

KIC 007287165

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})
007287165-01	OBS	No	1.550594	132.668221	1.7	11.953	7.5	0.9	3.35	7284	0.44	26576.20
007287165-02	OBS	No	13.972167	136.553937	432.2	0.568	18.3	11.2	3.35	7284	7.54	1417.33

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007287165-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
007287165-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS—HALO_GHOST

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

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

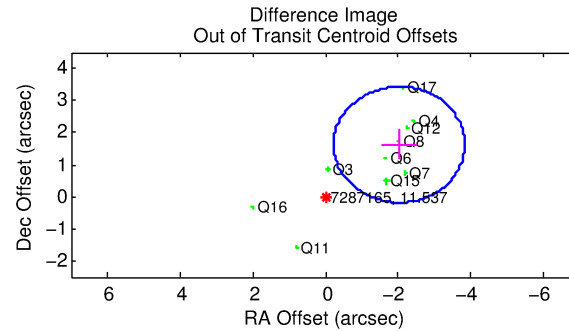
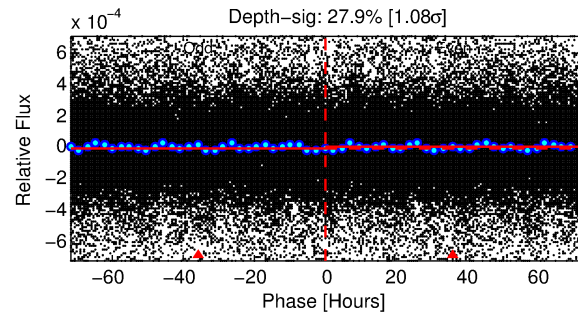
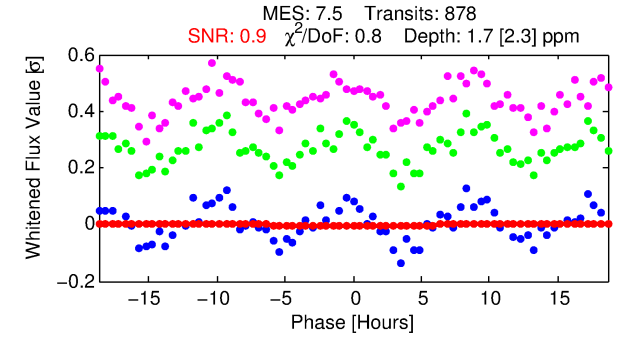
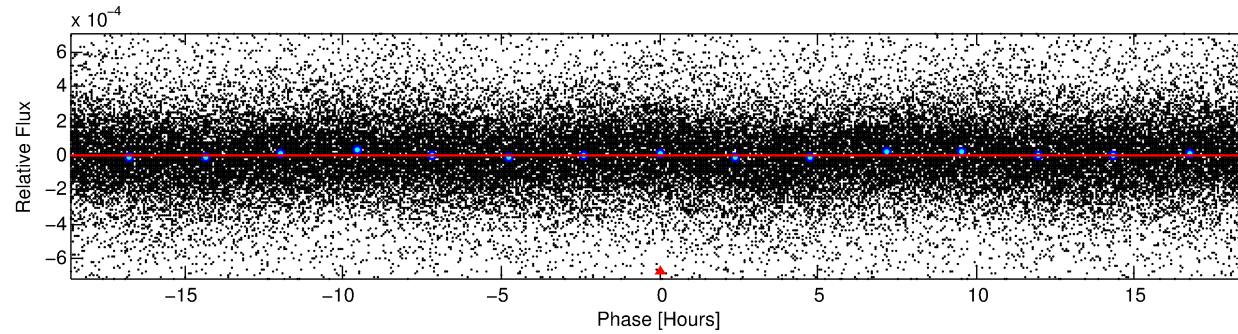
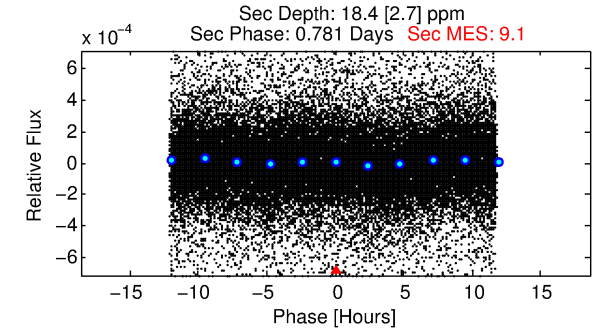
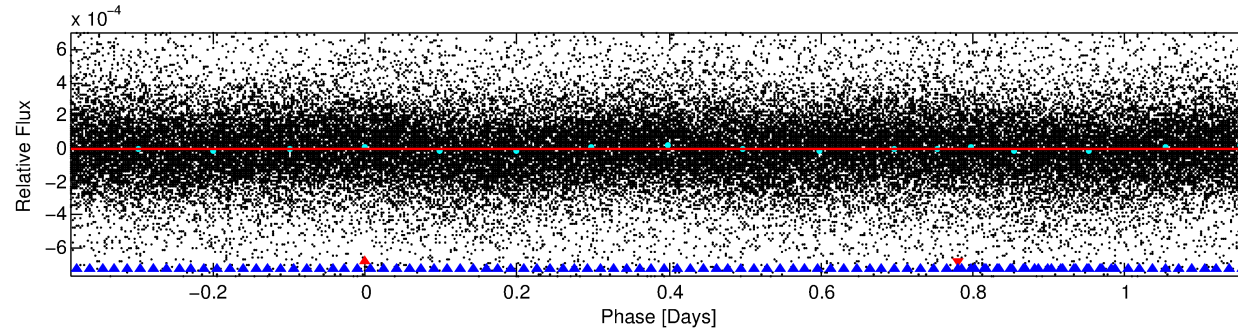
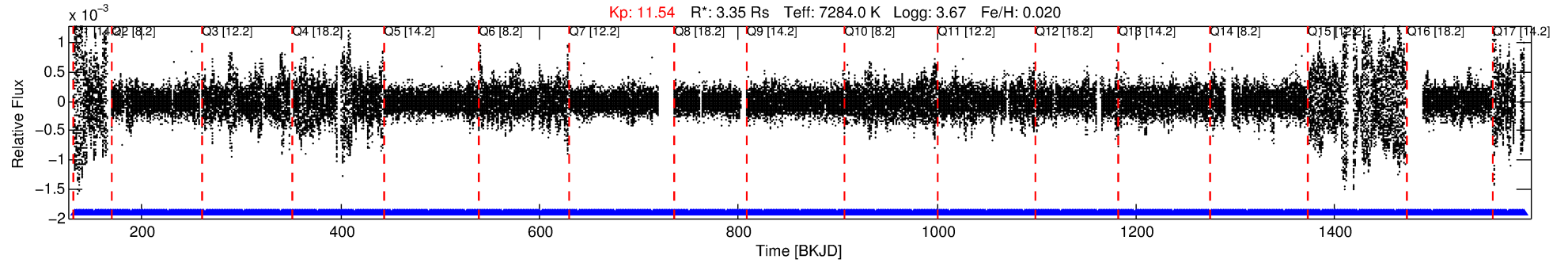
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007287165-01

No Significant Match Found

DV One-Page Summary

KIC: 7287165 Candidate: 1 of 2 Period: 1.551 d



DV Fit Results:

Period = 1.55059 [0.00022] d
Epoch = 132.6682 [0.0457] BKJD
Rp/R* = 0.0012 [0.0068]
a/R* = 1.18 [11.32]
b = 0.01 [3092.35]
Seff = 26576.20 [20373.19]
Teq = 3256 [624] K
Rp = 0.44 [2.48] Re
a = 0.0326 [0.0151] AU
Ag = 55.71 [628.57] [0.09σ]
Teffp = 13753 [38708] K [0.27σ]

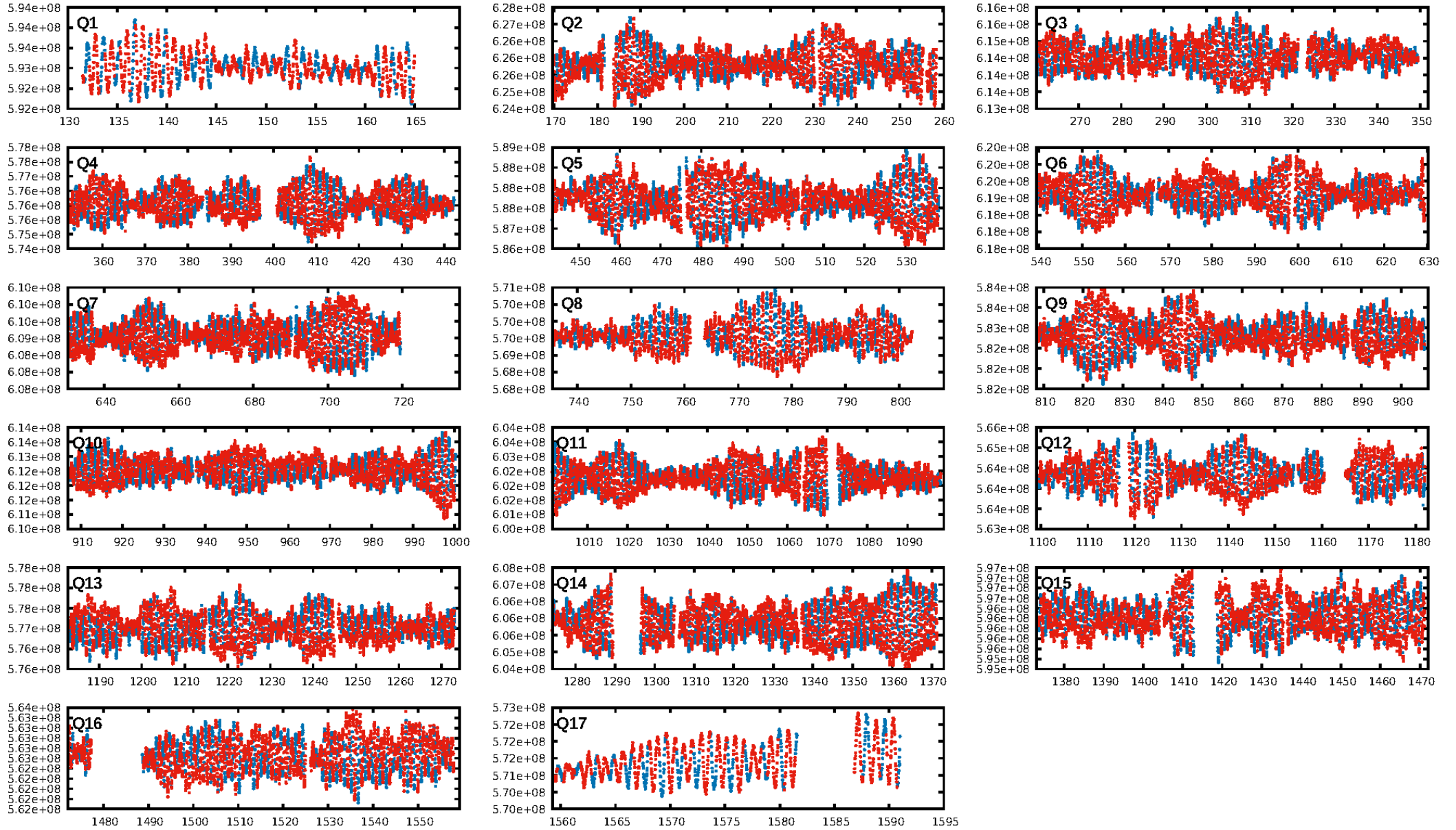
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [24.91σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.30e-64
RollingBand-fgt: 1.00 [838/838]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 2.597 arcsec [4.31σ]
KicOffset-rm: 2.477 arcsec [4.35σ]
OotOffset-st: 1/4/4/1 [10]
KicOffset-st: 1/4/4/1 [10]
DiffImageQuality-fgm: 0.40 [4/10]
DiffImageOverlap-fno: 1.00 [17/17]

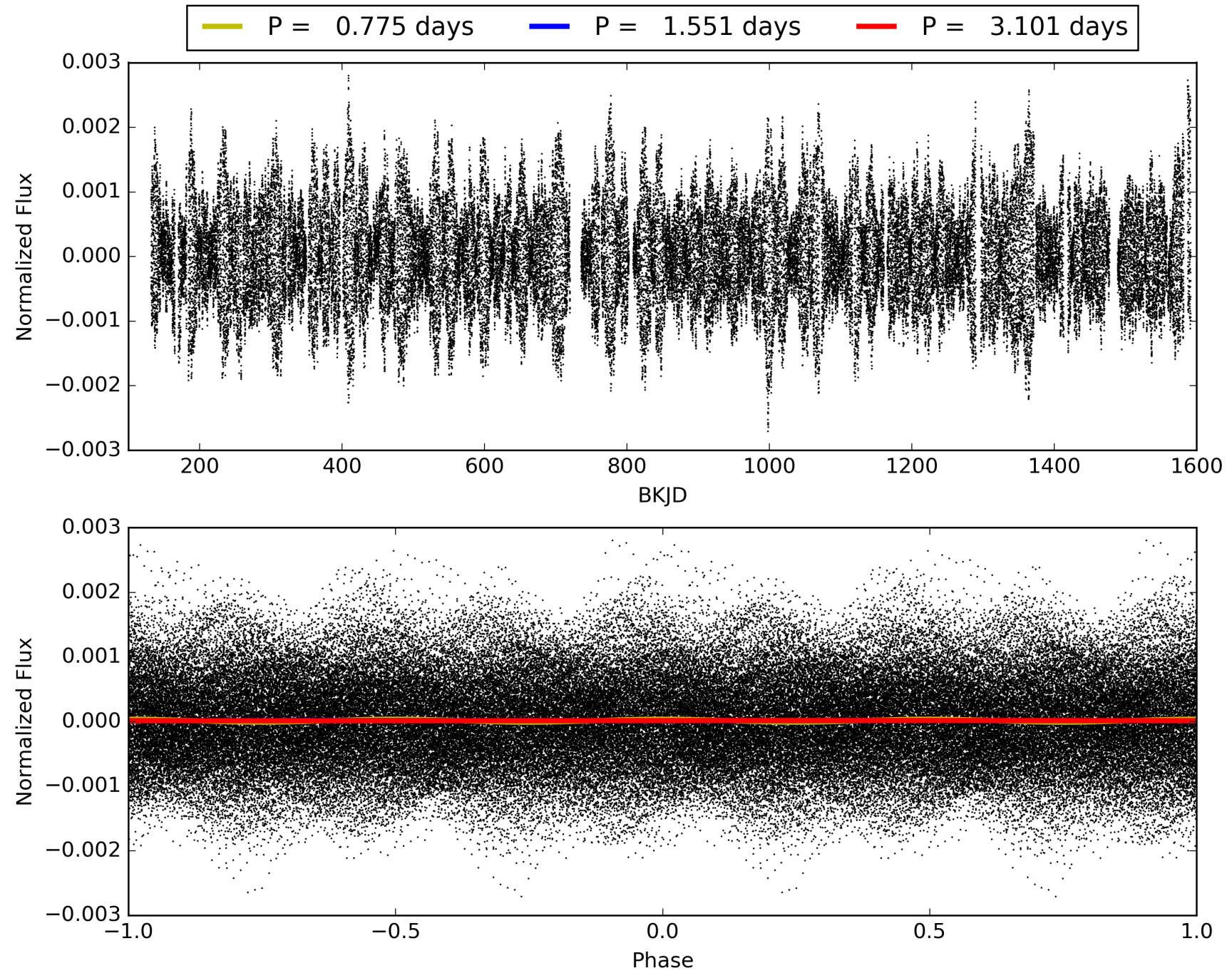
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:39:37 Z

