

KIC 005475494

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})
005475494-01	OBS	3969.01	0.736183	132.091456	182.3	1.286	19.6	21.3	1.09	6355	1.73	6266.04
005475494-02	OBS	No	0.736207	131.708706	86.2	1.237	8.1	10.2	1.09	6355	1.19	6265.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005475494-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
005475494-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET

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 005475494-01

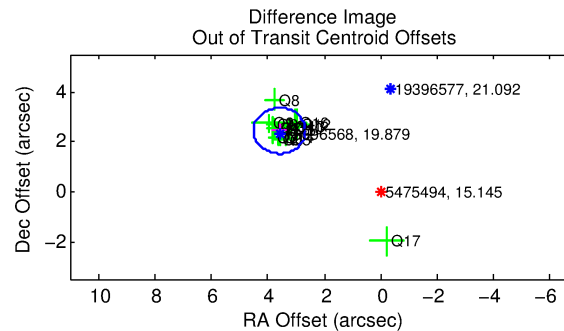
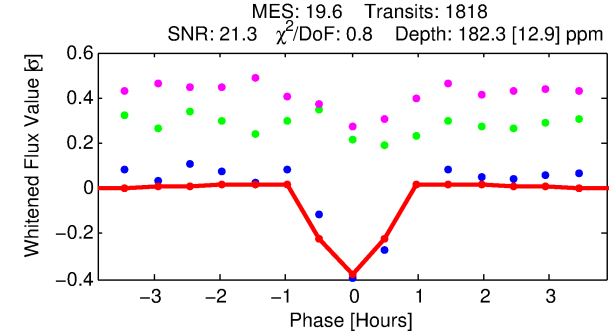
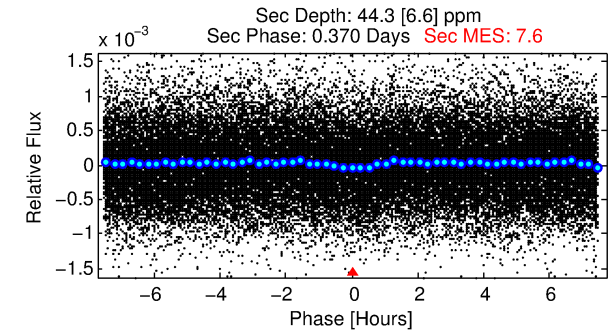
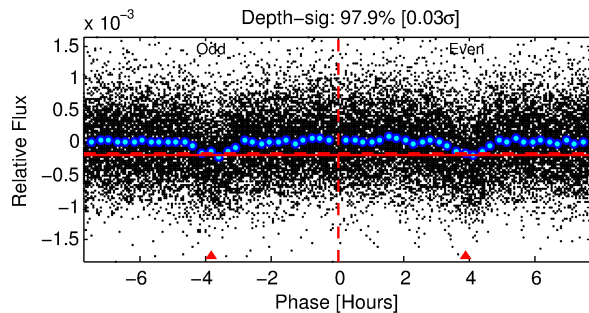
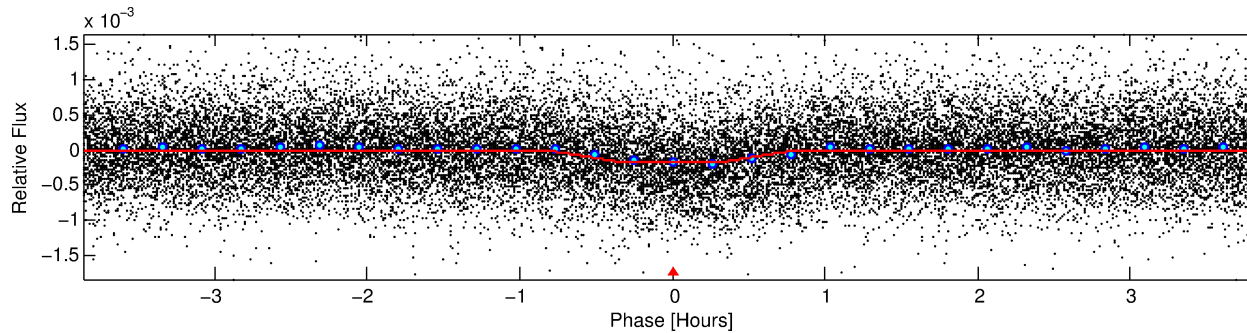
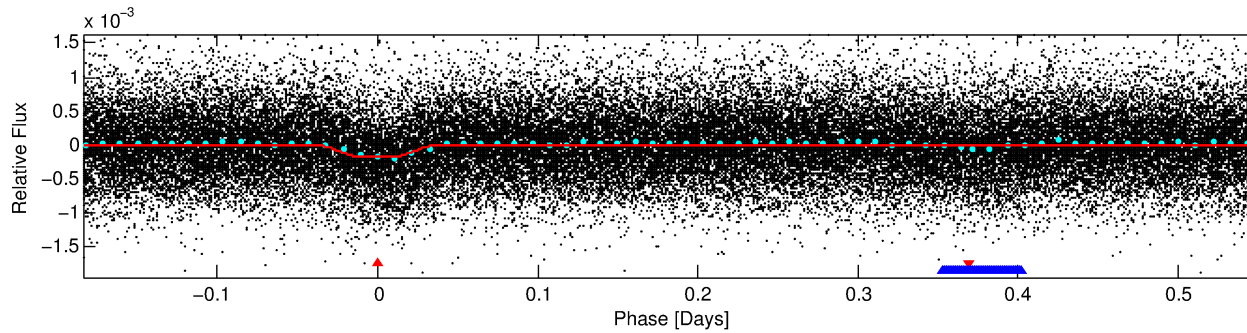
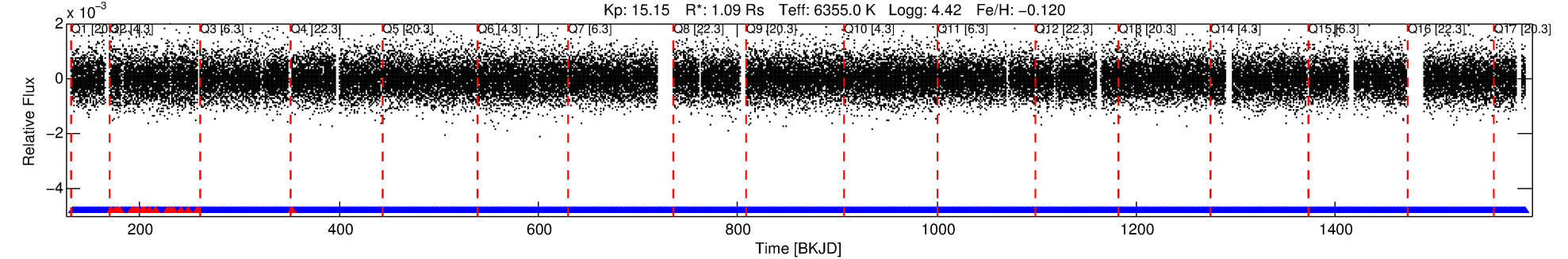
No Significant Match Found

DV One-Page Summary

KIC: 5475494 Candidate: 1 of 2 Period: 0.736 d

KOI: K03969.01 Corr: 0.876

Kp: 15.15 R*: 1.09 Rs Teff: 6355.0 K Logg: 4.42 Fe/H: -0.120



DV Fit Results:

Period = 0.73618 [0.00000] d
Epoch = 132.0915 [0.0009] BKJD
Rp/R* = 0.0146 [0.0042]
a/R* = 2.25 [2.85]
b = 0.90 [0.34]
Seff = 6266.04 [2232.88]
Teq = 2269 [202] K
Rp = 1.73 [0.69] Re
a = 0.0166 [0.0038] AU
Ag = 2.24 [1.53] [0.82σ]
Teffp = 4294 [653] K [2.96σ]

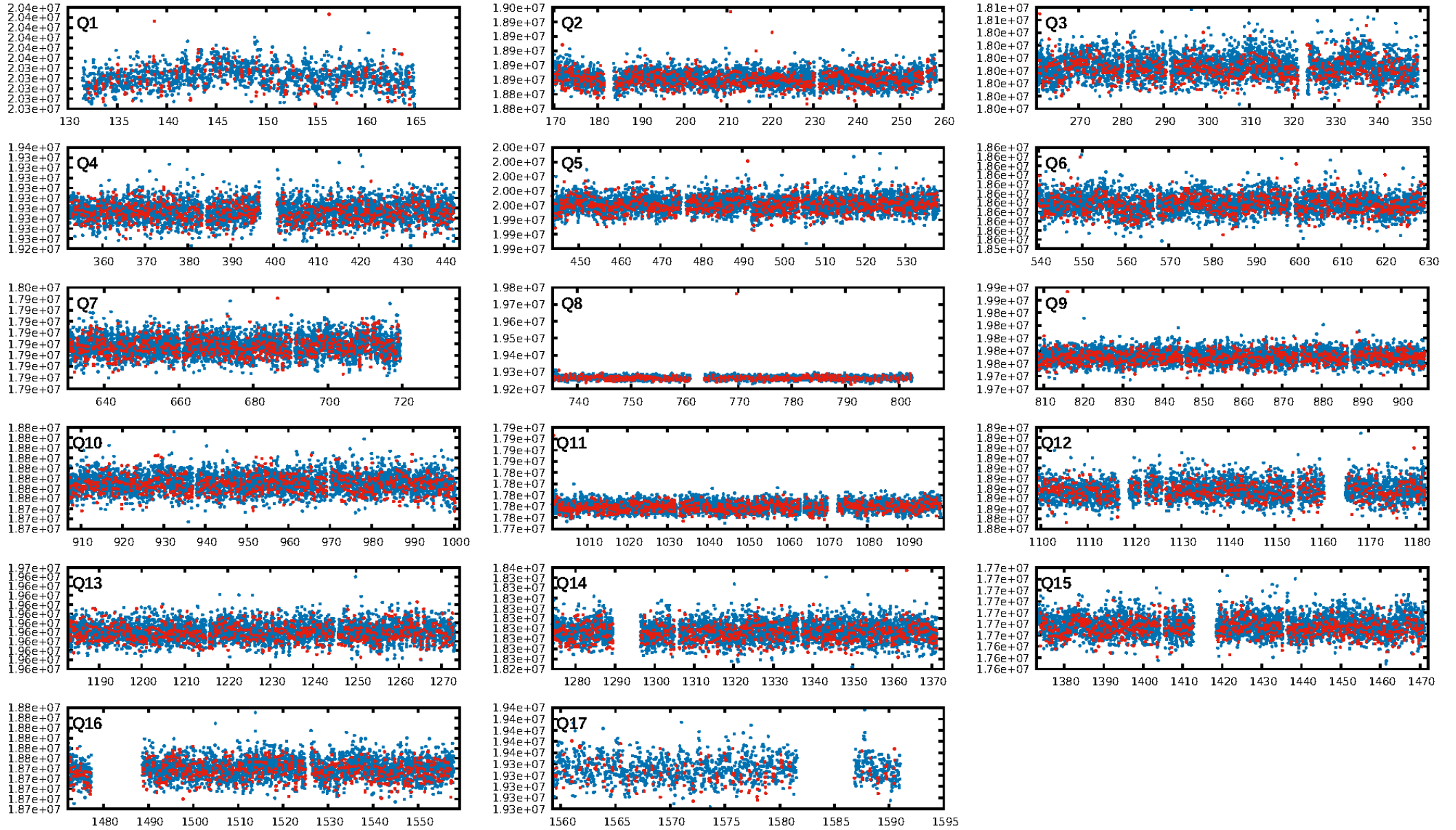
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.27e-85
RollingBand-fgt: 0.99 [1719/1738]
GhostDiagnostic-chr: 0.8224
Centroid-sig: 0.0%
Centroid-so: 5.946 arcsec [9.65σ]
OotOffset-rm: 4.336 arcsec [14.19σ]
KicOffset-rm: 4.248 arcsec [12.21σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 1.00 [17/17]

