

KIC 005446372

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})
005446372-01	OBS	No	0.665755	131.931307	52.5	1.787	11.2	10.0	1.46	7389	1.23	20643.46
005446372-02	OBS	No	0.665758	132.111199	55.2	1.758	9.5	9.0	1.46	7389	1.26	20643.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005446372-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005446372-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

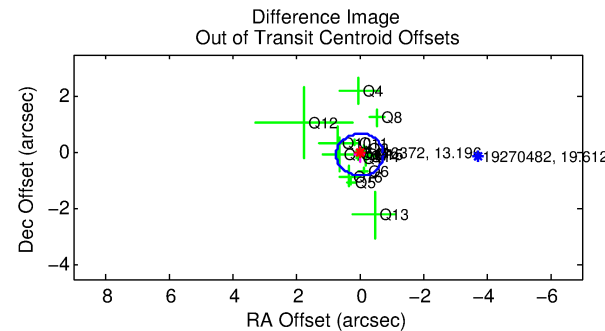
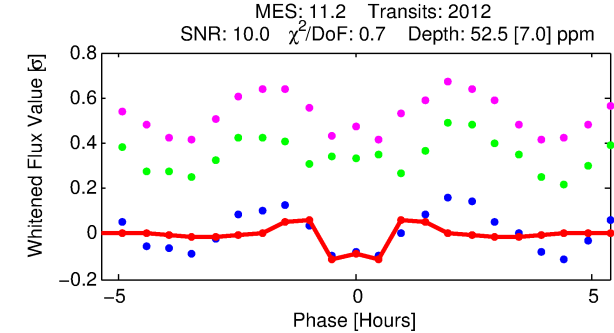
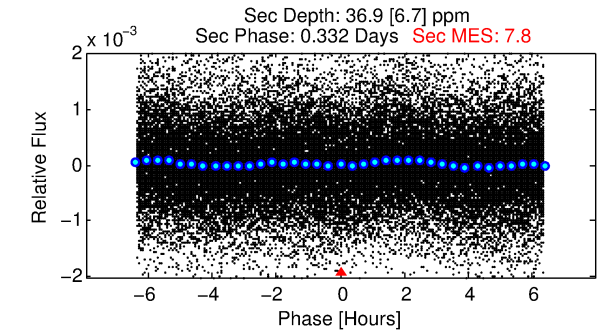
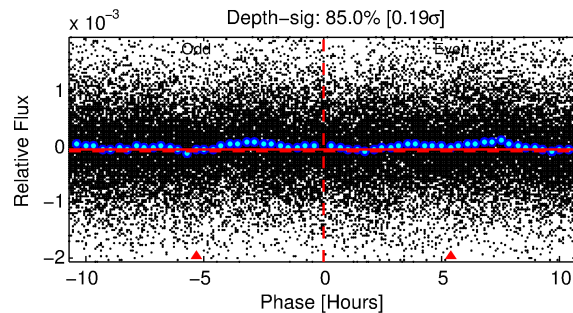
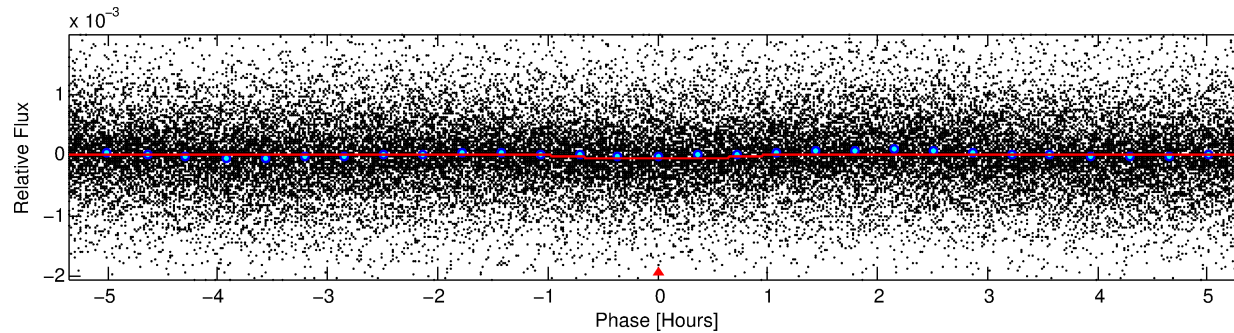
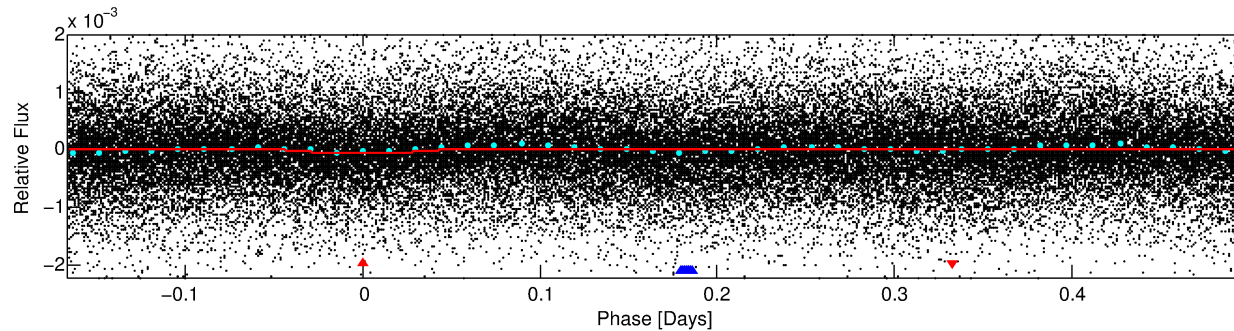
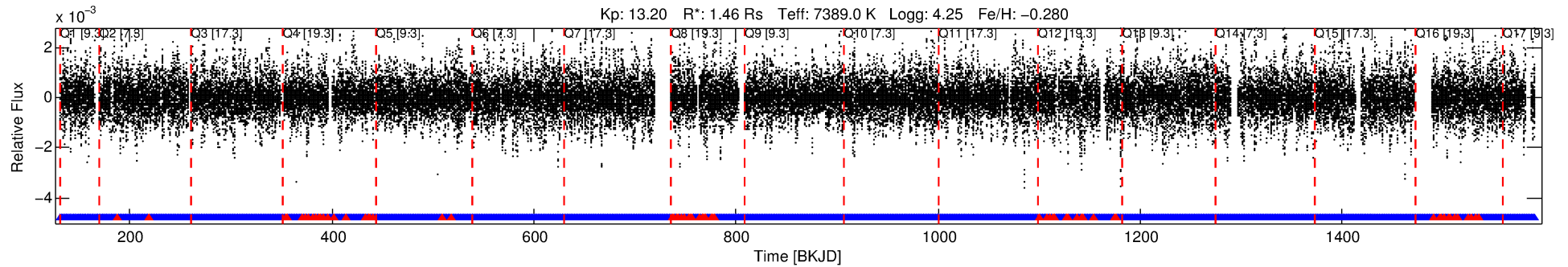
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005446372-01

No Significant Match Found

DV One-Page Summary

KIC: 5446372 Candidate: 1 of 2 Period: 0.666 d



DV Fit Results:

Period = 0.66576 [0.00001] d
Epoch = 131.9313 [0.0012] BKJD
Rp/R* = 0.0077 [0.0015]
a/R* = 1.60 [1.17]
b = 0.90 [0.26]
Seff = 20643.46 [8716.71]
Teq = 3056 [323] K
Rp = 1.23 [0.49] Re
a = 0.0166 [0.0046] AU
Ag = 3.73 [2.18] [1.25 σ]
Teffp = 6565 [772] K [4.19 σ]

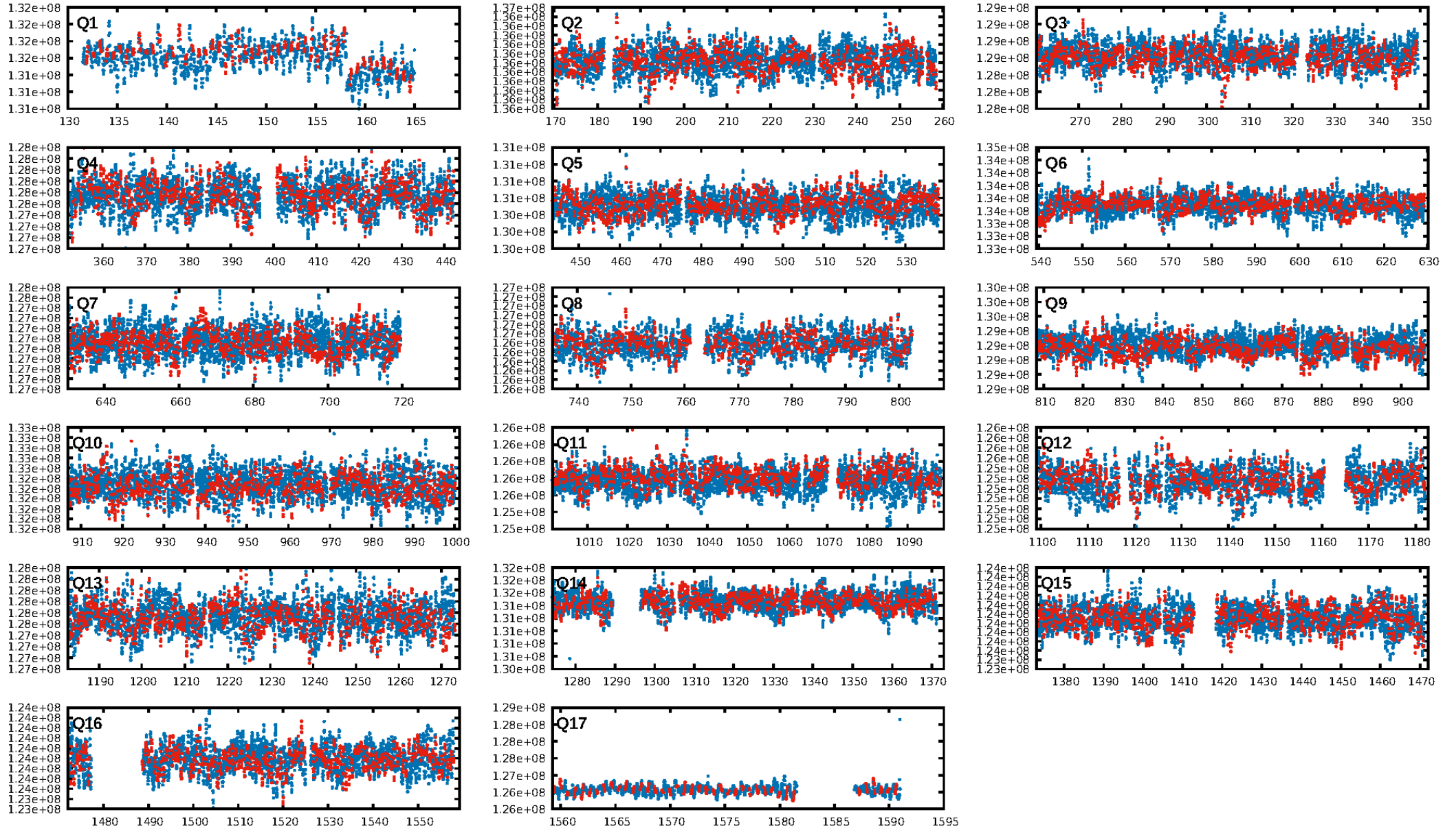
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.25e-28
RollingBand-fgt: 0.96 [1854/1922]
GhostDiagnostic-chr: 1.238
Centroid-sig: N/A
Centroid-so: 0.170 arcsec [0.47 σ]
OotOffset-rm: 0.077 arcsec [0.31 σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-rm: 0.136 arcsec [0.58 σ]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.50 [8/16]
DiffImageOverlap-fno: 0.00 [0/17]

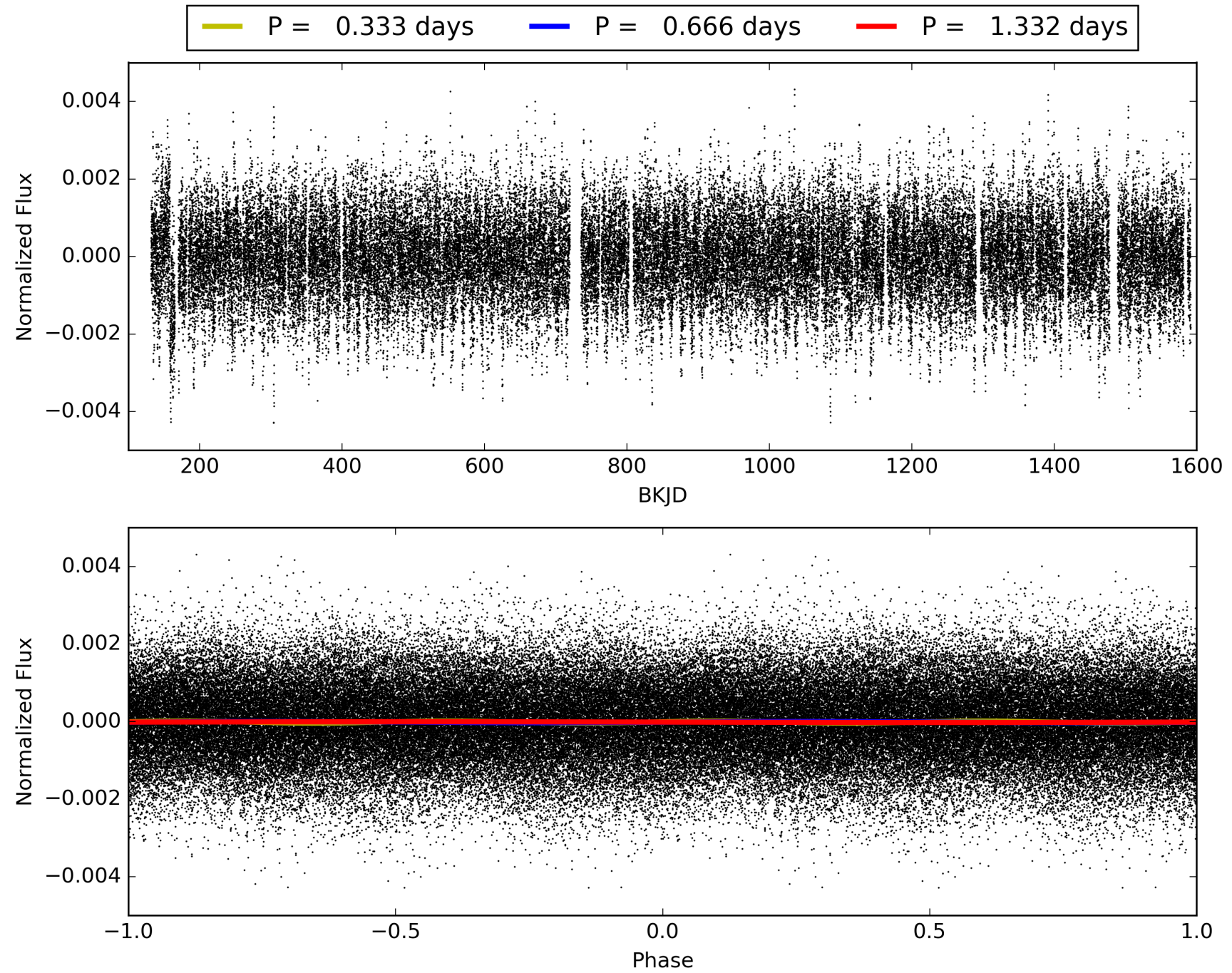
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:05:38 Z

