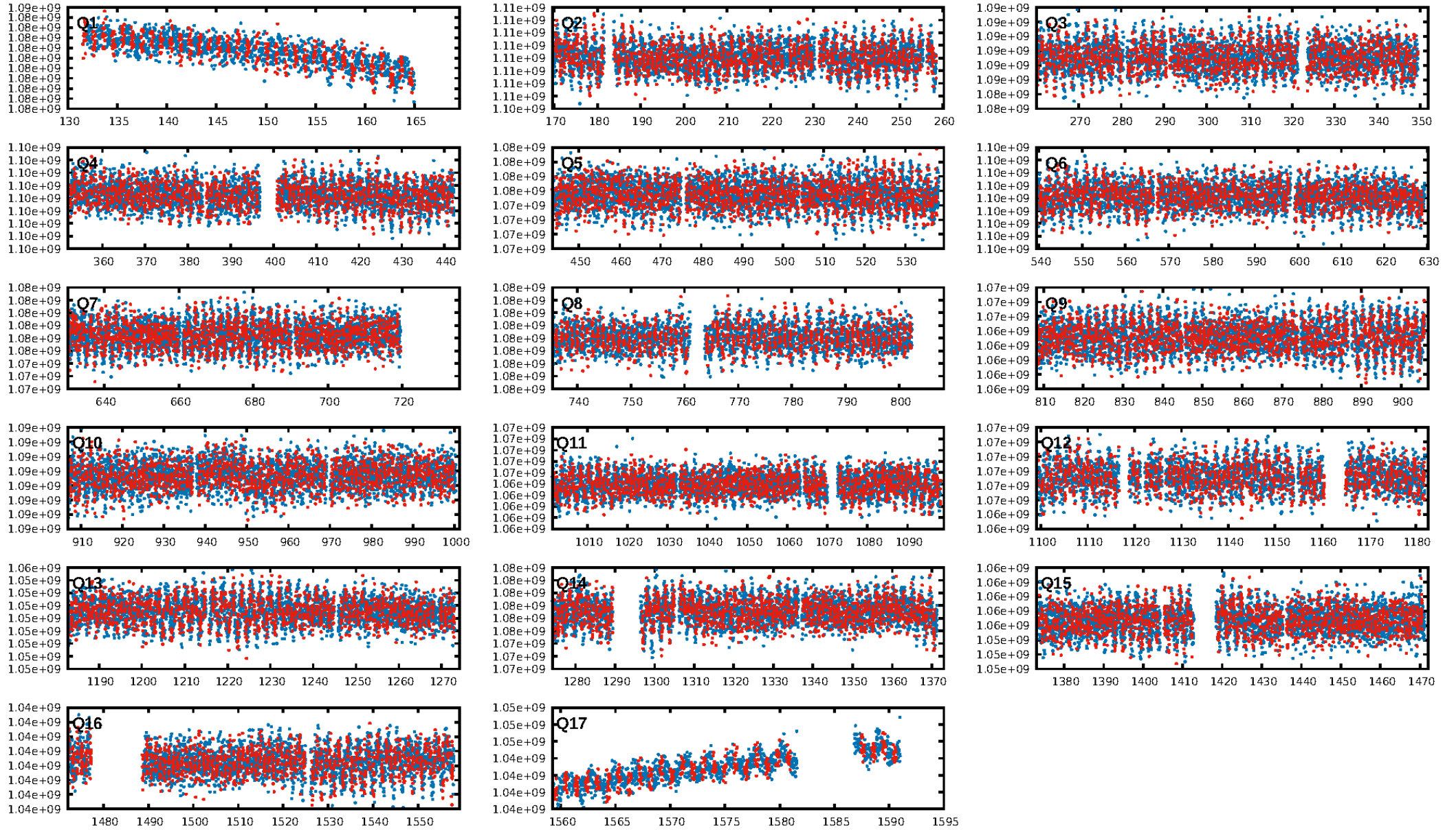
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 99.7% [3.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.35e-16
RollingBand-fgt: 1.00 [1317/1317]
GhostDiagnostic-chr: -2.125
Centroid-sig: 0.0%
Centroid-so: 1.030 arcsec [2.04 σ]
OotOffset-rm: 0.229 arcsec [0.86 σ]
KicOffset-rm: 0.133 arcsec [0.31 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.65 [11/17]
DiffImageOverlap-fno: 0.00 [0/17]

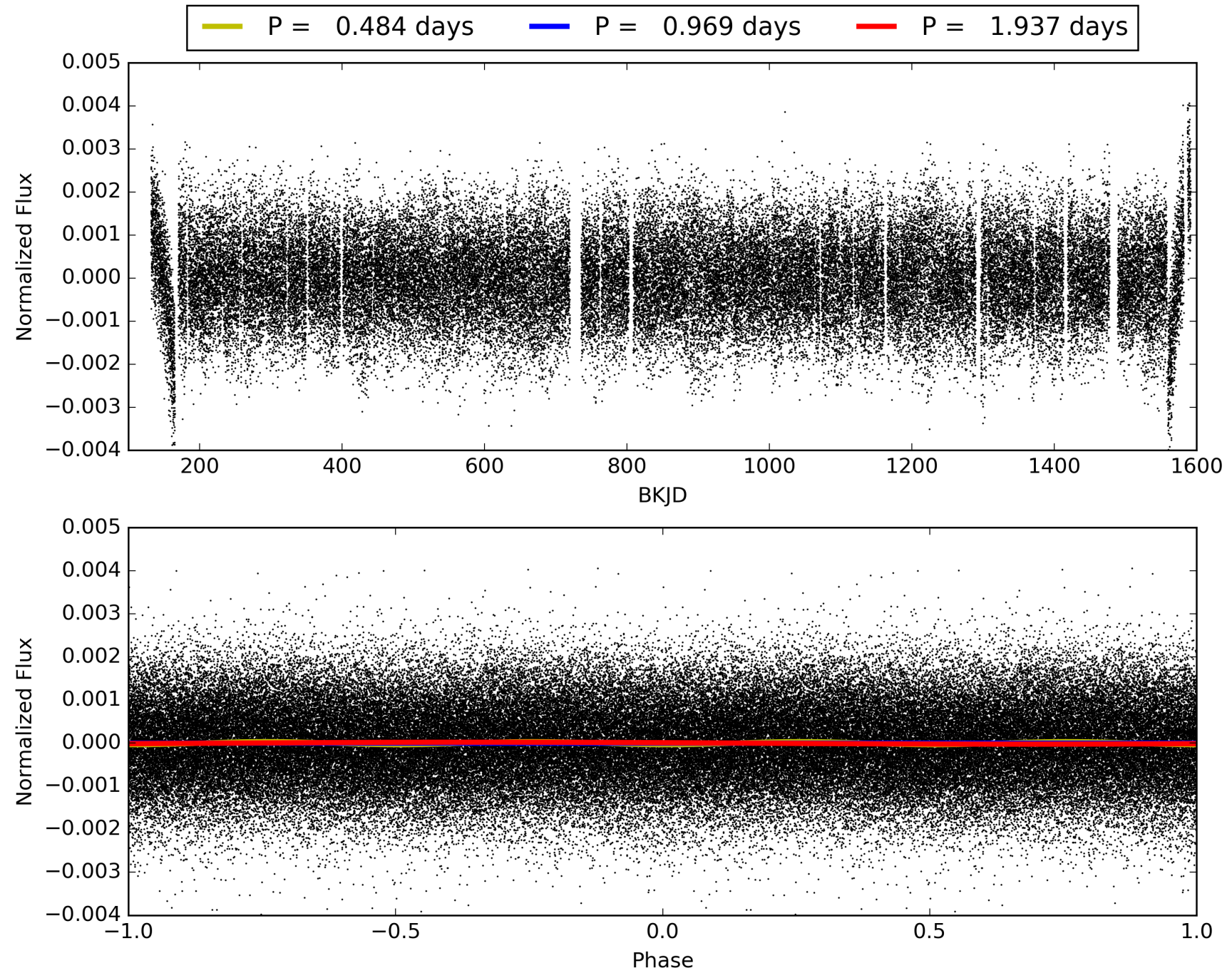
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:47:07 Z

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

TCE 007848288-01, PDC Light Curves

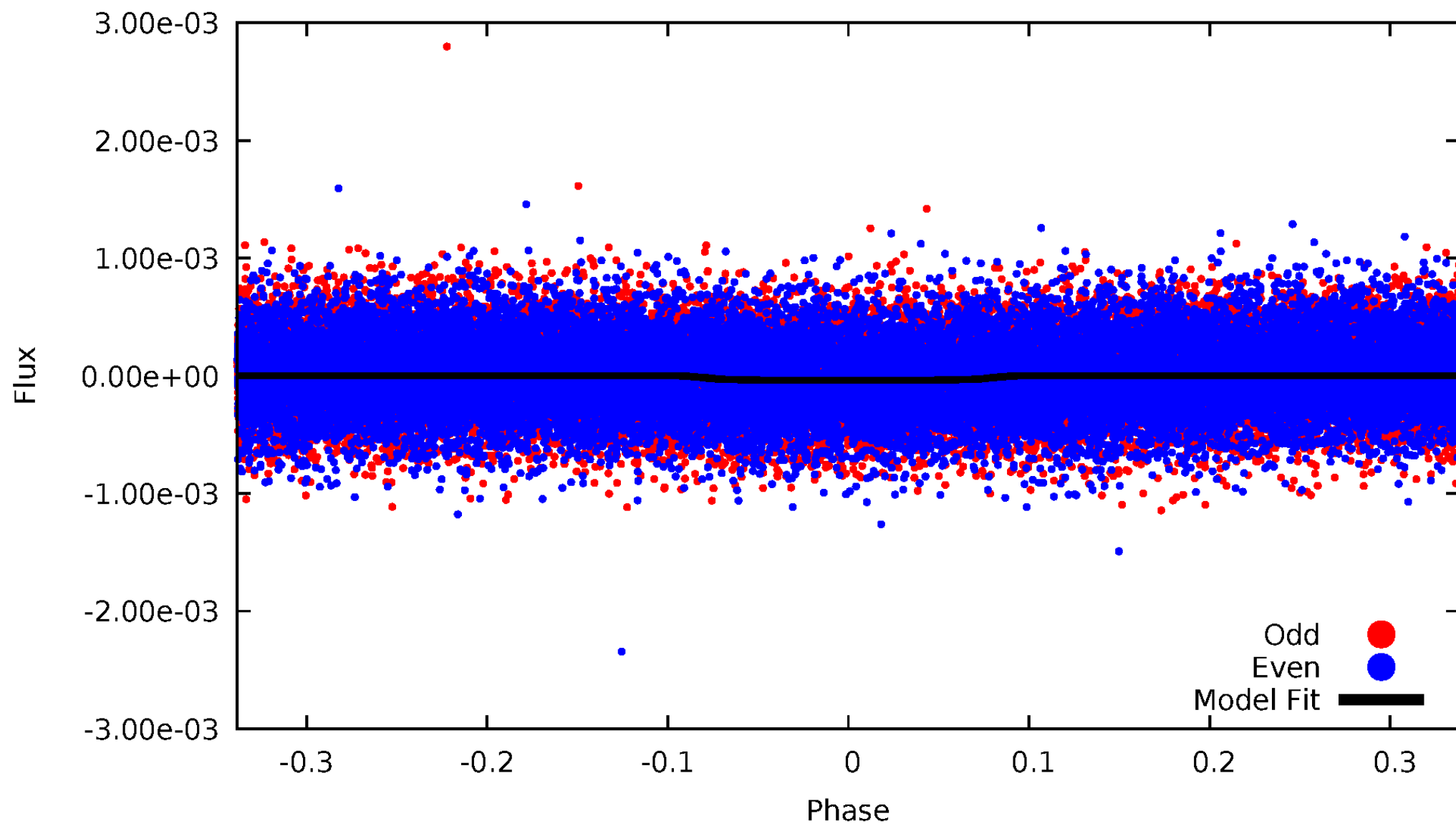


TCE 007848288-01



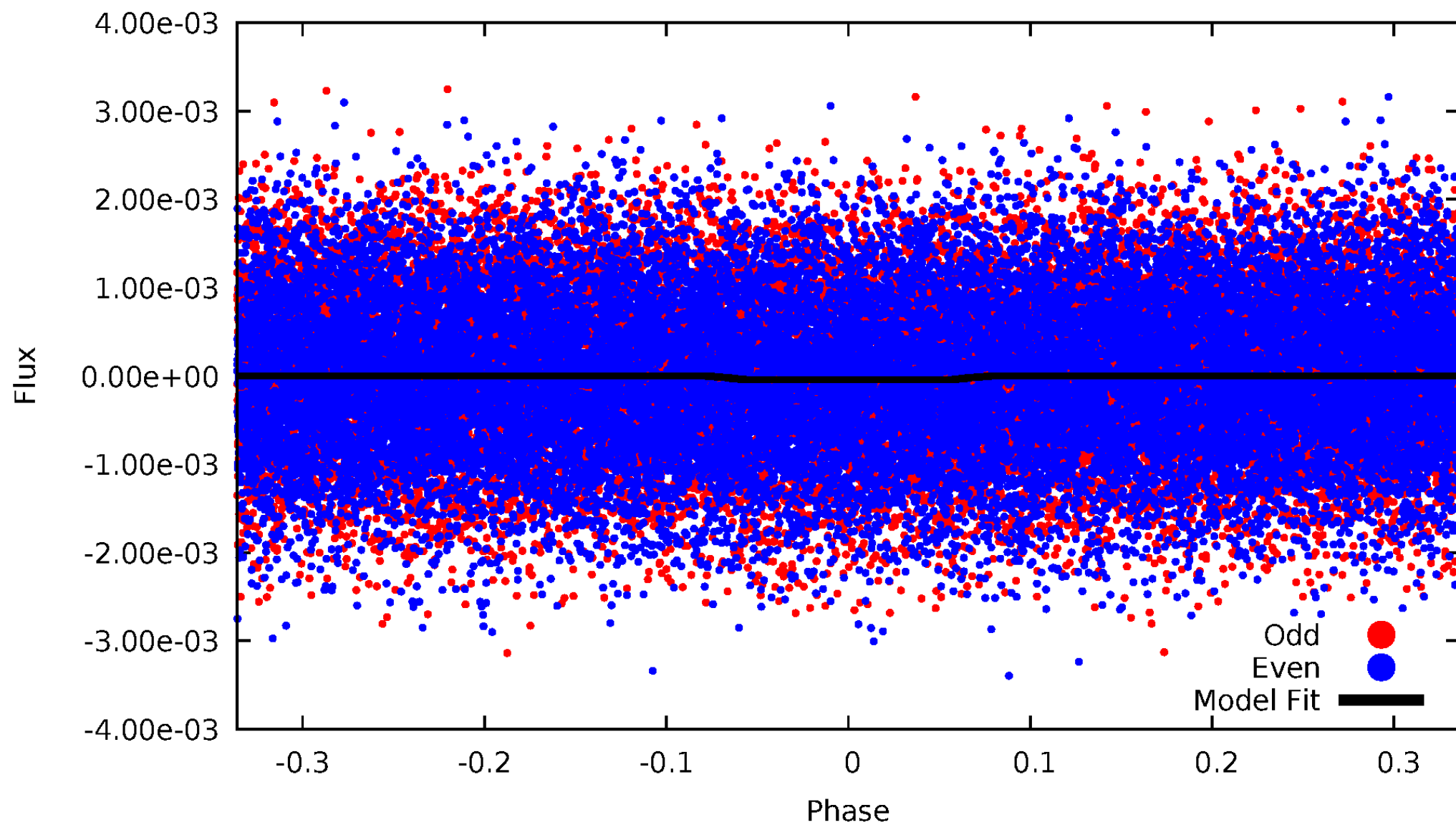
DV Odd/Even

TCE 007848288-01

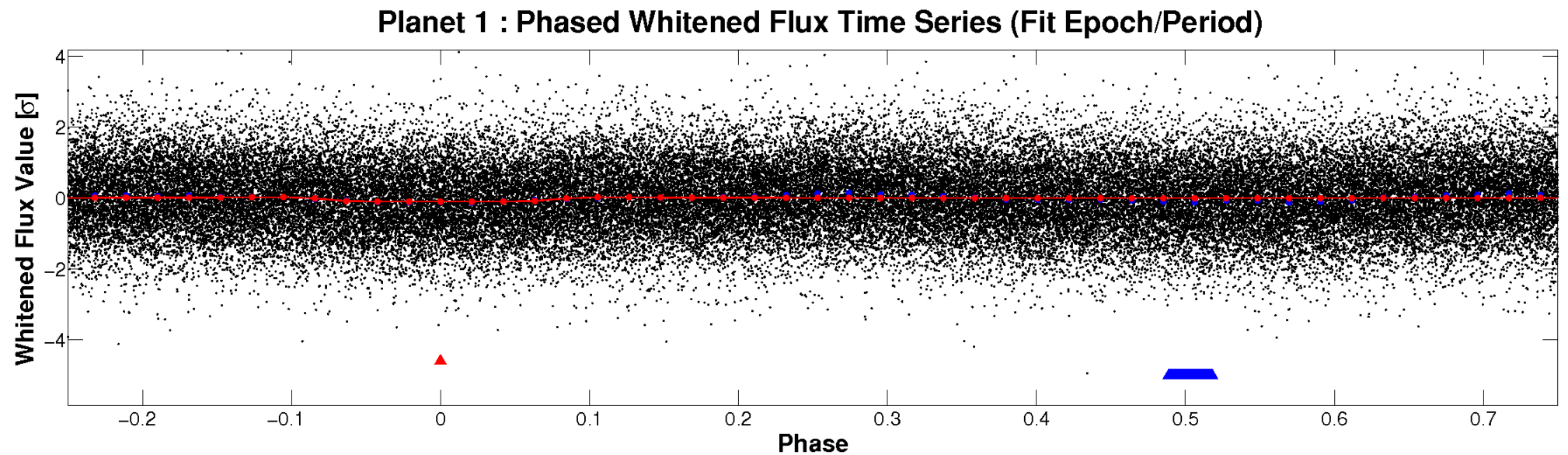
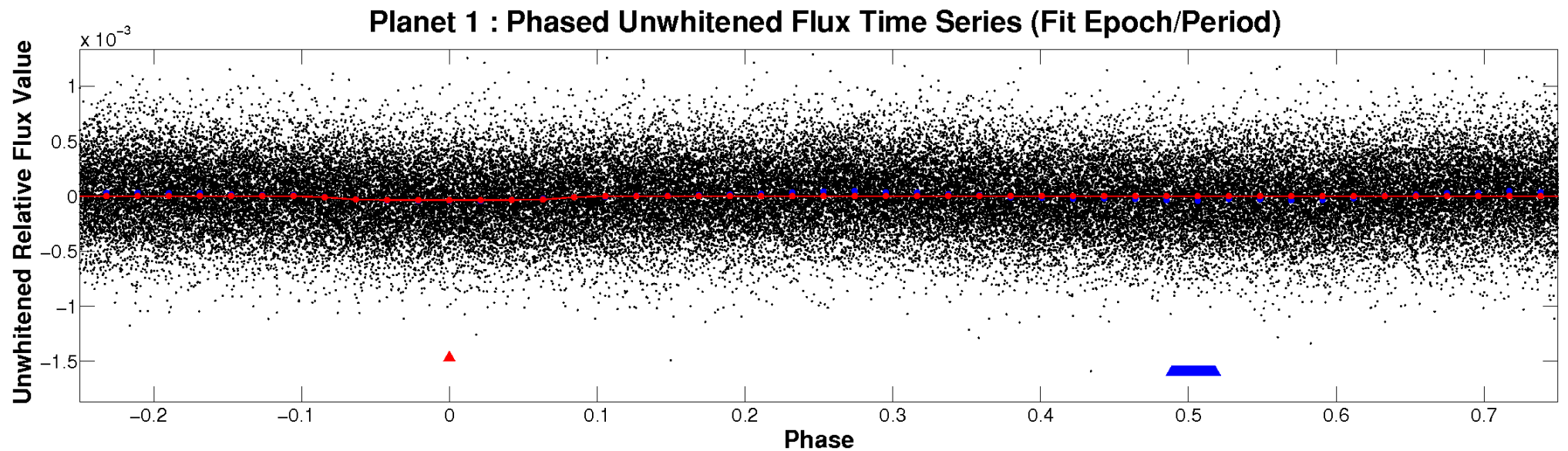


