

KIC 001432789

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})
001432789-01	OBS	0992.01	9.931420	136.493177	394.9	6.048	22.9	24.0	1.22	5782	2.80	178.14
001432789-02	OBS	0992.02	4.578356	132.295672	132.6	4.045	8.9	9.9	1.22	5782	1.64	500.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001432789-01	OBS	PC	0.85	0	0	0	0	NO_COMMENT
001432789-02	OBS	PC	0.96	0	0	0	0	NO_COMMENT

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 001432789-01

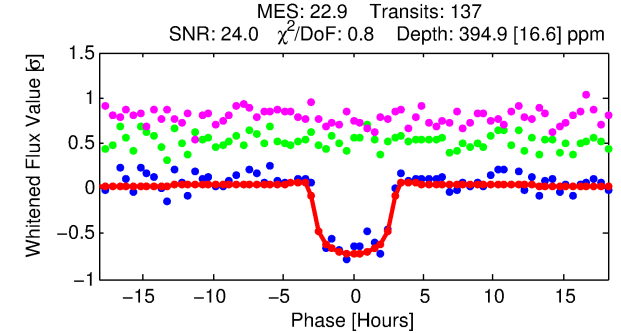
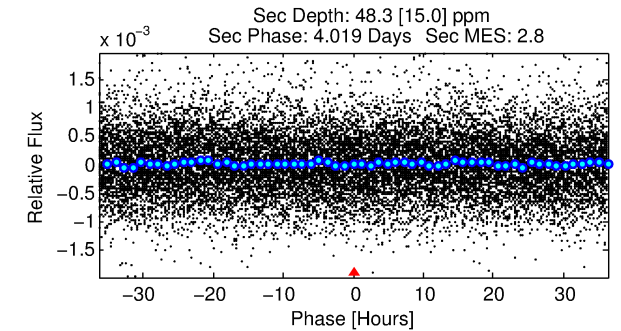
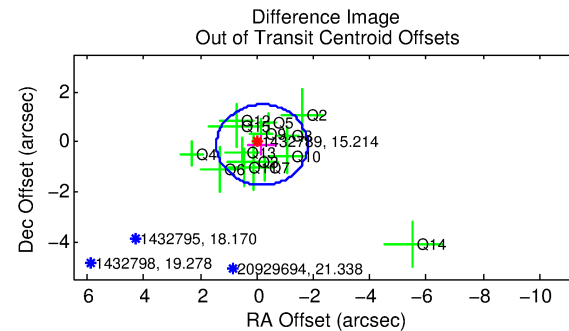
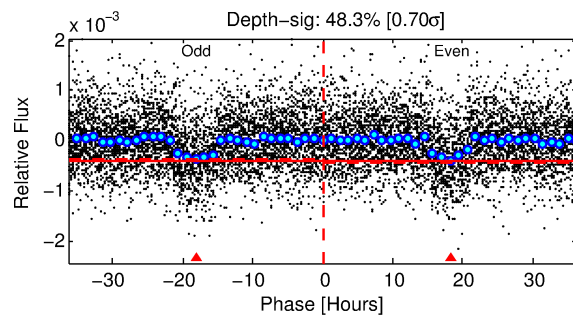
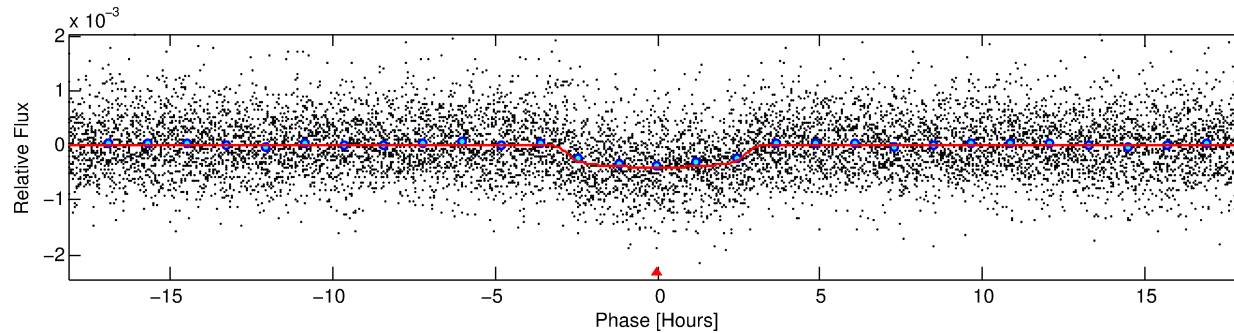
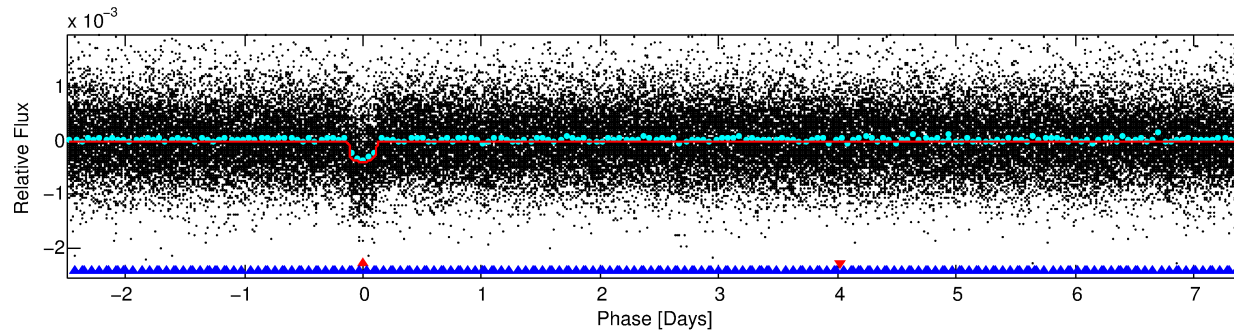
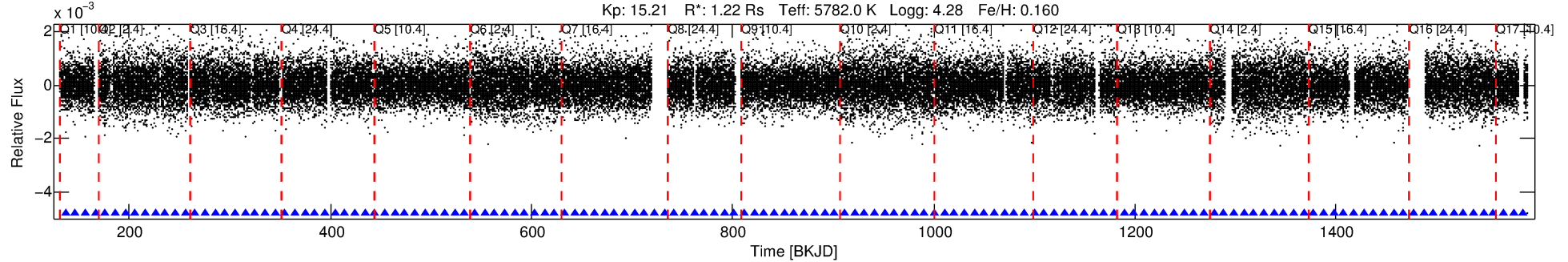
No Significant Match Found

DV One-Page Summary

KIC: 1432789 Candidate: 1 of 2 Period: 9.931 d

KOI: K00992.01 Corr: 0.967

Kp: 15.21 R*: 1.22 Rs Teff: 5782.0 K Logg: 4.28 Fe/H: 0.160



DV Fit Results:

Period = 9.93142 [0.00006] d
Epoch = 136.4932 [0.0048] BKJD
Rp/R* = 0.0210 [0.0028]
a/R* = 6.87 [3.94]
b = 0.86 [0.17]
Seff = 178.14 [43.13]
Teq = 932 [56] K
Rp = 2.80 [0.58] Re
a = 0.0915 [0.0137] AU
Ag = 28.35 [13.32] [2.05σ]
Teffp = 3324 [341] K [6.93σ]

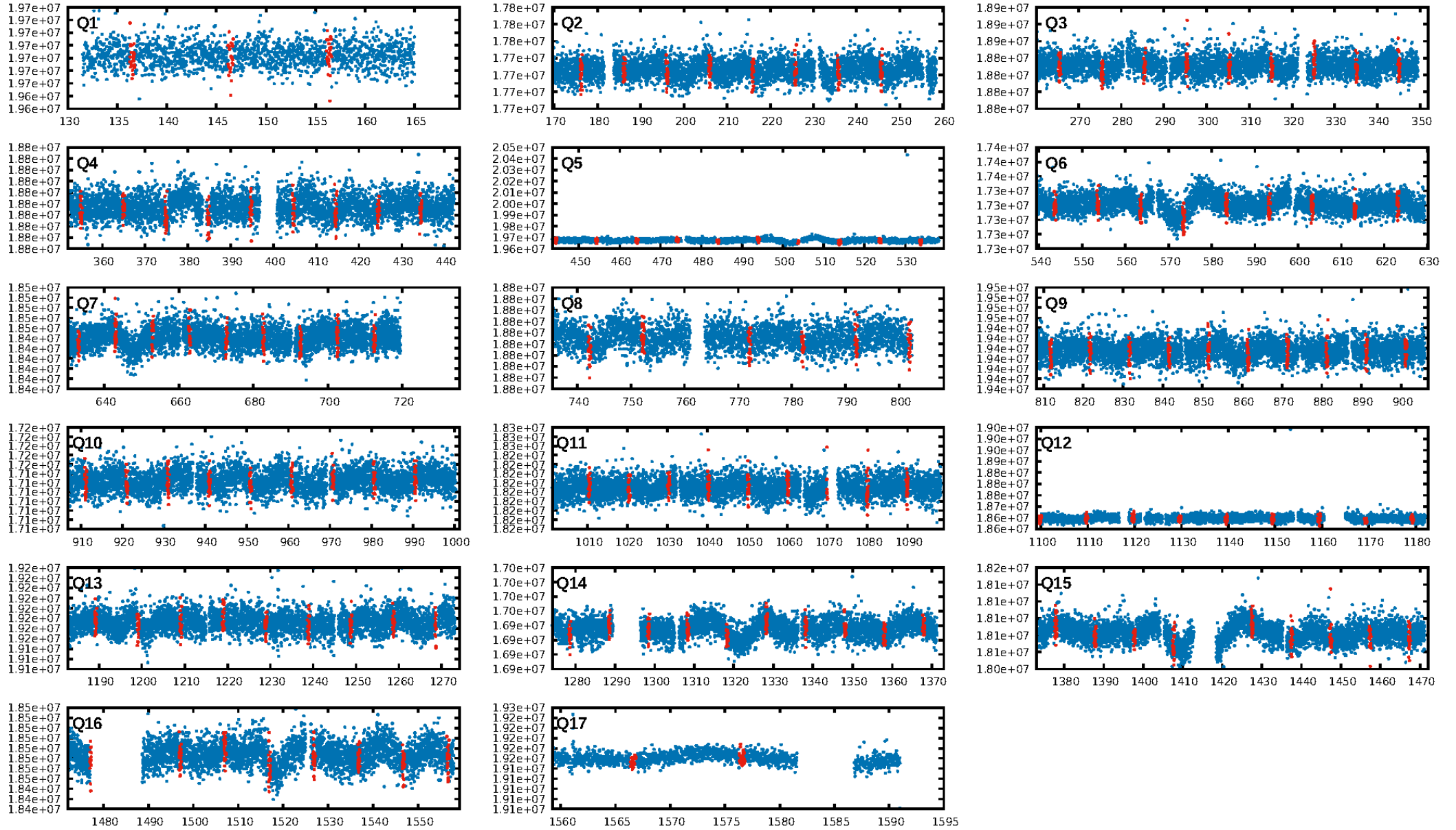
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [17.66σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.75e-113
RollingBand-fgt: 1.00 [132/132]
GhostDiagnostic-chr: 2.754
Centroid-sig: 0.0%
Centroid-so: 1.071 arcsec [1.68σ]
OotOffset-rm: 0.221 arcsec [0.41σ]
KicOffset-rm: 0.104 arcsec [0.22σ]
OotOffset-st: 4/4/3/3 [14]
KicOffset-st: 4/4/3/3 [14]
DiffImageQuality-fgm: 0.71 [10/14]
DiffImageOverlap-fno: 1.00 [17/17]

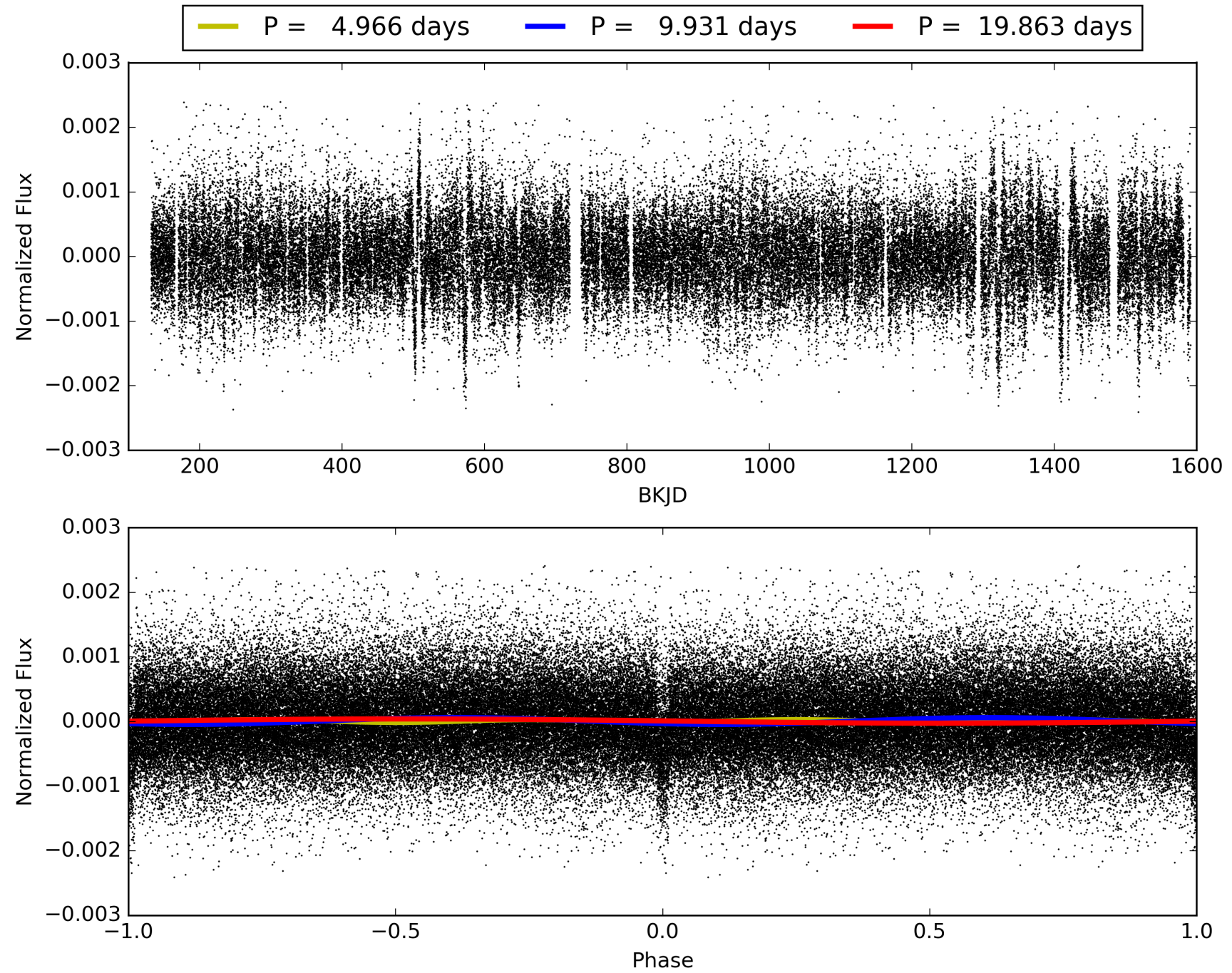
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:33:06 Z