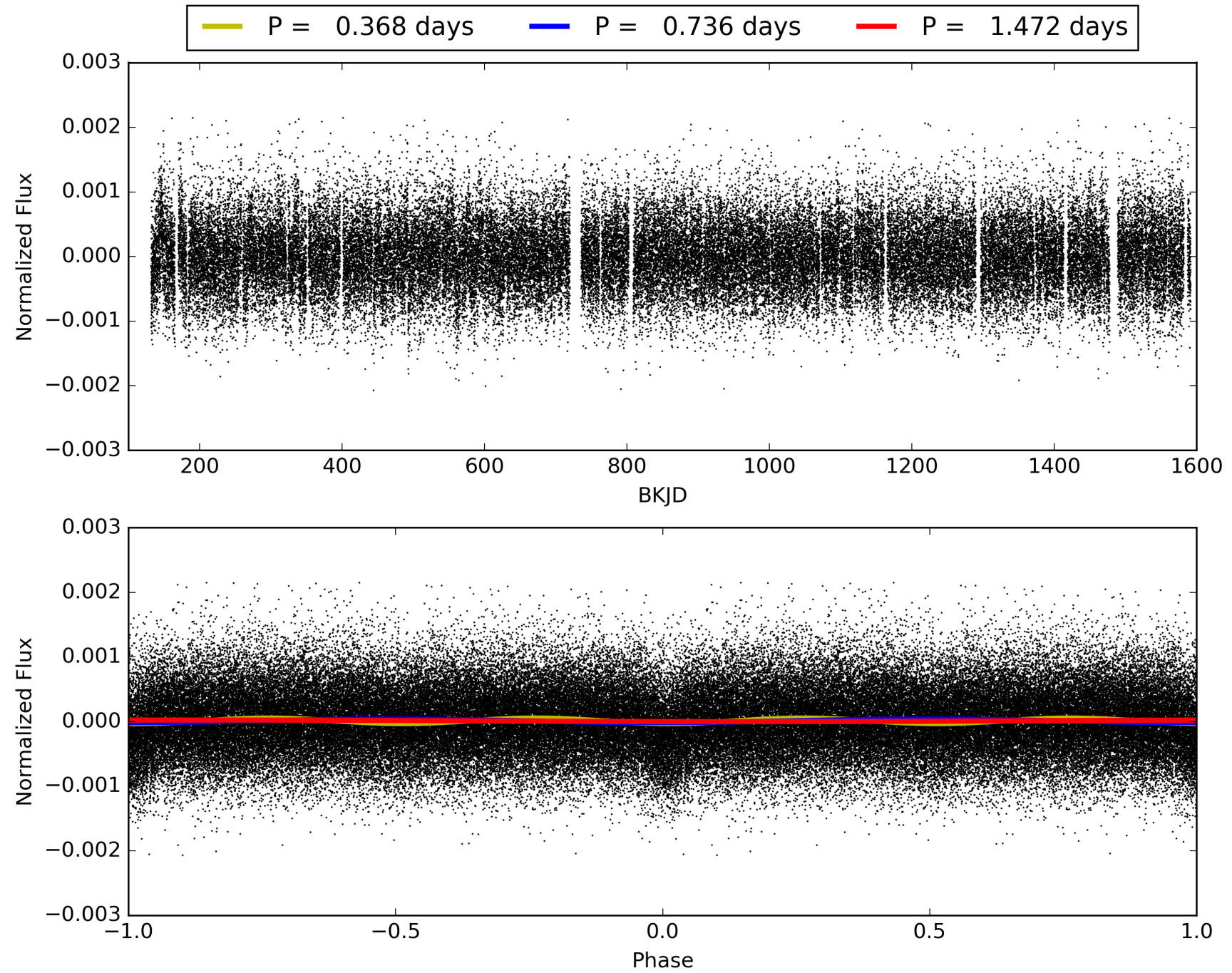
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:36:34 Z