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

TCE 007287165-01, PDC Light Curves

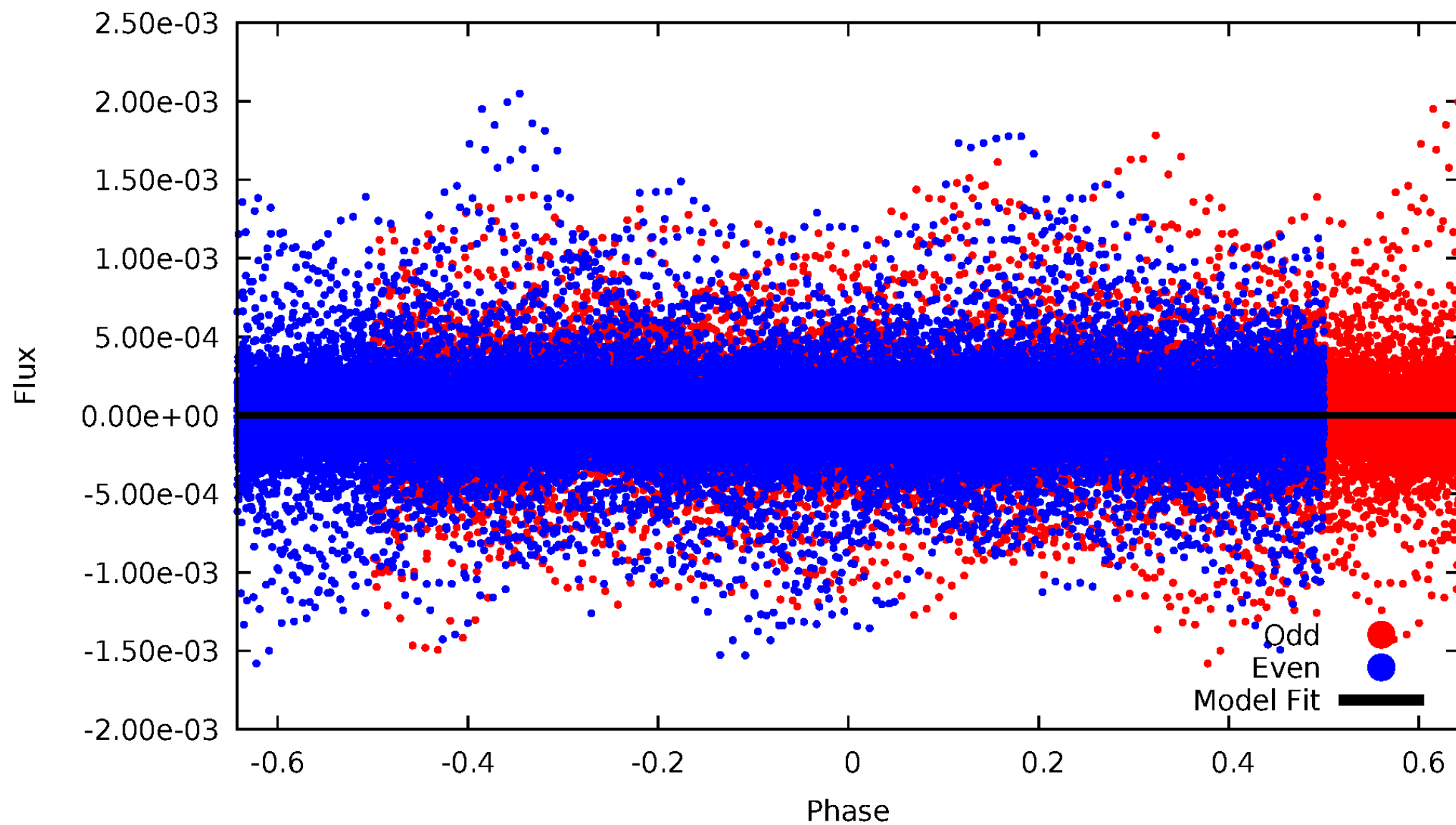


TCE 007287165-01



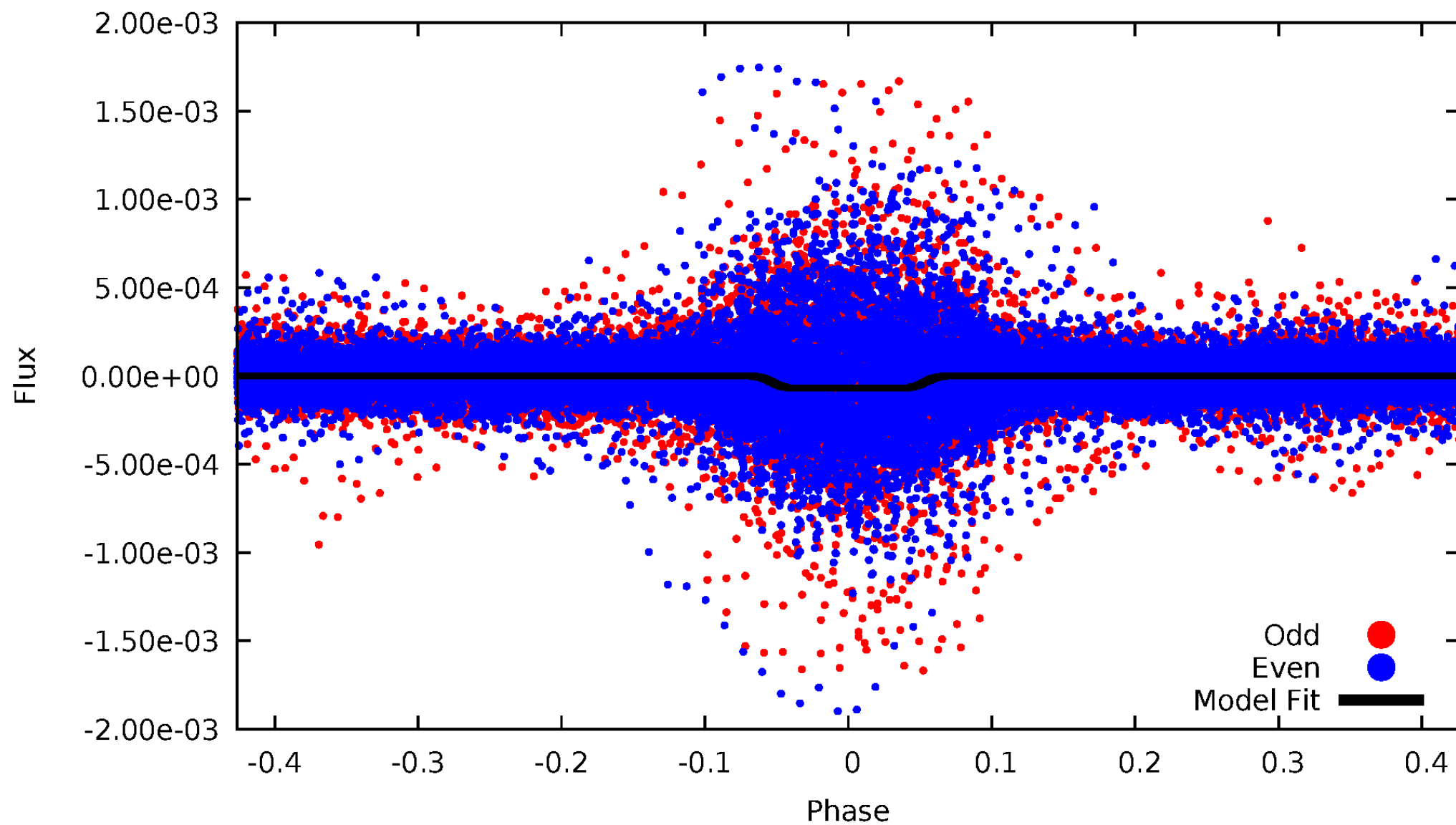
DV Odd/Even

TCE 007287165-01

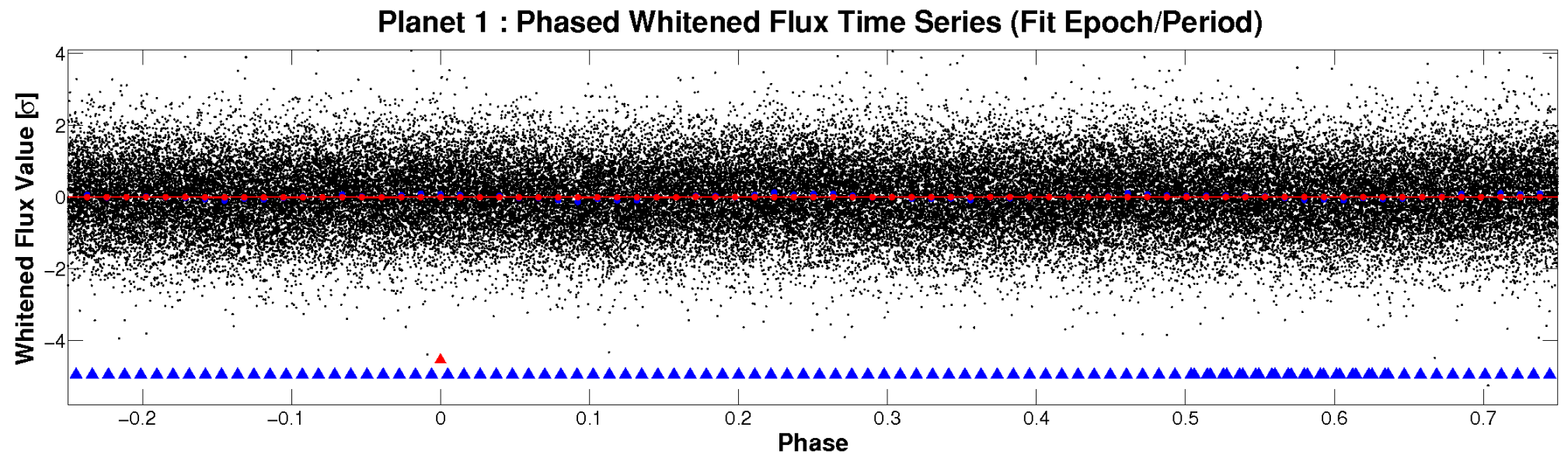
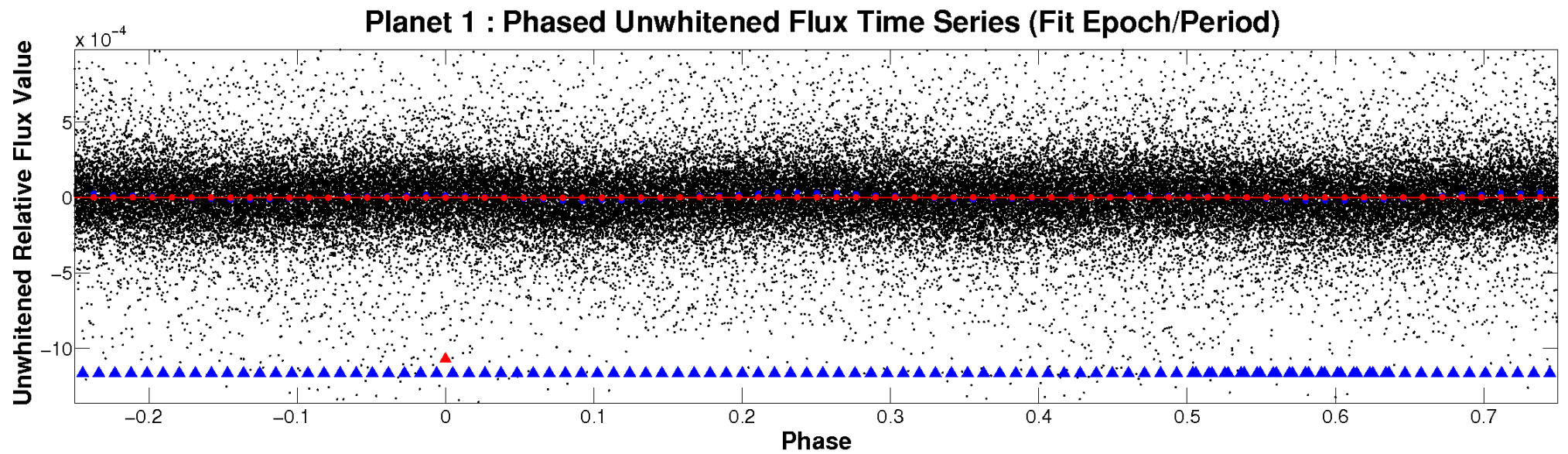


ALT Odd/Even

TCE 007287165-01

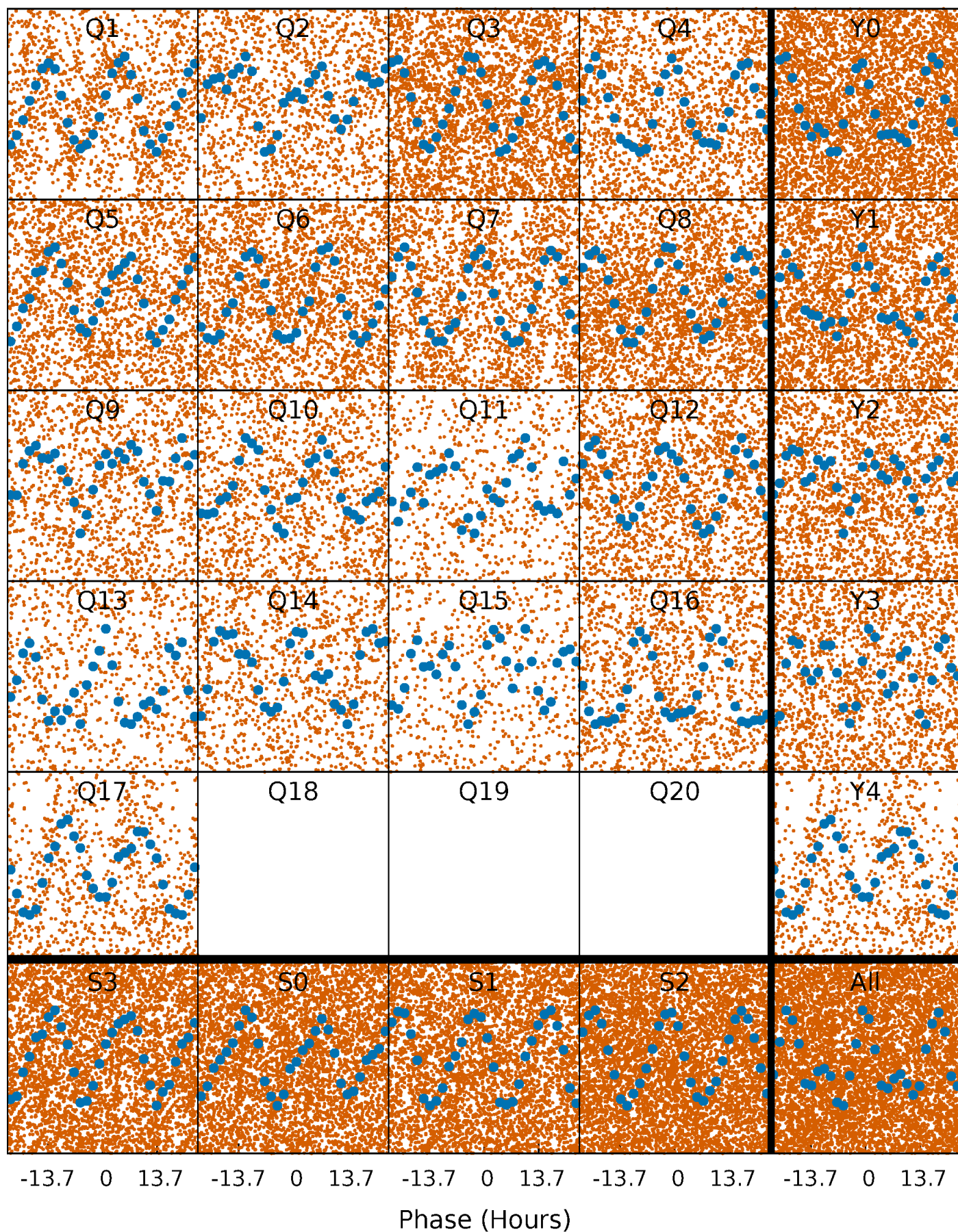


Non-Whitened Vs. Whitened Light Curve



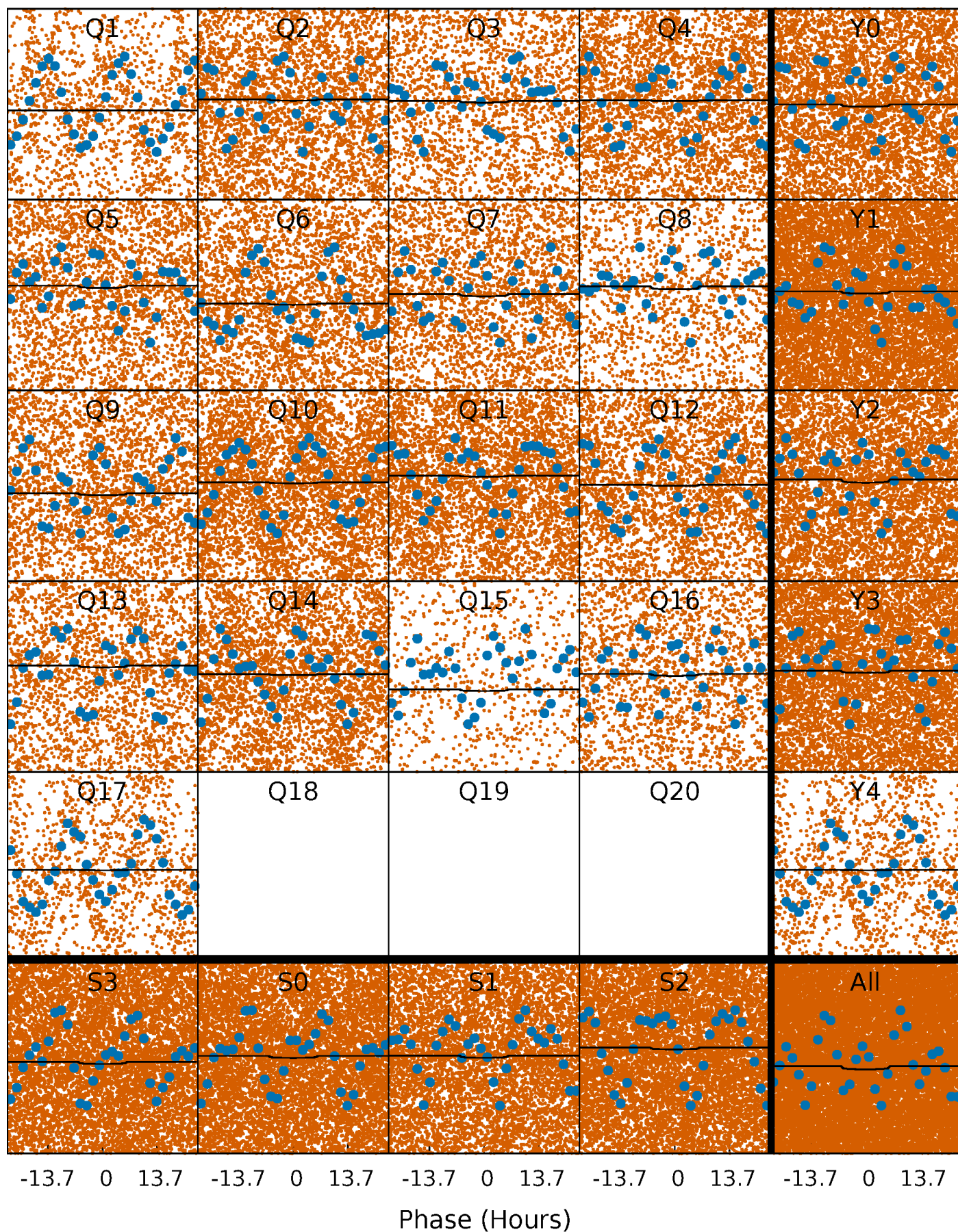
PDC Quarter-Phased Transit Curves

TCE 007287165-01 P= 1.550594 Days $T_0=132.668221$ (BKJD)