ALT Odd/Even

TCE 007848288-01

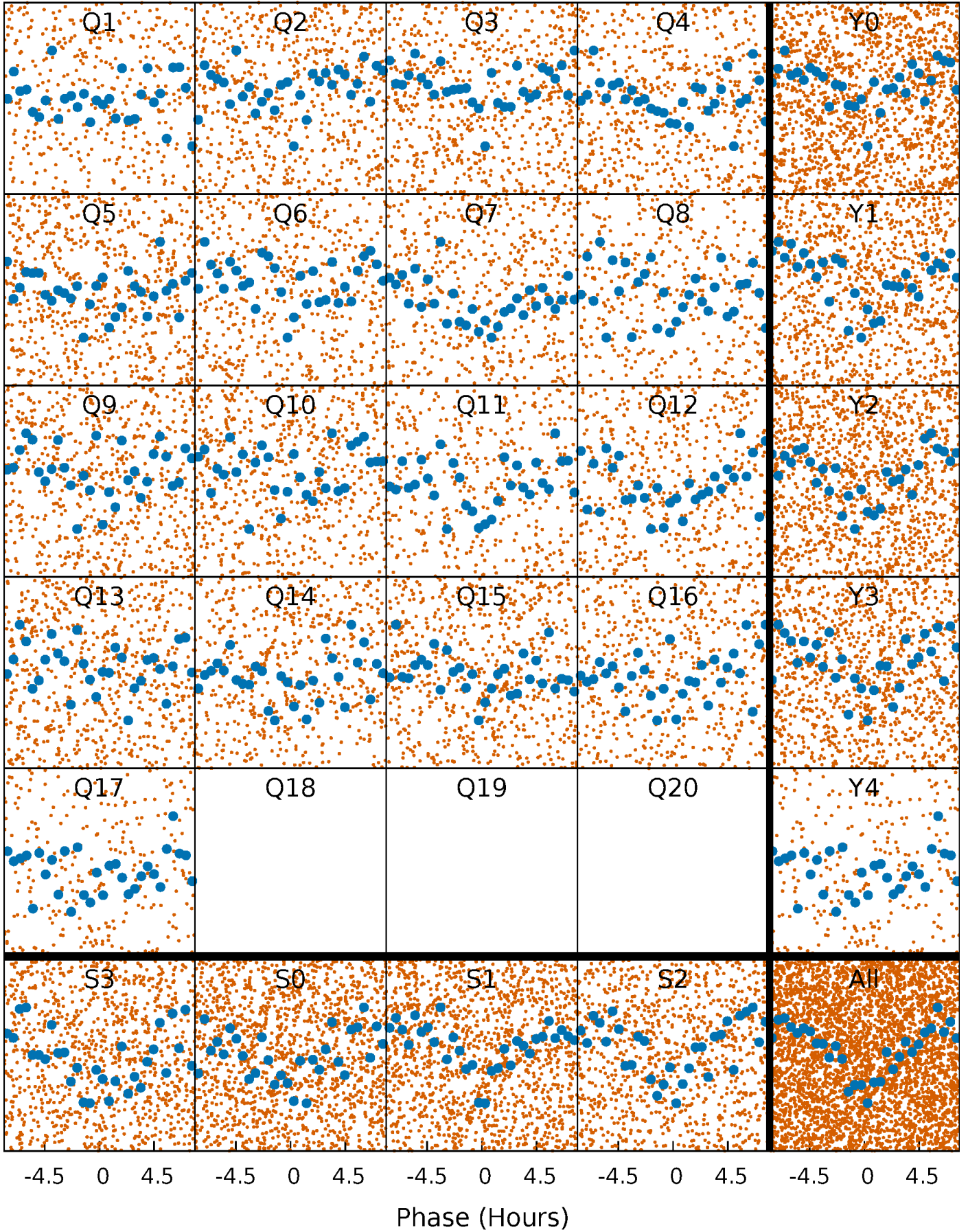


Non-Whitened Vs. Whitened Light Curve



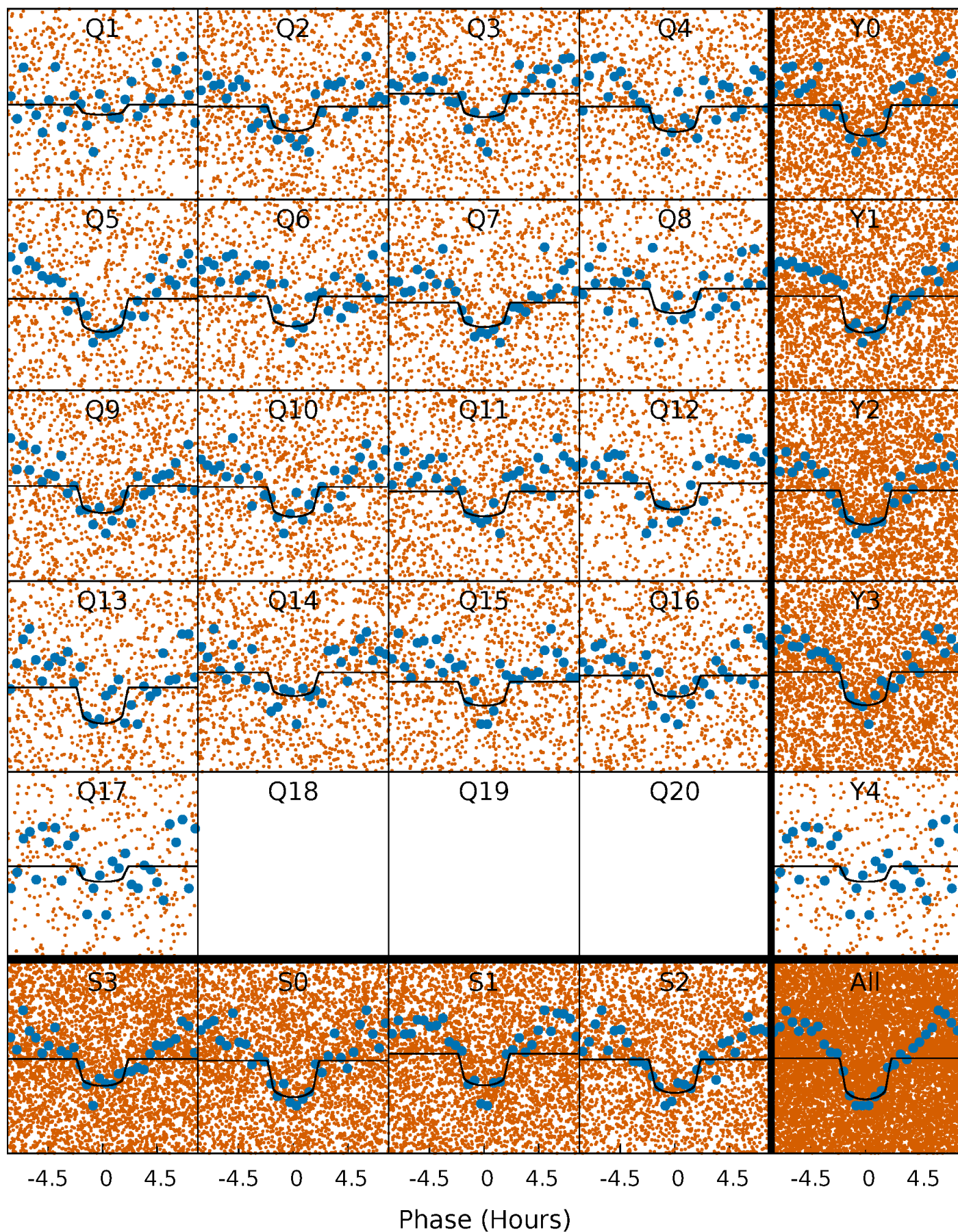
PDC Quarter-Phased Transit Curves

TCE 007848288-01 P= 0.968664 Days $T_0=131.684768$ (BKJD)



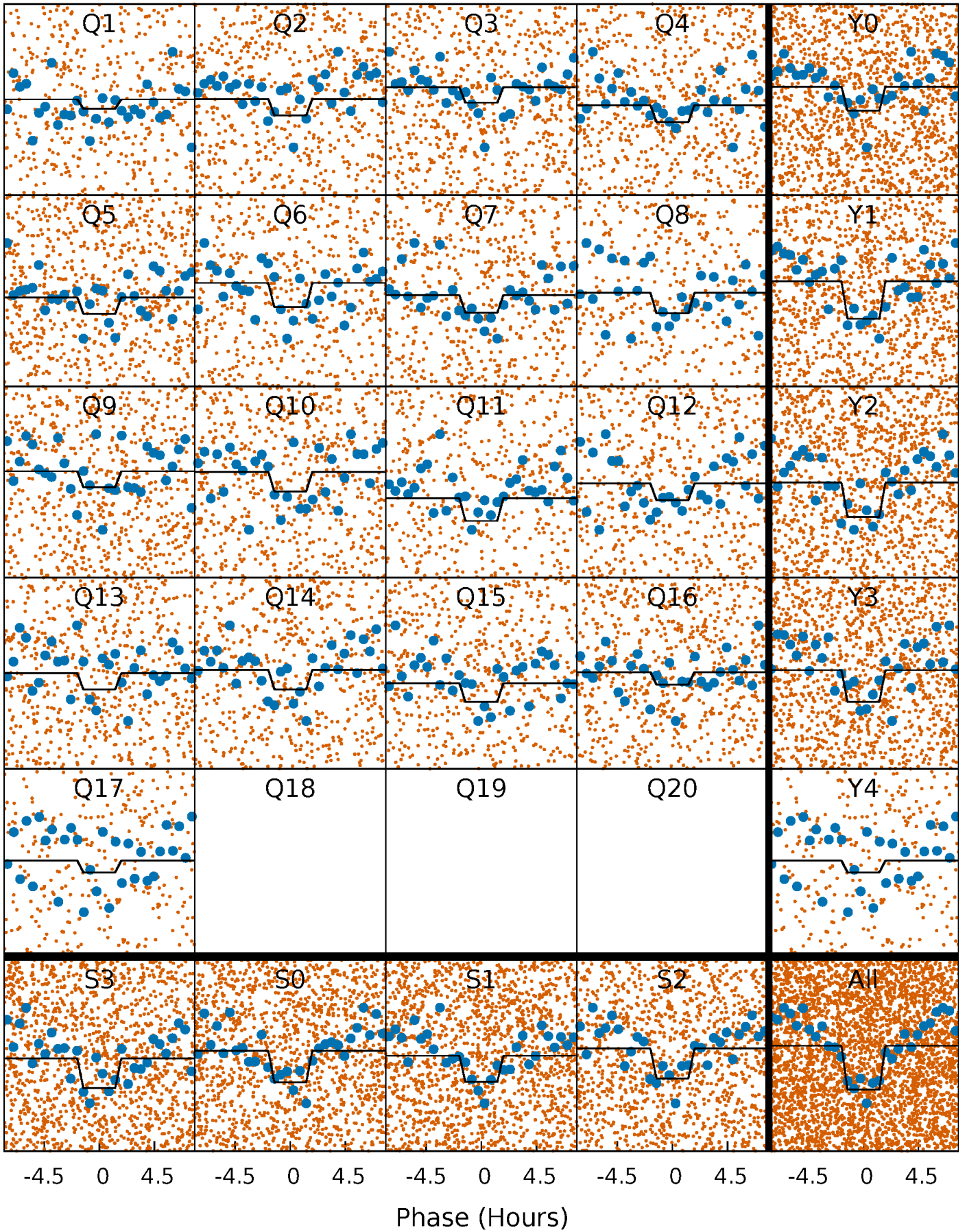
DV Quarter-Phased Transit Curves

TCE 007848288-01 P= 0.968664 Days $T_0=131.684768$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

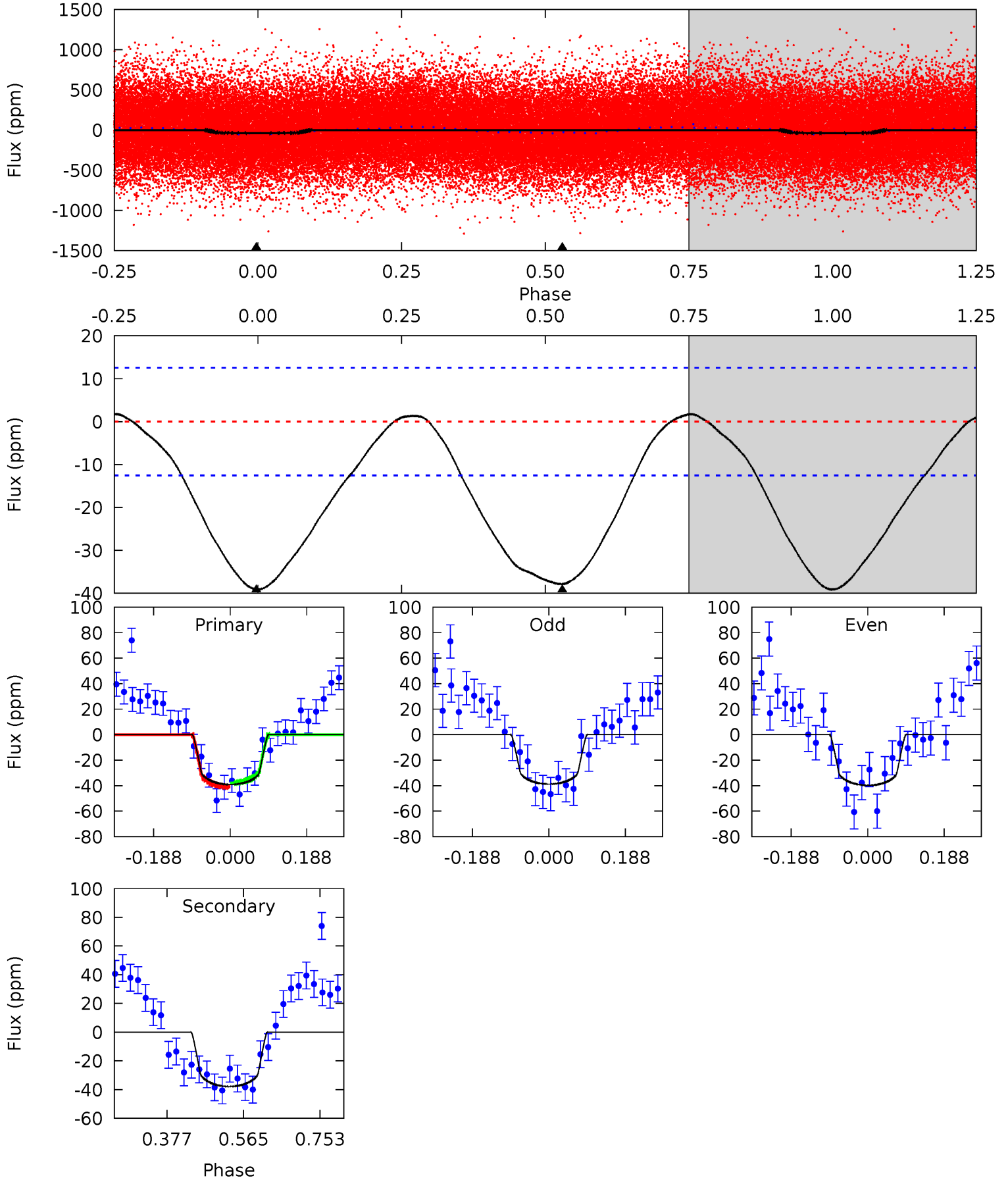
TCE 007848288-01 P= 0.968663 Days $T_0=131.684992$ (BKJD)



DV Model-Shift Uniqueness Test

007848288-01, P = 0.968664 Days, E = 130.716104 Days

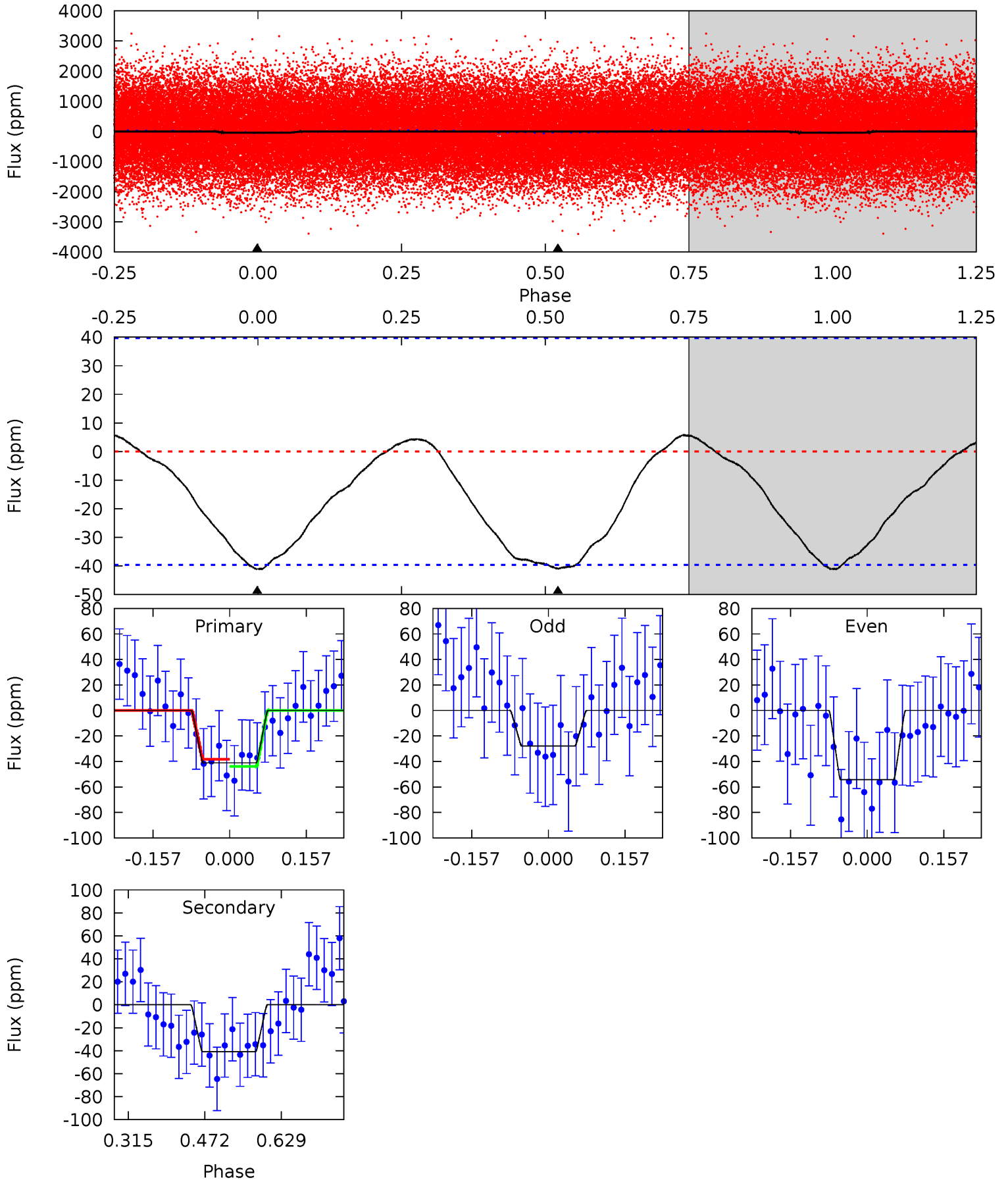
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	13.4	0	0	4.43	1.32	0.98	13.8	13.8	13.4	13.4	0.18	0.97	0.04	0.54



Alt Model-Shift Uniqueness Test

007848288-01, P = 0.968663 Days, E = 130.716329 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.64	4.62	0	0	4.47	1.41	0.57	4.64	4.64	4.62	4.62	1.49	1.58	0.12	0.31