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

TCE 005475494-01, PDC Light Curves

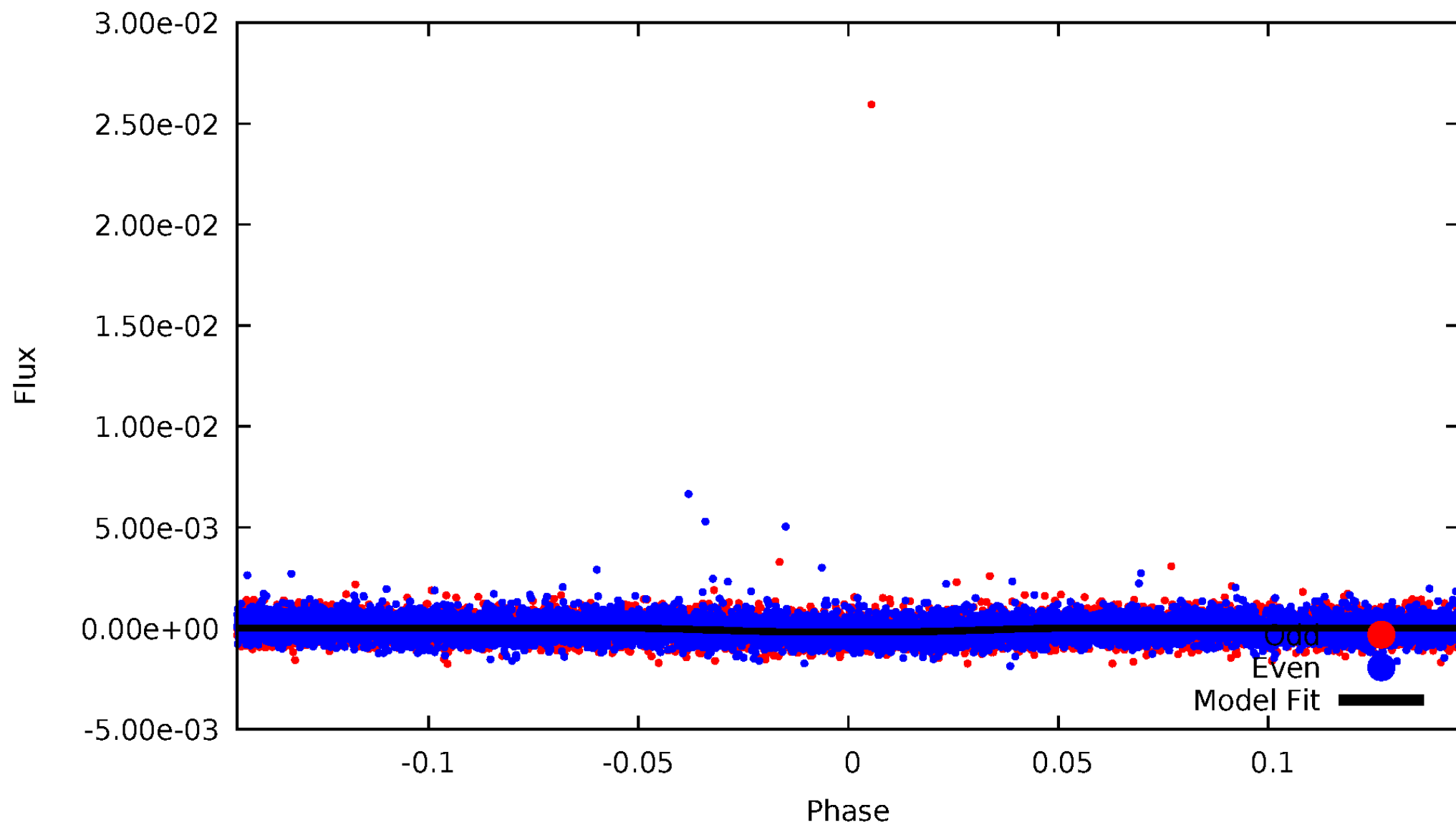


TCE 005475494-01



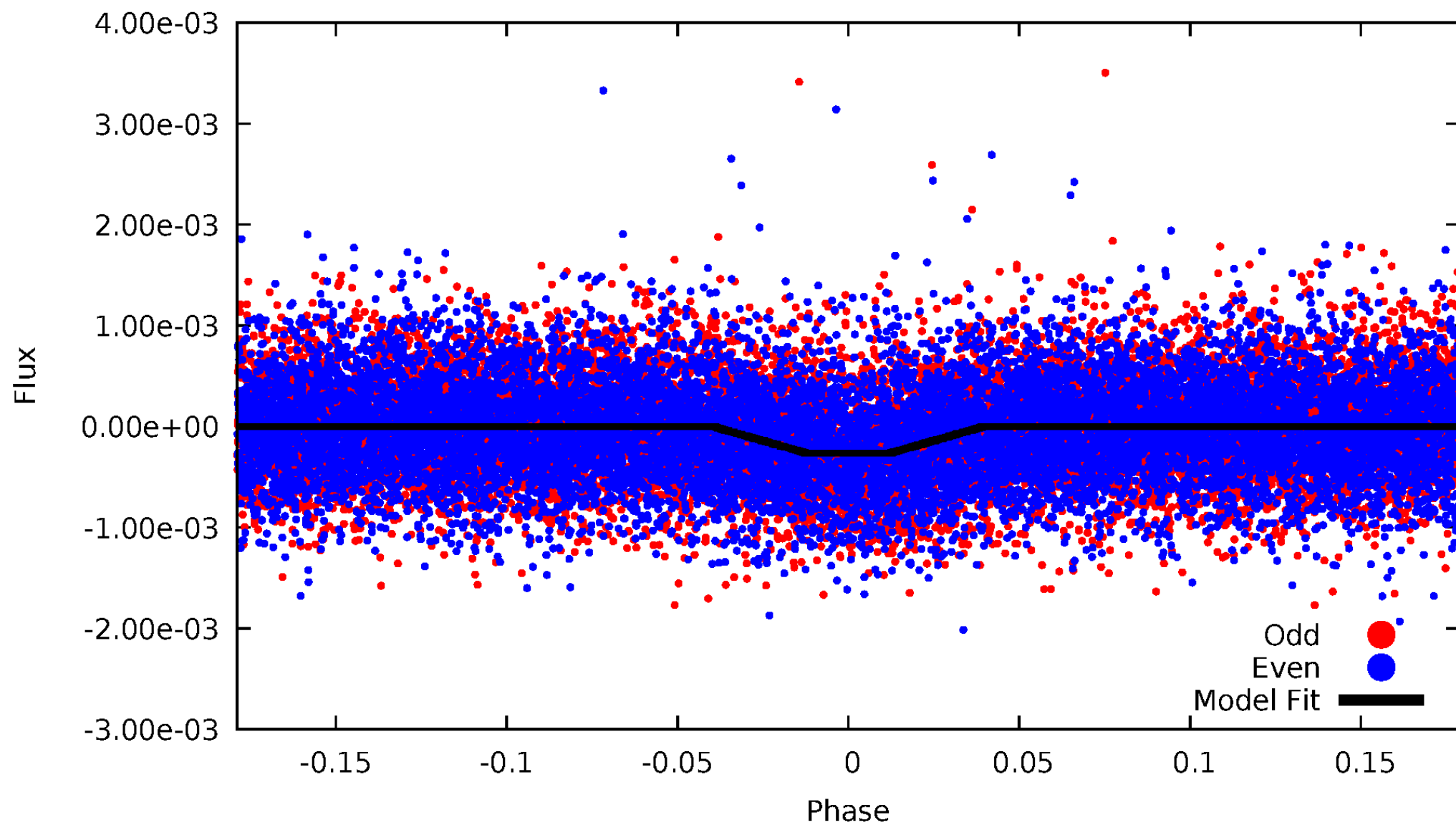
DV Odd/Even

TCE 005475494-01



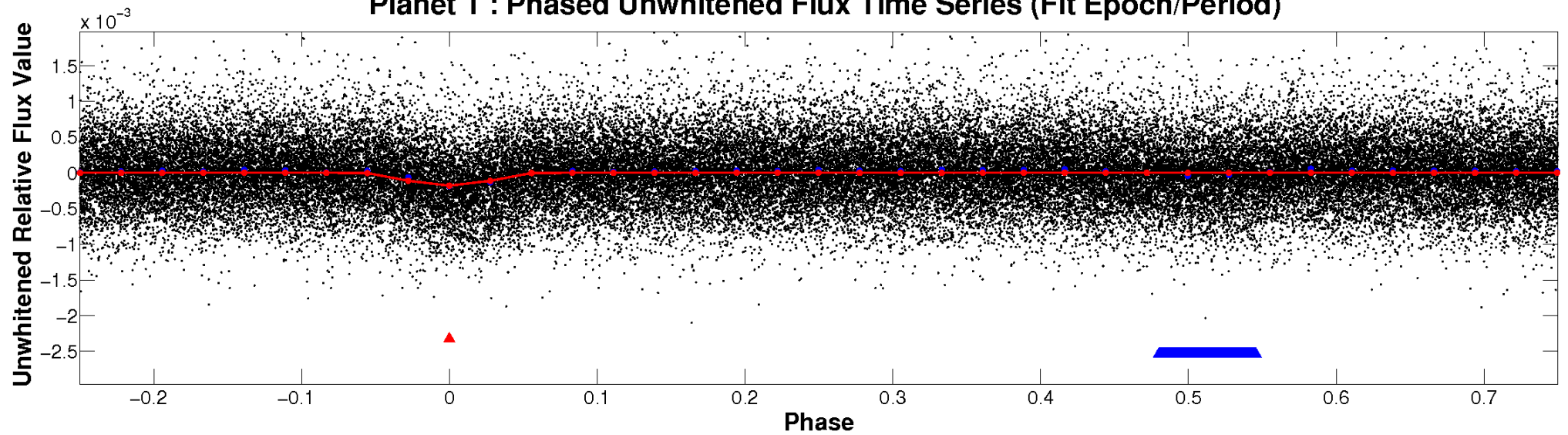
ALT Odd/Even

TCE 005475494-01

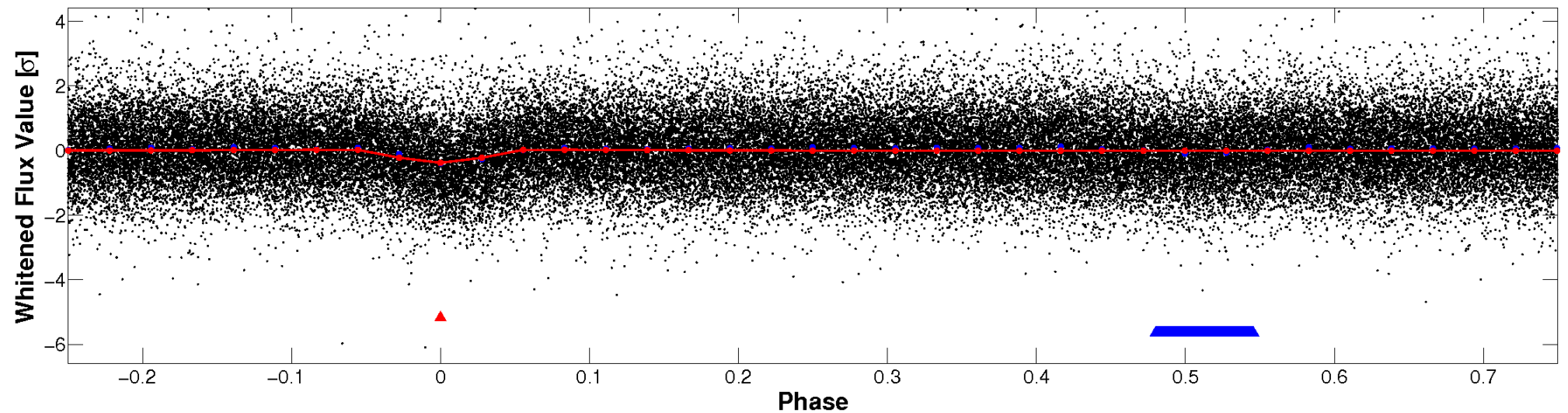


Non-Whitened Vs. Whitened Light Curve

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

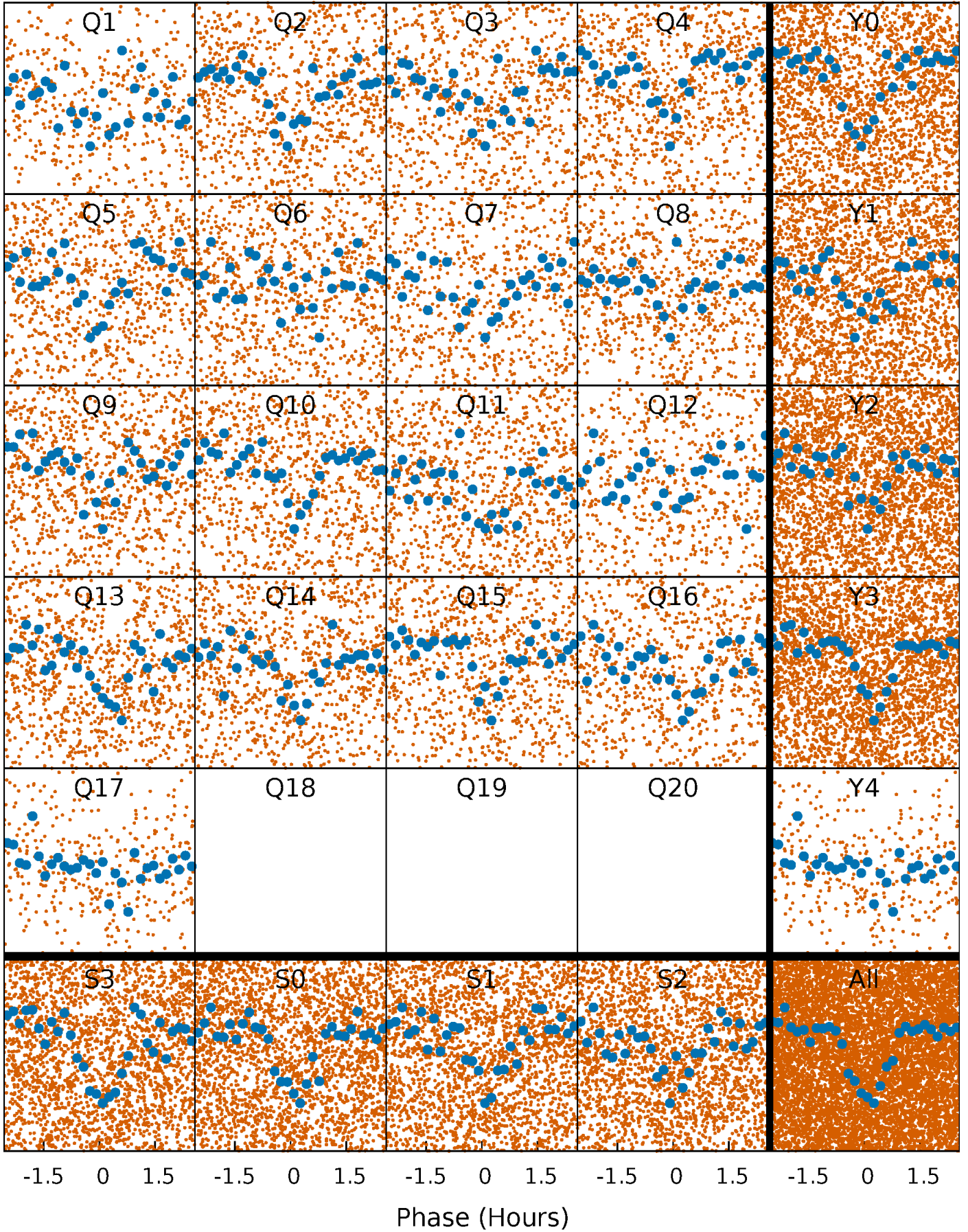