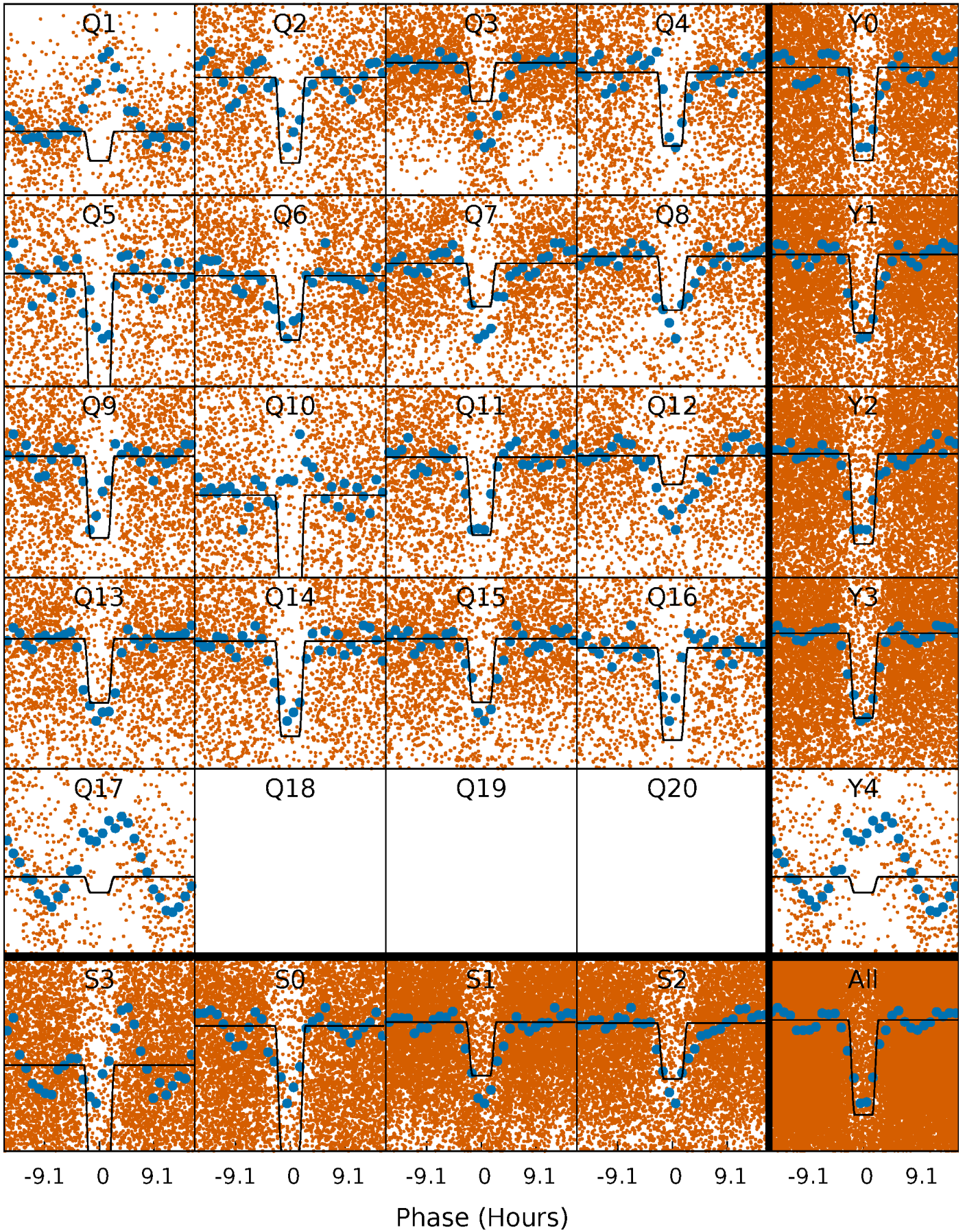
DV Quarter-Phased Transit Curves

TCE 007287165-01 P= 1.550594 Days $T_0=132.668221$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

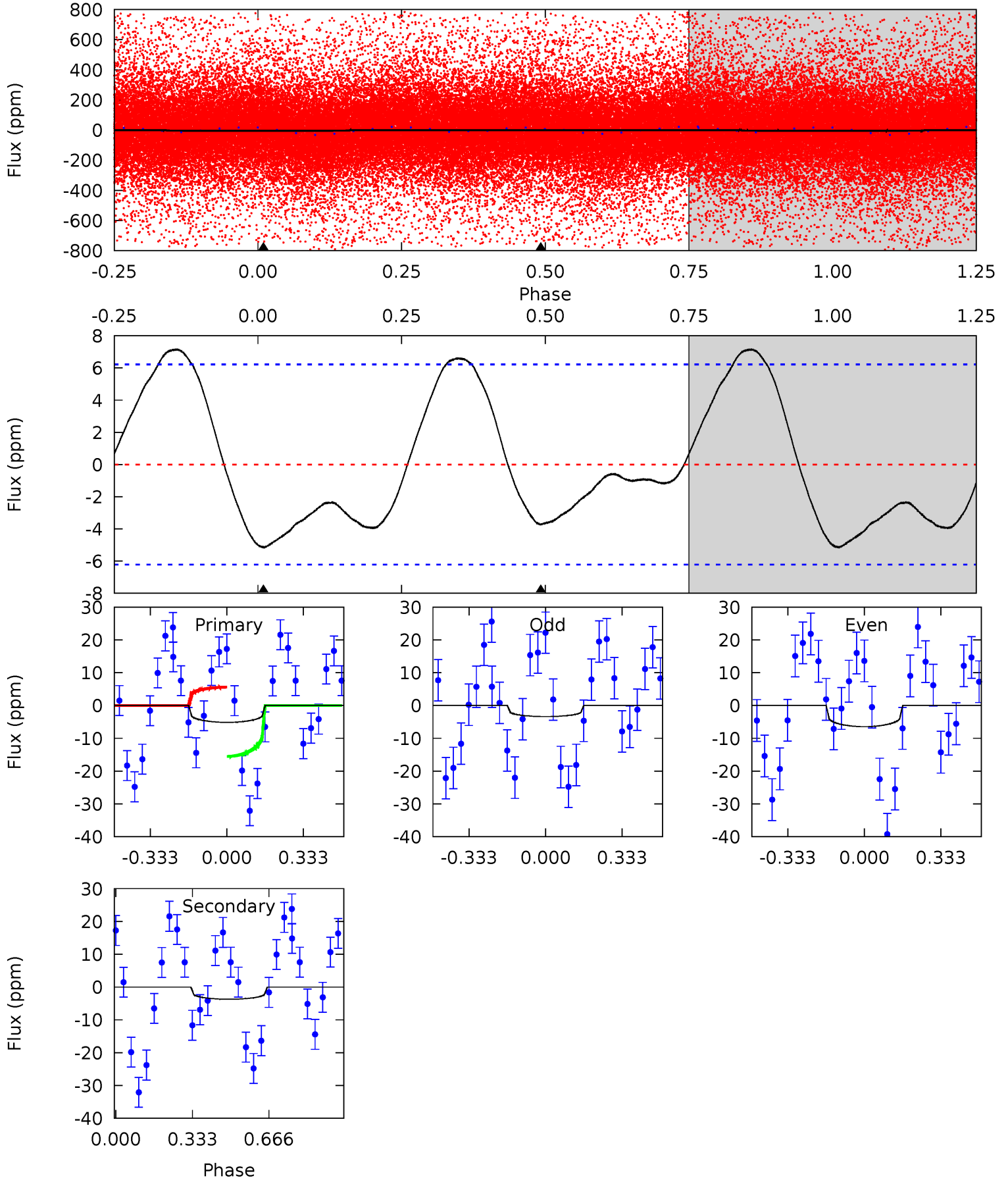
TCE 007287165-01 P= 1.550792 Days $T_0=132.762472$ (BKJD)



DV Model-Shift Uniqueness Test

007287165-01, P = 1.550594 Days, E = 131.117627 Days

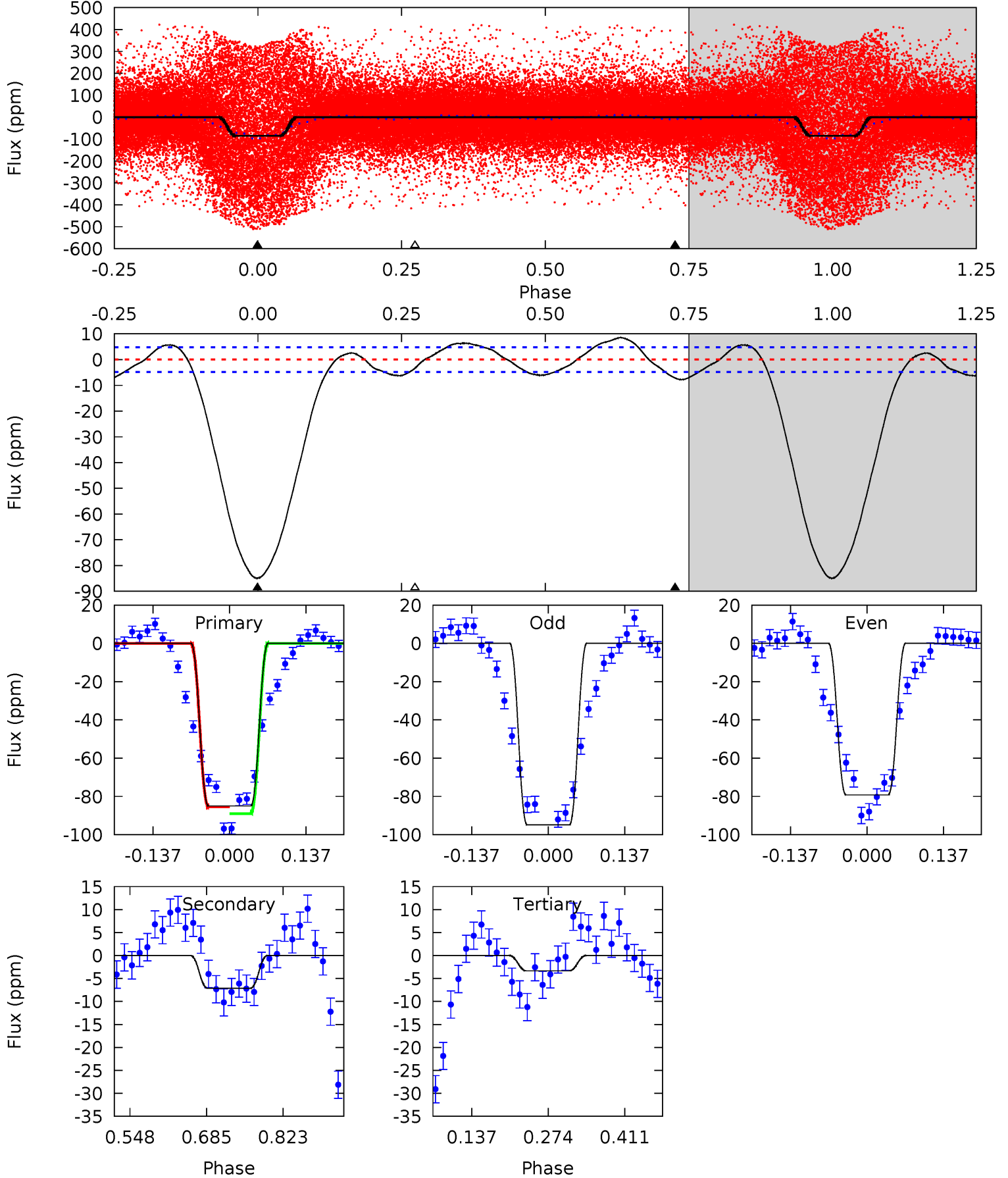
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.56	2.57	0	0	4.31	0.97	1.09	3.56	3.56	2.57	2.57	1.06	0.89	0.58	3.55



Alt Model-Shift Uniqueness Test

007287165-01, P = 1.550792 Days, E = 131.211680 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
79.5	6.69	3.13	0	4.50	1.49	3.82	76.4	79.5	3.56	6.69	7.27	0.67	0.09	1.62



Stellar Parameters For KIC 007287165

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7284^{+226}_{-302}	$3.673^{+0.442}_{-0.078}$	$0.020^{+0.200}_{-0.350}$	$3.351^{+0.397}_{-1.588}$	$1.930^{+0.112}_{-0.476}$	$0.072^{+0.315}_{-0.019}$
	+3%/-4%	+12%/-2%	+1000%/-1750%	+12%/-47%	+6%/-25%	+436%/-26%
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 007287165-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-4 ± 1	$1.71^{+1.85}_{-1.14}$	4411^{+295}_{-524}	3920^{+3692}_{-7406}	$0.667^{+5.519}_{-0.519}$
Alt.	-7 ± 1	$2.80^{+2.52}_{-1.66}$	4377^{+324}_{-486}	3500^{+2428}_{-6992}	$0.513^{+2.628}_{-0.367}$

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 $A_{obs} \gg 1.0$

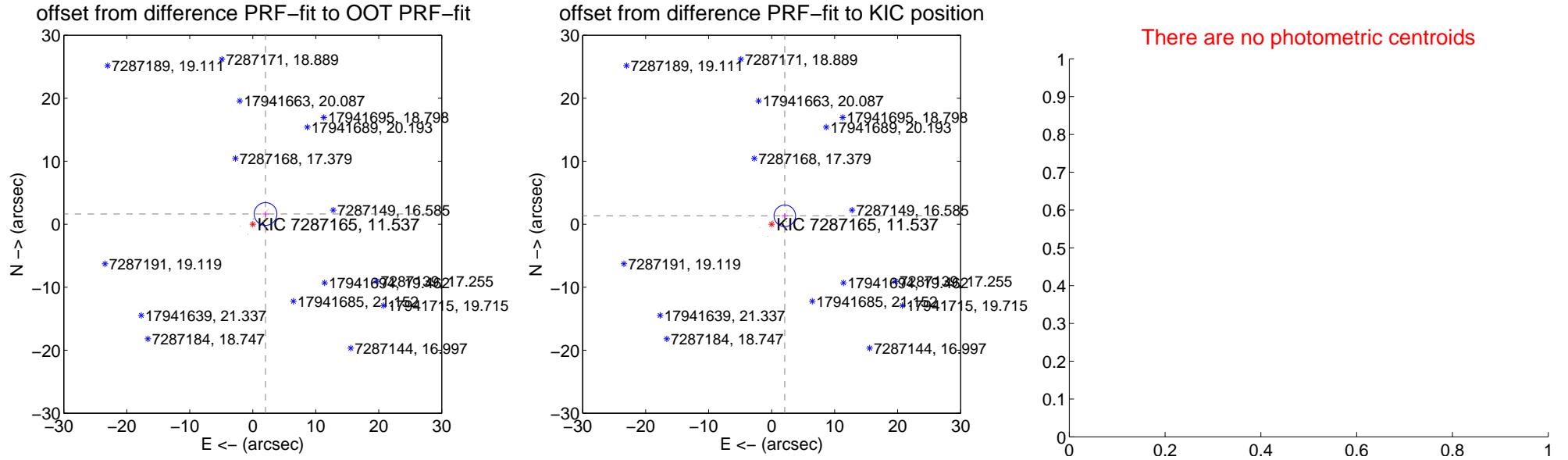
DV Centroid Data

Supplemental centroid analysis for 007287165-01. **Kepler magnitude: 11.54**. Transit SNR 0.89

There are 4 quarters with good PRF difference image offsets

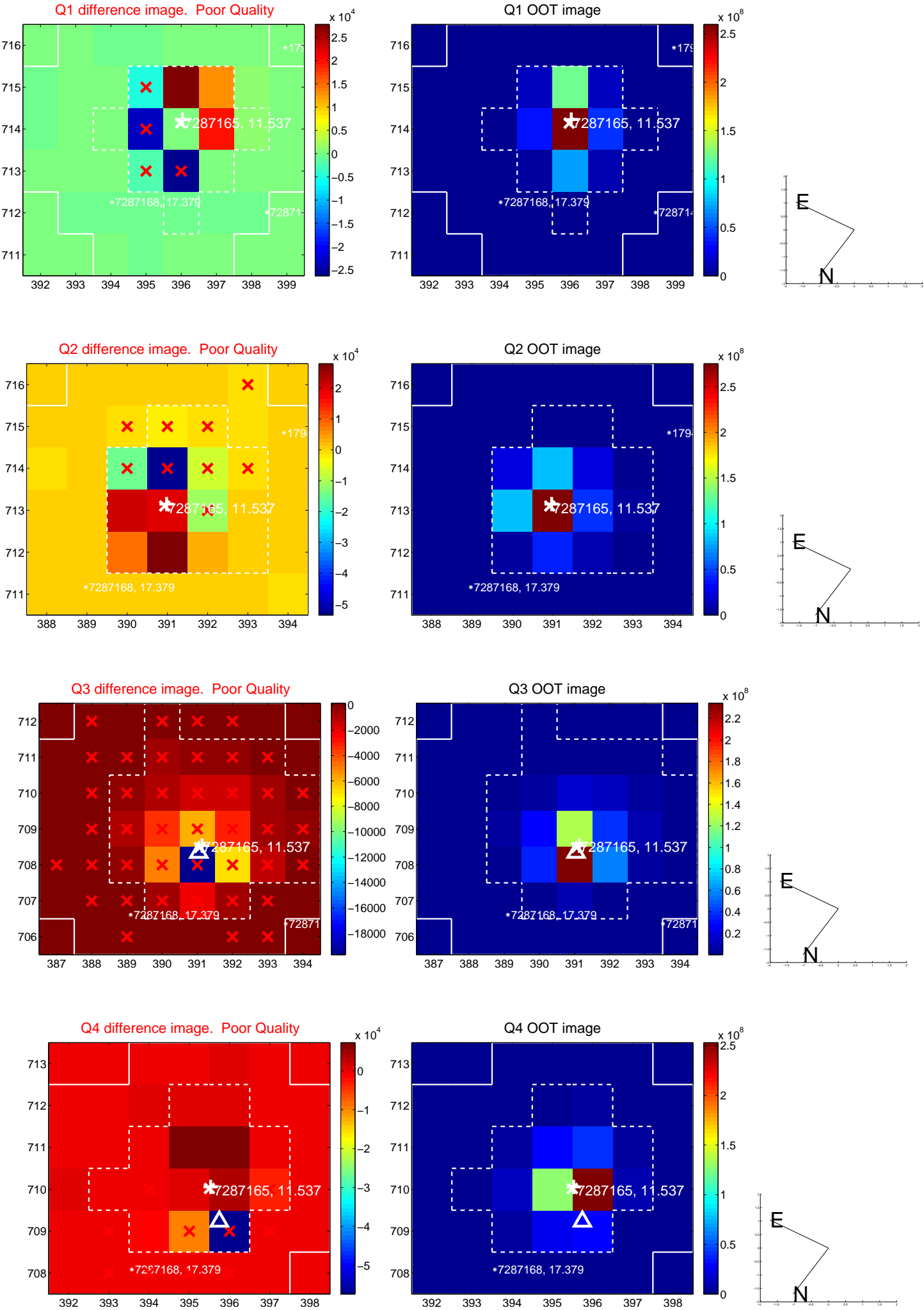
The direct PRF centroid is offset from the target star catalog position by about 0.48 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.597 \pm 0.602	4.31	-2.027 \pm 0.473	1.623 \pm 0.431
PRF-fit source offset from KIC position	2.477 \pm 0.570	4.35	-2.086 \pm 0.475	1.336 \pm 0.404
photometric centroid source offset	—	—	—	—