Stellar Parameters For KIC 007848288

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7578^{+235}_{-314}	$3.560^{+0.567}_{-0.063}$	$-0.260^{+0.250}_{-0.300}$	$3.873^{+0.518}_{-2.203}$	$1.988^{+0.061}_{-0.545}$	$0.048^{+0.350}_{-0.010}$
	+3%/-4%	+16%/-2%	+96%/-115%	+13%/-57%	+3%/-27%	+726%/-21%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007848288-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-38 ± 3	$2.27^{+1.50}_{-1.20}$	5616^{+470}_{-831}	6922^{+4268}_{-1644}	$2.199^{+7.266}_{-1.374}$
Alt.	-41 ± 9	$2.37^{+1.39}_{-1.14}$	5662^{+455}_{-886}	6959^{+3725}_{-1624}	$2.162^{+5.824}_{-1.340}$

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

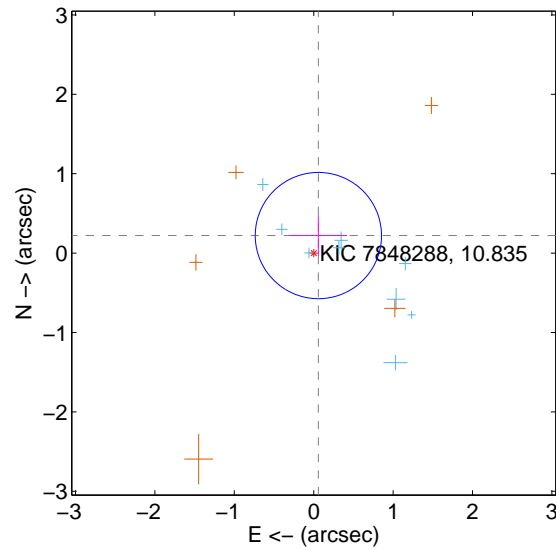
Supplemental centroid analysis for 007848288-01. **Kepler magnitude: 10.84.** Transit SNR 9.37

There are 11 quarters with good PRF difference image offsets

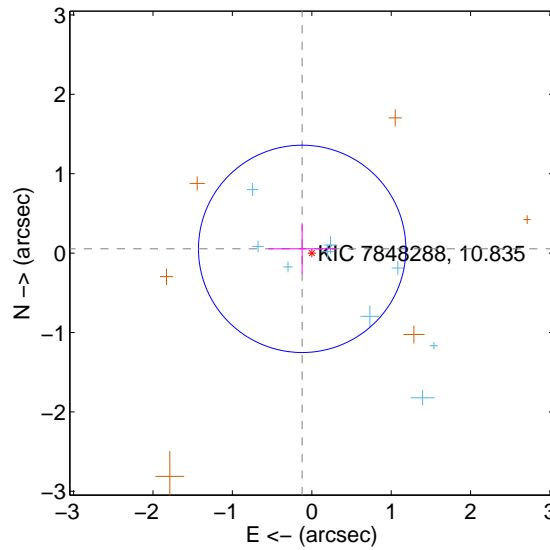
The direct PRF centroid is offset from the target star catalog position by about 0.42 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.229 ± 0.265	0.86	-0.059 ± 0.360	0.221 ± 0.257
PRF-fit source offset from KIC position	0.133 ± 0.435	0.31	0.122 ± 0.426	0.053 ± 0.309
photometric centroid source offset	1.03 ± 0.50	2.04	0.76 ± 0.55	0.70 ± 0.45

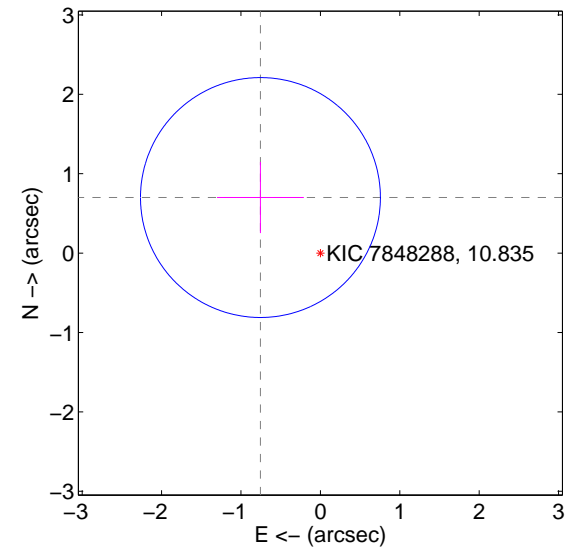
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

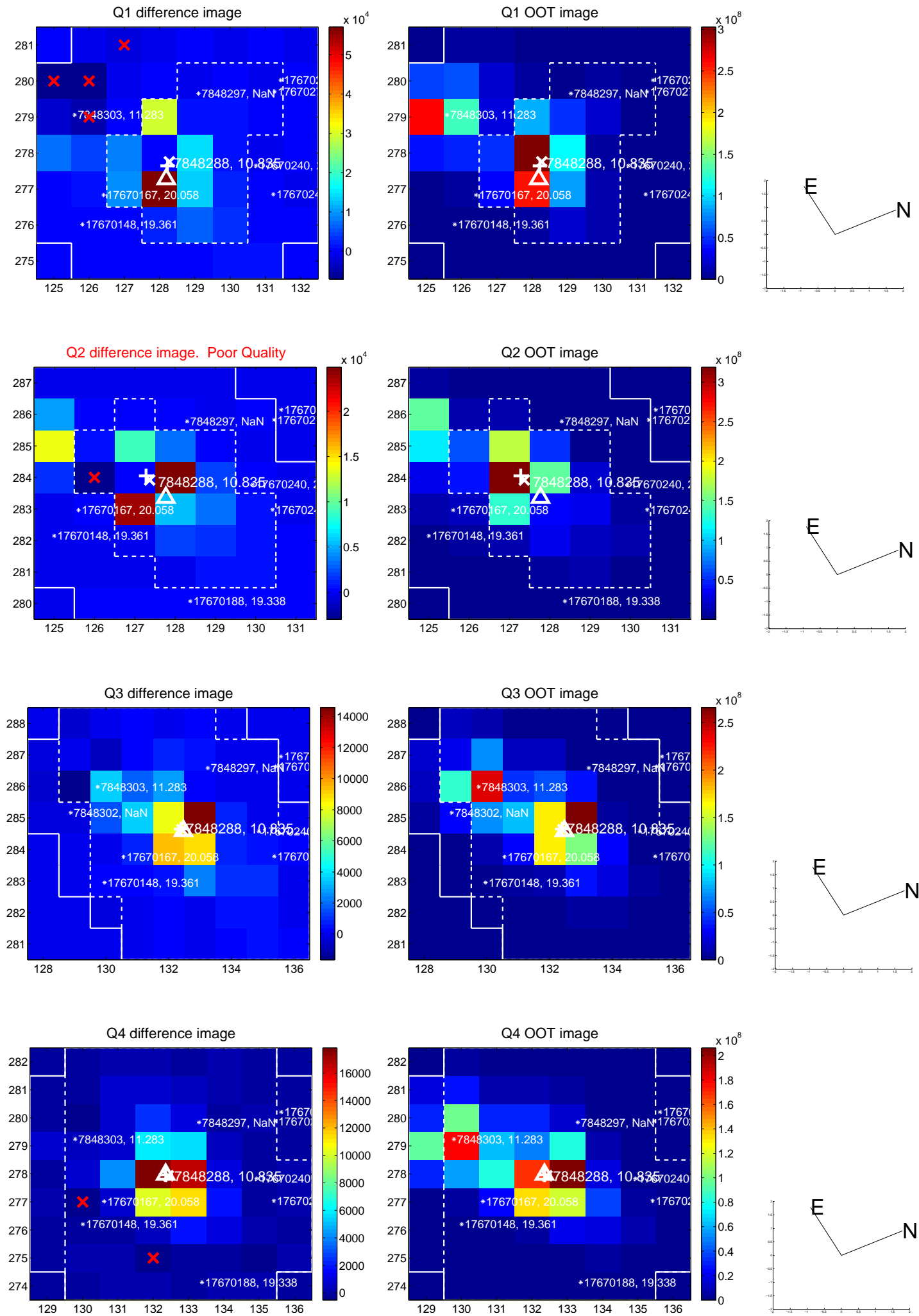


offset from photometric centroids

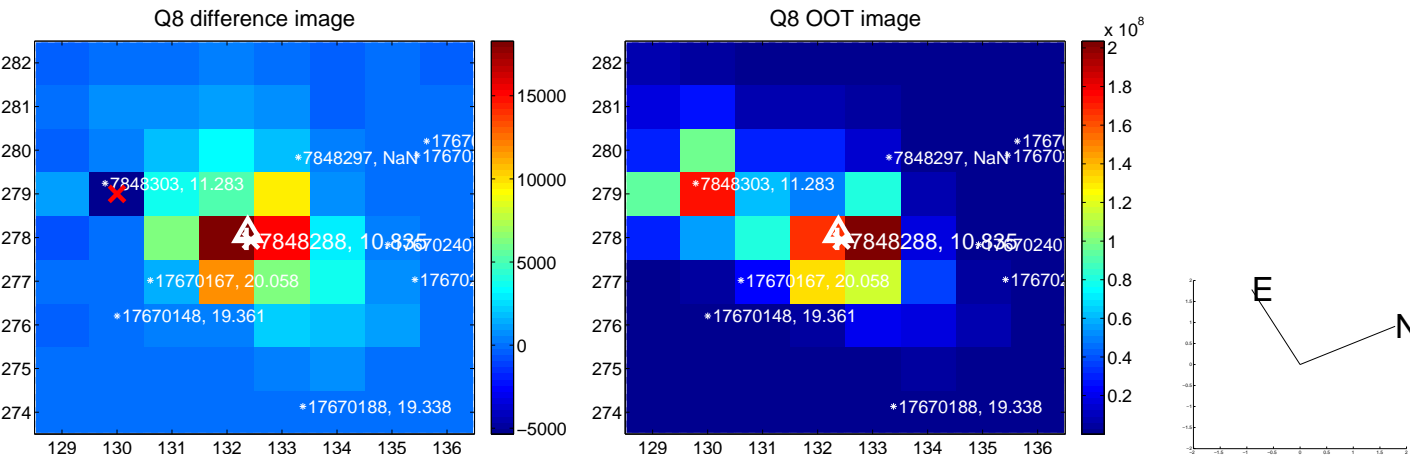
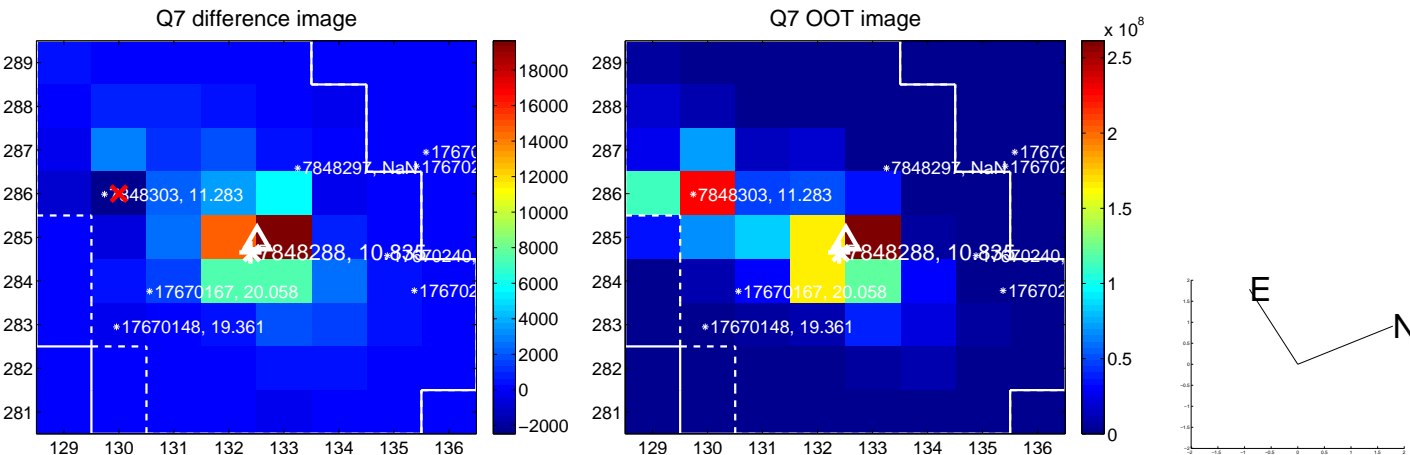
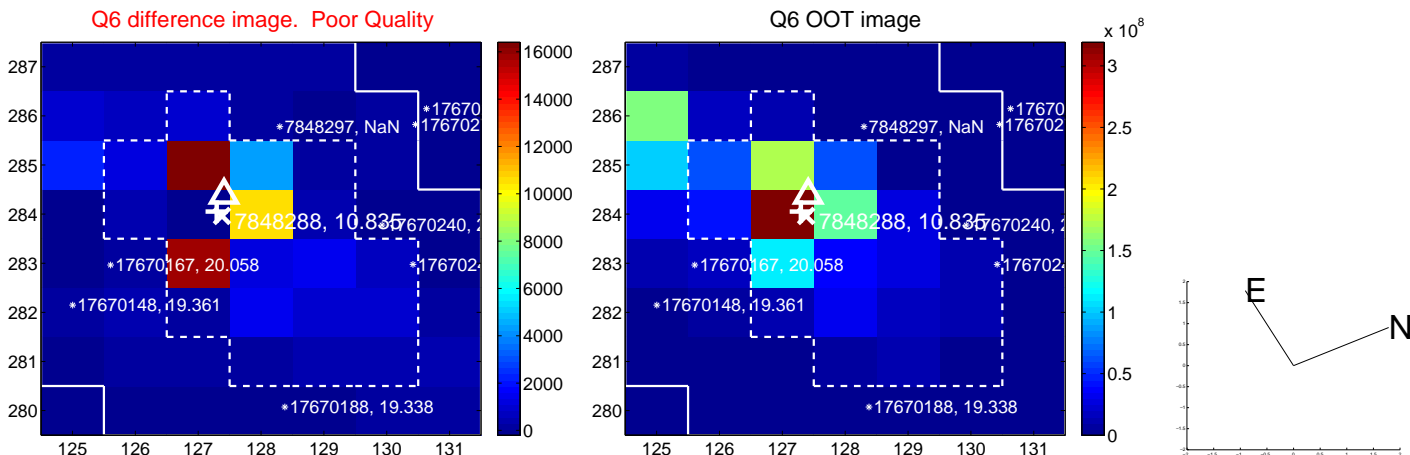
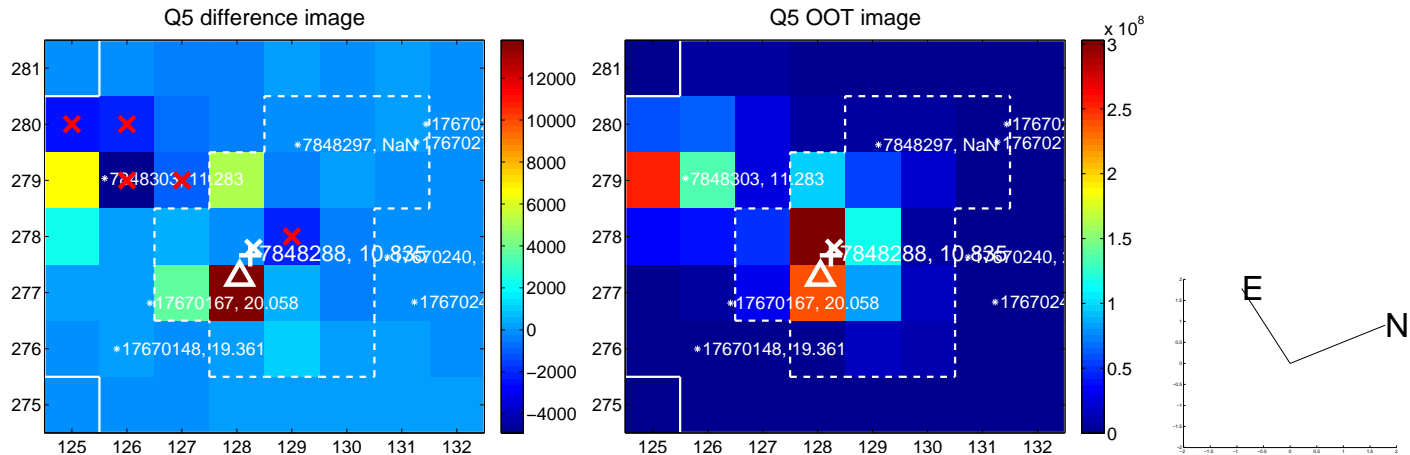


