

KIC 002576224

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})
002576224-01	OBS	No	1.629177	132.896891	0.1	1.117	10.1	0.0	2.08	7503	0.07	11029.49
002576224-02	OBS	No	1.629085	133.104533	14.2	7.768	9.1	9.5	2.08	7503	0.84	11030.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002576224-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
002576224-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—SWEET_NTL—LPP_DV—SAME_NTL_PERIOD—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 002576224-01

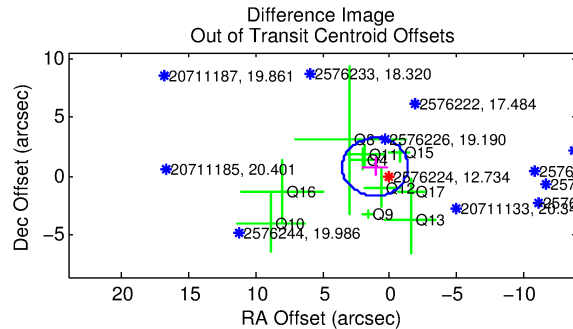
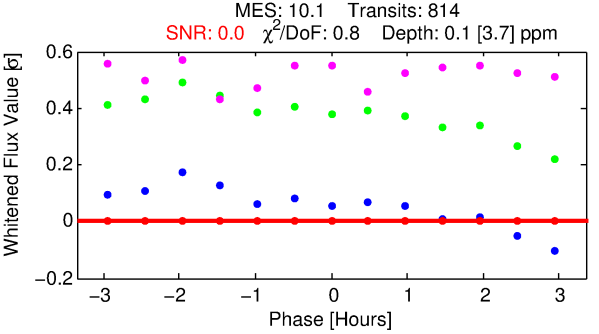
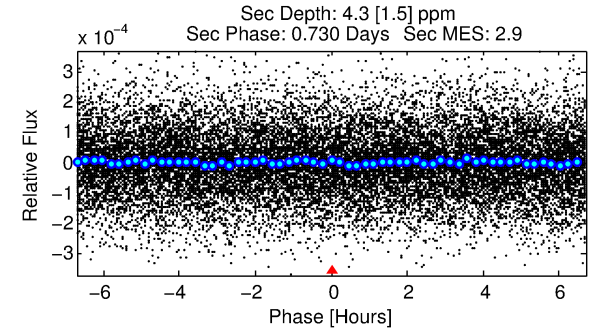
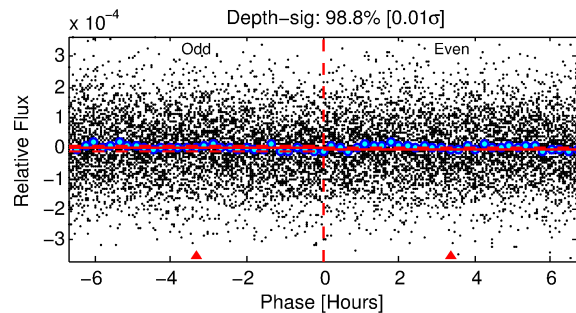
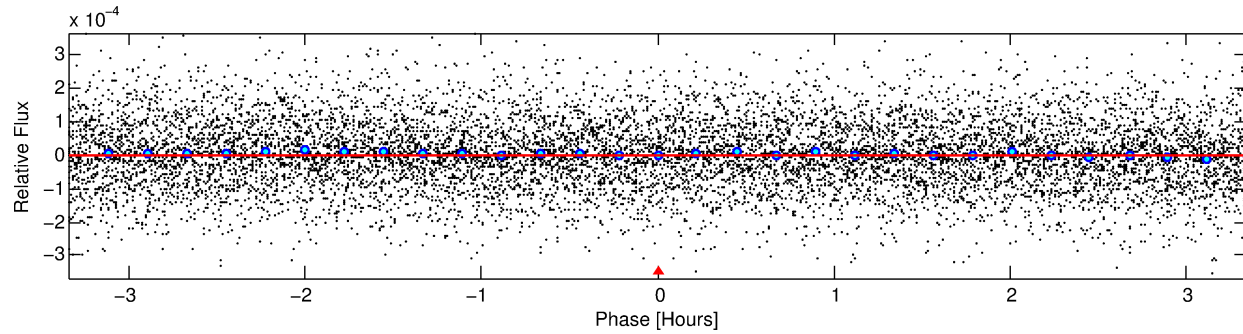
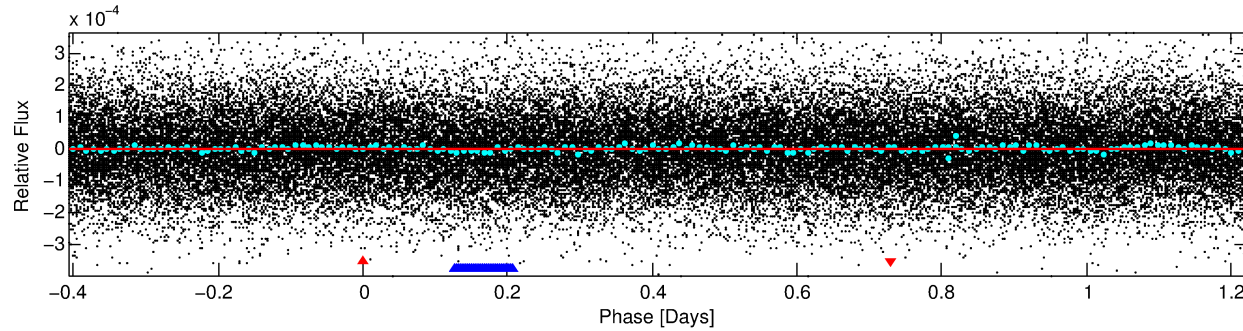
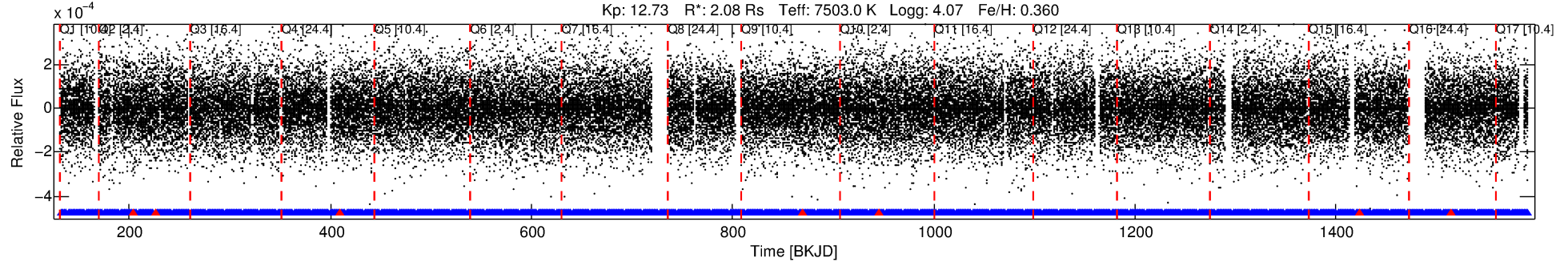
No Significant Match Found

DV One-Page Summary

KIC: 2576224 Candidate: 1 of 2 Period: 1.629 d

KOI: K04465 Corr: No Ephemeris Match

Kp: 12.73 R*: 2.08 Rs Teff: 7503.0 K Logg: 4.07 Fe/H: 0.360



DV Fit Results:

Period = 1.62918 [0.00304] d
Epoch = 132.8969 [0.5896] BKJD
Rp/R* = 0.0003 [0.0059]
a/R* = 7.60 [76.39]
b = 0.74 [7.06]
Seff = 11029.49 [4121.10]
Teff = 2613 [244] K
Rp = 0.07 [1.33] Re
a = 0.0333 [0.0076] AU
Ag = 504.93 [18573.69] [0.03σ]
Teffp = 19152 [176126] K [0.09σ]

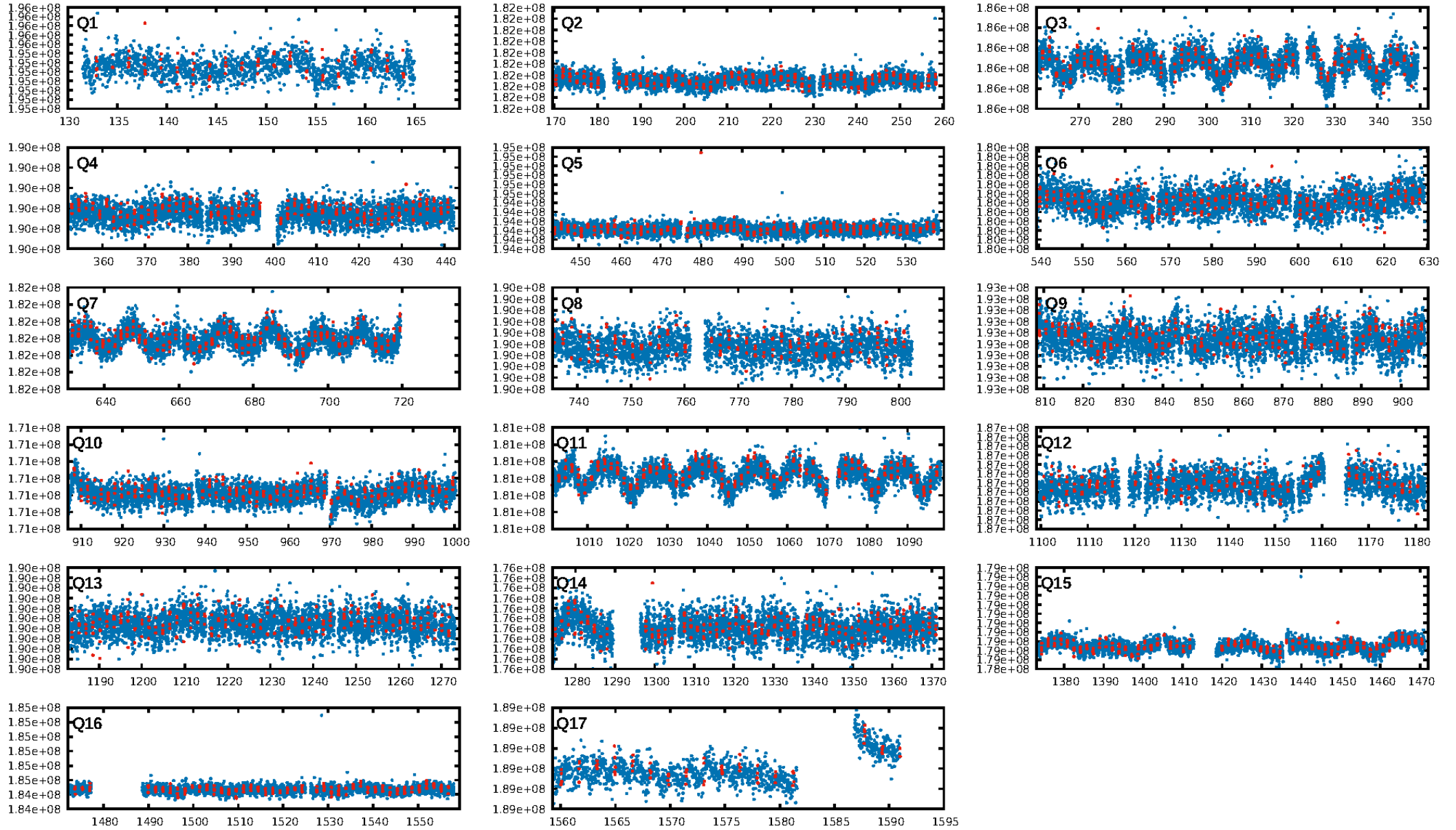
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.33e-21
RollingBand-fgt: 0.99 [770/777]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 1.353 arcsec [1.66σ]
KicOffset-rm: 1.362 arcsec [1.62σ]
OotOffset-st: 1/2/4/3 [10]
KicOffset-st: 1/2/4/3 [10]
DiffImageQuality-fgm: 0.00 [0/10]
DiffImageOverlap-fno: 0.00 [0/17]

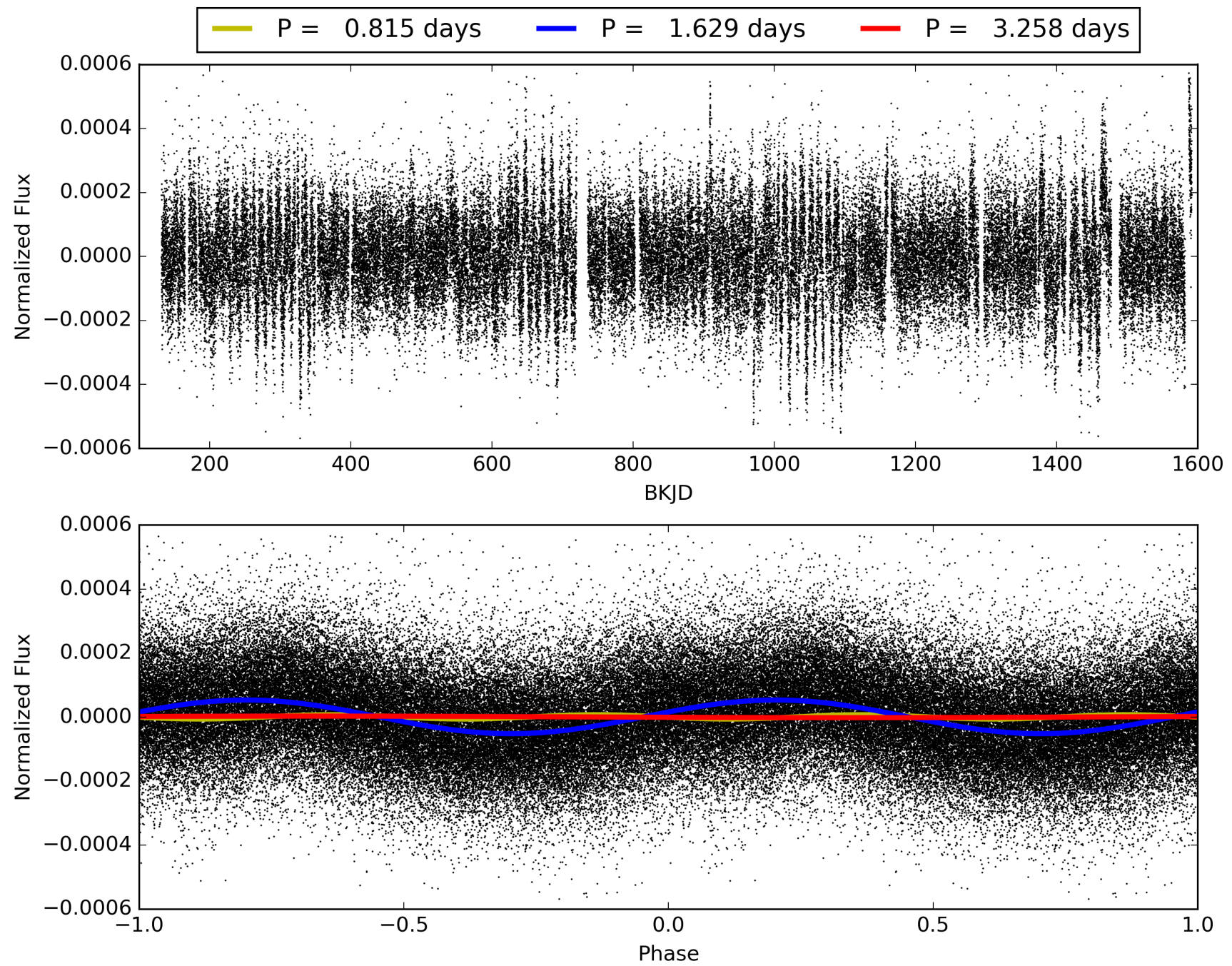
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:44:13 Z