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

TCE 005446372-01, PDC Light Curves

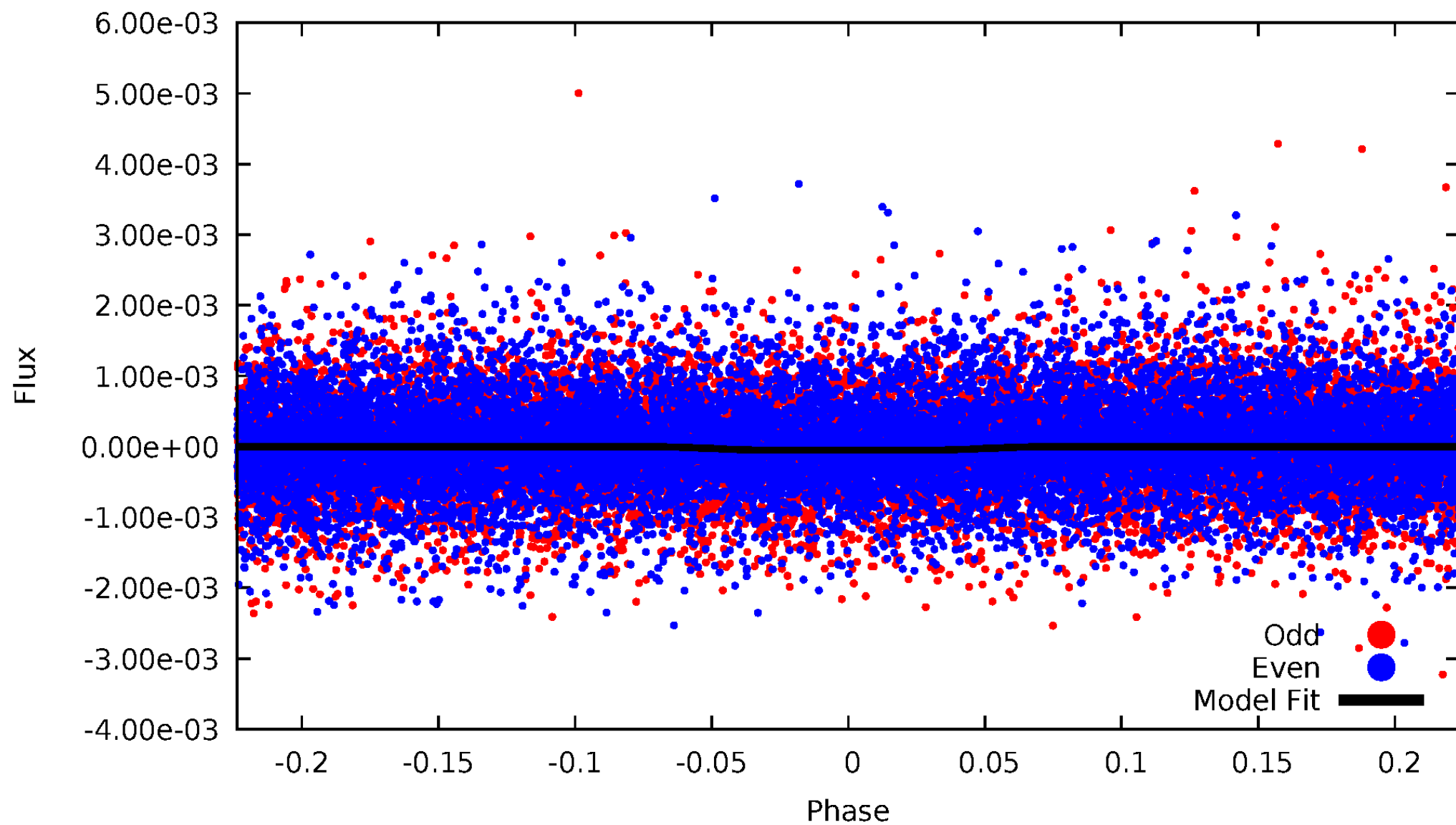


TCE 005446372-01



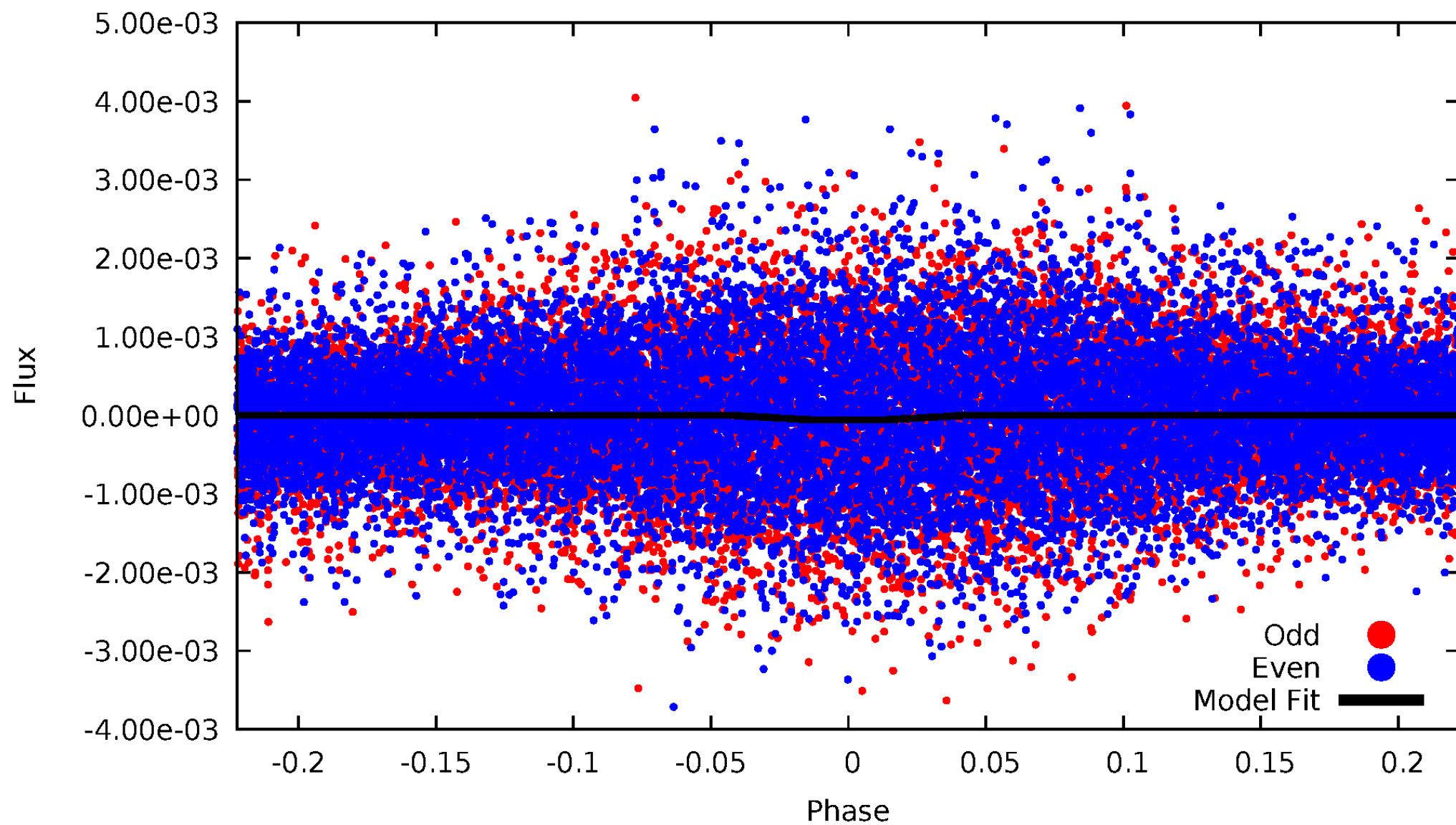
DV Odd/Even

TCE 005446372-01

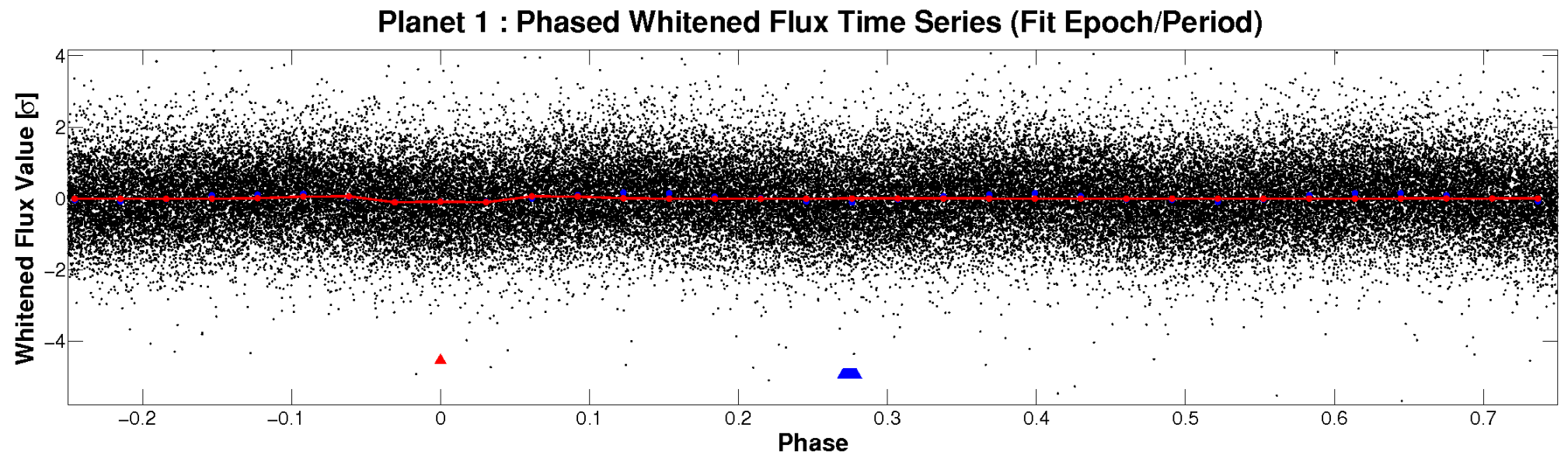
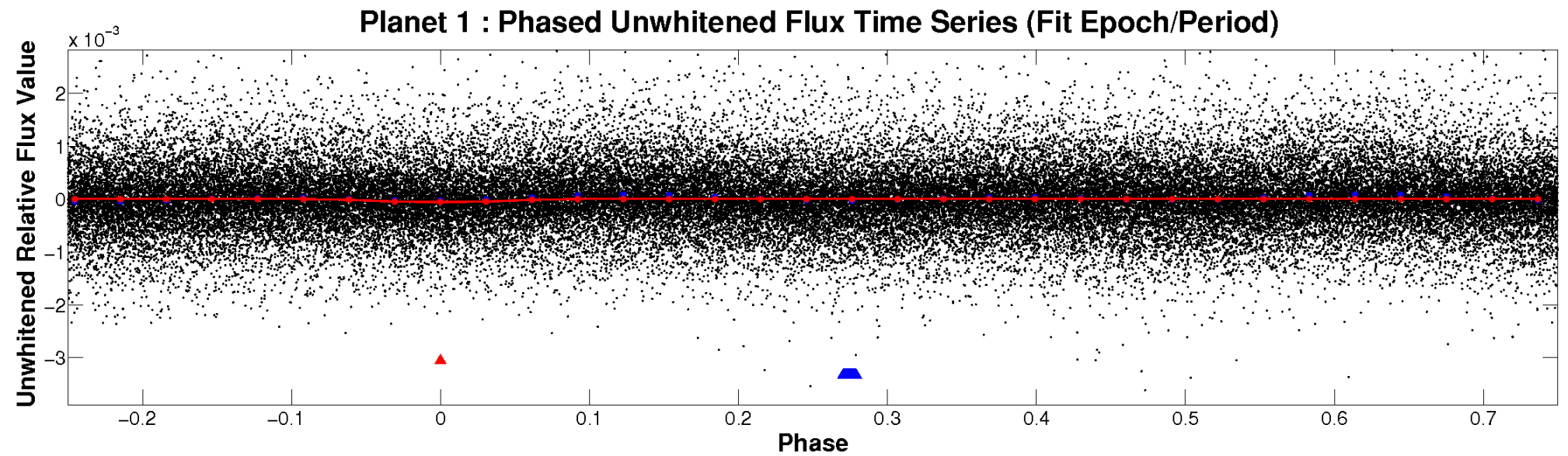


ALT Odd/Even

TCE 005446372-01

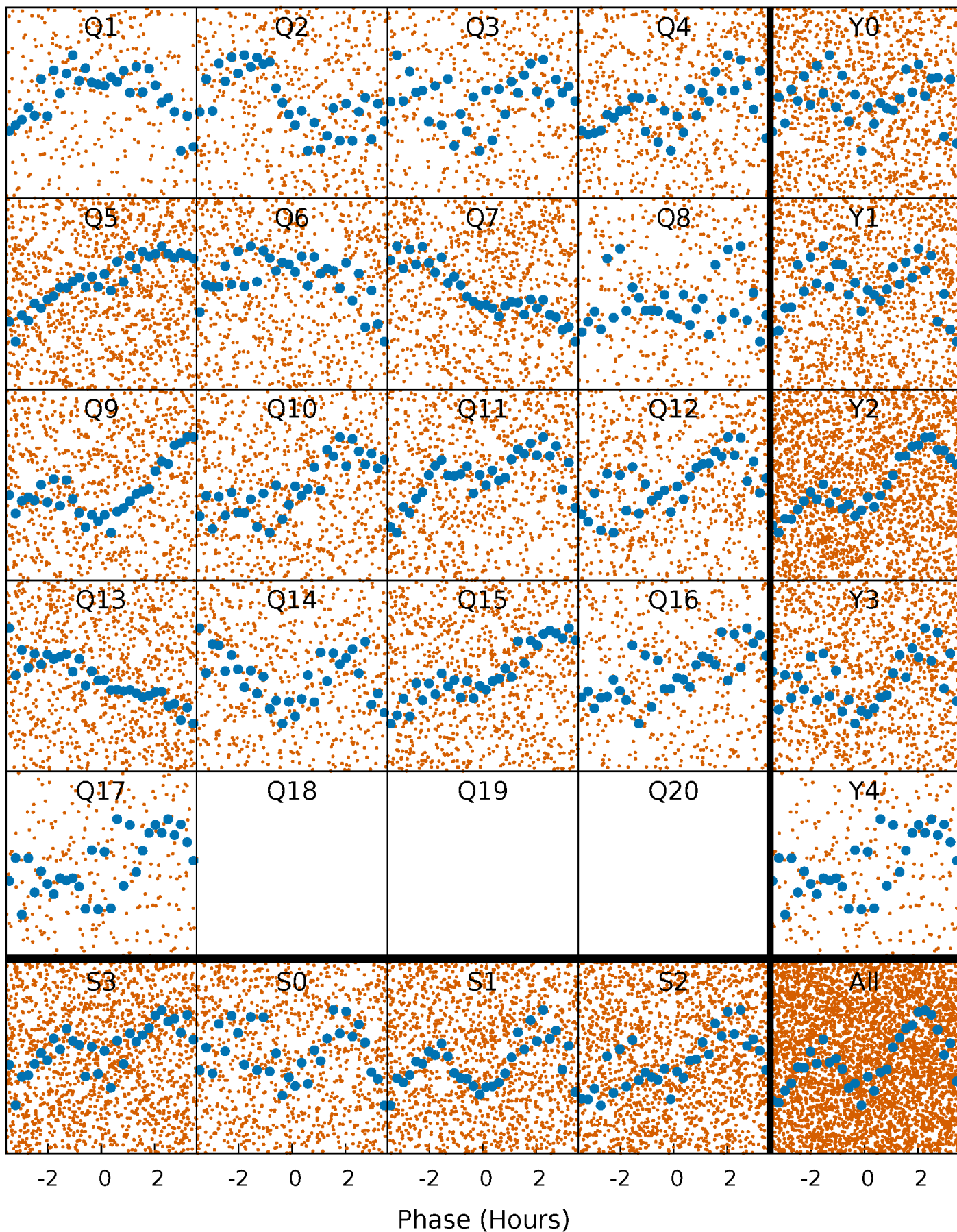


Non-Whitened Vs. Whitened Light Curve



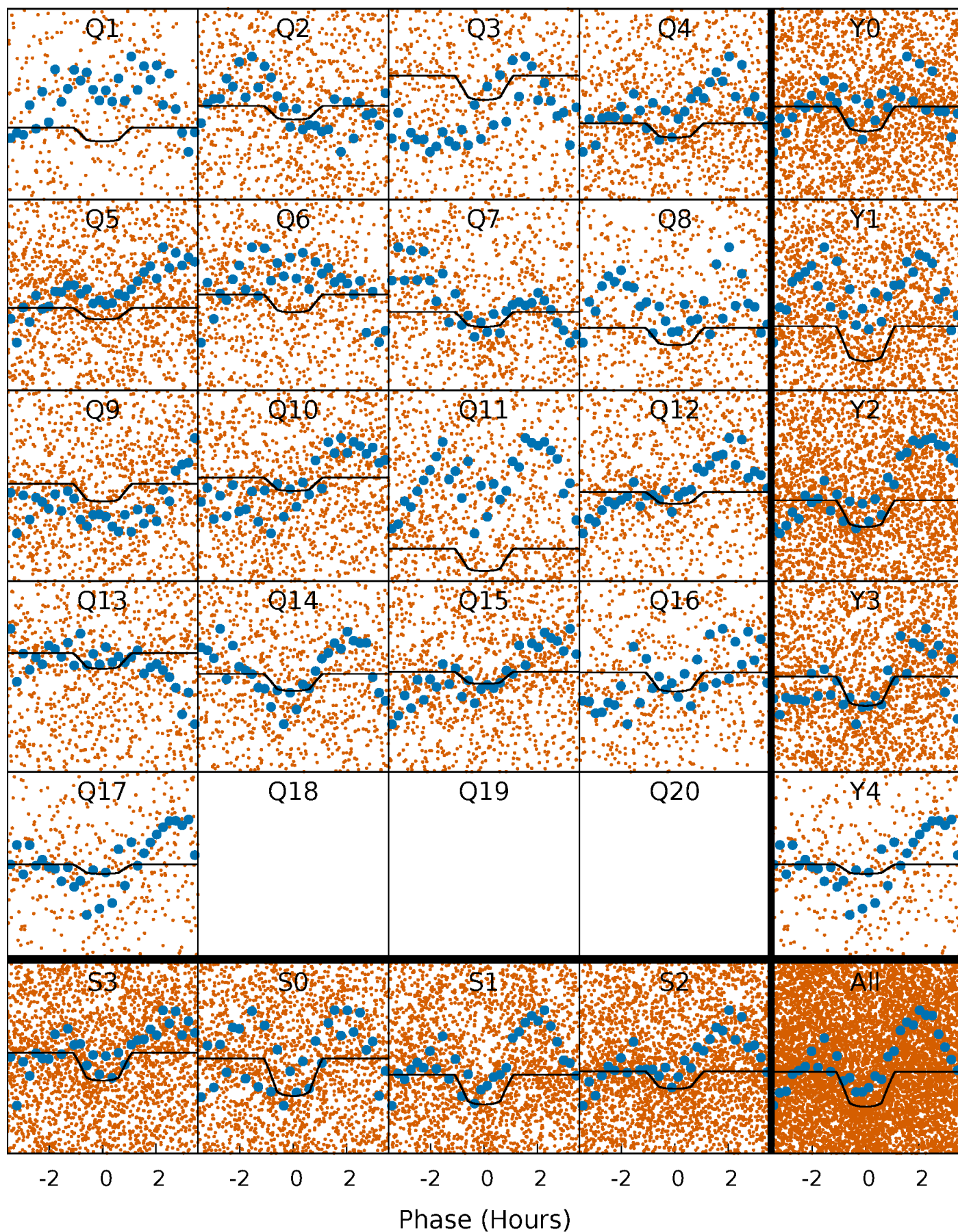
PDC Quarter-Phased Transit Curves

TCE 005446372-01 P= 0.665755 Days $T_0=131.931307$ (BKJD)



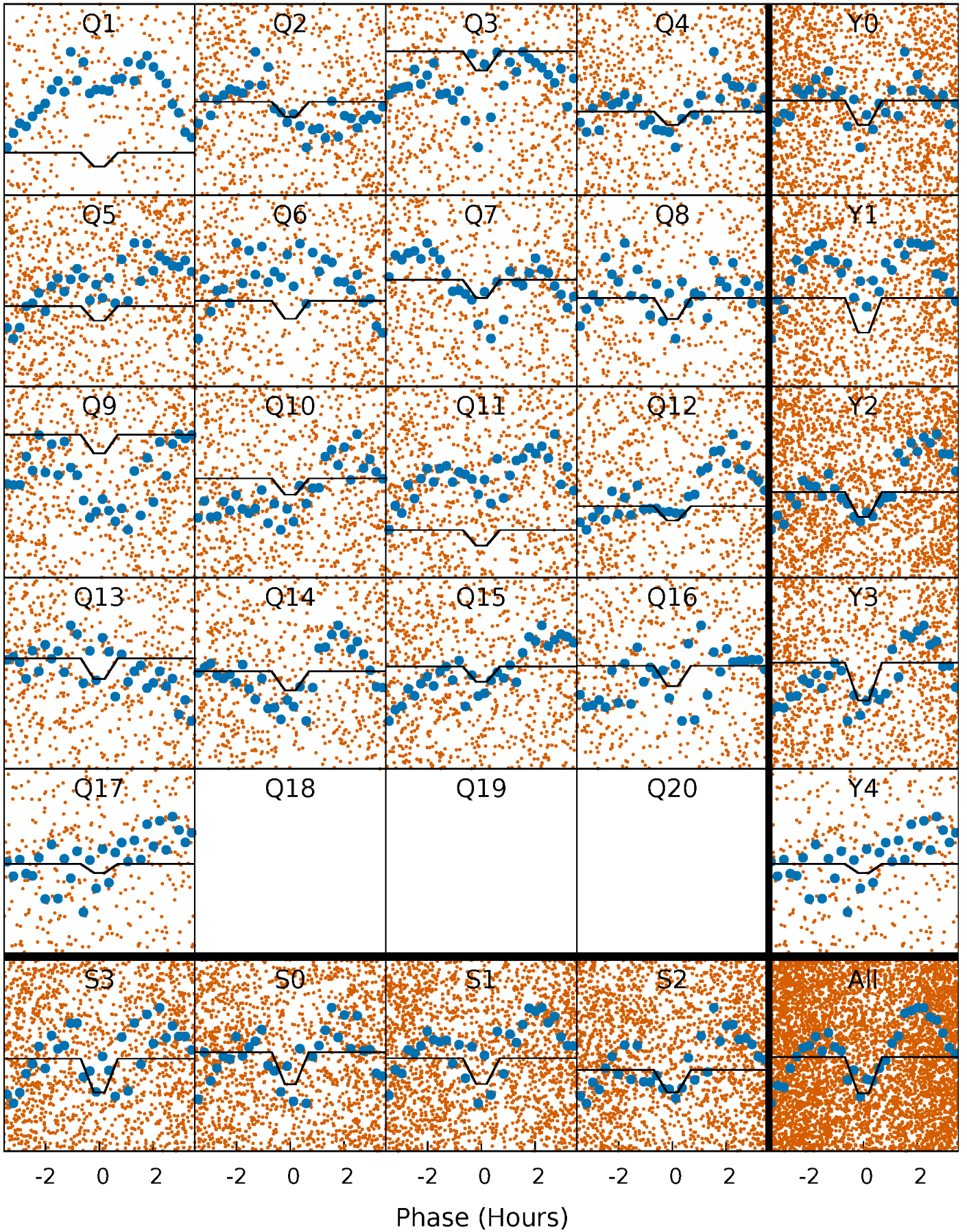
DV Quarter-Phased Transit Curves

TCE 005446372-01 P= 0.665755 Days $T_0=131.931307$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

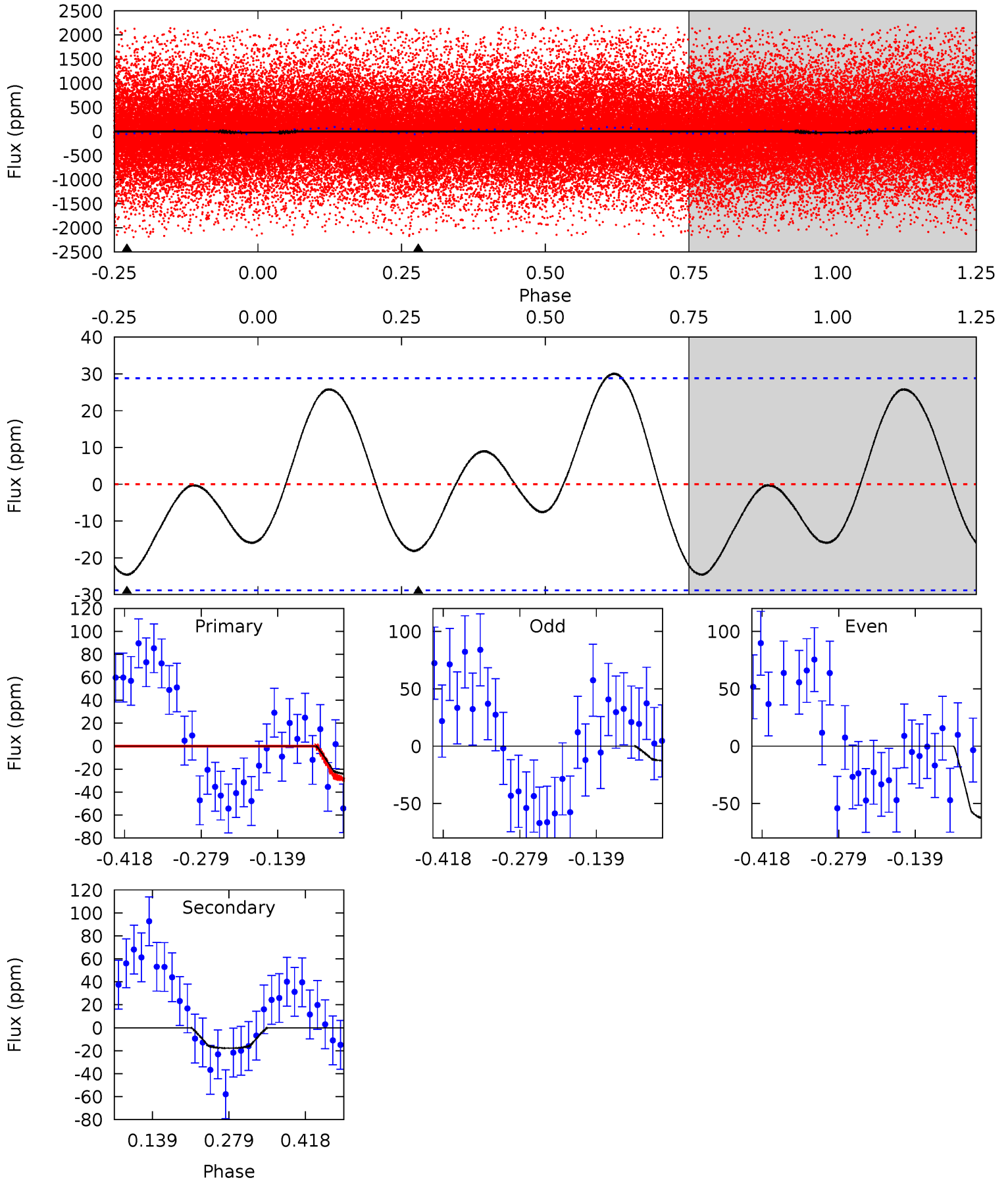
TCE 005446372-01 P= 0.665753 Days $T_0=131.931015$ (BKJD)



DV Model-Shift Uniqueness Test

005446372-01, P = 0.665755 Days, E = 131.265552 Days

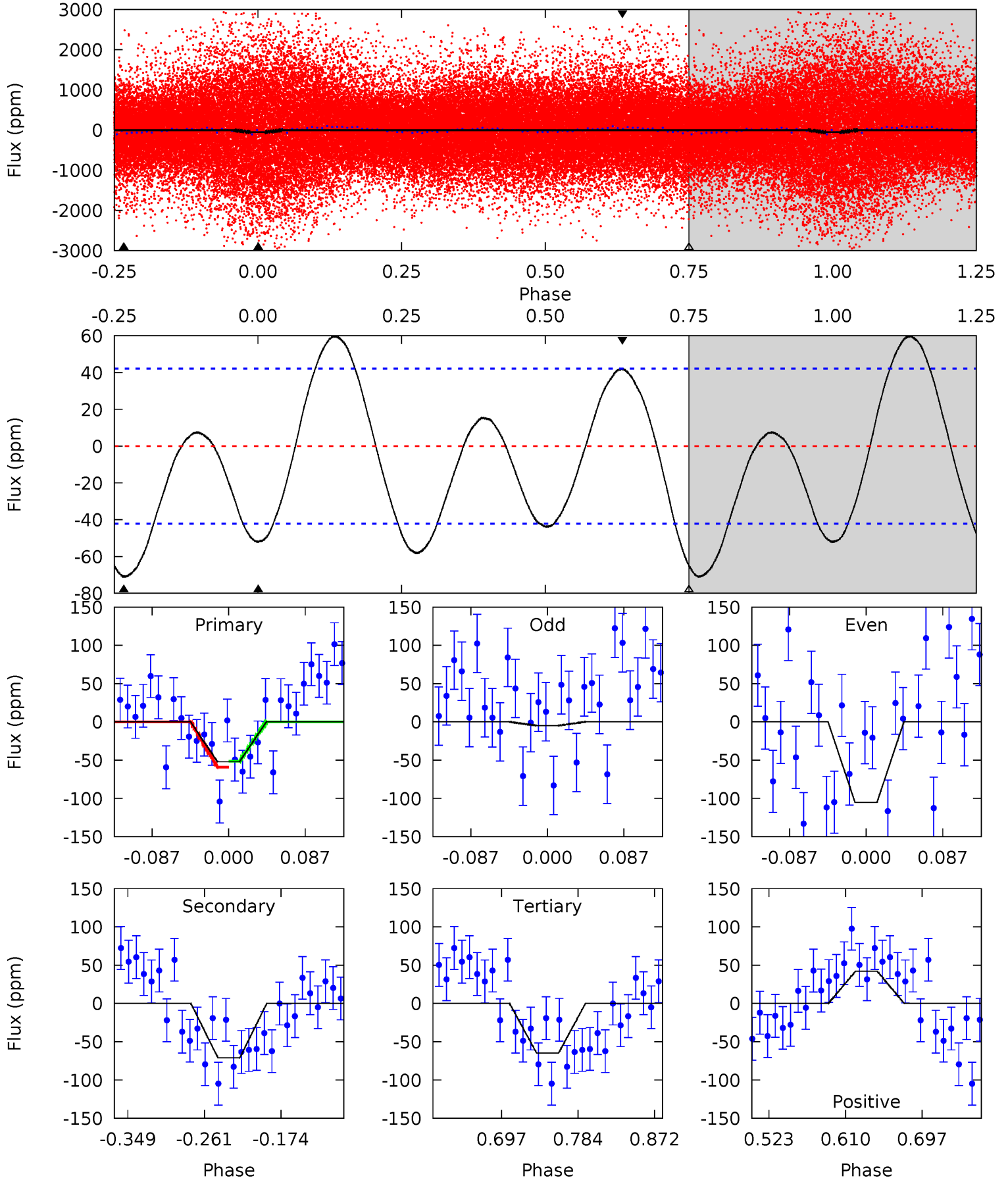
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.84	2.78	0	0	4.49	1.48	2.27	3.84	3.84	2.78	2.78	3.96	0.35	0.55	0.60