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

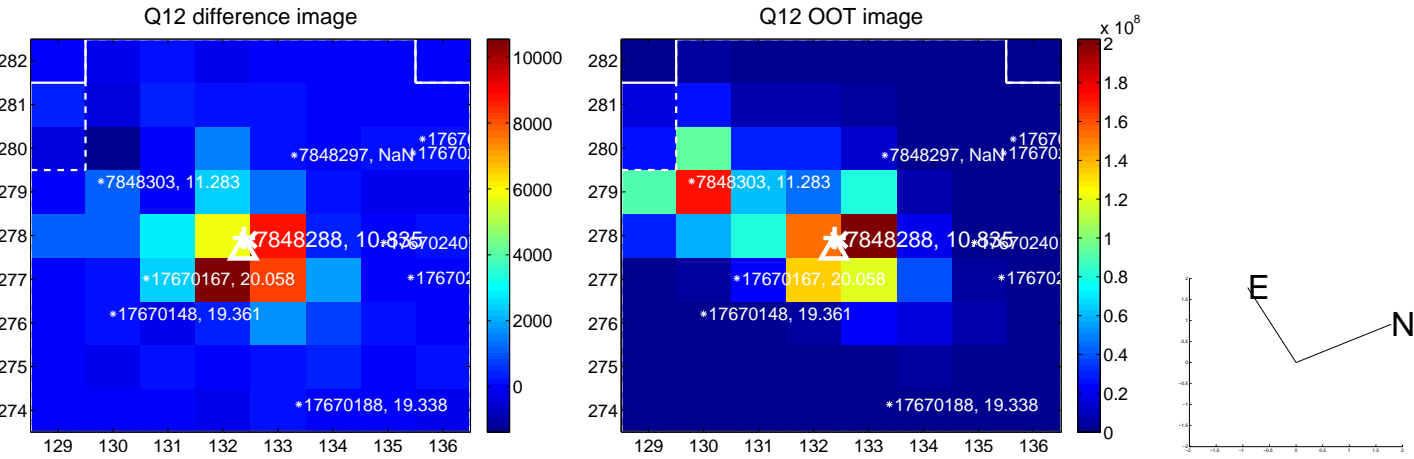
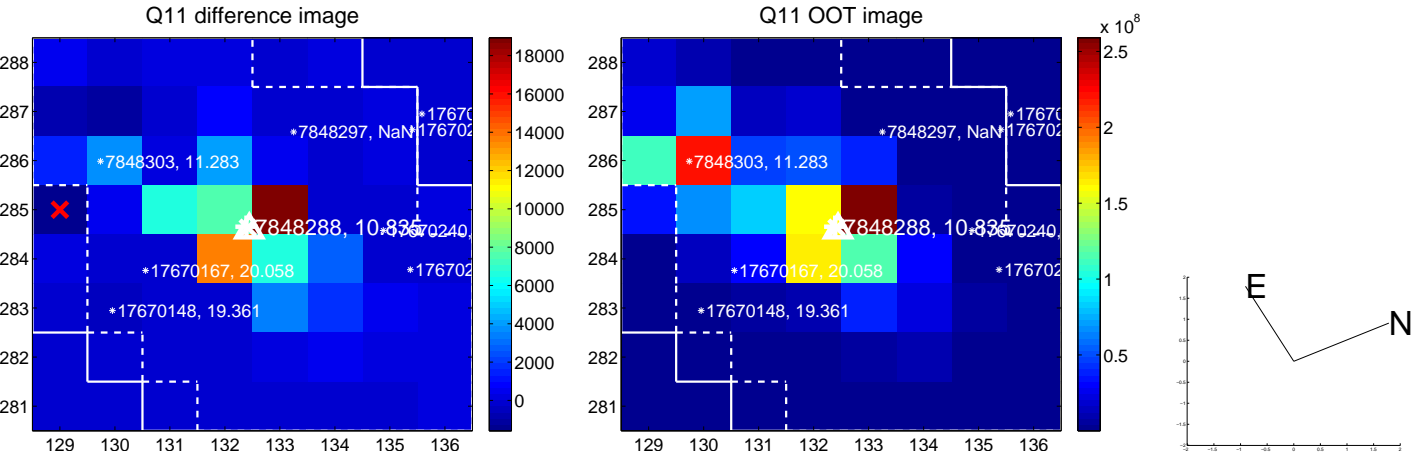
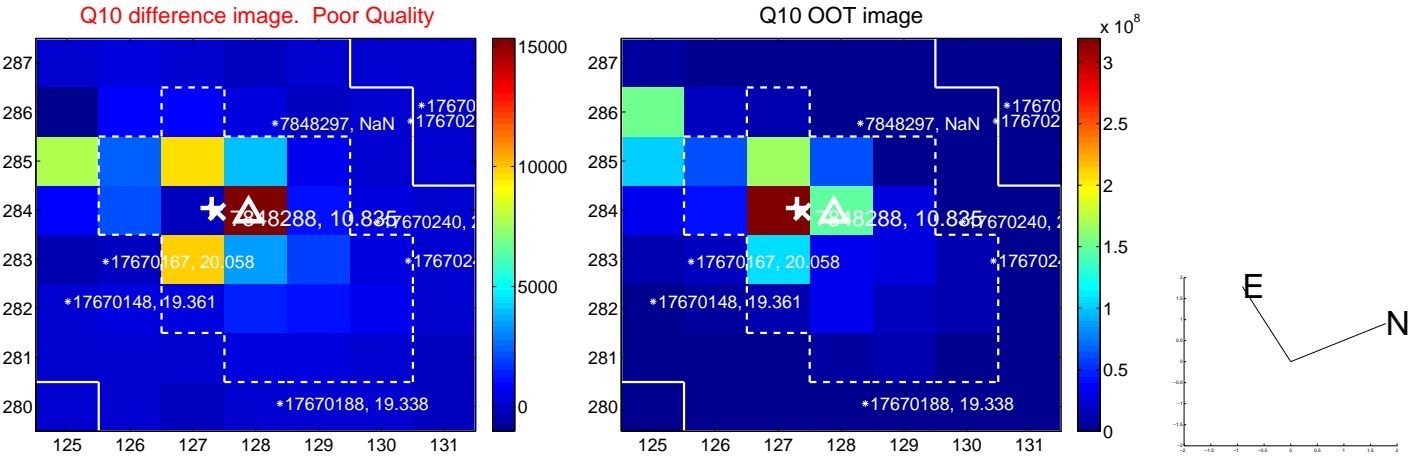
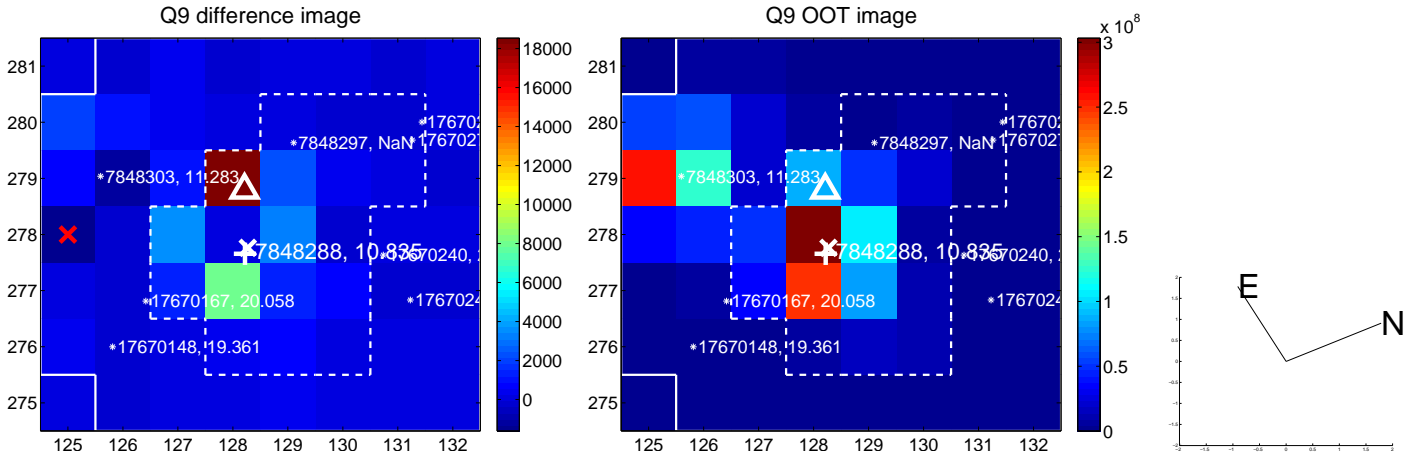
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



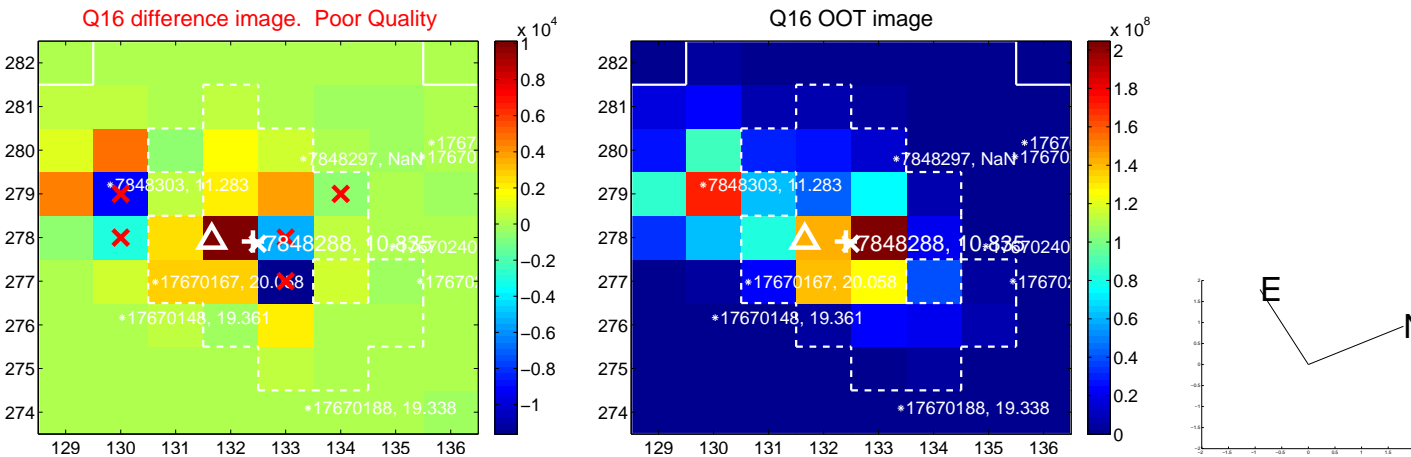
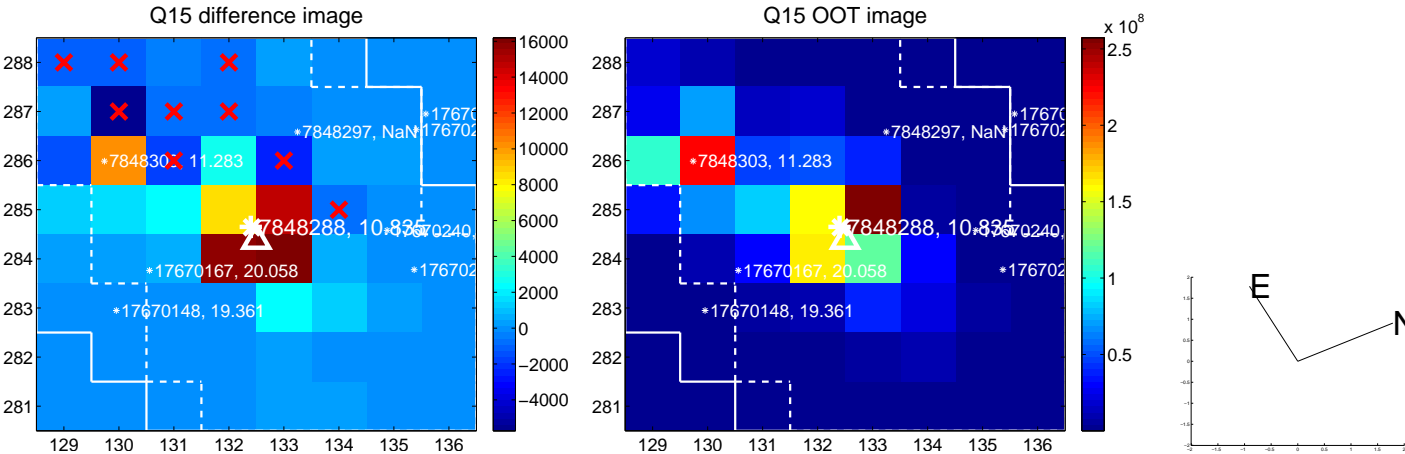
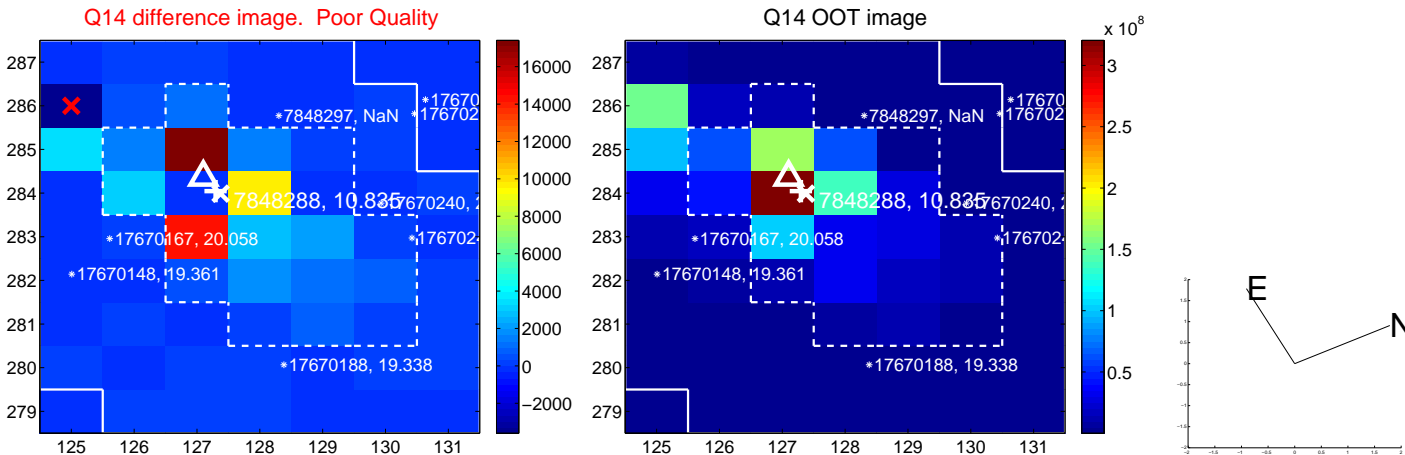
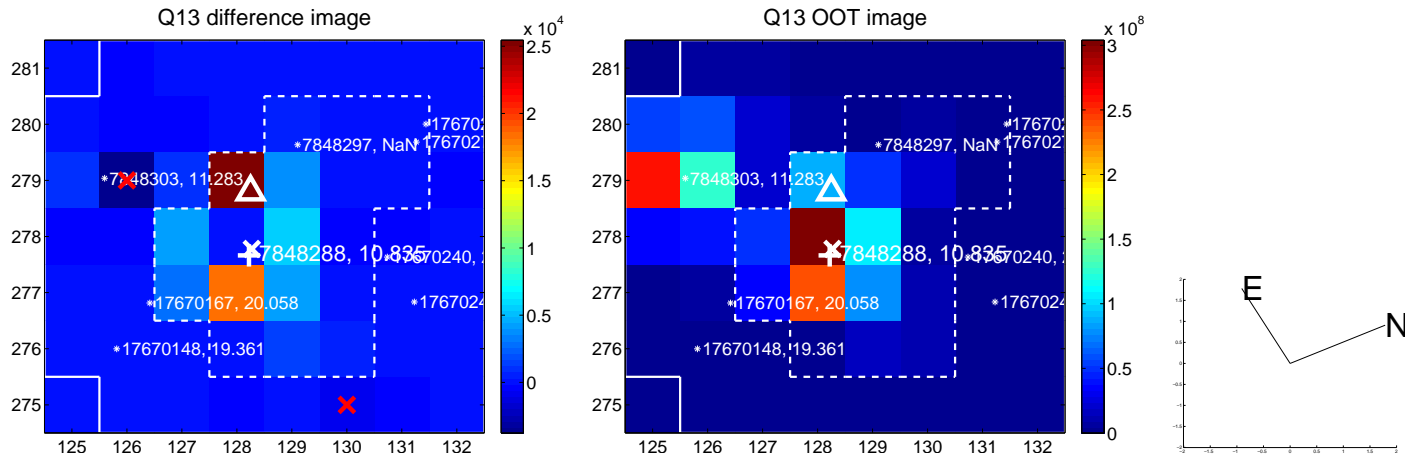
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



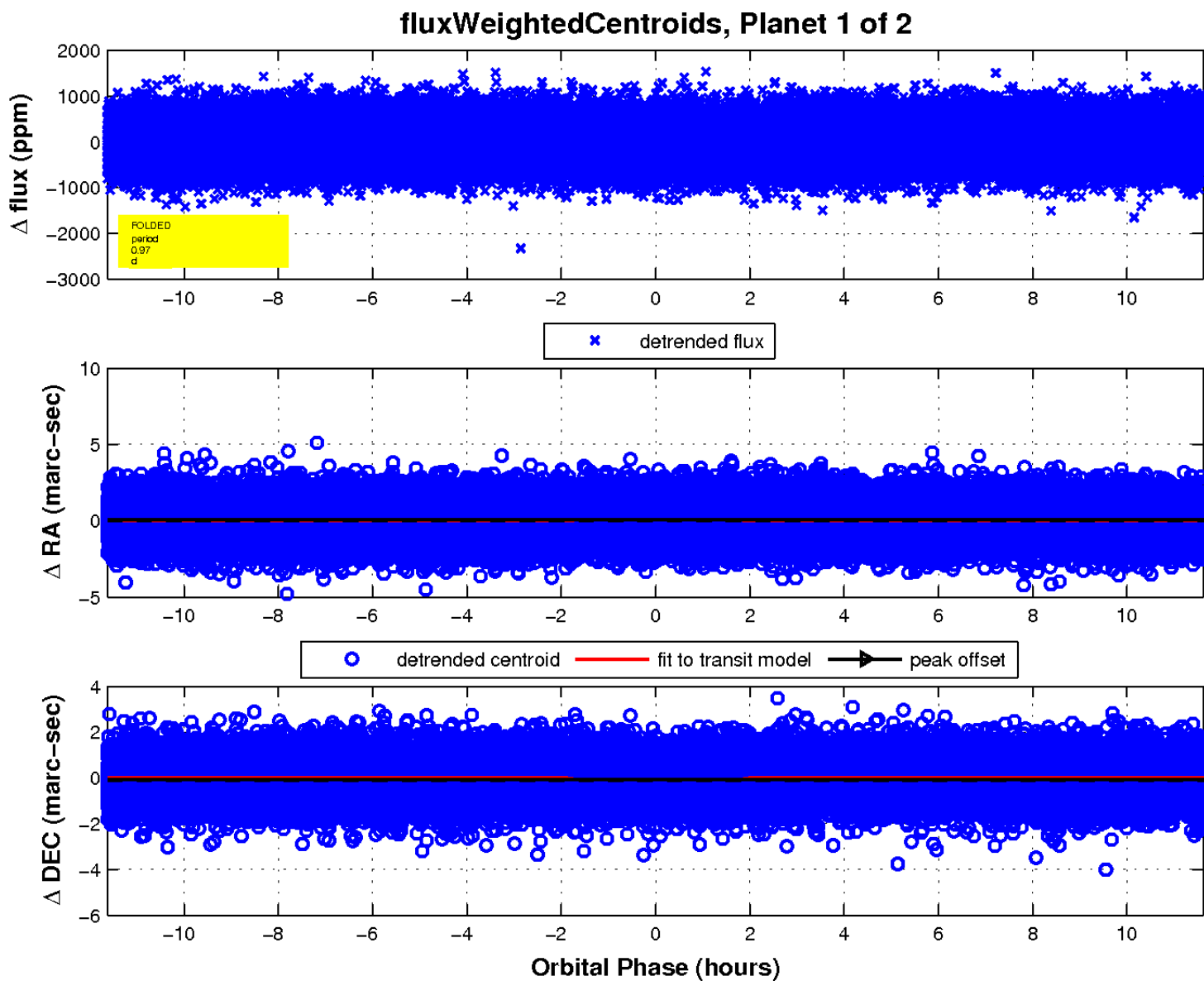
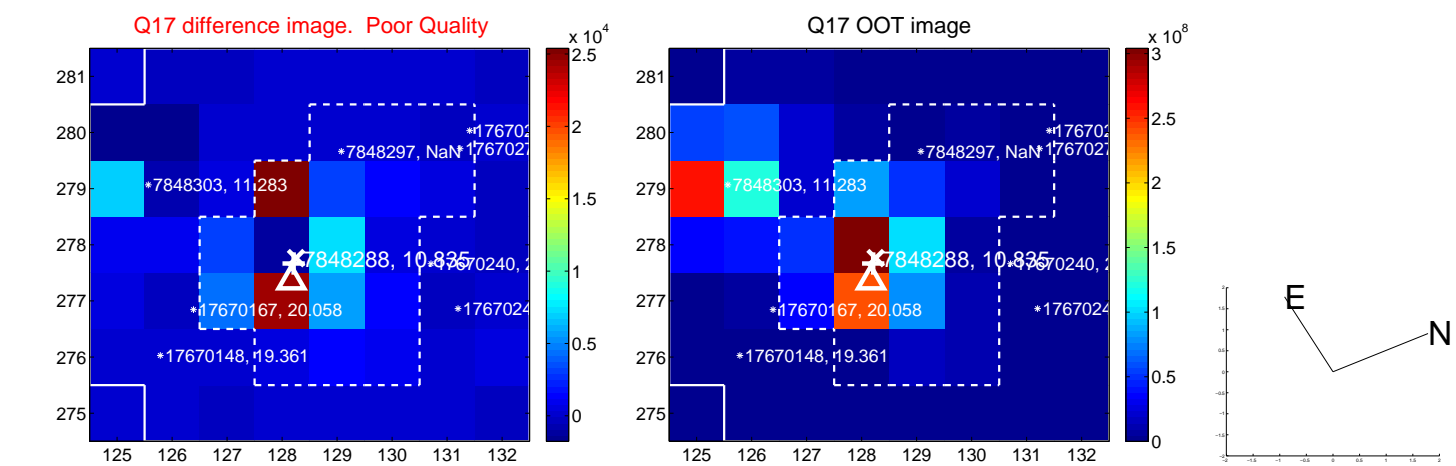
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