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



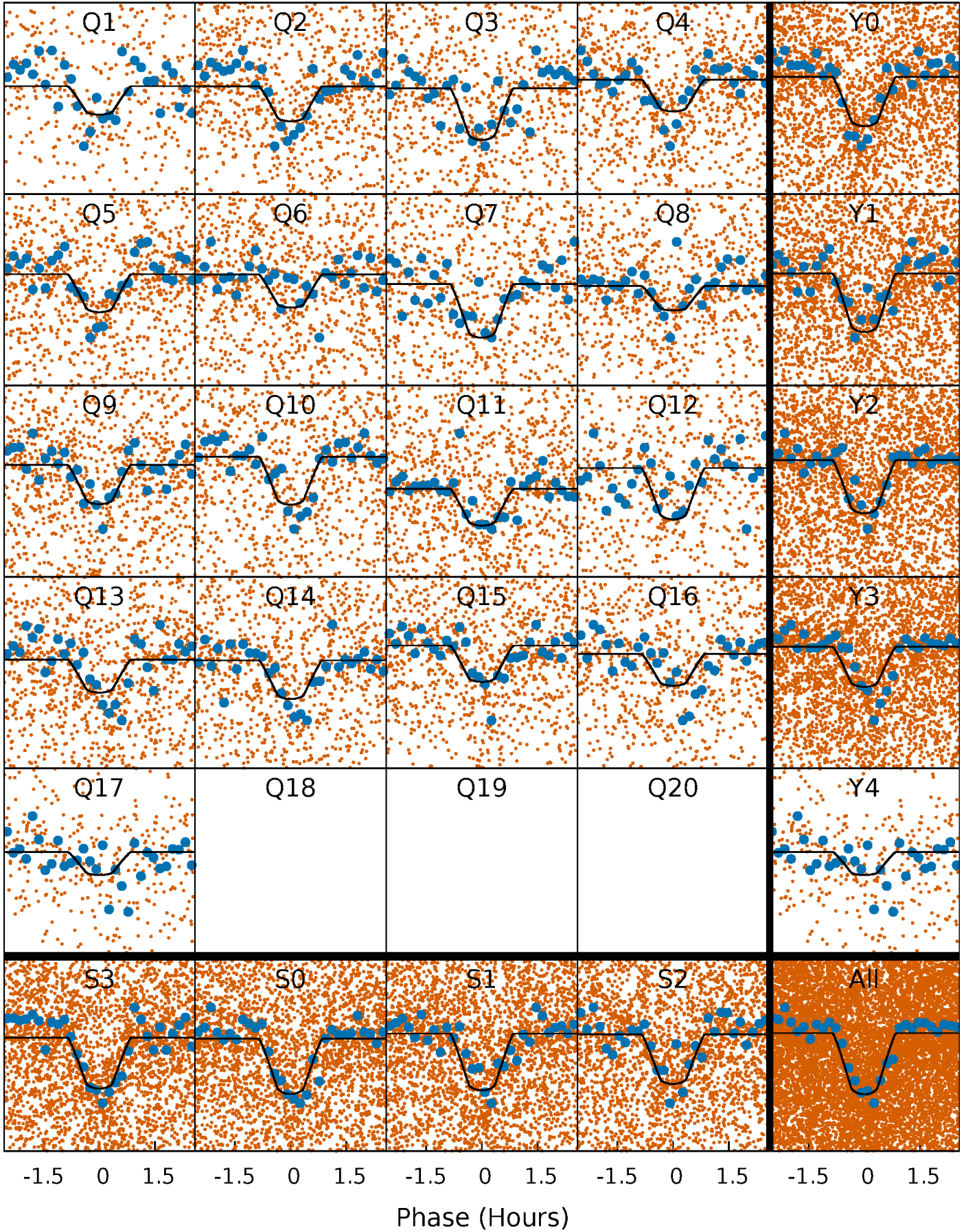
PDC Quarter-Phased Transit Curves

TCE 005475494-01 P= 0.736183 Days $T_0=132.091456$ (BKJD)



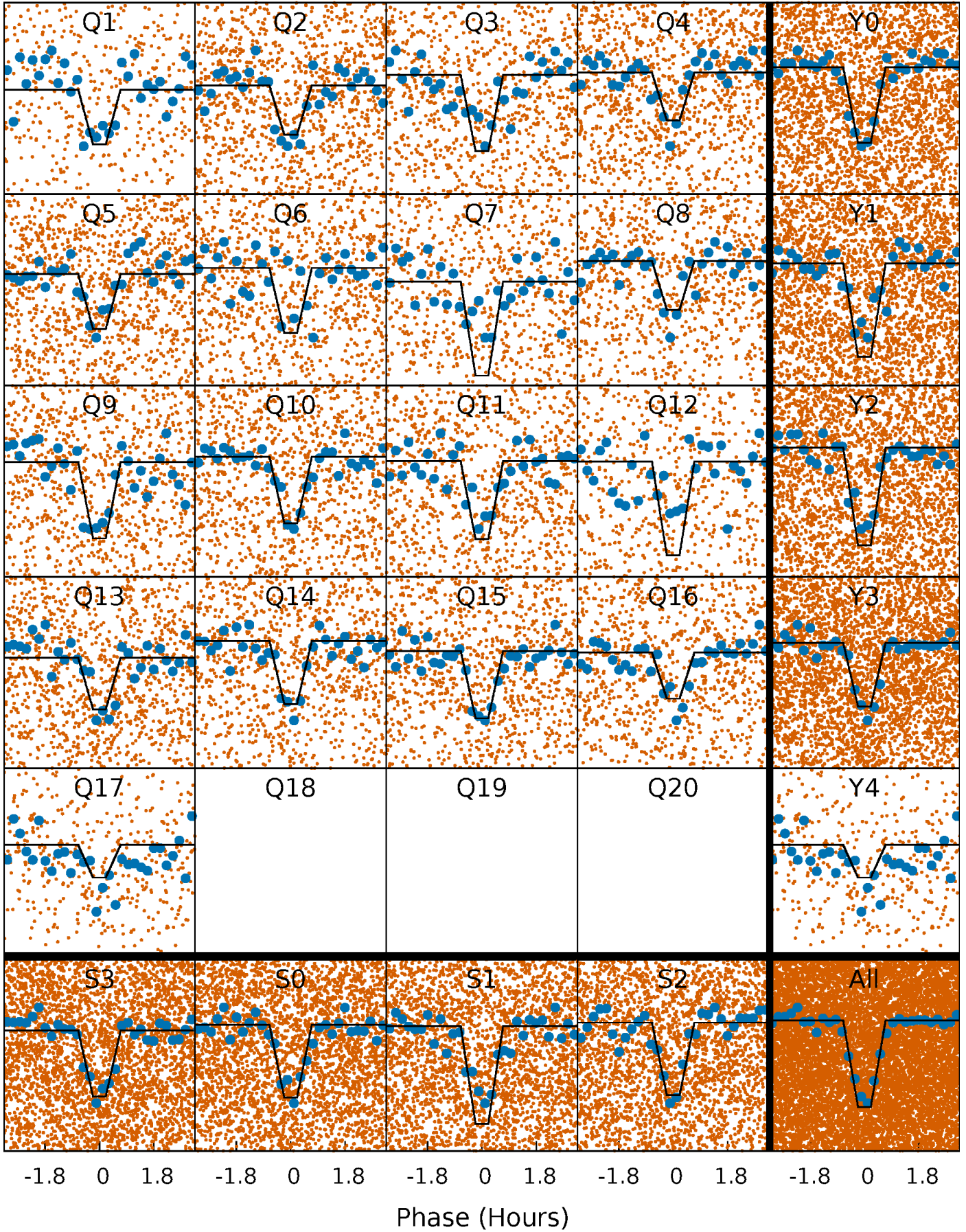
DV Quarter-Phased Transit Curves

TCE 005475494-01 P= 0.736183 Days $T_0=132.091456$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

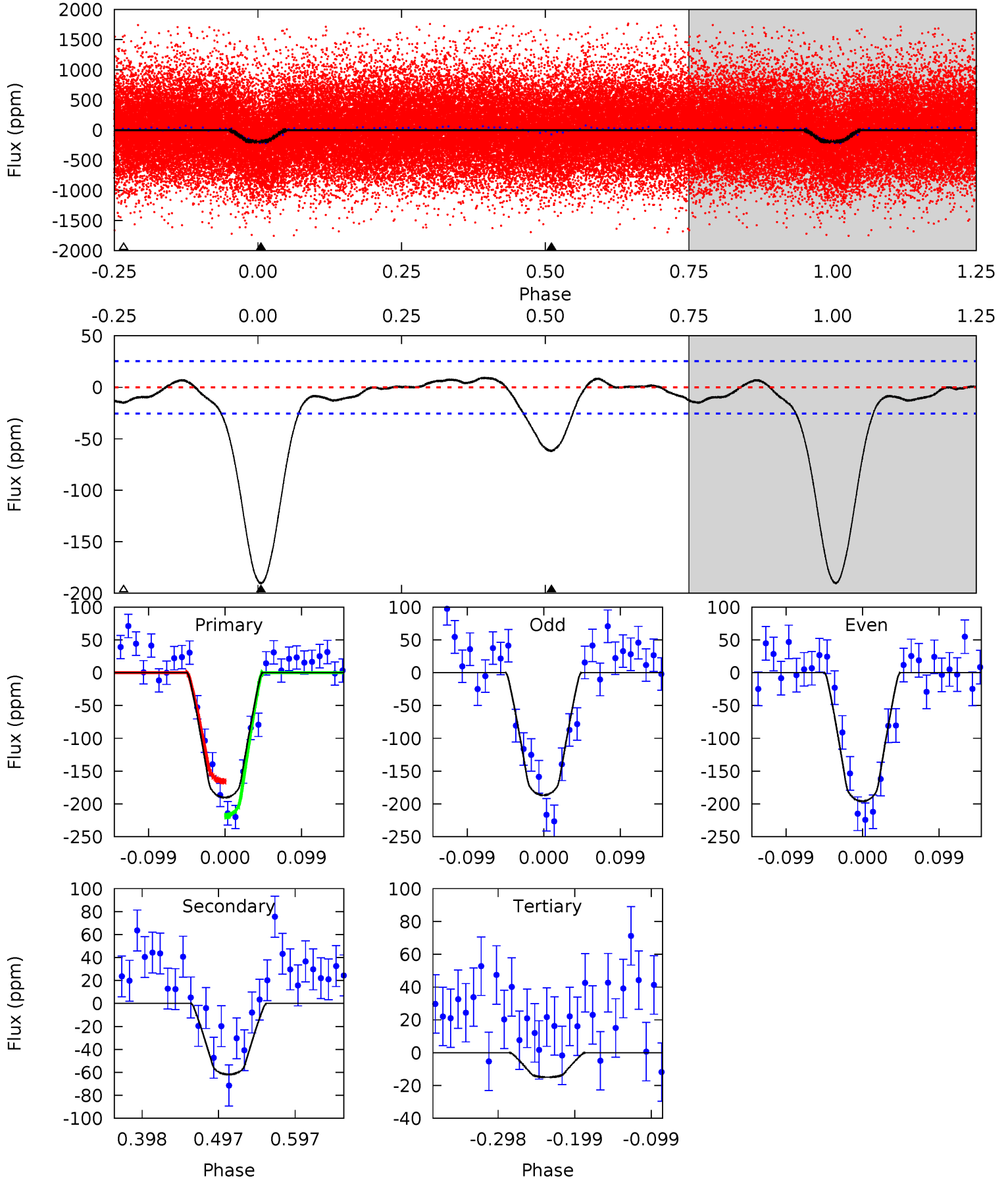
TCE 005475494-01 P= 0.736189 Days $T_0=132.089231$ (BKJD)