Alt Model-Shift Uniqueness Test

005446372-01, P = 0.665753 Days, E = 131.265262 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.68	7.74	7.07	4.57	4.59	1.71	3.67	-1.39	1.11	0.67	3.16	5.20	1.08	0.46	0.41



Stellar Parameters For KIC 005446372

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7389^{+232}_{-310}	$4.249^{+0.087}_{-0.203}$	$-0.280^{+0.250}_{-0.350}$	$1.462^{+0.505}_{-0.217}$	$1.389^{+0.216}_{-0.216}$	$0.626^{+0.316}_{-0.336}$
	+3%/-4%	+2%/-5%	+89%/-125%	+35%/-15%	+16%/-16%	+51%/-54%
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 005446372-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-18 ± 6	$1.26^{+0.31}_{-0.29}$	4330^{+328}_{-257}	5158^{+836}_{-741}	$1.625^{+1.384}_{-0.734}$
Alt.	-71 ± 9	$1.29^{+0.30}_{-0.27}$	4321^{+332}_{-266}	7546^{+1206}_{-810}	$6.245^{+4.212}_{-2.087}$

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 $A_{obs} \gg 1.0$

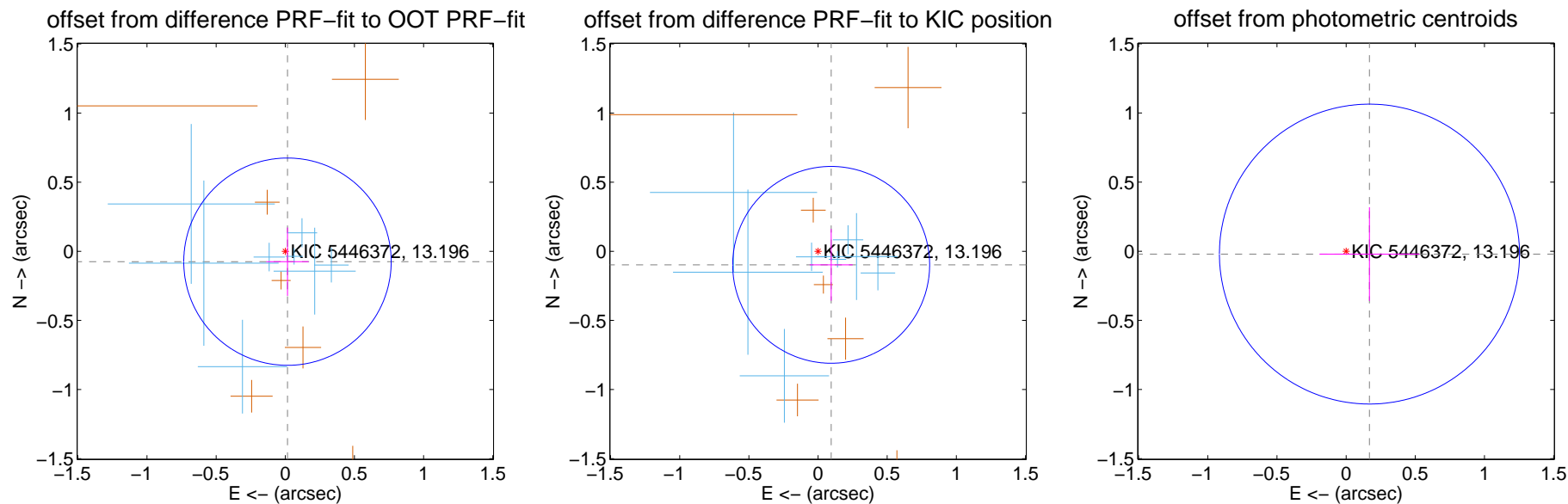
DV Centroid Data

Supplemental centroid analysis for 005446372-01. Kepler magnitude: 13.20. Transit SNR 10.03

There are 8 quarters with good PRF difference image offsets

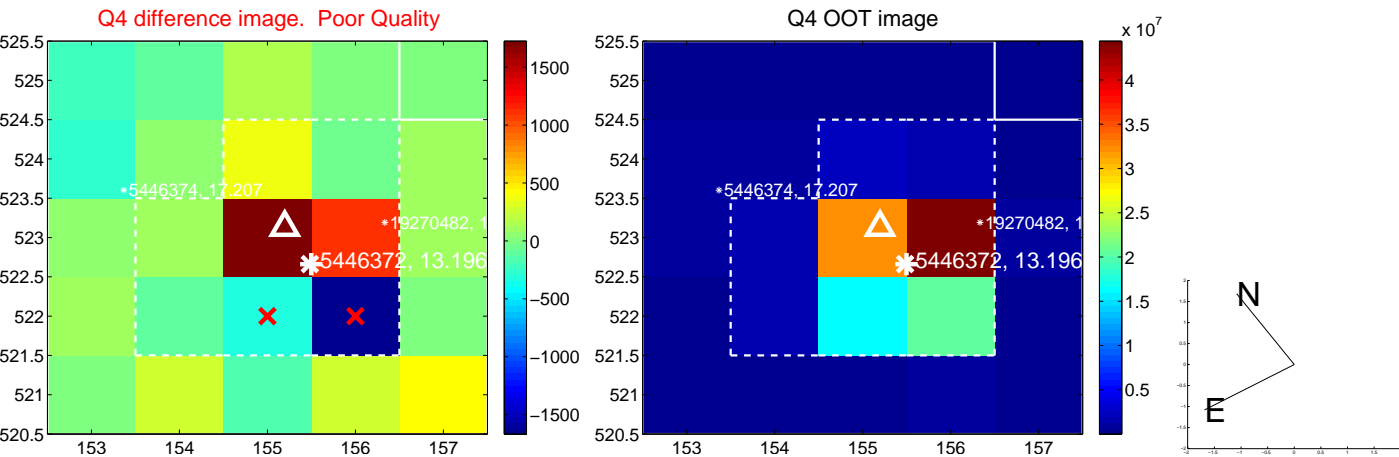
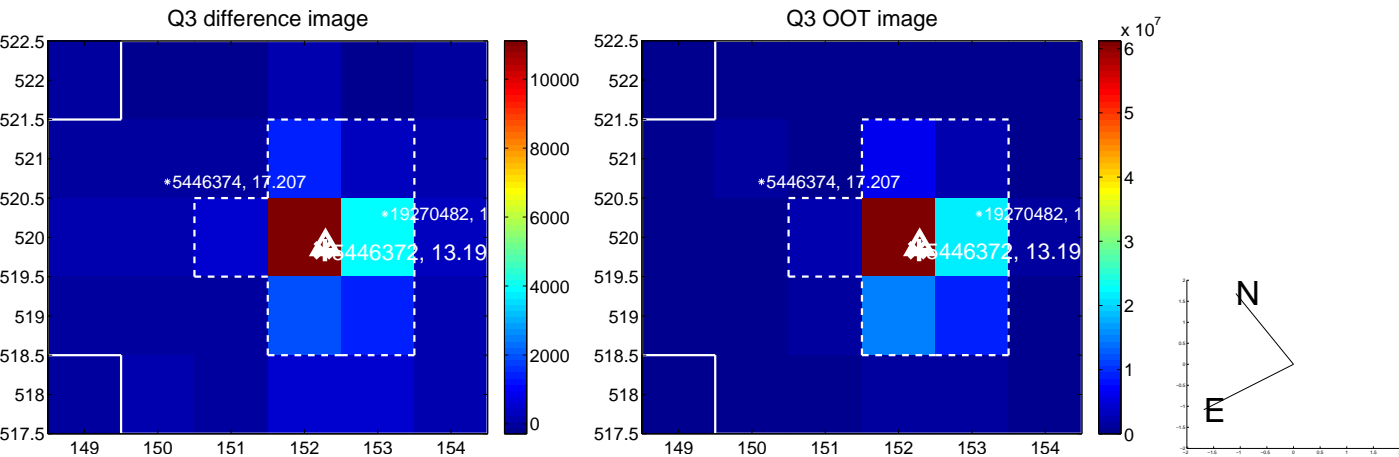
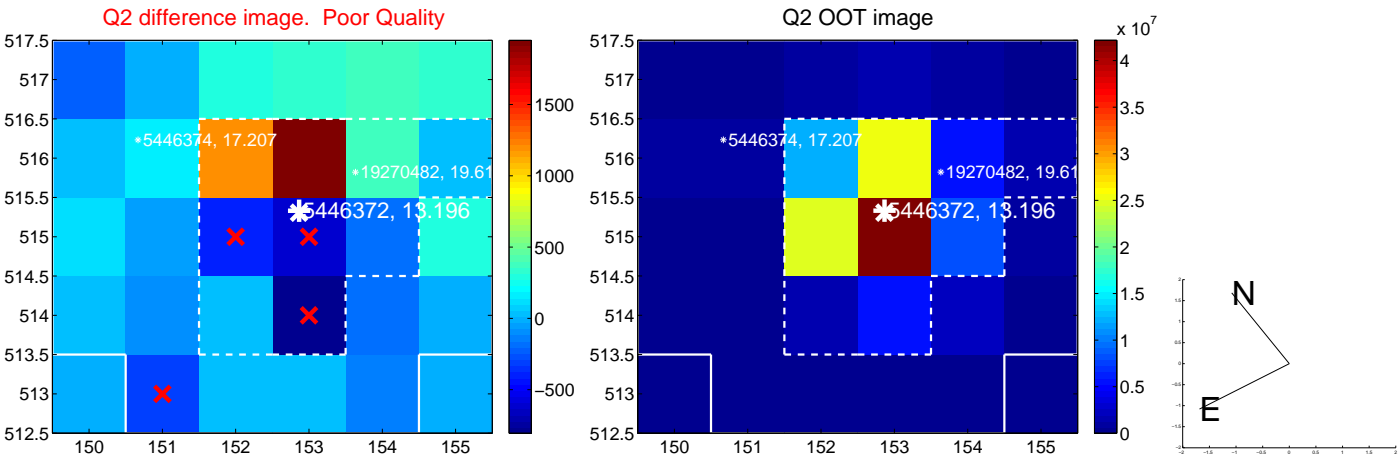
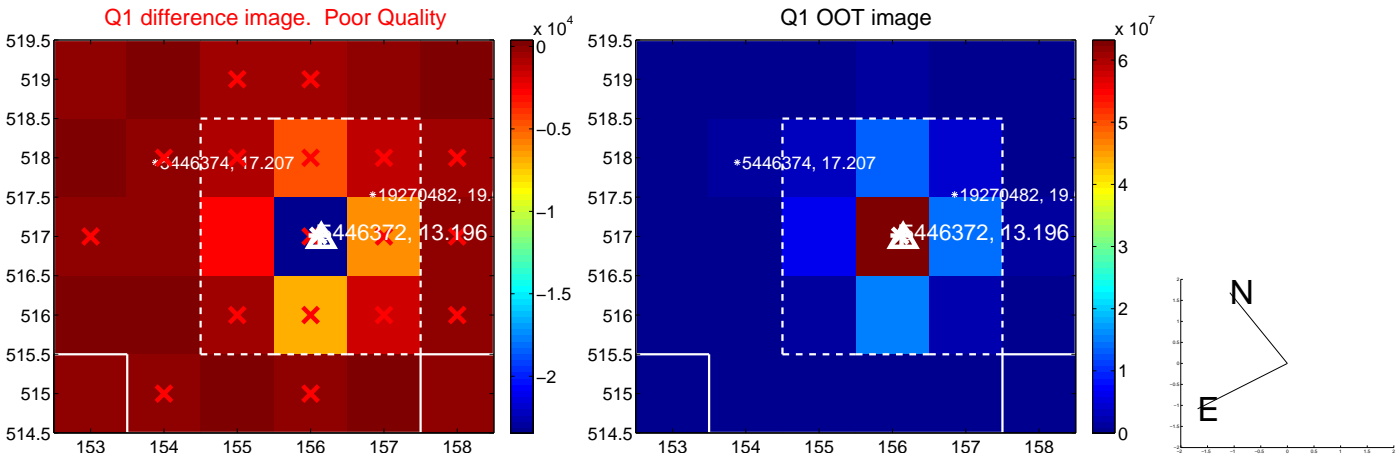
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.077 ± 0.250	0.31	-0.016 ± 0.153	-0.075 ± 0.247
PRF-fit source offset from KIC position	0.136 ± 0.237	0.58	-0.095 ± 0.155	-0.098 ± 0.259
photometric centroid source offset	0.17 ± 0.36	0.47	-0.17 ± 0.36	-0.02 ± 0.34

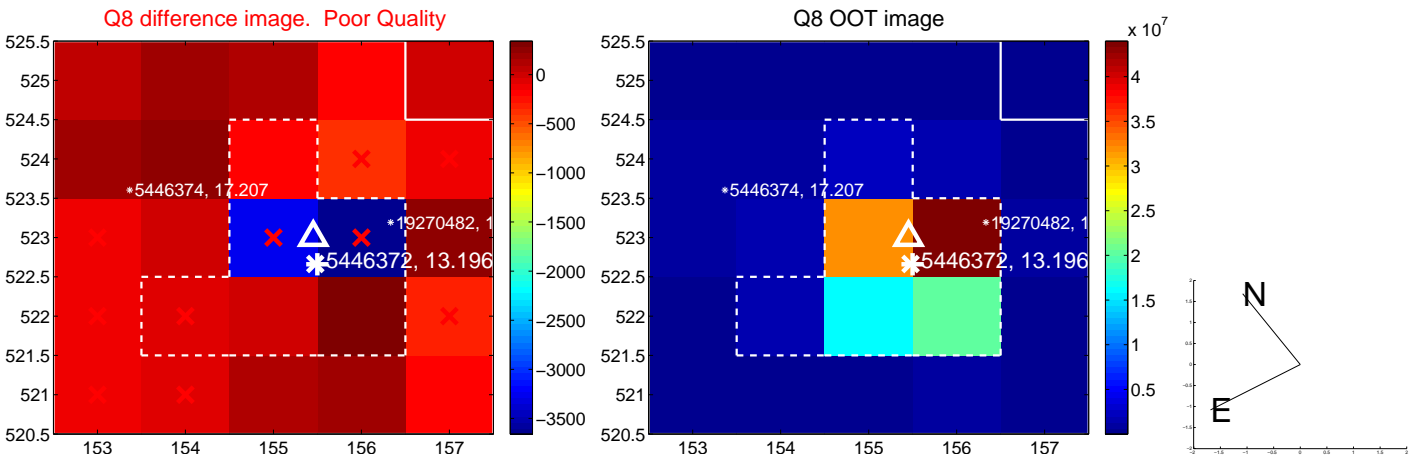
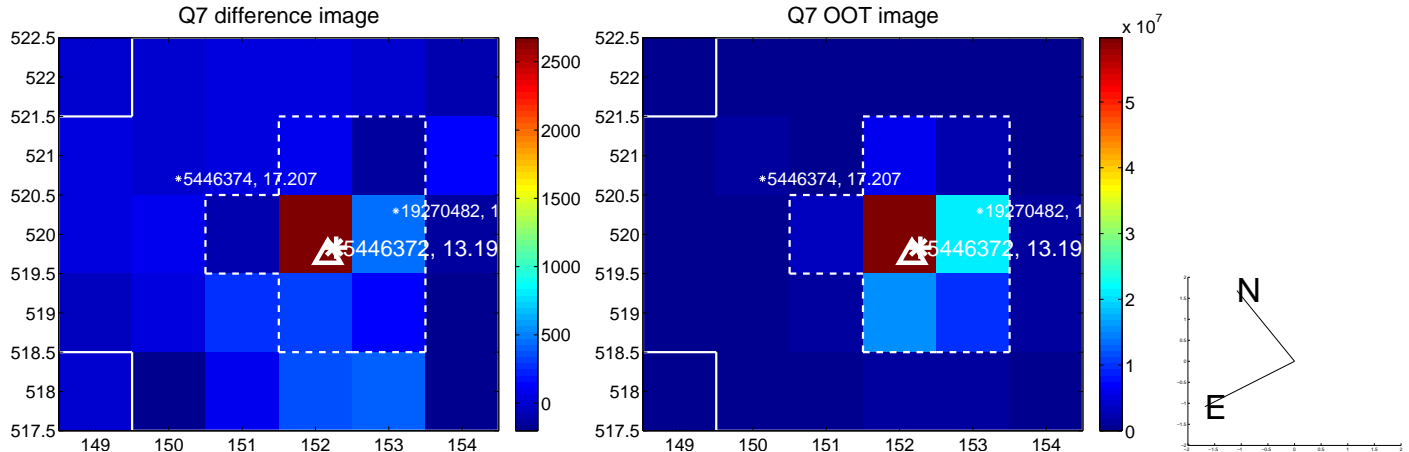
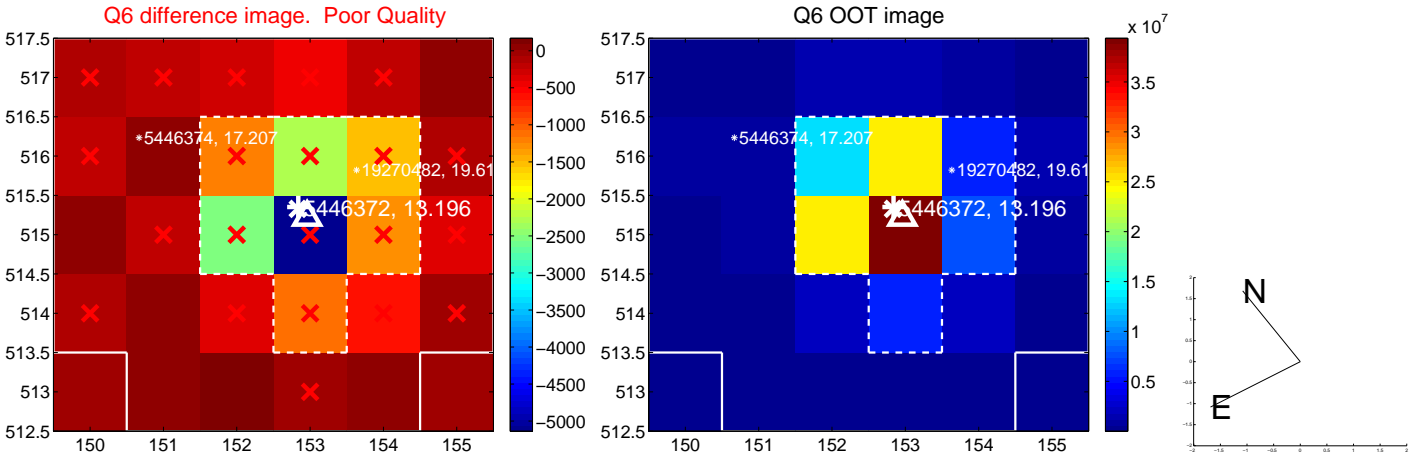
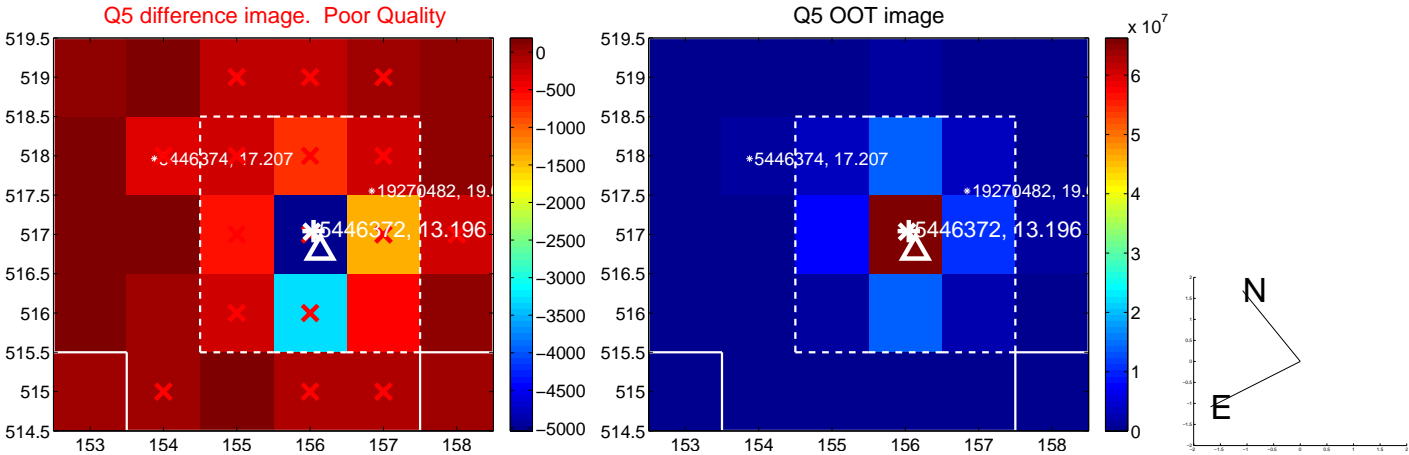