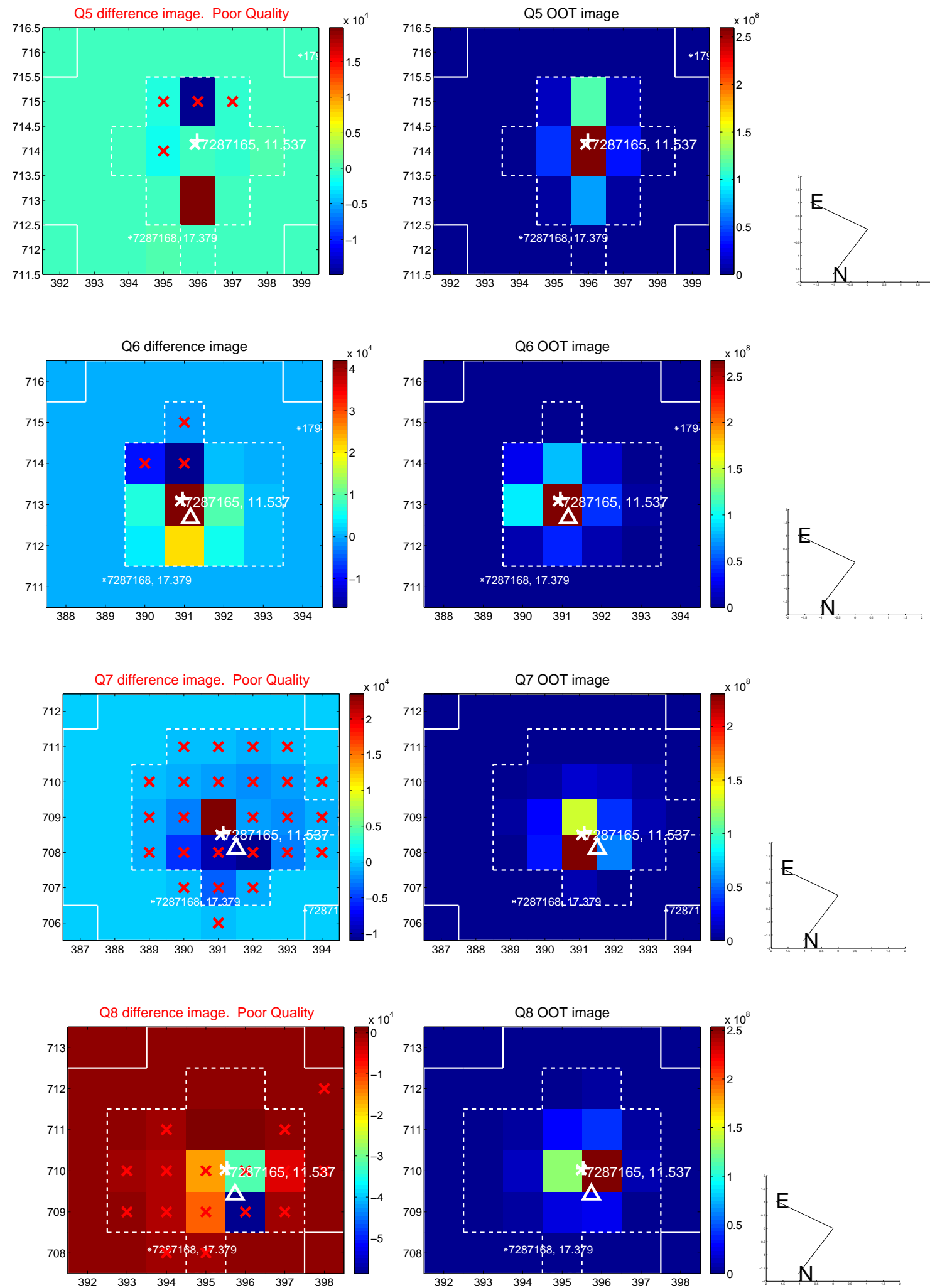


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

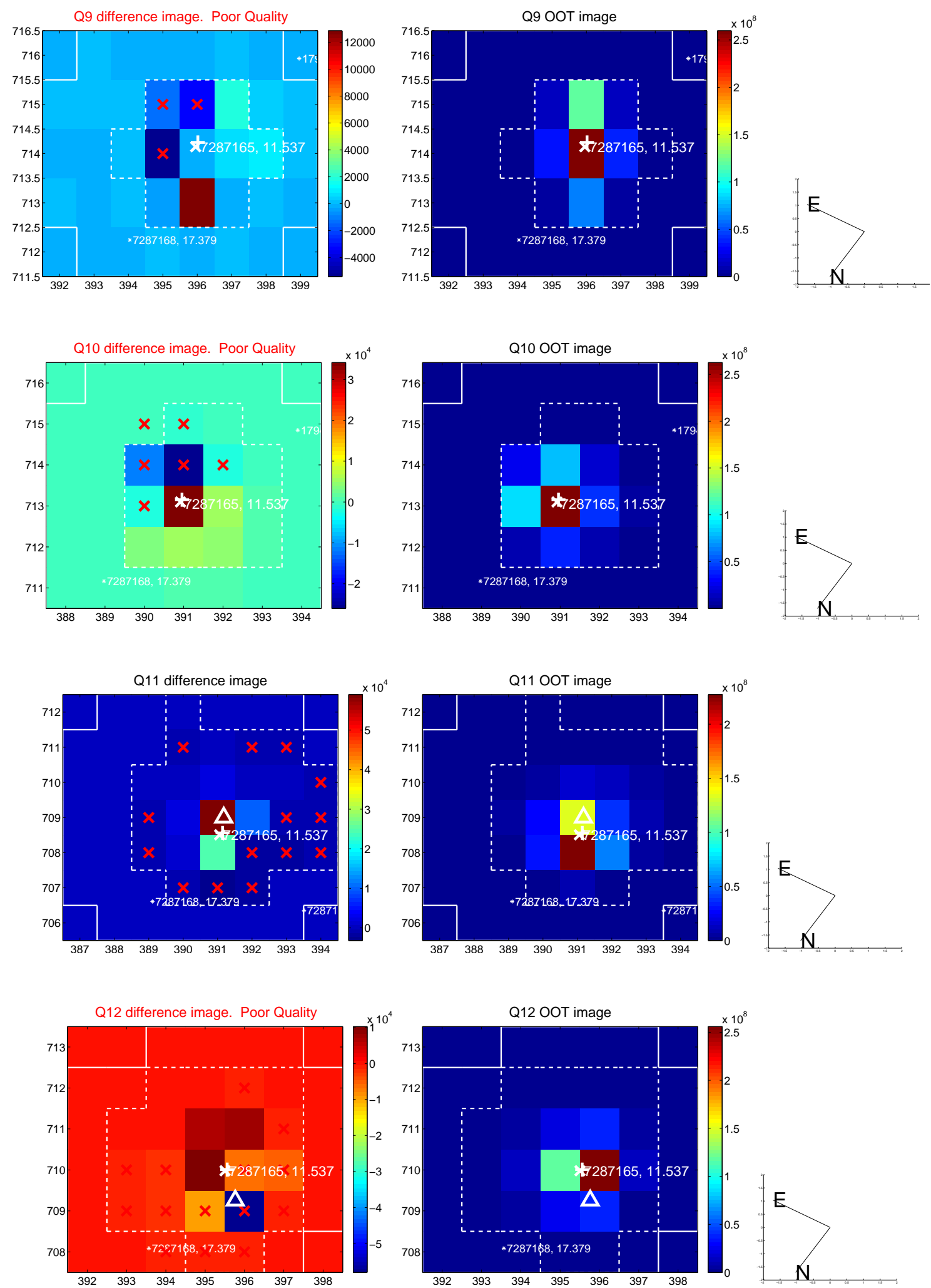
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



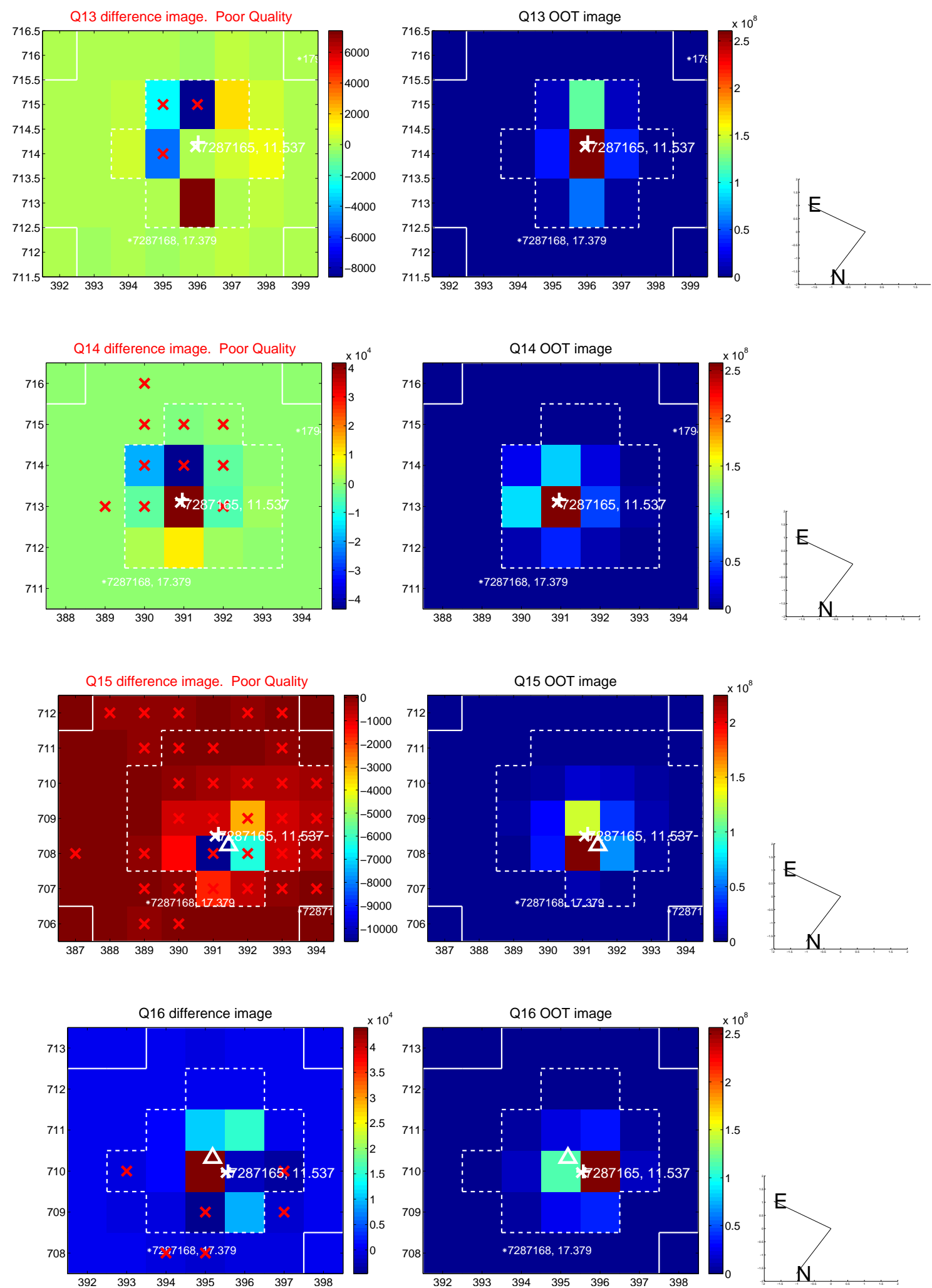
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



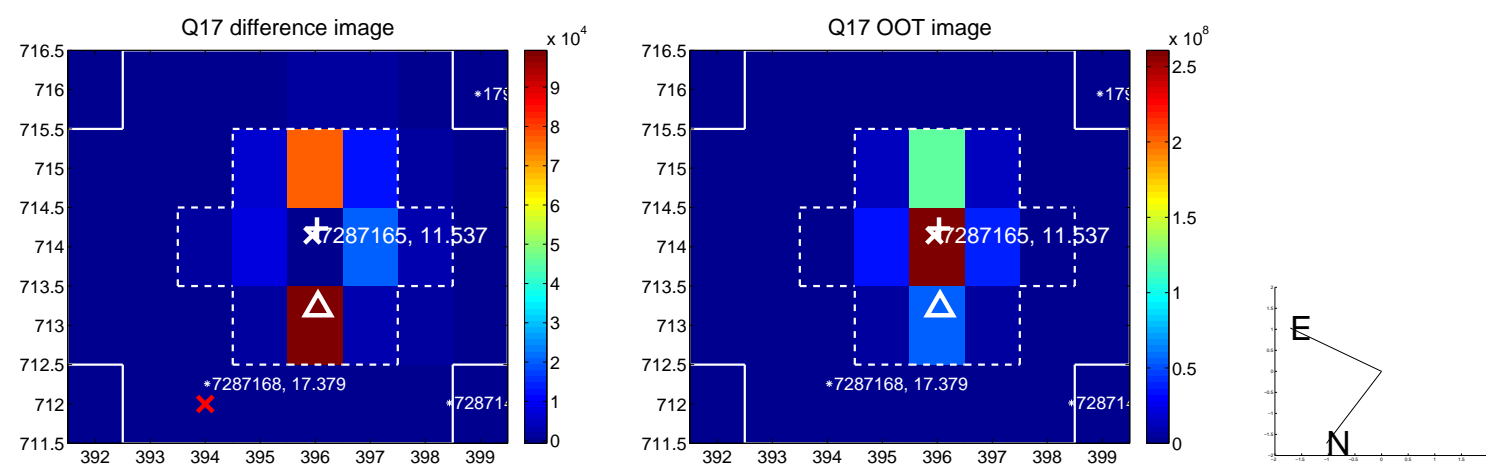
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



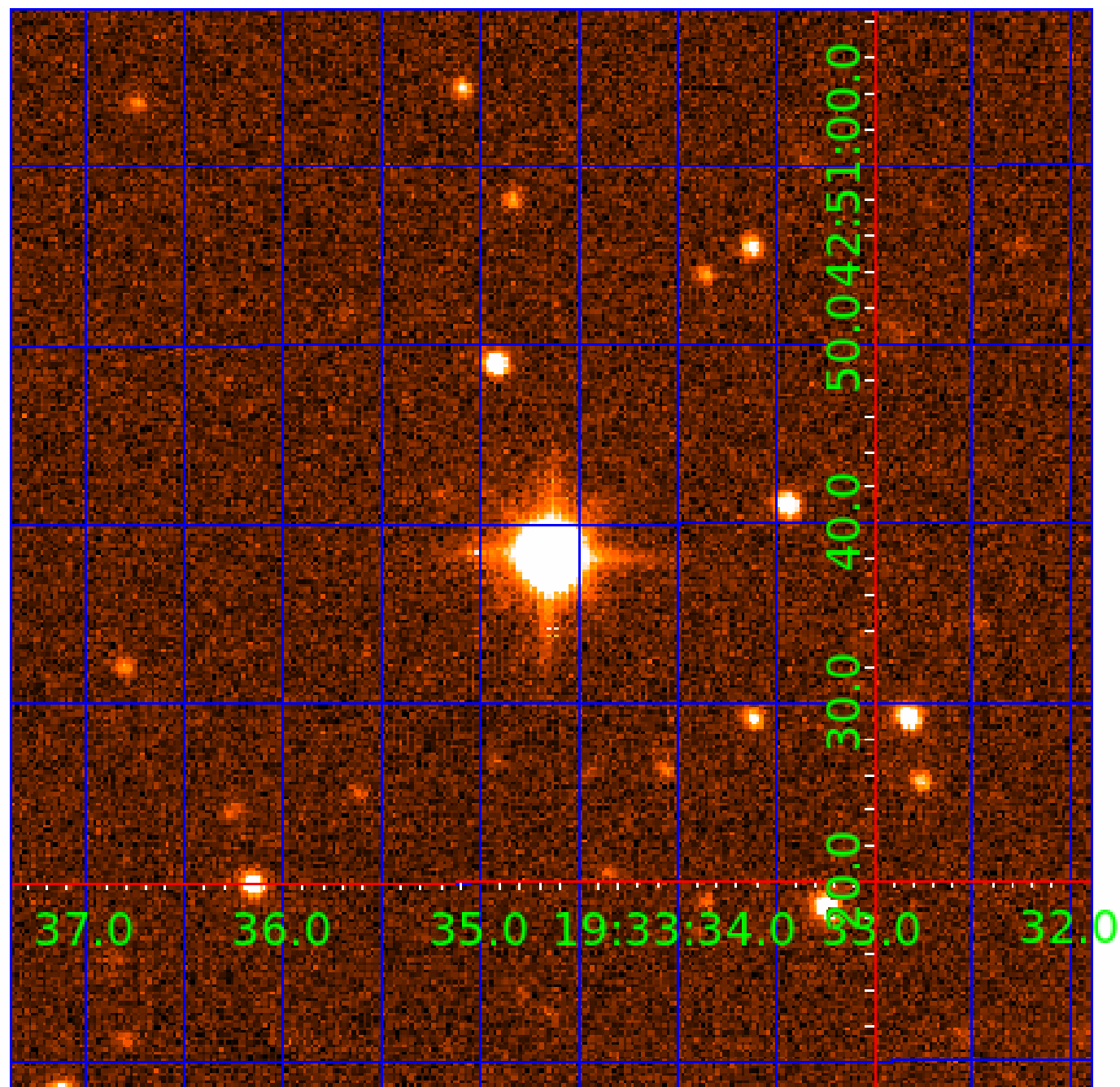
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 007287165