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

TCE 001432789-01, PDC Light Curves

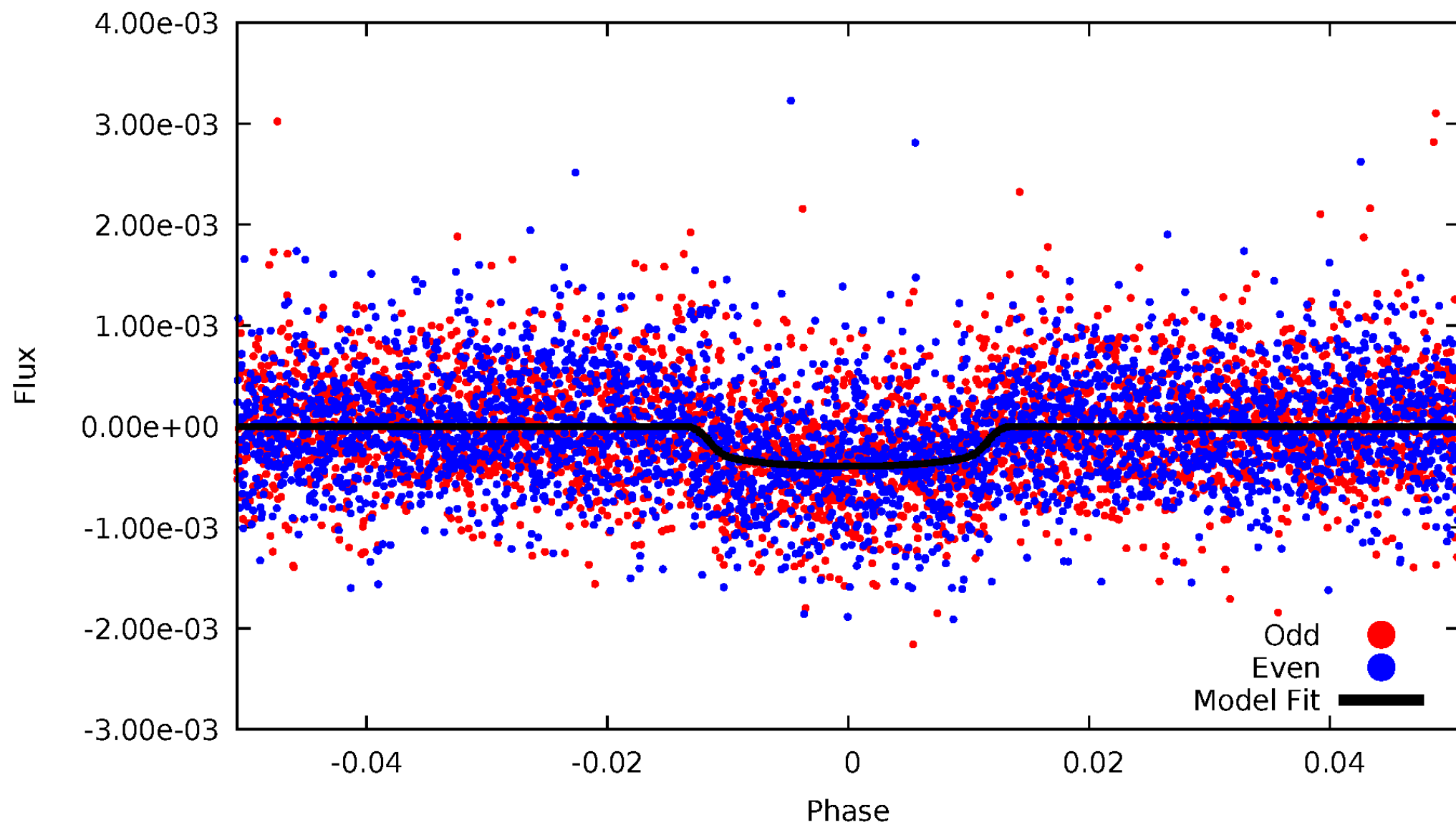


TCE 001432789-01



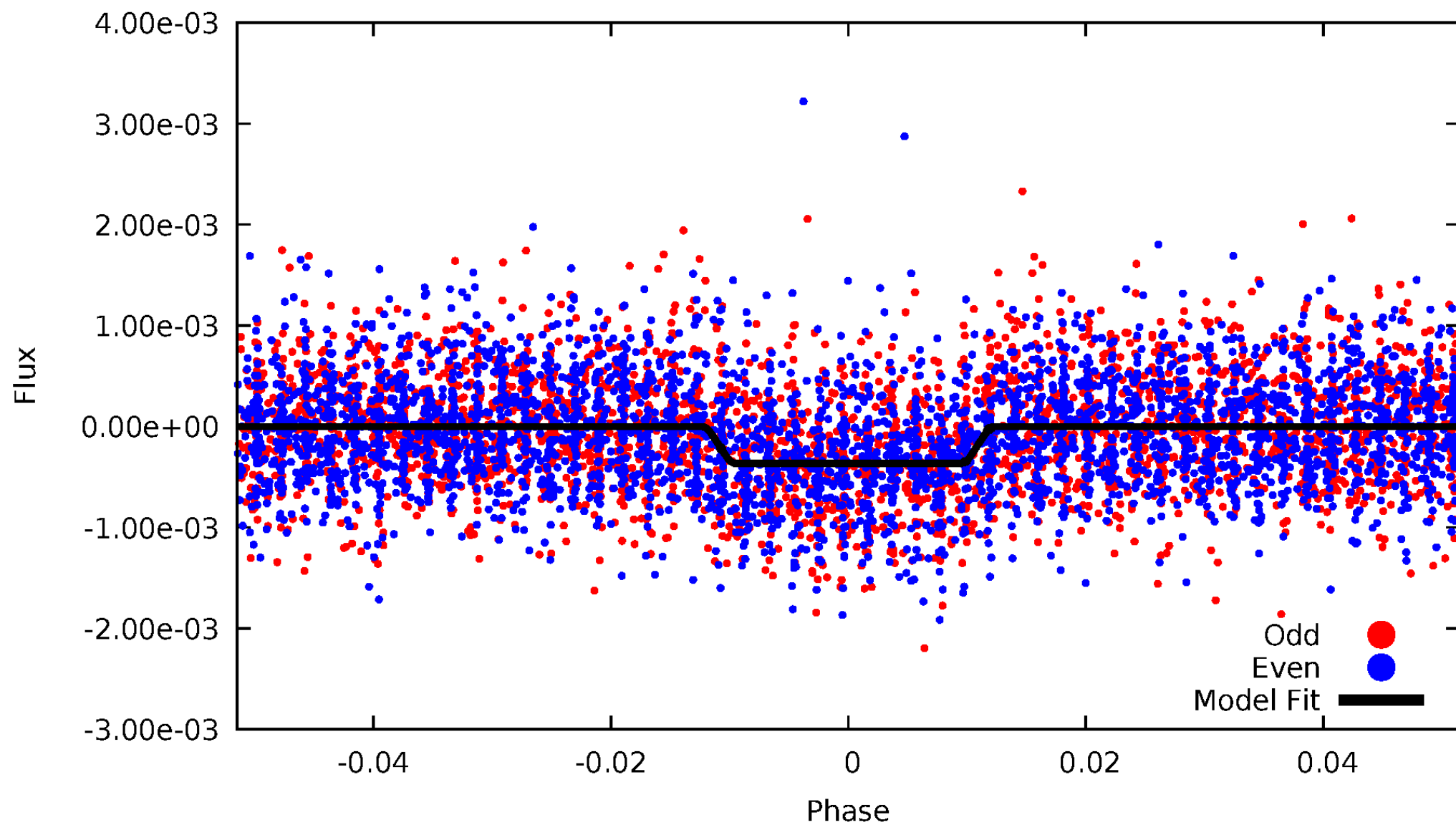
DV Odd/Even

TCE 001432789-01



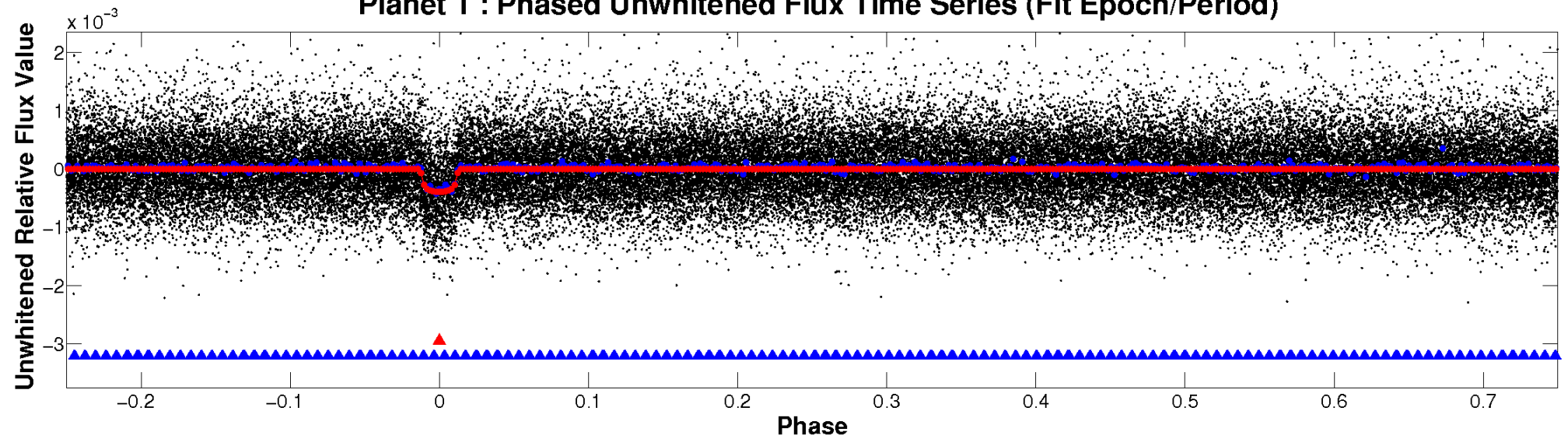
ALT Odd/Even

TCE 001432789-01

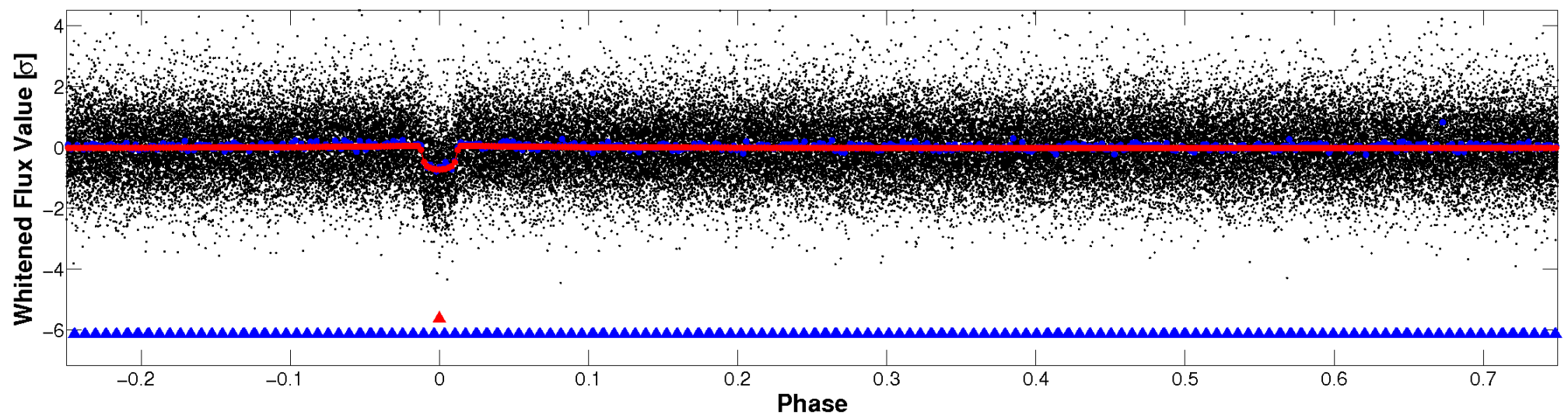


Non-Whitened Vs. Whitened Light Curve

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

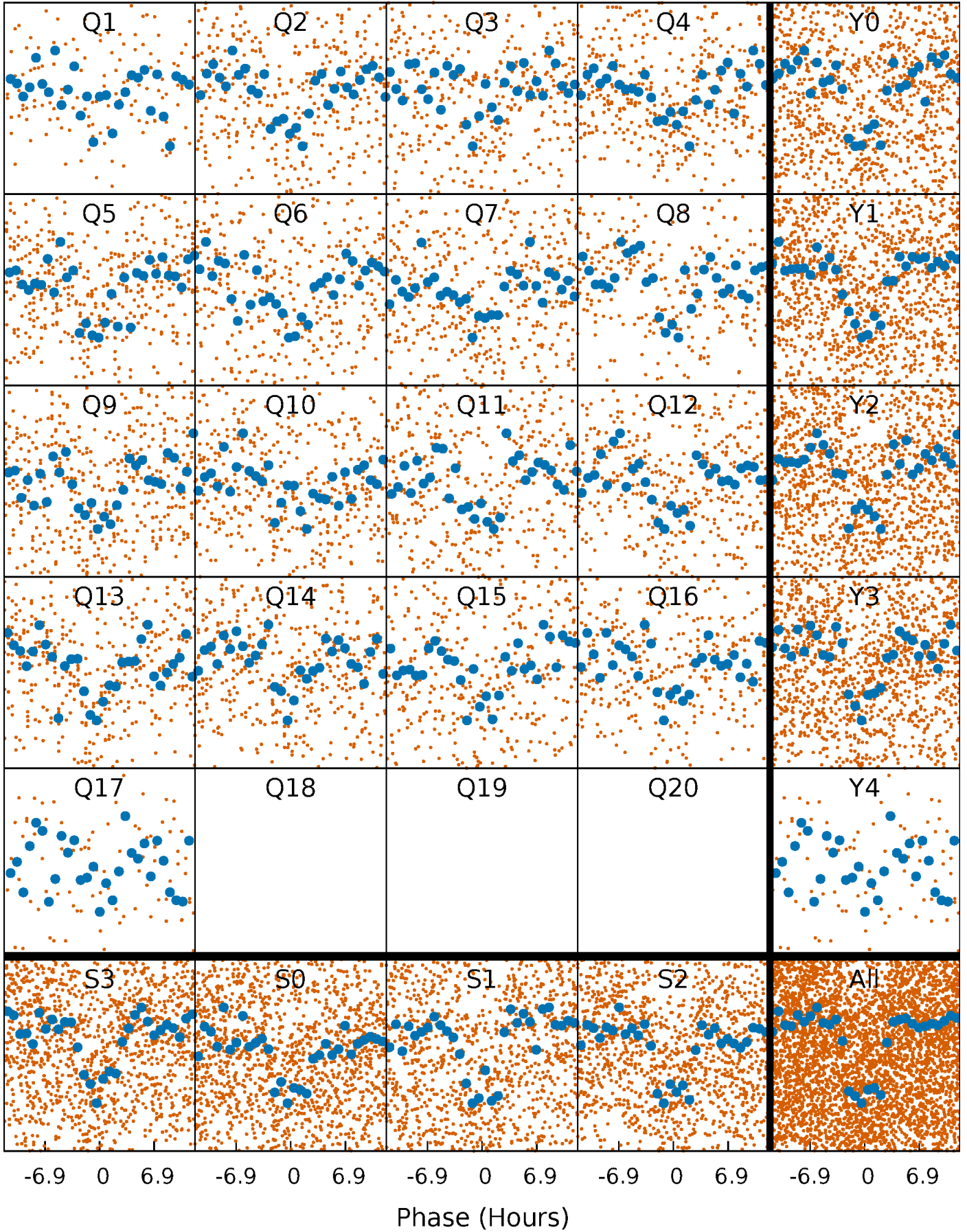


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



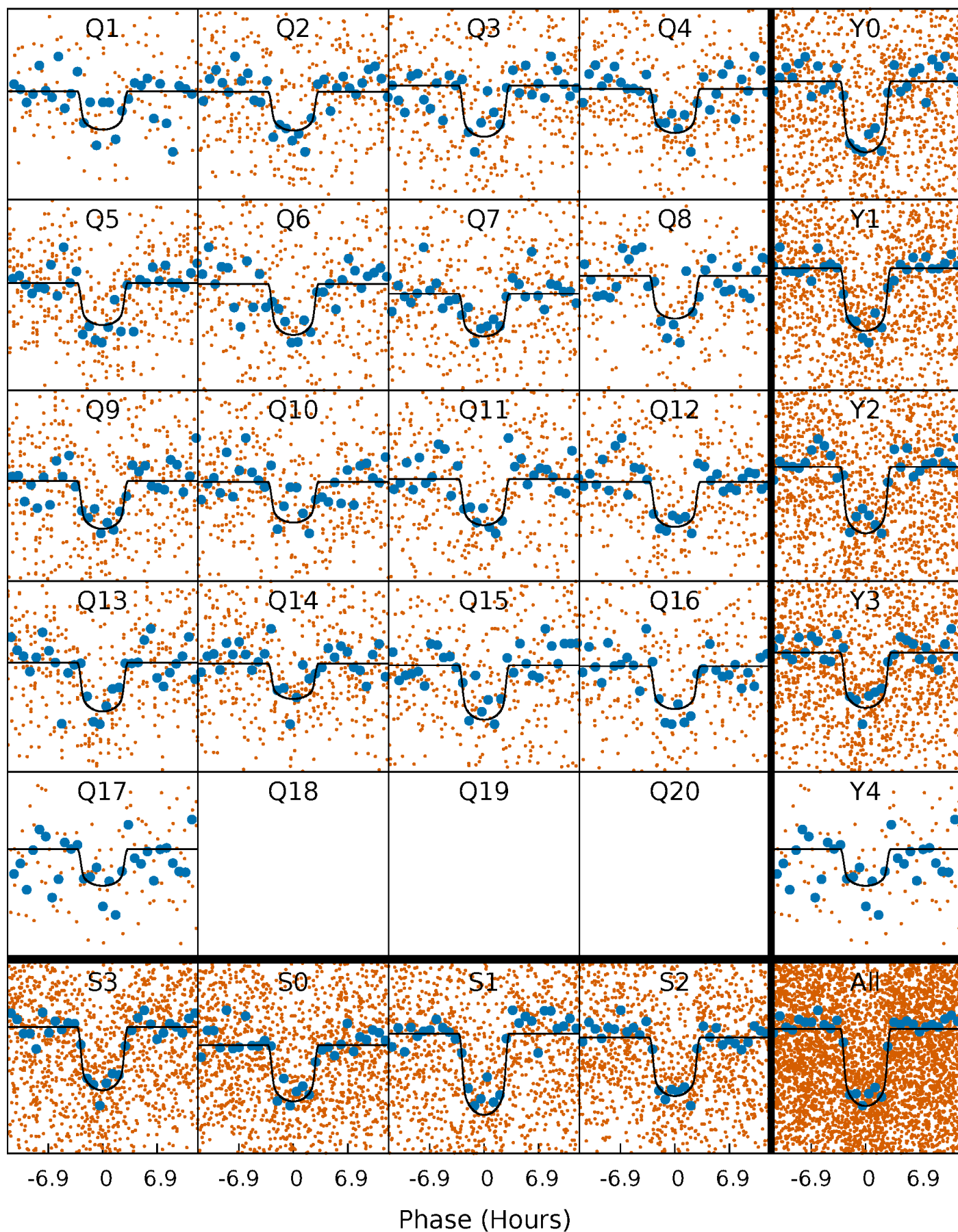
PDC Quarter-Phased Transit Curves

TCE 001432789-01 P= 9.931420 Days $T_0=136.493177$ (BKJD)



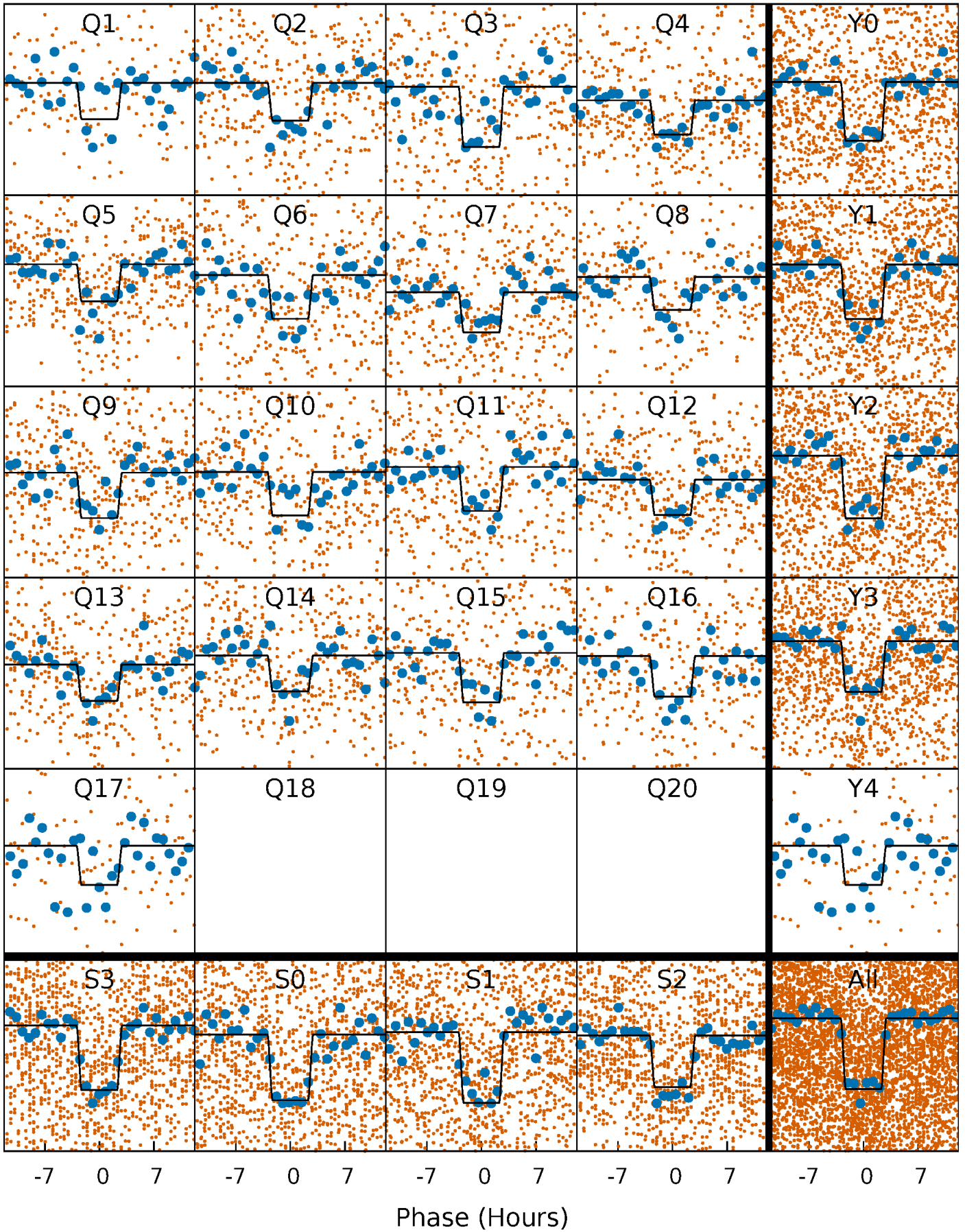
DV Quarter-Phased Transit Curves

TCE 001432789-01 P= 9.931420 Days $T_0=136.493177$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

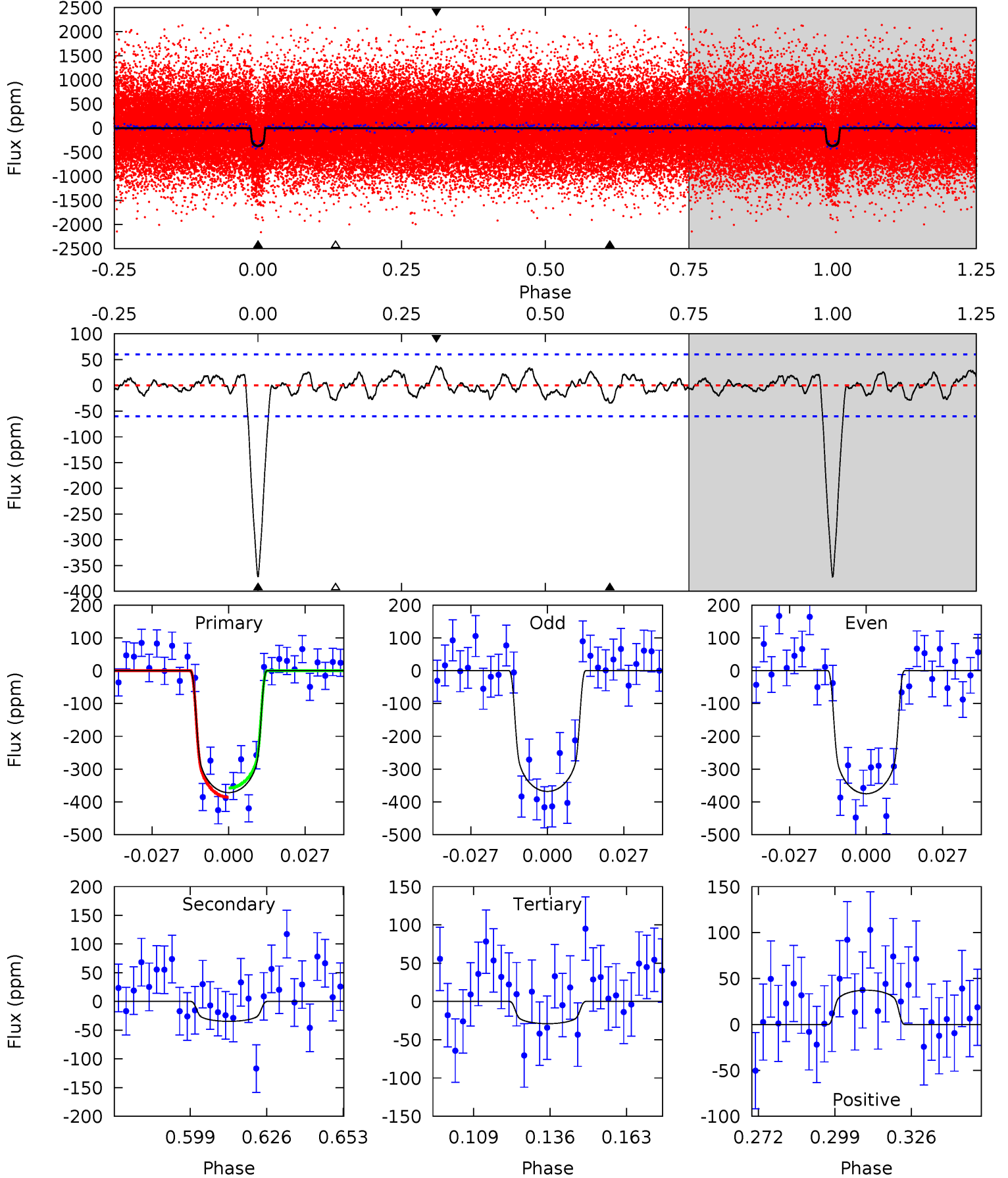
TCE 001432789-01 P= 9.931264 Days $T_0=136.503760$ (BKJD)



DV Model-Shift Uniqueness Test

001432789-01, P = 9.931420 Days, E = 126.561757 Days

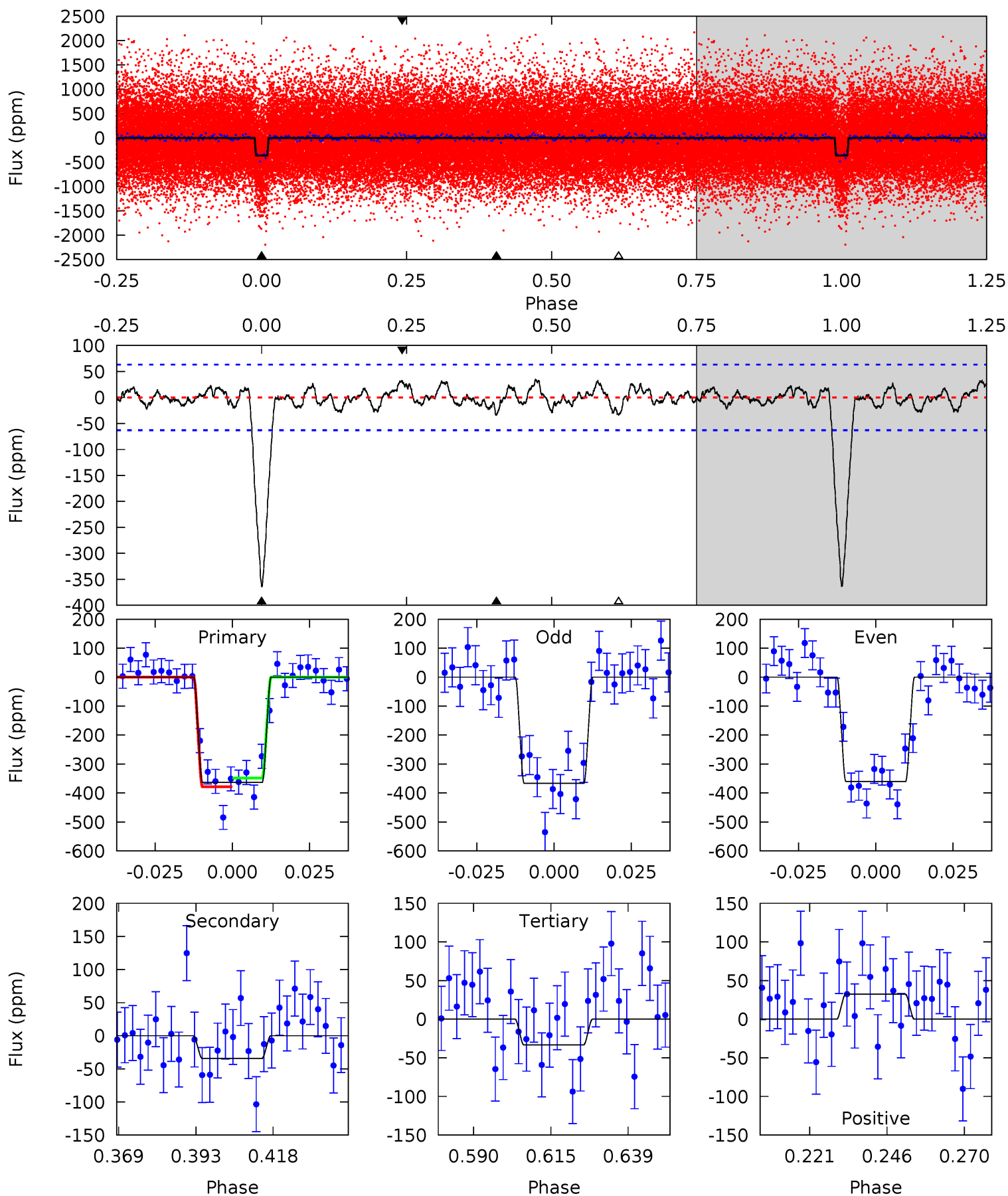
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.8	2.78	2.33	2.99	4.83	2.21	1.10	27.5	26.8	0.45	-0.21	0.28	1.01	0.09	1.13