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

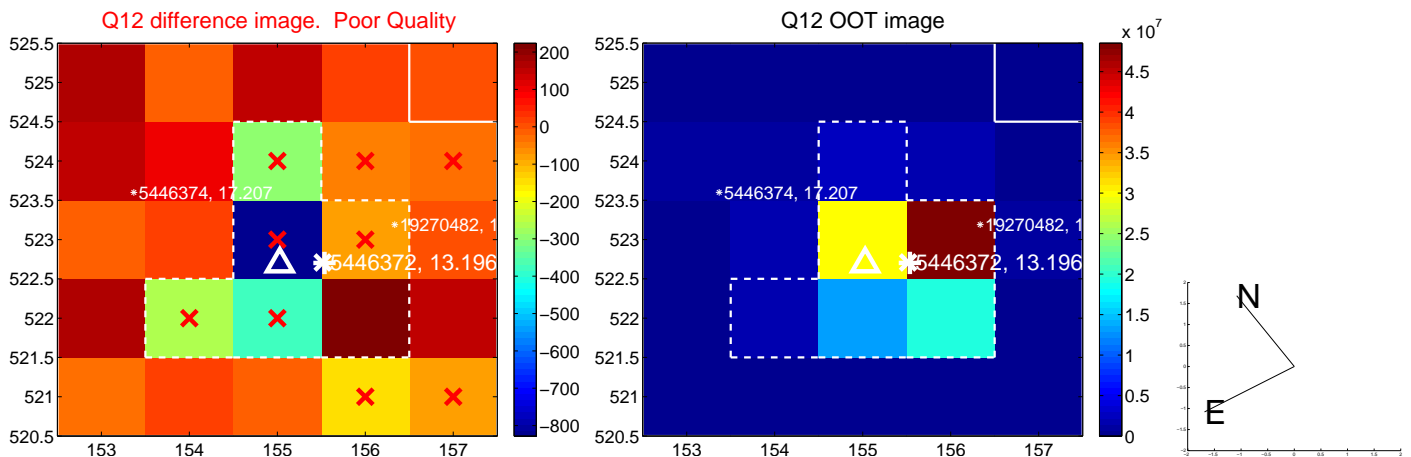
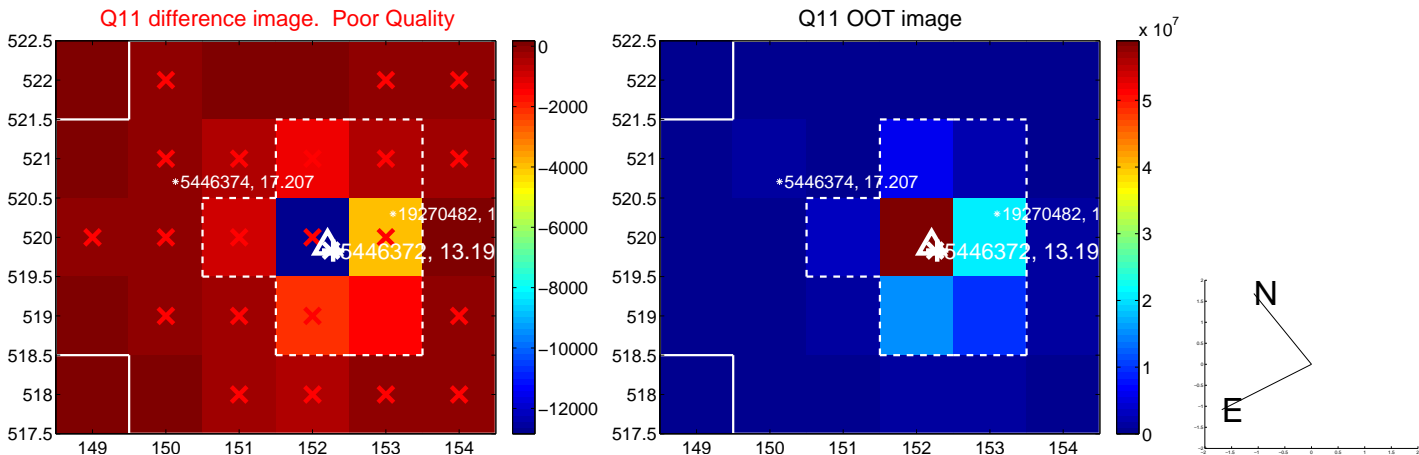
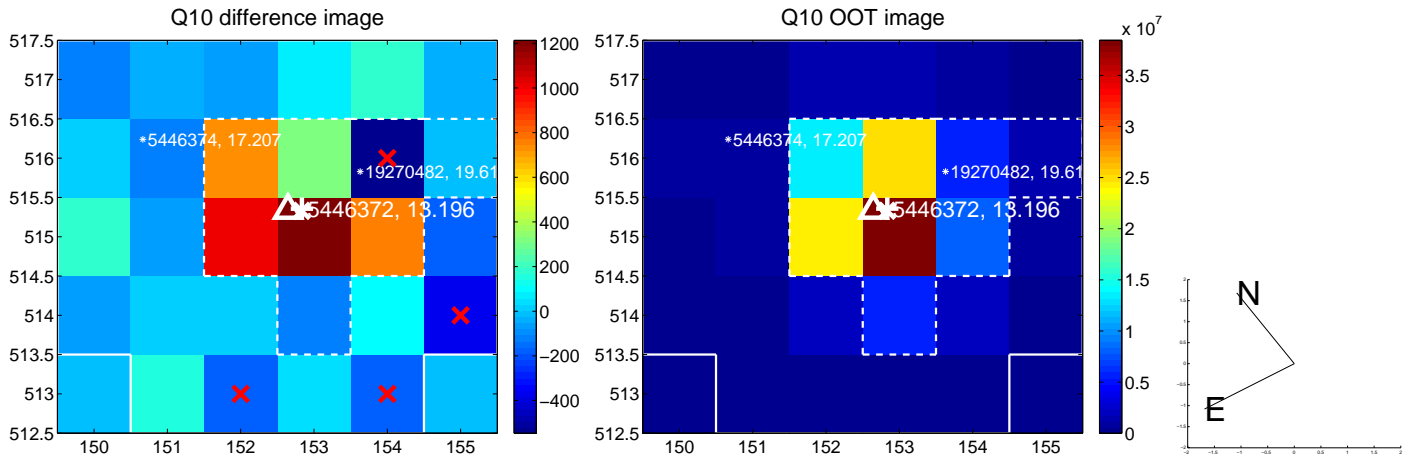
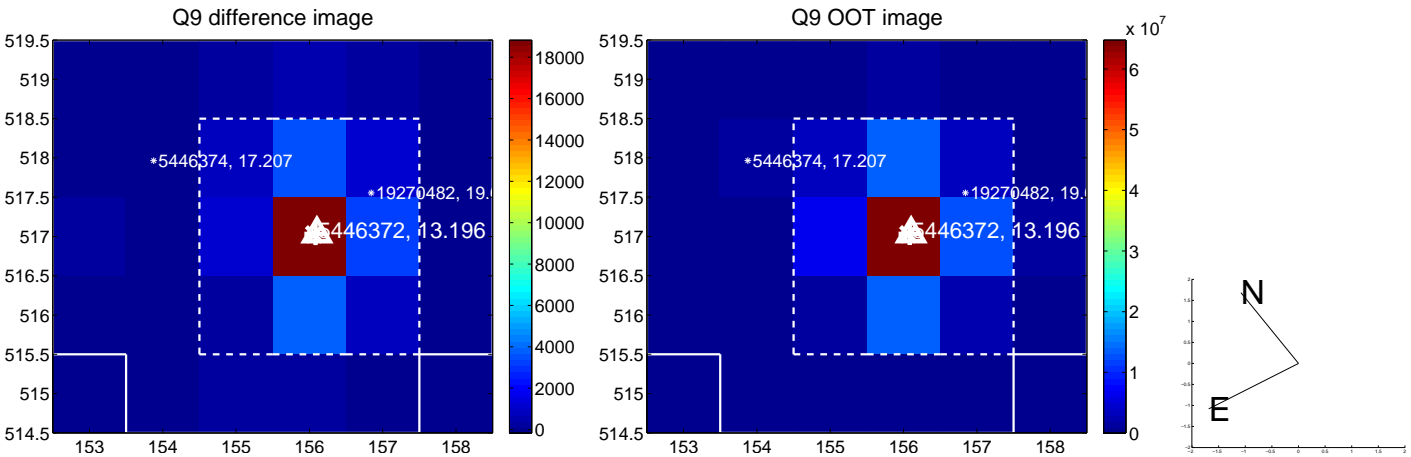
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



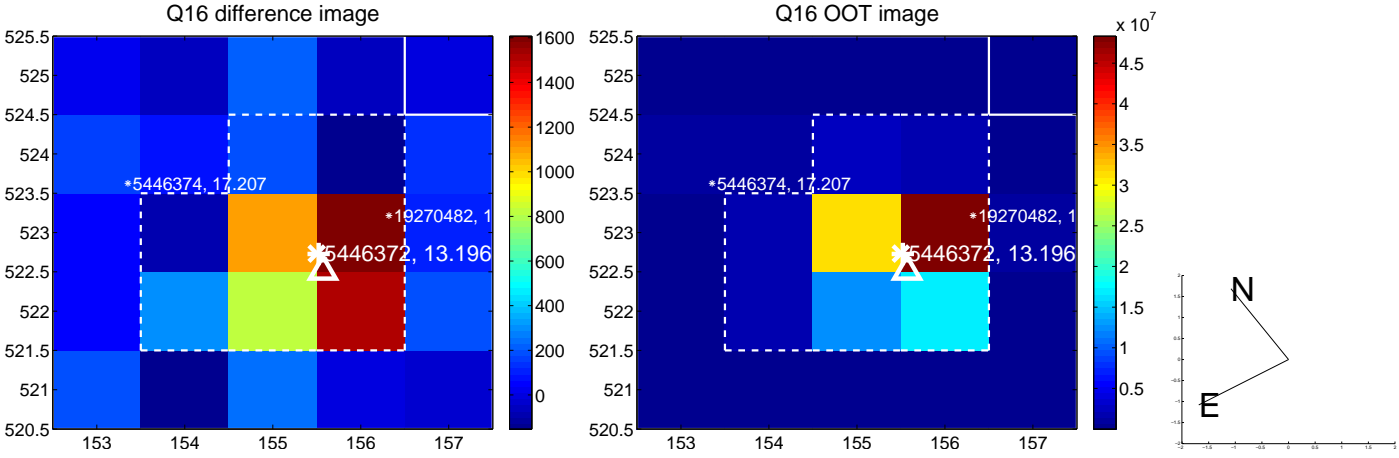
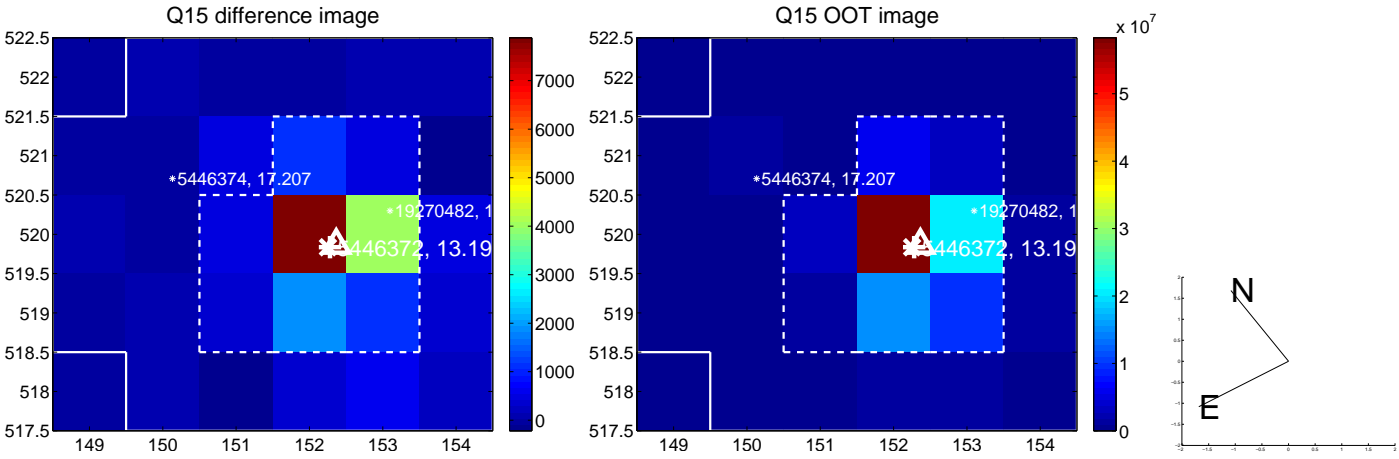
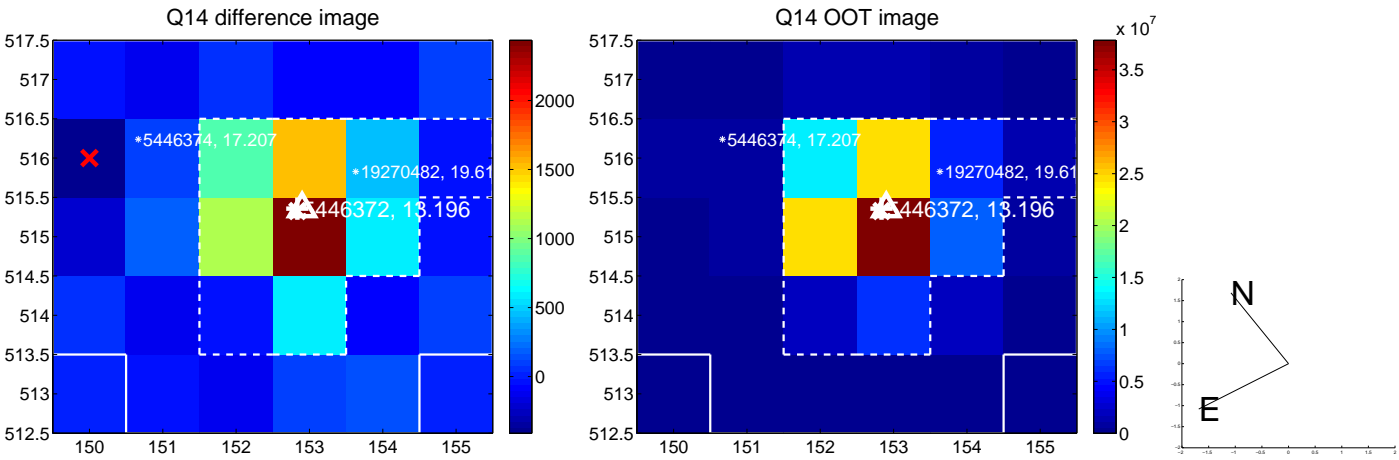
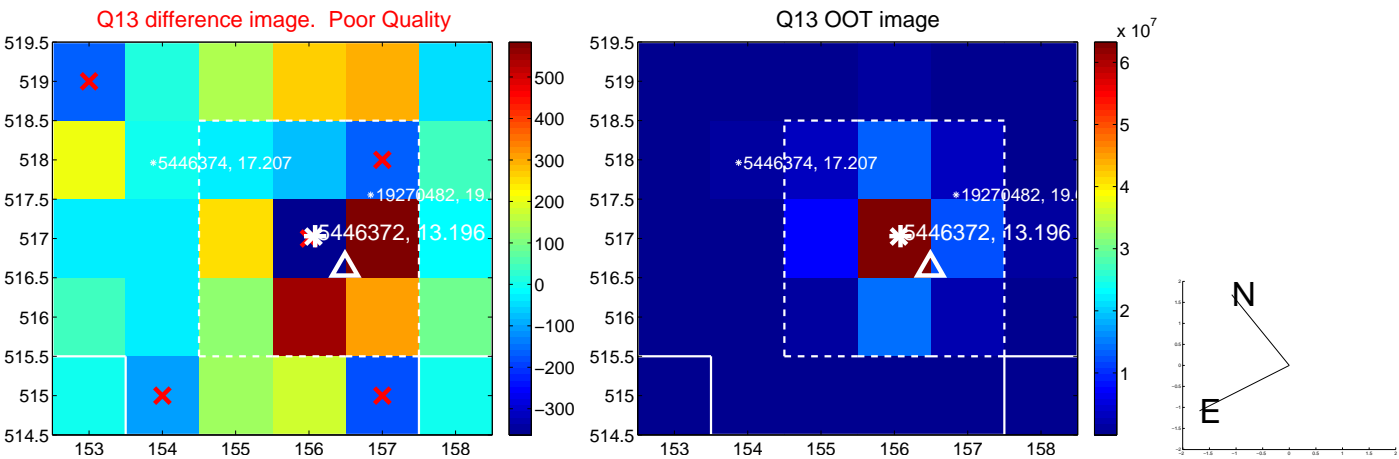
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



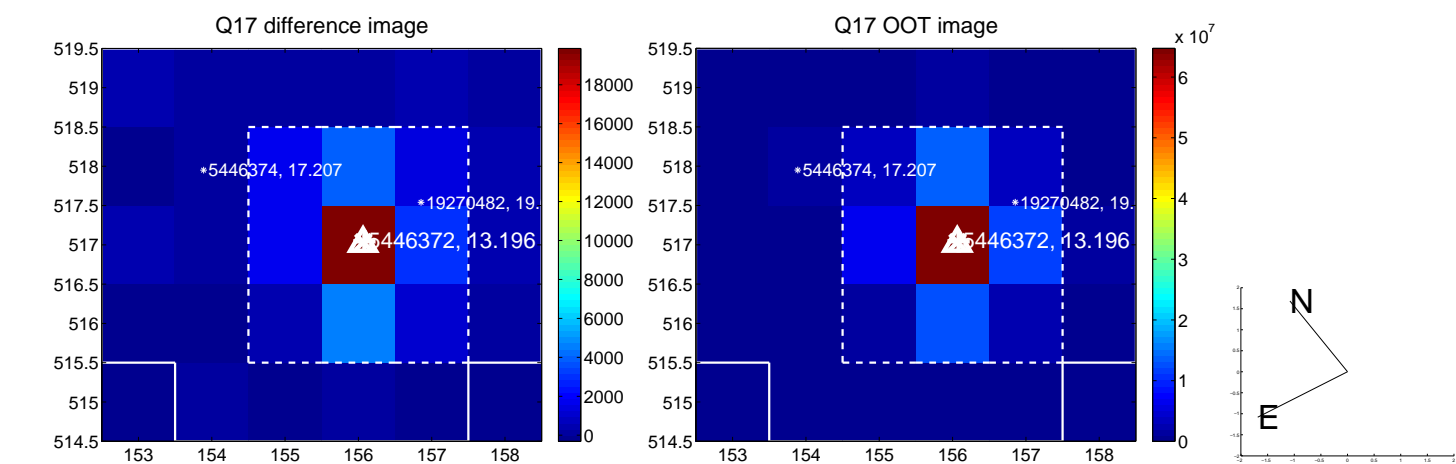
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



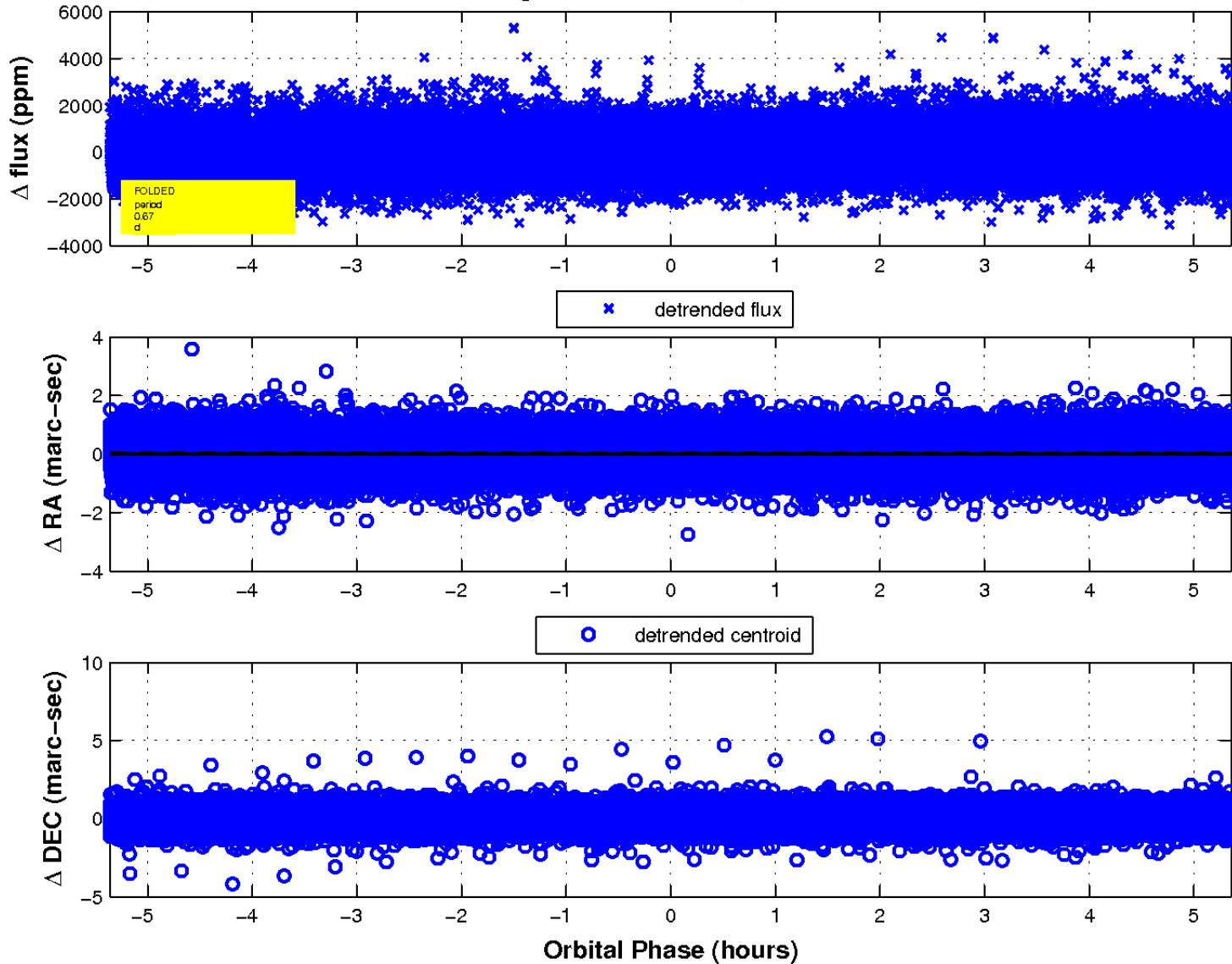
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