DV Model-Shift Uniqueness Test

005475494-01, P = 0.736183 Days, E = 131.355273 Days

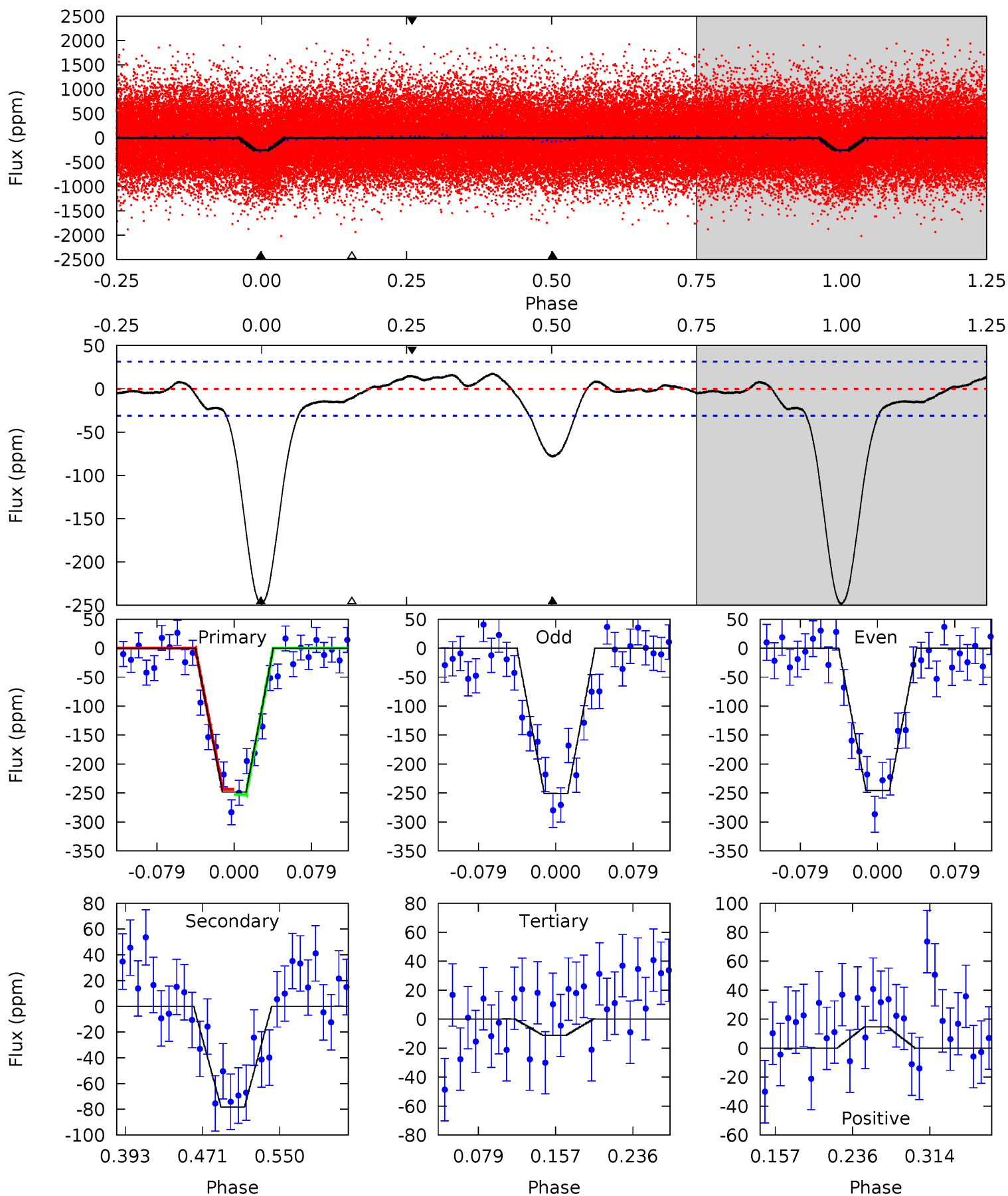
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.2	11.1	2.69	0	4.57	1.65	1.18	31.5	34.2	8.41	11.1	0.83	0.92	0.05	4.78



Alt Model-Shift Uniqueness Test

005475494-01, P = 0.736189 Days, E = 131.353042 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.6	11.5	1.63	2.16	4.62	1.76	1.44	35.0	34.5	9.89	9.36	0.36	0.98	0.07	0.67



Stellar Parameters For KIC 005475494

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6355^{+172}_{-211}	$4.418^{+0.060}_{-0.180}$	$-0.120^{+0.250}_{-0.300}$	$1.090^{+0.297}_{-0.127}$	$1.134^{+0.150}_{-0.150}$	$1.234^{+0.399}_{-0.596}$
	+3%/-3%	+1%/-4%	+208%/-250%	+27%/-12%	+13%/-13%	+32%/-48%
Source	PHO1	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 005475494-01 / KOI 3969.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-62 ± 6	$1.81^{+0.60}_{-0.55}$	3219^{+208}_{-147}	4658^{+855}_{-567}	$2.828^{+2.929}_{-1.231}$
Alt.	-78 ± 7	$2.01^{+0.55}_{-0.53}$	3218^{+203}_{-149}	4658^{+703}_{-452}	$2.862^{+2.424}_{-1.033}$

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

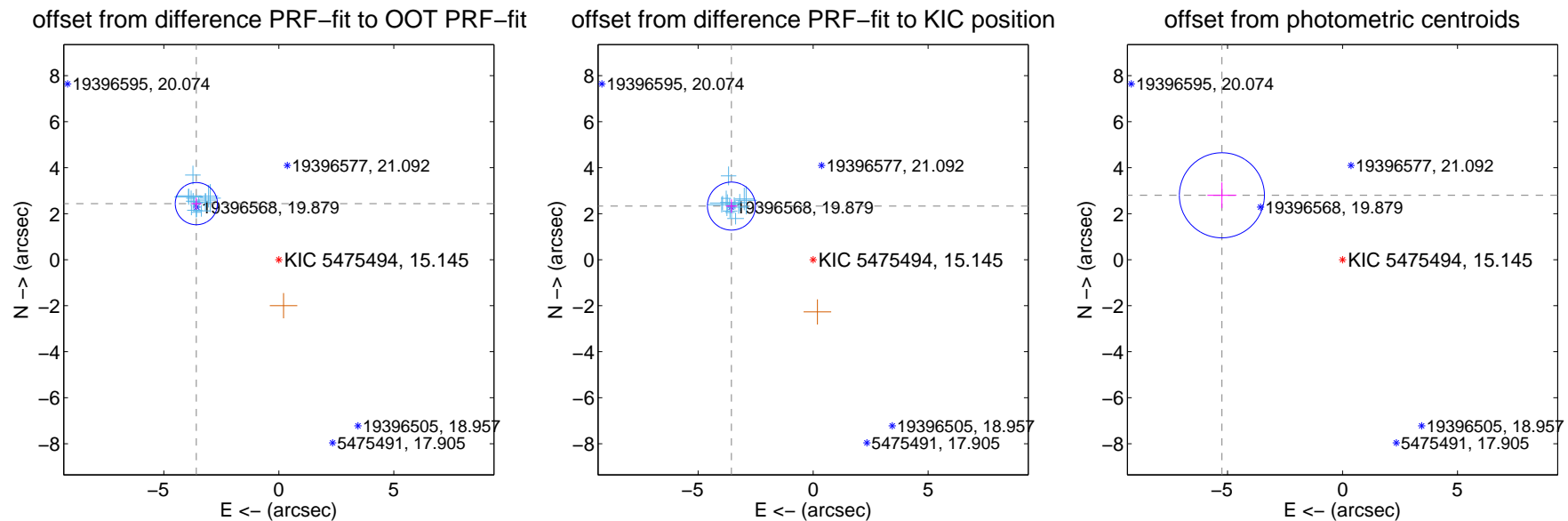
DV Centroid Data

Supplemental centroid analysis for 005475494-01. Kepler magnitude: 15.14. Transit SNR 21.35