Alt Model-Shift Uniqueness Test

001432789-01, P = 9.931264 Days, E = 126.572496 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.9	2.63	2.56	2.49	4.85	2.25	1.04	25.4	25.5	0.07	0.14	0.24	1.03	0.09	1.14



Stellar Parameters For KIC 001432789

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5782^{+78}_{-78}	$4.280^{+0.137}_{-0.112}$	$0.160^{+0.150}_{-0.150}$	$1.220^{+0.196}_{-0.176}$	$1.035^{+0.079}_{-0.063}$	$0.803^{+0.512}_{-0.267}$
	+1%/-1%	+3%/-3%	+94%/-94%	+16%/-14%	+8%/-6%	+64%/-33%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 001432789-01 / KOI 0992.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-35 ± 12	$2.78^{+0.45}_{-0.44}$	1298^{+57}_{-54}	3525^{+251}_{-268}	21^{+11}_{-9}
Alt.	-34 ± 13	$2.54^{+0.46}_{-0.44}$	1298^{+56}_{-59}	3620^{+301}_{-306}	24^{+16}_{-11}

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 $A_{obs} \gg 1.0$

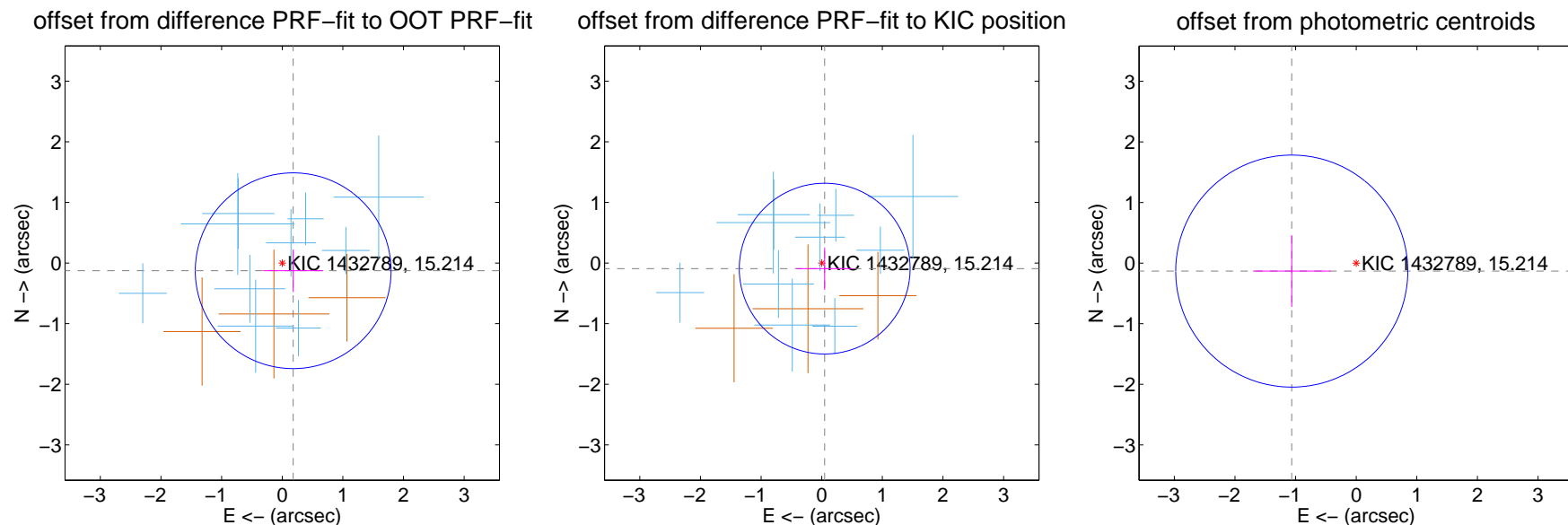
DV Centroid Data

Supplemental centroid analysis for 001432789-01. Kepler magnitude: 15.21. Transit SNR 23.99

There are 10 quarters with good PRF difference image offsets

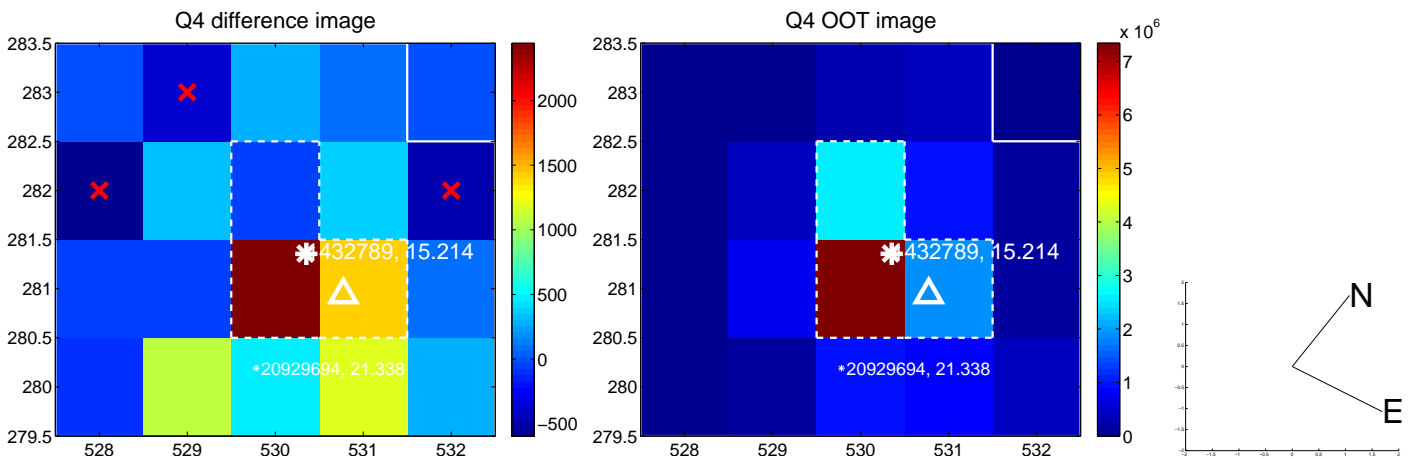
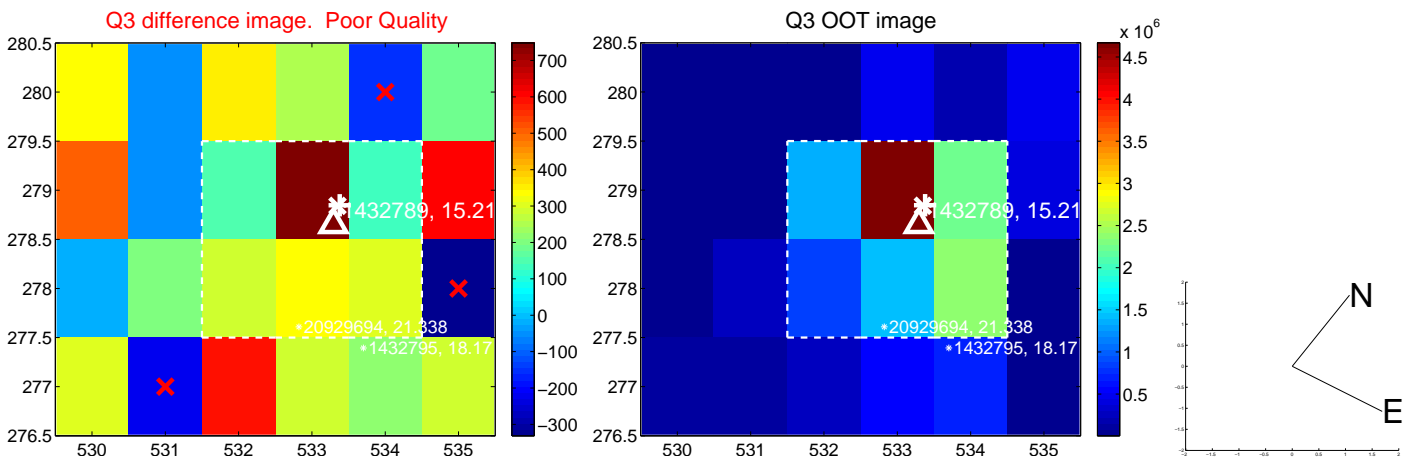
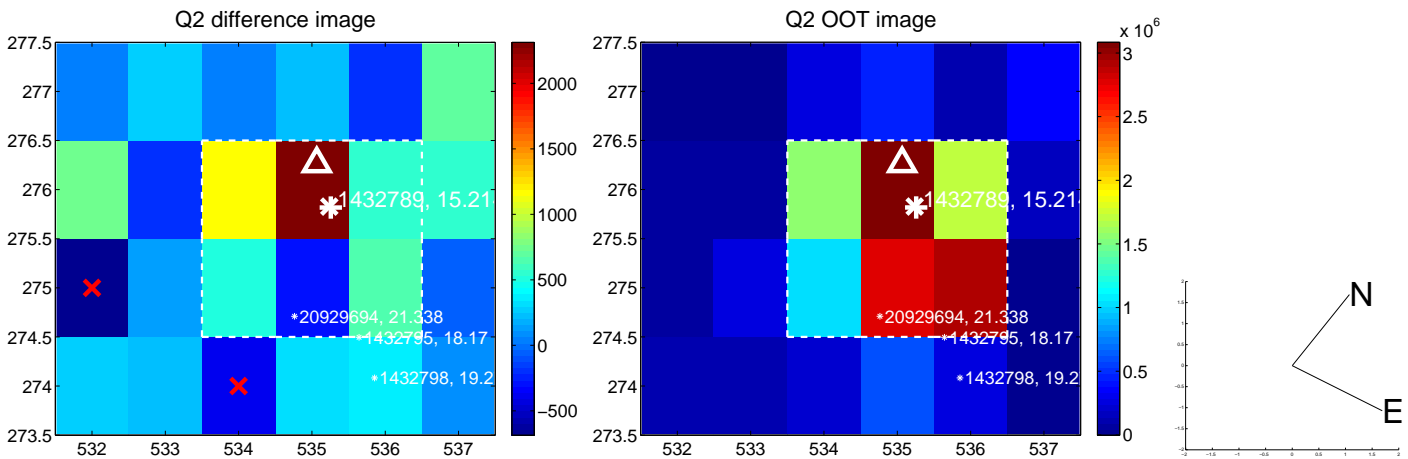
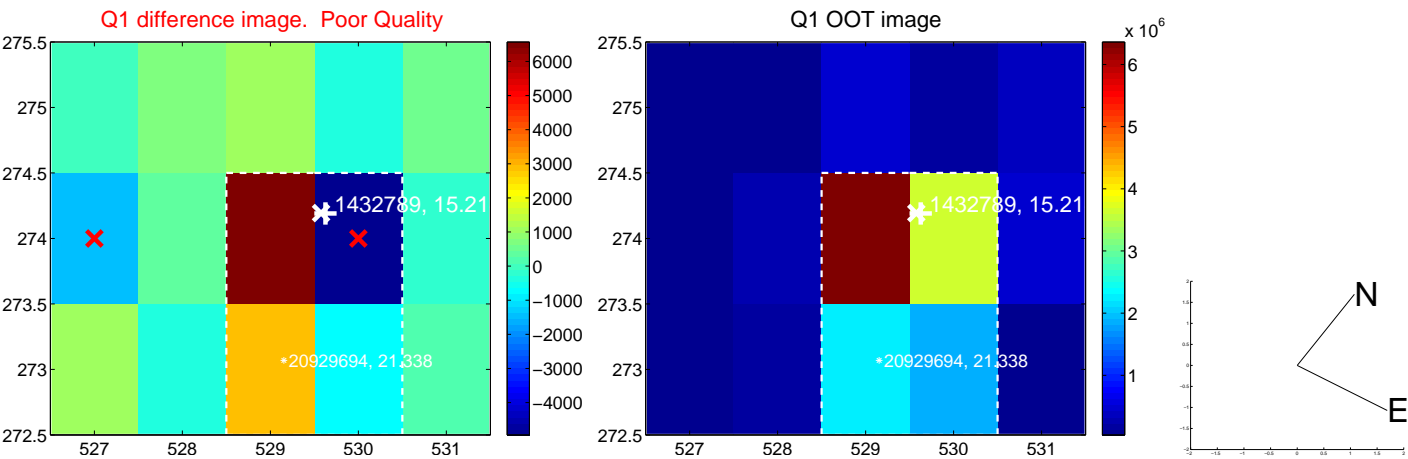
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.221 ± 0.538	0.41	-0.181 ± 0.496	-0.127 ± 0.350
PRF-fit source offset from KIC position	0.104 ± 0.470	0.22	-0.049 ± 0.466	-0.092 ± 0.350
photometric centroid source offset	1.07 ± 0.64	1.68	1.06 ± 0.64	-0.13 ± 0.59

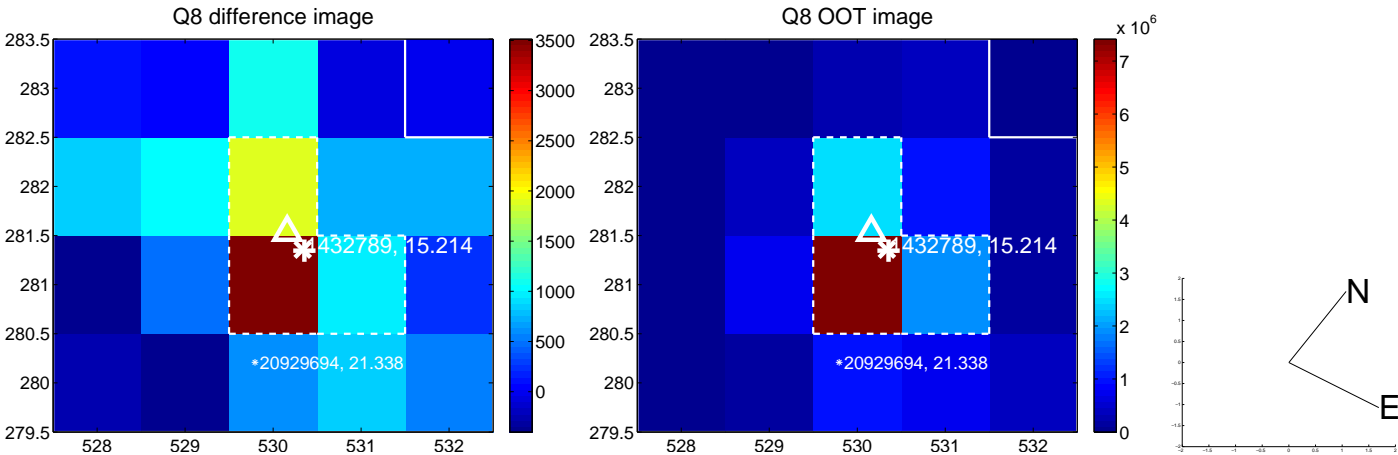
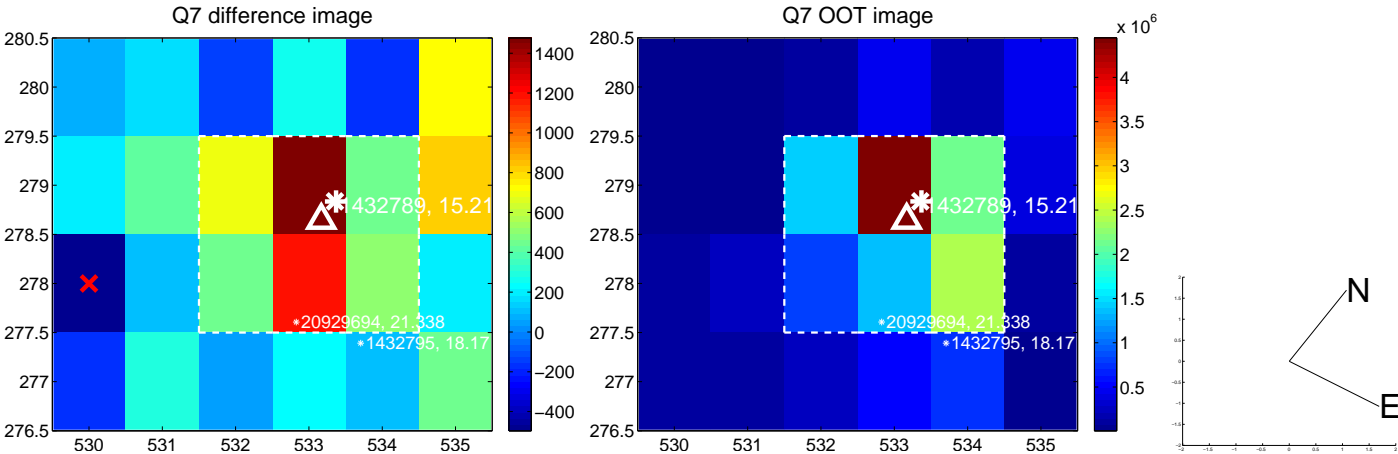
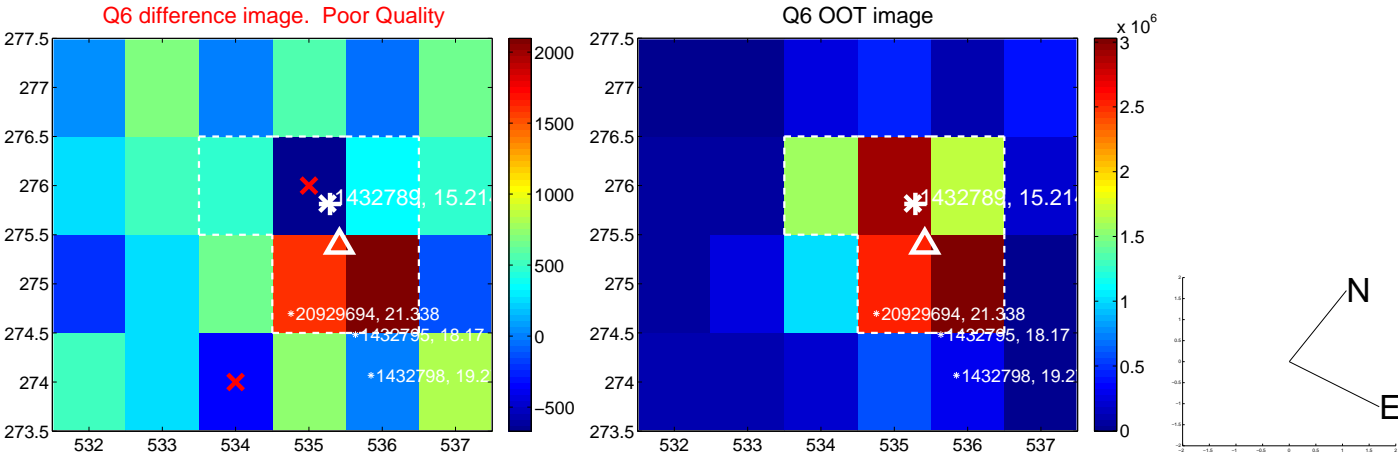
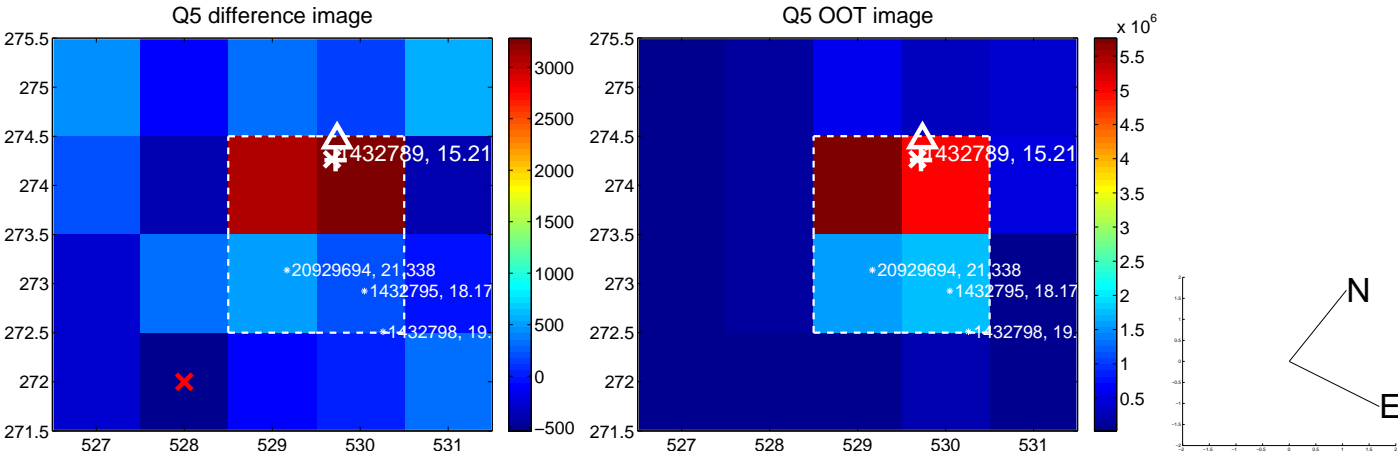