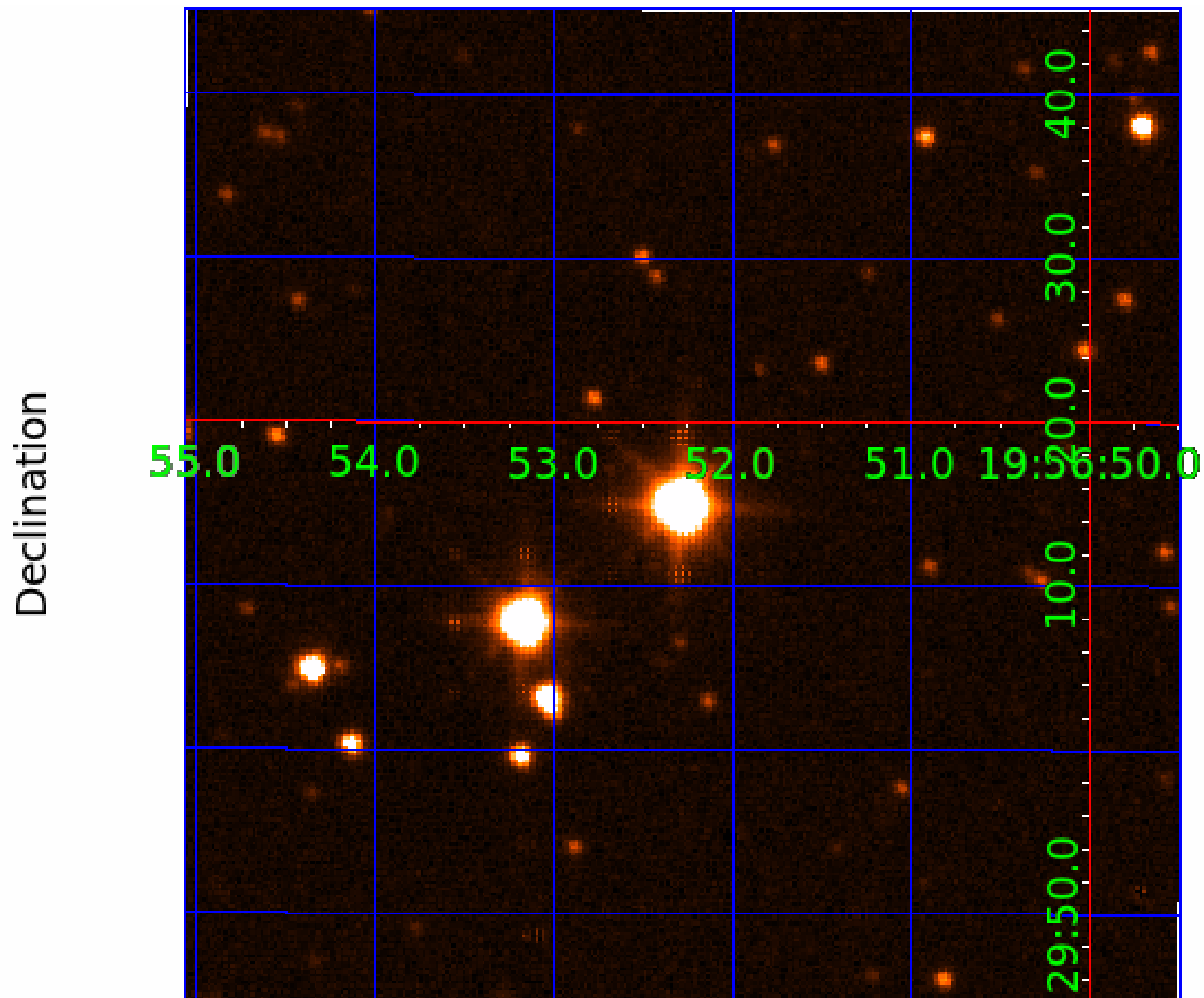
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 007848288

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})
007848288-01	OBS	No	0.968664	131.684768	38.0	3.932	9.2	9.4	3.87	7578	2.80	76368.33
007848288-02	OBS	No	1.937291	133.155248	45.8	6.679	8.3	8.3	3.87	7578	2.77	30307.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007848288-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
007848288-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

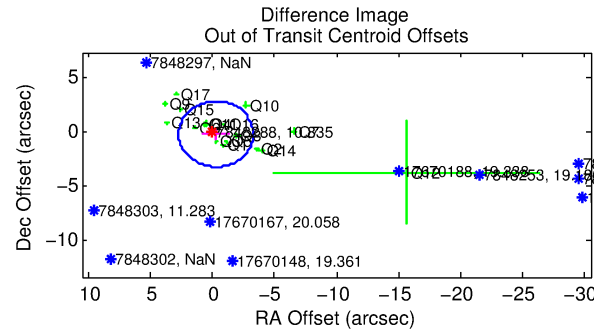
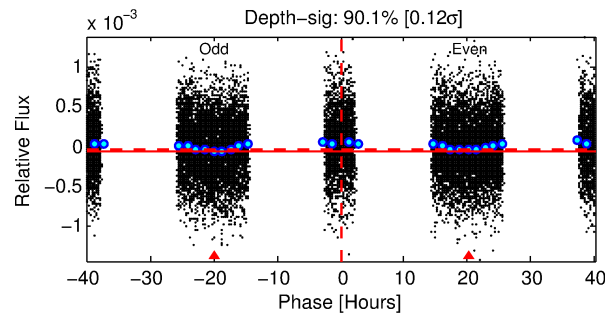
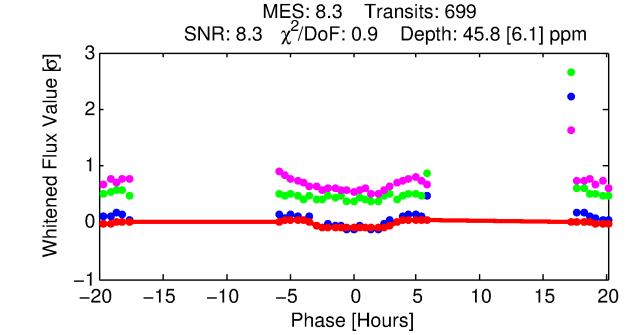
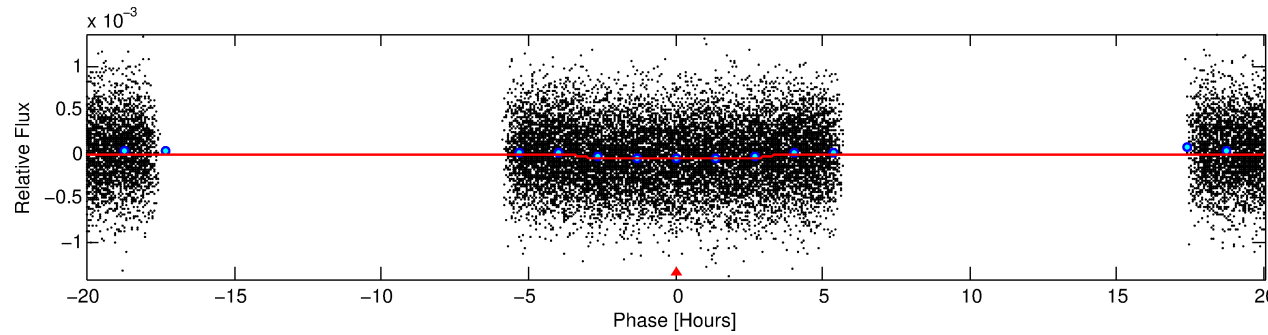
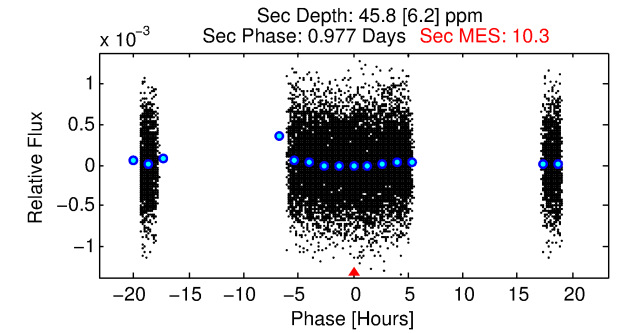
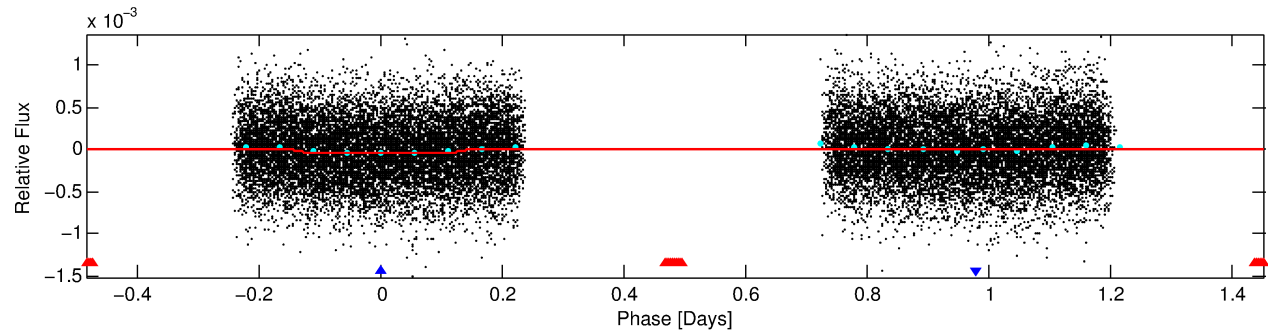
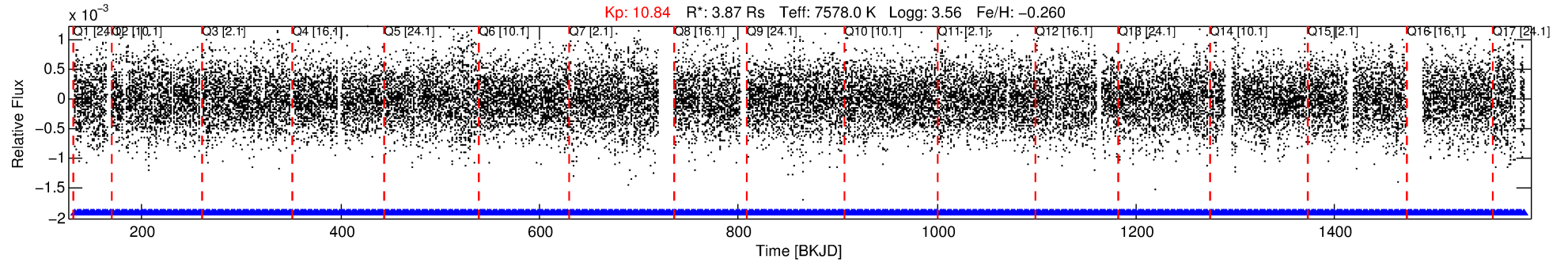
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007848288-02

No Significant Match Found

DV One-Page Summary

KIC: 7848288 Candidate: 2 of 2 Period: 1.937 d



DV Fit Results:

Period = 1.93729 [0.00002] d
Epoch = 133.1552 [0.0062] BKJD
Rp/R* = 0.0066 [0.0028]
a/R* = 1.88 [2.93]
b = 0.65 [1.96]
Seff = 30307.58 [29209.10]
Teq = 3364 [811] K
Rp = 2.77 [1.98] Re
a = 0.0382 [0.0221] AU
Ag = 4.81 [6.21] [0.61 σ]
Teffp = 7702 [1715] K [2.29 σ]

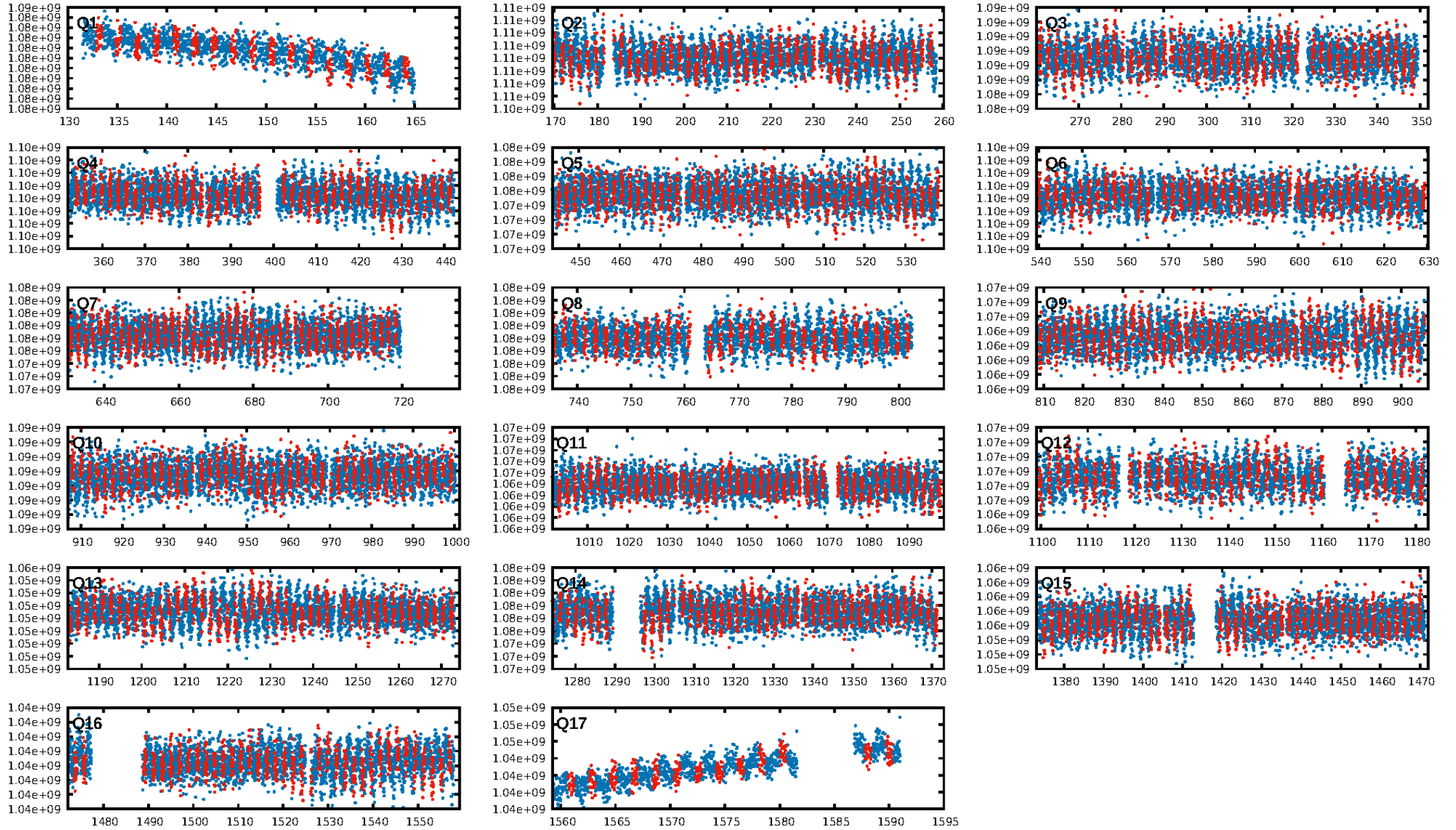
DV Diagnostic Results:

ShortPeriod-sig: 99.7% [3.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.77e-12
RollingBand-fgt: 1.00 [669/669]
GhostDiagnostic-chr: 1.521
Centroid-sig: 0.0%
Centroid-so: 1.219 arcsec [2.05 σ]
OotOffset-rm: 0.347 arcsec [0.35 σ]
KicOffset-rm: 0.474 arcsec [0.57 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.47 [8/17]
DiffImageOverlap-fno: 0.00 [0/17]

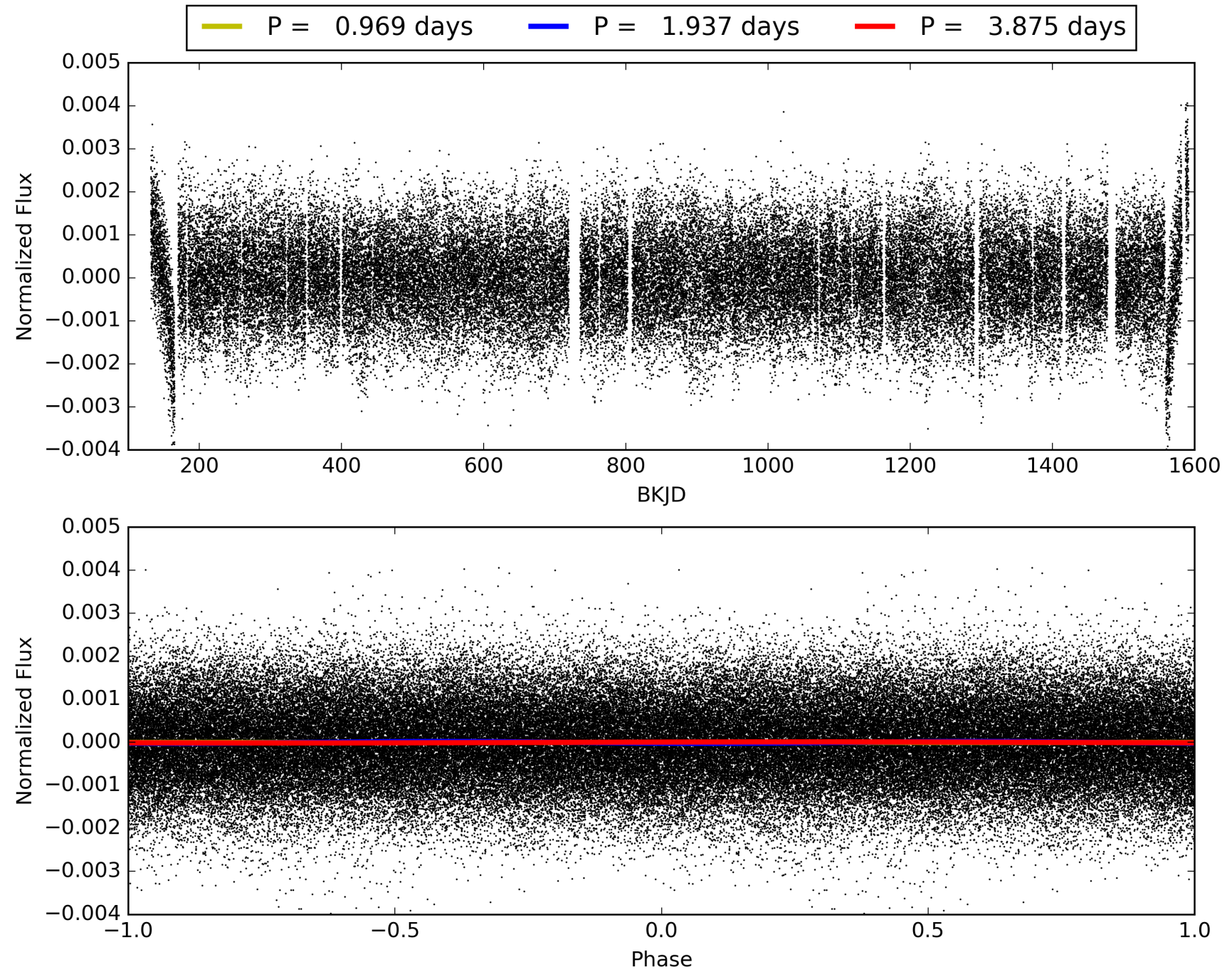
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:47:27 Z