There are 16 quarters with good PRF difference image offsets

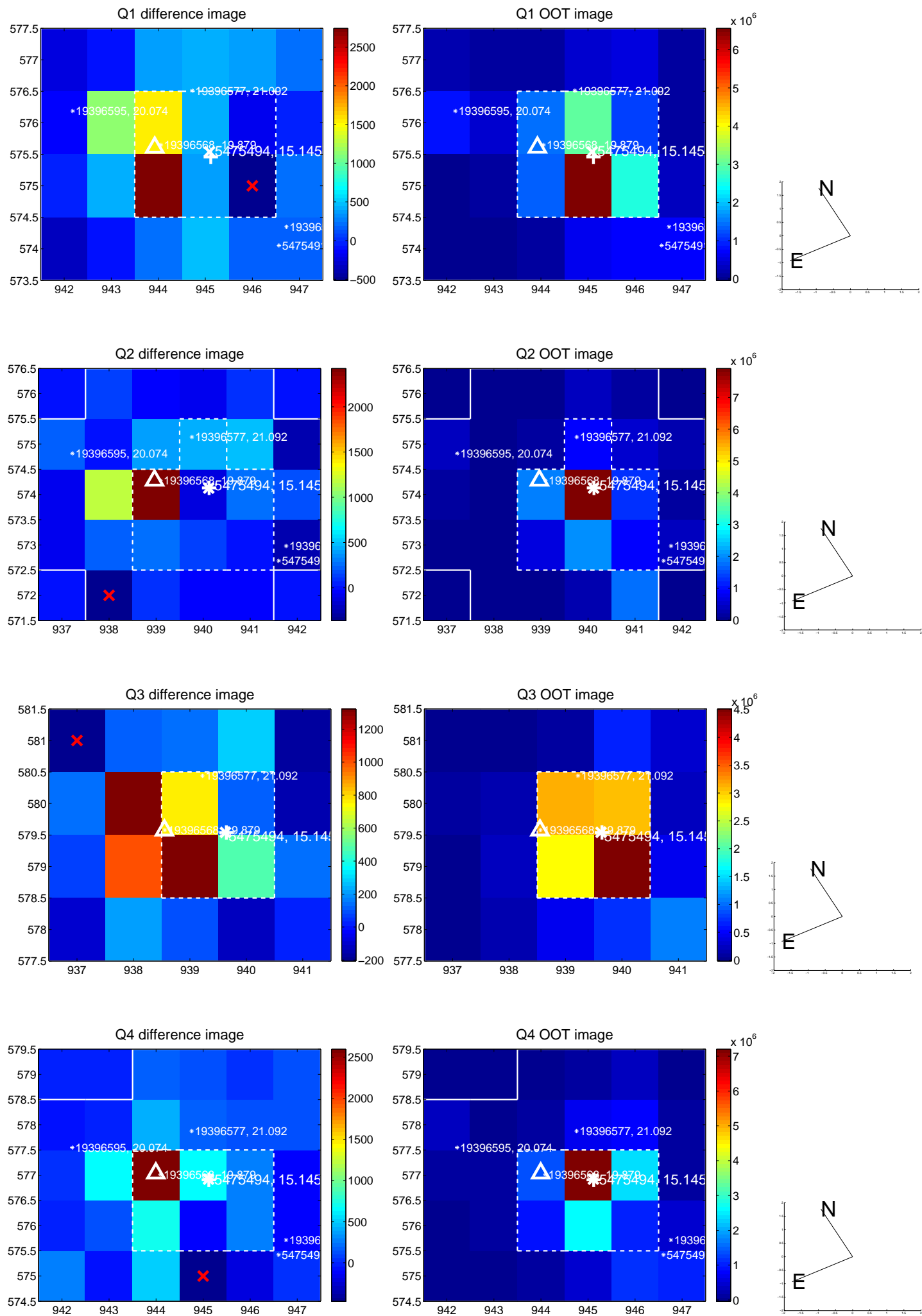
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.336 ± 0.306	14.19	3.586 ± 0.214	2.437 ± 0.254
PRF-fit source offset from KIC position	4.248 ± 0.348	12.21	3.551 ± 0.241	2.331 ± 0.292
photometric centroid source offset	5.95 ± 0.62	9.65	5.25 ± 0.63	2.80 ± 0.56

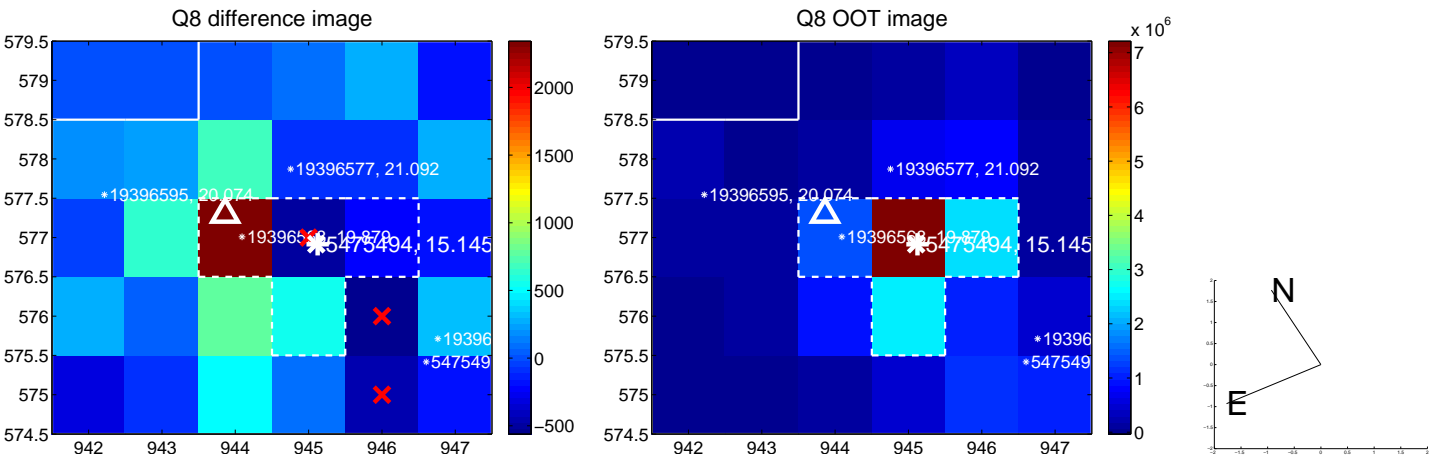
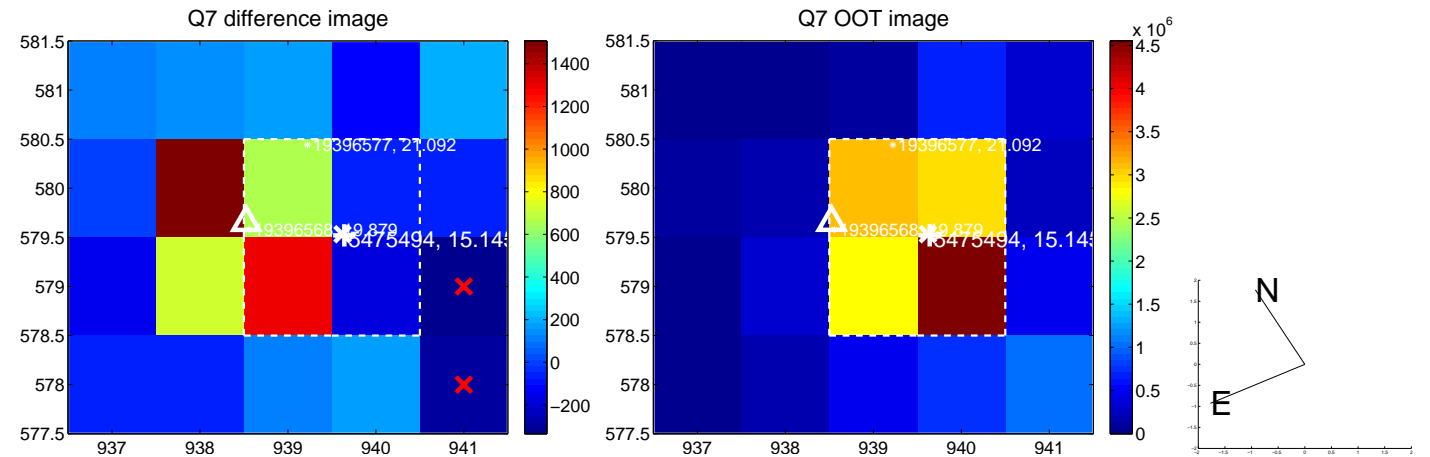
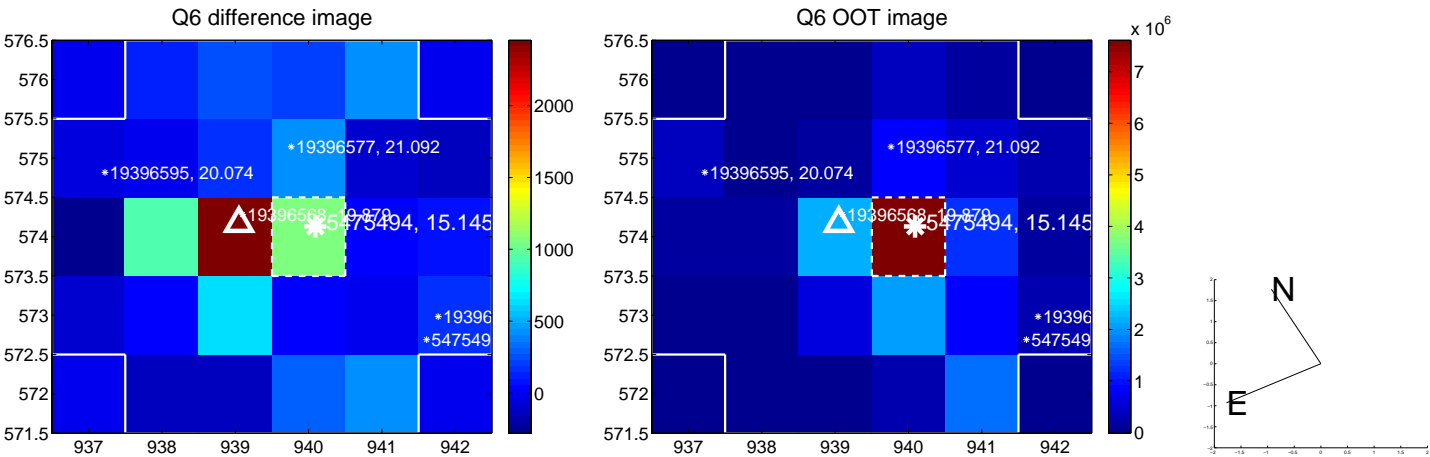
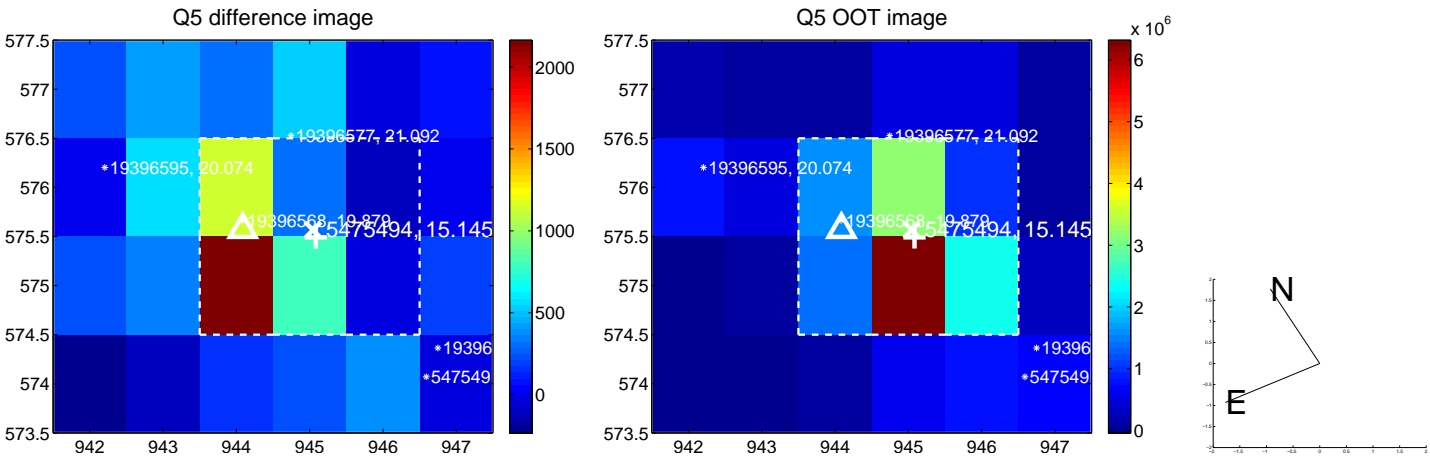