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

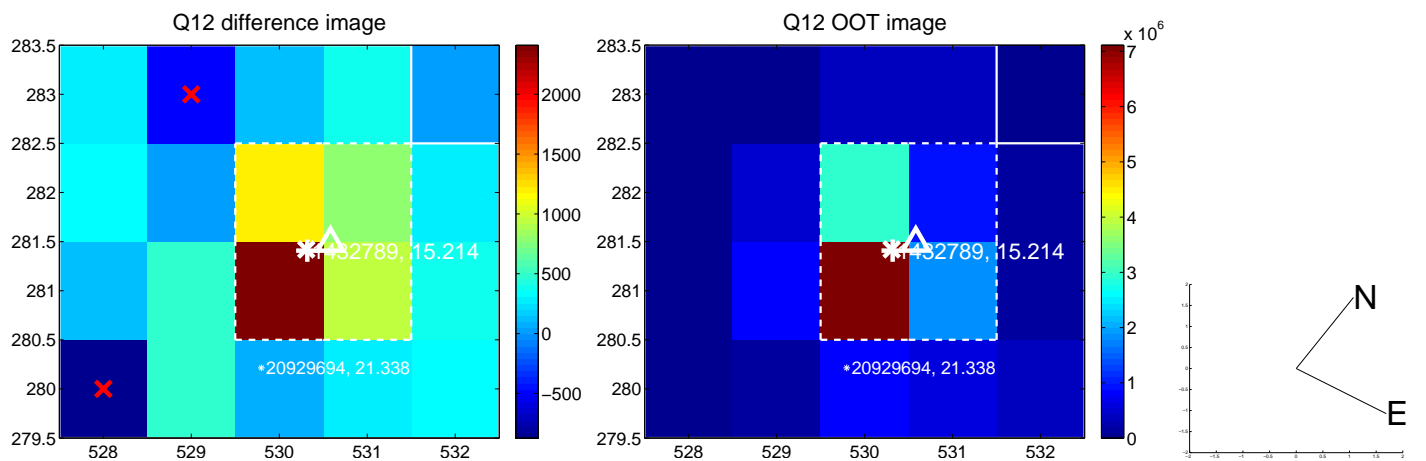
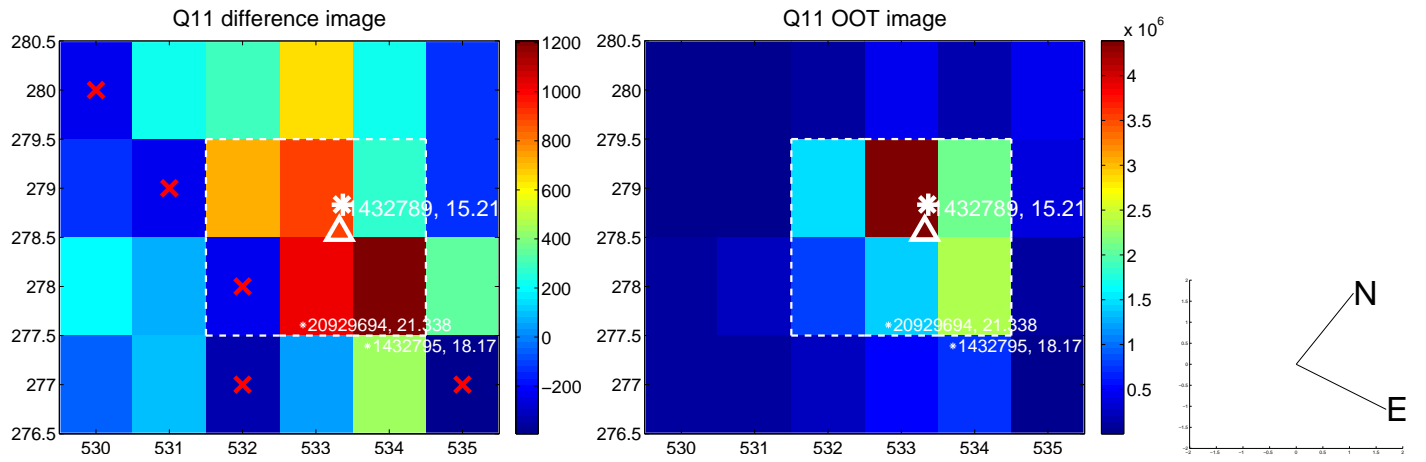
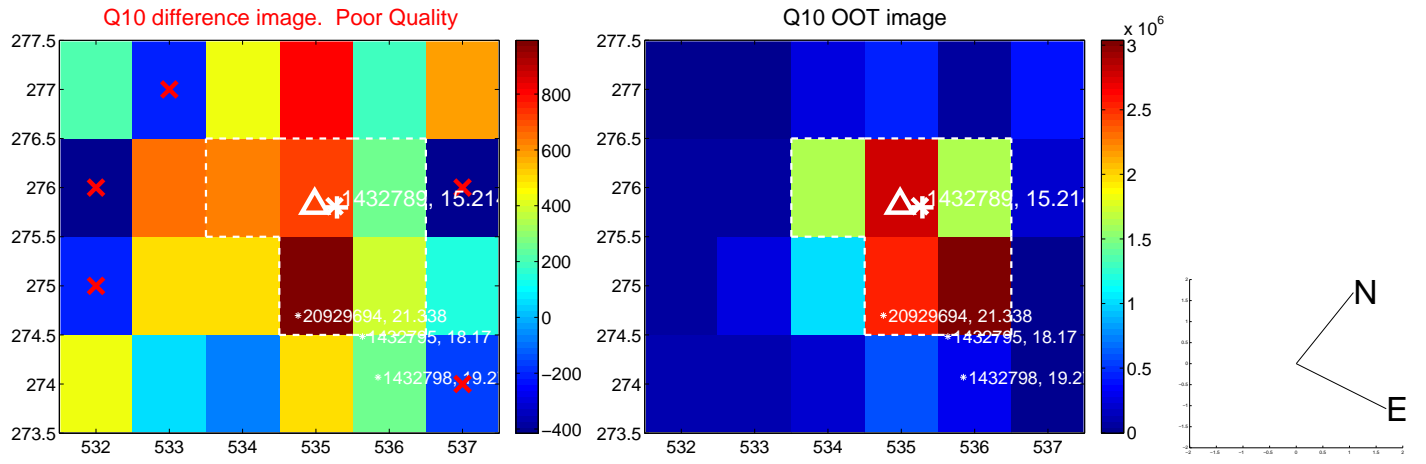
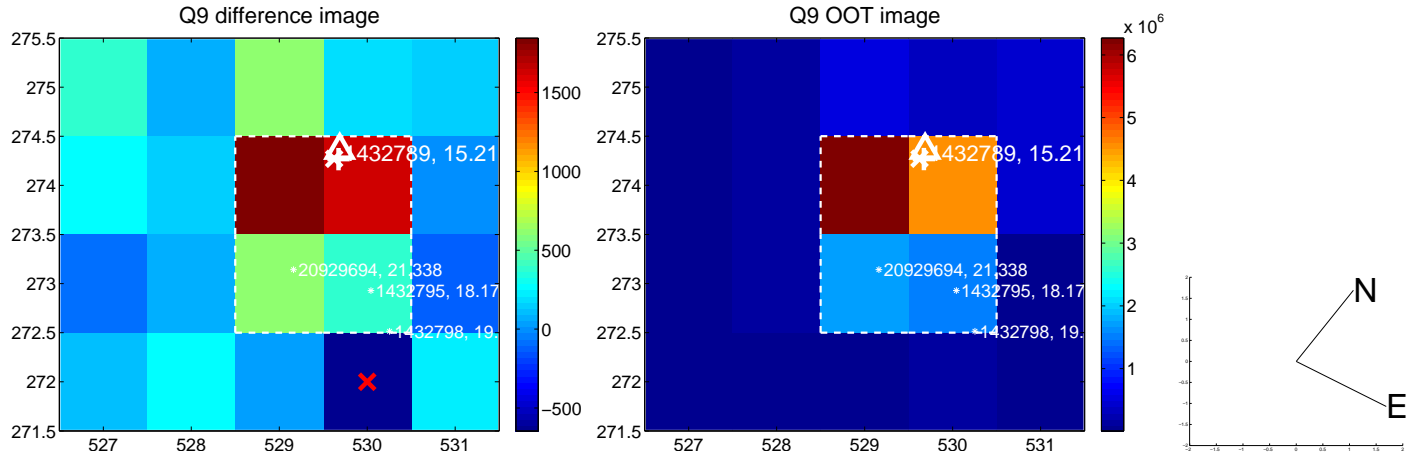
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



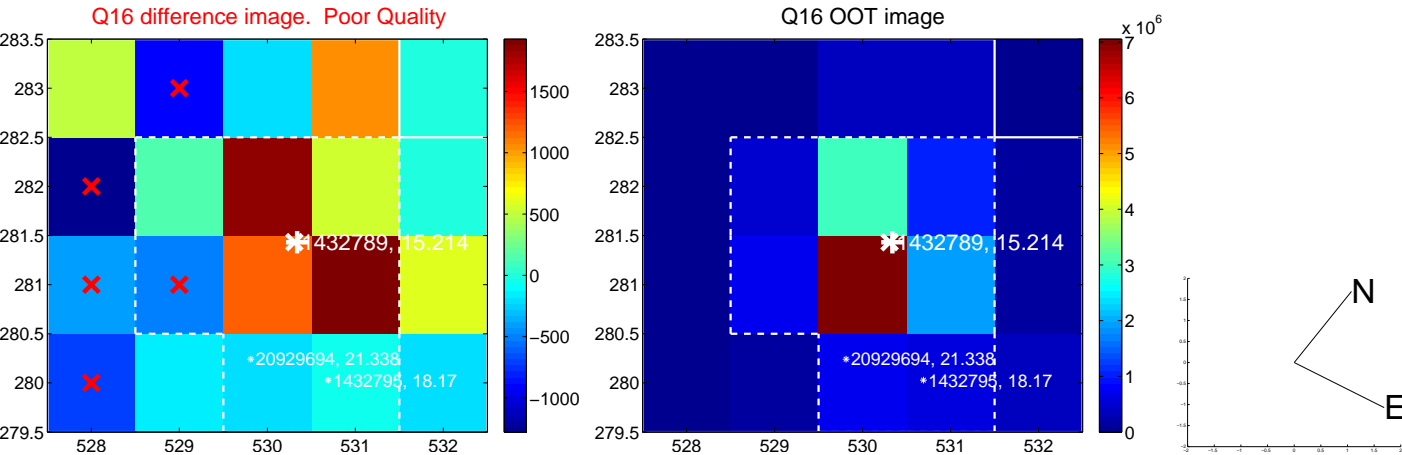
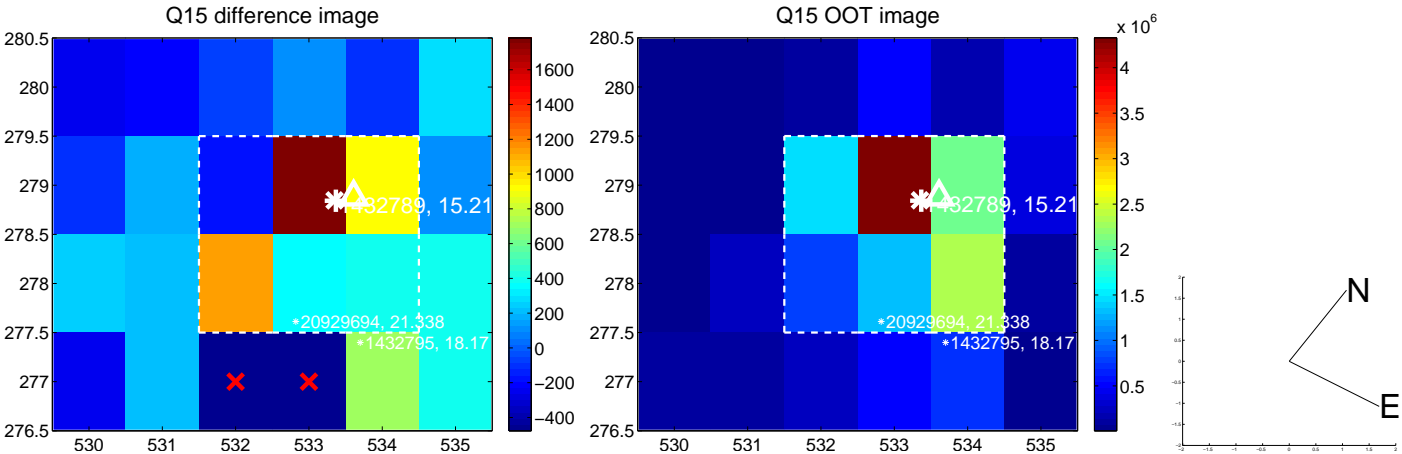
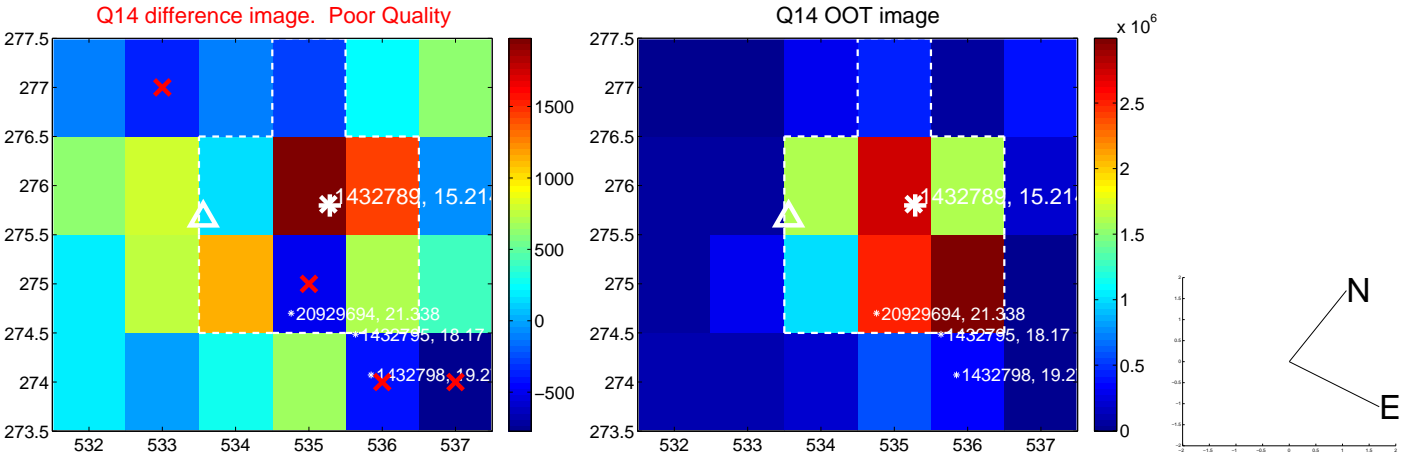
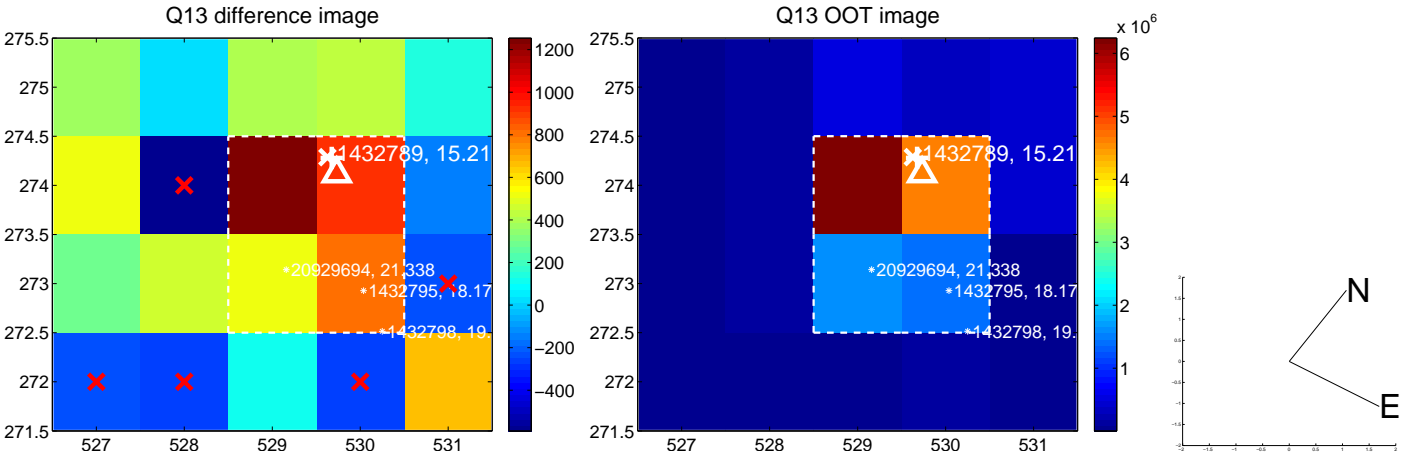
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



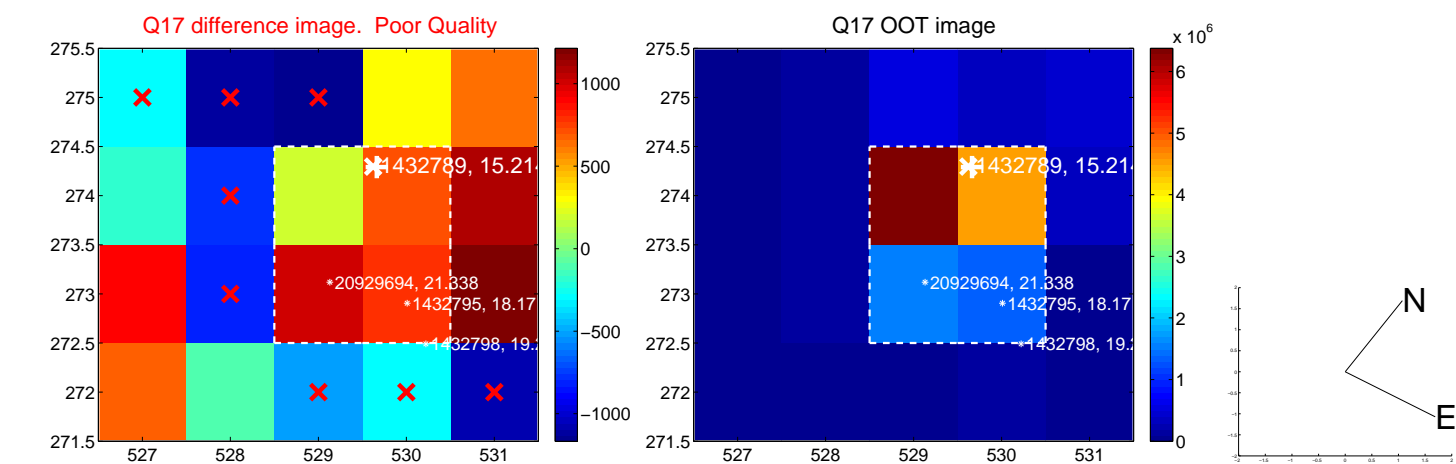
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



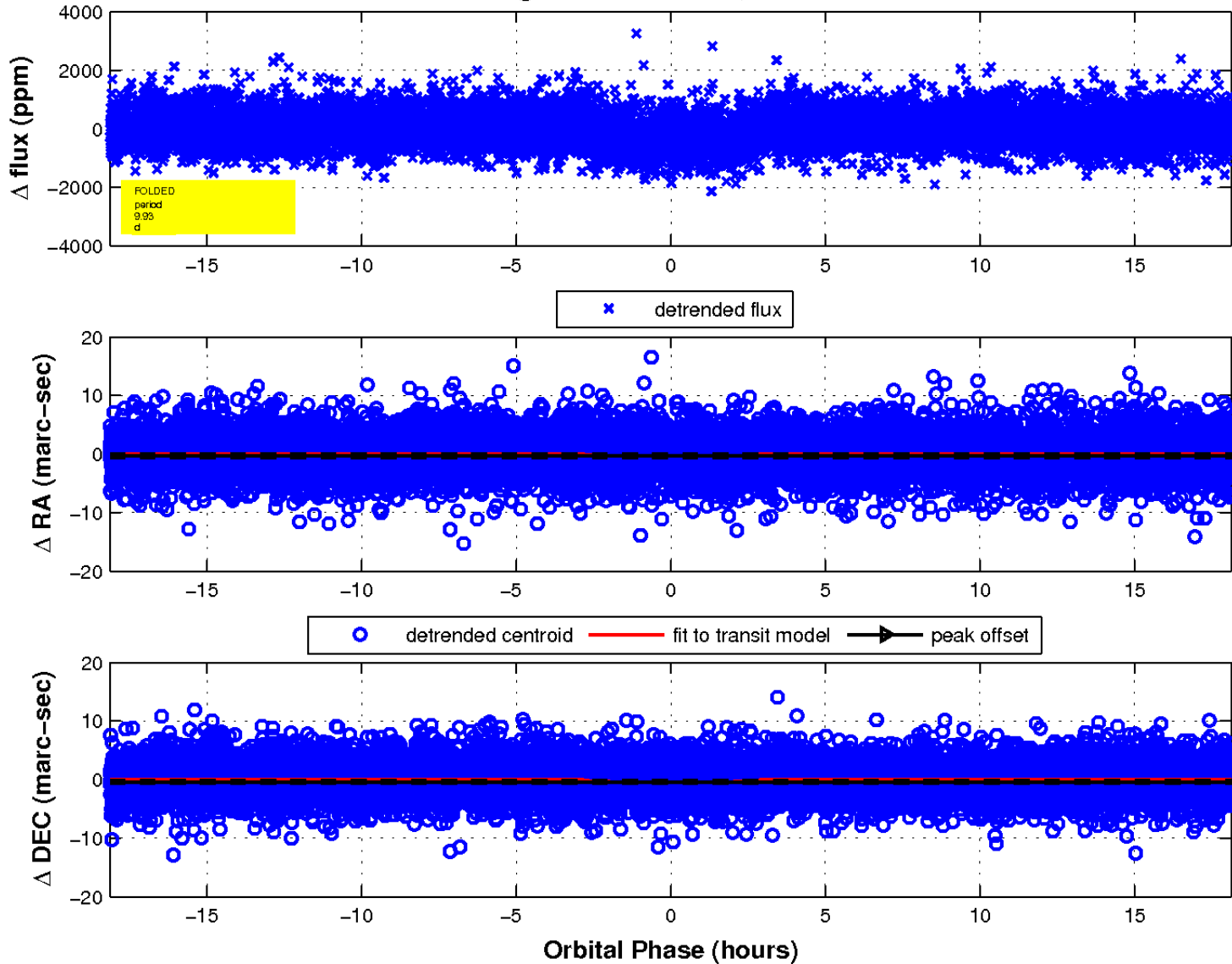
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

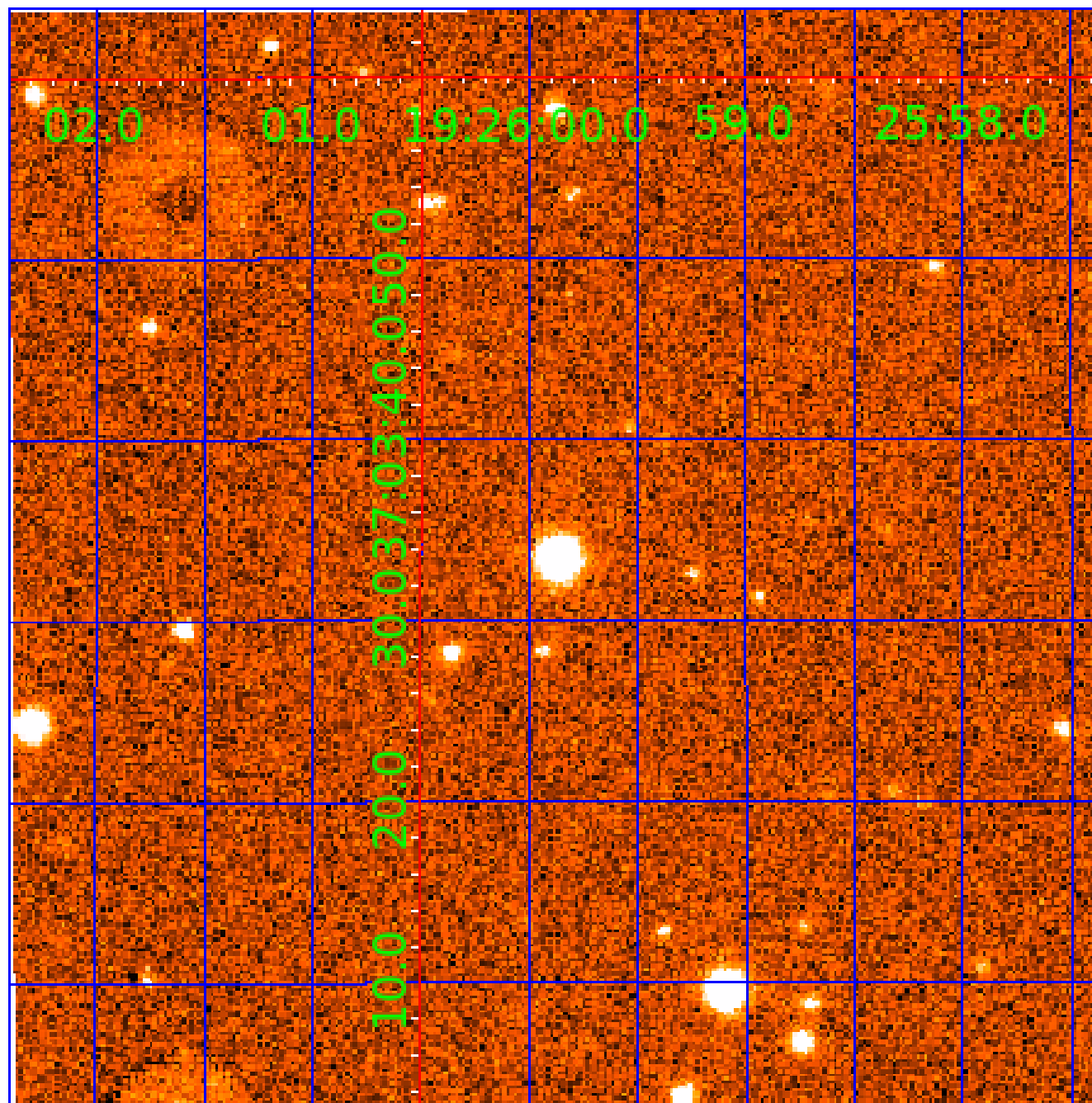


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 001432789

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})
001432789-01	OBS	0992.01	9.931420	136.493177	394.9	6.048	22.9	24.0	1.22	5782	2.80	178.14
001432789-02	OBS	0992.02	4.578356	132.295672	132.6	4.045	8.9	9.9	1.22	5782	1.64	500.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001432789-01	OBS	PC	0.85	0	0	0	0	NO_COMMENT
001432789-02	OBS	PC	0.96	0	0	0	0	NO_COMMENT

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.