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

TCE 002576224-01, PDC Light Curves

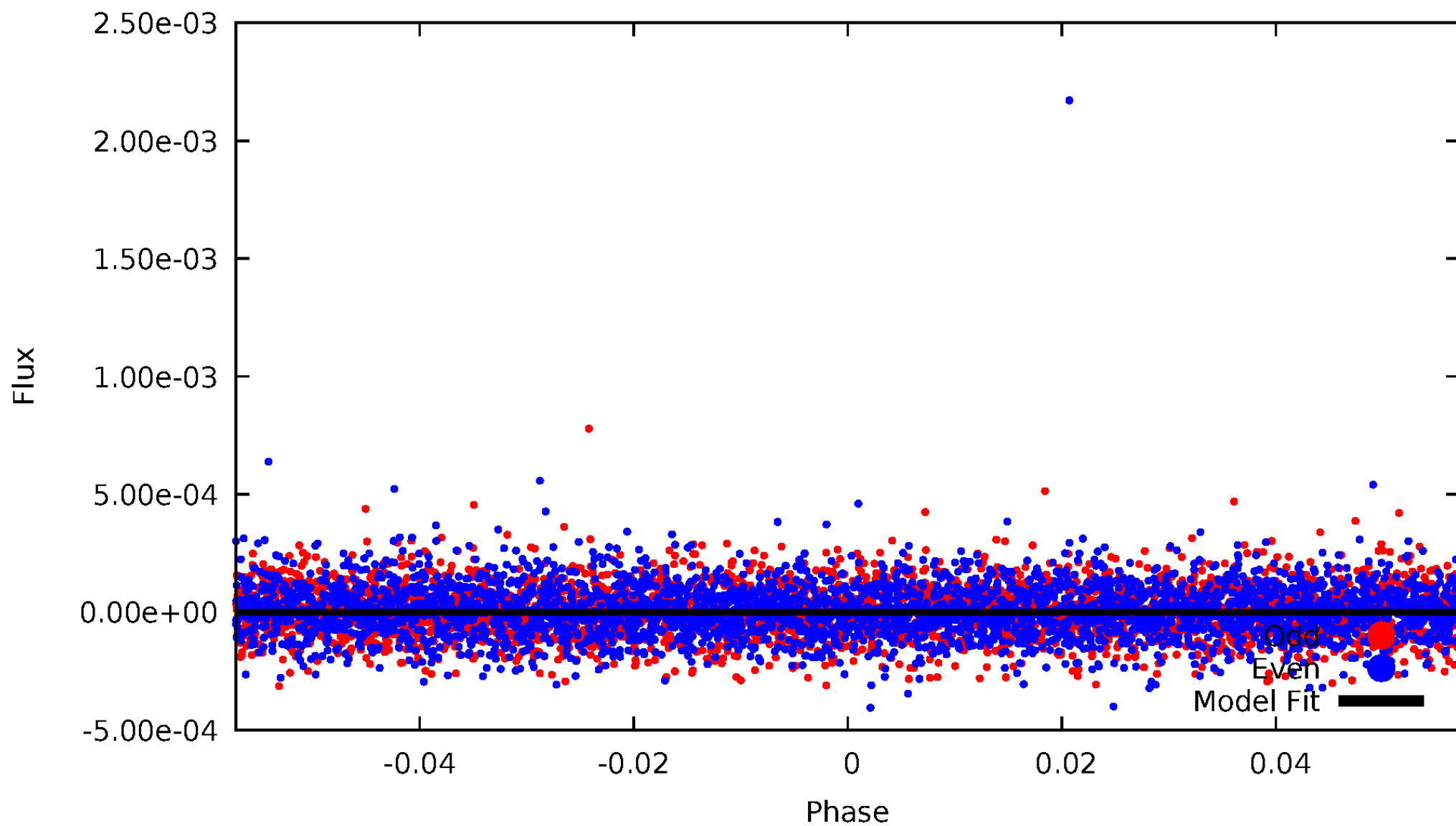


TCE 002576224-01



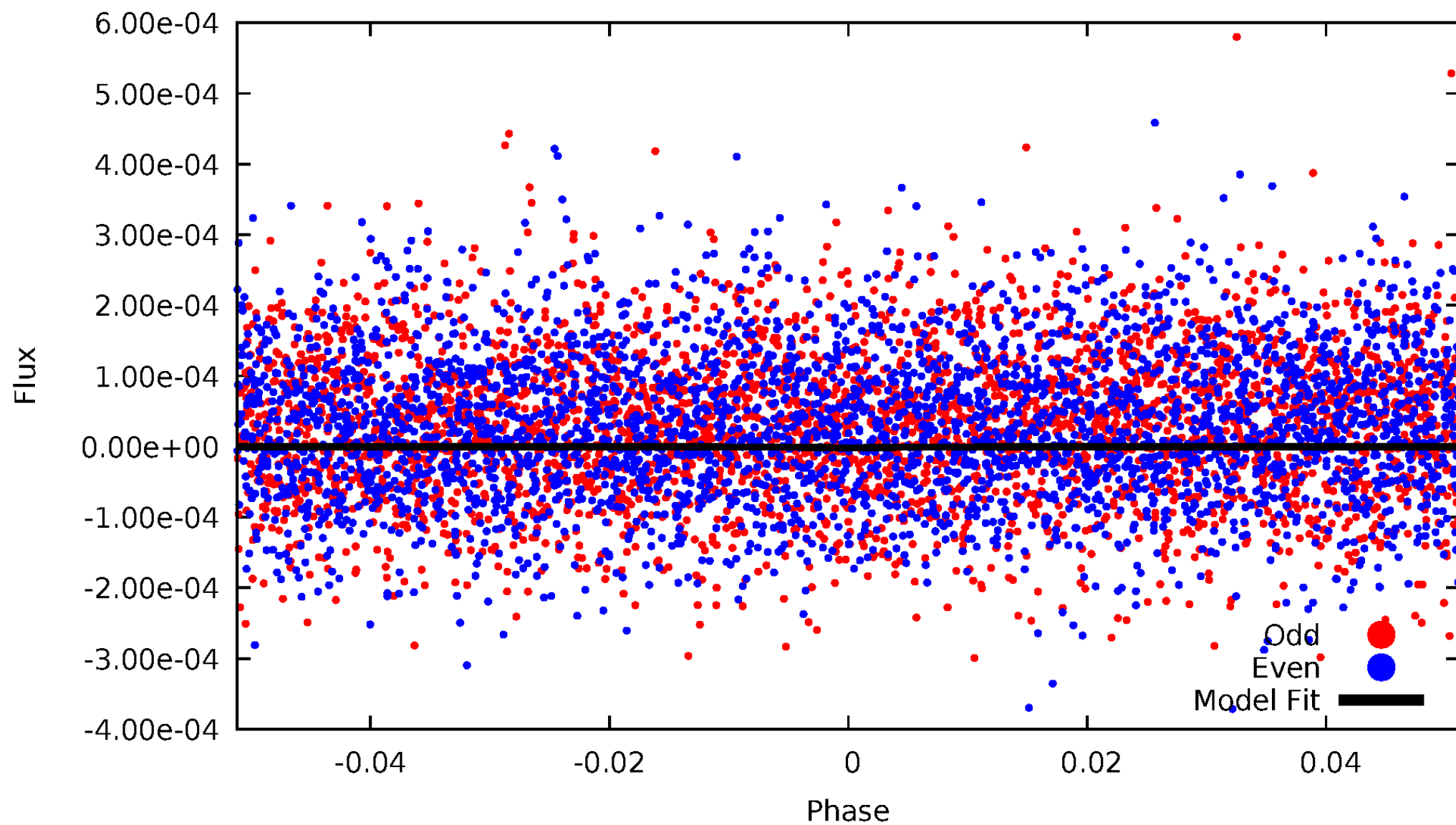
DV Odd/Even

TCE 002576224-01



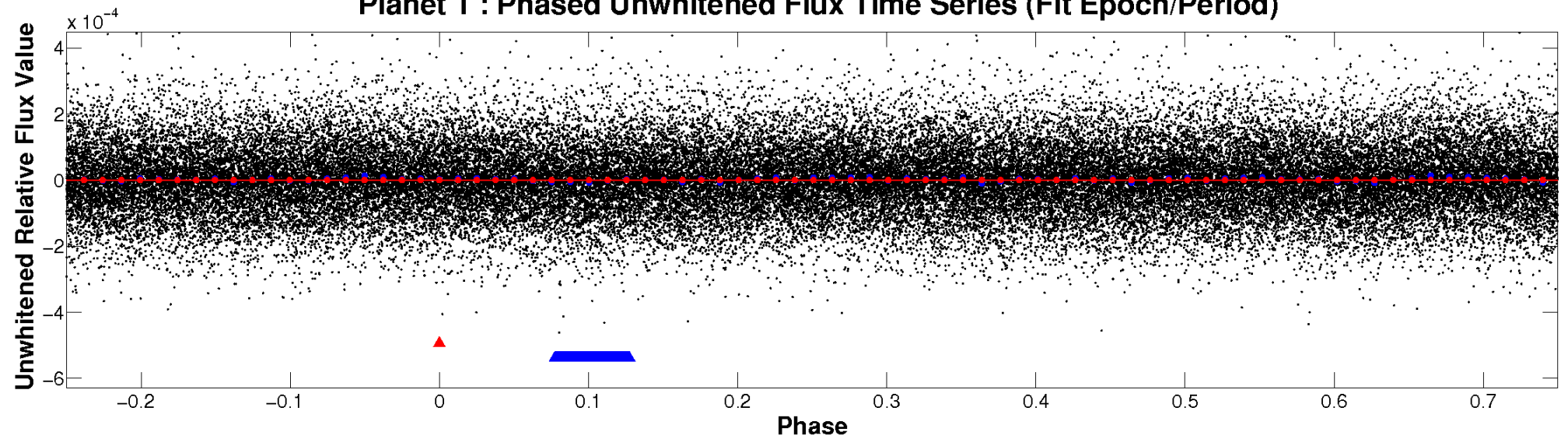
ALT Odd/Even

TCE 002576224-01

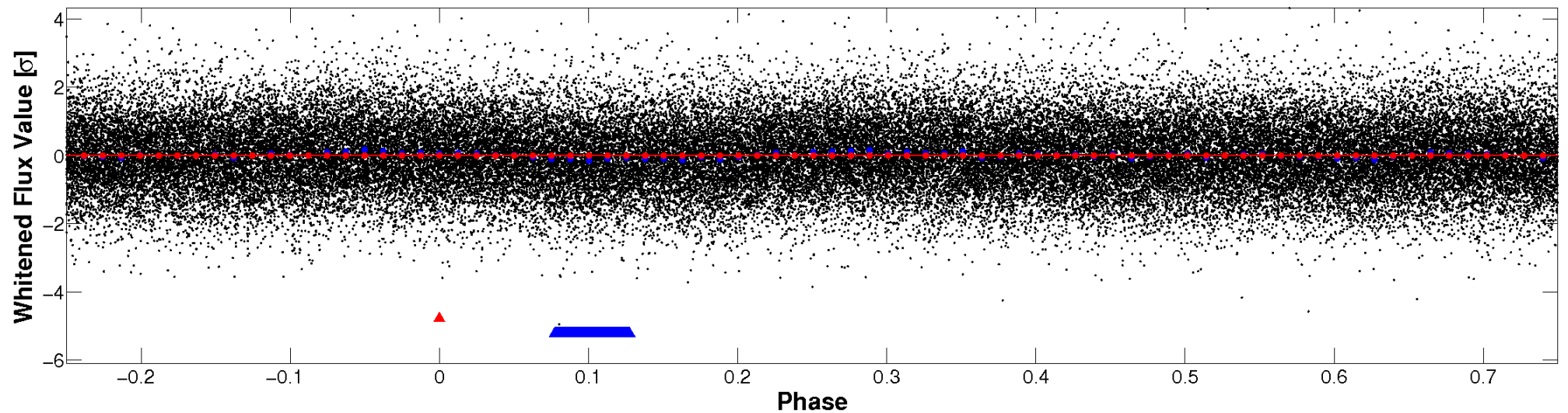


Non-Whitened Vs. Whitened Light Curve

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

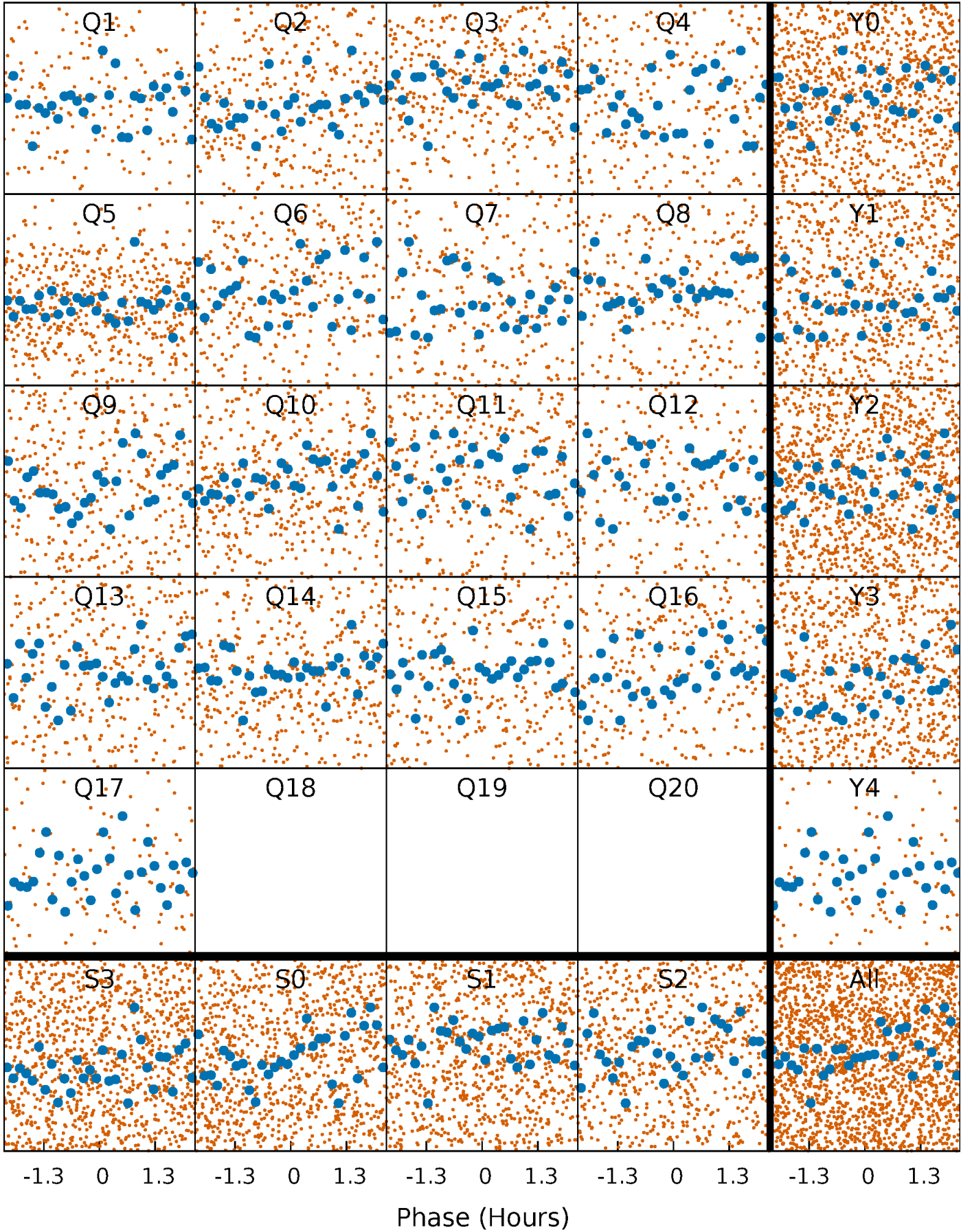


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



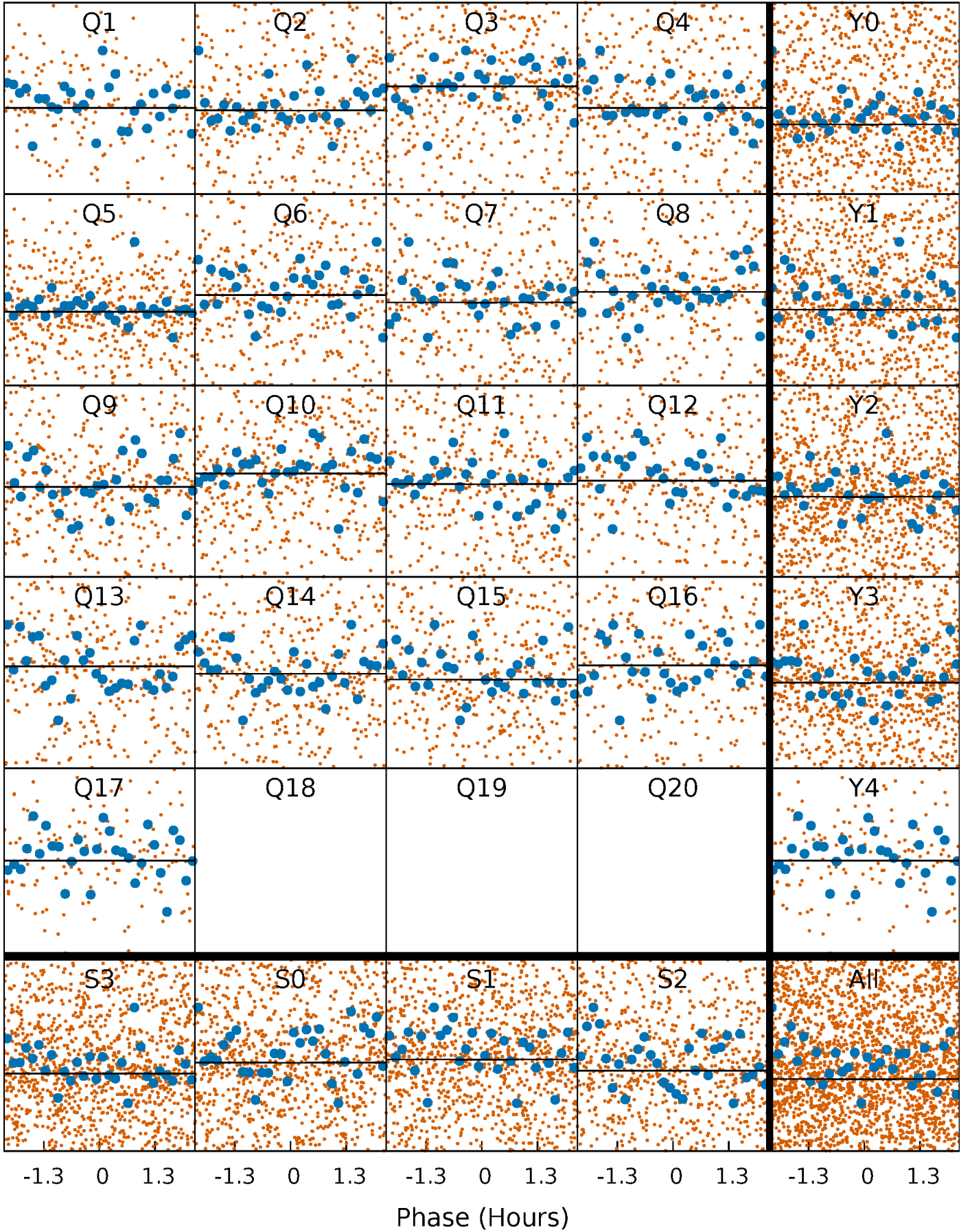
PDC Quarter-Phased Transit Curves

TCE 002576224-01 P= 1.629177 Days $T_0=132.896891$ (BKJD)



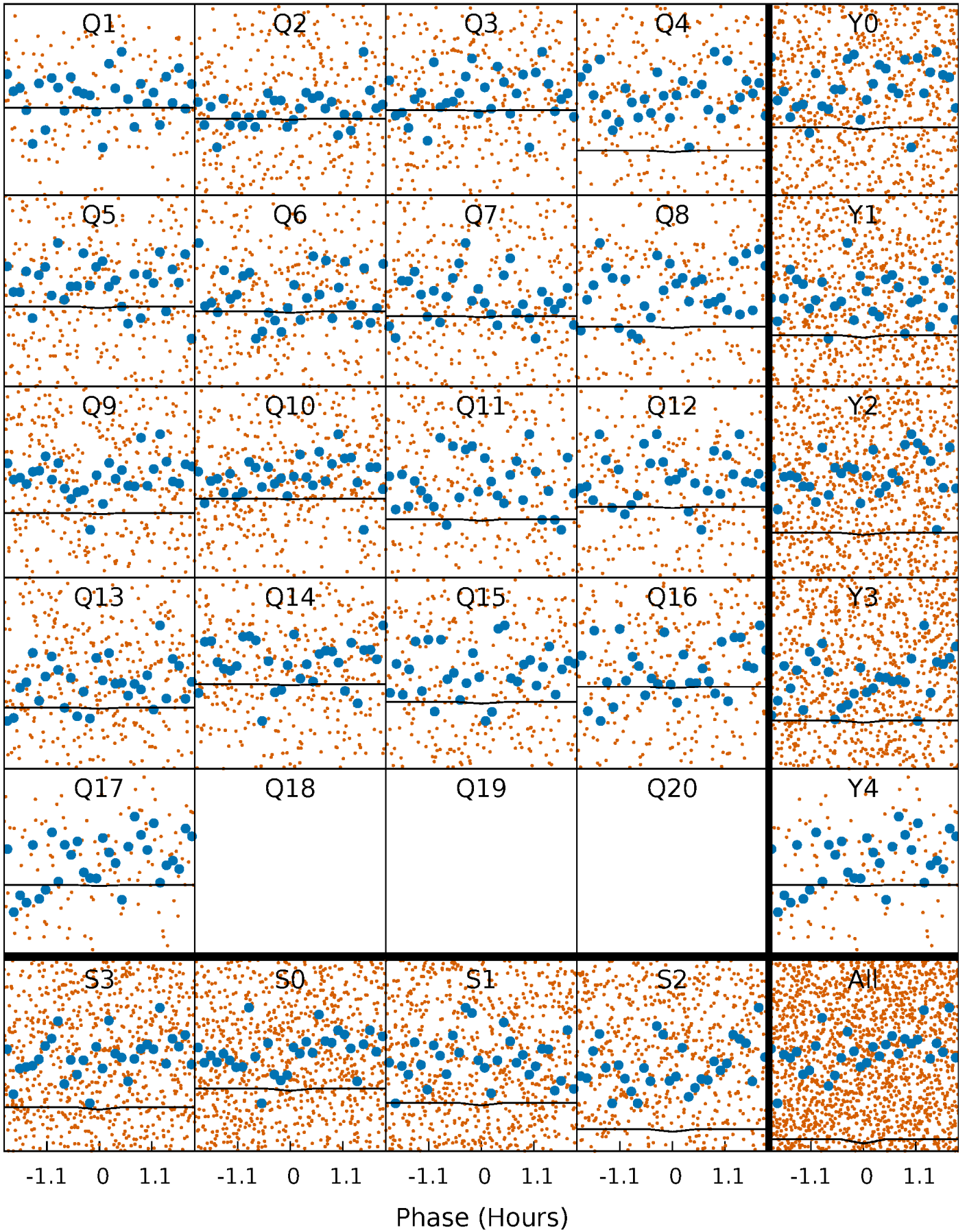
DV Quarter-Phased Transit Curves

TCE 002576224-01 $P = 1.629177$ Days $T_0 = 132.896891$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