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})
007287165-01	OBS	No	1.550594	132.668221	1.7	11.953	7.5	0.9	3.35	7284	0.44	26576.20
007287165-02	OBS	No	13.972167	136.553937	432.2	0.568	18.3	11.2	3.35	7284	7.54	1417.33

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007287165-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
007287165-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS—HALO_GHOST

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

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

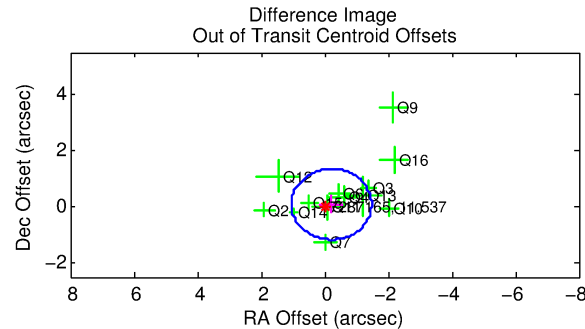
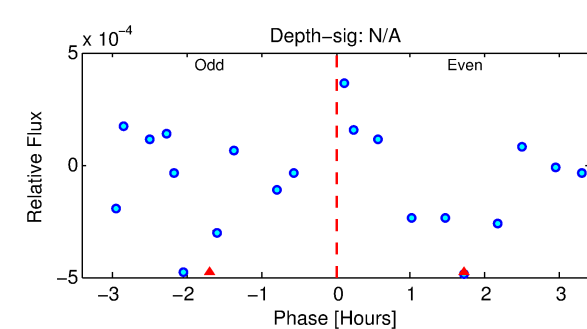
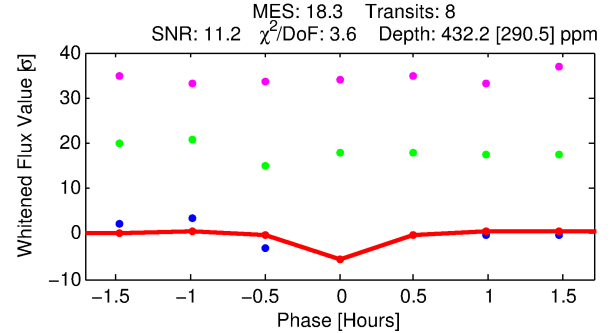
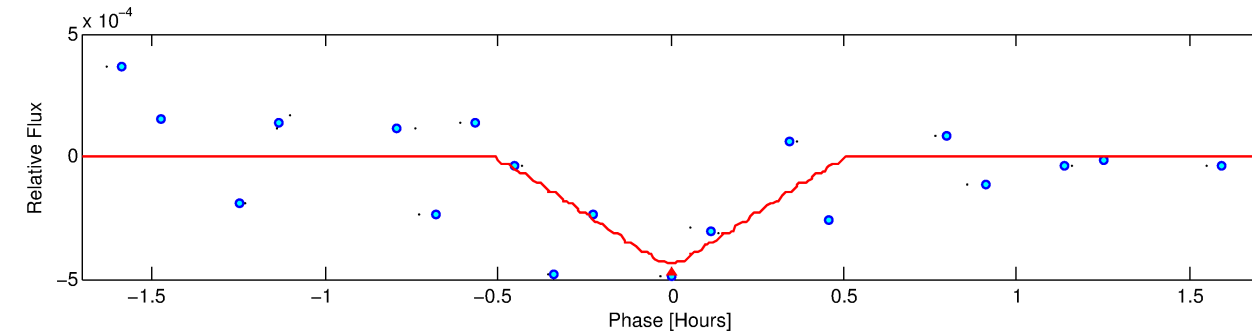
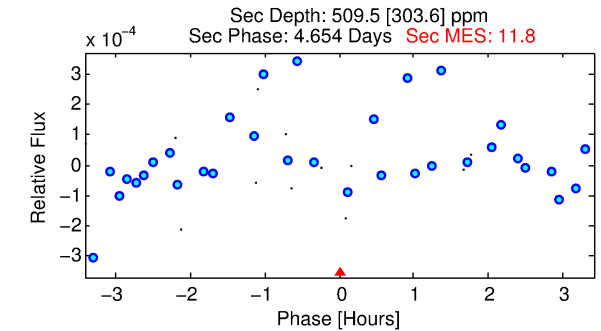
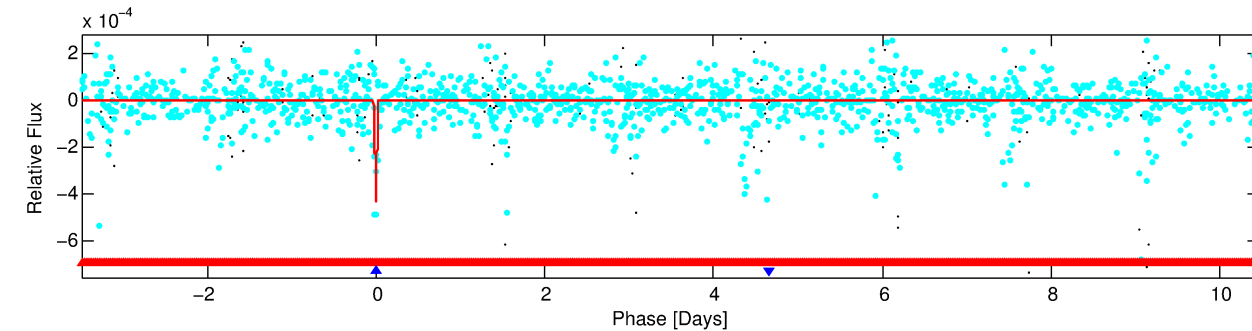
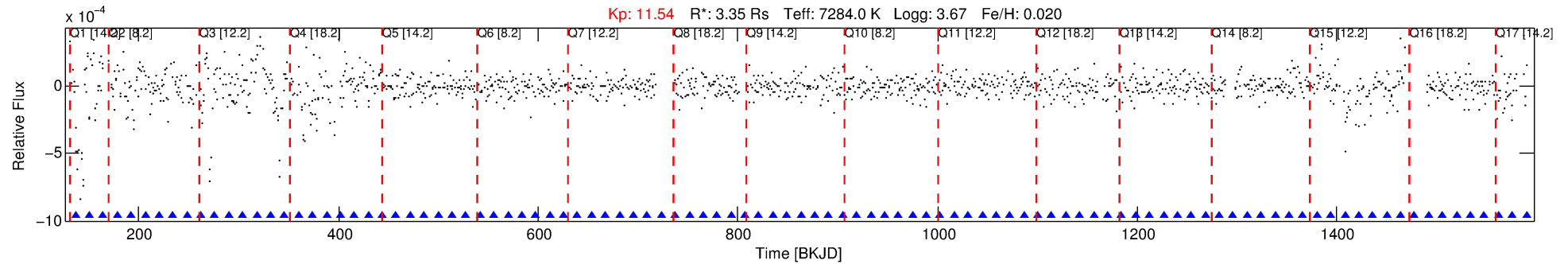
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007287165-02

No Significant Match Found

DV One-Page Summary

KIC: 7287165 Candidate: 2 of 2 Period: 13.972 d



DV Fit Results:

Period = 13.97217 [0.00013] d
Epoch = 136.5539 [0.0031] BKJD
Rp/R* = 0.0206 [0.0149]
a/R* = 155.01 [636.50]
b = 0.60 [4.28]
Seff = 1417.33 [1086.52]
Teq = 1565 [300] K
Rp = 7.54 [6.51] Re
a = 0.1414 [0.0655] AU
Ag = 98.43 [170.37] [0.57] σ
Teffp = 7619 [2990] K [2.01] σ

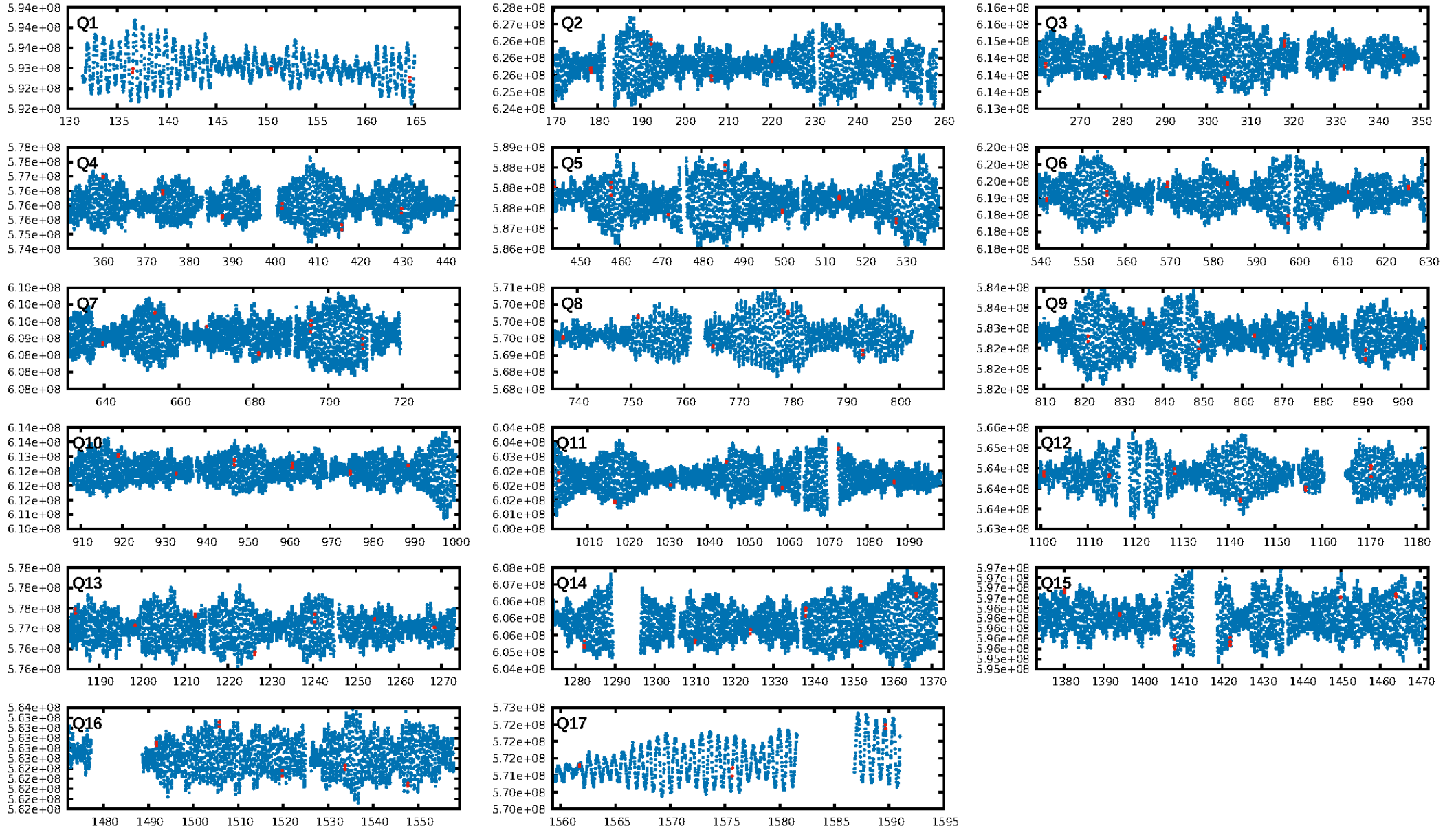
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [24.91 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 8.1%
ModelChiSquareGof-sig: 26.4%
Bootstrap-pfa: 2.61e-140
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -0.1032
Centroid-sig: 0.6%
Centroid-so: 0.564 arcsec [3.94 σ]
OotOffset-rm: 0.231 arcsec [0.55 σ]
KicOffset-rm: 0.467 arcsec [1.31 σ]
OotOffset-st: 4/4/3/2 [13]
KicOffset-st: 4/4/3/2 [13]
DiffImageQuality-fgm: 0.54 [7/13]
DiffImageOverlap-fno: 0.53 [9/17]

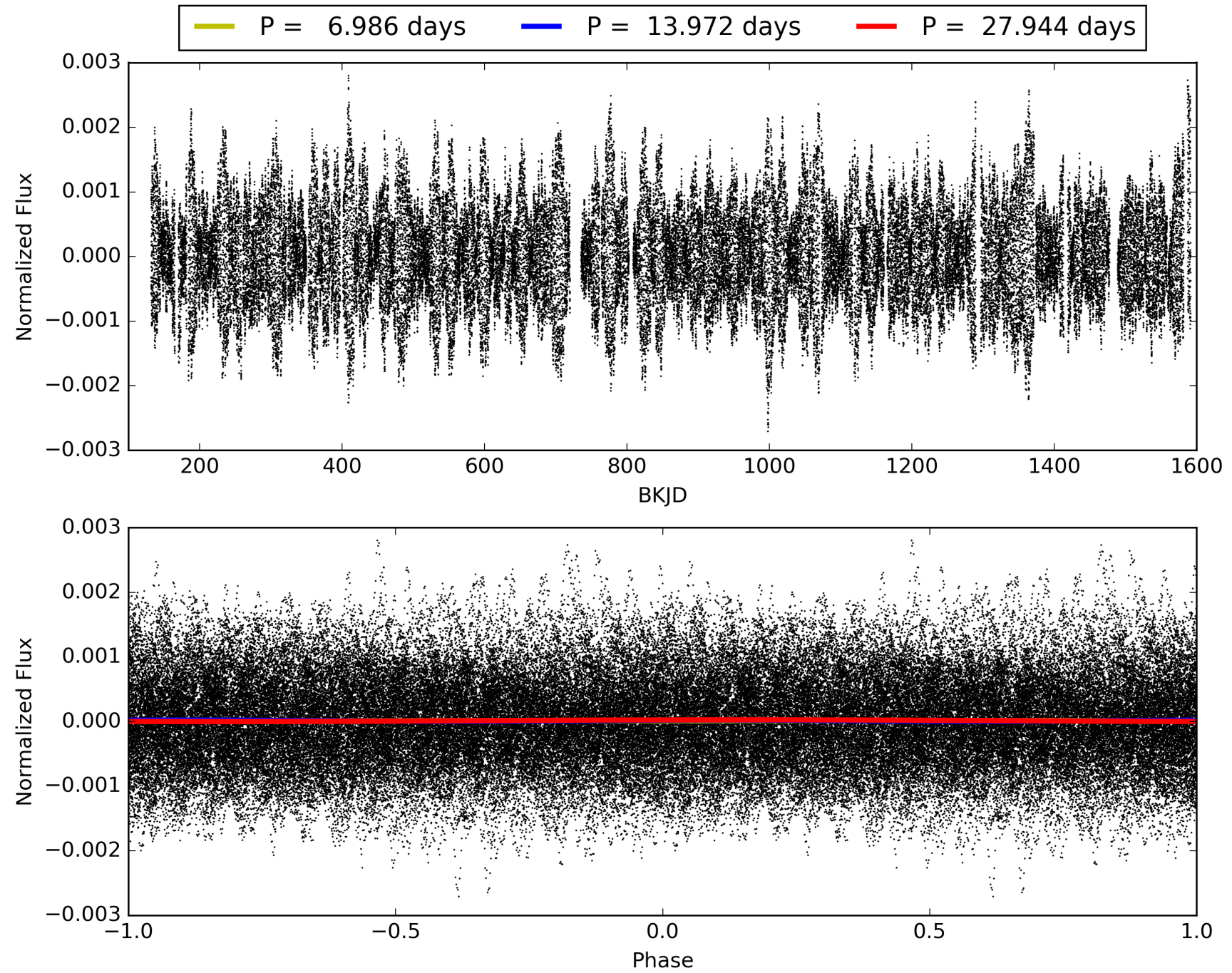
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:39:48 Z