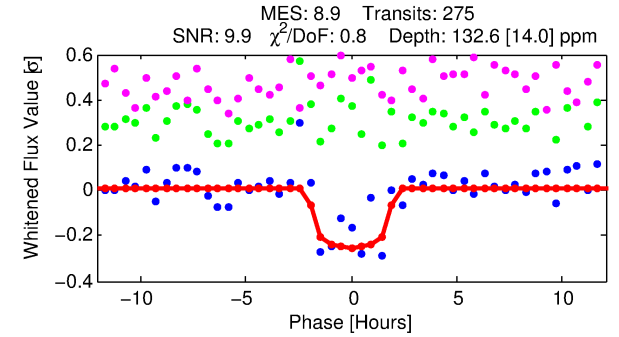
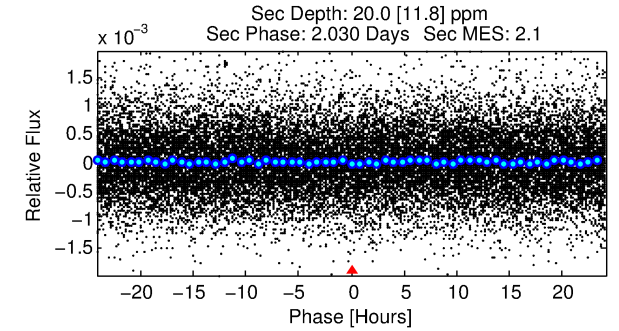
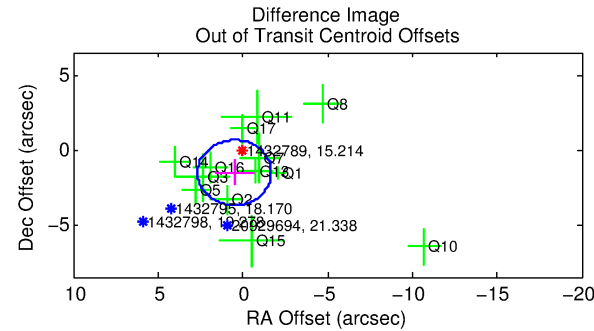
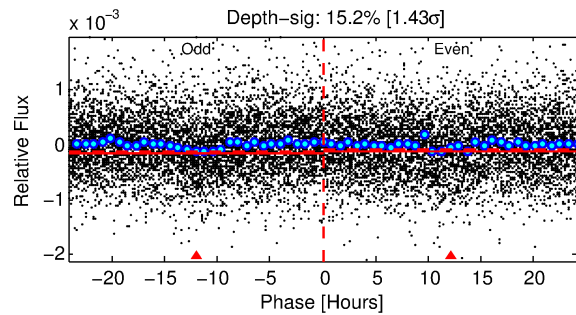
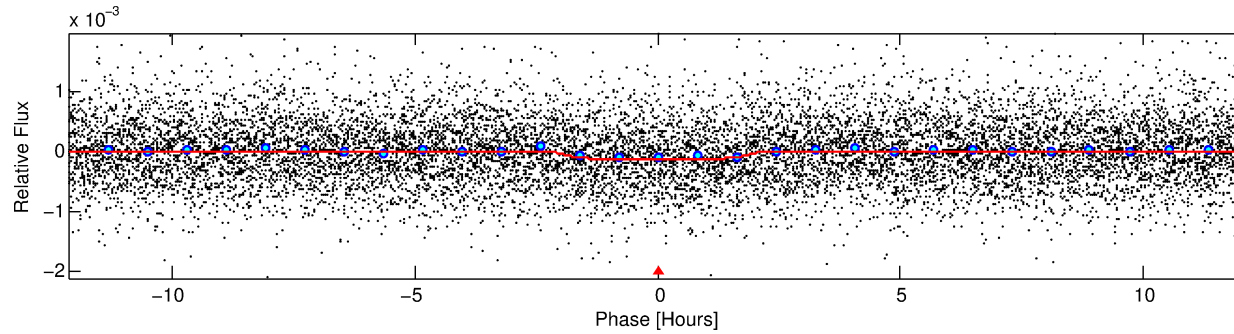
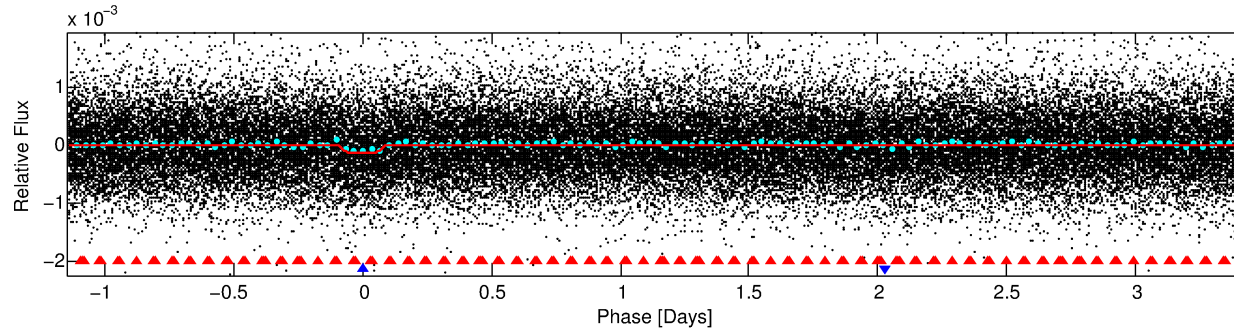
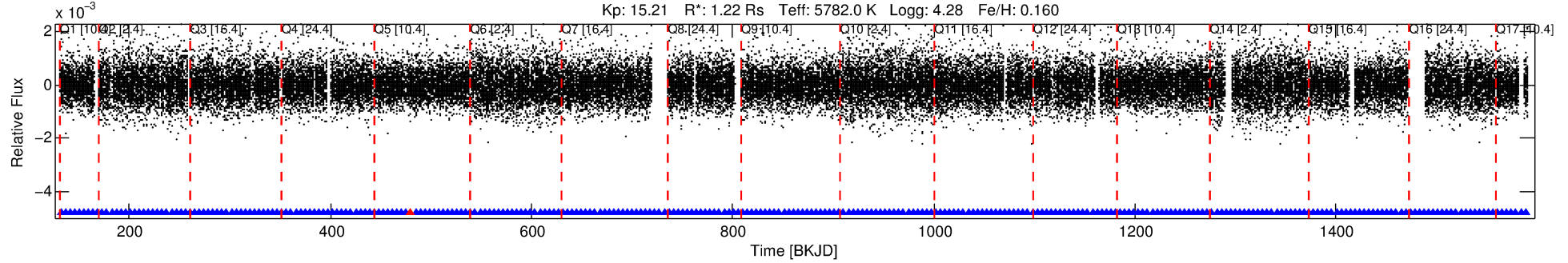
Ephemeris Match Information For 001432789-02

No Significant Match Found

DV One-Page Summary

KIC: 1432789 Candidate: 2 of 2 Period: 4.578 d
KOI: K00992.02 Corr: 0.982

Kp: 15.21 R*: 1.22 Rs Teff: 5782.0 K Logg: 4.28 Fe/H: 0.160



DV Fit Results:

Period = 4.57836 [0.00004] d
Epoch = 132.2957 [0.0069] BKJD
Rp/R* = 0.0123 [0.0080]
a/R* = 4.43 [12.77]
b = 0.88 [0.79]
Seff = 500.23 [121.10]
Teff = 1206 [73] K
Rp = 1.64 [1.10] Re
a = 0.0546 [0.0082] AU
Ag = 12.14 [17.55] [0.63σ]
Teffp = 3480 [1242] K [1.83σ]

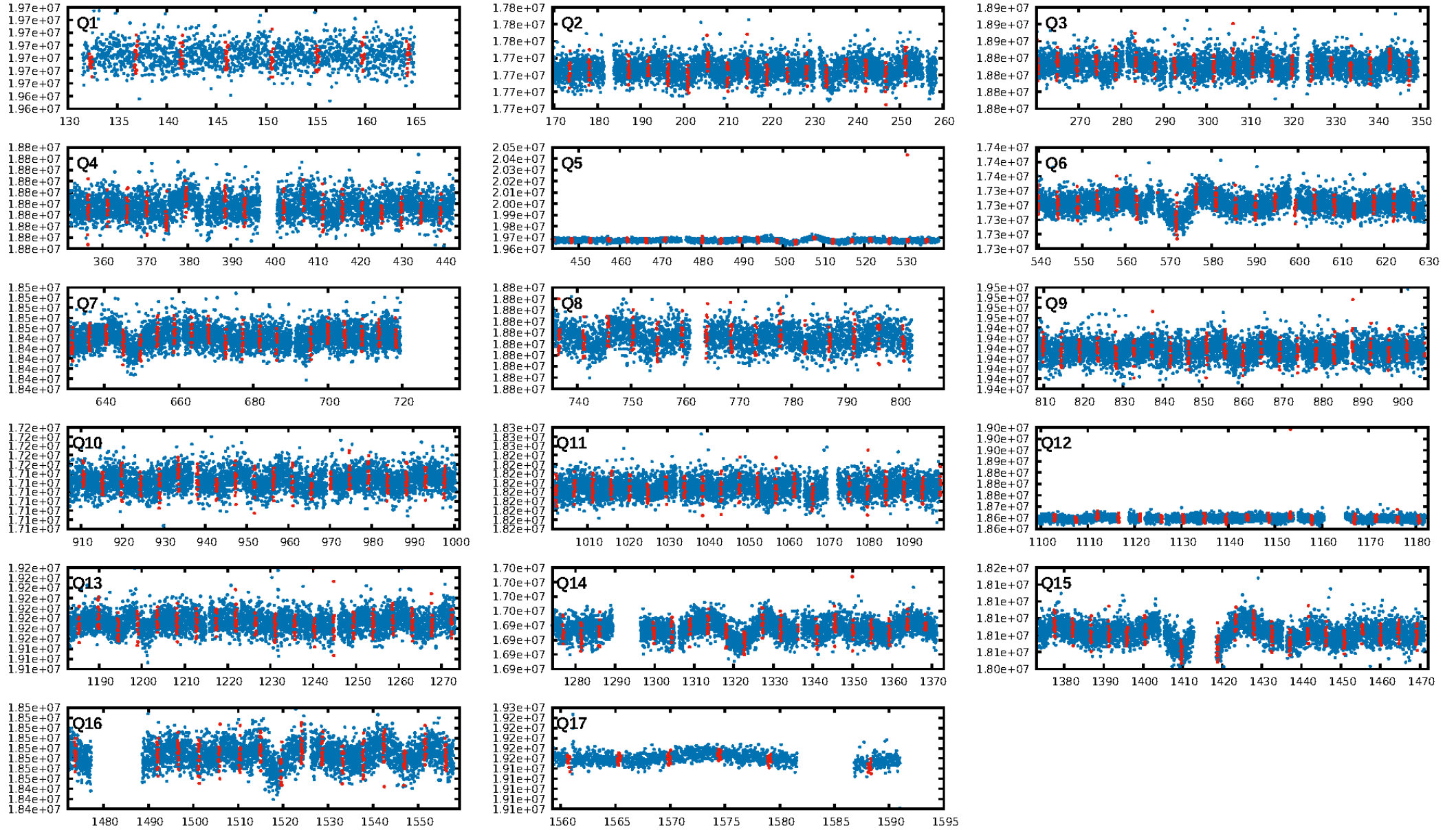
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [17.66σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.56e-19
RollingBand-fgt: 1.00 [260/261]
GhostDiagnostic-chr: 2.358
Centroid-sig: 0.2%
Centroid-so: 3.845 arcsec [2.65σ]
OotOffset-rm: 1.615 arcsec [2.22σ]
KicOffset-rm: 1.570 arcsec [2.30σ]
OotOffset-st: 3/4/2/4 [13]
KicOffset-st: 3/4/2/4 [13]
DiffImageQuality-fgm: 0.31 [4/13]
DiffImageOverlap-fno: 1.00 [17/17]

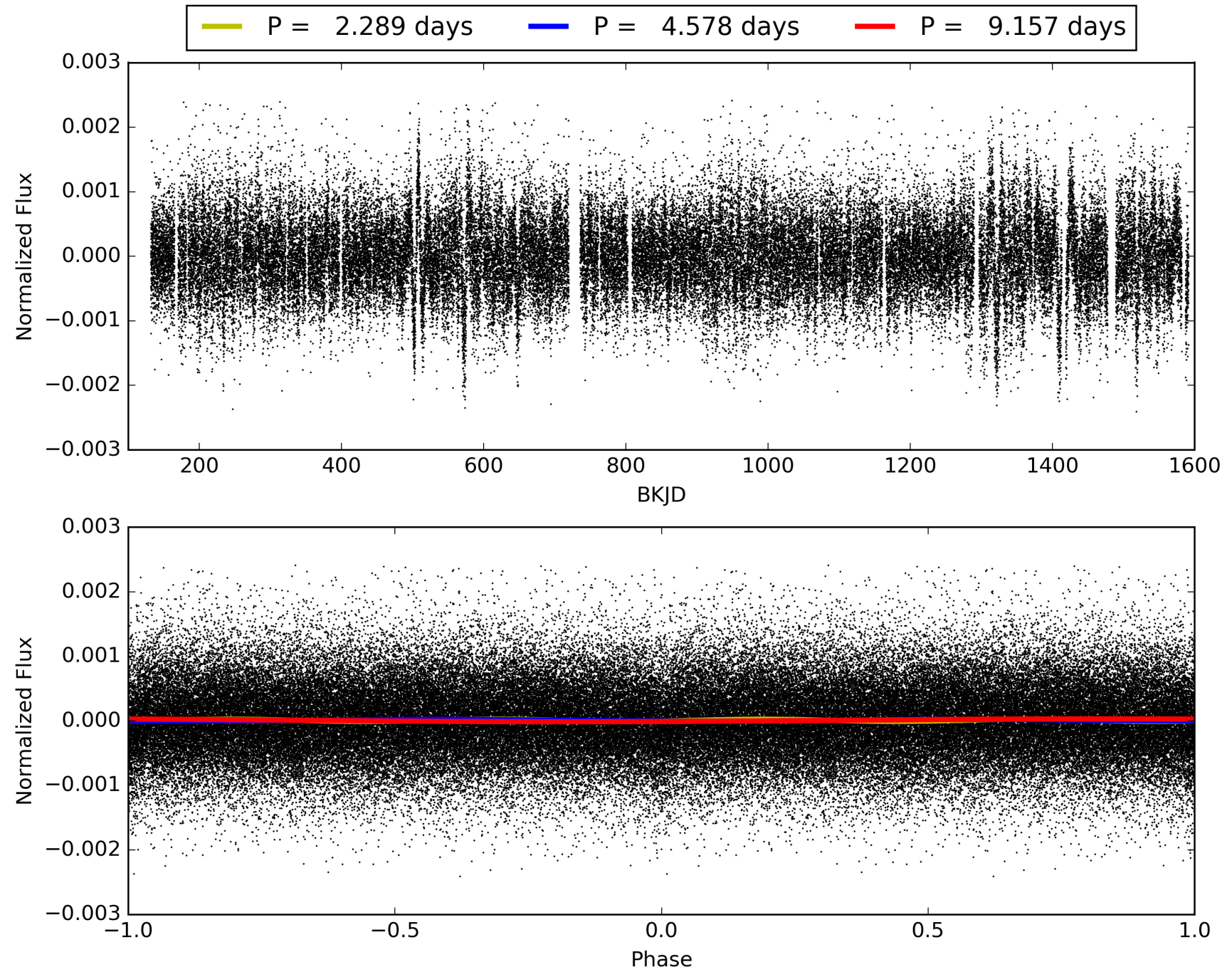
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:33:13 Z