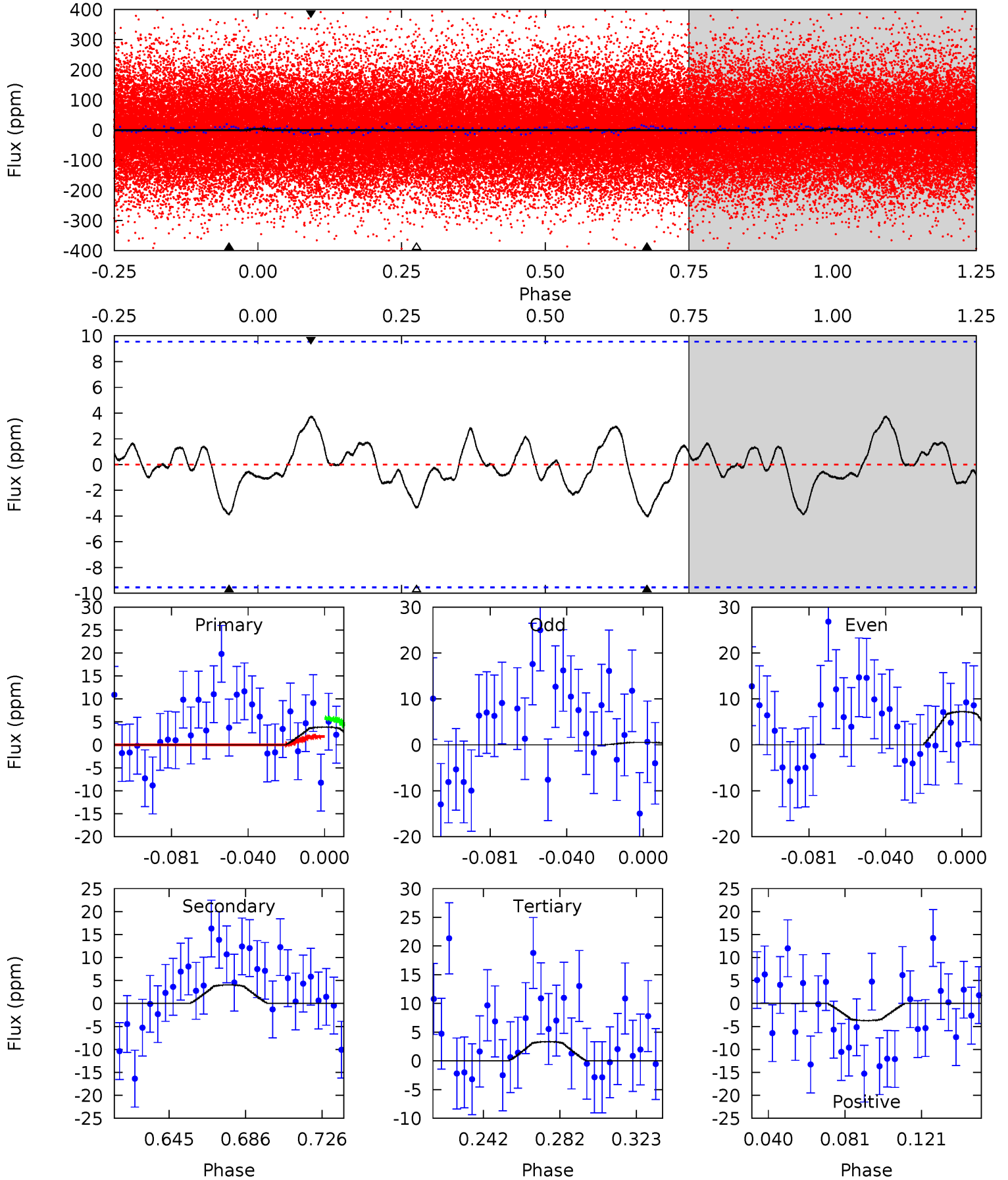
TCE 002576224-01 P= 1.629150 Days $T_0=132.892854$ (BKJD)



DV Model-Shift Uniqueness Test

002576224-01, P = 1.629177 Days, E = 131.267714 Days

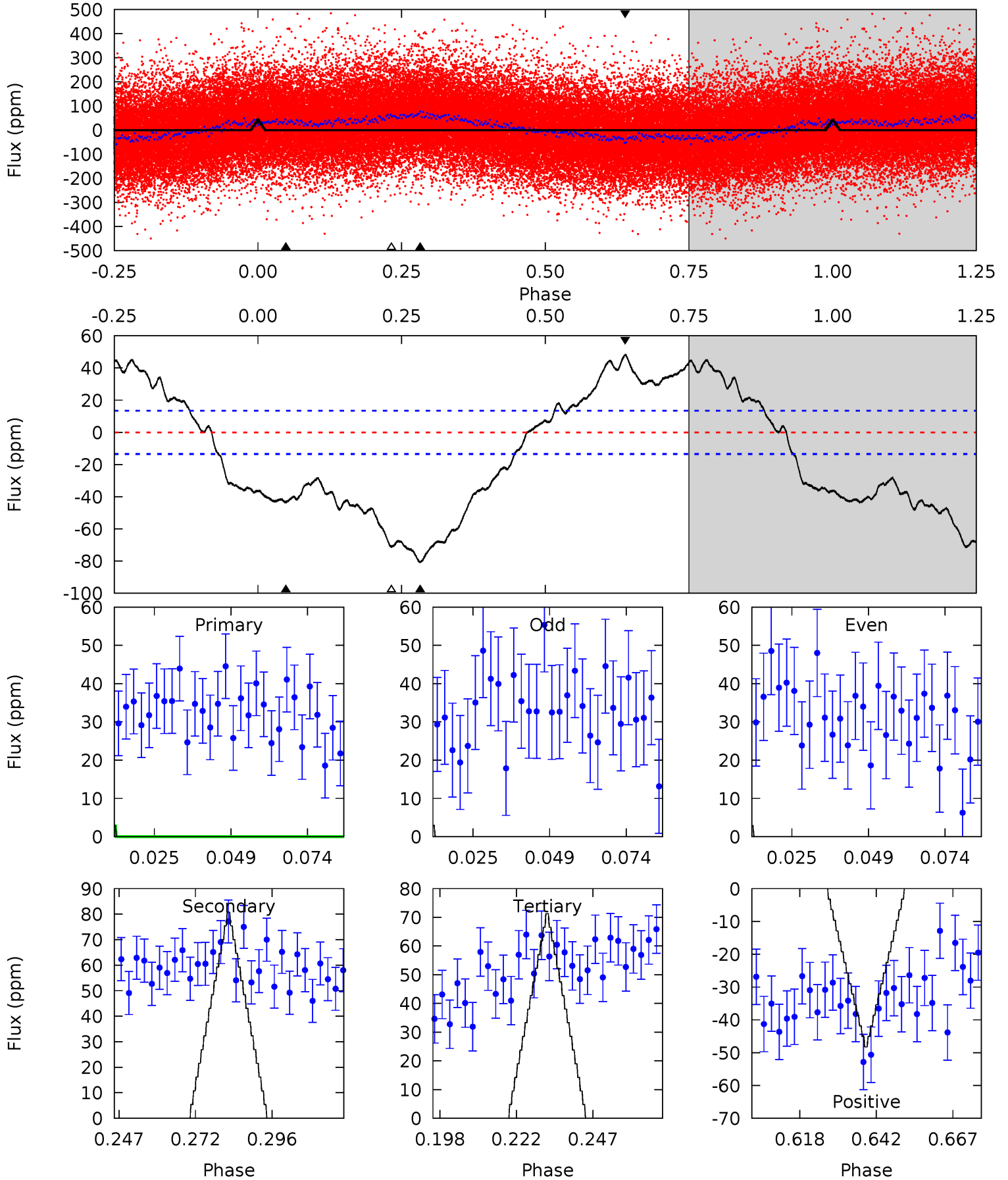
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.93	2.01	1.67	1.86	4.75	2.05	0.70	0.26	0.06	0.34	0.15	1.67	0.62	0.48	0.98



Alt Model-Shift Uniqueness Test

002576224-01, P = 1.629150 Days, E = 131.263704 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.7	29.1	25.7	17.4	4.85	2.25	13.2	-10.00	-1.70	3.43	11.7	0.17	1.07	0.37	0.42



Stellar Parameters For KIC 002576224

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7503^{+206}_{-324}	$4.072^{+0.120}_{-0.180}$	$0.360^{+0.050}_{-0.450}$	$2.075^{+0.569}_{-0.379}$	$1.852^{+0.161}_{-0.299}$	$0.292^{+0.190}_{-0.133}$
	+3%/-4%	+3%/-4%	+14%/-125%	+27%/-18%	+9%/-16%	+65%/-45%
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 002576224-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4 ± 2	$0.92^{+0.99}_{-0.62}$	3655^{+242}_{-236}	5000^{+4778}_{-1743}	$2.560^{+24.208}_{-2.044}$
Alt.	-81 ± 3	$1.05^{+1.04}_{-0.73}$	3683^{+267}_{-235}	11978^{+34367}_{-4551}	45^{+422}_{-34}

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

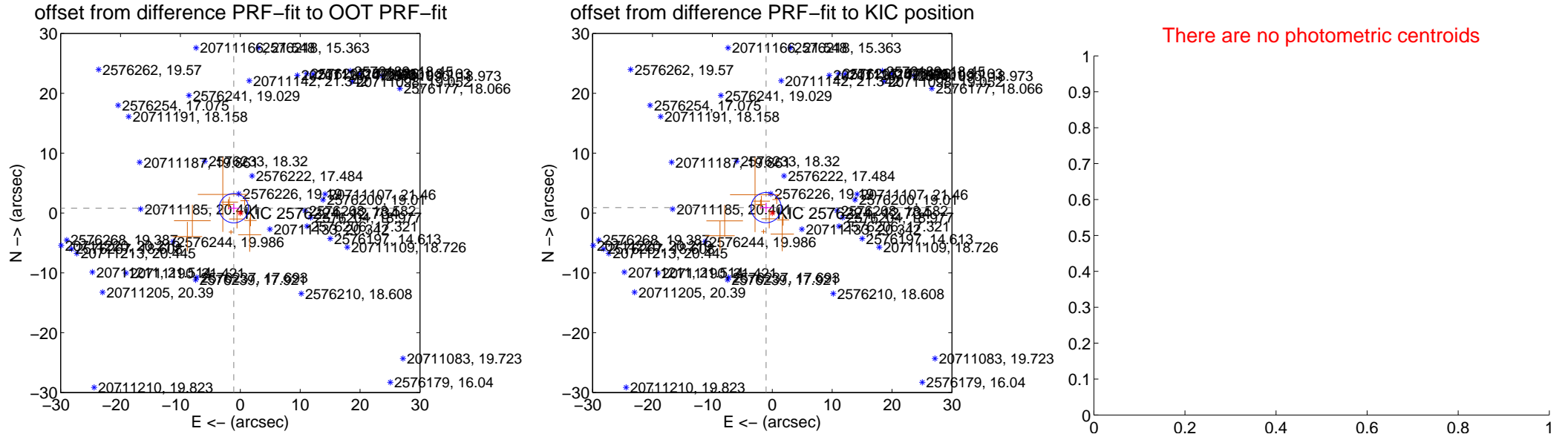
DV Centroid Data

Supplemental centroid analysis for 002576224-01. Kepler magnitude: 12.73. Transit SNR 0.03

There are 0 quarters with good PRF difference image offsets

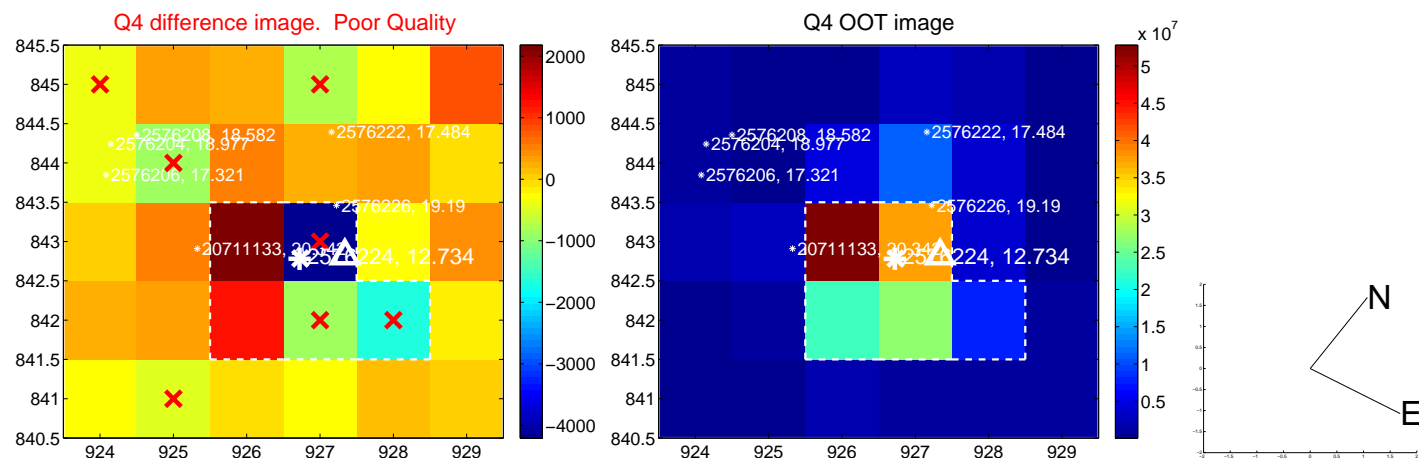
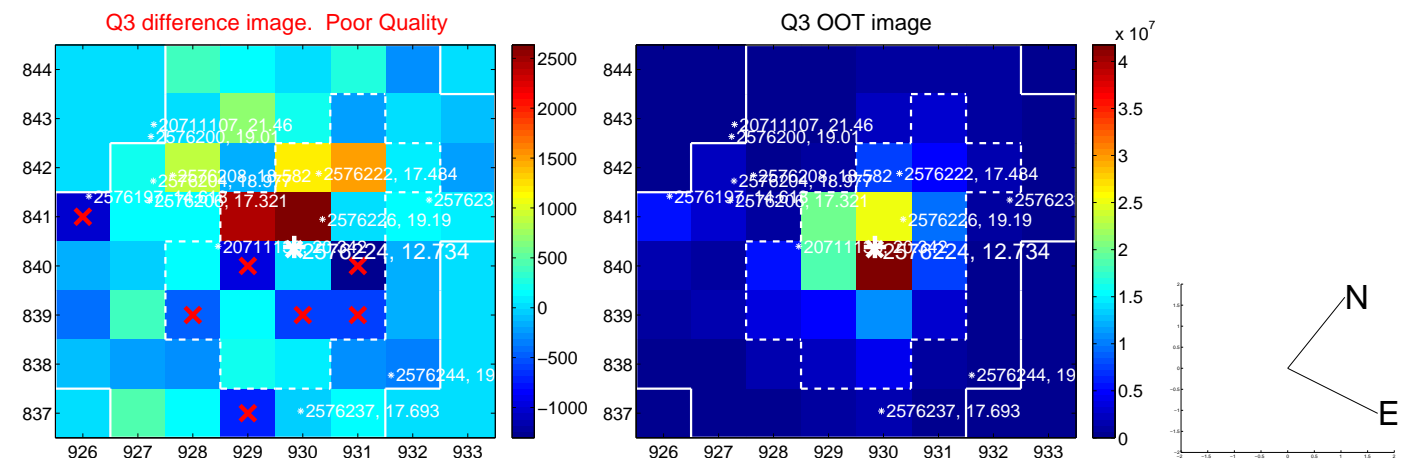
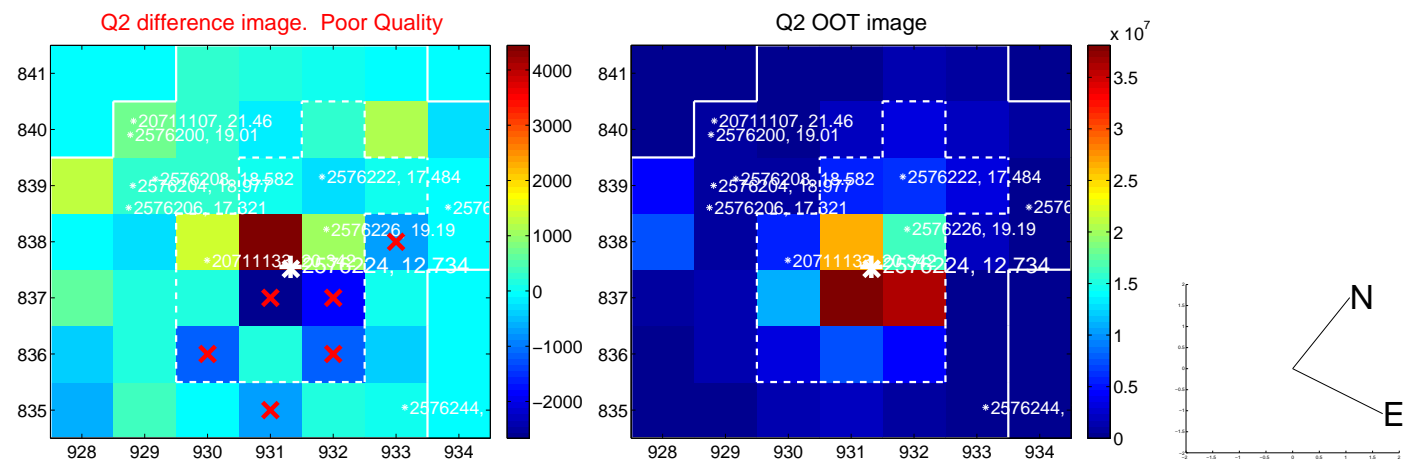
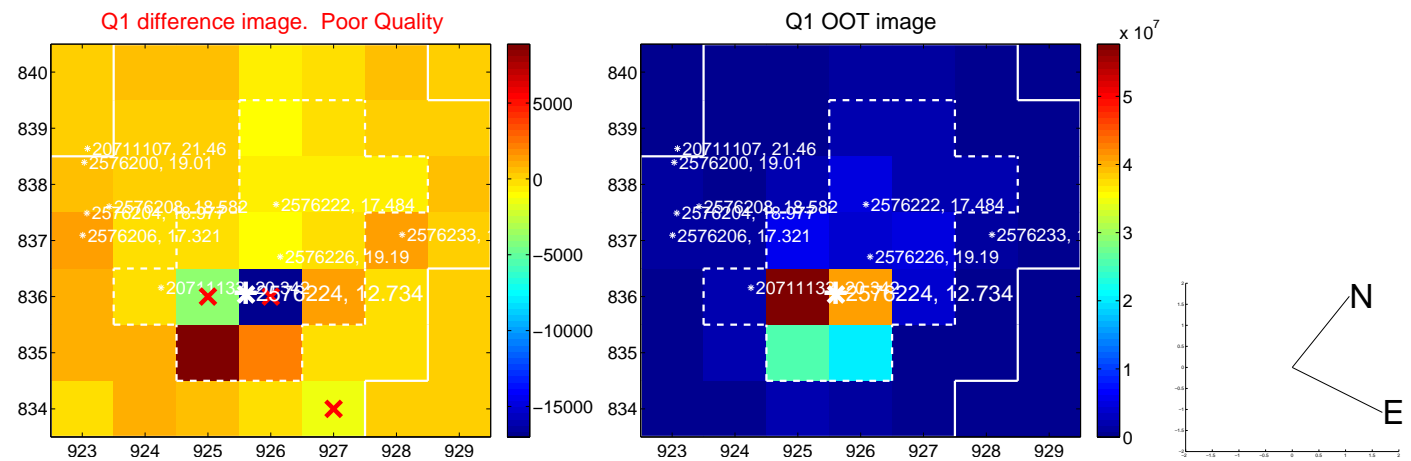
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.353 ± 0.817	1.66	1.086 ± 0.925	0.806 ± 0.715
PRF-fit source offset from KIC position	1.362 ± 0.842	1.62	1.023 ± 1.092	0.899 ± 0.822
photometric centroid source offset	—	—	—	—