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

TCE 007287165-02, PDC Light Curves

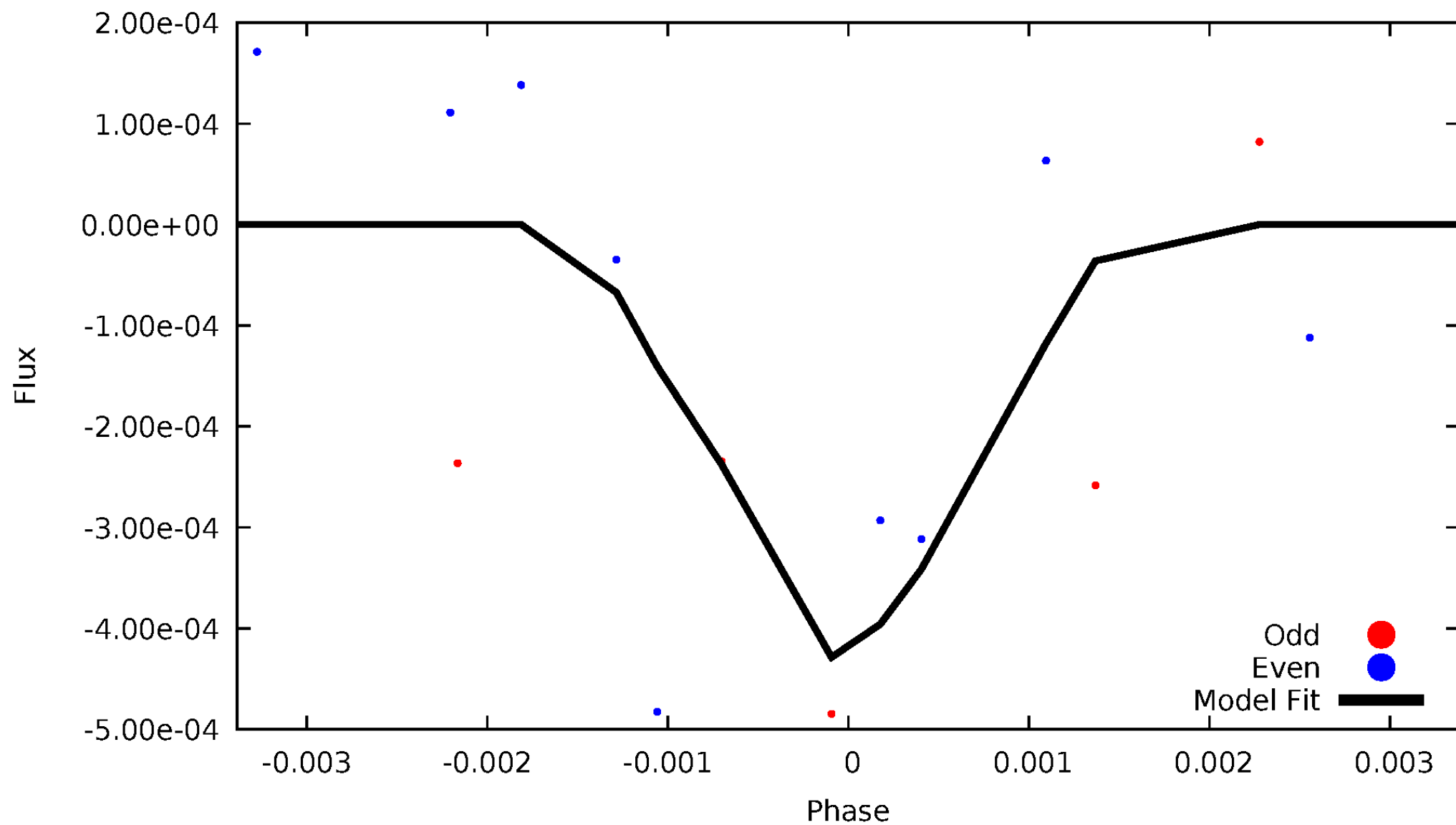


TCE 007287165-02



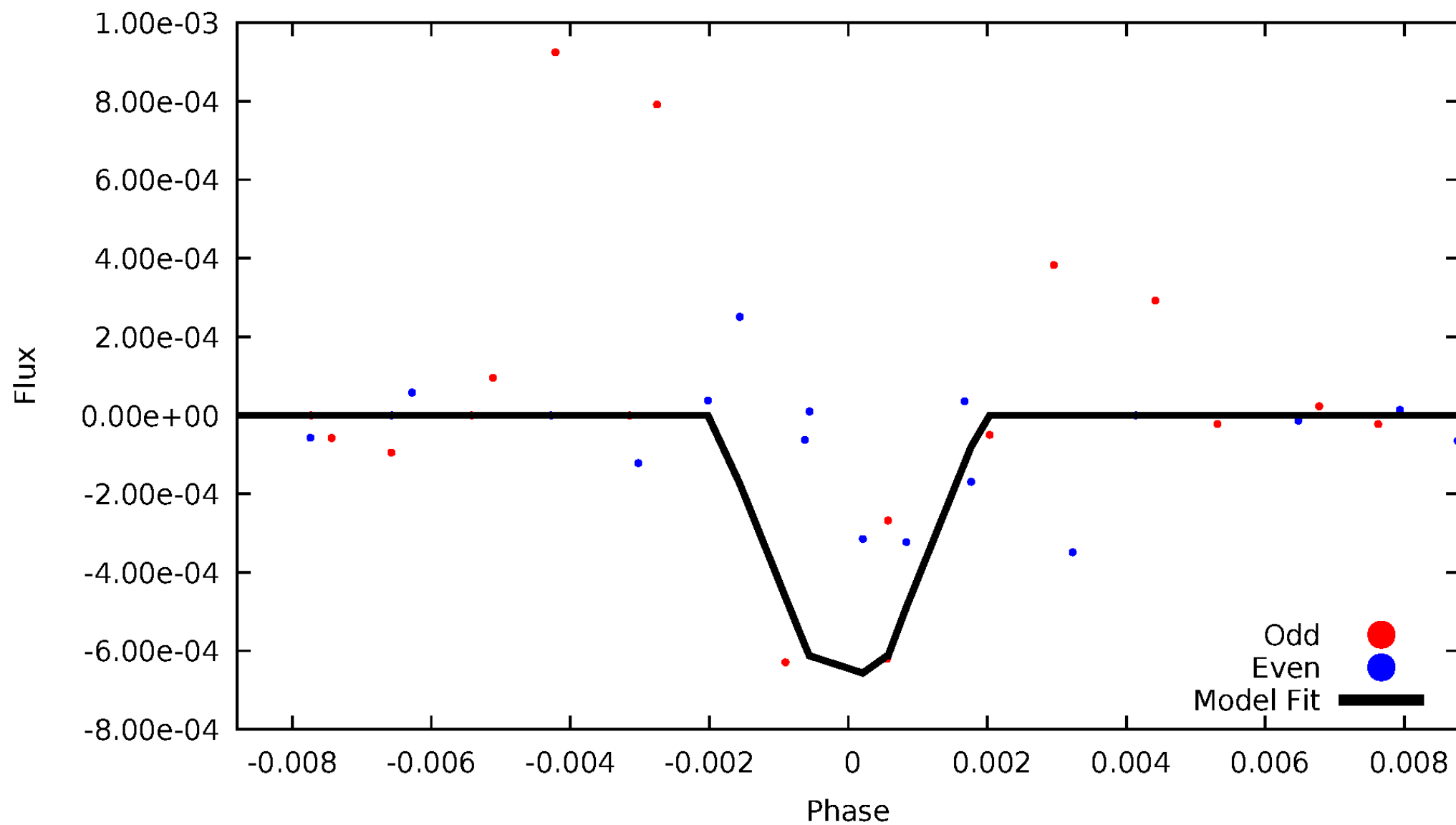
DV Odd/Even

TCE 007287165-02



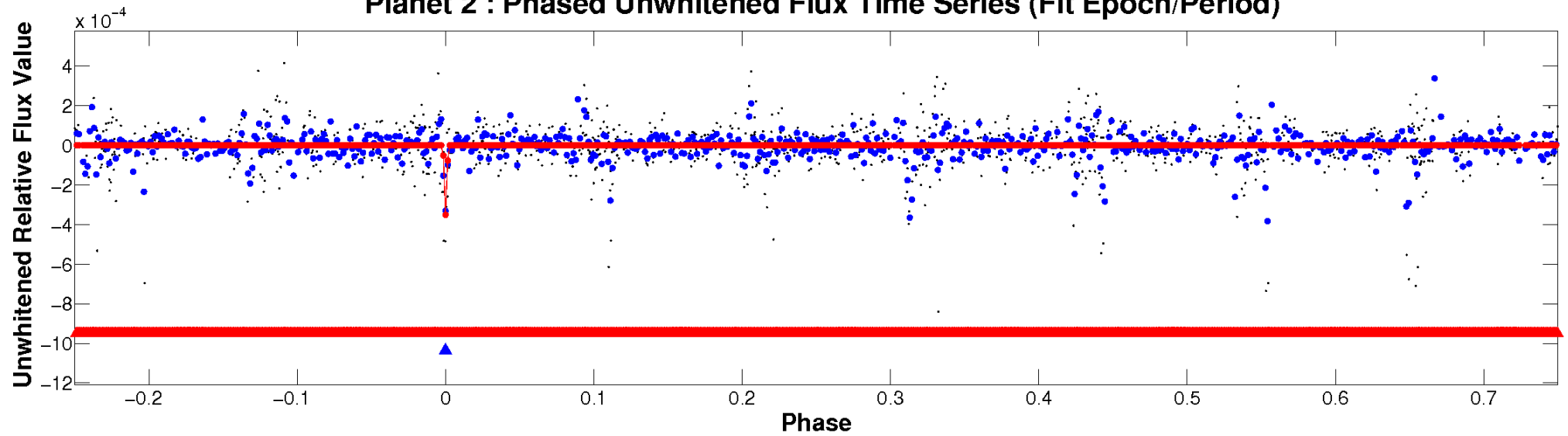
ALT Odd/Even

TCE 007287165-02

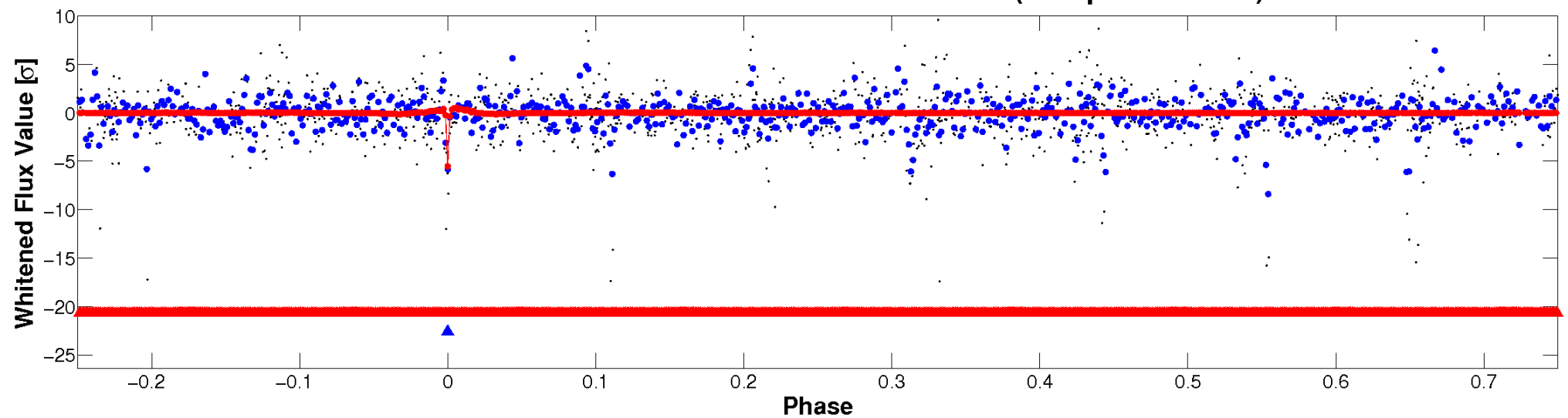


Non-Whitened Vs. Whitened Light Curve

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

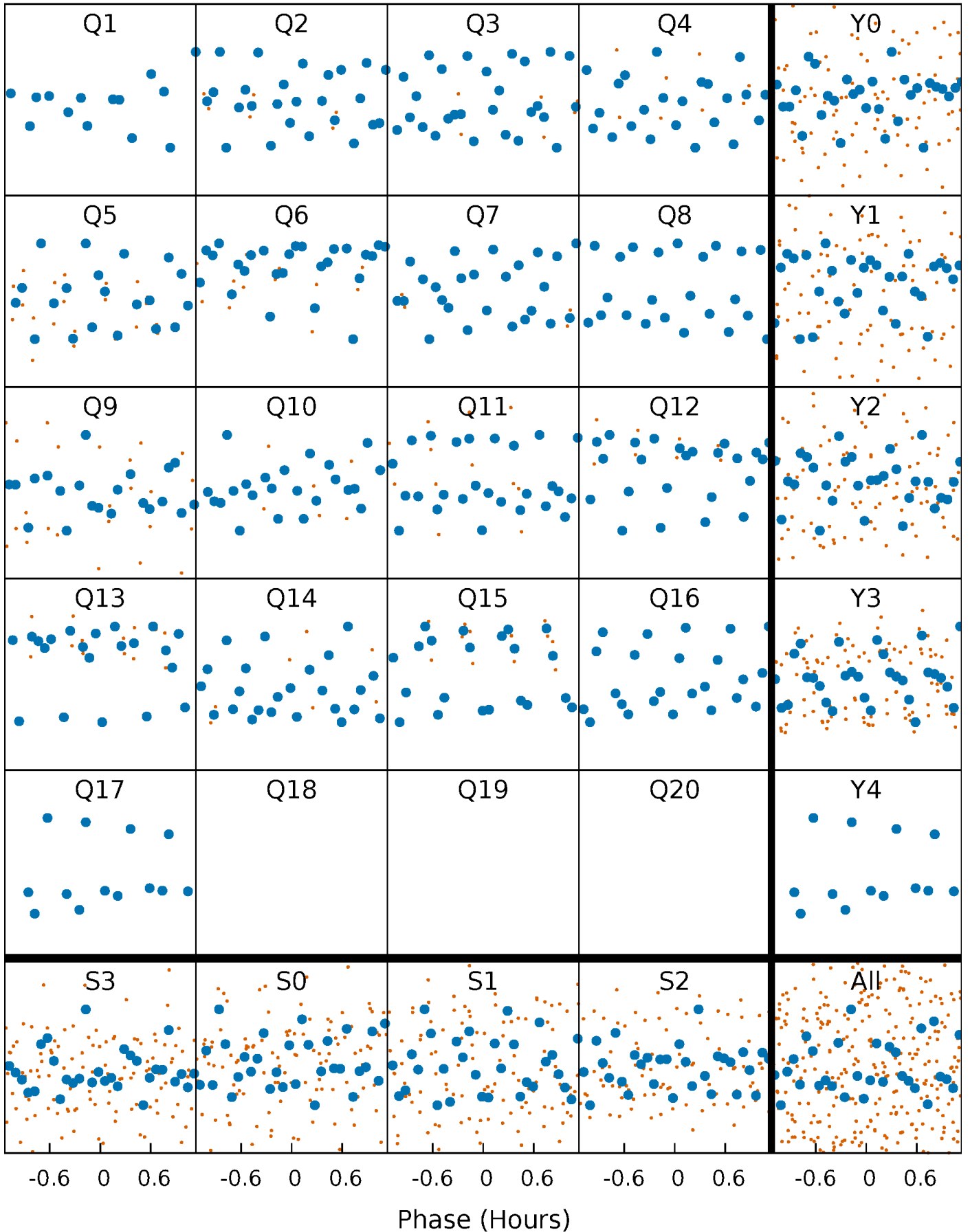


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



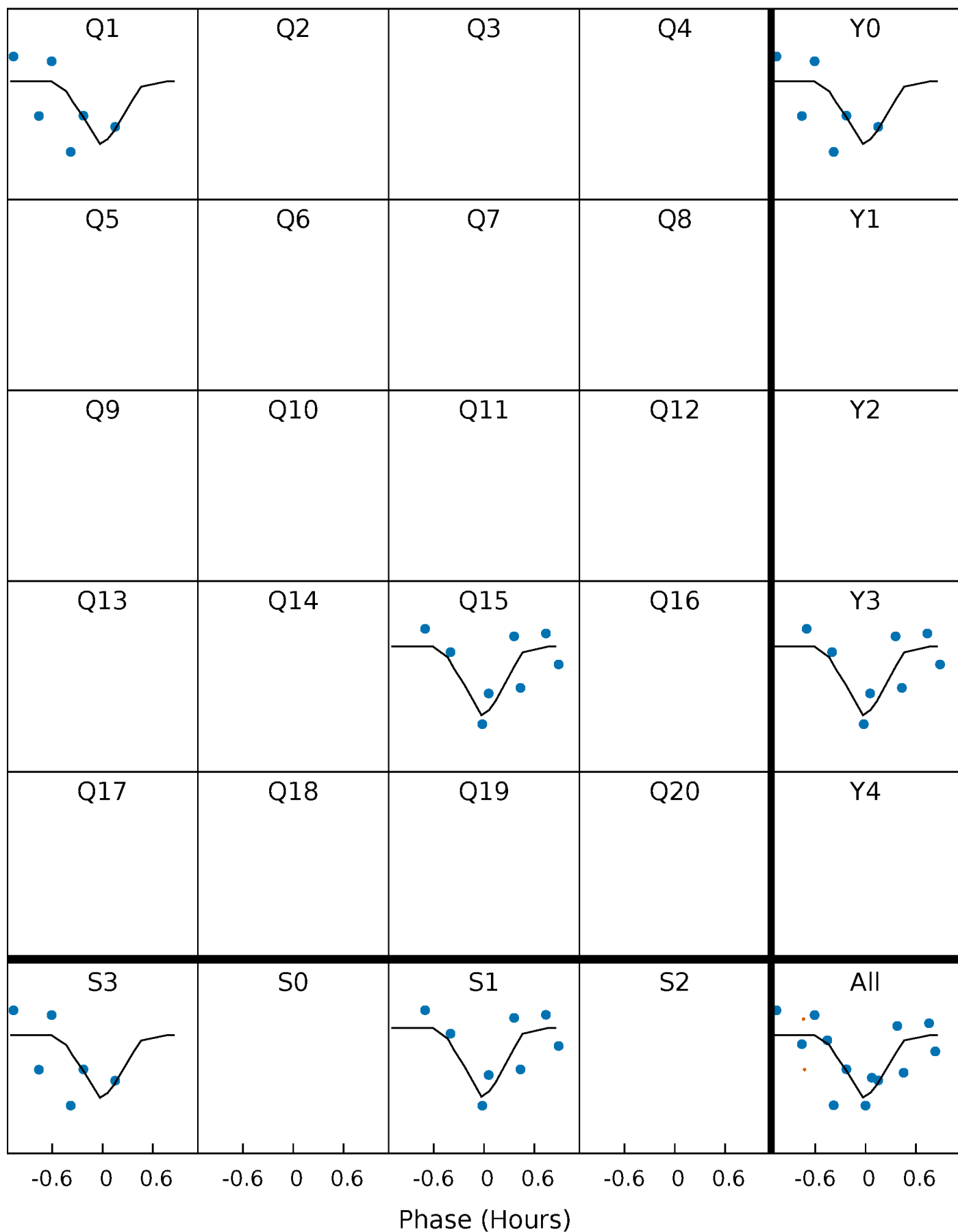
PDC Quarter-Phased Transit Curves

TCE 007287165-02 P= 13.972167 Days $T_0=136.553937$ (BKJD)