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

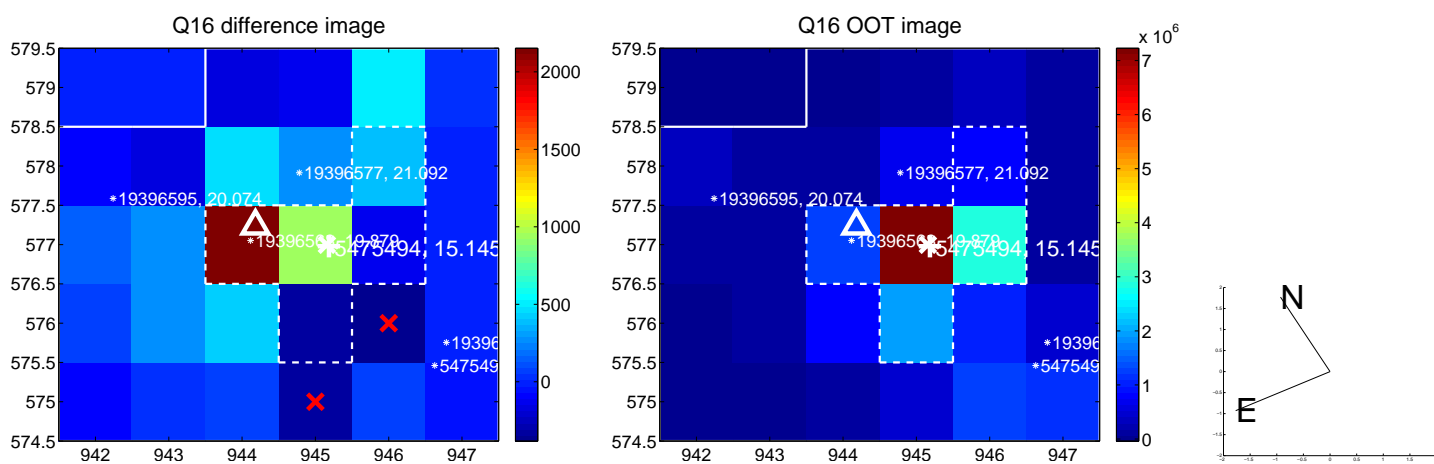
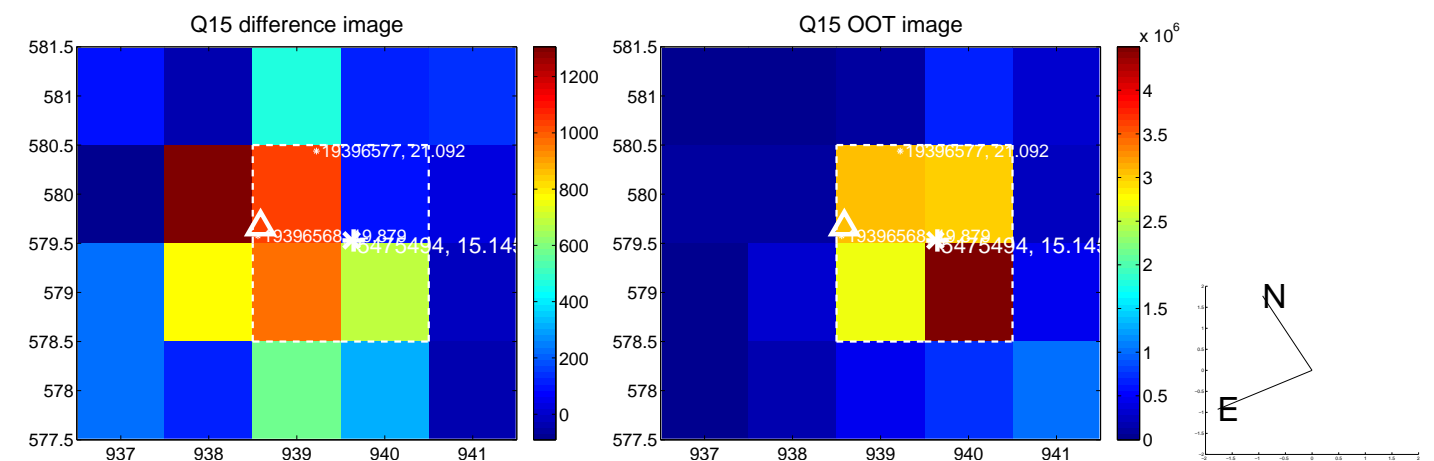
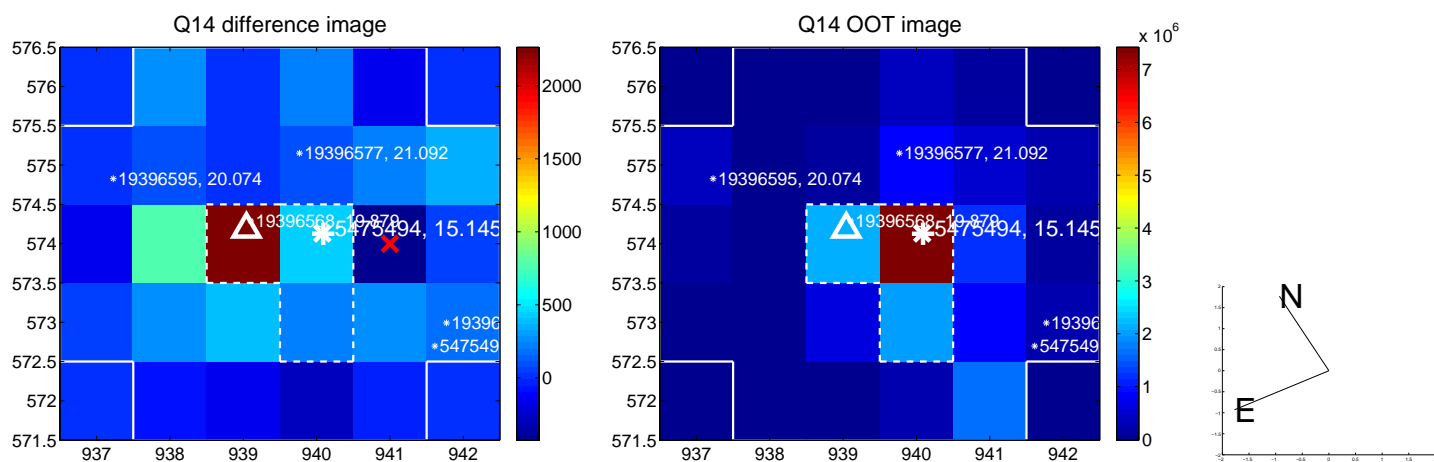
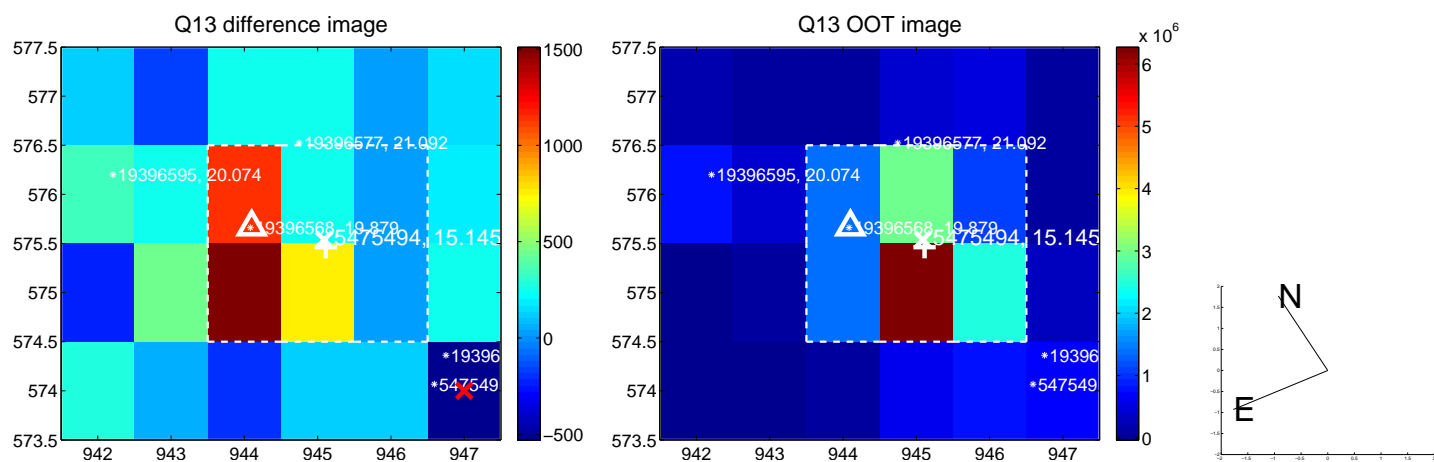
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