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

TCE 001432789-02, PDC Light Curves

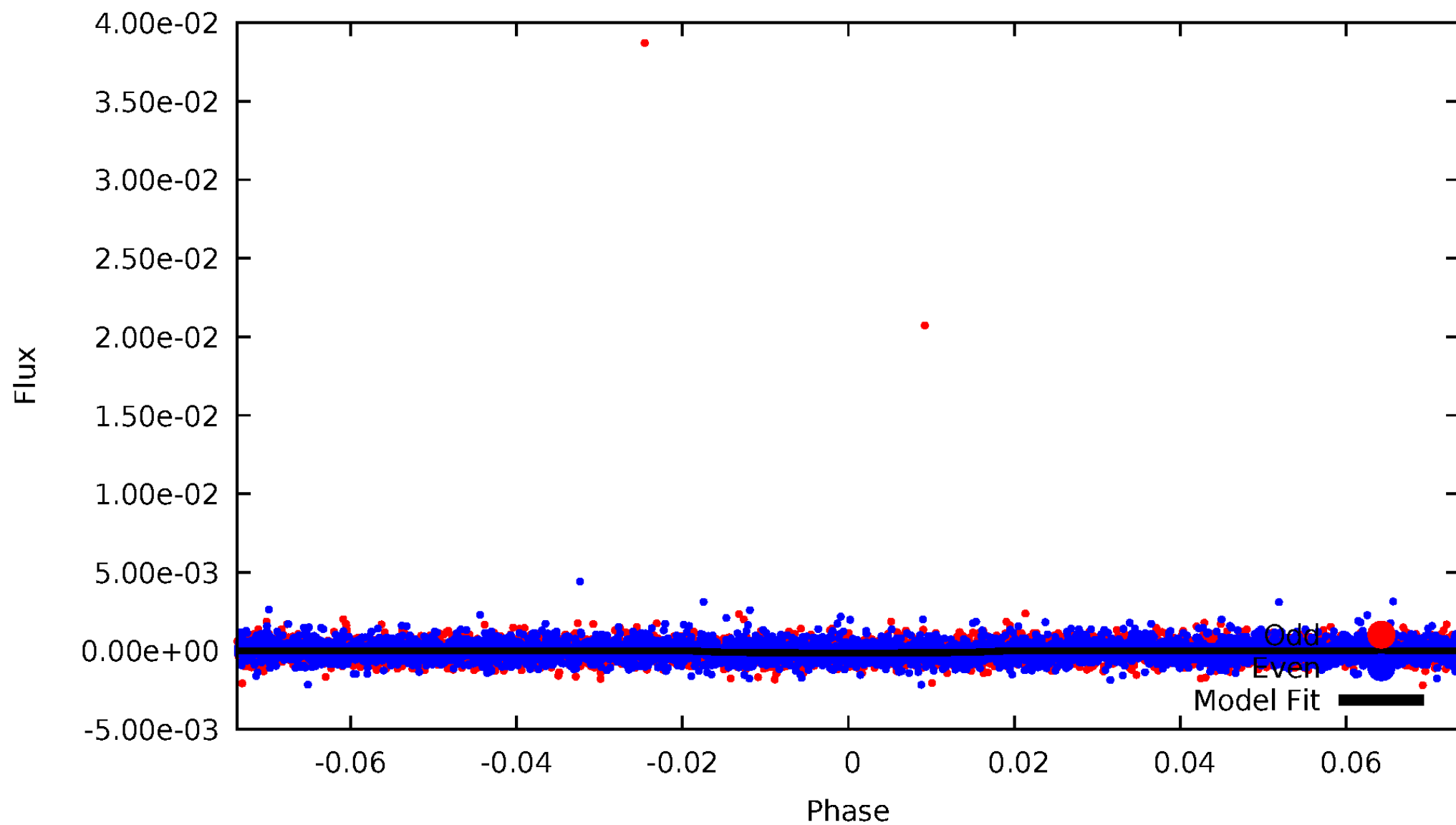


TCE 001432789-02



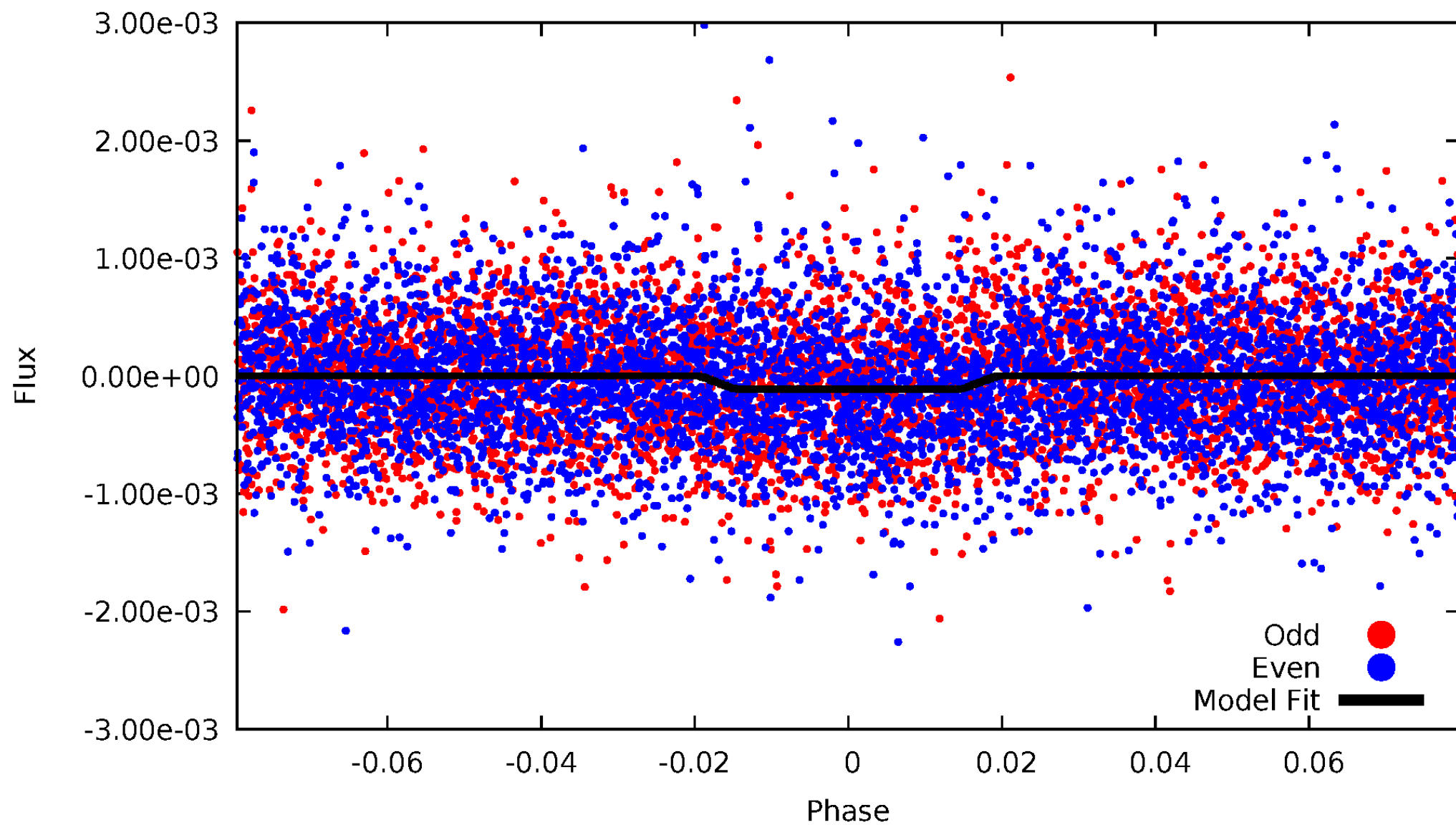
DV Odd/Even

TCE 001432789-02



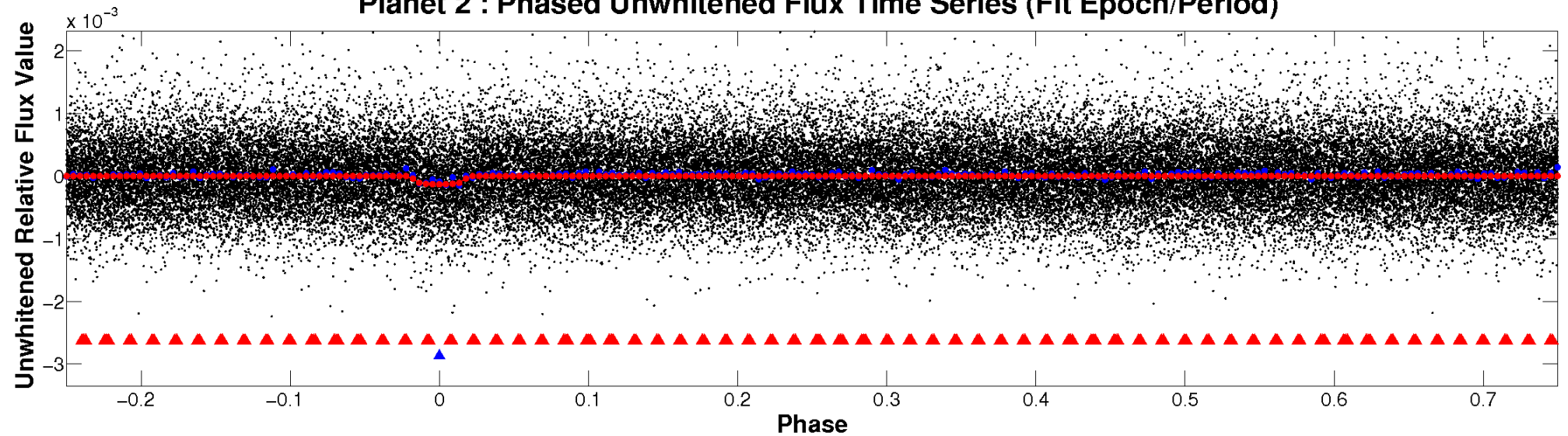
ALT Odd/Even

TCE 001432789-02

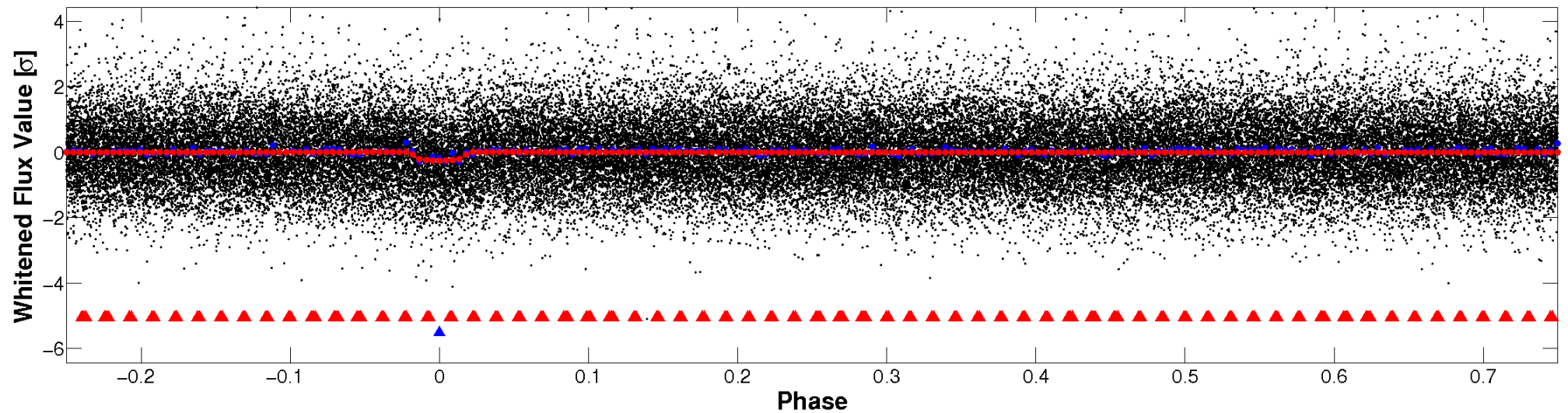


Non-Whitened Vs. Whitened Light Curve

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

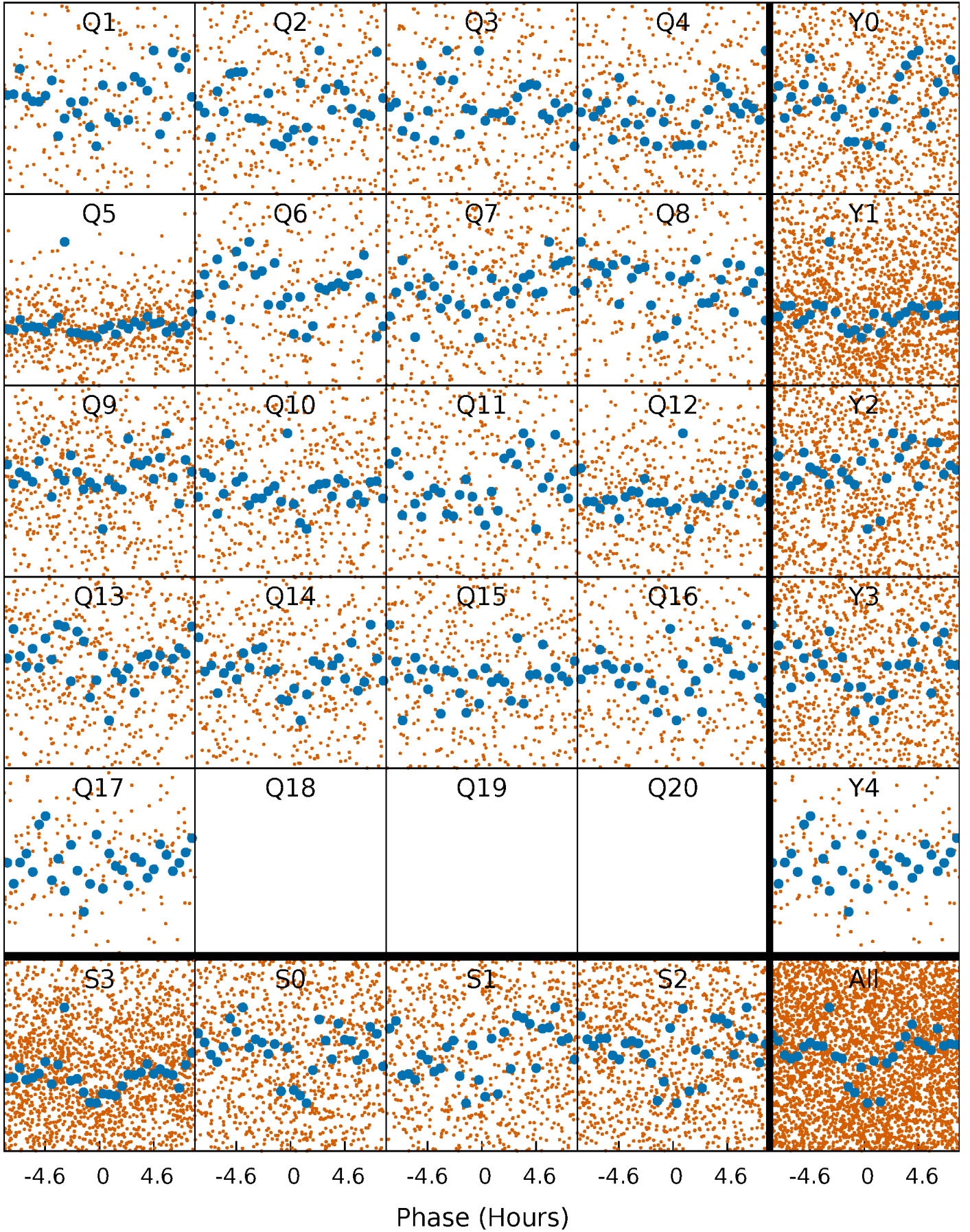


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



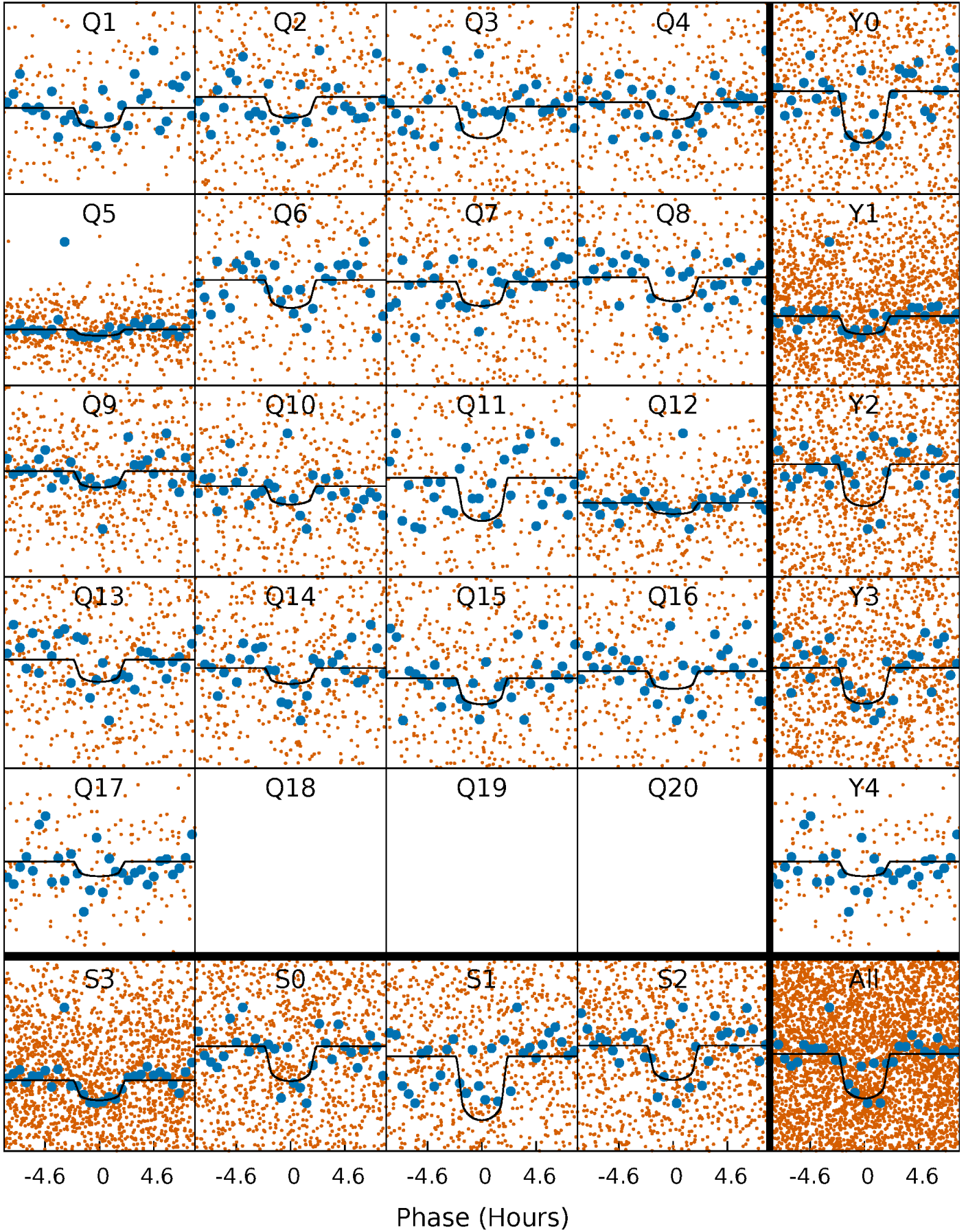
PDC Quarter-Phased Transit Curves

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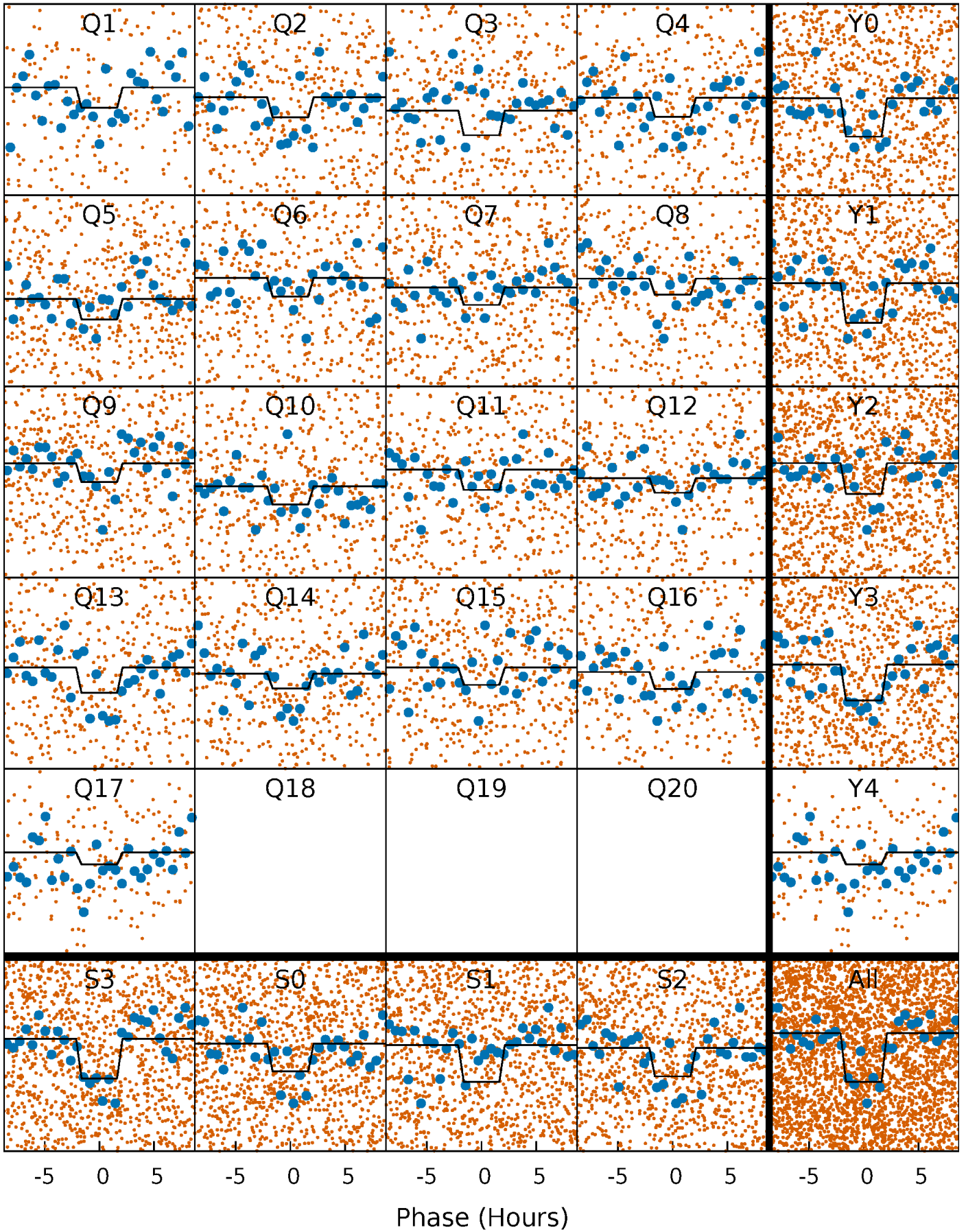
DV Quarter-Phased Transit Curves

TCE 001432789-02 P= 4.578356 Days $T_0=132.295672$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

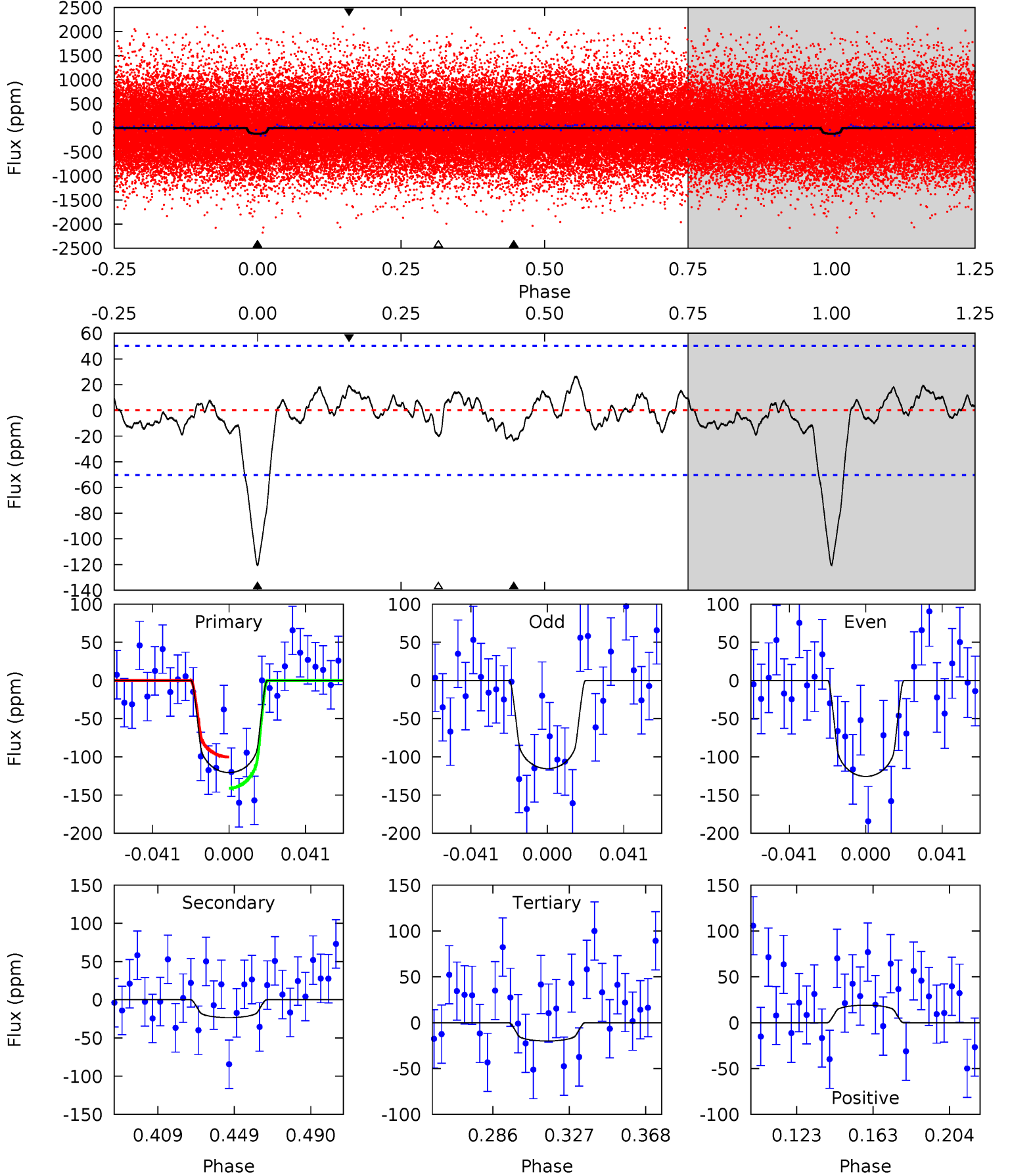
TCE 001432789-02 P= 4.578423 Days $T_0=132.285775$ (BKJD)