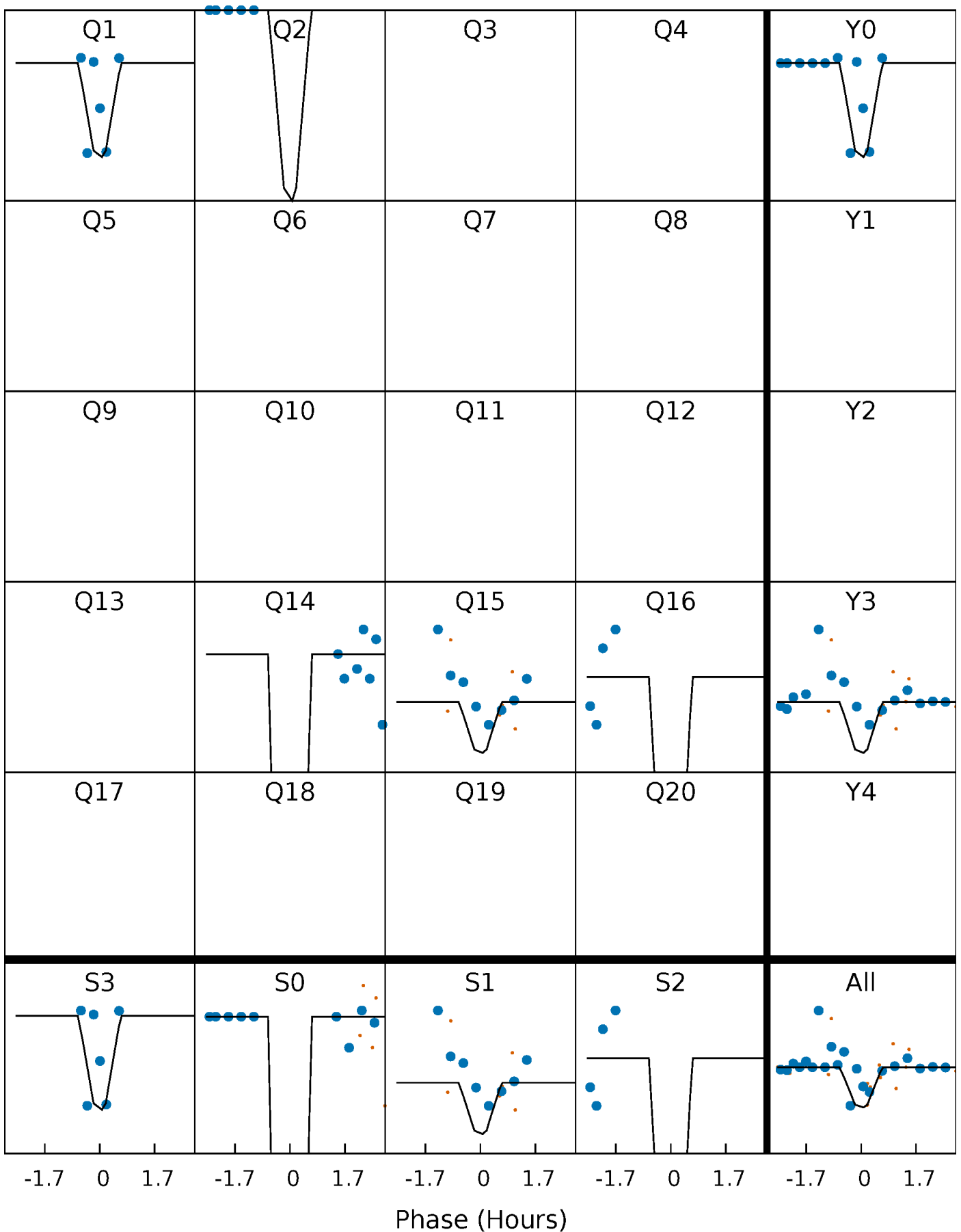
DV Quarter-Phased Transit Curves

TCE 007287165-02 P= 13.972167 Days $T_0=136.553937$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

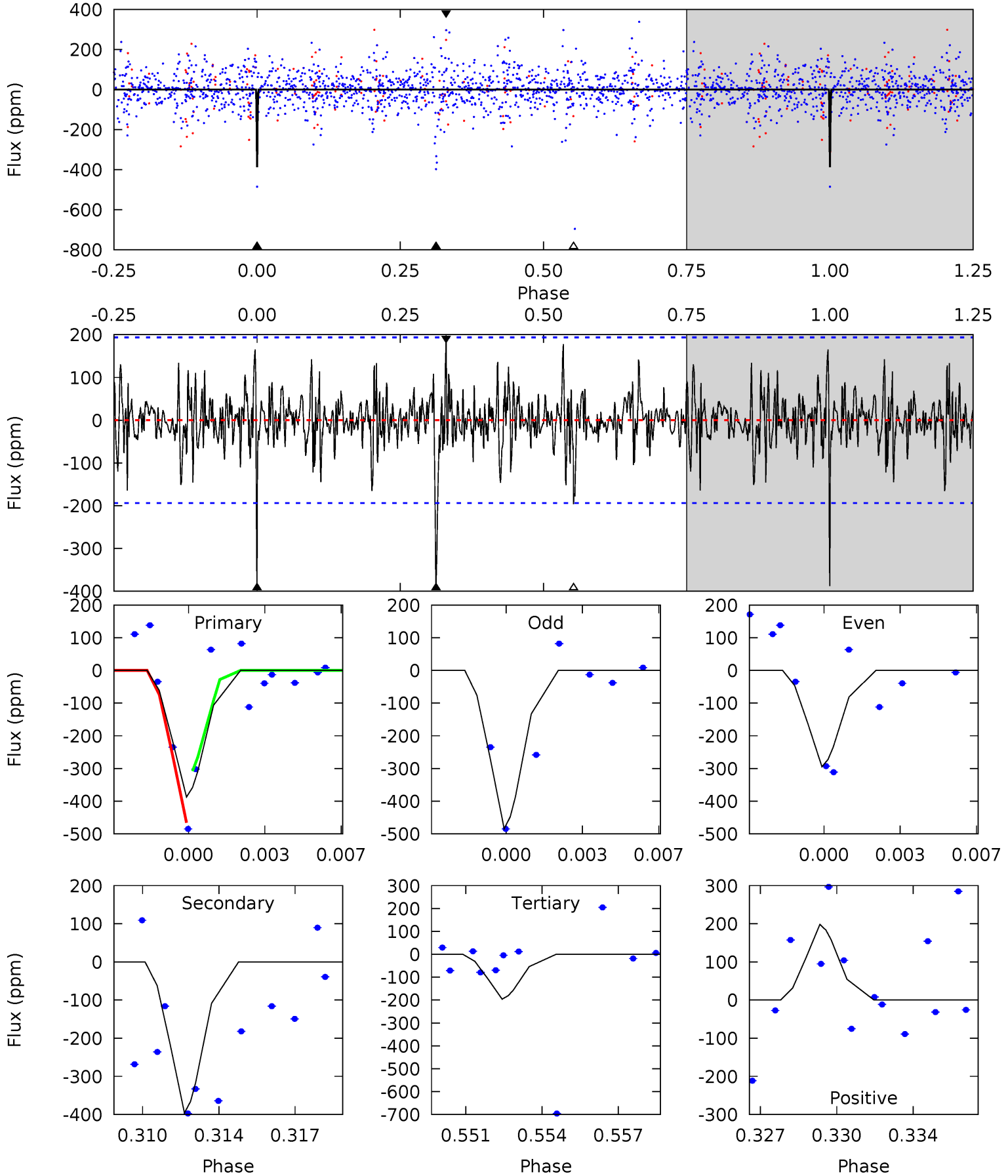
TCE 007287165-02 P= 13.972260 Days $T_0=136.536237$ (BKJD)



DV Model-Shift Uniqueness Test

007287165-02, P = 13.972167 Days, E = 122.581770 Days

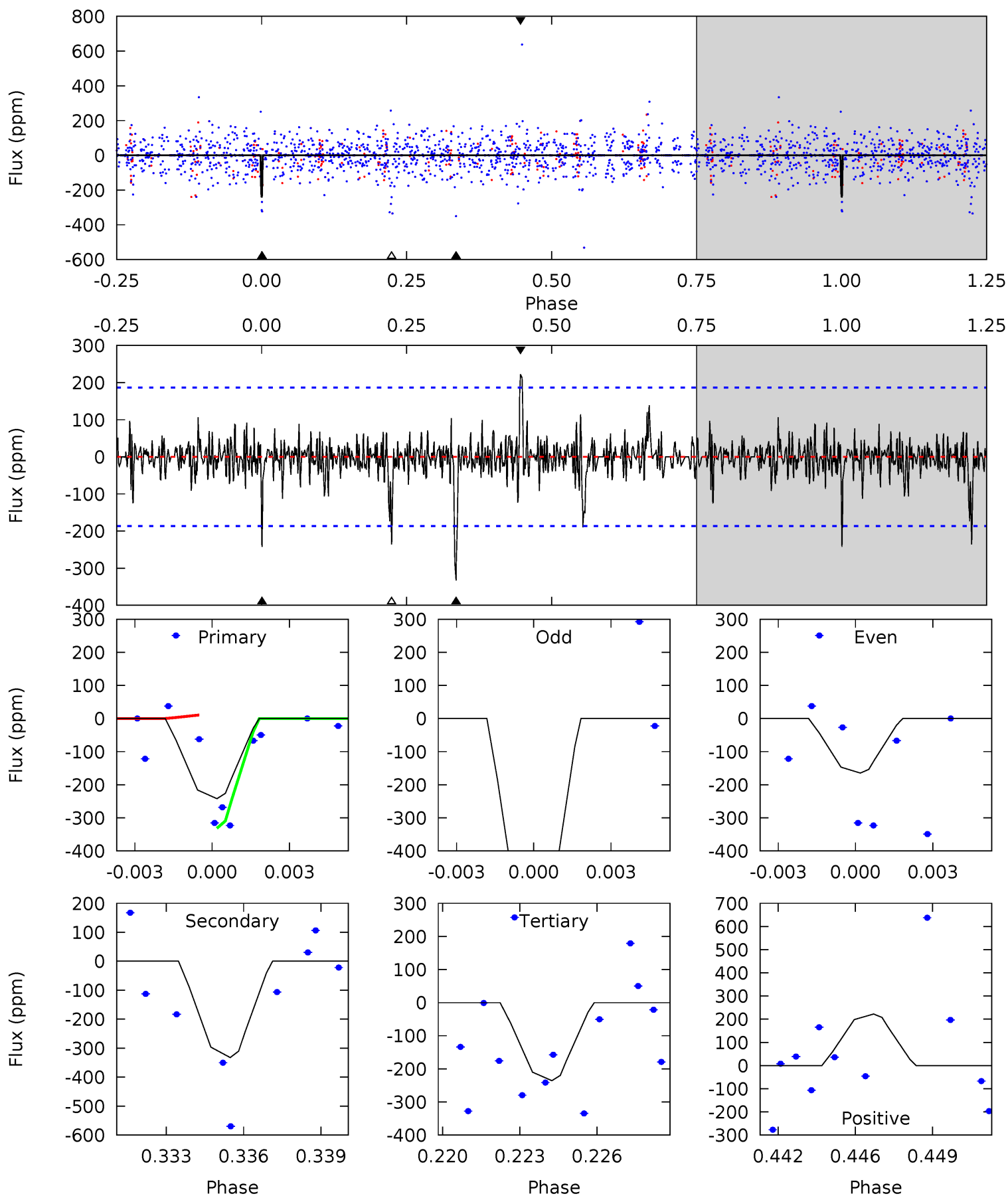
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	10.7	5.30	5.36	5.23	2.93	1.31	5.18	5.11	5.41	5.35	2.57	0.90	0.33	2.29



Alt Model-Shift Uniqueness Test

007287165-02, P = 13.972260 Days, E = 122.563977 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.80	9.34	6.62	6.24	5.23	2.94	1.10	0.19	0.56	2.72	3.10	6.39	1.41	0.40	4.80



Stellar Parameters For KIC 007287165

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7284^{+226}_{-302}	$3.673^{+0.442}_{-0.078}$	$0.020^{+0.200}_{-0.350}$	$3.351^{+0.397}_{-1.588}$	$1.930^{+0.112}_{-0.476}$	$0.072^{+0.315}_{-0.019}$
	+3%/-4%	+12%/-2%	+1000%/-1750%	+12%/-47%	+6%/-25%	+436%/-26%
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 007287165-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-396 ± 37	$7.16^{+5.35}_{-4.14}$	2110^{+151}_{-250}	6788^{+4906}_{-1510}	81^{+381}_{-53}
Alt.	-333 ± 36	$8.23^{+5.79}_{-4.25}$	2111^{+162}_{-237}	6078^{+3173}_{-1203}	53^{+179}_{-35}

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 $A_{obs} \gg 1.0$

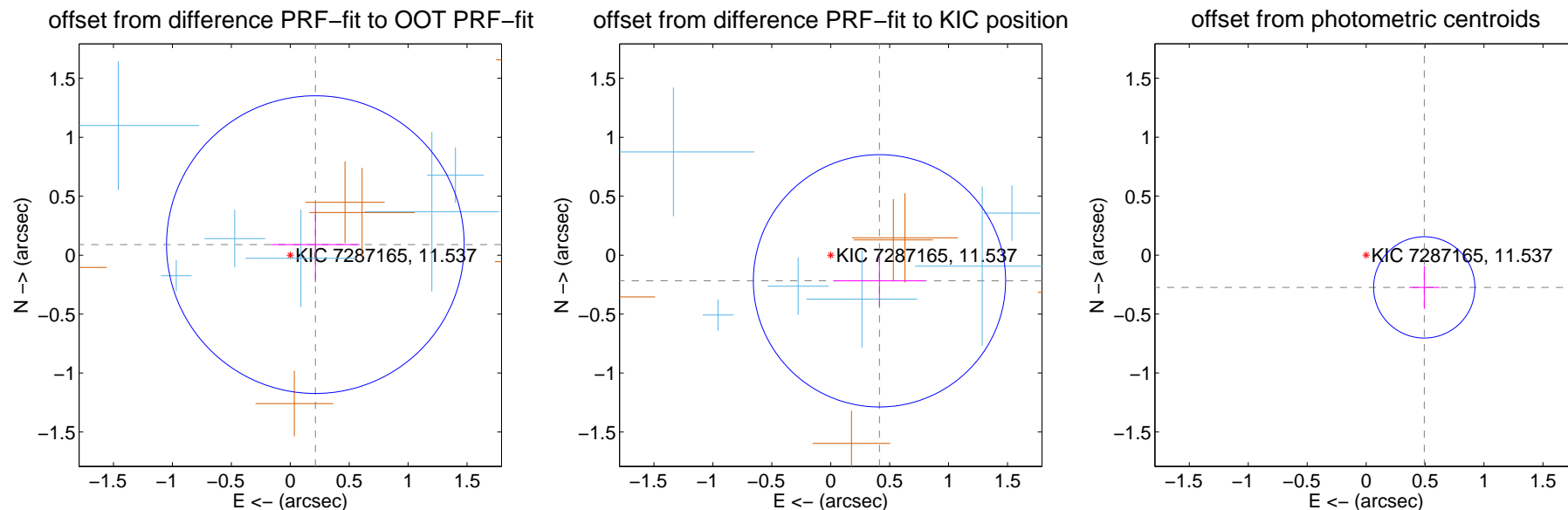
DV Centroid Data

Supplemental centroid analysis for 007287165-02. **Kepler magnitude: 11.54.** Transit SNR 11.17

There are 7 quarters with good PRF difference image offsets

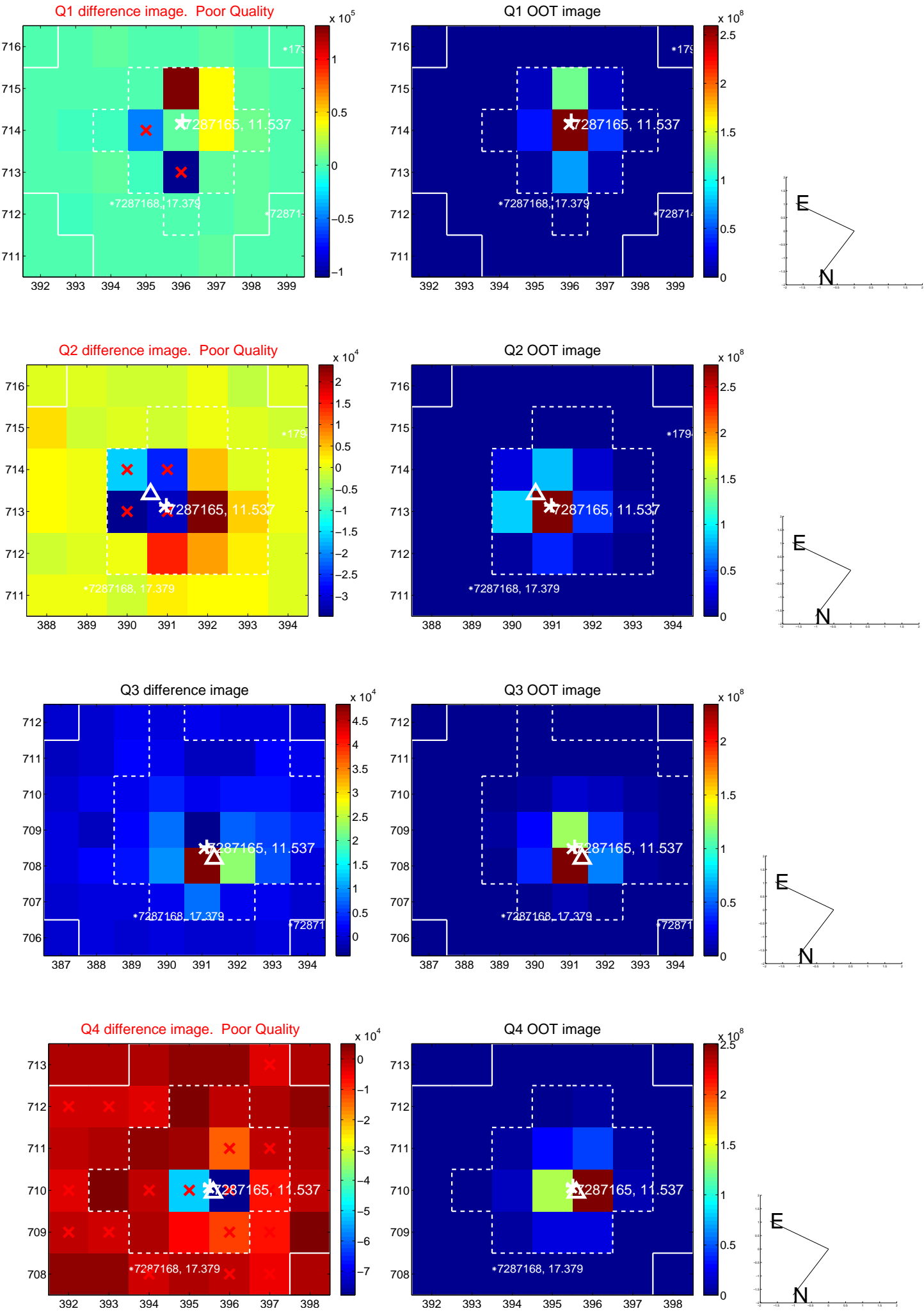
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.231 ± 0.421	0.55	-0.213 ± 0.374	0.089 ± 0.318
PRF-fit source offset from KIC position	0.467 ± 0.357	1.31	-0.414 ± 0.387	-0.218 ± 0.216
photometric centroid source offset	0.56 ± 0.14	3.94	-0.49 ± 0.13	-0.27 ± 0.18