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

TCE 007848288-02, PDC Light Curves

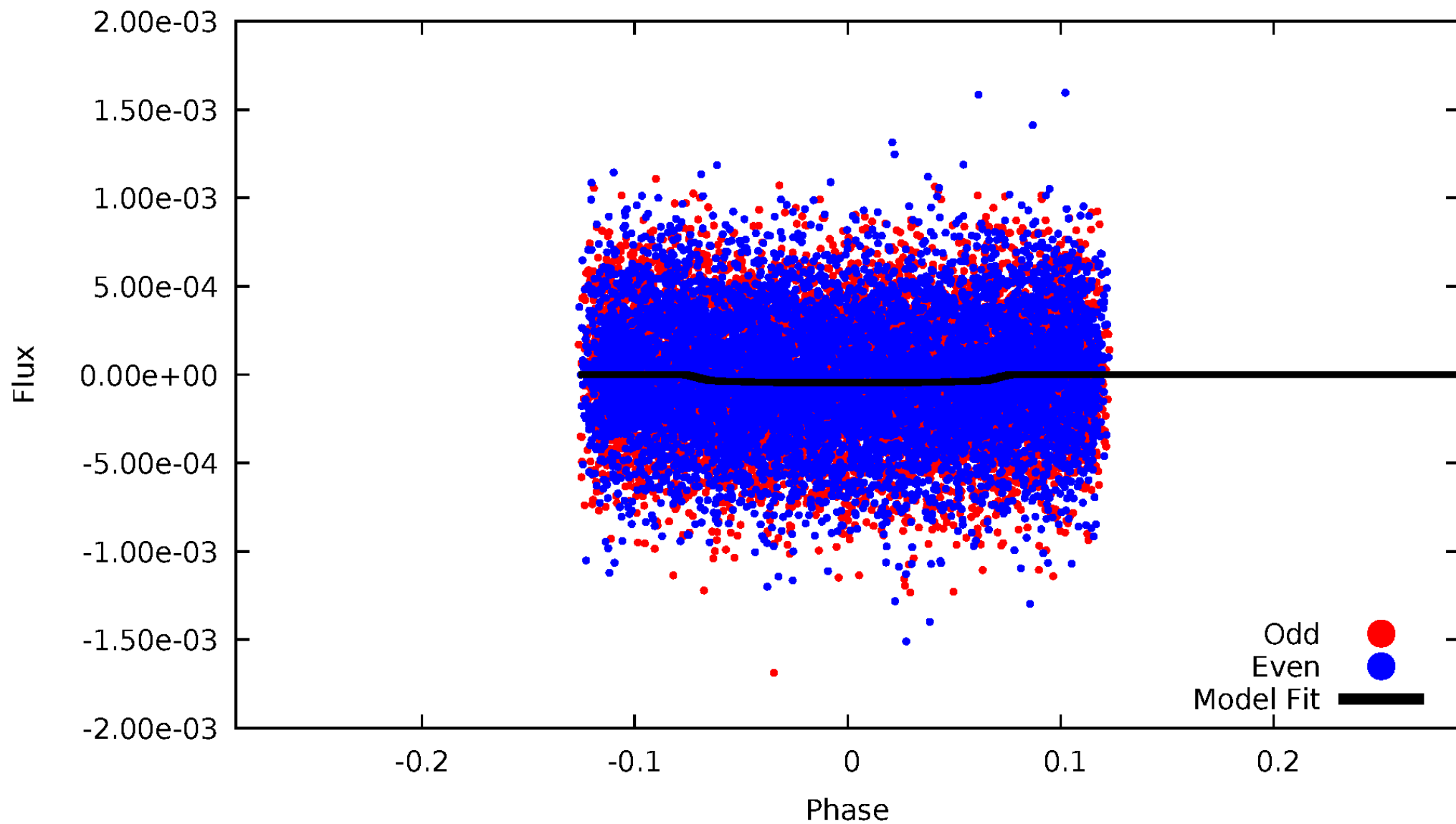


TCE 007848288-02



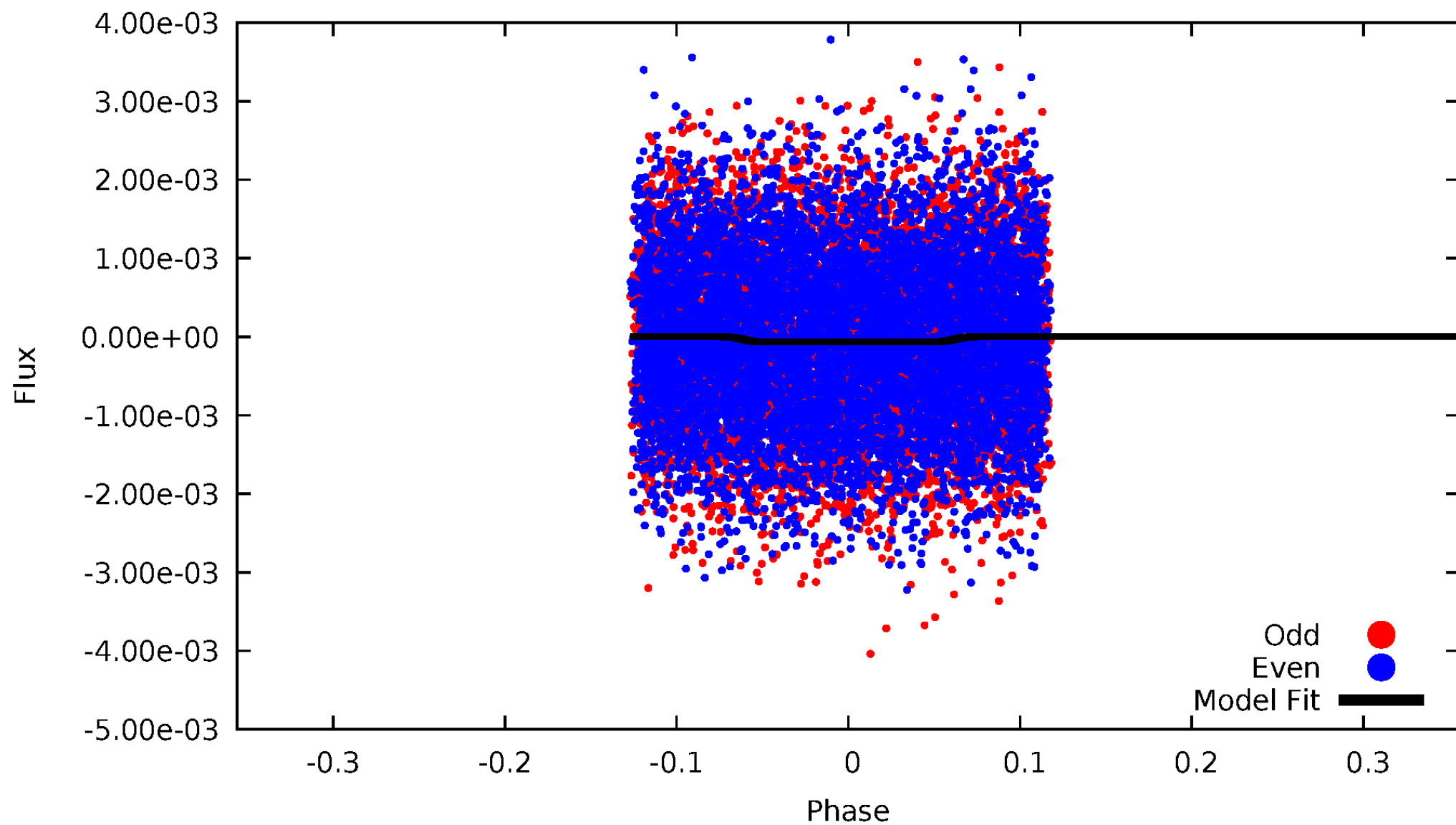
DV Odd/Even

TCE 007848288-02



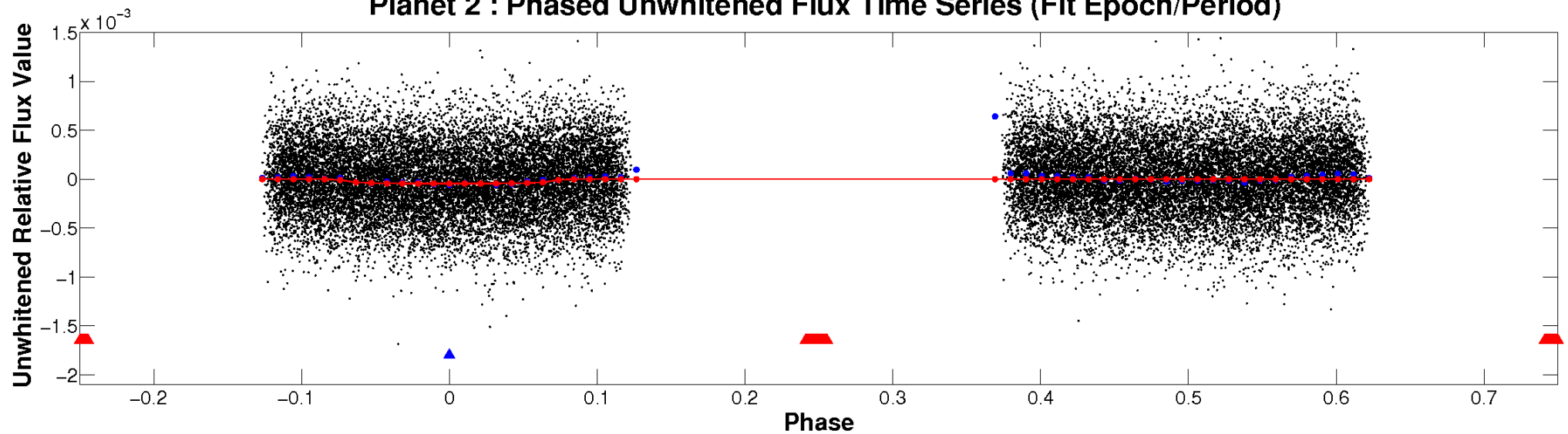
ALT Odd/Even

TCE 007848288-02

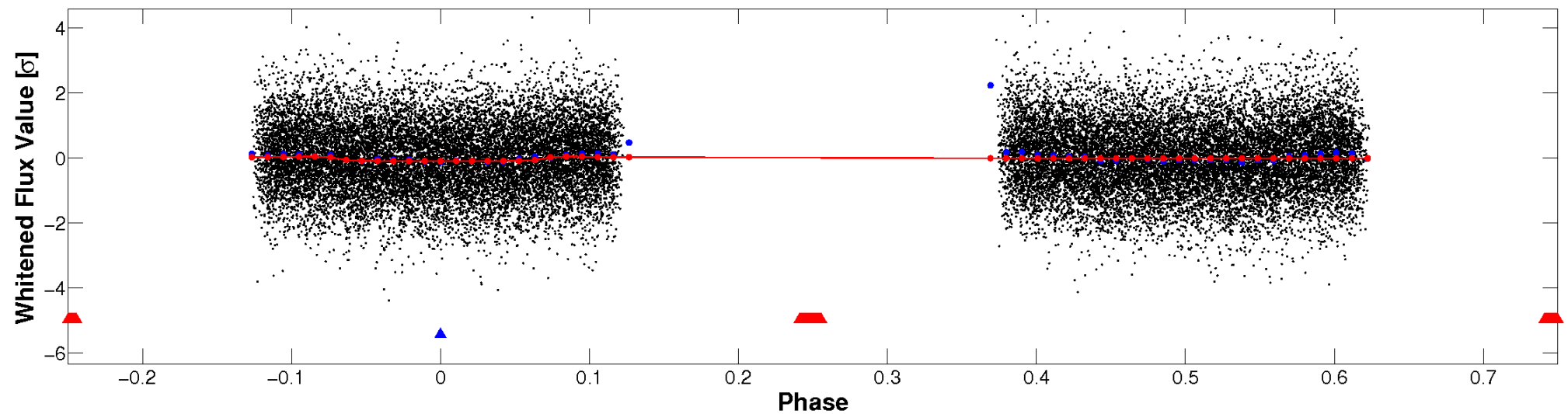


Non-Whitened Vs. Whitened Light Curve

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

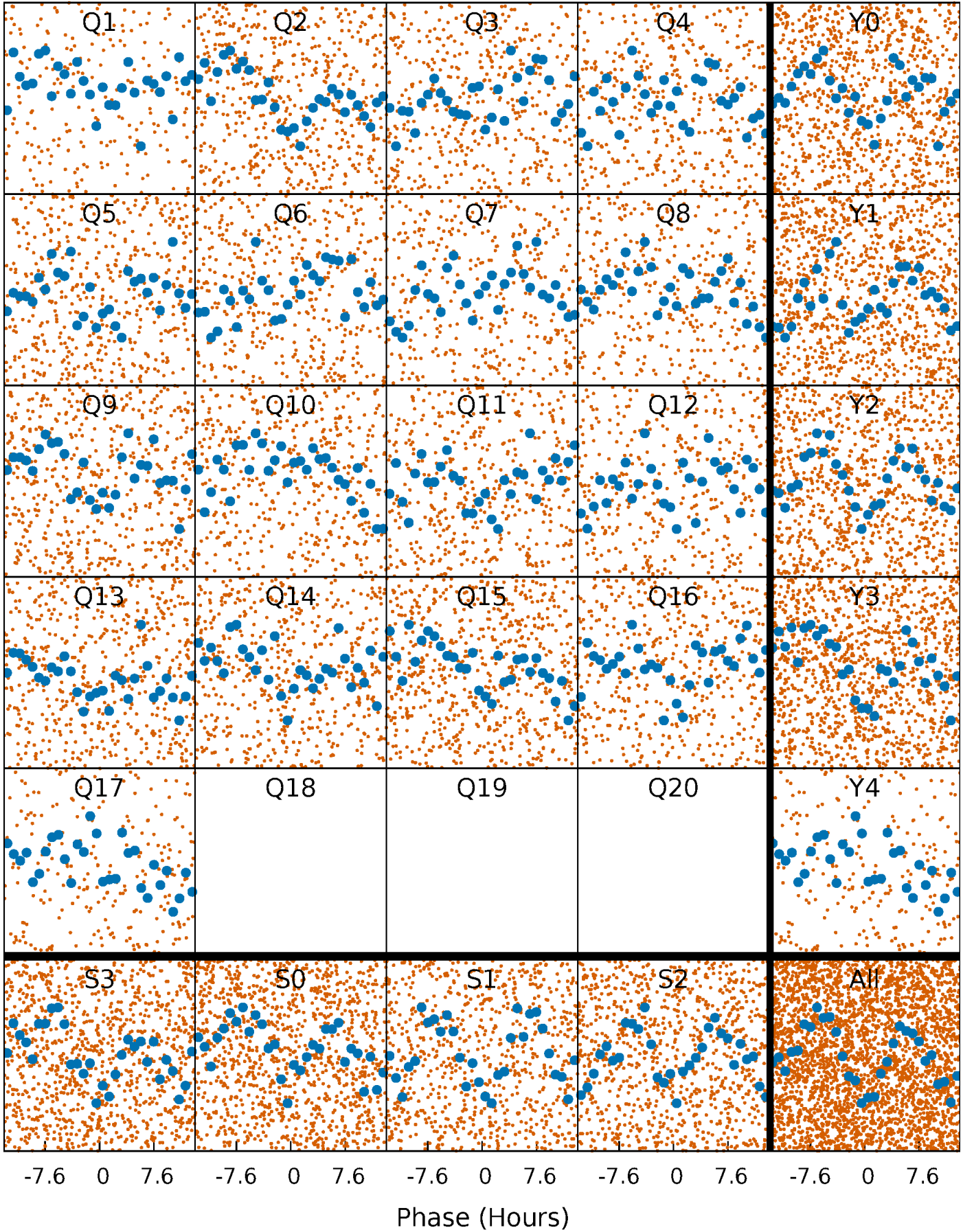


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



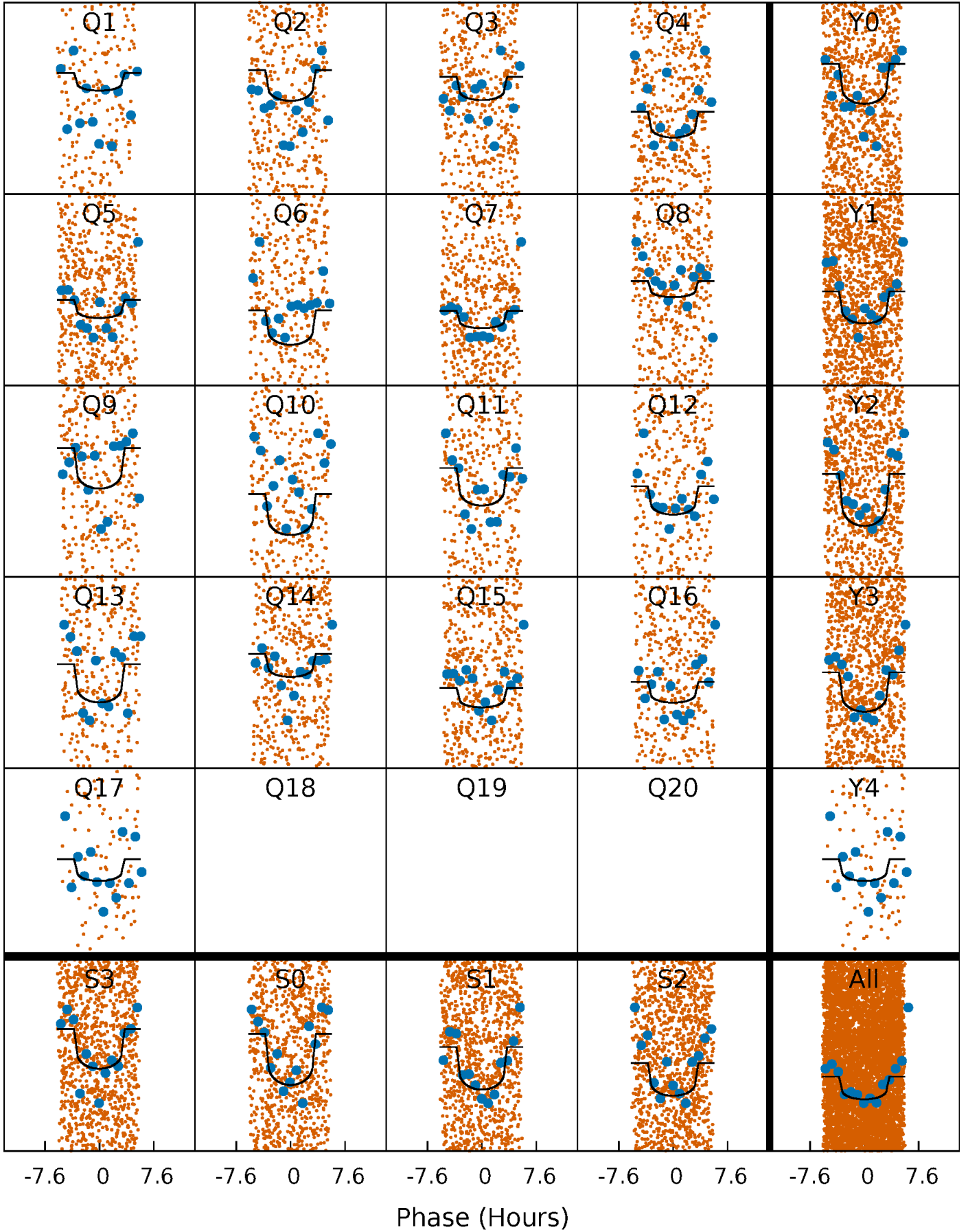
PDC Quarter-Phased Transit Curves

TCE 007848288-02 P= 1.937291 Days $T_0=133.155248$ (BKJD)



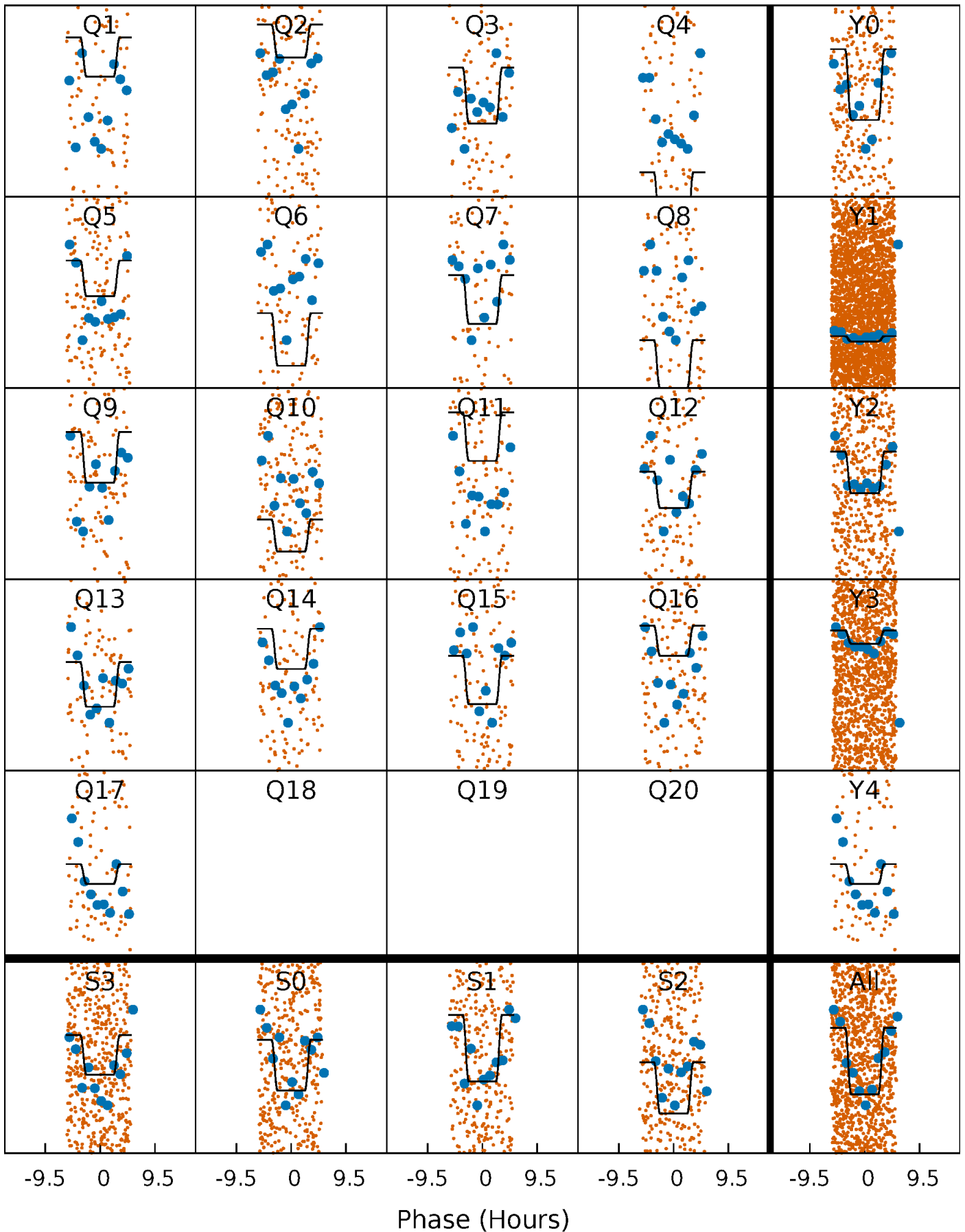
DV Quarter-Phased Transit Curves

TCE 007848288-02 $P = 1.937291$ Days $T_0 = 133.155248$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