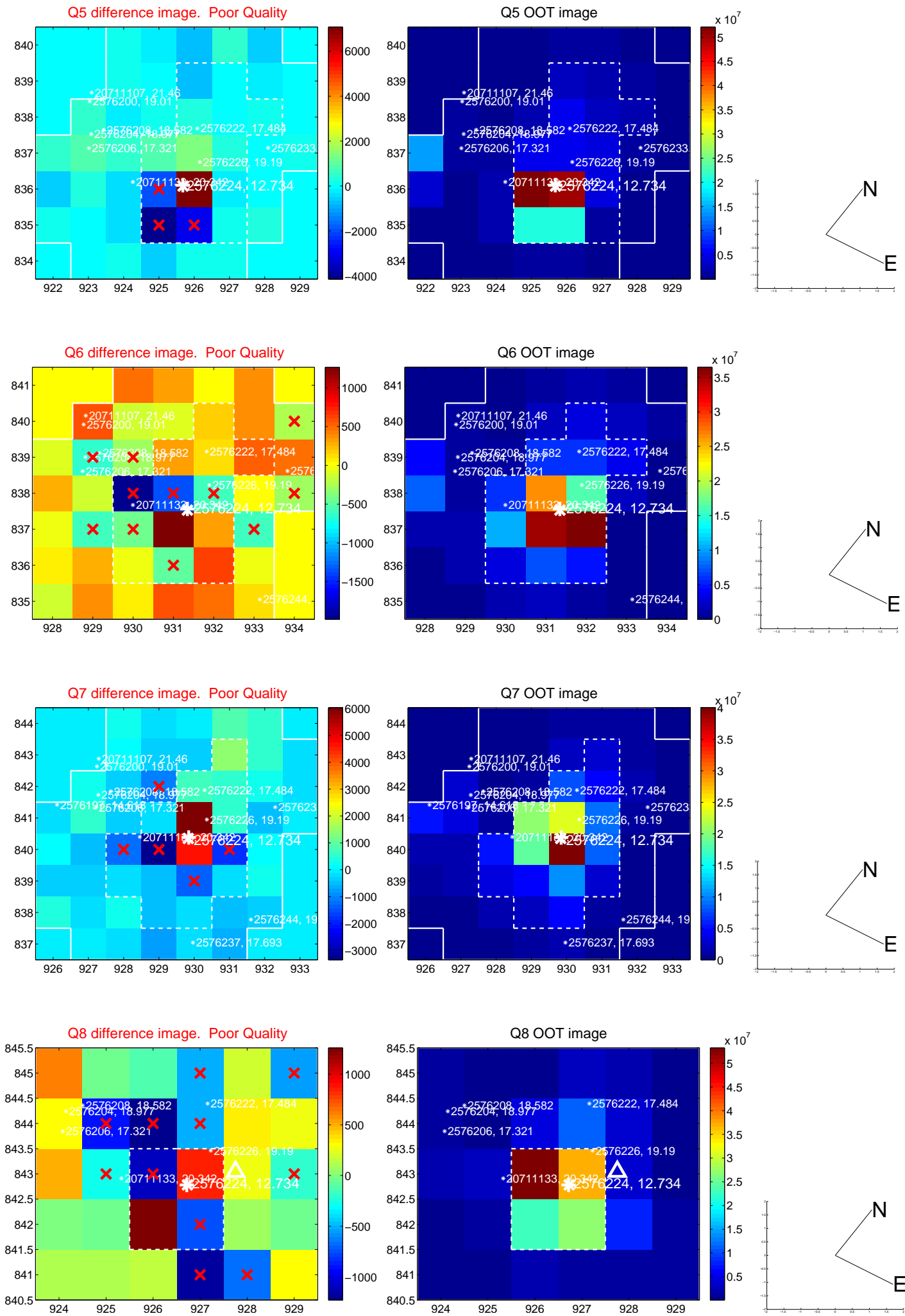


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

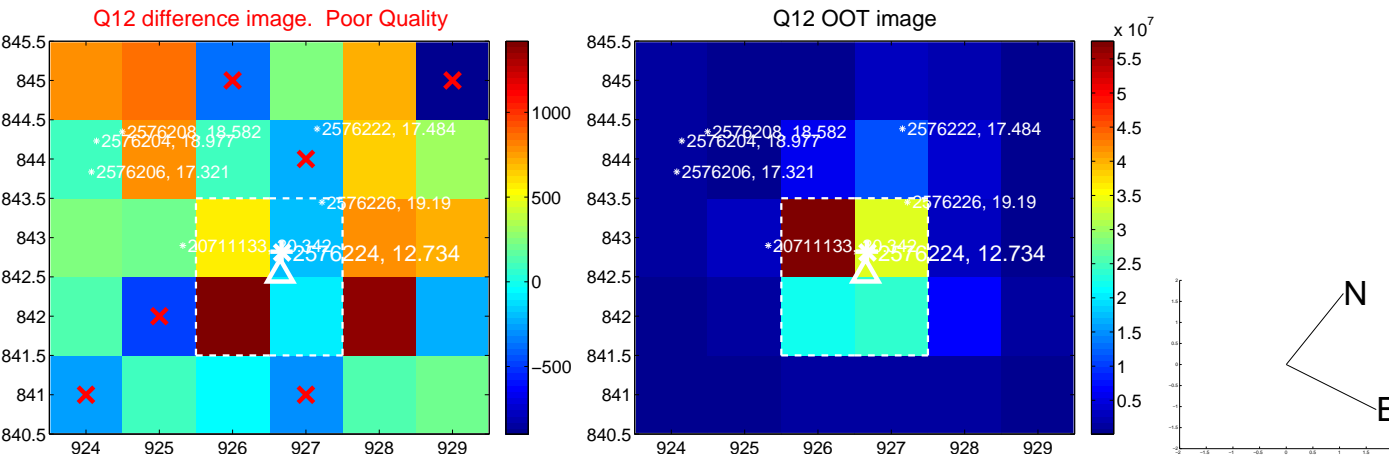
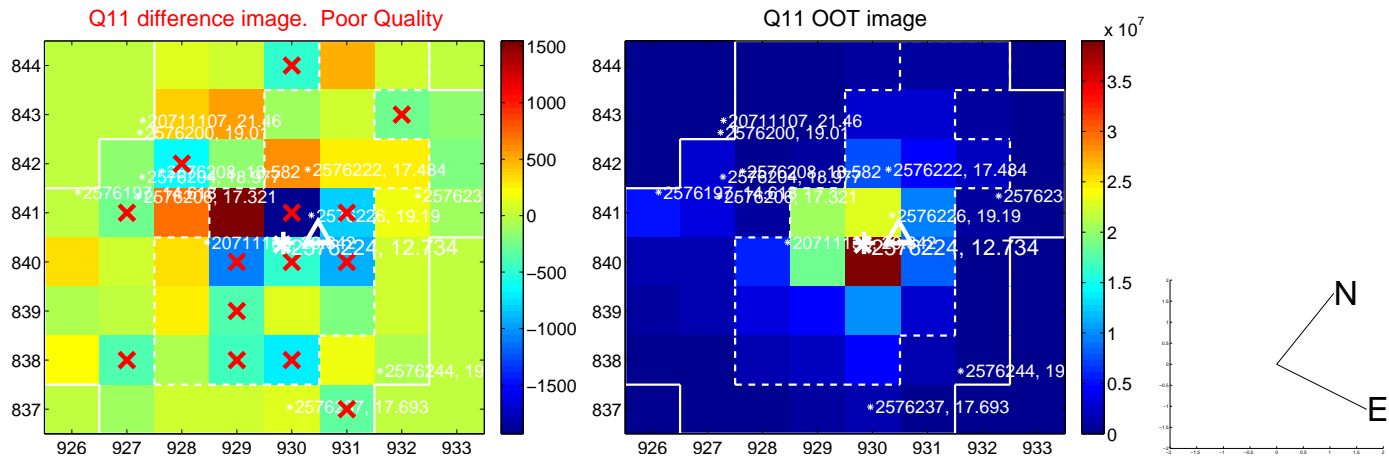
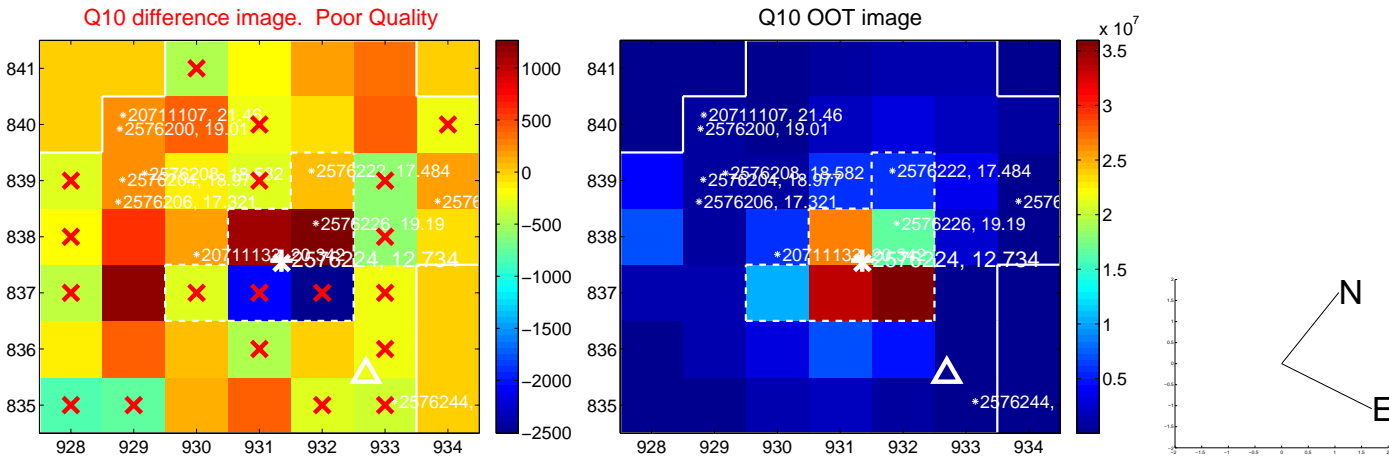
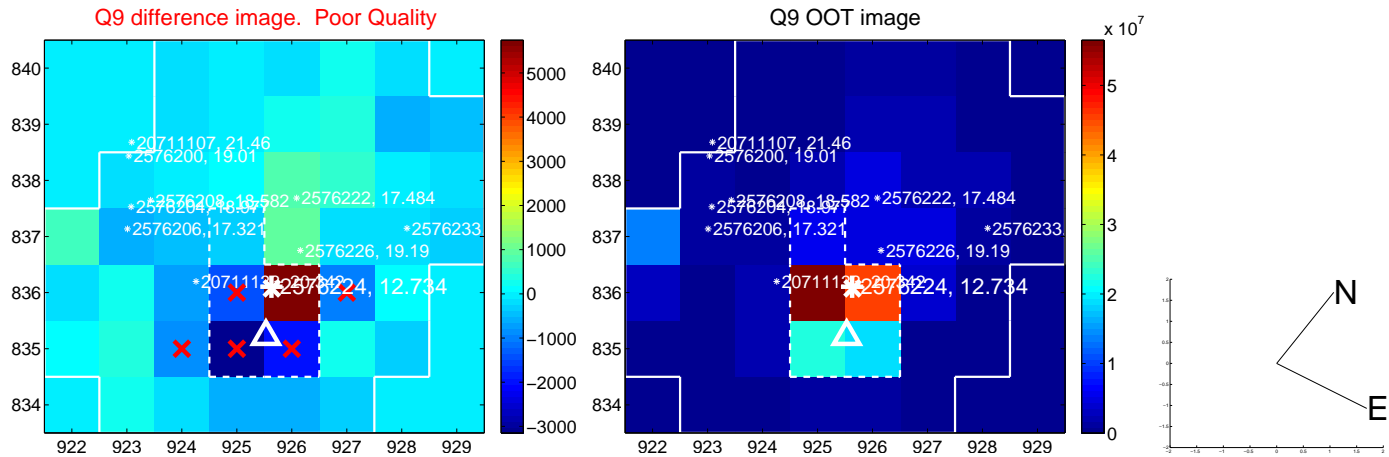
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



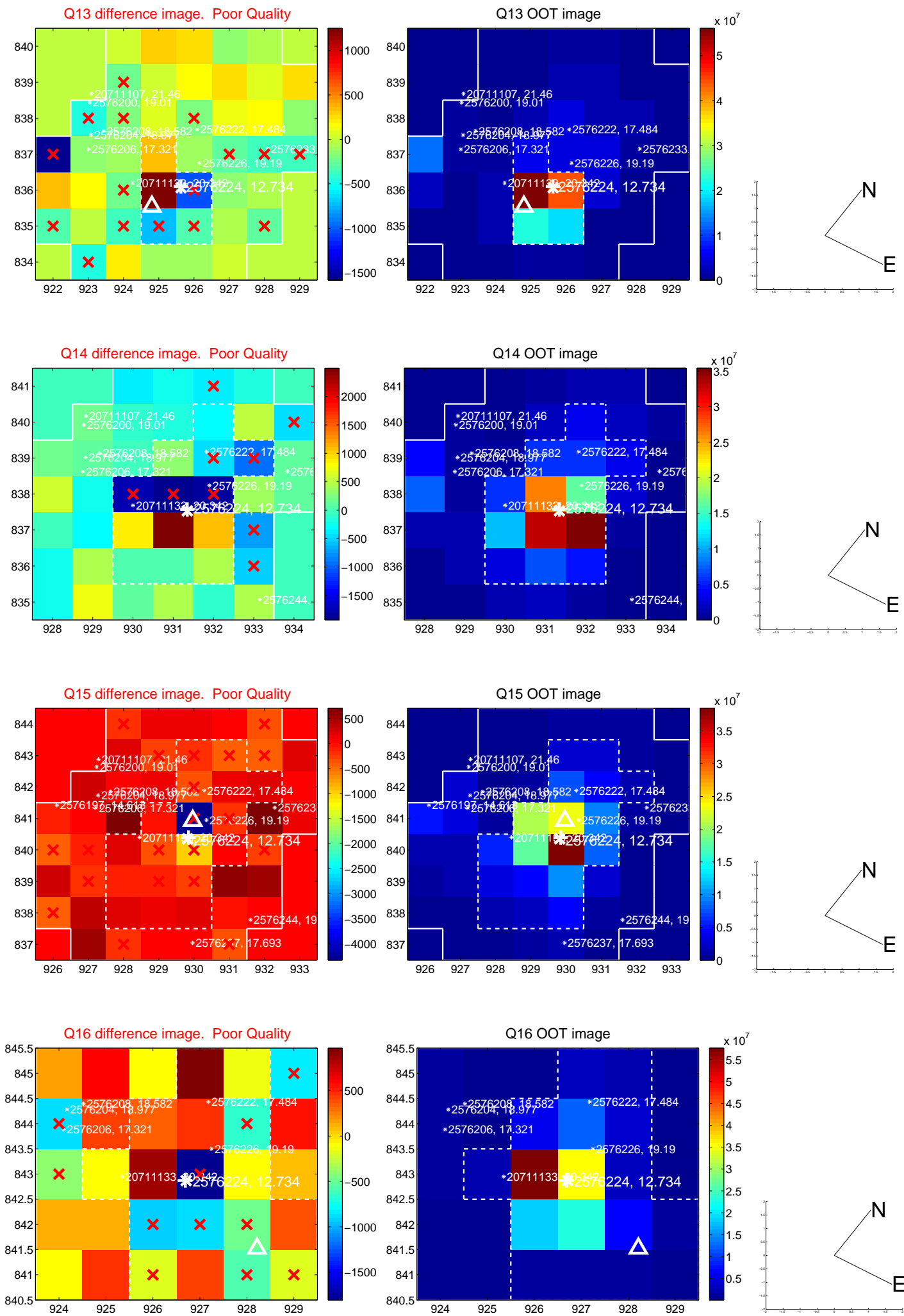
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