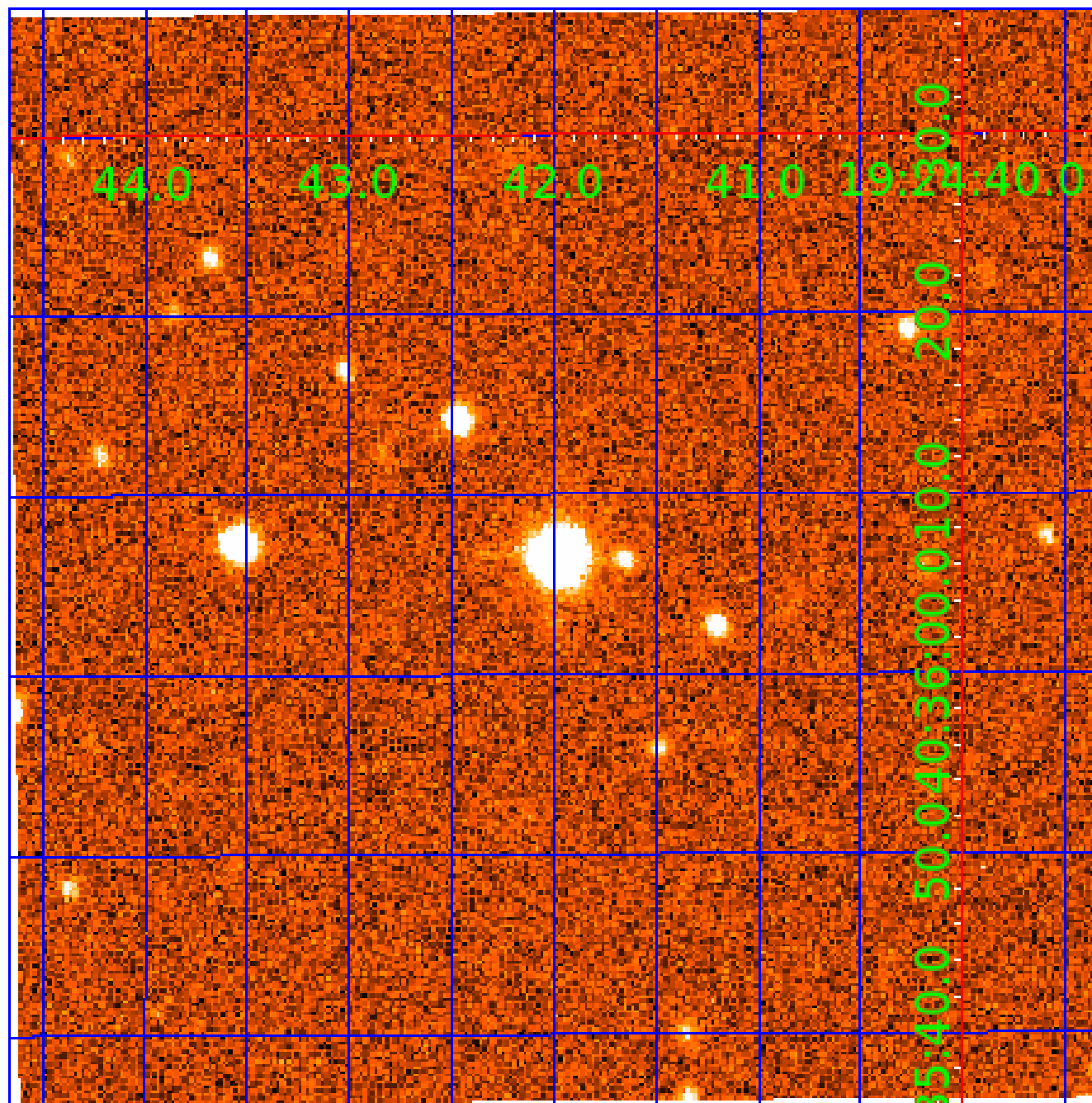


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005446372

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})
005446372-01	OBS	No	0.665755	131.931307	52.5	1.787	11.2	10.0	1.46	7389	1.23	20643.46
005446372-02	OBS	No	0.665758	132.111199	55.2	1.758	9.5	9.0	1.46	7389	1.26	20643.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005446372-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005446372-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

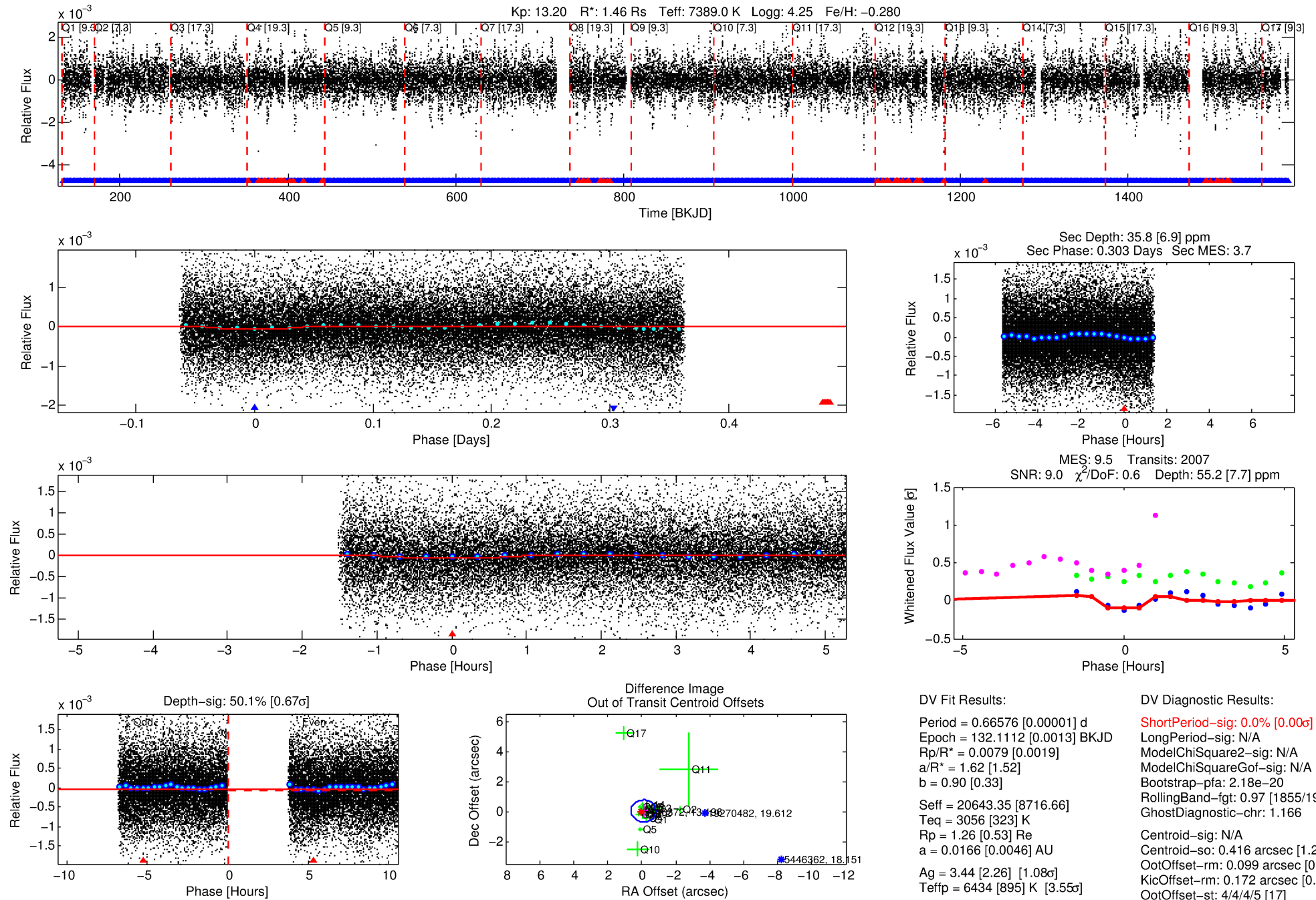
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005446372-02

No Significant Match Found

DV One-Page Summary

KIC: 5446372 Candidate: 2 of 2 Period: 0.666 d



DV Fit Results:

Period = 0.66576 [0.00001] d
Epoch = 132.1112 [0.0013] BKJD
Rp/R* = 0.0079 [0.0019]
a/R* = 1.62 [1.52]
b = 0.90 [0.33]
Seff = 20643.35 [8716.66]
Teq = 3056 [323] K
Rp = 1.26 [0.53] Re
a = 0.0166 [0.0046] AU
Ag = 3.44 [2.26] [1.08 σ]
Teffp = 6434 [895] K [3.55 σ]

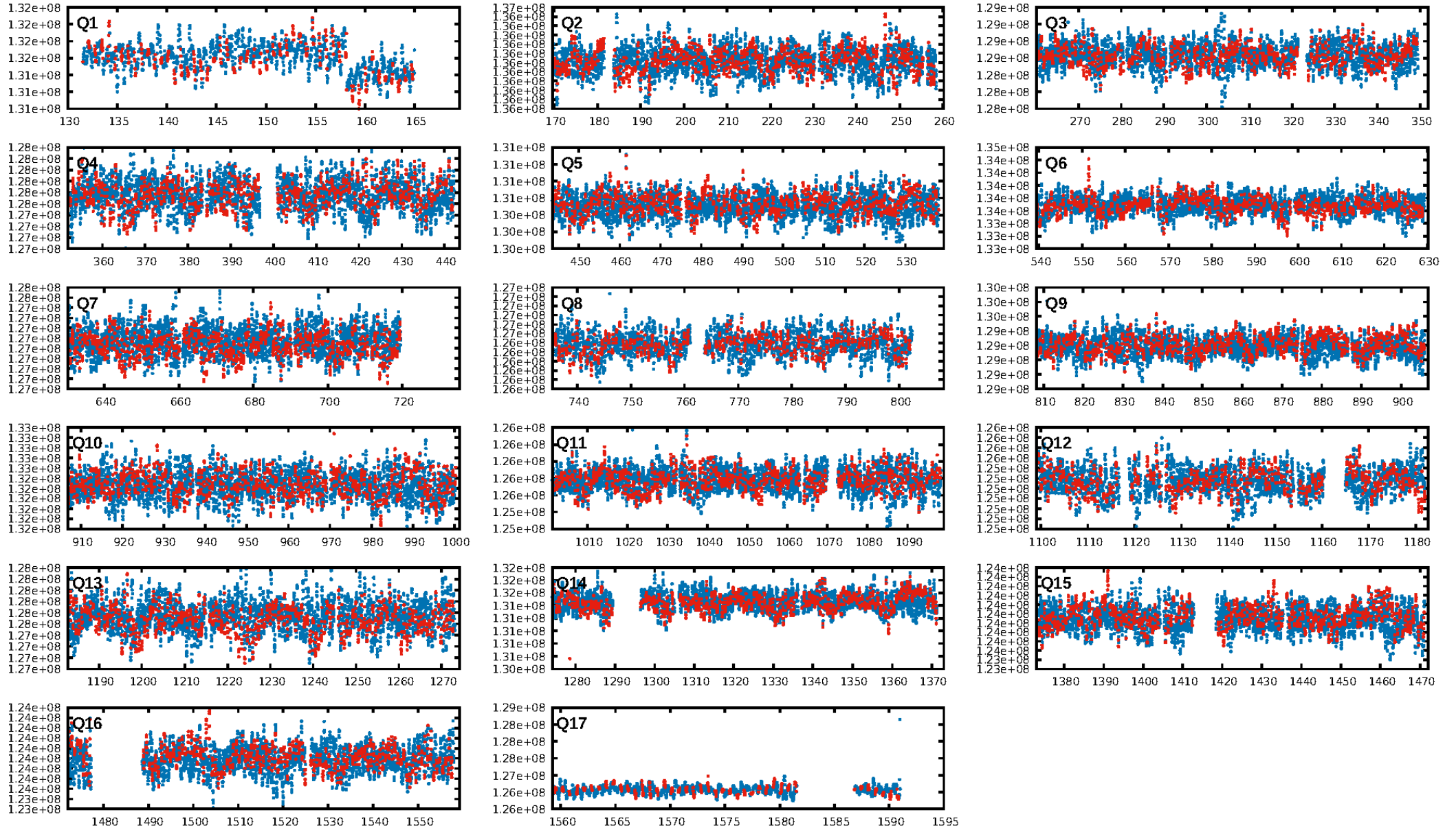
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.18e-20
RollingBand-fgt: 0.97 [1855/1916]
GhostDiagnostic-chr: 1.166
Centroid-sig: N/A
Centroid-so: 0.416 arcsec [1.26 σ]
OotOffset-rm: 0.099 arcsec [0.41 σ]
KicOffset-rm: 0.172 arcsec [0.70 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.59 [10/17]
DiffImageOverlap-fno: 0.00 [0/17]

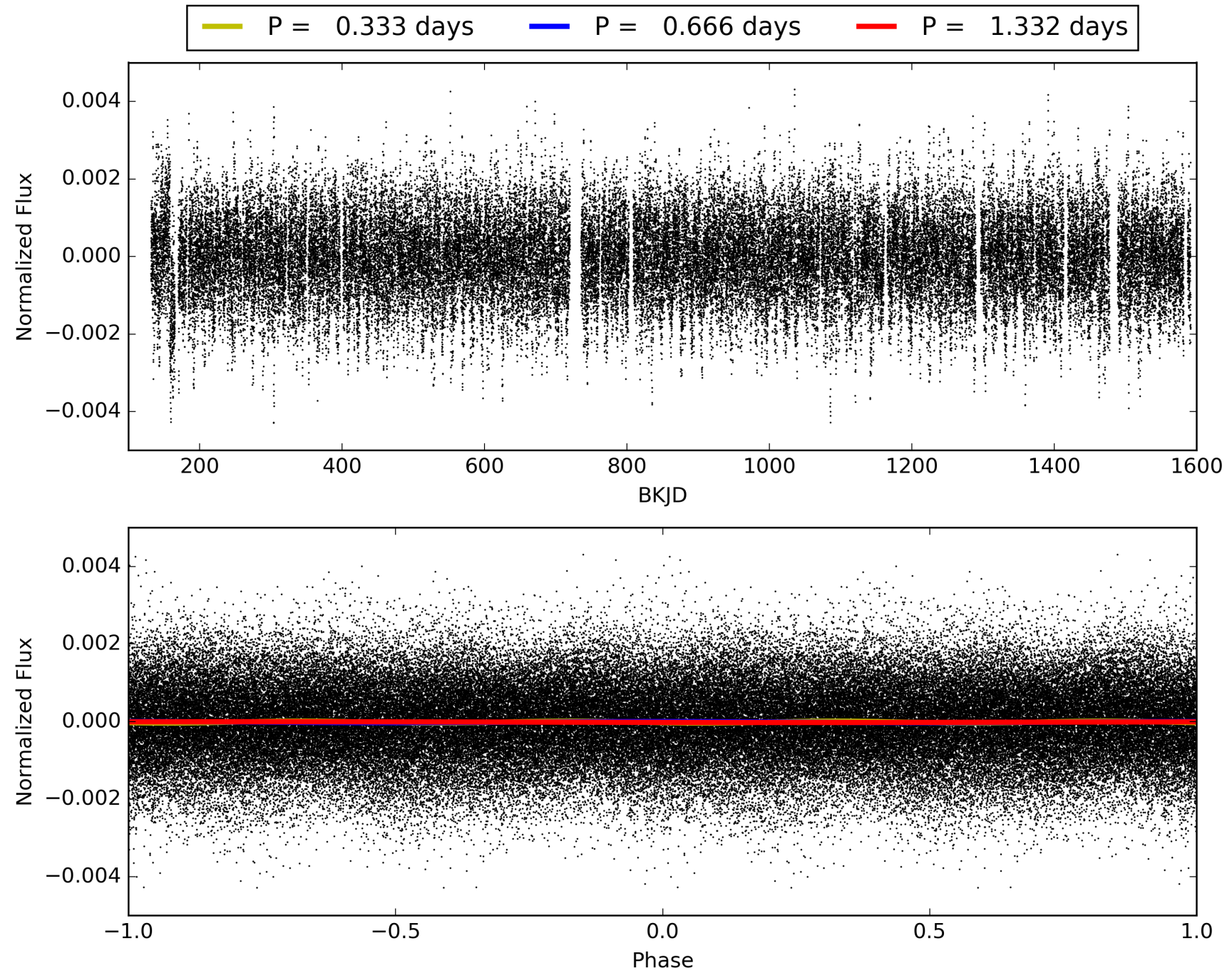
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:05:50 Z