DV Model-Shift Uniqueness Test

001432789-02, P = 4.578356 Days, E = 127.717316 Days

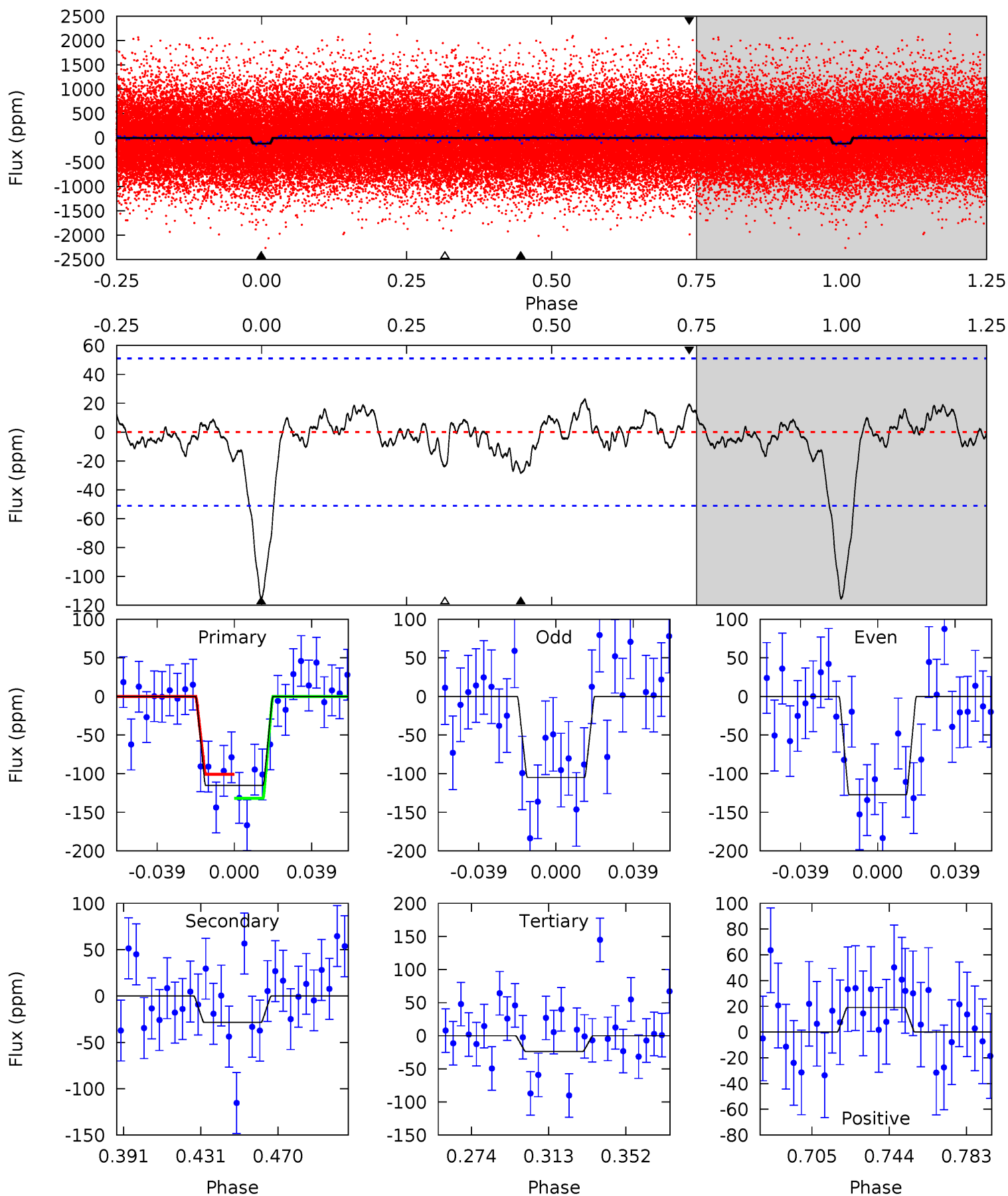
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	2.21	1.89	1.80	4.75	2.05	0.89	9.51	9.59	0.32	0.41	0.48	0.83	0.18	1.94



Alt Model-Shift Uniqueness Test

001432789-02, P = 4.578423 Days, E = 127.707352 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	2.64	2.21	1.77	4.76	2.06	0.82	8.53	8.97	0.43	0.87	1.04	0.89	0.17	1.45



Stellar Parameters For KIC 001432789

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5782^{+78}_{-78}	$4.280^{+0.137}_{-0.112}$	$0.160^{+0.150}_{-0.150}$	$1.220^{+0.196}_{-0.176}$	$1.035^{+0.079}_{-0.063}$	$0.803^{+0.512}_{-0.267}$
	+1%/-1%	+3%/-3%	+94%/-94%	+16%/-14%	+8%/-6%	+64%/-33%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 001432789-02 / KOI 0992.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-23 ± 11	$1.71^{+1.07}_{-0.97}$	1681^{+78}_{-79}	3845^{+1405}_{-659}	12^{+50}_{-8}
Alt.	-28 ± 11	$1.50^{+1.03}_{-0.90}$	1683^{+75}_{-74}	4187^{+1963}_{-761}	20^{+108}_{-13}

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

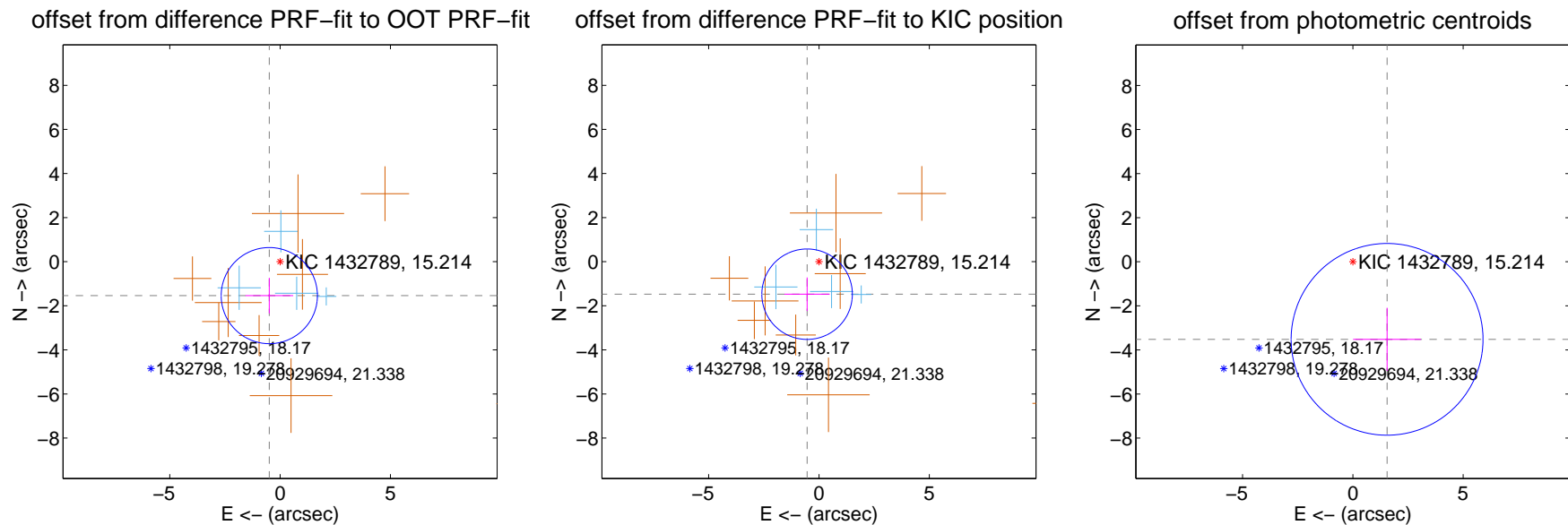
DV Centroid Data

Supplemental centroid analysis for 001432789-02. Kepler magnitude: 15.21. Transit SNR 9.90

There are 4 quarters with good PRF difference image offsets

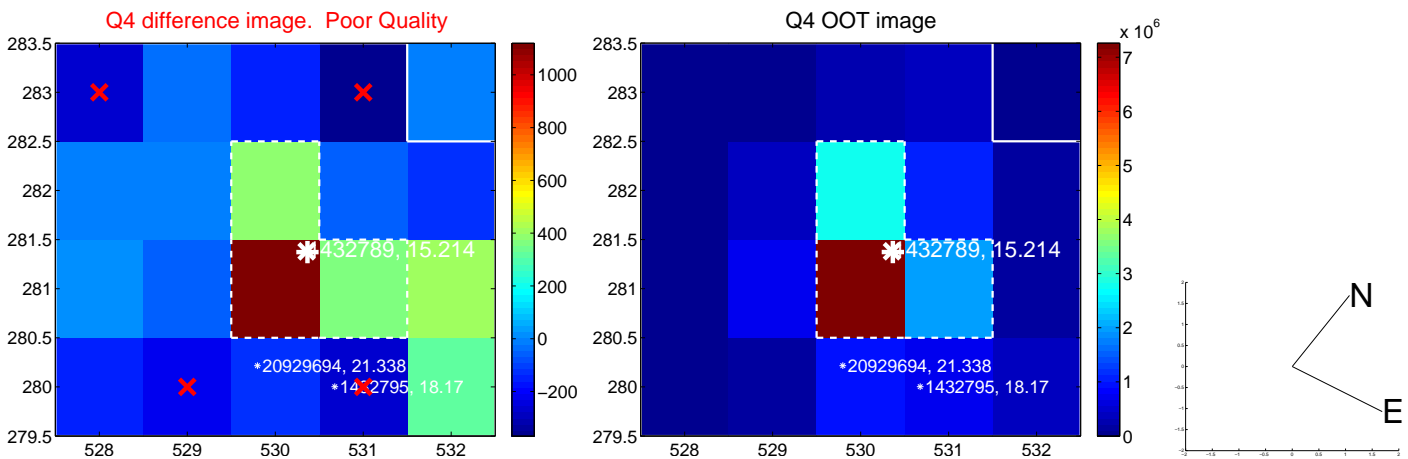
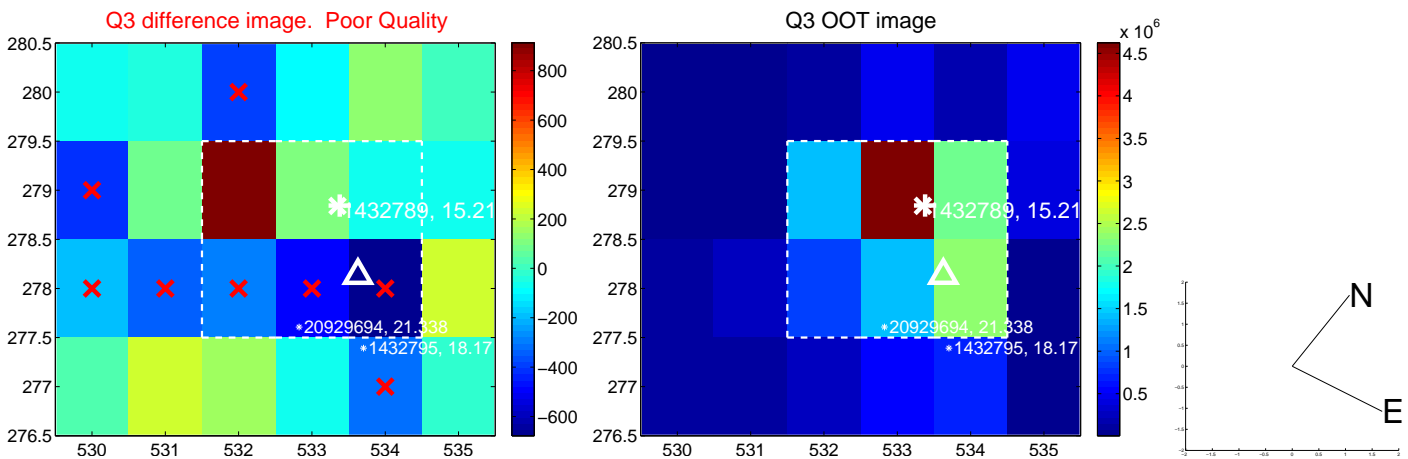
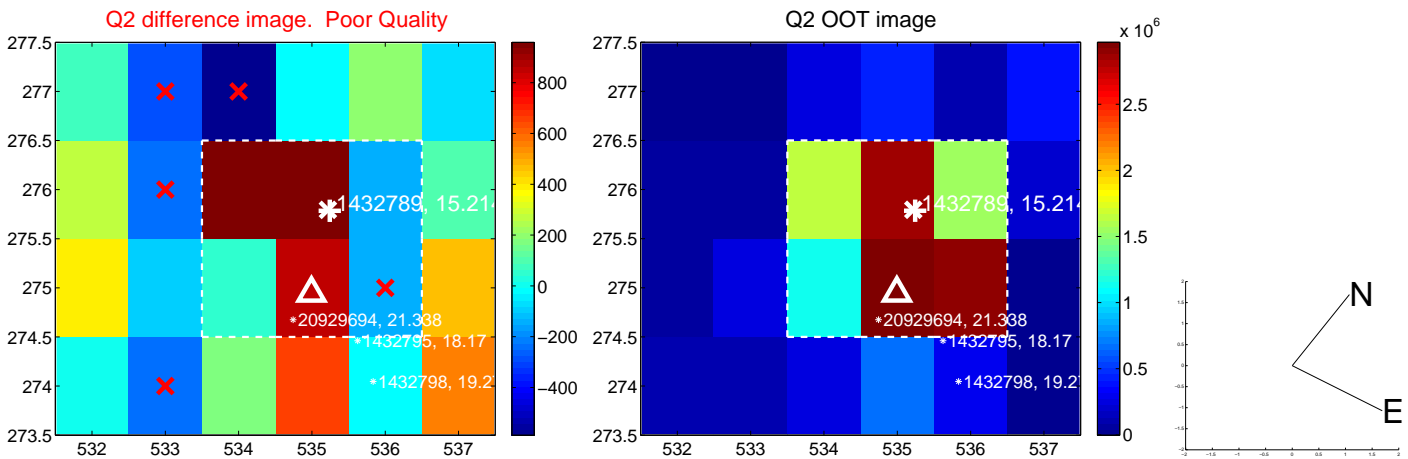
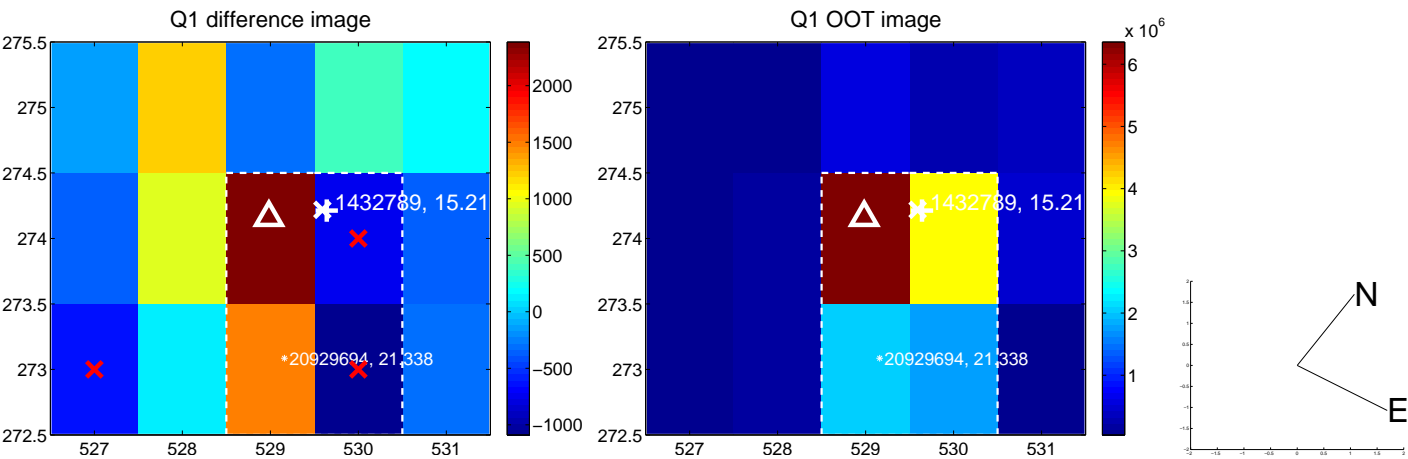
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.615 ± 0.727	2.22	0.490 ± 1.082	-1.539 ± 0.805
PRF-fit source offset from KIC position	1.570 ± 0.684	2.30	0.539 ± 1.025	-1.474 ± 0.762
photometric centroid source offset	3.85 ± 1.45	2.65	-1.55 ± 1.54	-3.52 ± 1.43

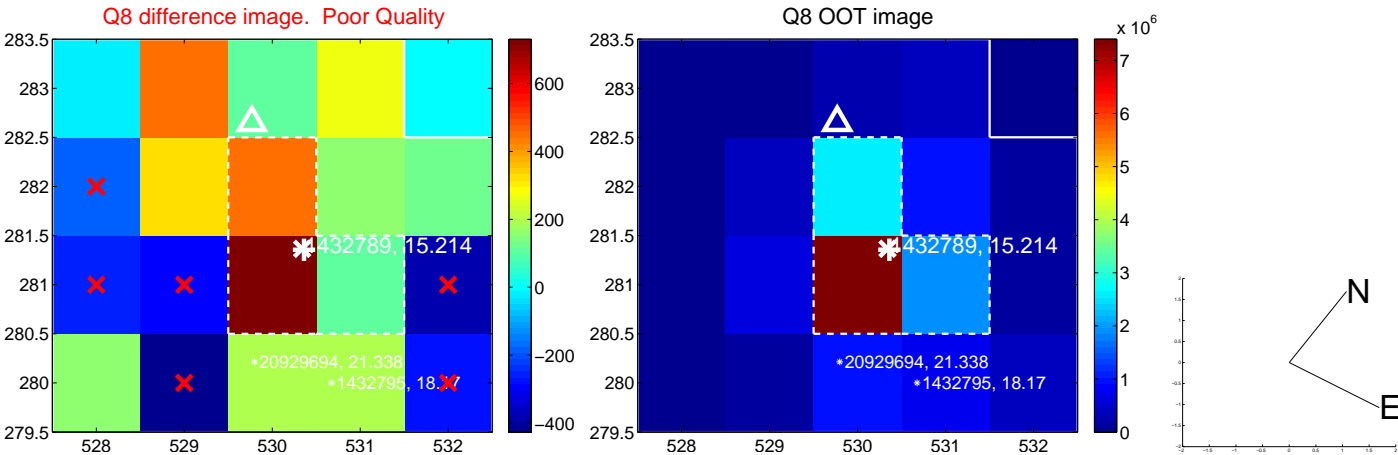
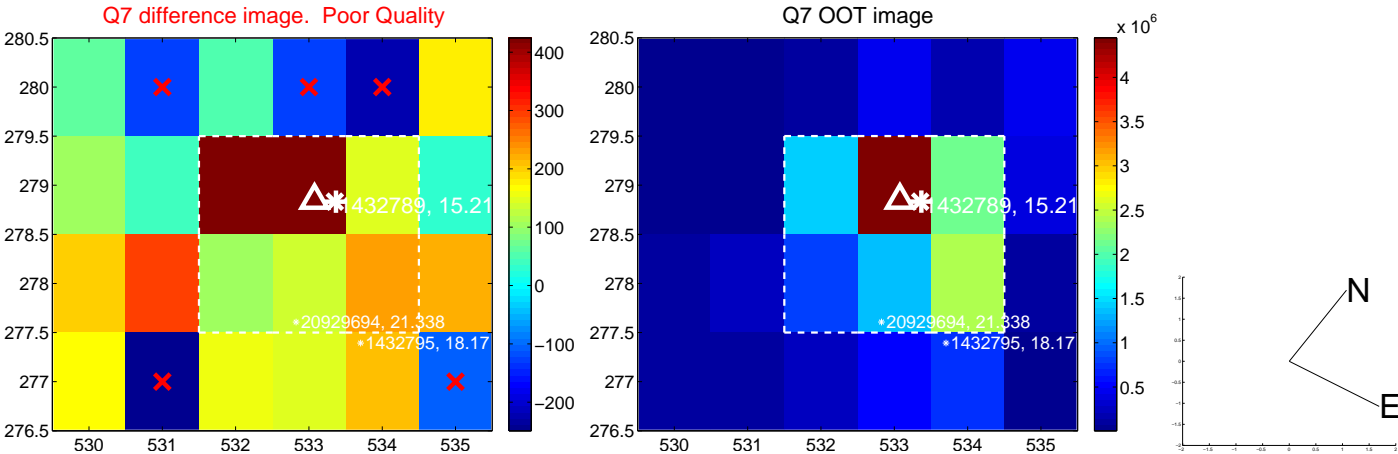
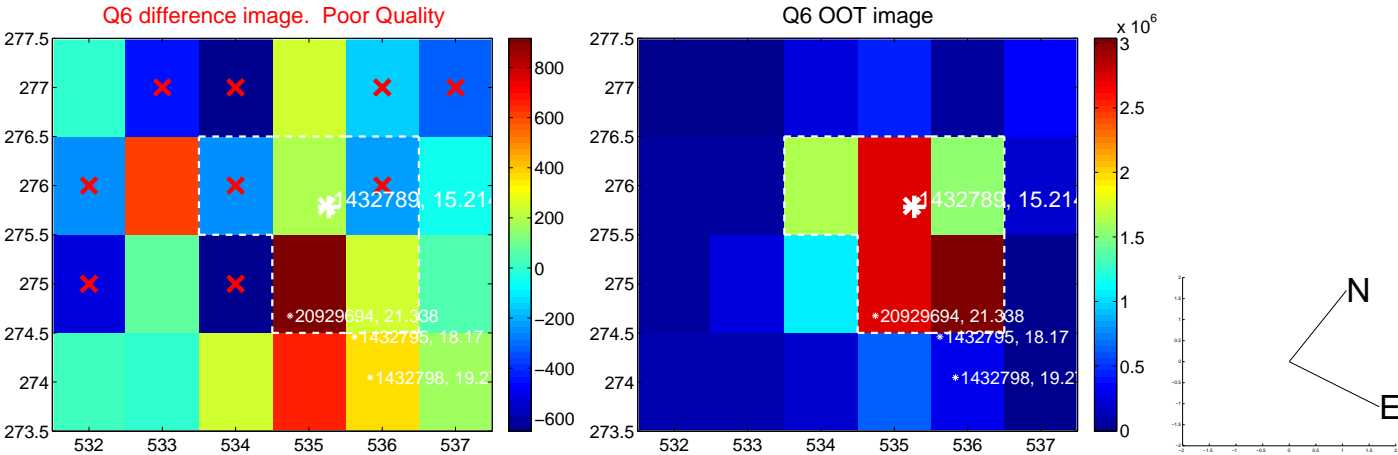
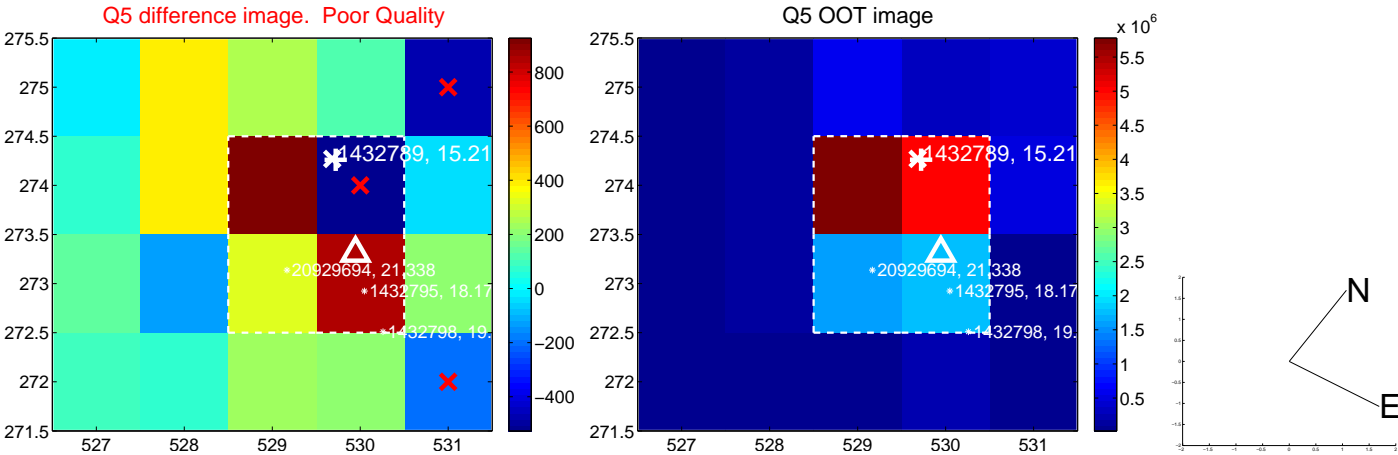


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000 are from the UKIRT catalog.