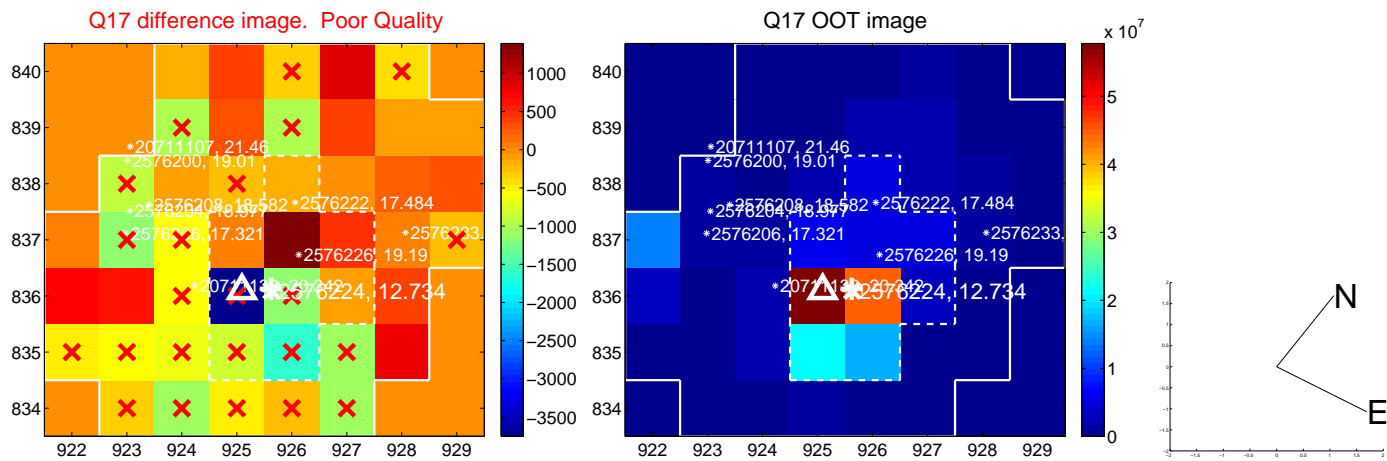
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



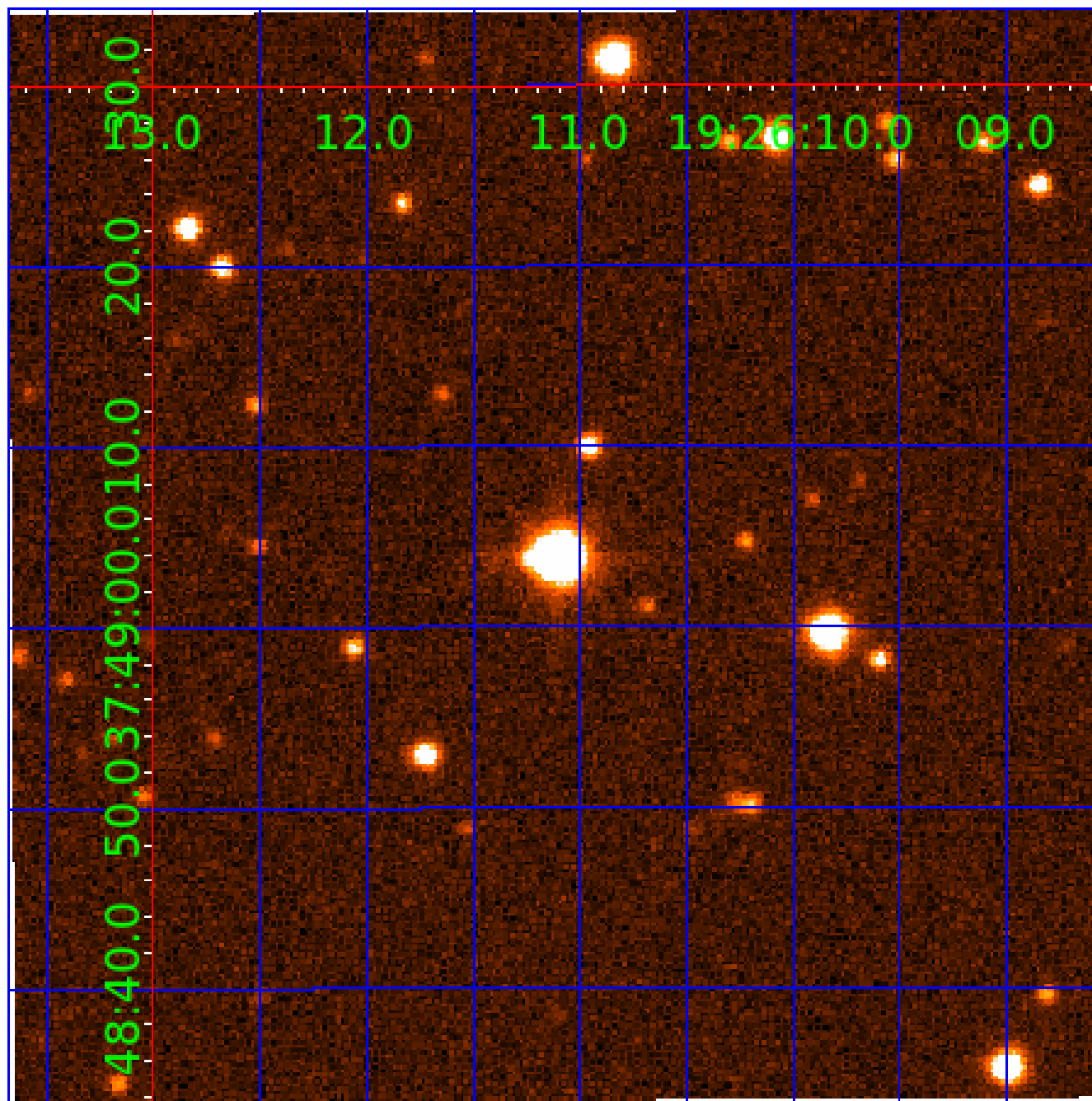
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 002576224

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})
002576224-01	OBS	No	1.629177	132.896891	0.1	1.117	10.1	0.0	2.08	7503	0.07	11029.49
002576224-02	OBS	No	1.629085	133.104533	14.2	7.768	9.1	9.5	2.08	7503	0.84	11030.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002576224-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
002576224-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—SWEET_NTL—LPP_DV—SAME_NTL_PERIOD—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 002576224-02

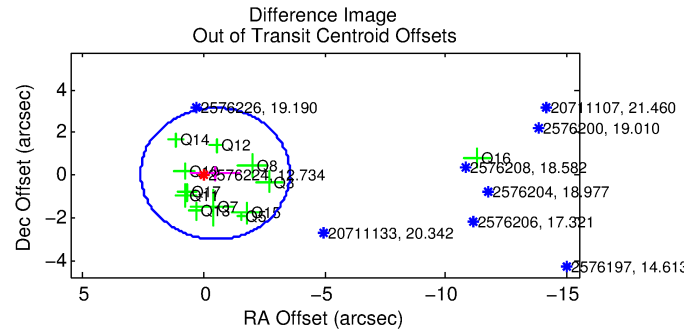
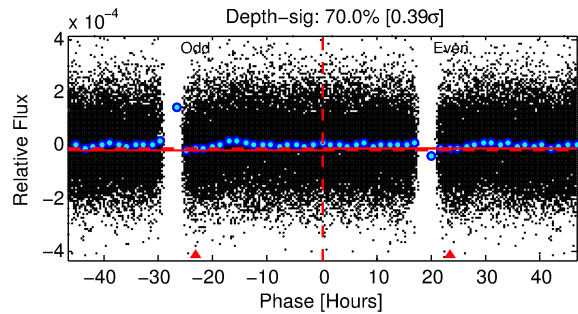
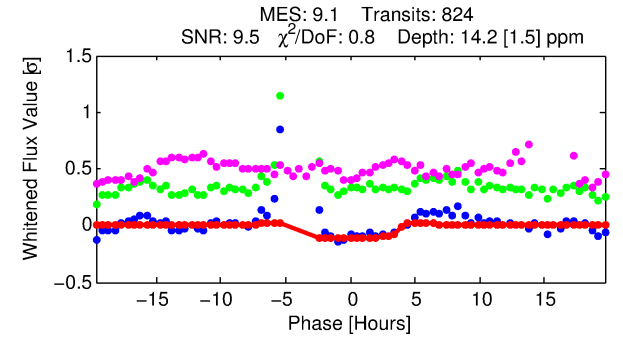
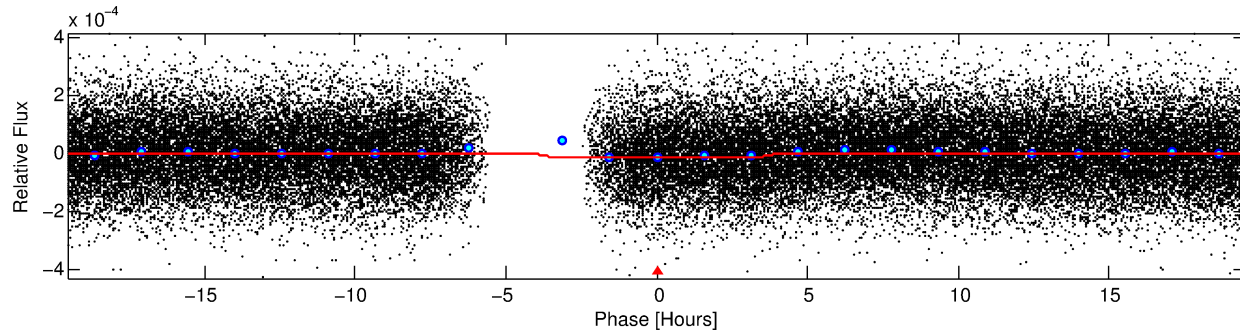
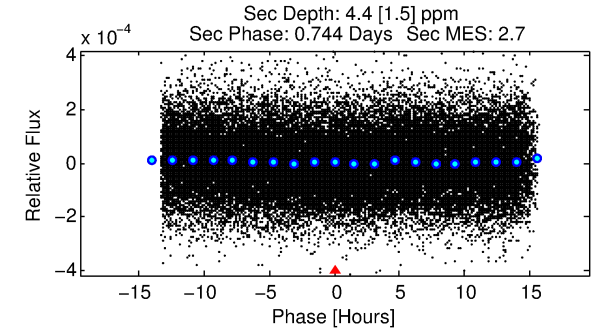
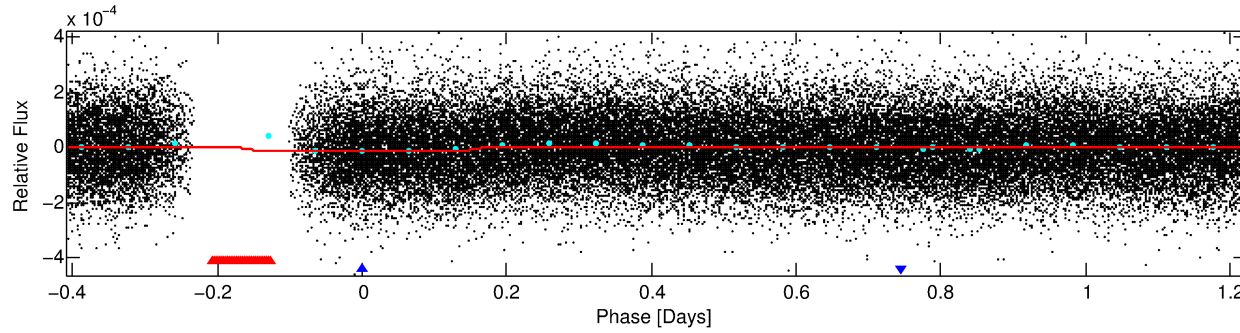
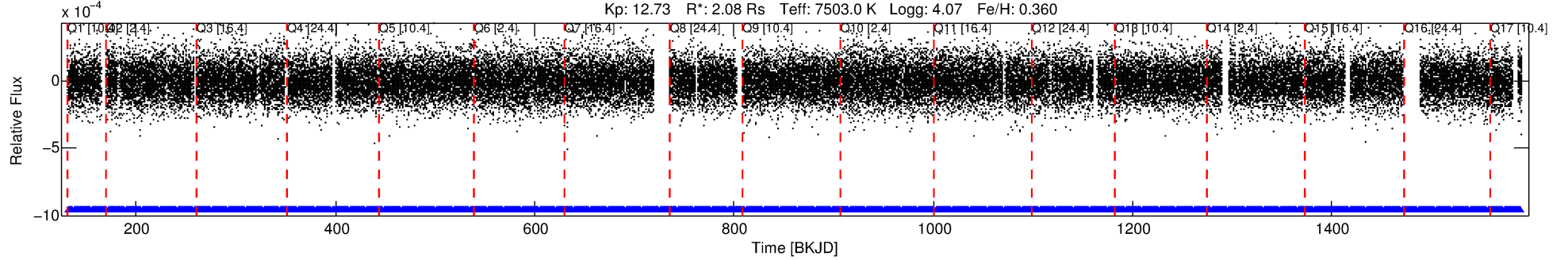
No Significant Match Found

DV One-Page Summary

KIC: 2576224 Candidate: 2 of 2 Period: 1.629 d

KOI: K04465 Corr: No Ephemeris Match

Kp: 12.73 R*: 2.08 Rs Teff: 7503.0 K Logg: 4.07 Fe/H: 0.360



DV Fit Results:

Period = 1.62909 [0.00003] d
Epoch = 133.1045 [0.0253] BKJD
Rp/R* = 0.0037 [0.0014]
a/R* = 1.42 [1.68]
b = 0.69 [1.74]
Seff = 11030.31 [4121.31]
Teq = 2613 [244] K
Rp = 0.84 [0.39] Re
a = 0.0333 [0.0076] AU
Ag = 3.85 [3.39] [0.84σ]
Teff = 5659 [1182] K [2.52σ]

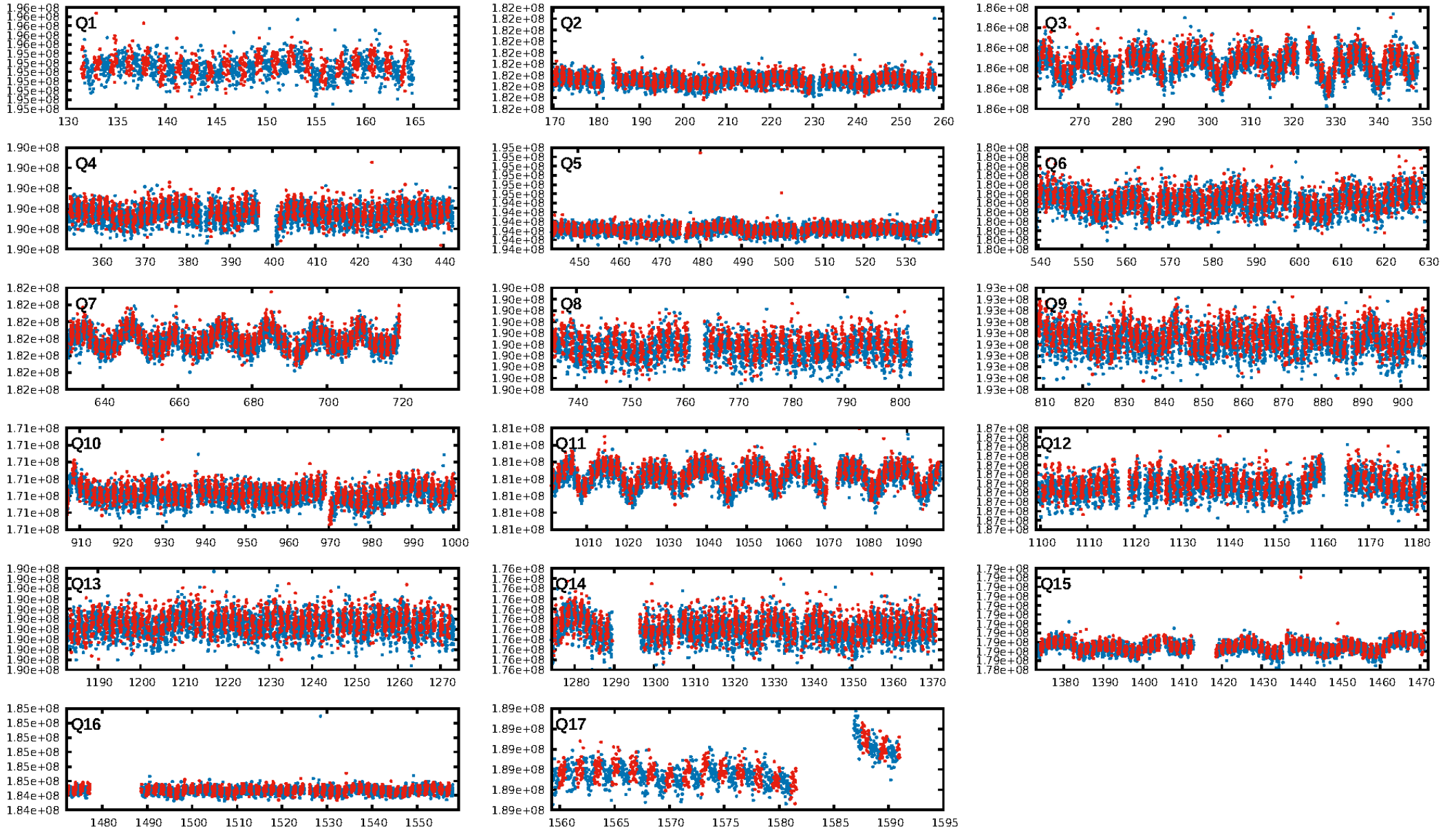
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.33e-18
RollingBand-fgt: 1.00 [787/787]
GhostDiagnostic-chr: -3.236
Centroid-sig: 0.0%
Centroid-so: 3.006 arcsec [2.33σ]
OotOffset-rm: 0.496 arcsec [0.48σ]
KicOffset-rm: 0.590 arcsec [0.66σ]
OotOffset-st: 2/4/3/3 [12]
KicOffset-st: 2/4/3/3 [12]
DiffImageQuality-fgm: 0.00 [0/12]
DiffImageOverlap-fno: 0.00 [0/17]