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

TCE 005446372-02, PDC Light Curves

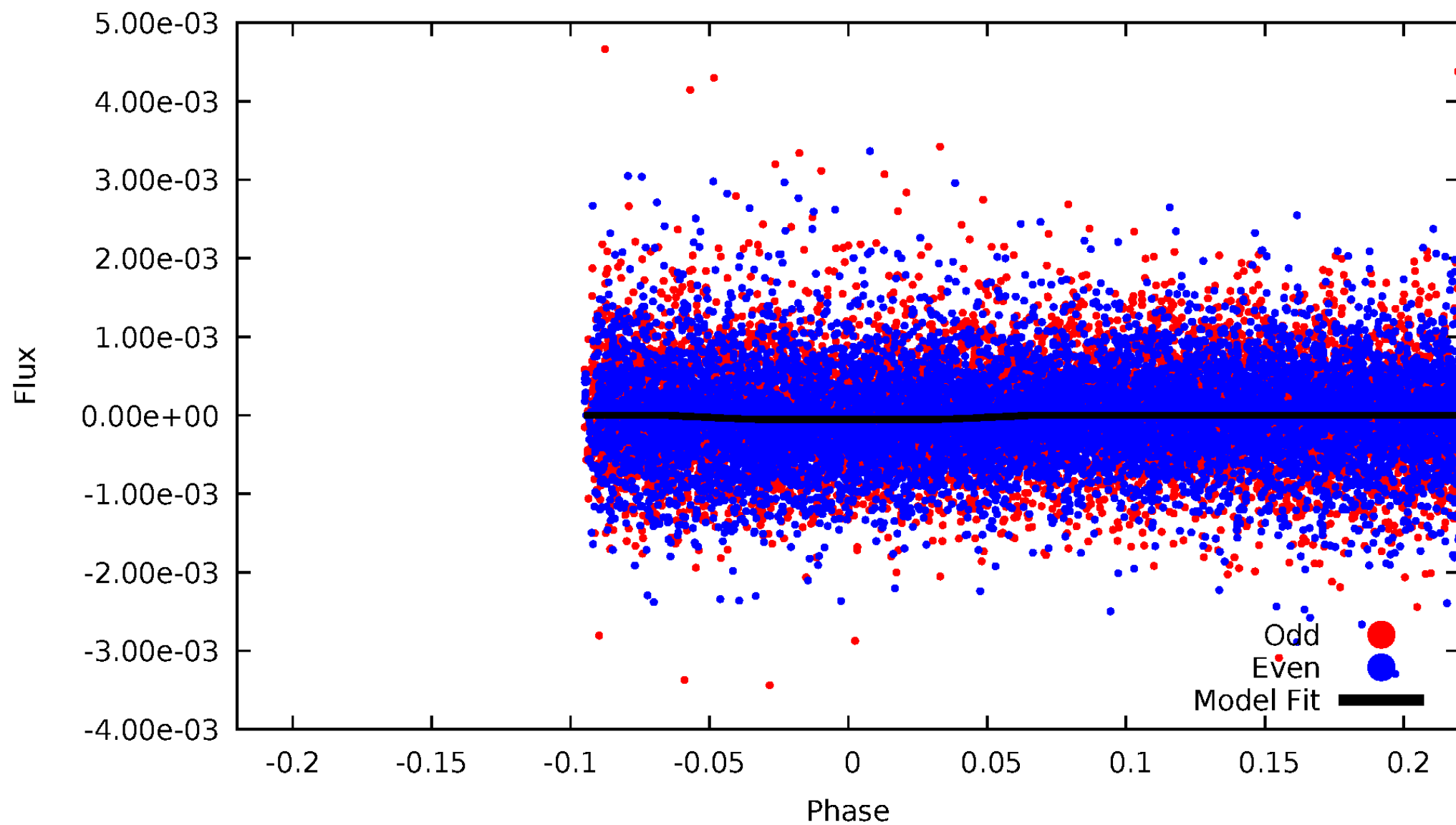


TCE 005446372-02



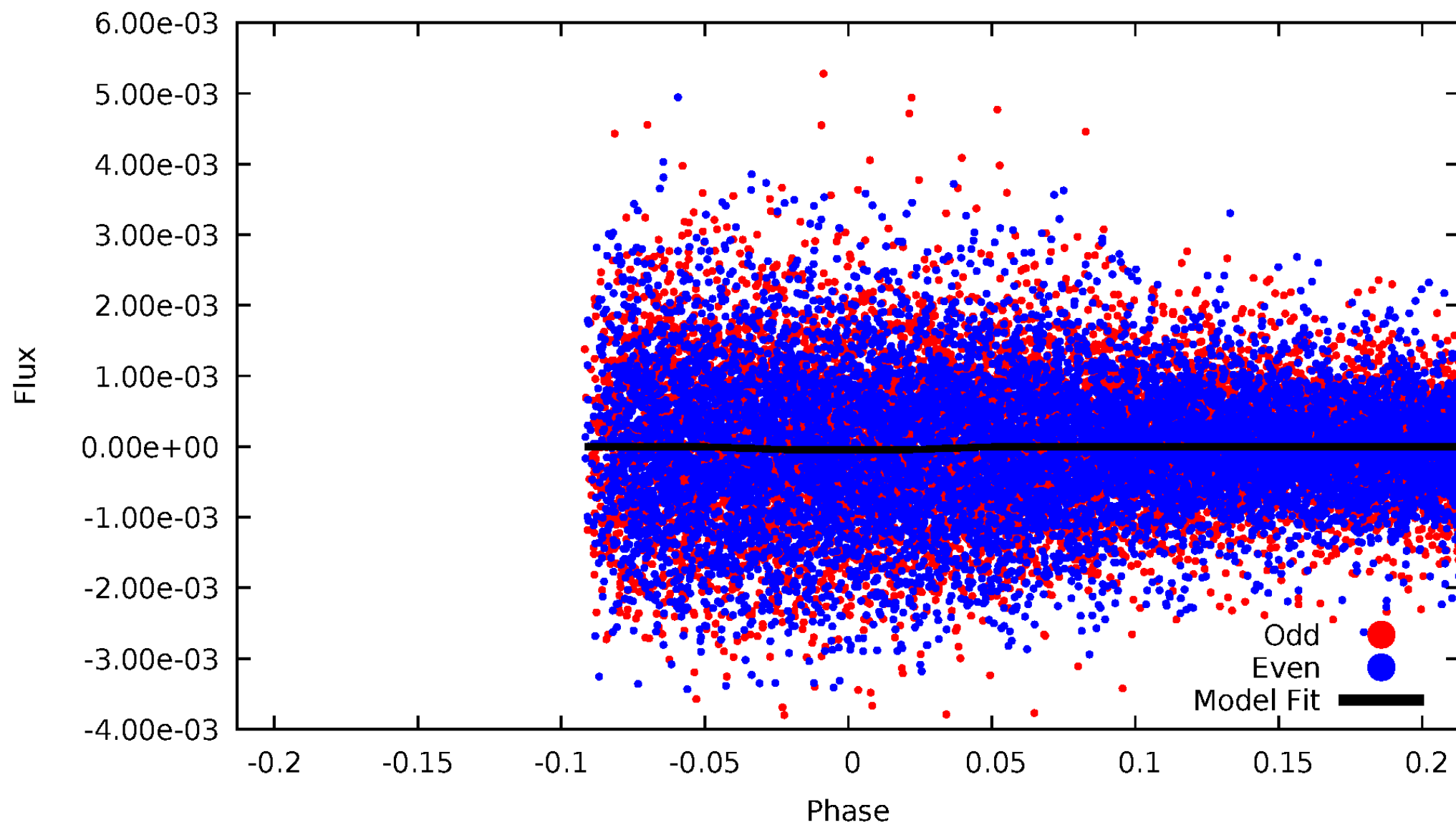
DV Odd/Even

TCE 005446372-02



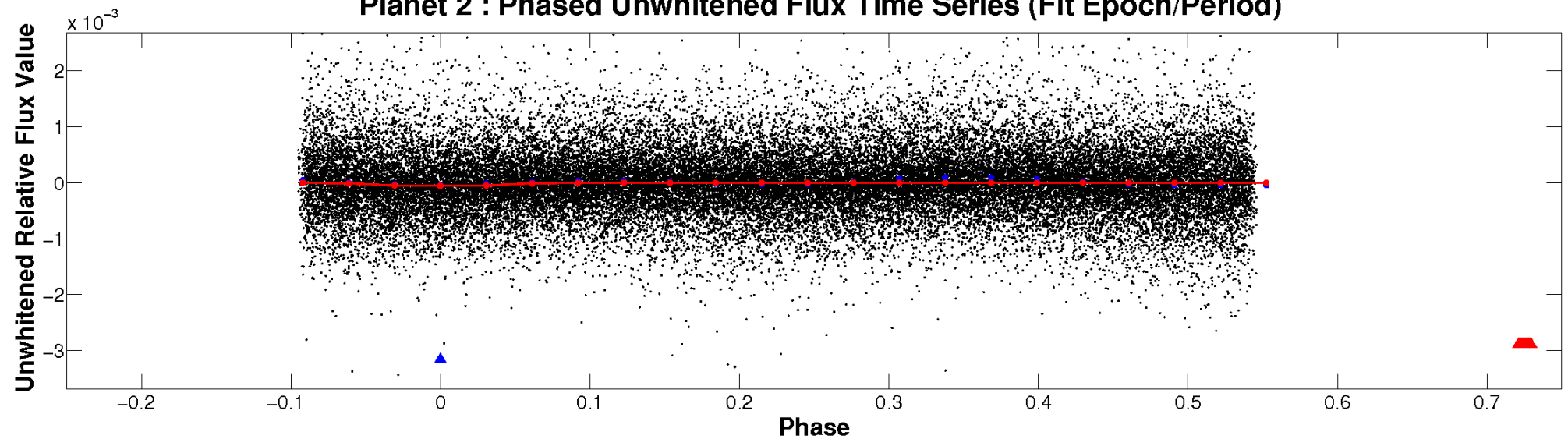
ALT Odd/Even

TCE 005446372-02

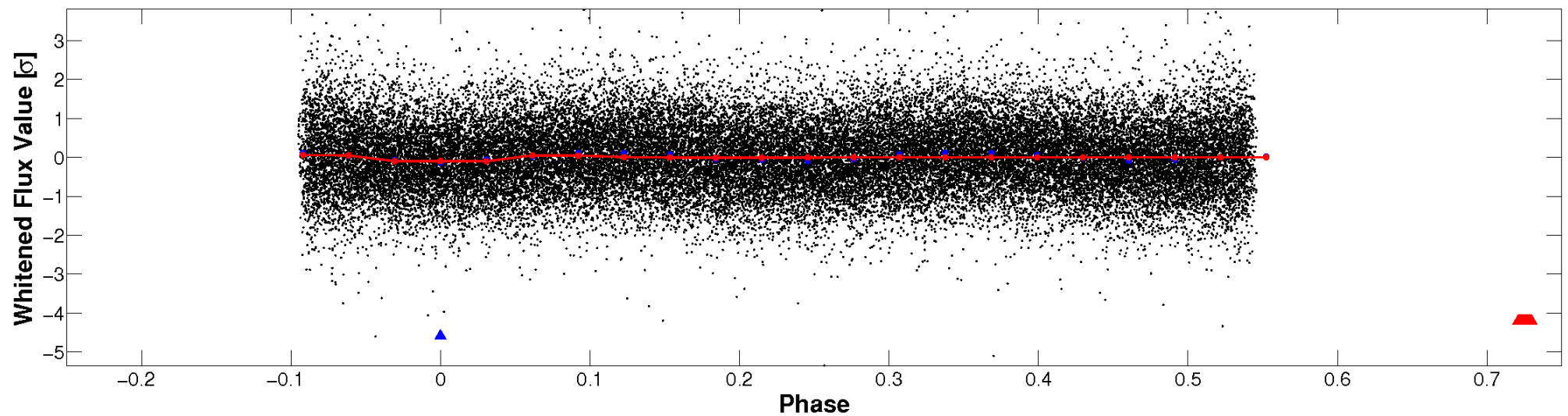


Non-Whitened Vs. Whitened Light Curve

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

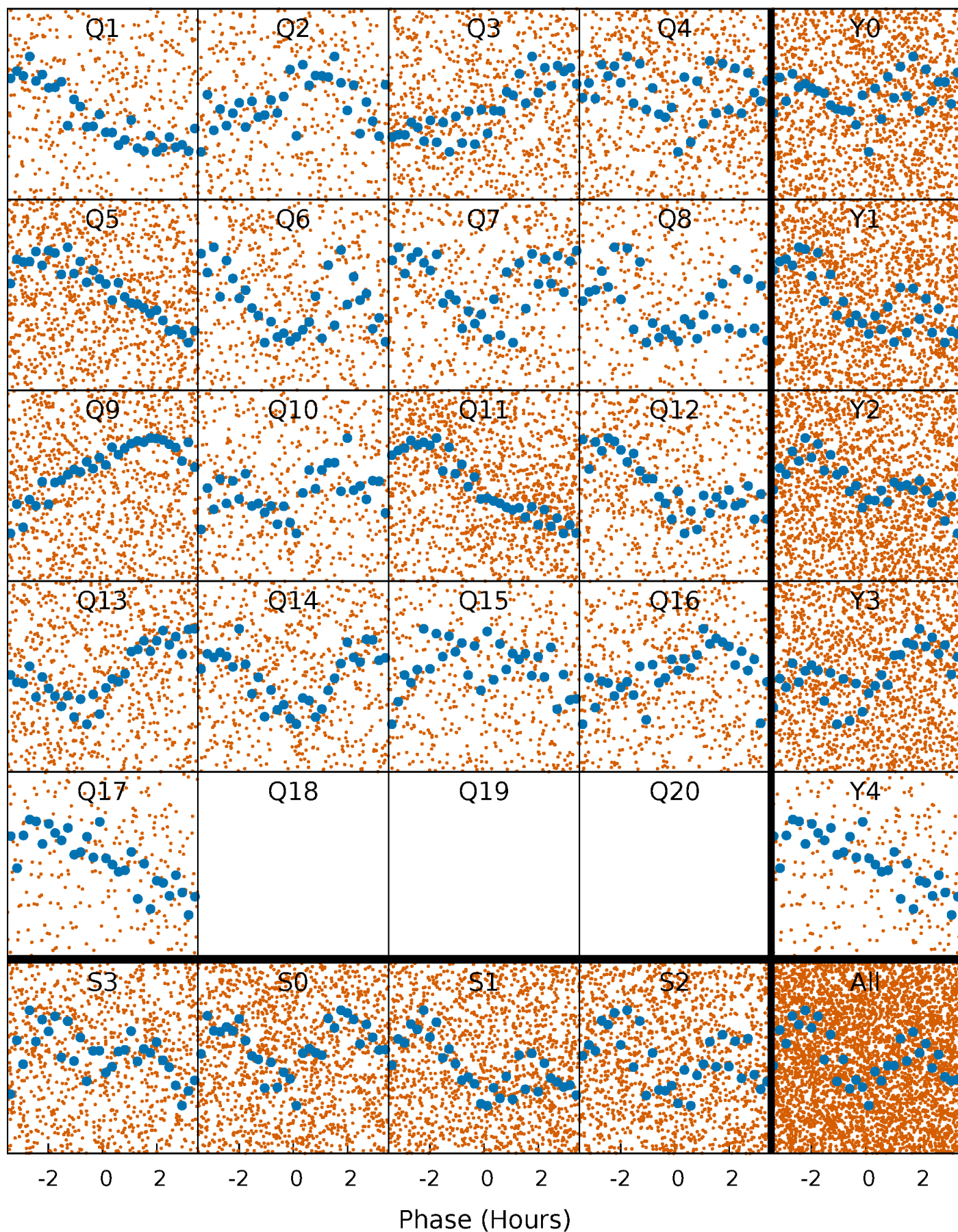


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



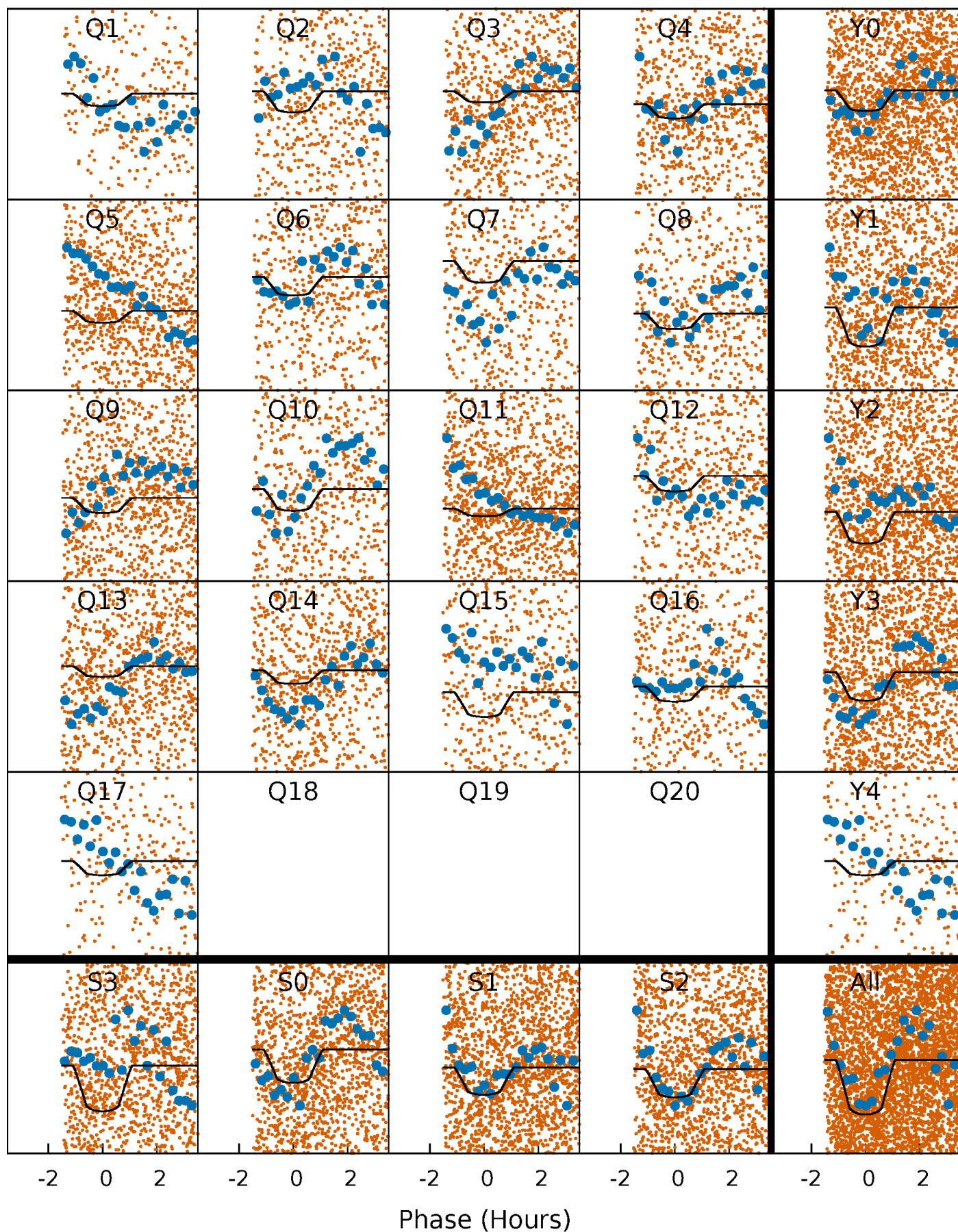
PDC Quarter-Phased Transit Curves

TCE 005446372-02 P= 0.665758 Days $T_0=132.111199$ (BKJD)



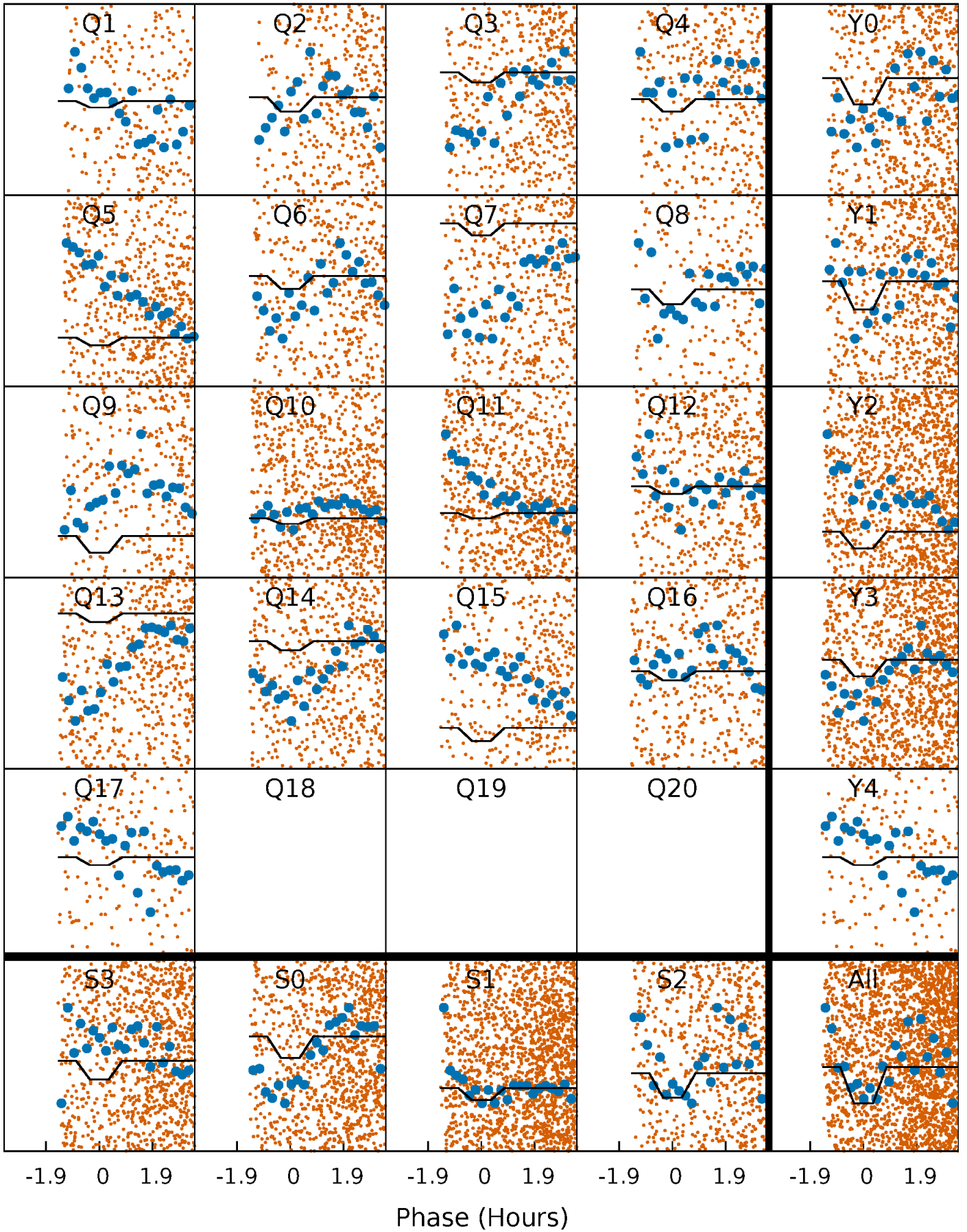
DV Quarter-Phased Transit Curves

TCE 005446372-02 $P = 0.665758$ Days $T_0 = 132.111199$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

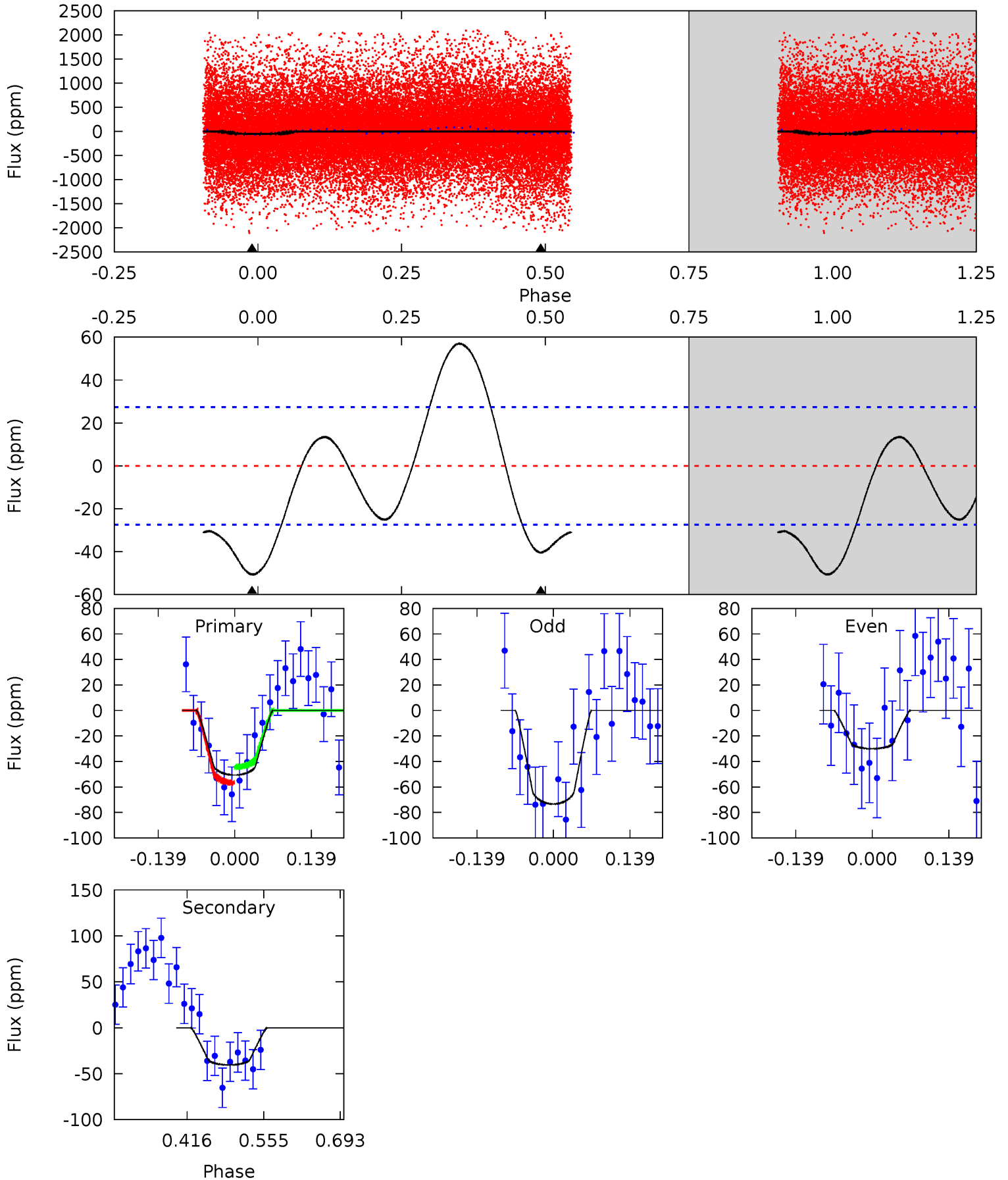
TCE 005446372-02 $P = 0.665760$ Days $T_0 = 132.103545$ (BKJD)



DV Model-Shift Uniqueness Test

005446372-02, P = 0.665758 Days, E = 131.445441 Days

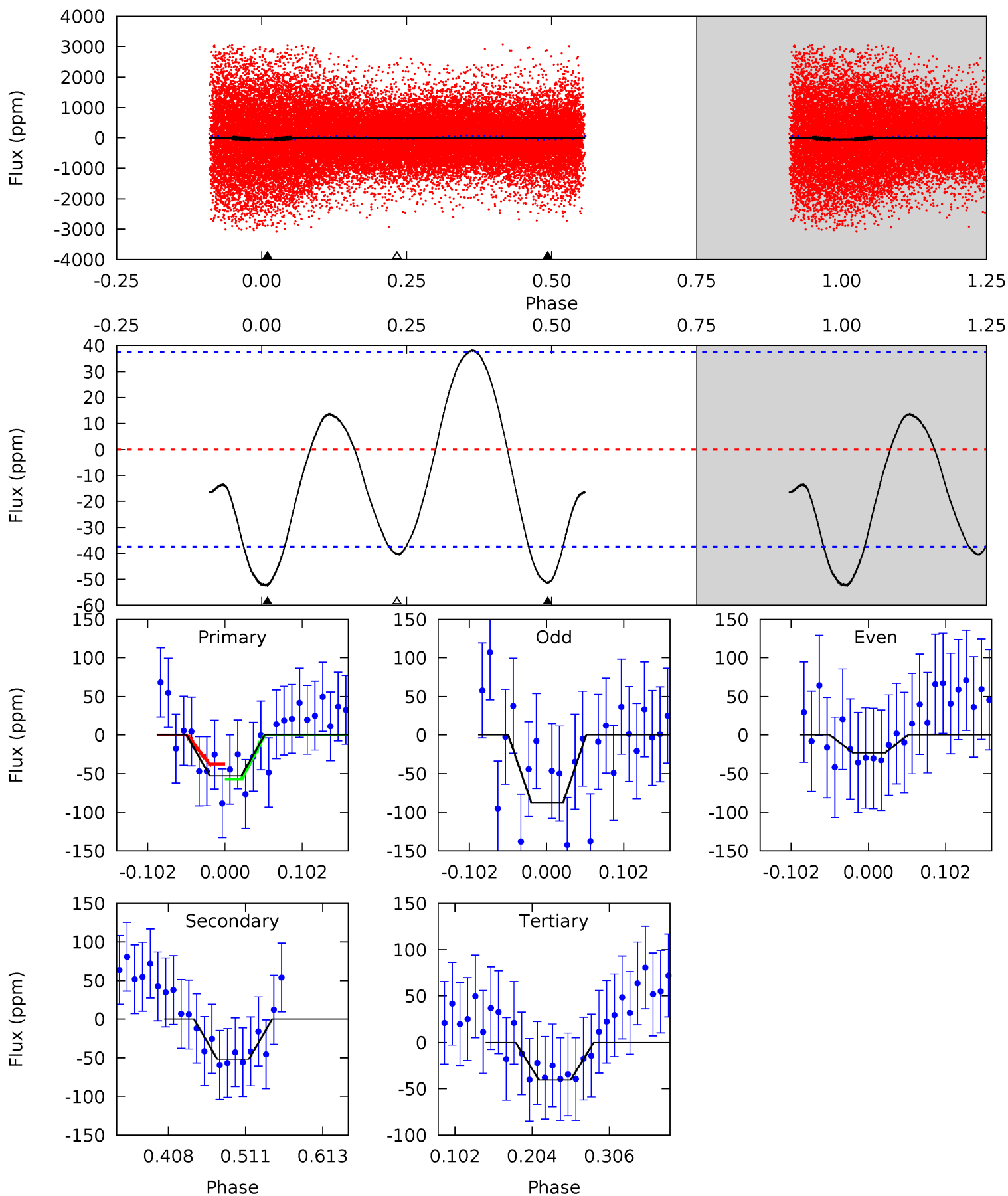
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.31	6.65	0	0	4.50	1.48	4.37	8.31	8.31	6.65	6.65	3.58	0.57	0.53	0.99