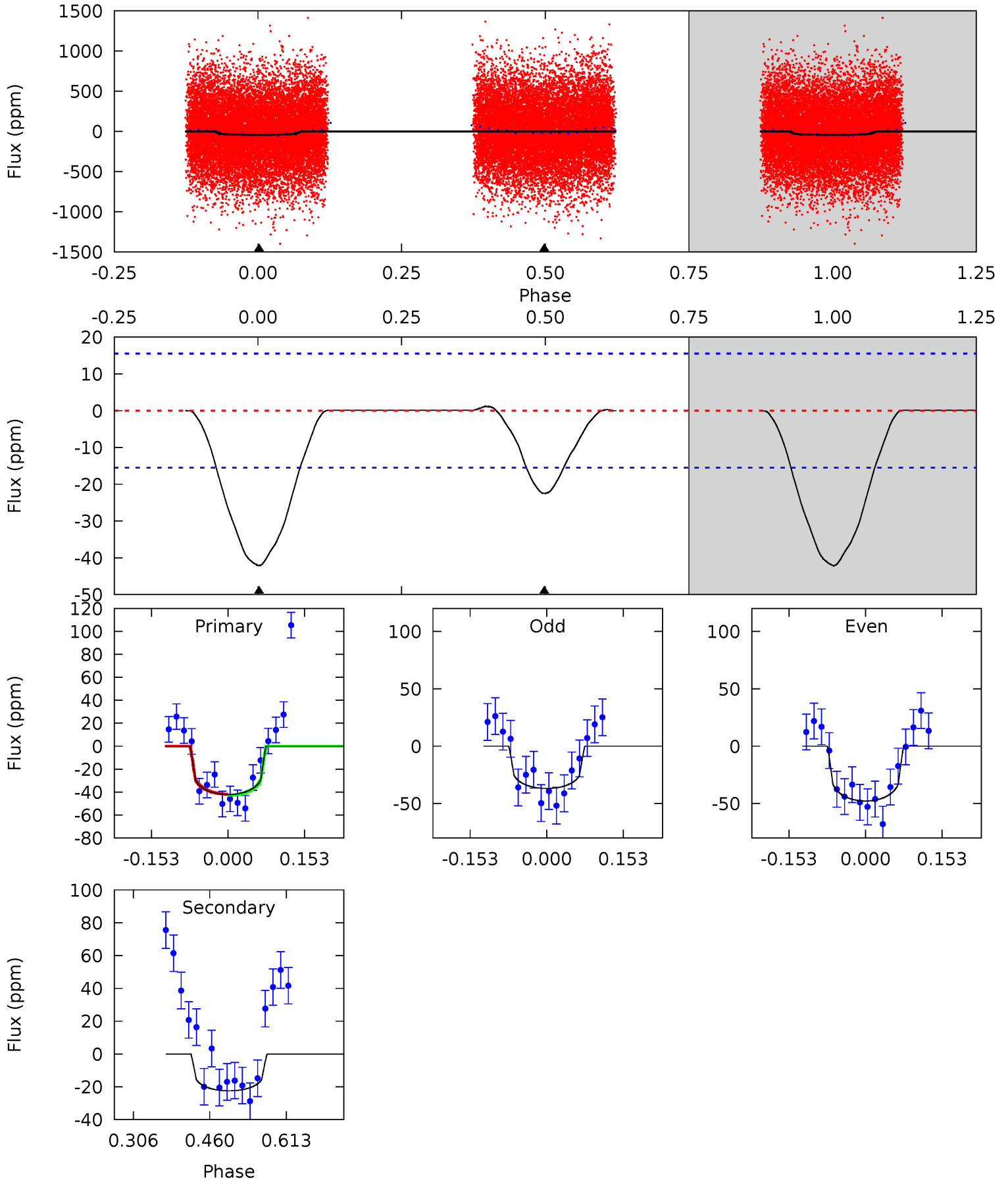
TCE 007848288-02 $P = 1.937302$ Days $T_0 = 133.156579$ (BKJD)



DV Model-Shift Uniqueness Test

007848288-02, P = 1.937291 Days, E = 131.217957 Days

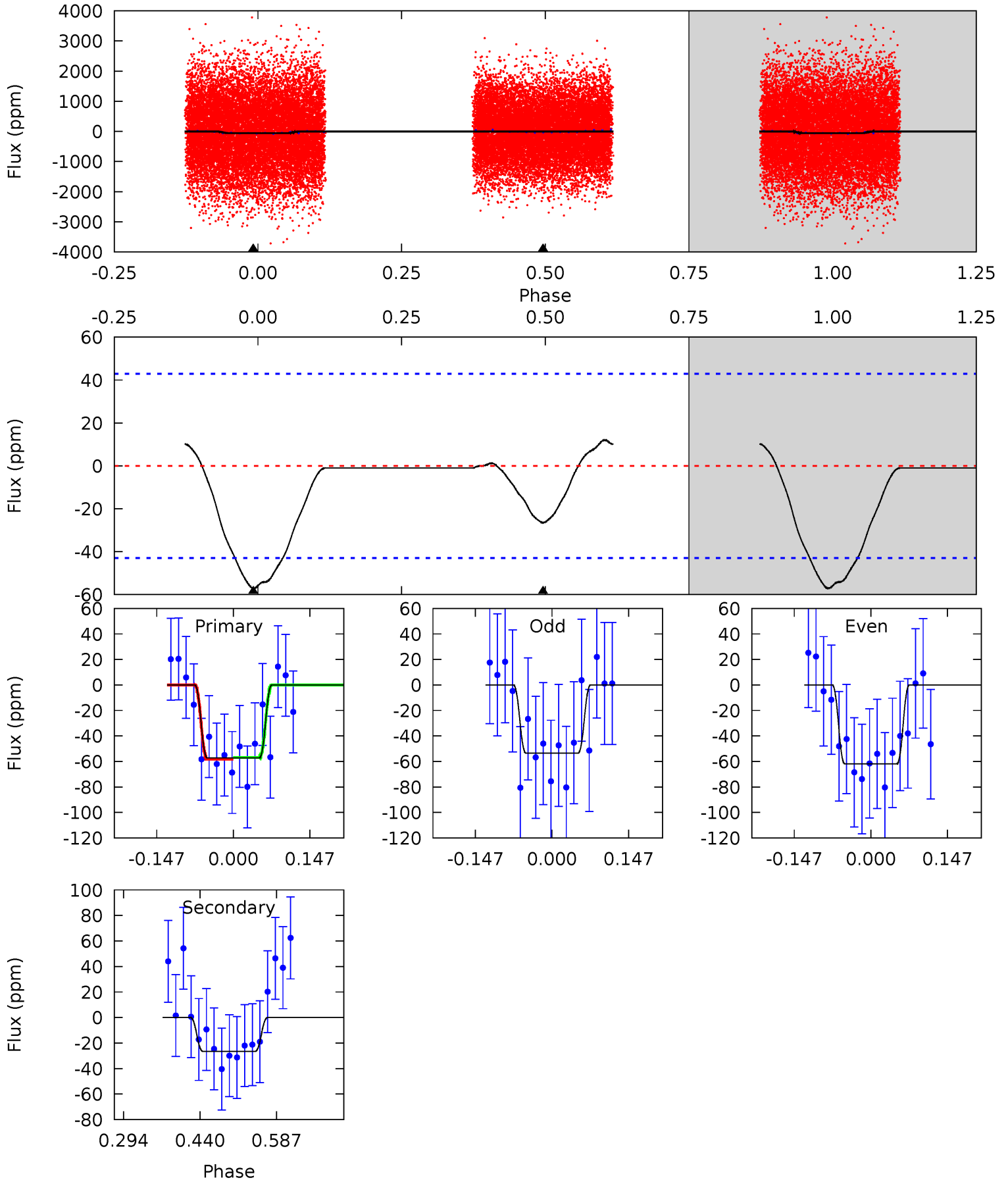
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	6.48	0	0	4.47	1.43	0.23	12.1	12.1	6.48	6.48	1.58	0.97	0.03	0.14



Alt Model-Shift Uniqueness Test

007848288-02, P = 1.937302 Days, E = 131.219277 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.96	2.77	0	0	4.48	1.45	0.66	5.96	5.96	2.77	2.77	0.44	3.40	0.17	0.07



Stellar Parameters For KIC 007848288

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7578^{+235}_{-314}	$3.560^{+0.567}_{-0.063}$	$-0.260^{+0.250}_{-0.300}$	$3.873^{+0.518}_{-2.203}$	$1.988^{+0.061}_{-0.545}$	$0.048^{+0.350}_{-0.010}$
	+3%/-4%	+16%/-2%	+96%/-115%	+13%/-57%	+3%/-27%	+726%/-21%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007848288-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-22 ± 3	$2.26^{+1.22}_{-1.04}$	4453^{+384}_{-681}	6070^{+2591}_{-998}	$3.383^{+8.818}_{-1.954}$
Alt.	-27 ± 10	$2.87^{+1.33}_{-1.25}$	4467^{+382}_{-657}	5722^{+1694}_{-1150}	$2.375^{+4.973}_{-1.422}$

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

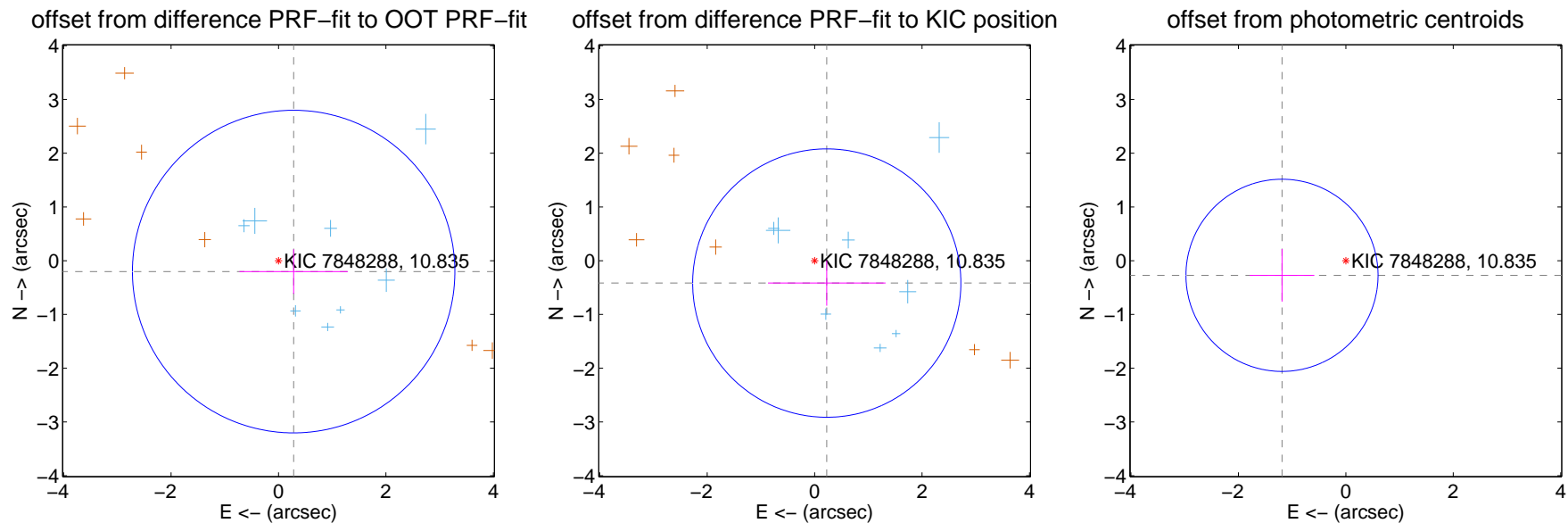
DV Centroid Data

Supplemental centroid analysis for 007848288-02. **Kepler magnitude: 10.84.** Transit SNR 8.32

There are 8 quarters with good PRF difference image offsets

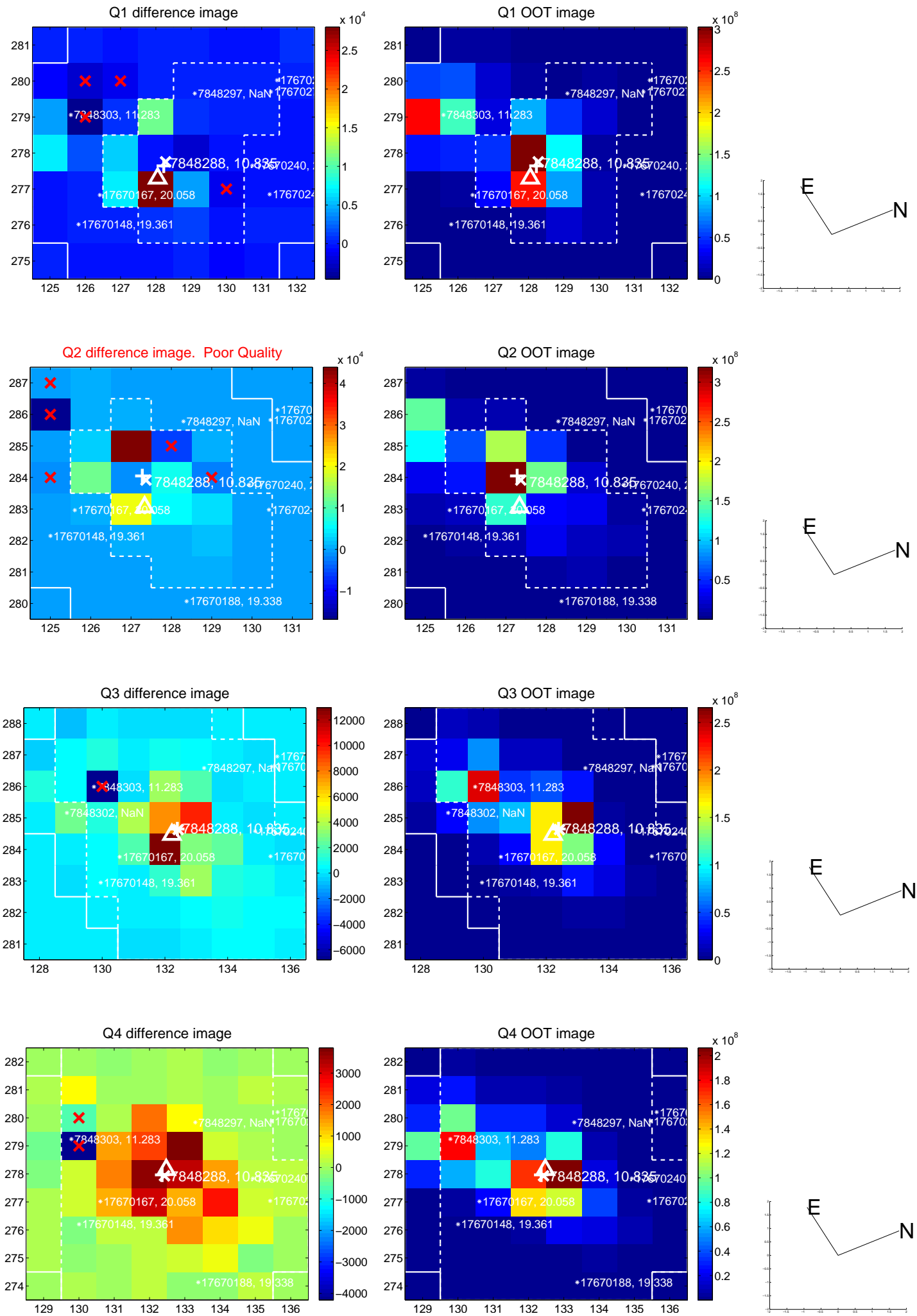
The direct PRF centroid is offset from the target star catalog position by about 0.42 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.347 ± 1.000	0.35	-0.282 ± 1.009	-0.202 ± 0.415
PRF-fit source offset from KIC position	0.474 ± 0.832	0.57	-0.226 ± 1.094	-0.416 ± 0.422
photometric centroid source offset	1.22 ± 0.60	2.05	1.19 ± 0.60	-0.27 ± 0.49