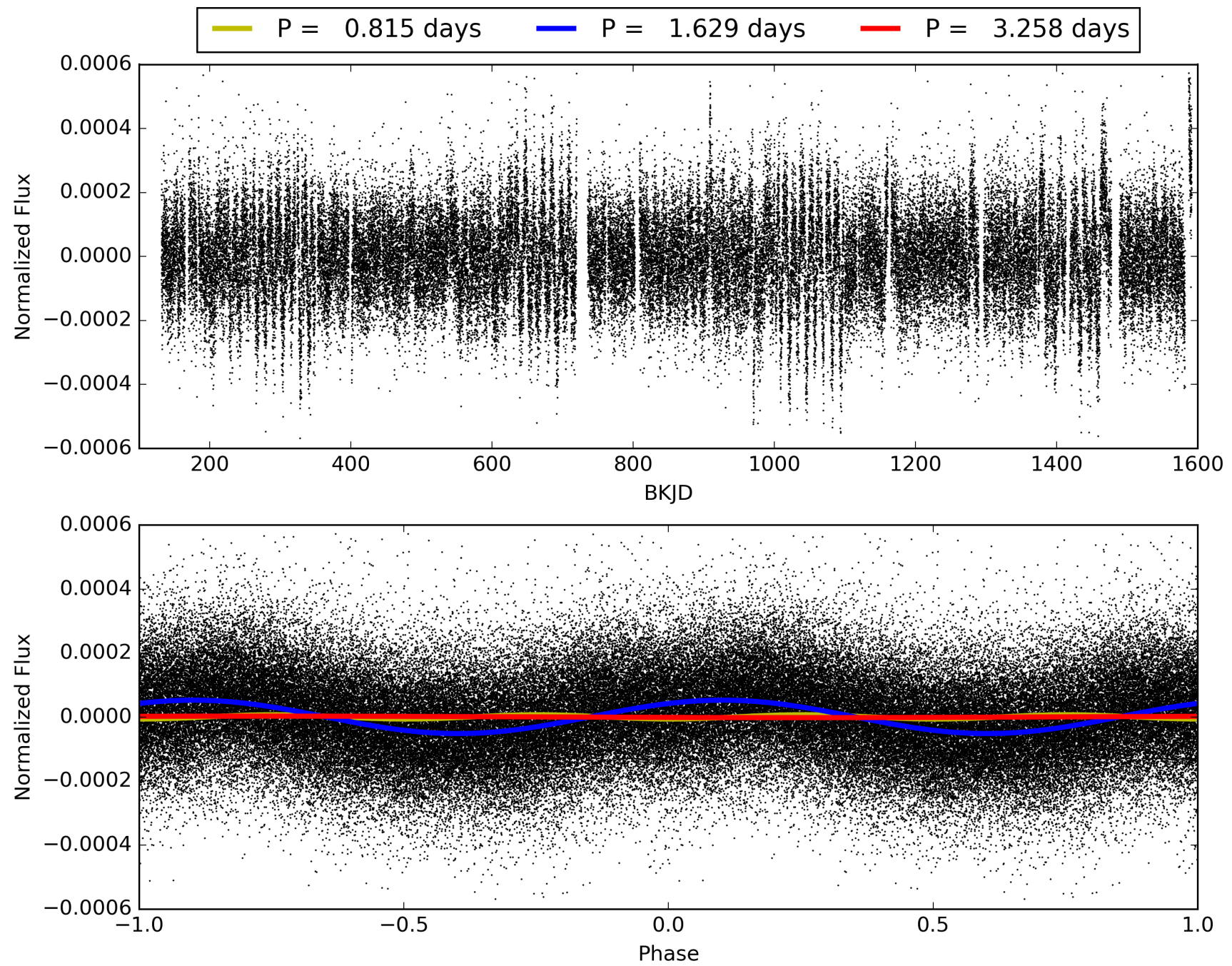
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:44:23 Z

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

TCE 002576224-02, PDC Light Curves

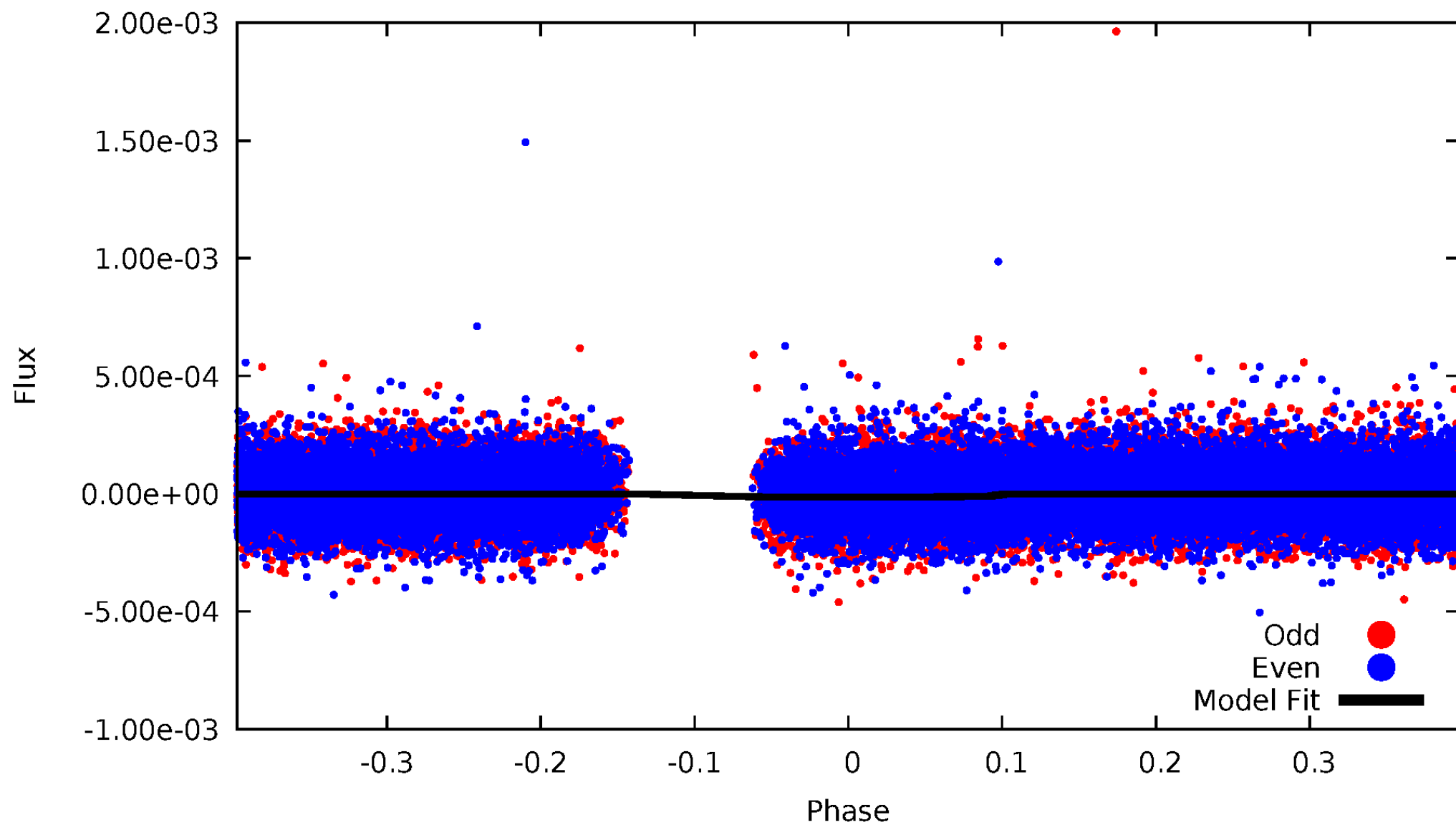


TCE 002576224-02



DV Odd/Even

TCE 002576224-02

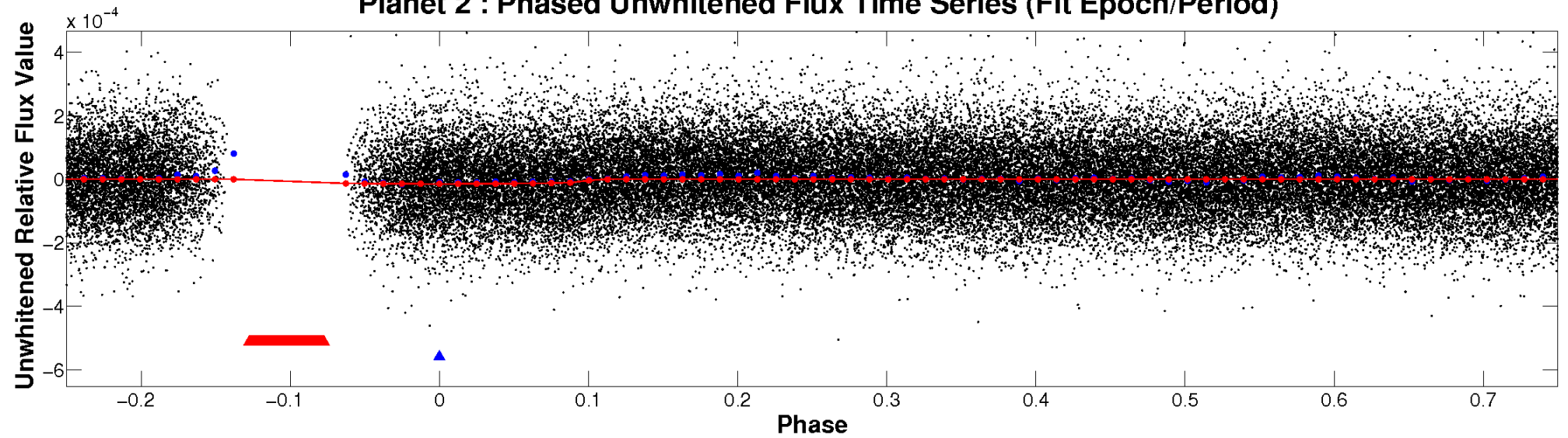


ALT Odd/Even

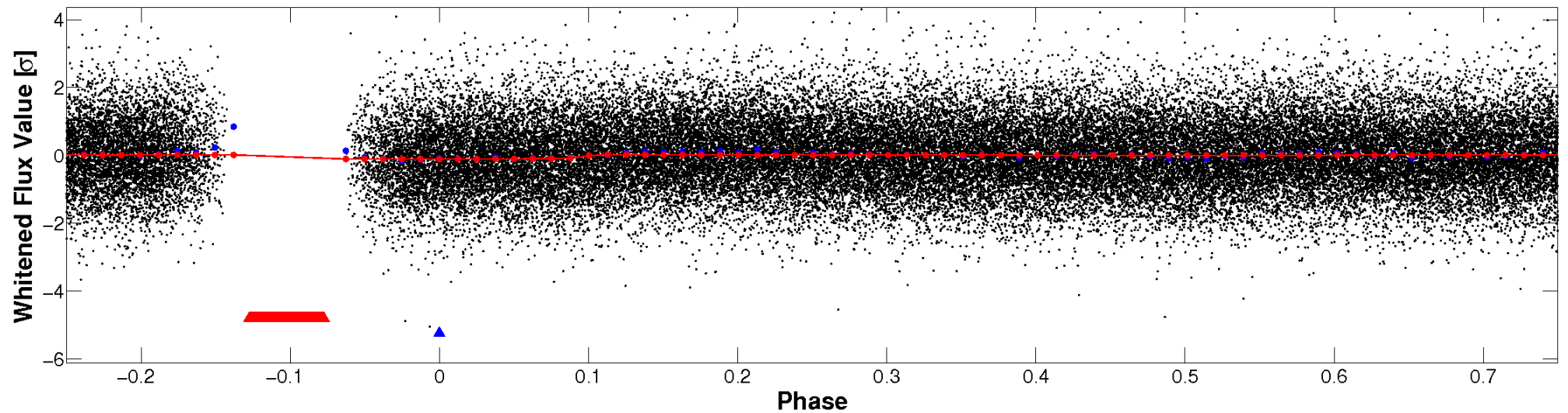
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

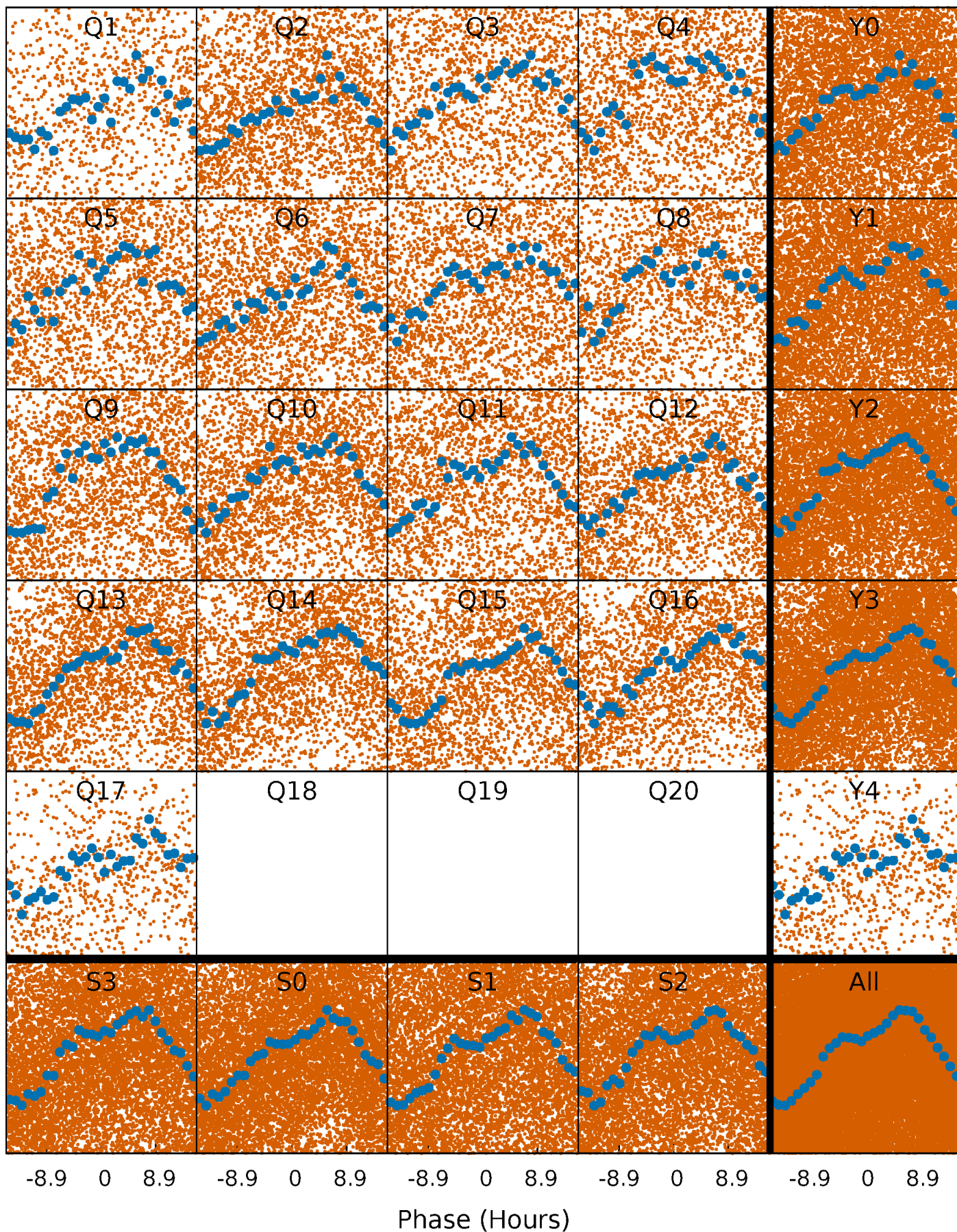


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



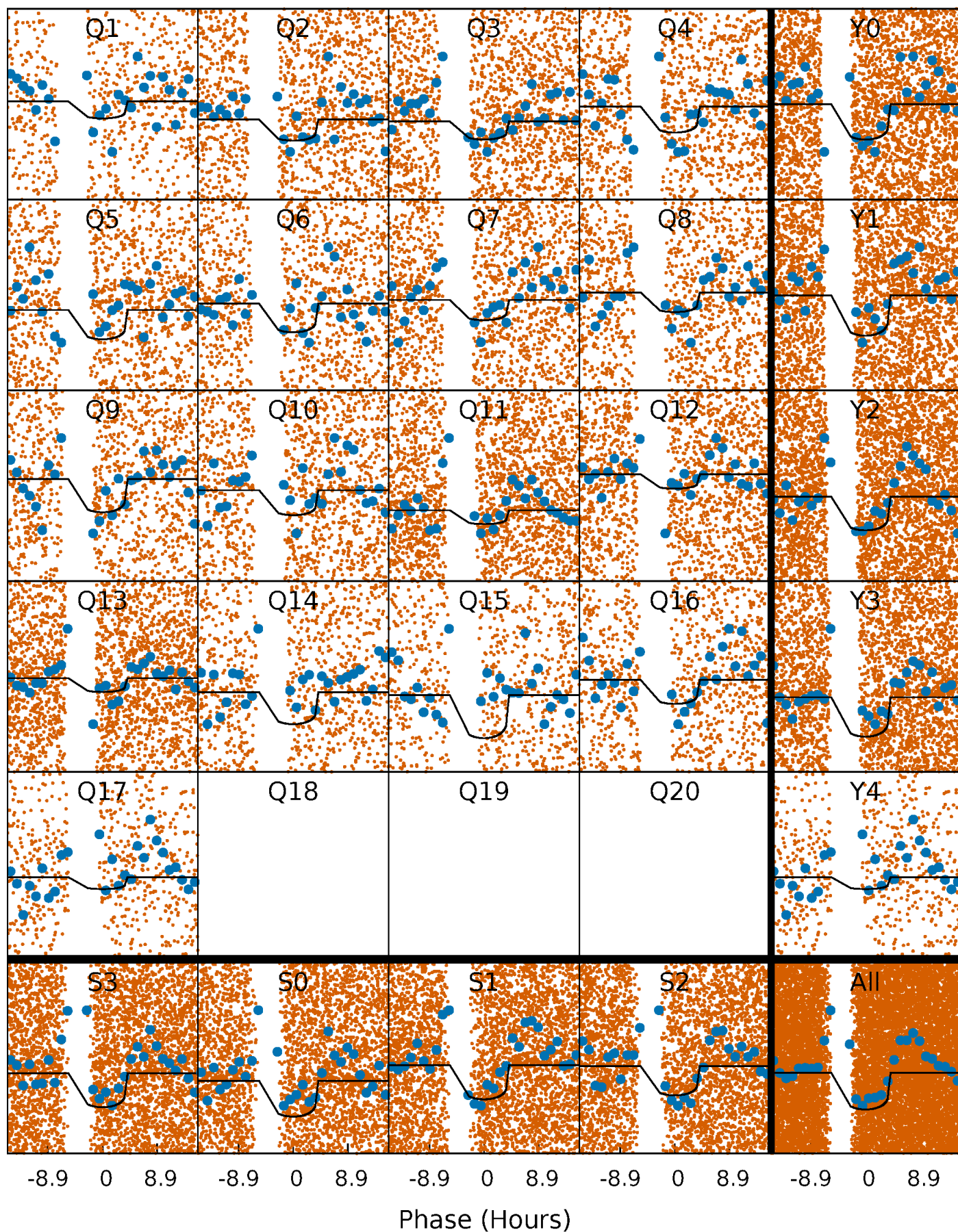
PDC Quarter-Phased Transit Curves

TCE 002576224-02 P= 1.629085 Days $T_0=133.104533$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 002576224-02 P= 1.629085 Days $T_0=133.104533$ (BKJD)