Alt Model-Shift Uniqueness Test

005446372-02, P = 0.665760 Days, E = 131.437785 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.43	6.30	4.95	0	4.56	1.63	3.20	1.48	6.43	1.35	6.30	3.89	0.82	0.42	0.84



Stellar Parameters For KIC 005446372

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7389^{+232}_{-310}	$4.249^{+0.087}_{-0.203}$	$-0.280^{+0.250}_{-0.350}$	$1.462^{+0.505}_{-0.217}$	$1.389^{+0.216}_{-0.216}$	$0.626^{+0.316}_{-0.336}$
	+3%/-4%	+2%/-5%	+89%/-125%	+35%/-15%	+16%/-16%	+51%/-54%
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 005446372-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-40 ± 6	$1.27^{+0.40}_{-0.32}$	4335^{+310}_{-245}	6418^{+1199}_{-824}	$3.657^{+2.879}_{-1.549}$
Alt.	-52 ± 8	$1.10^{+0.35}_{-0.34}$	4324^{+300}_{-248}	7490^{+2154}_{-1088}	$6.240^{+7.066}_{-2.757}$

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 $A_{obs} \gg 1.0$

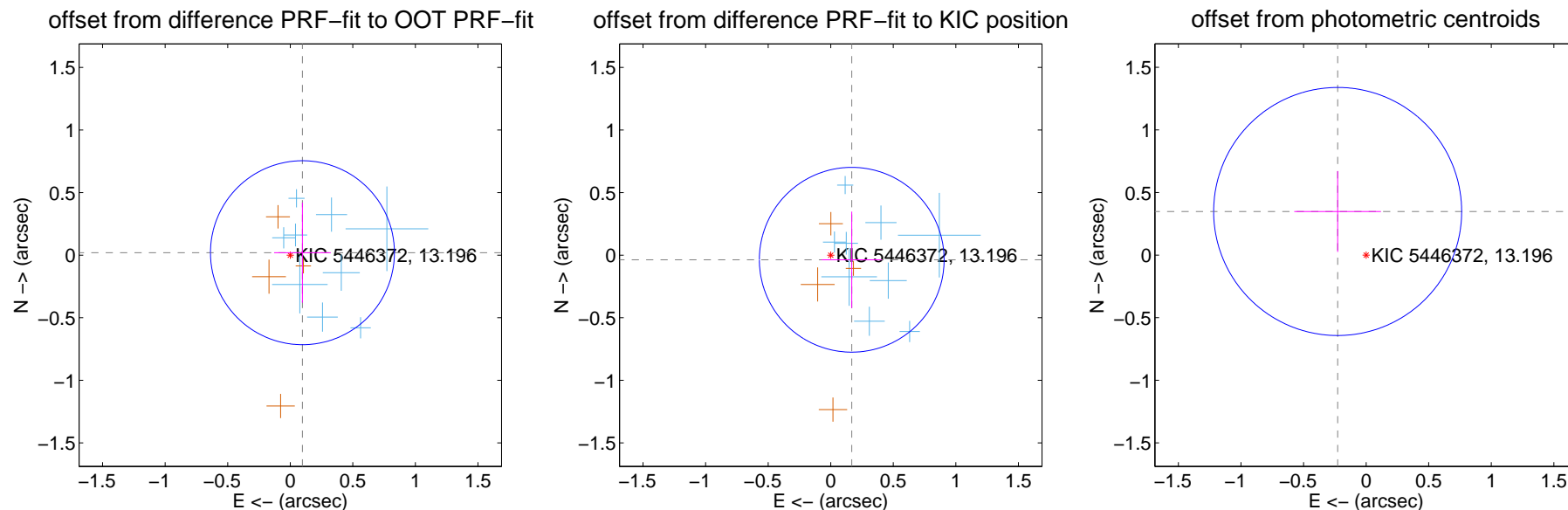
DV Centroid Data

Supplemental centroid analysis for 005446372-02. Kepler magnitude: 13.20. Transit SNR 8.99

There are 10 quarters with good PRF difference image offsets

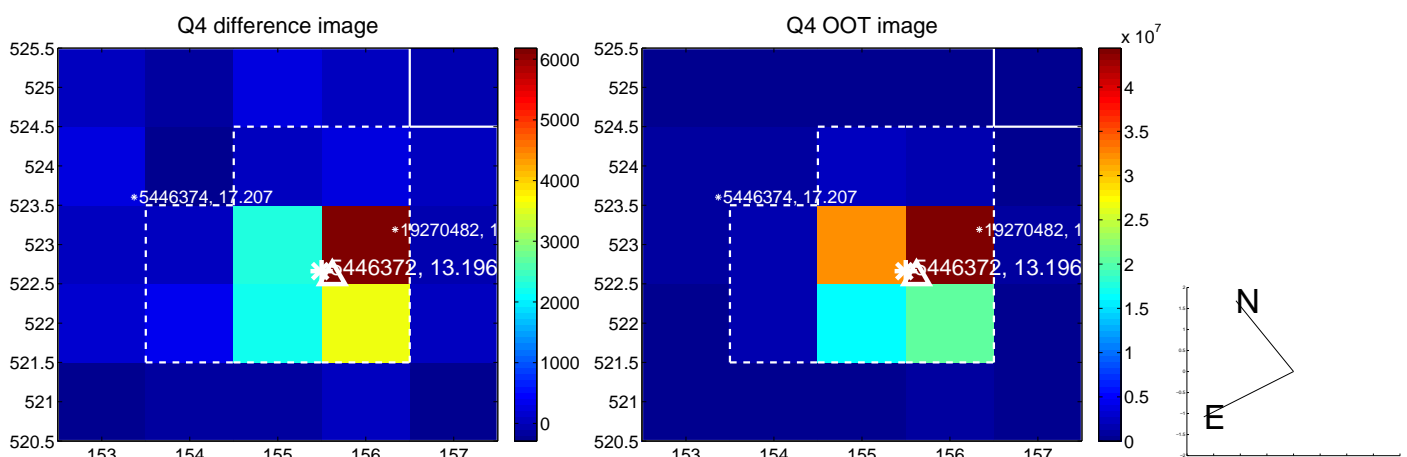
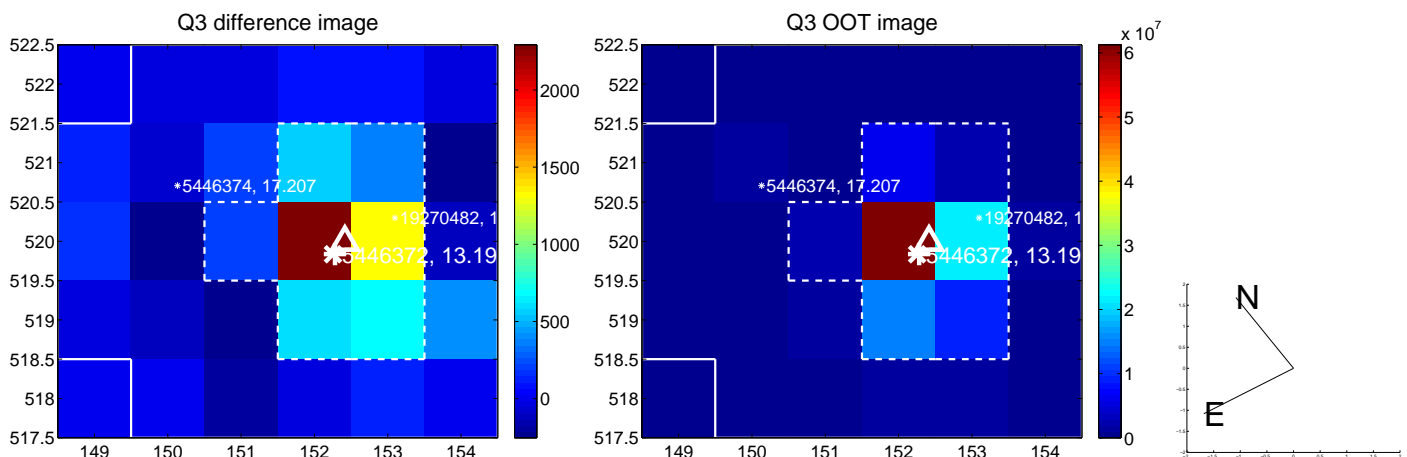
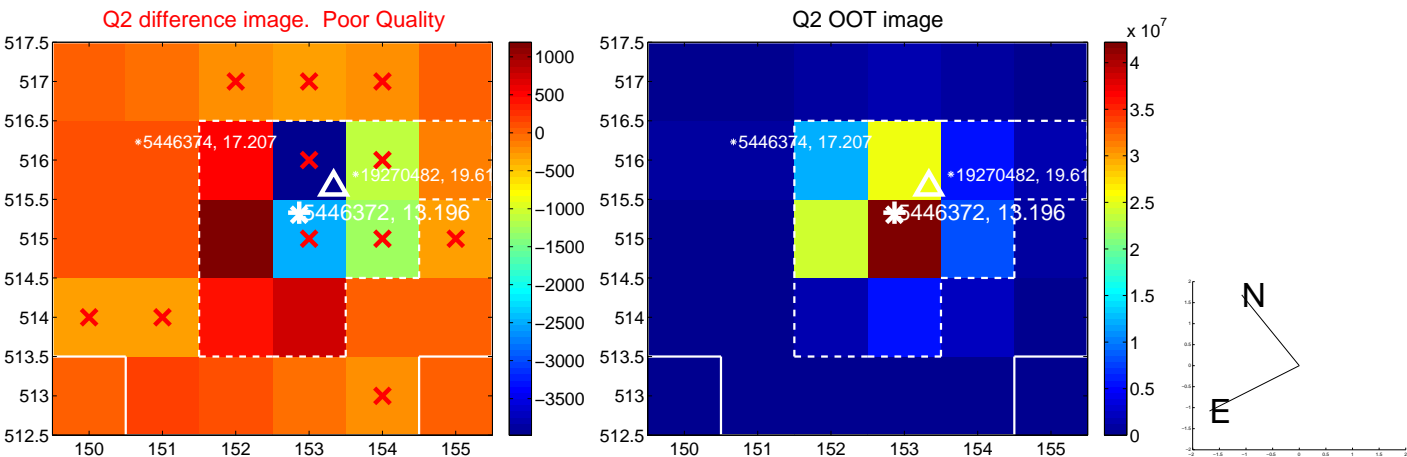
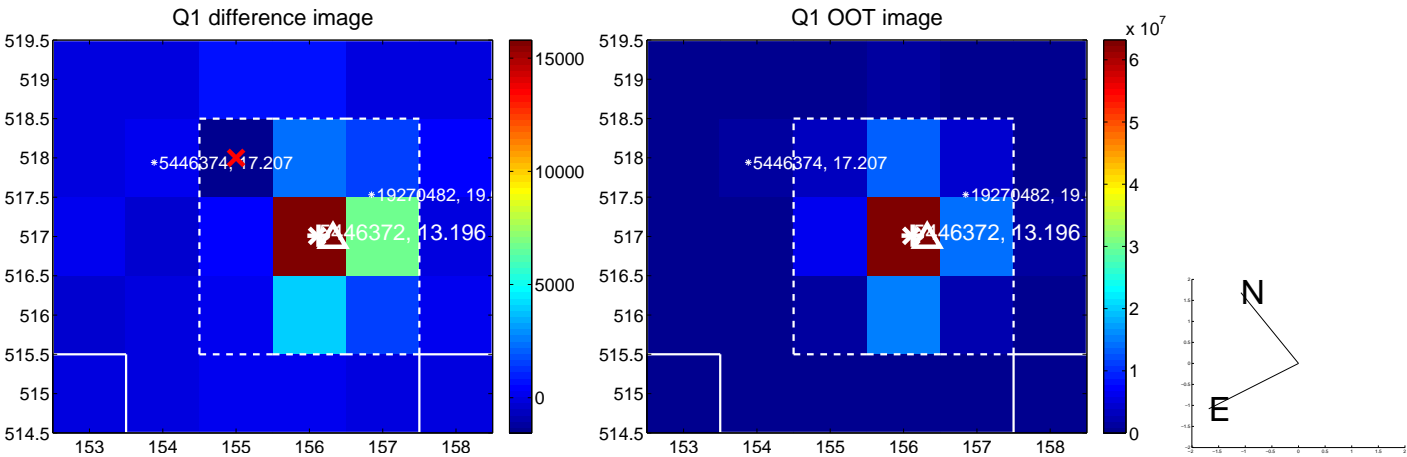
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.099 ± 0.245	0.41	-0.097 ± 0.226	0.019 ± 0.400
PRF-fit source offset from KIC position	0.172 ± 0.246	0.70	-0.168 ± 0.240	-0.037 ± 0.385
photometric centroid source offset	0.42 ± 0.33	1.26	0.23 ± 0.35	0.35 ± 0.32

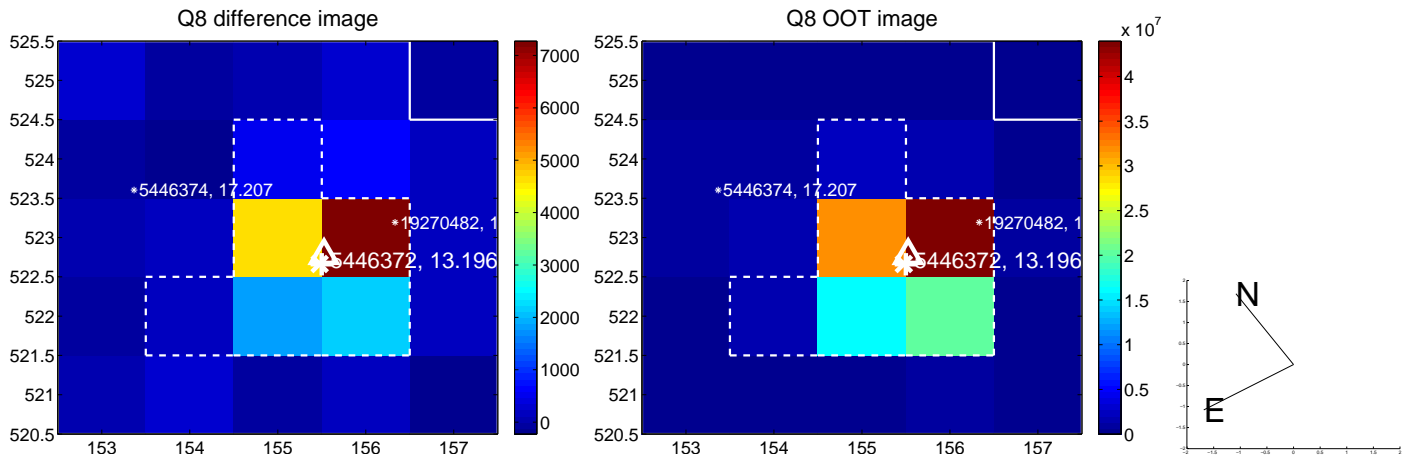
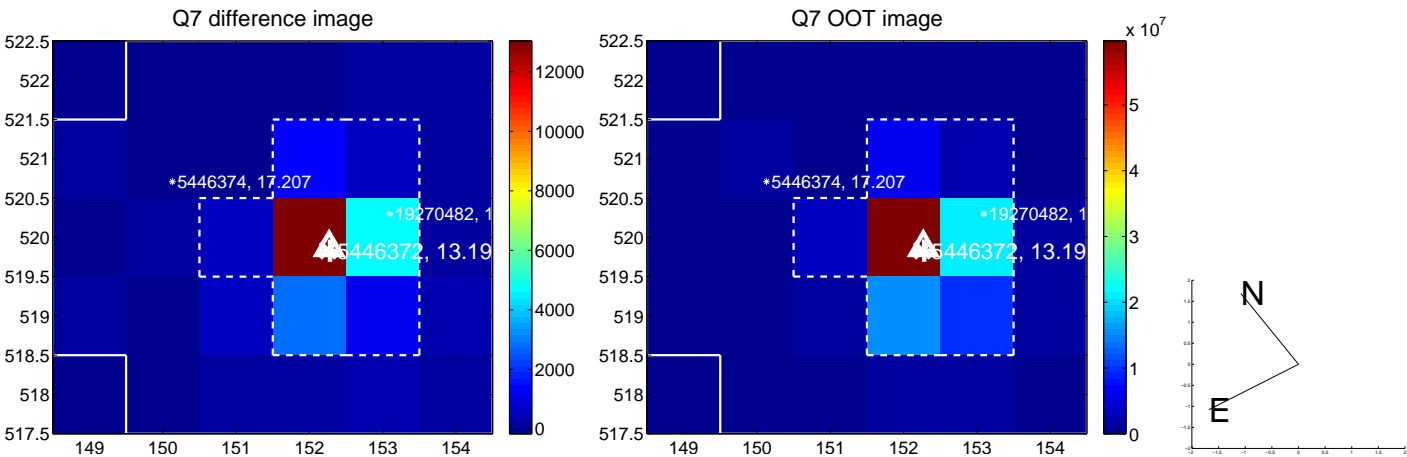
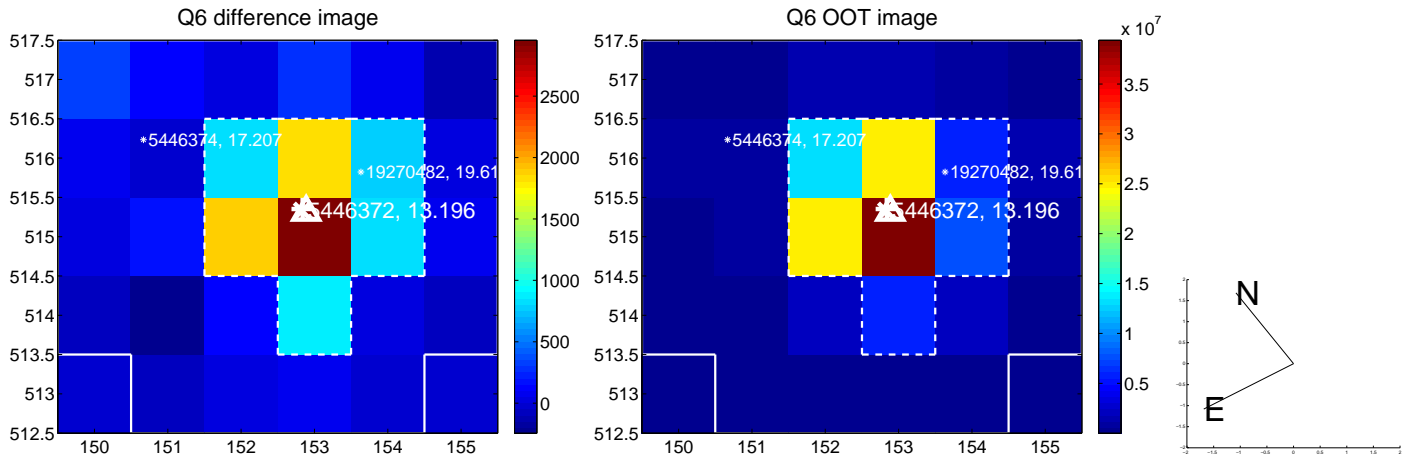
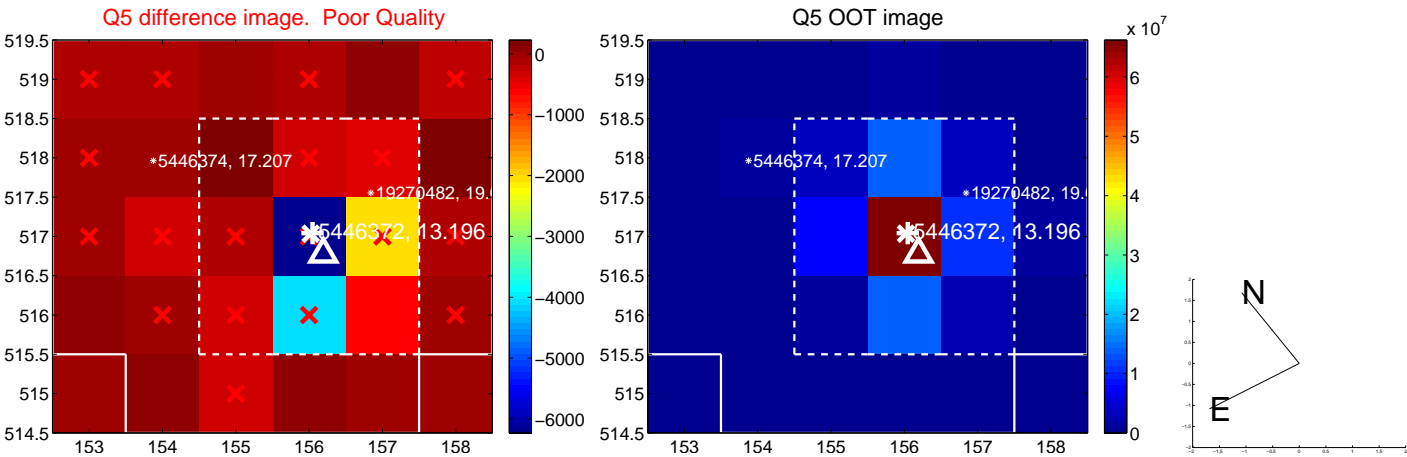