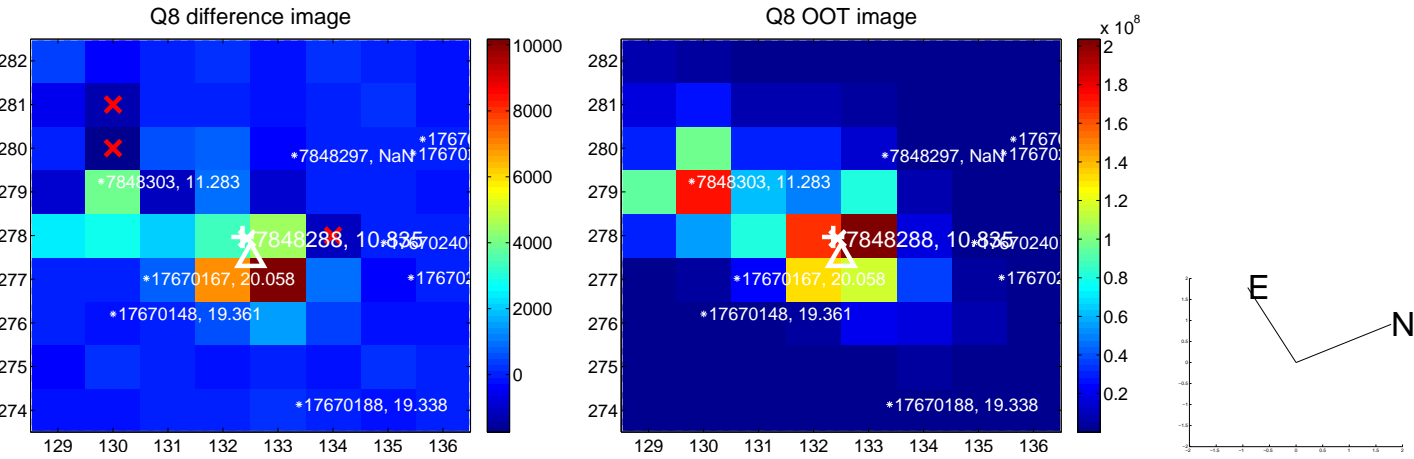
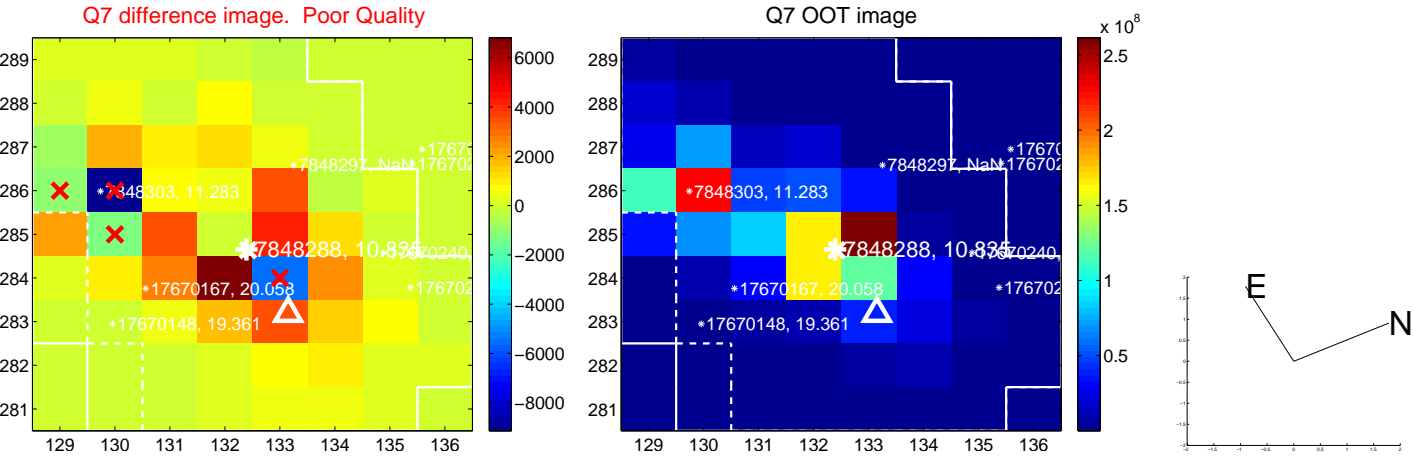
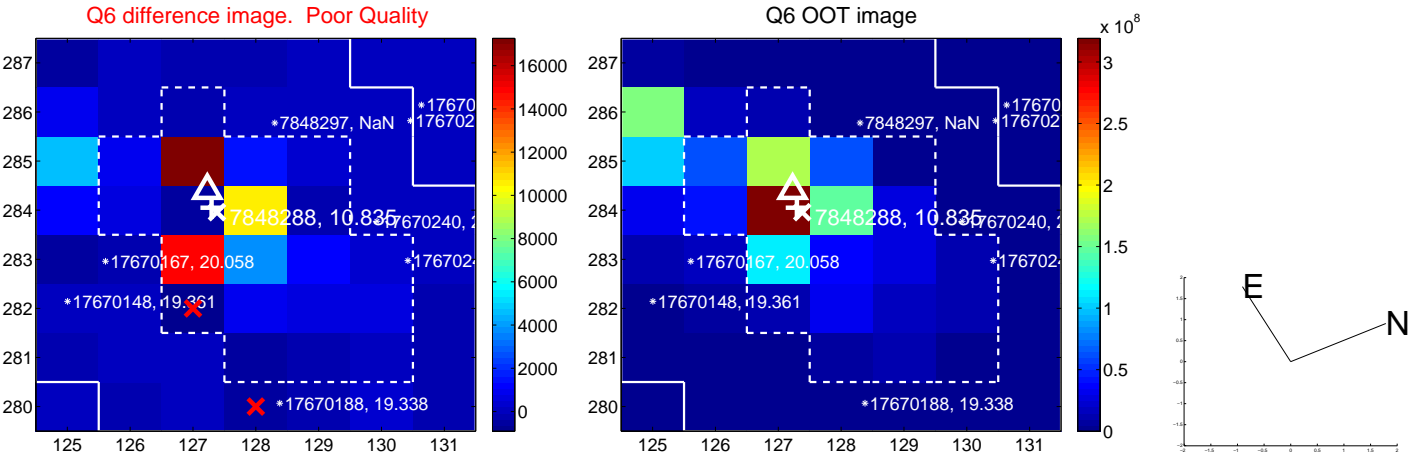
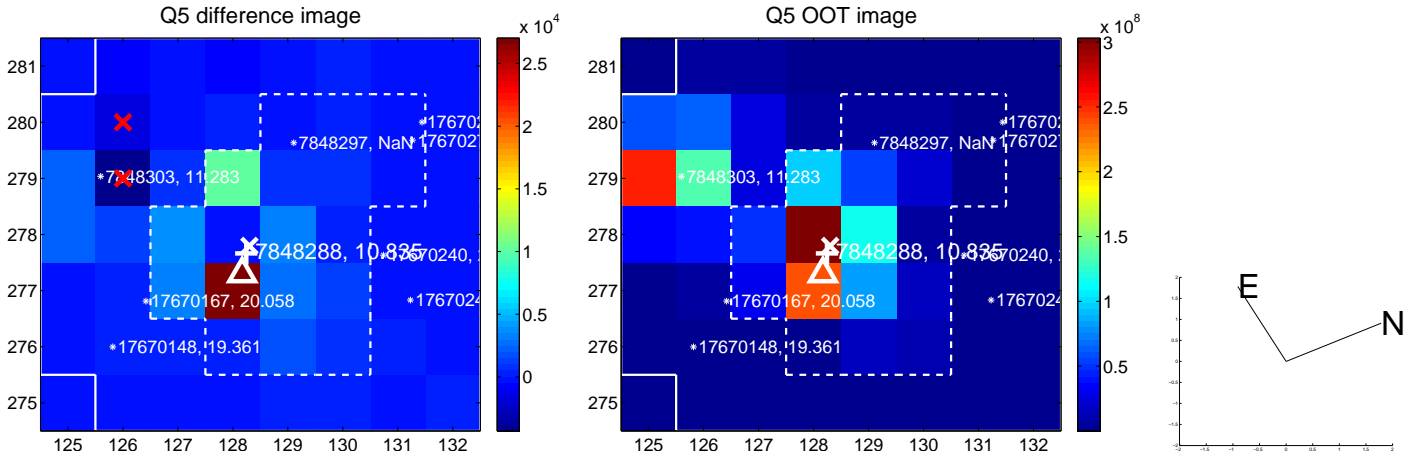


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

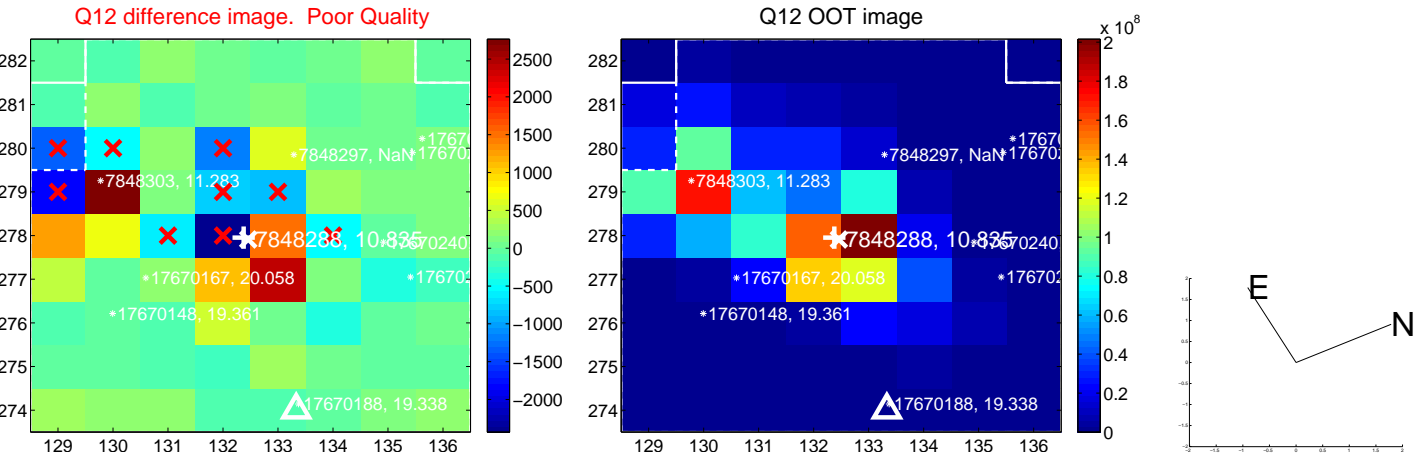
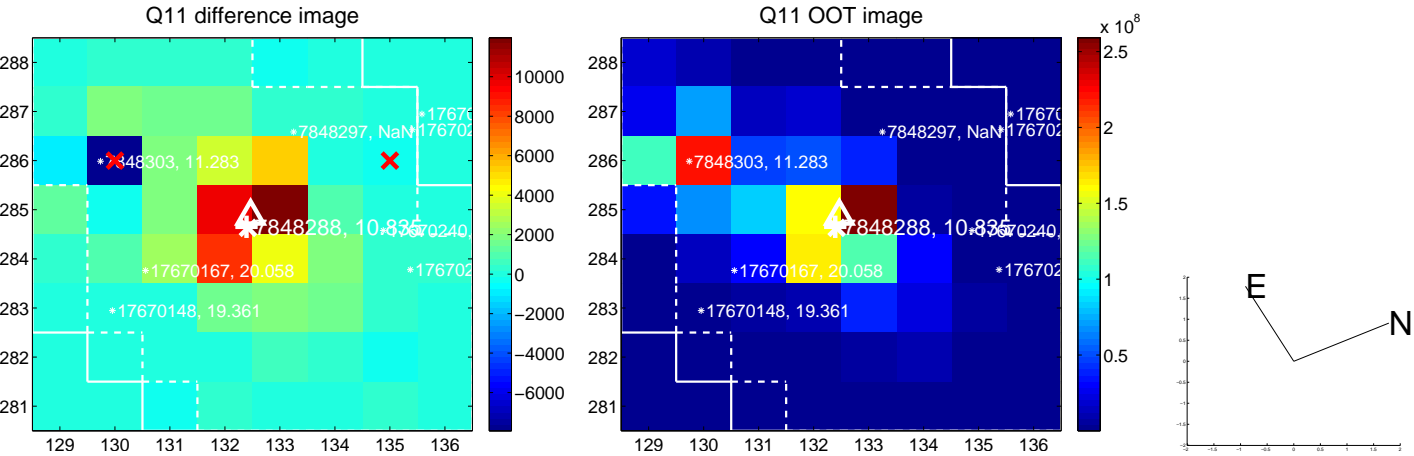
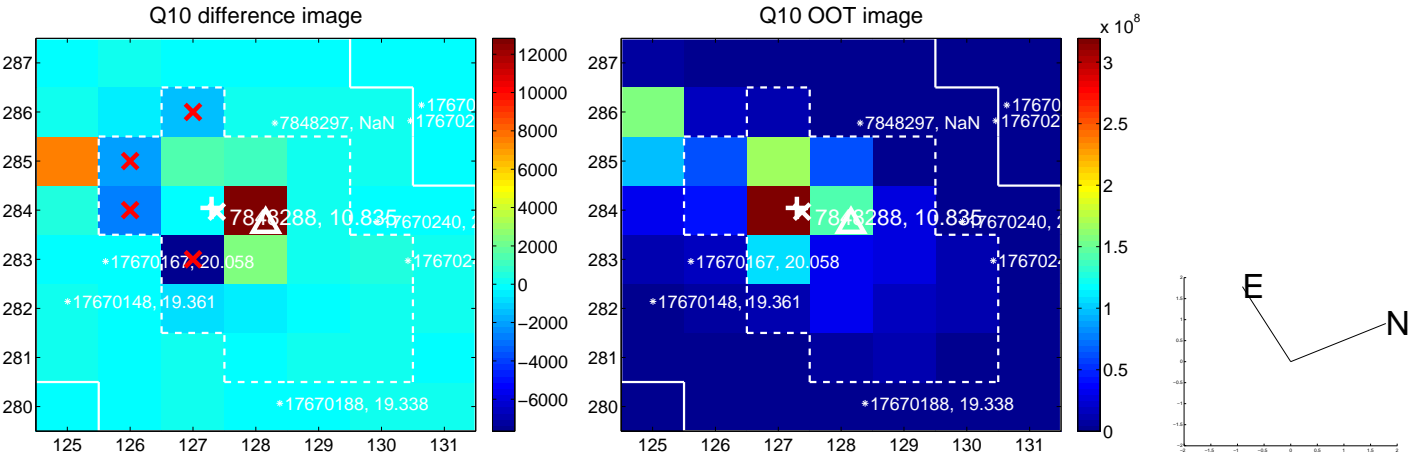
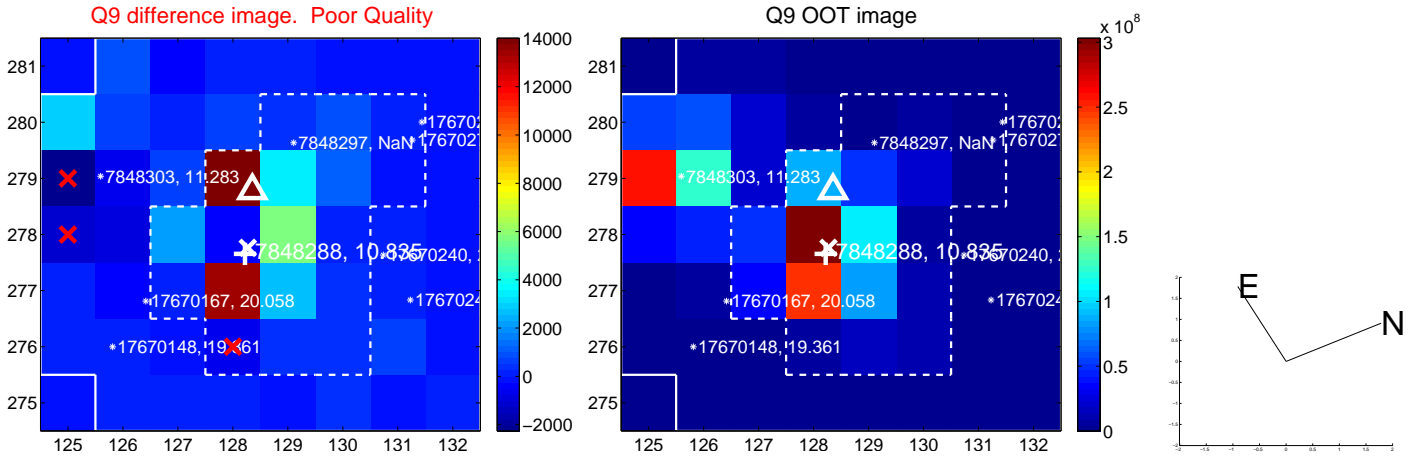
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



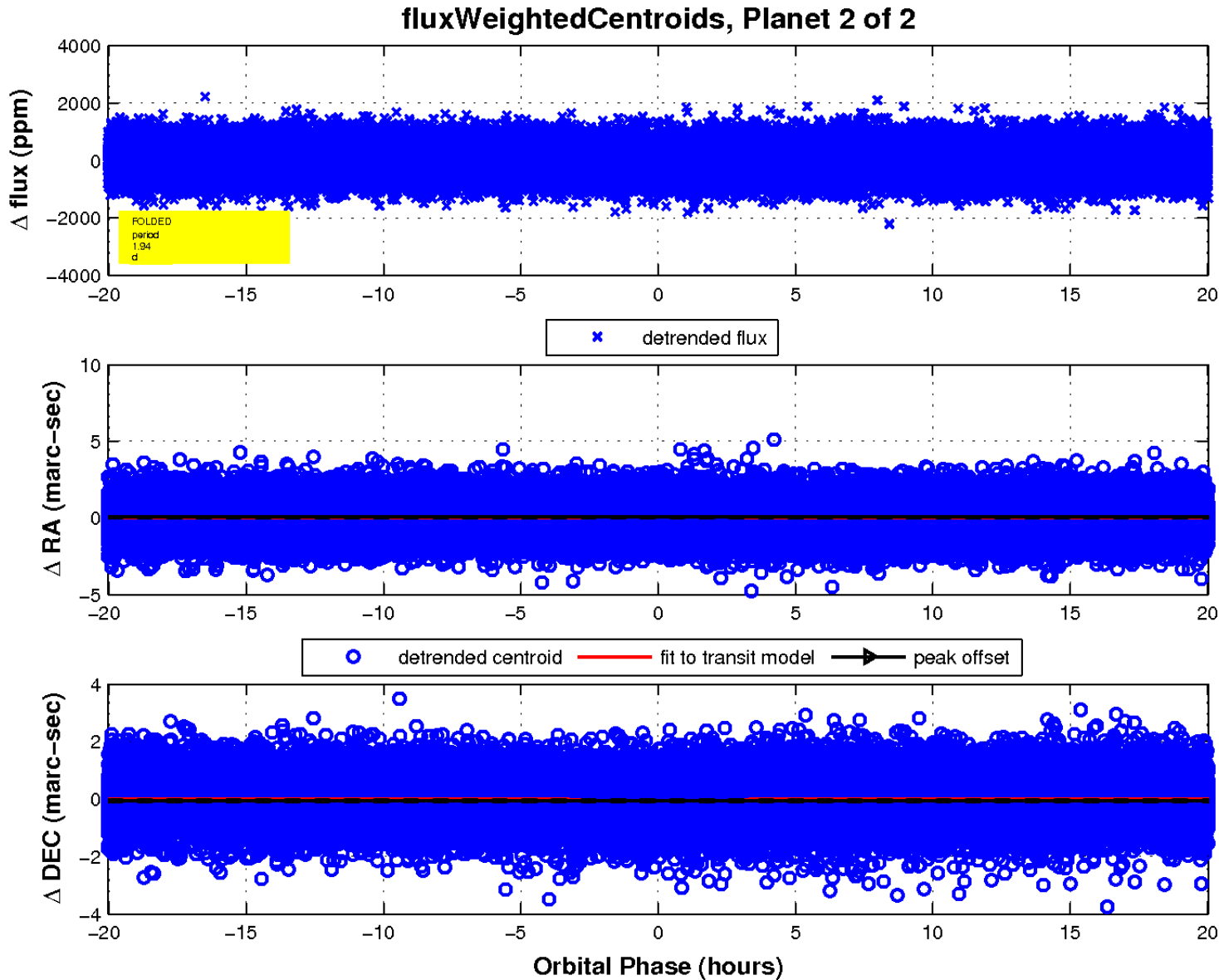
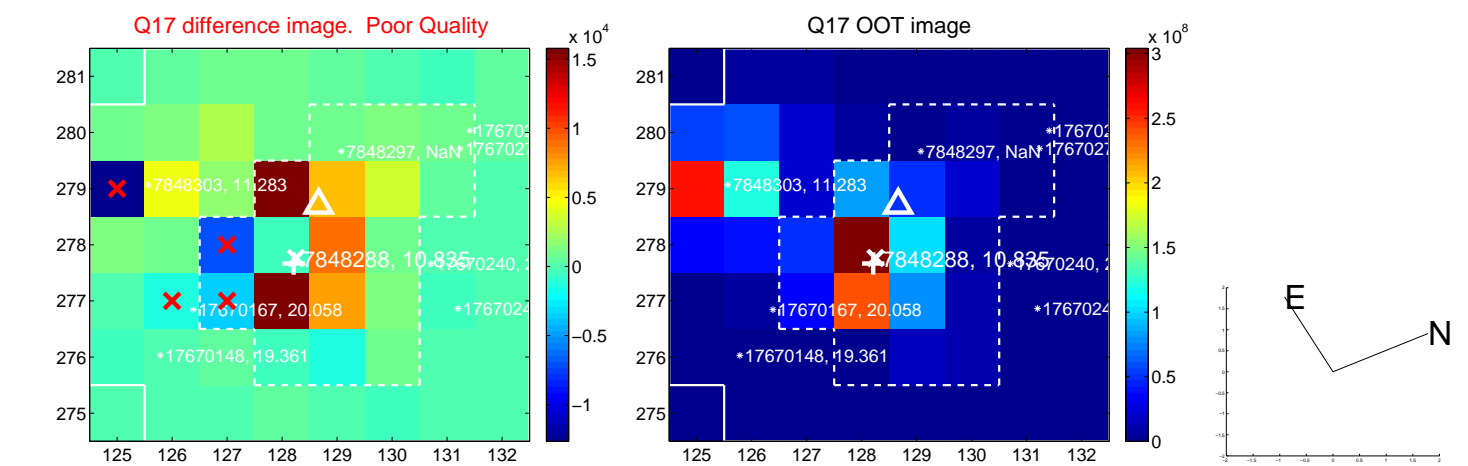
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UKIRT Image