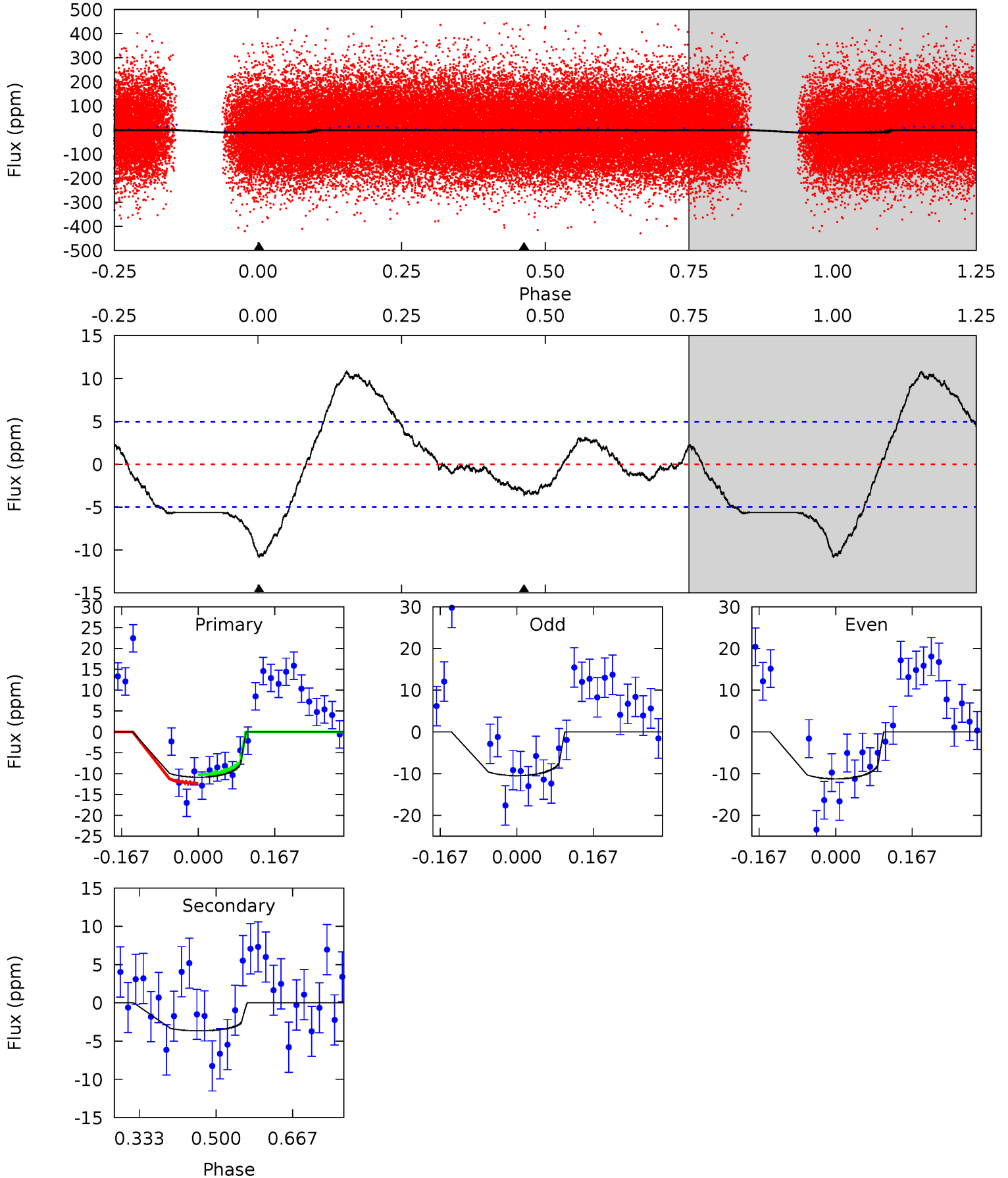


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

002576224-02, P = 1.629085 Days, E = 131.475448 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.77	3.28	0	0	4.46	1.38	2.73	9.77	9.77	3.28	3.28	0.35	0.90	0.50	0.83



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 002576224

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7503^{+206}_{-324}	$4.072^{+0.120}_{-0.180}$	$0.360^{+0.050}_{-0.450}$	$2.075^{+0.569}_{-0.379}$	$1.852^{+0.161}_{-0.299}$	$0.292^{+0.190}_{-0.133}$
	+3%/-4%	+3%/-4%	+14%/-125%	+27%/-18%	+9%/-16%	+65%/-45%
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 002576224-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4 ± 1	$0.84^{+0.35}_{-0.30}$	3660^{+281}_{-221}	5179^{+1390}_{-782}	$3.026^{+4.644}_{-1.644}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

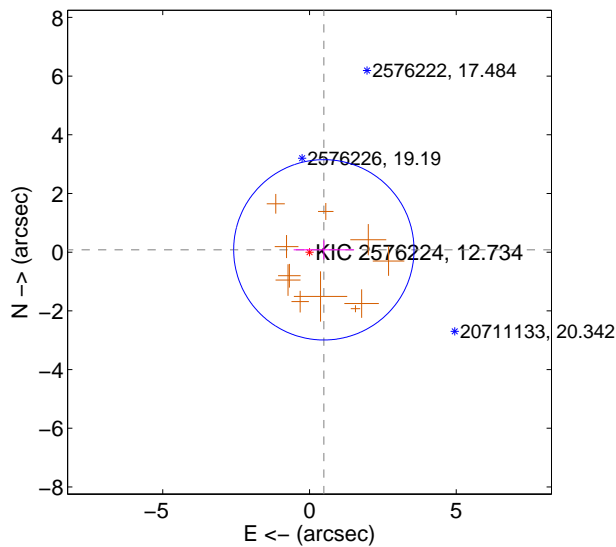
Supplemental centroid analysis for 002576224-02. Kepler magnitude: 12.73. Transit SNR 9.50

There are 0 quarters with good PRF difference image offsets

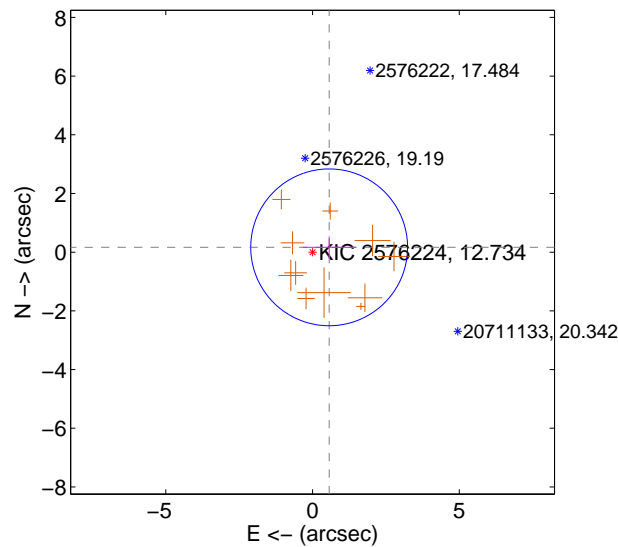
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.496 ± 1.024	0.48	-0.489 ± 1.032	0.080 ± 0.323
PRF-fit source offset from KIC position	0.590 ± 0.891	0.66	-0.567 ± 0.906	0.165 ± 0.367
photometric centroid source offset	3.01 ± 1.29	2.33	1.30 ± 1.39	-2.71 ± 1.26

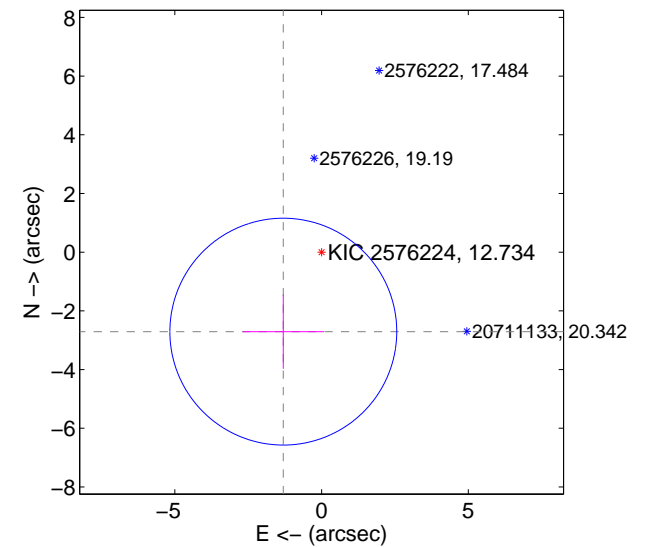
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