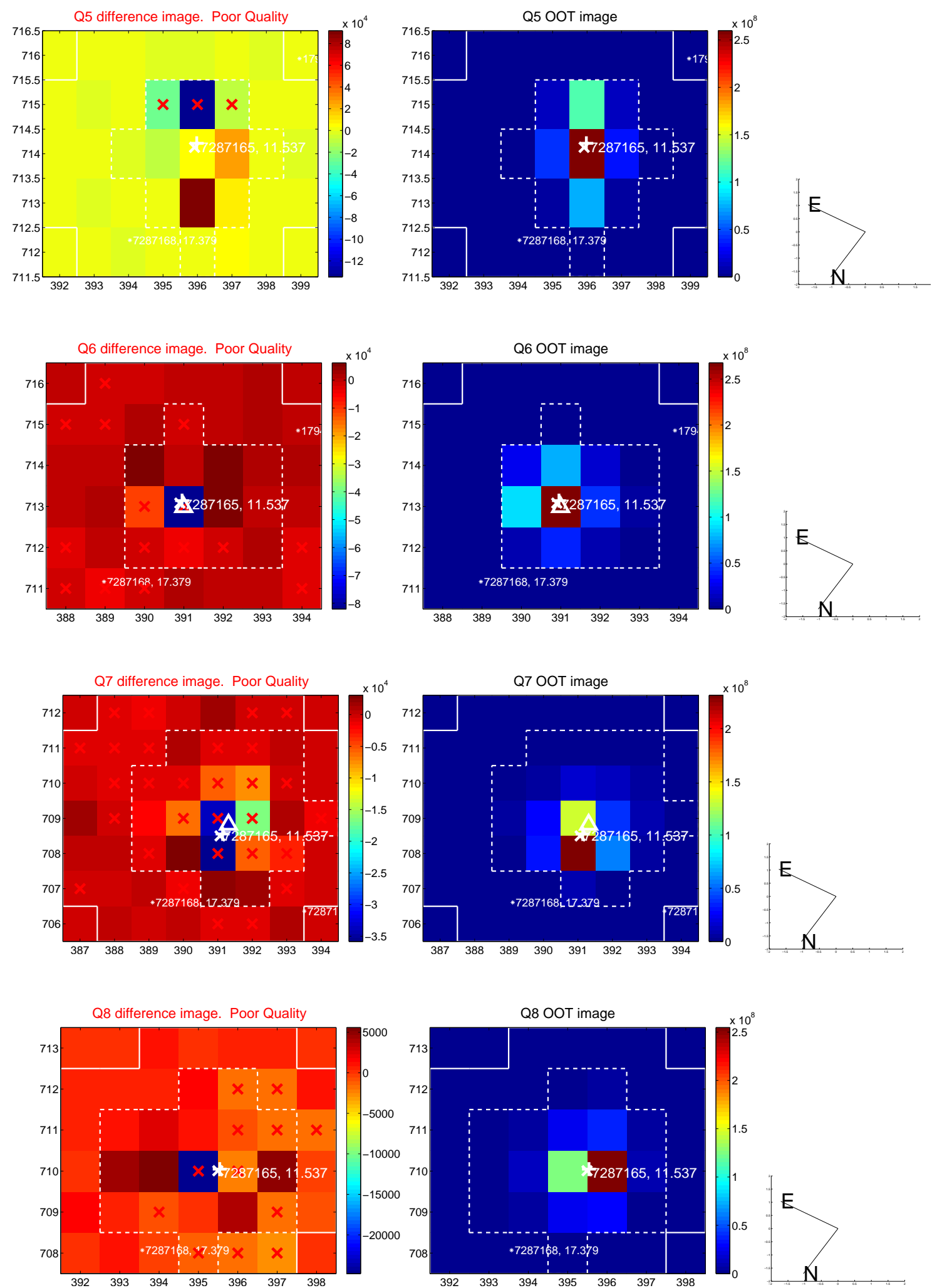


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

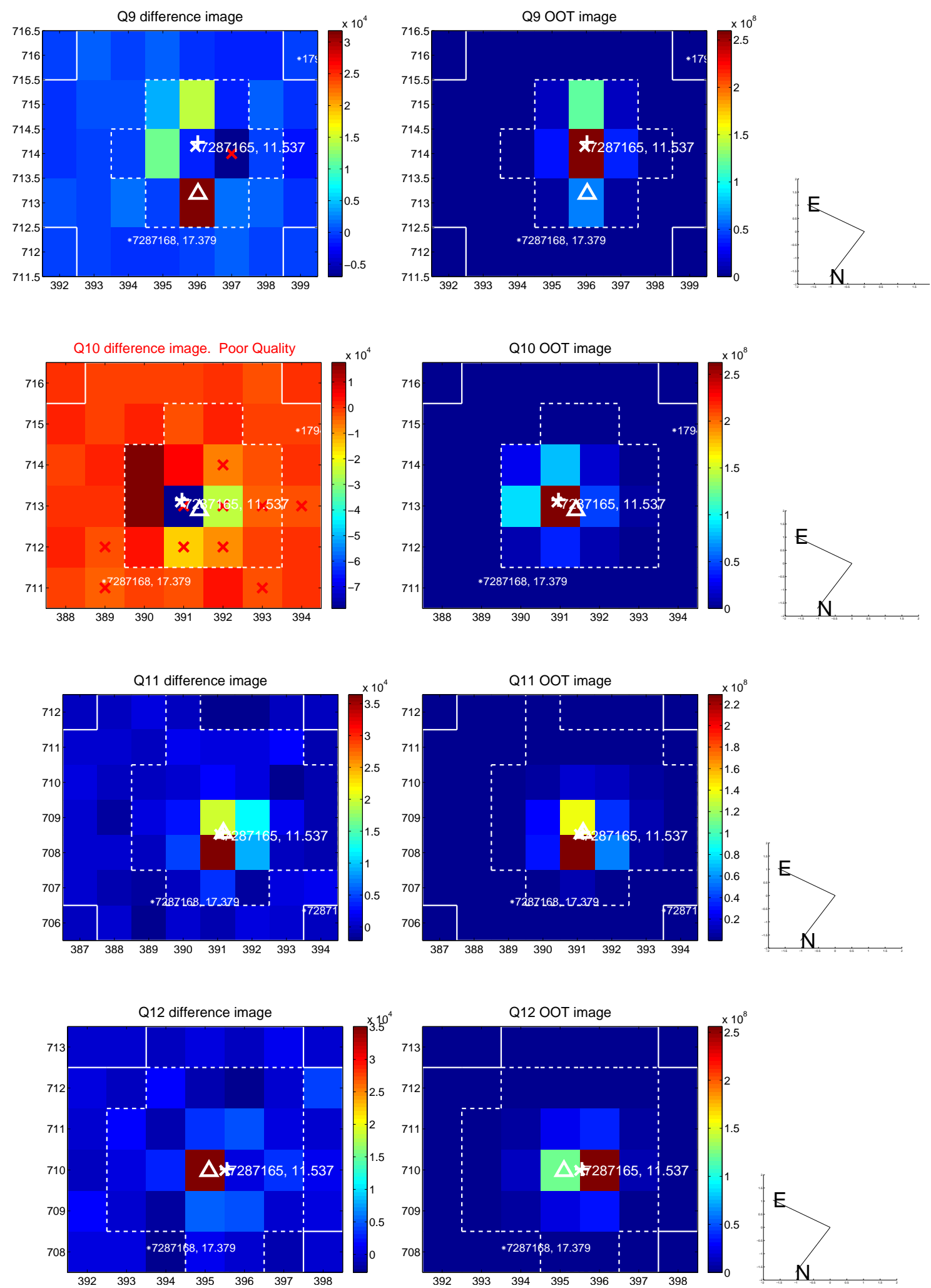
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



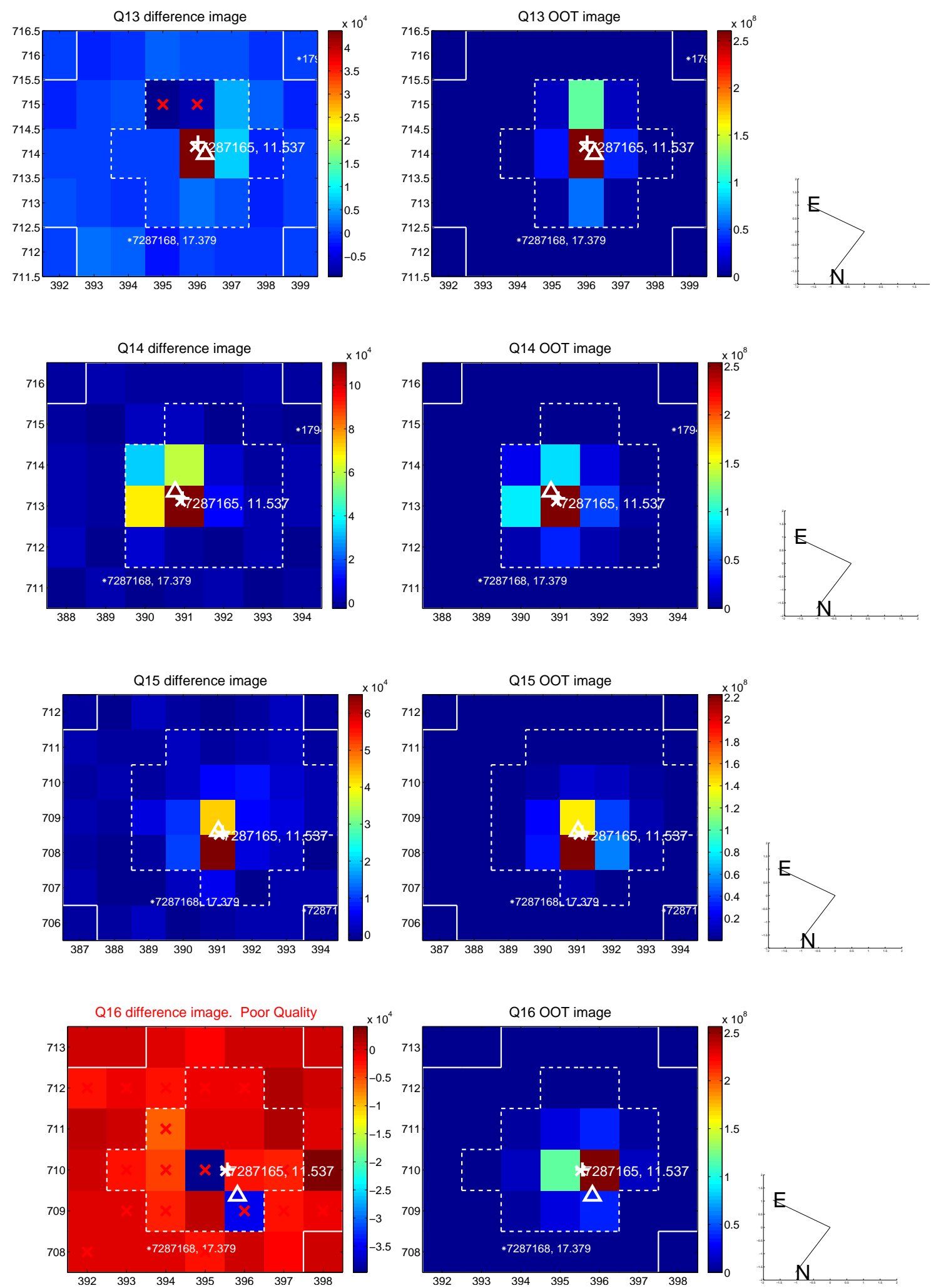
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



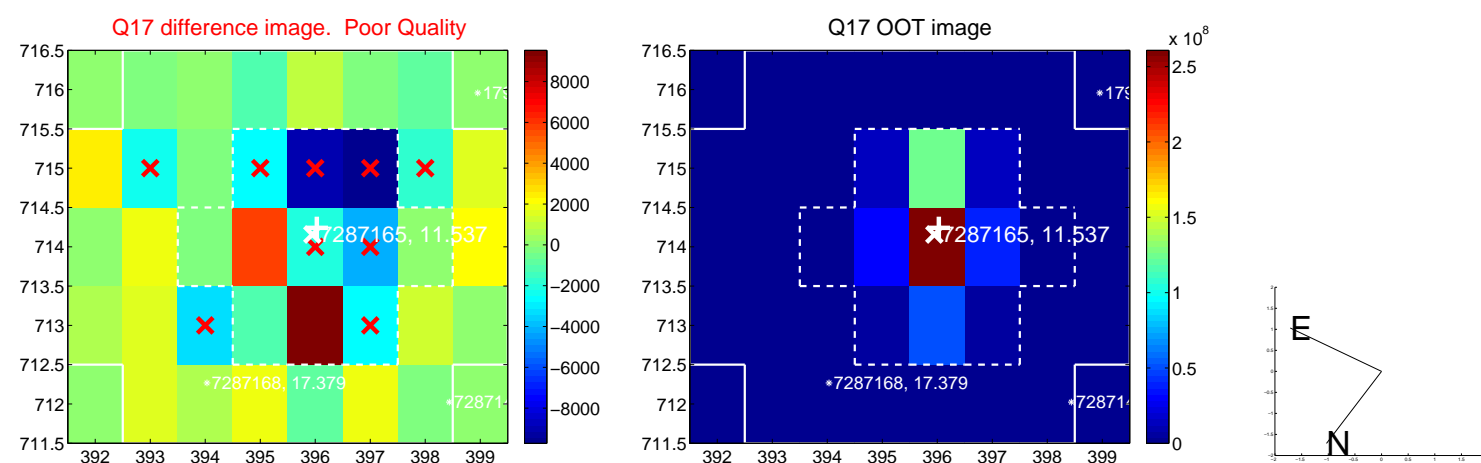
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



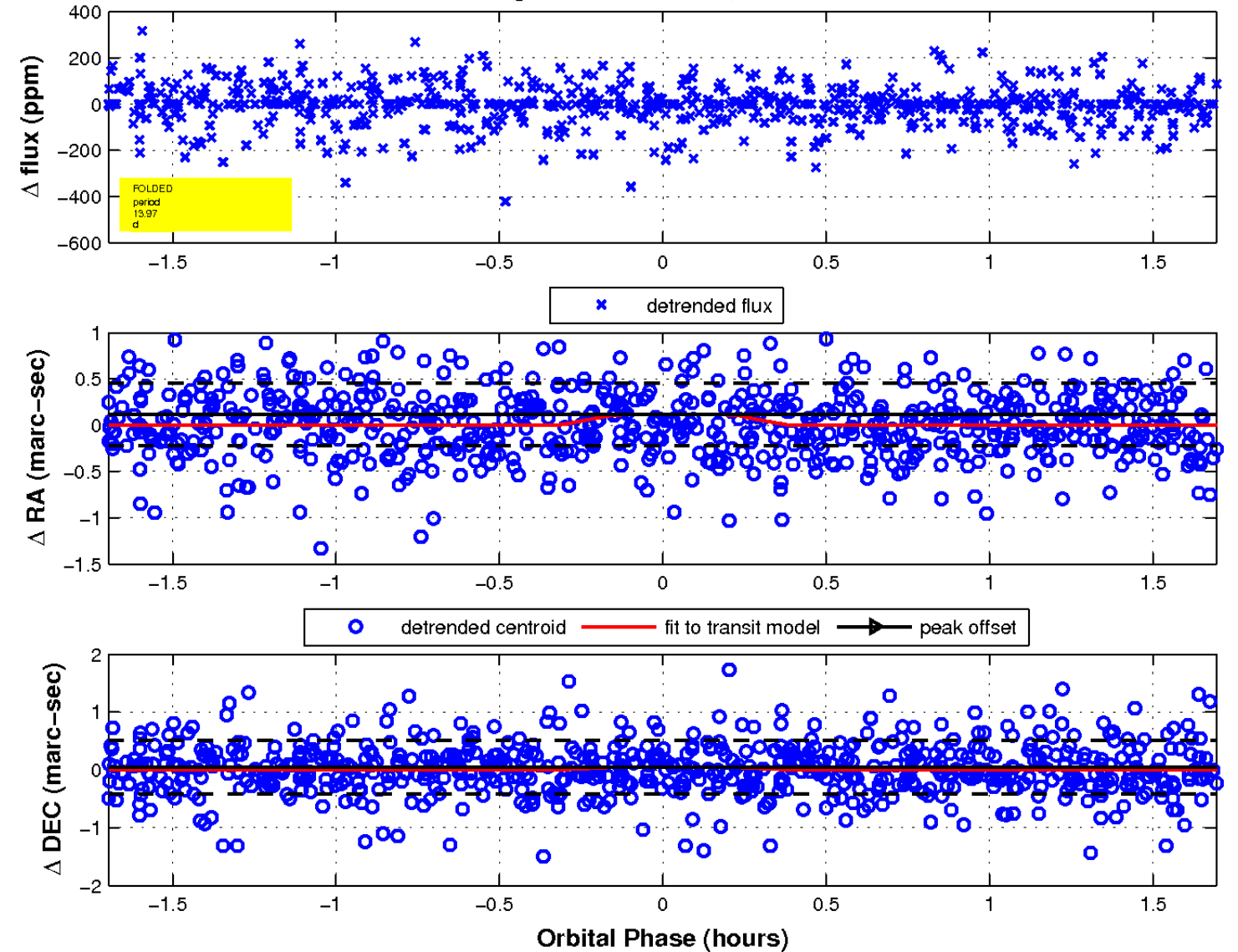
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