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

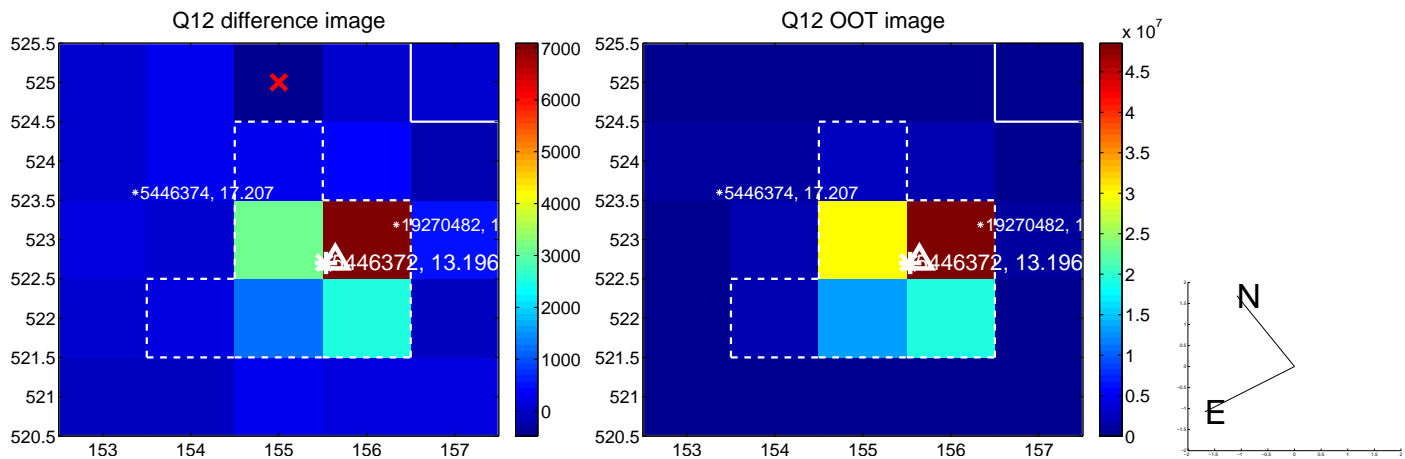
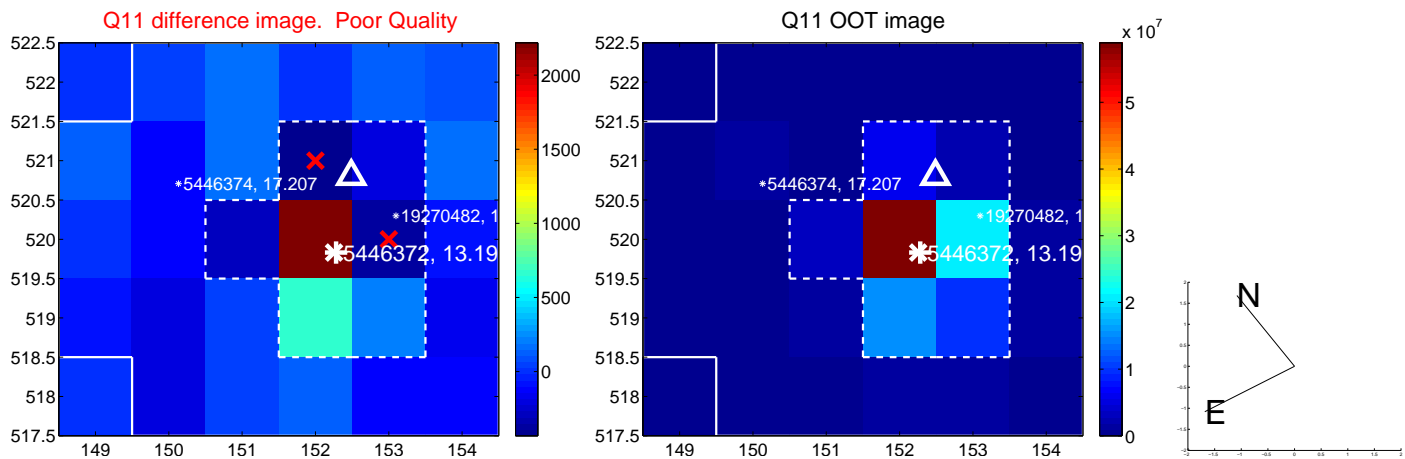
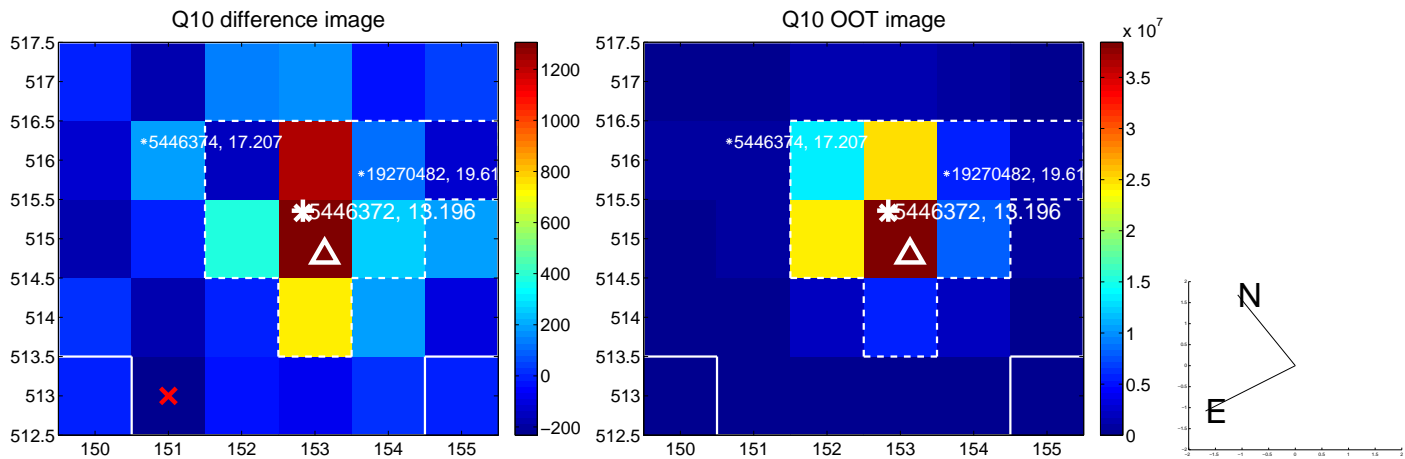
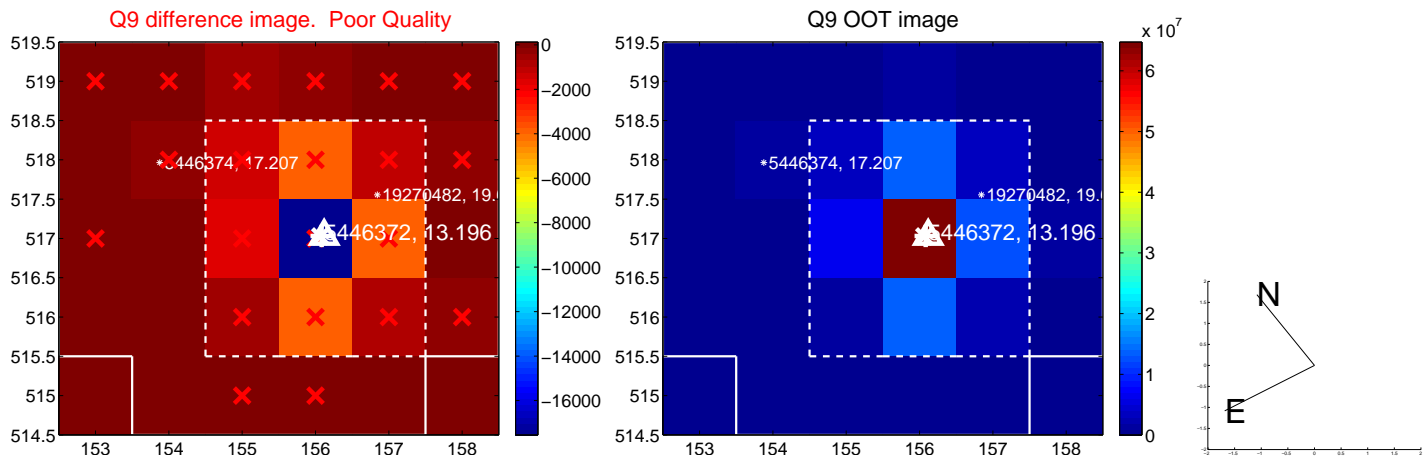
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



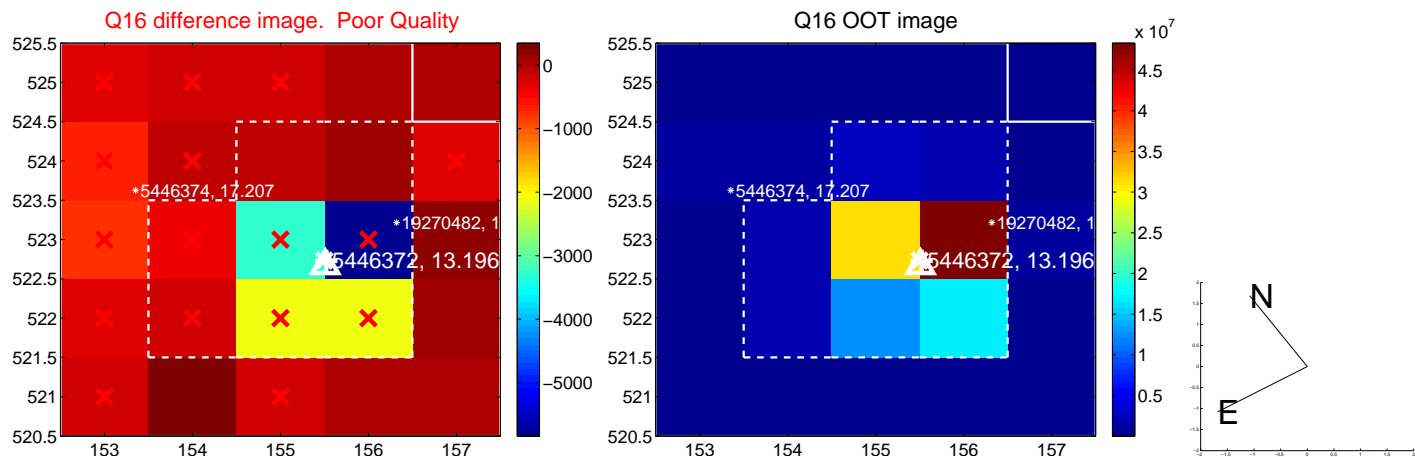
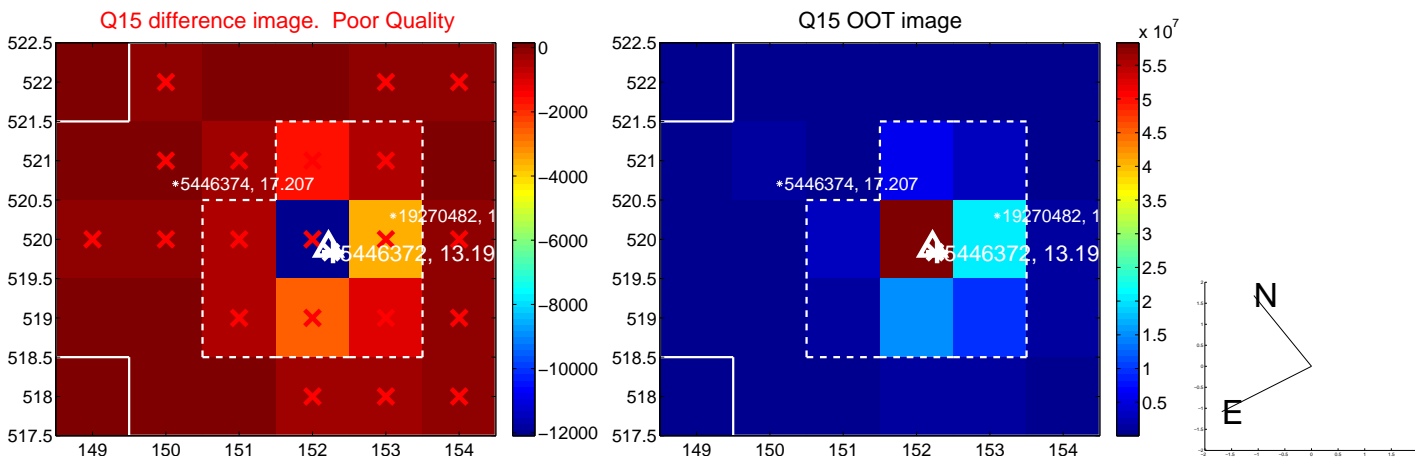
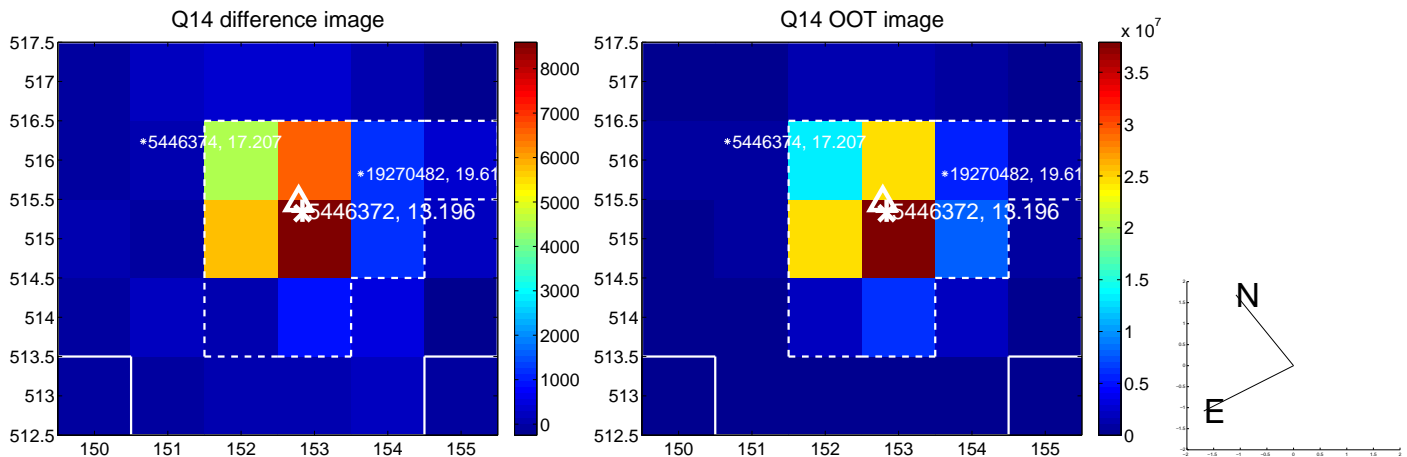
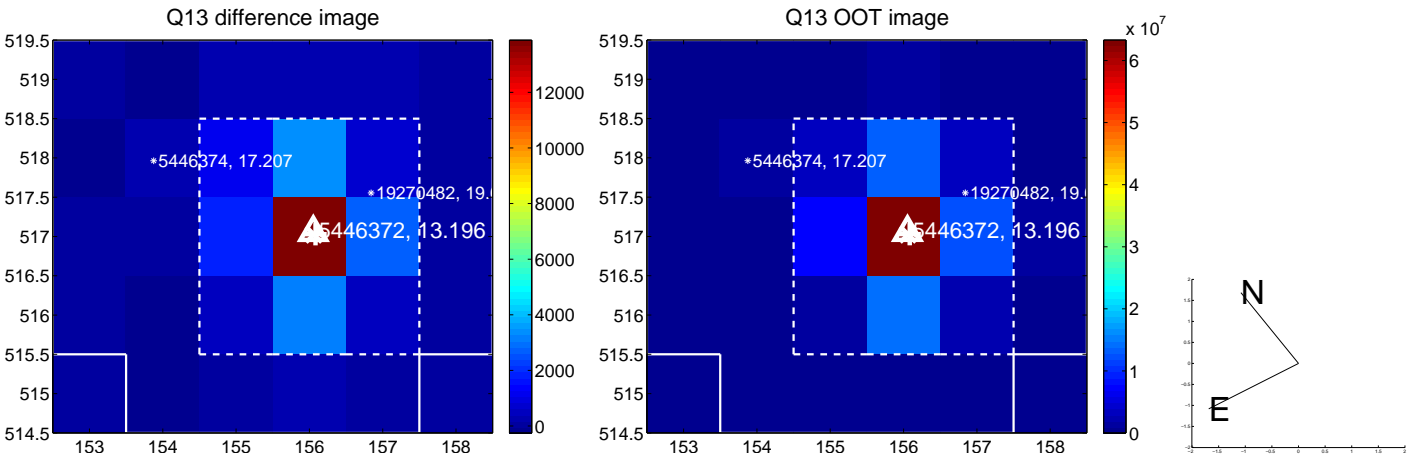
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



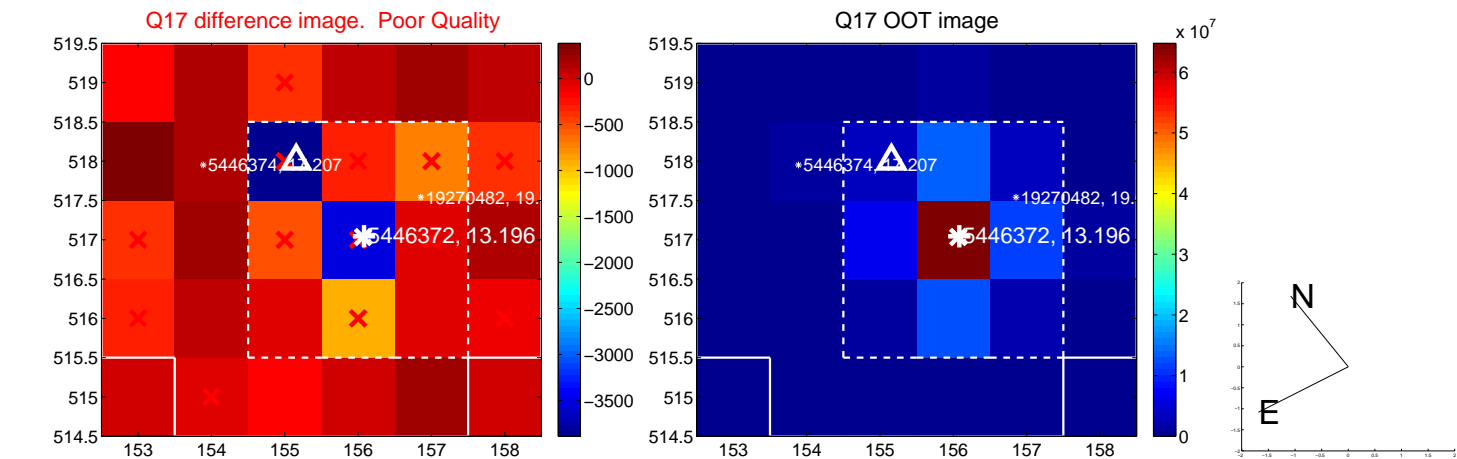
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



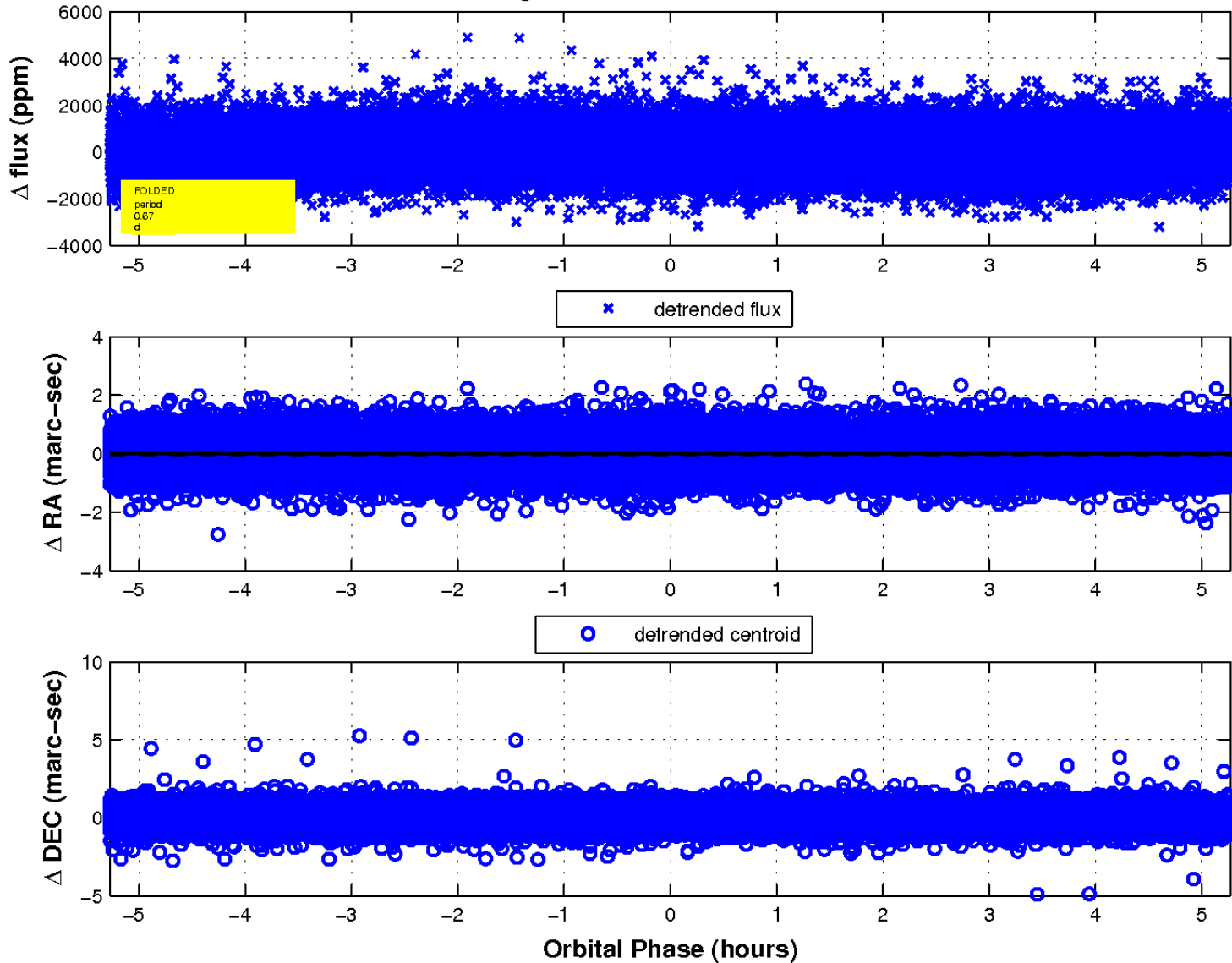
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