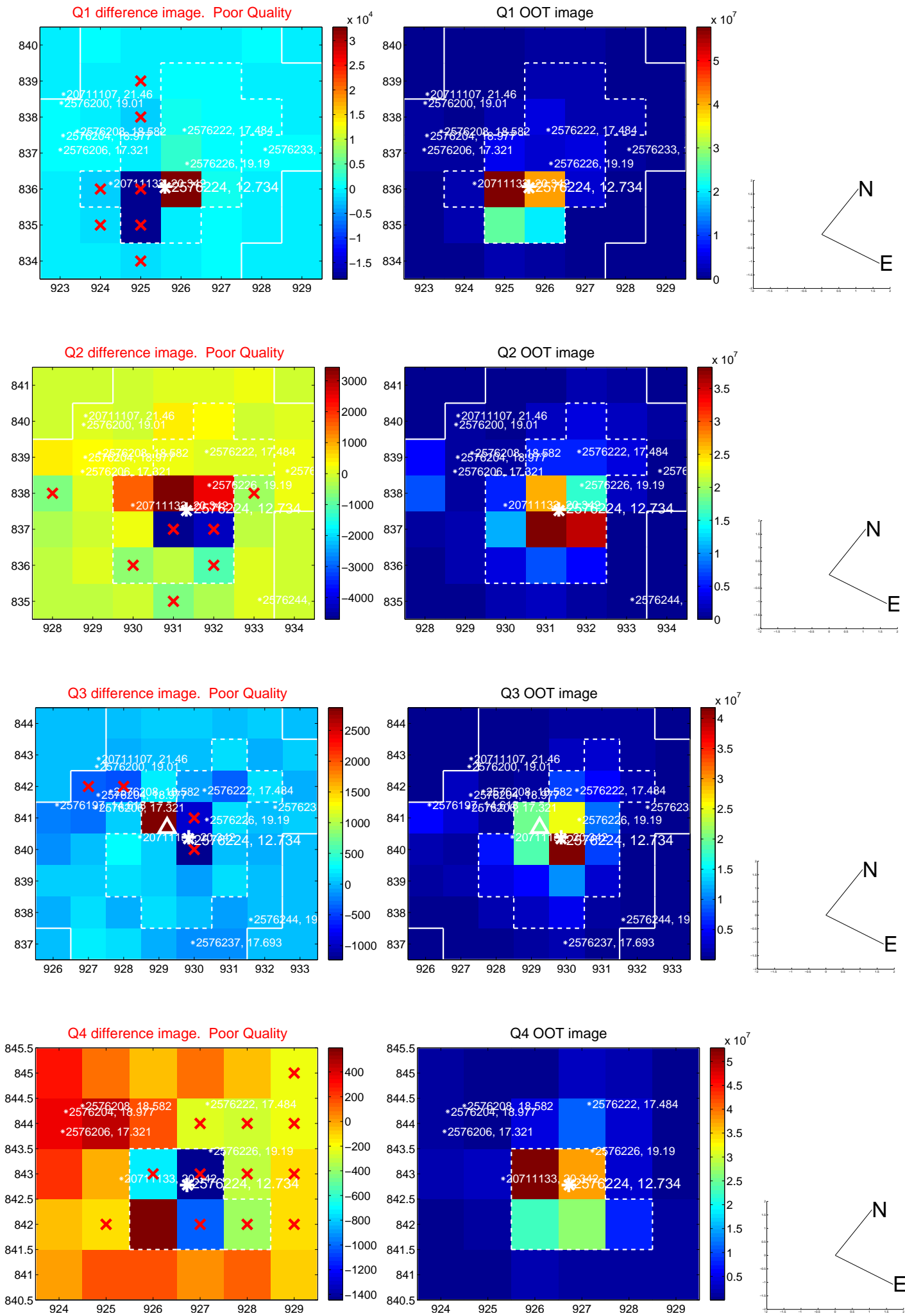


offset from photometric centroids

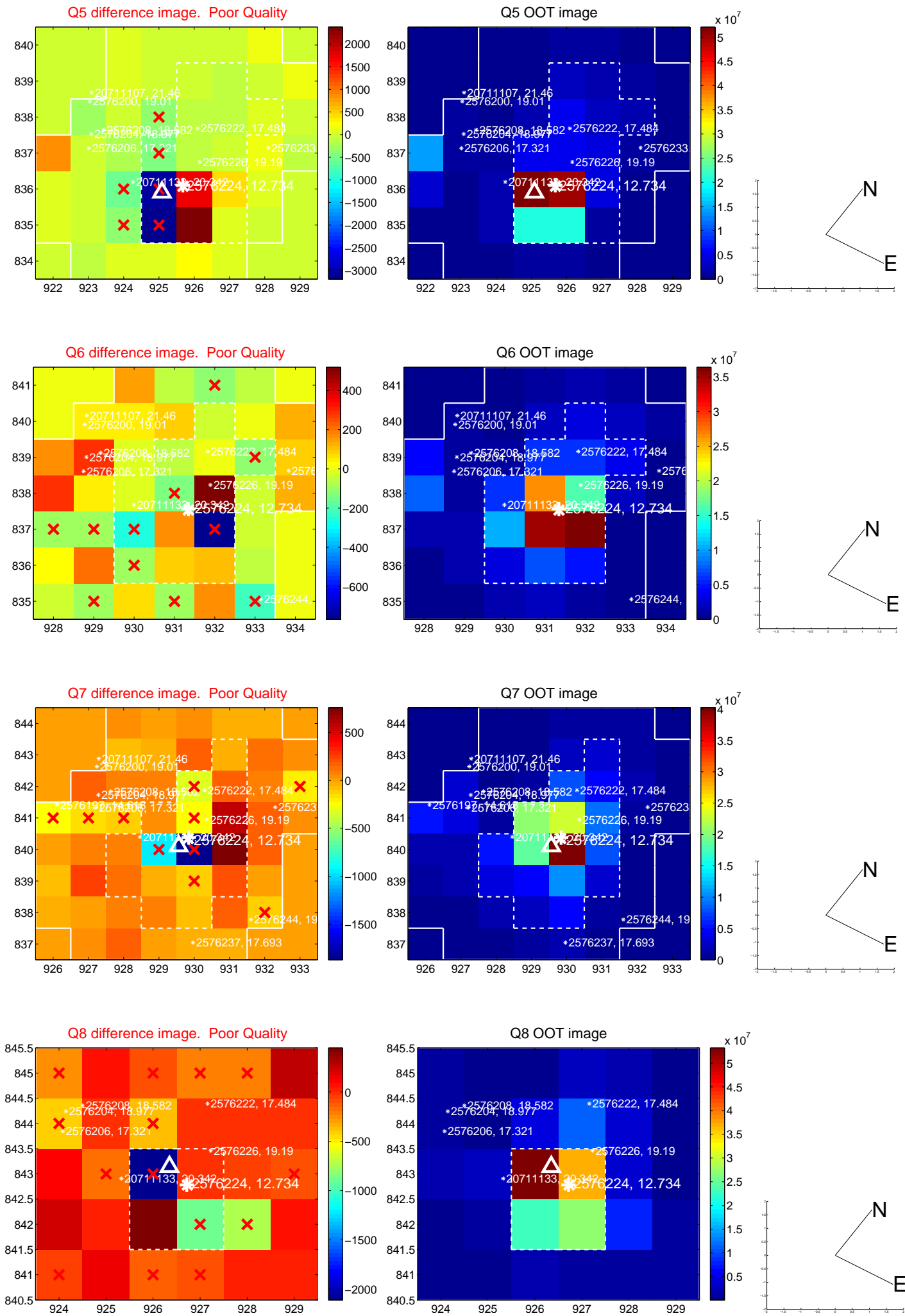


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

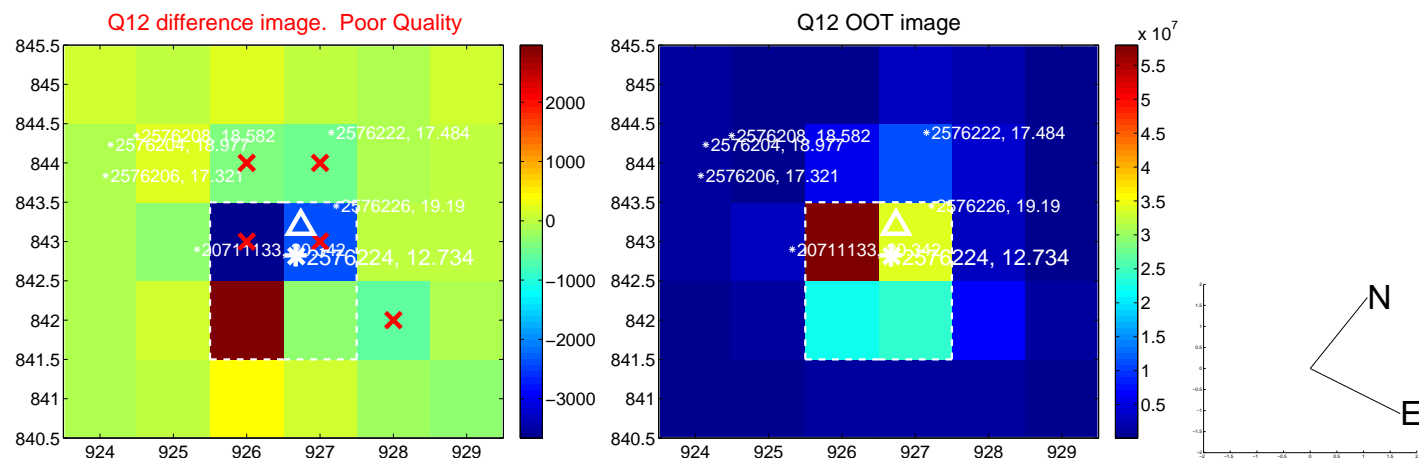
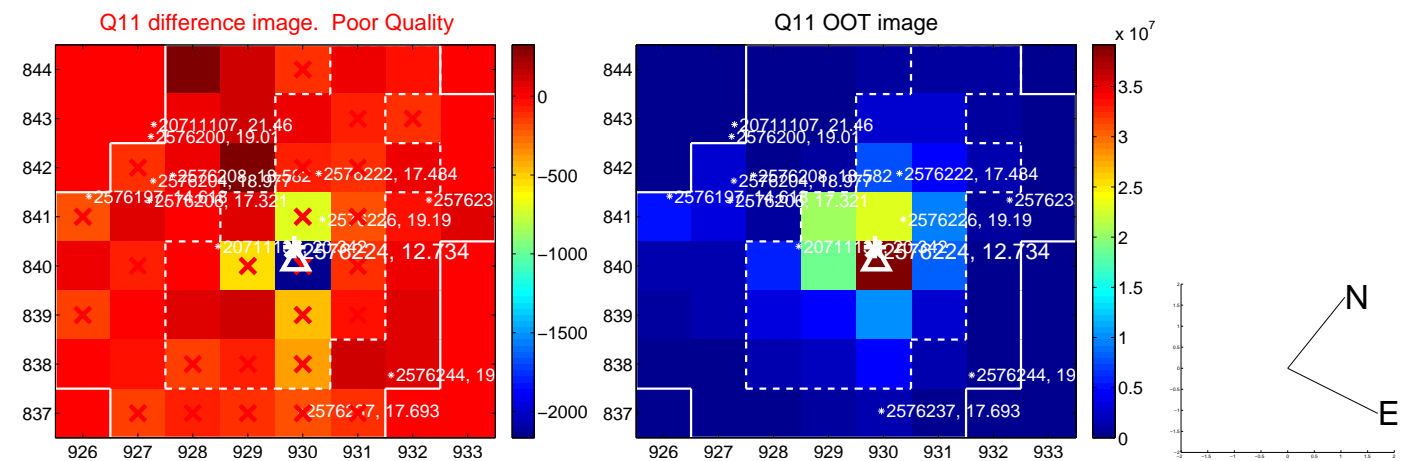
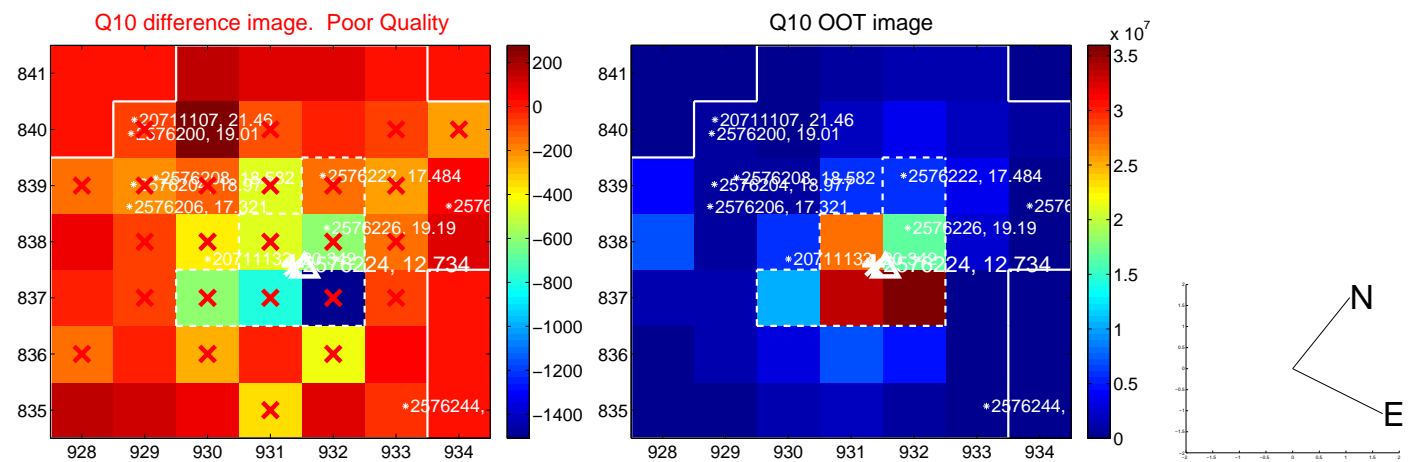
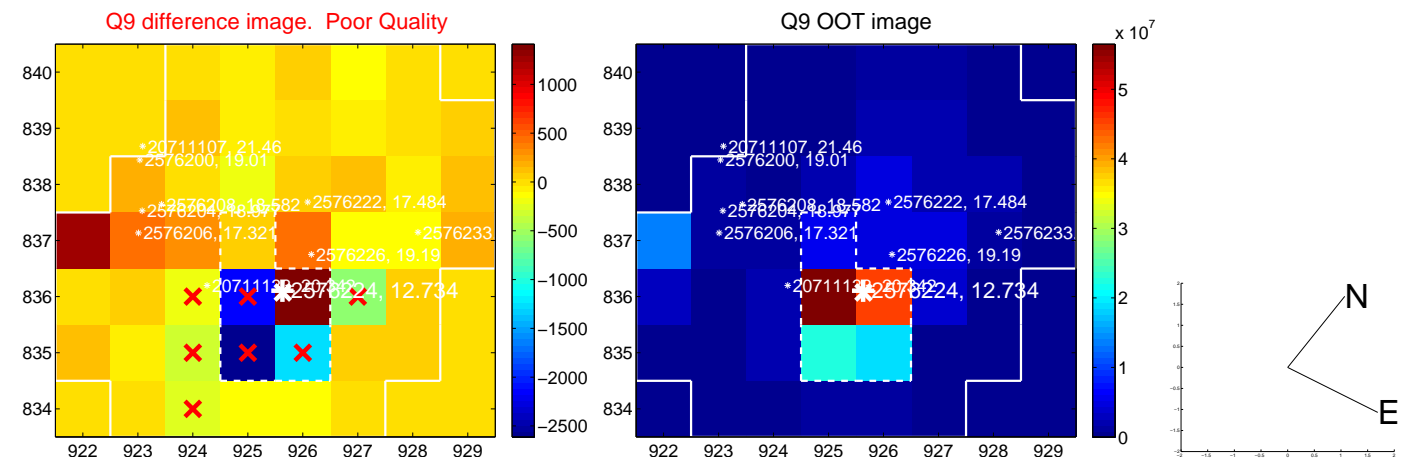
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



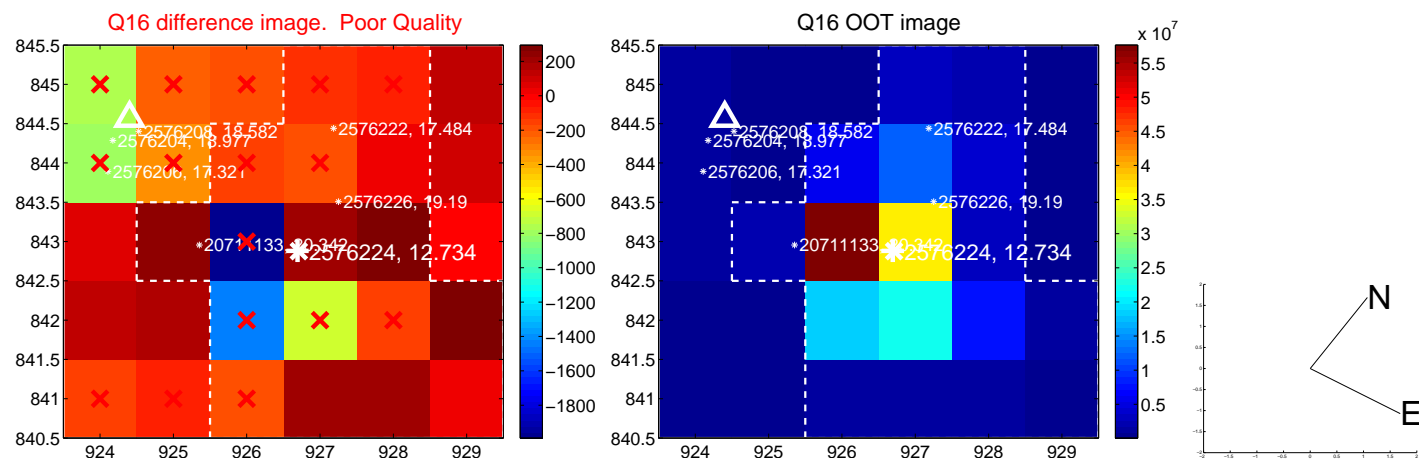
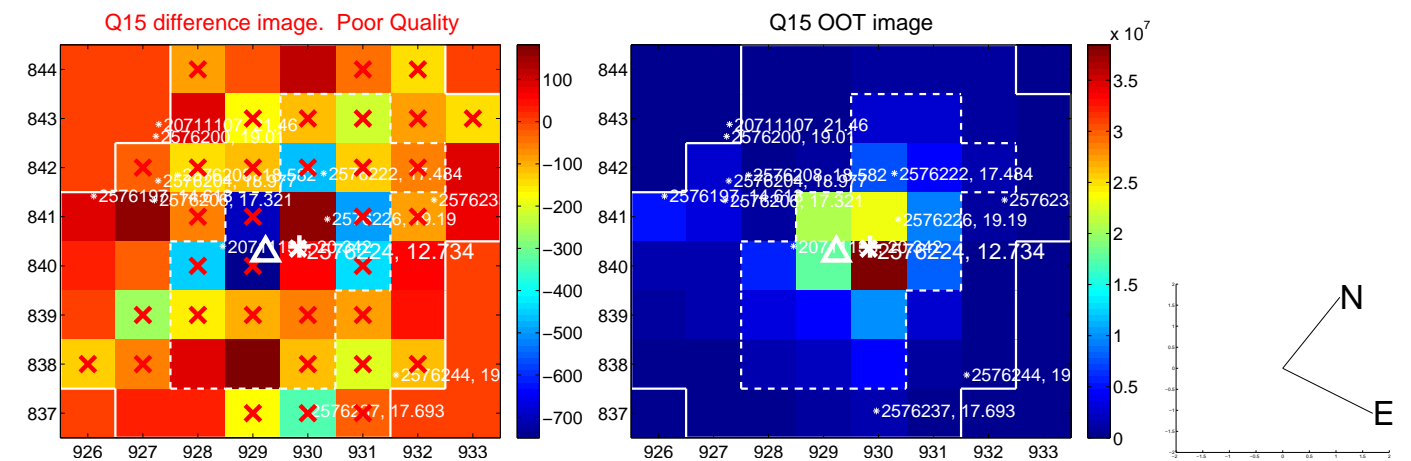
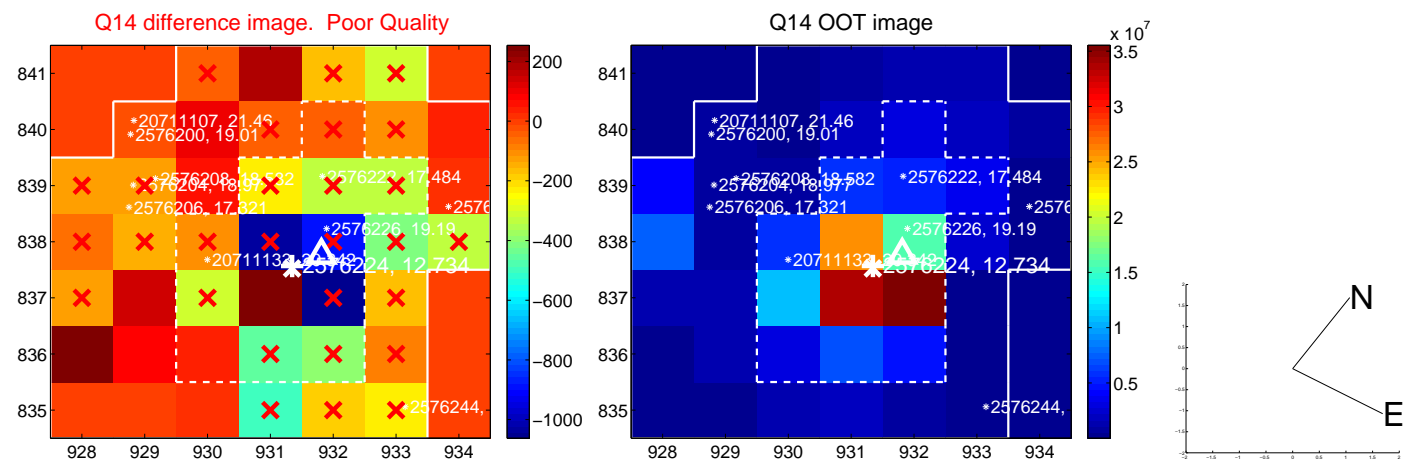
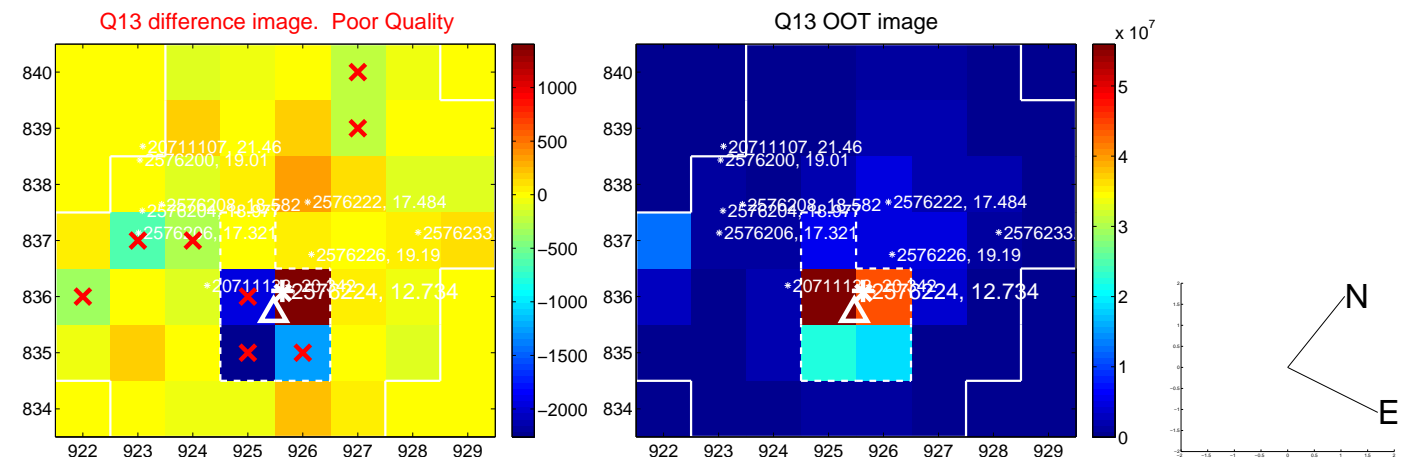
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



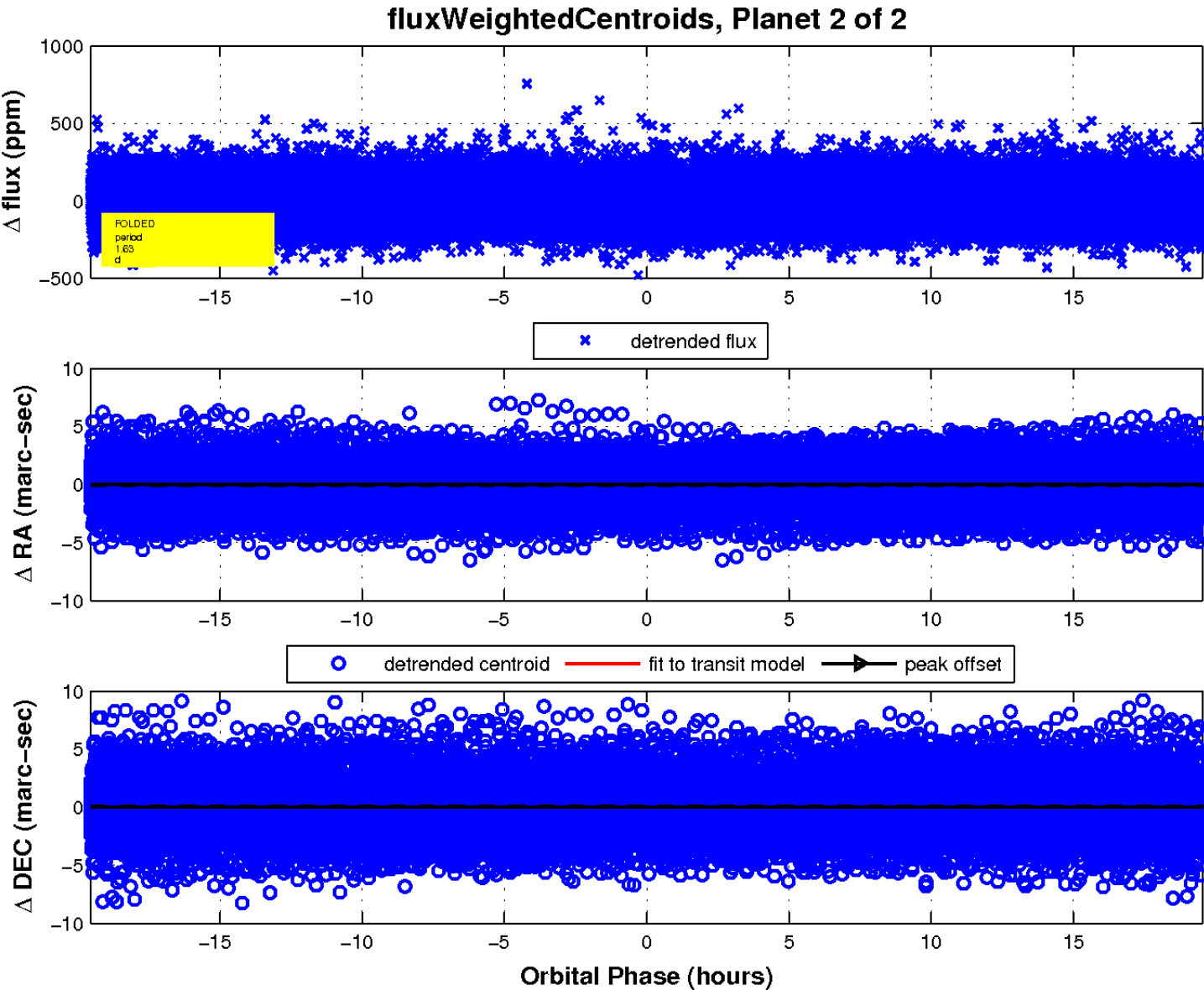
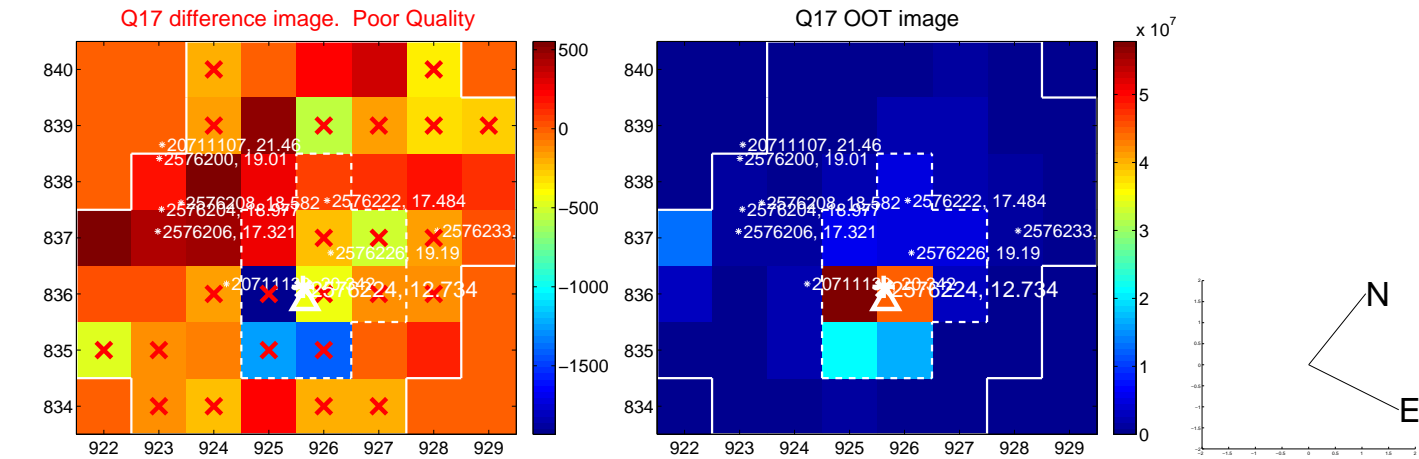
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