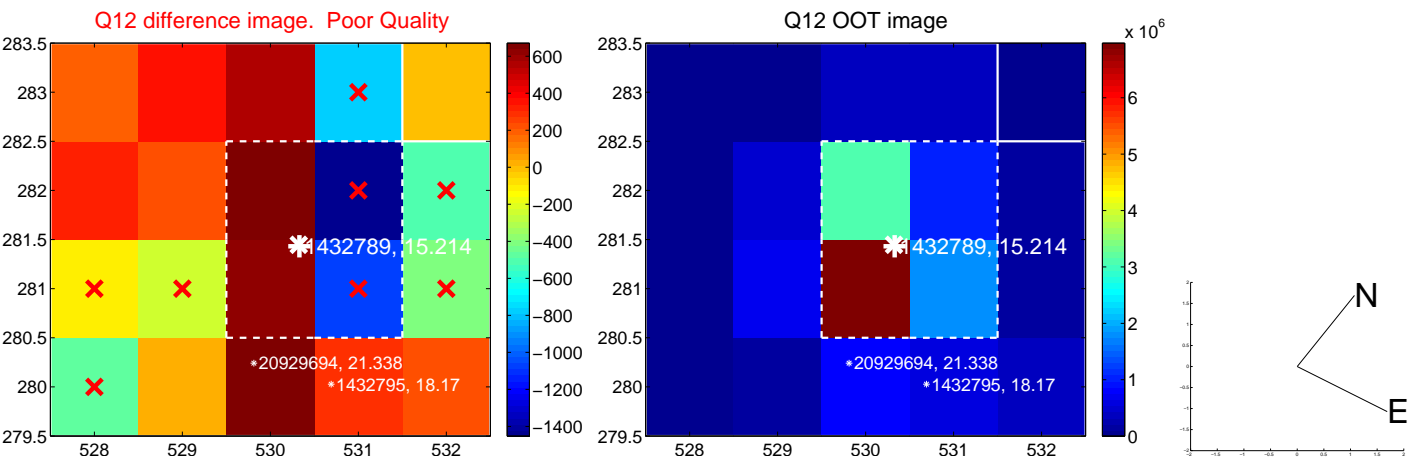
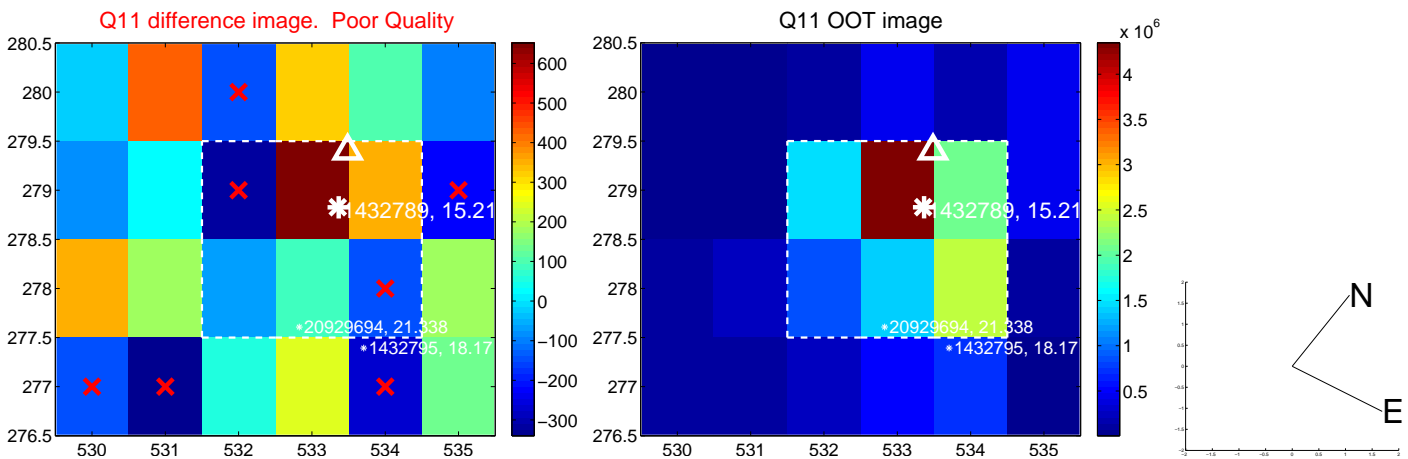
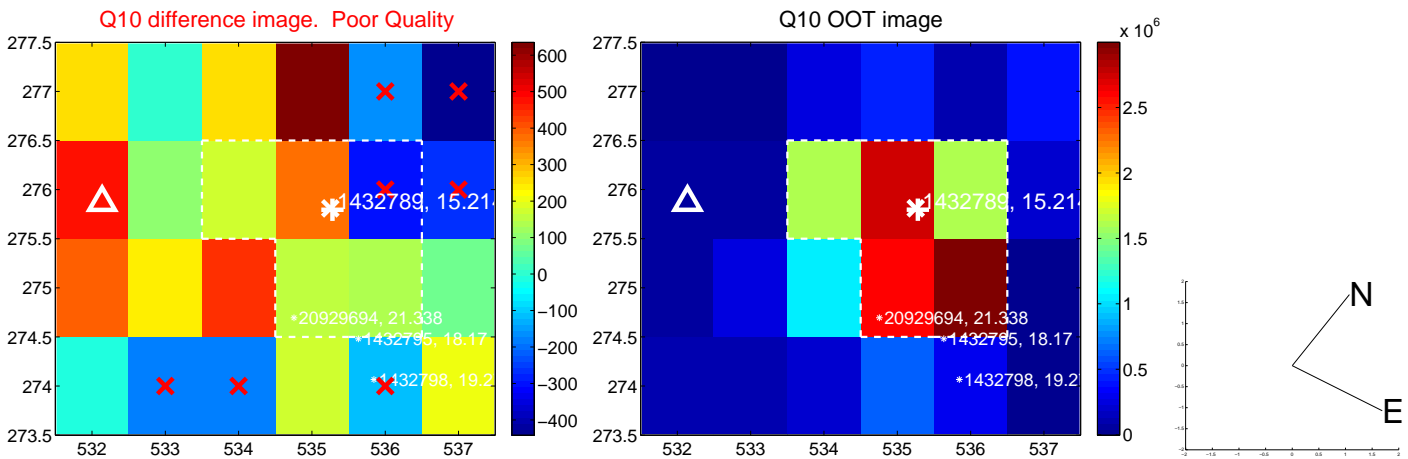
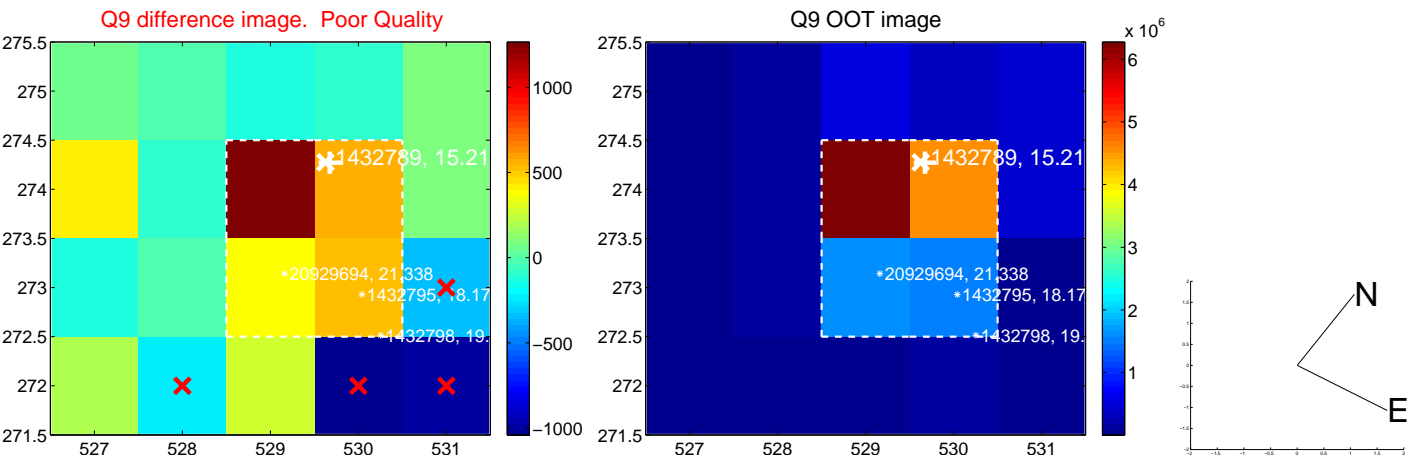
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



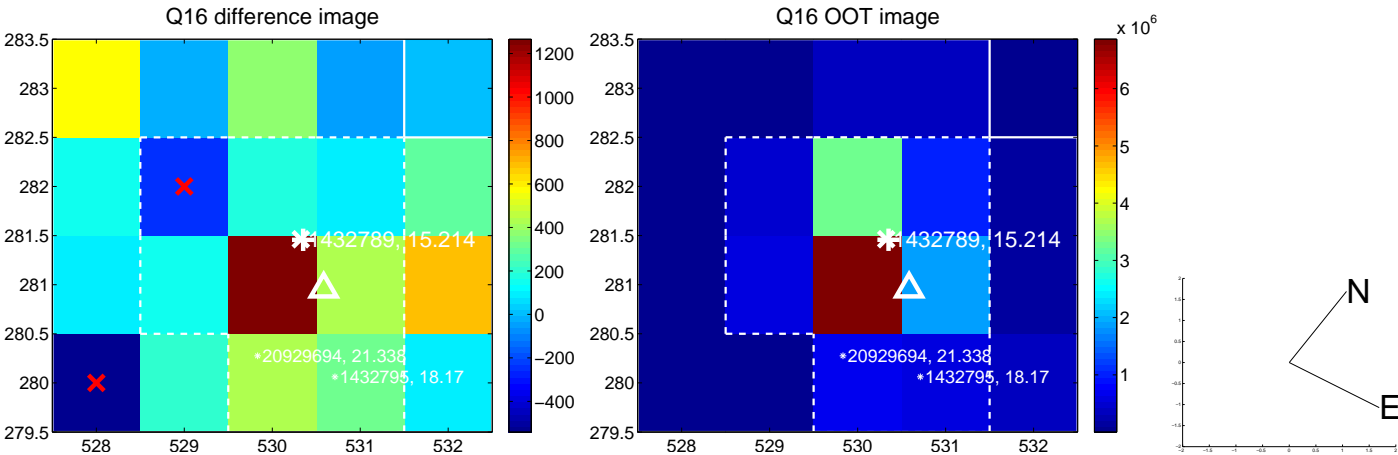
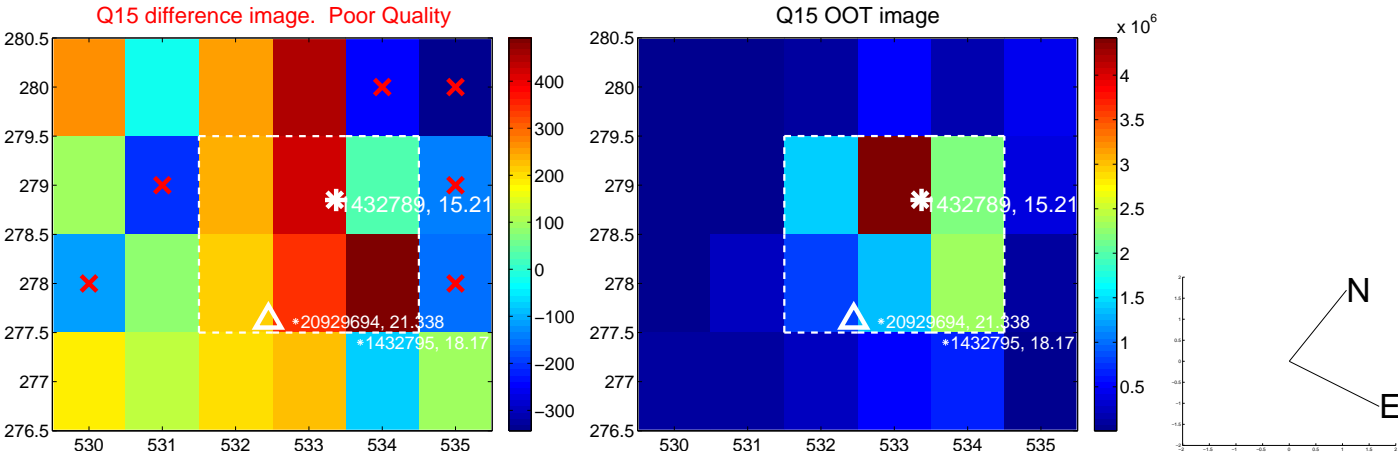
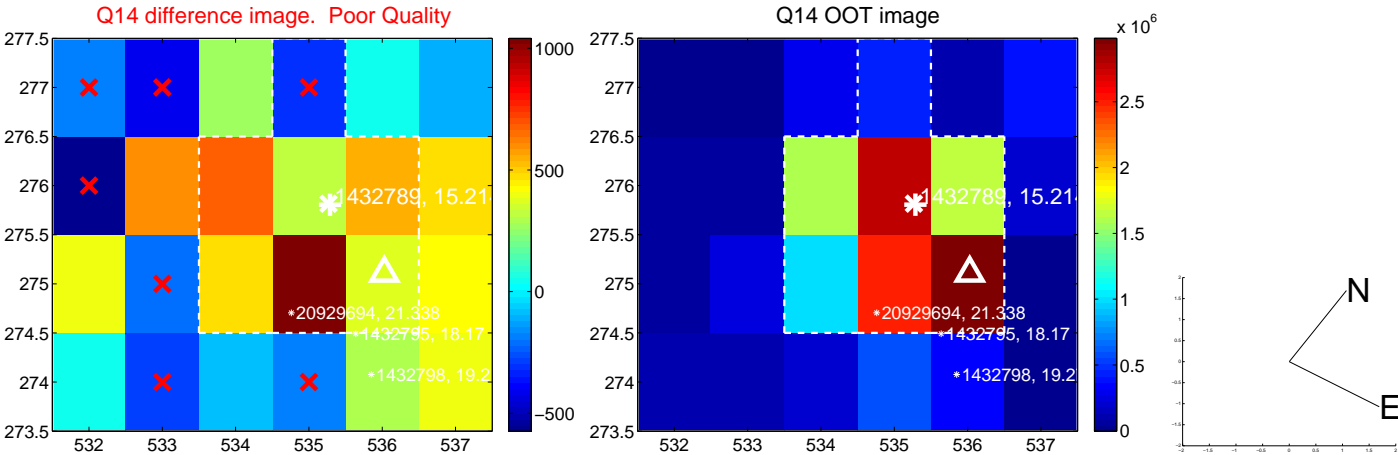
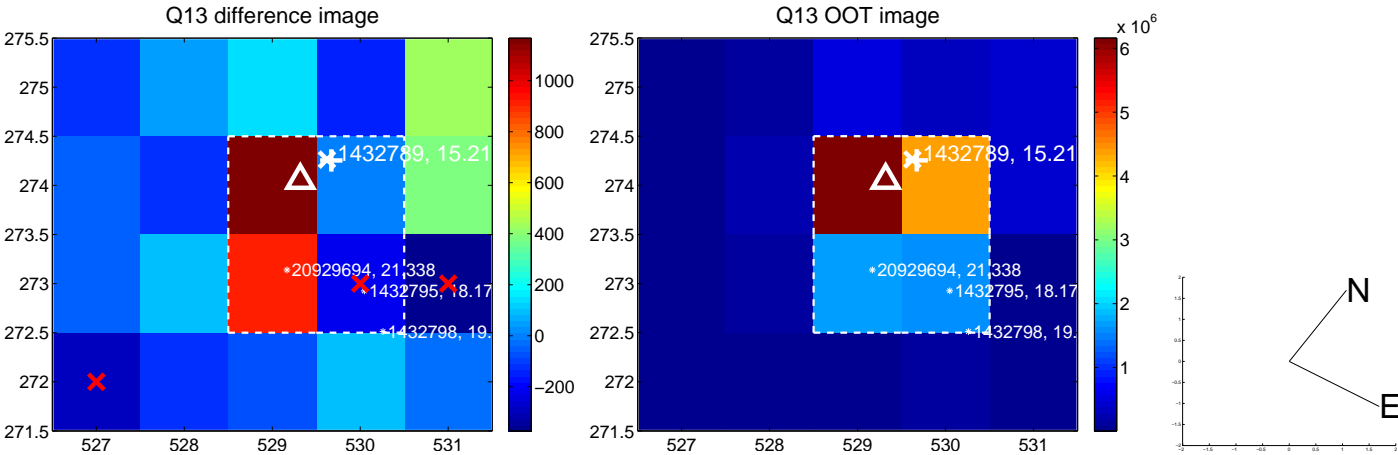
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



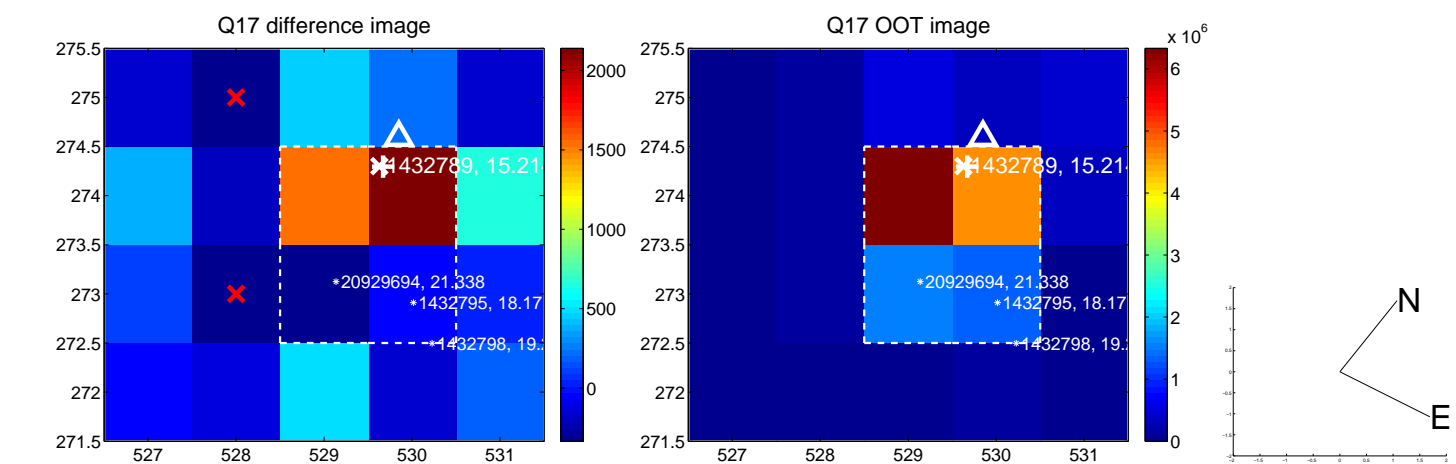
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



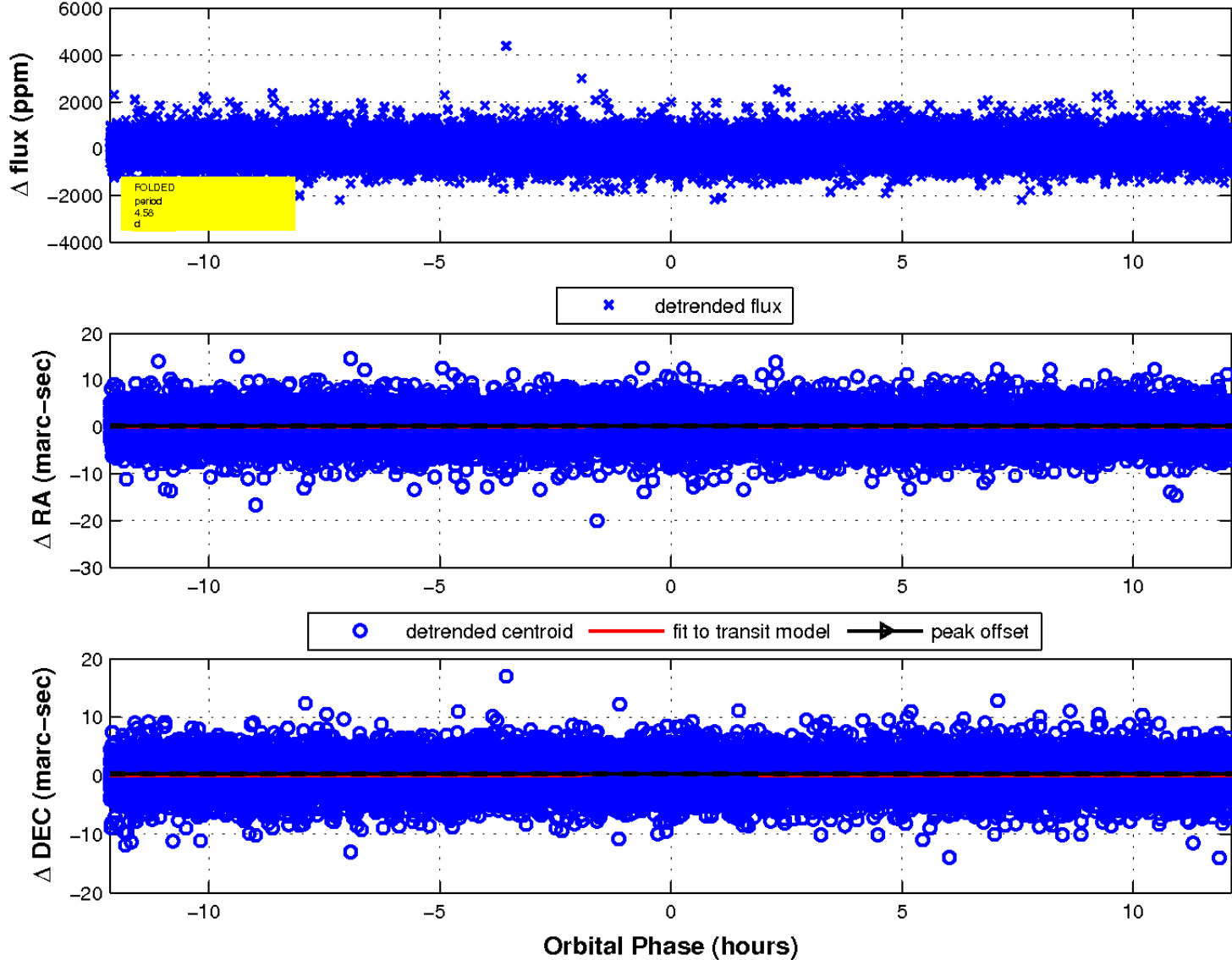
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