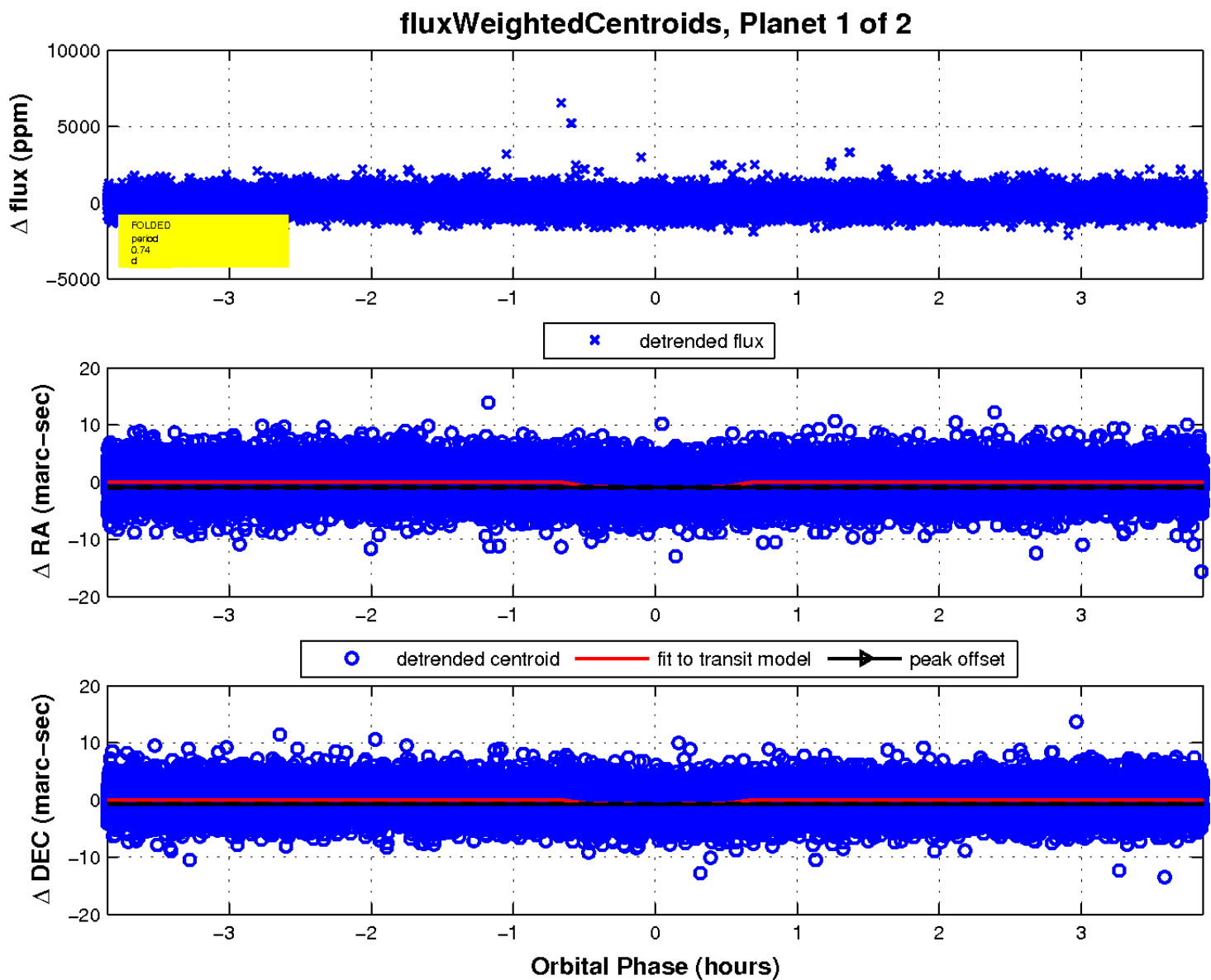
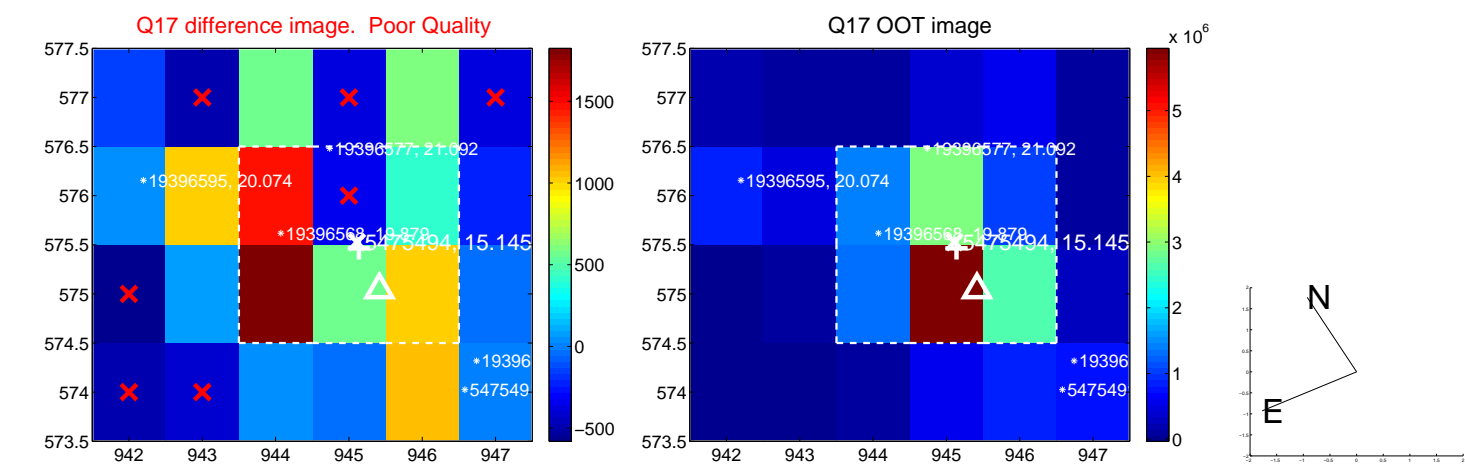
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

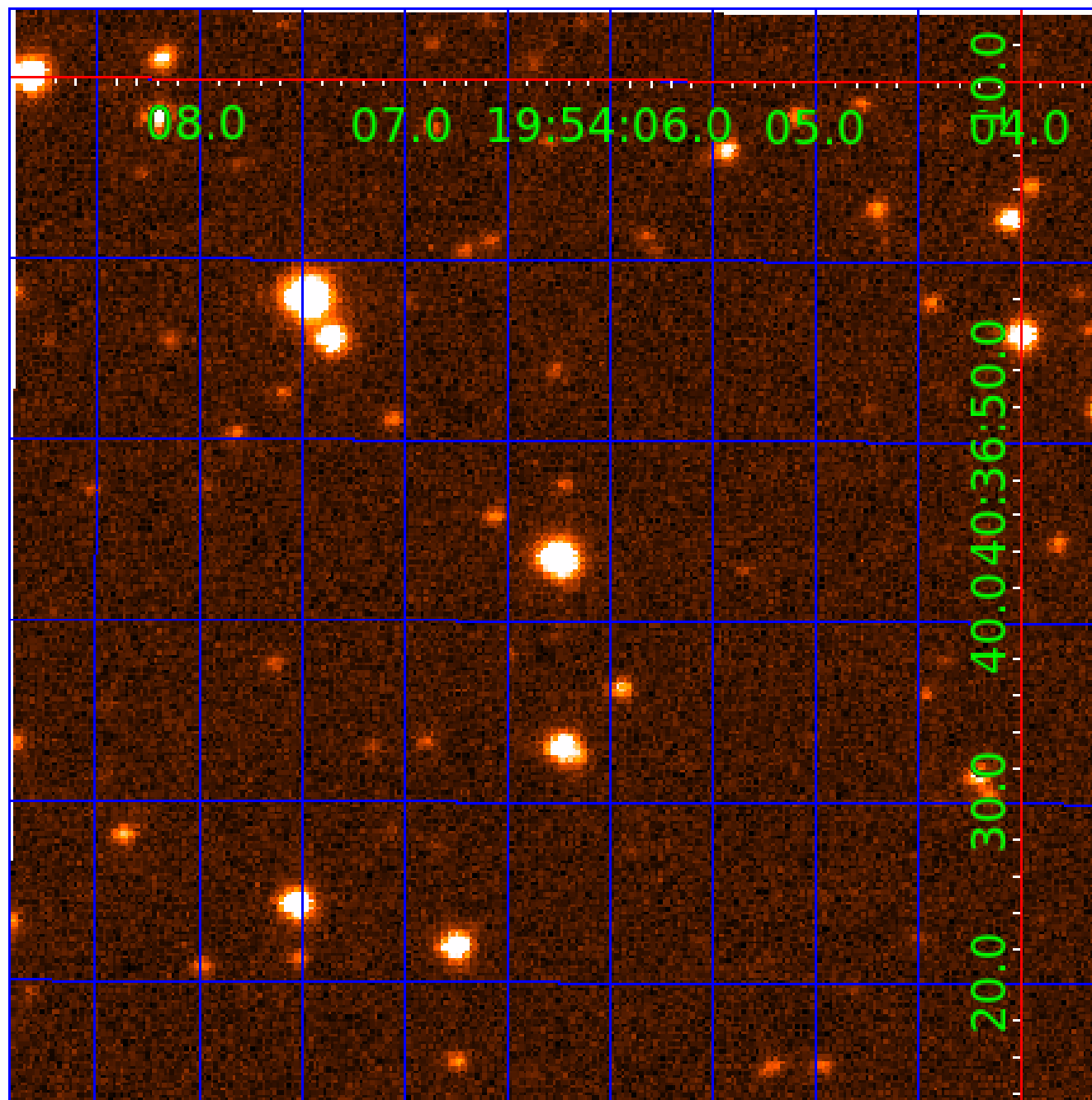


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005475494

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})
005475494-01	OBS	3969.01	0.736183	132.091456	182.3	1.286	19.6	21.3	1.09	6355	1.73	6266.04
005475494-02	OBS	No	0.736207	131.708706	86.2	1.237	8.1	10.2	1.09	6355	1.19	6265.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005475494-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
005475494-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET

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 005475494-02

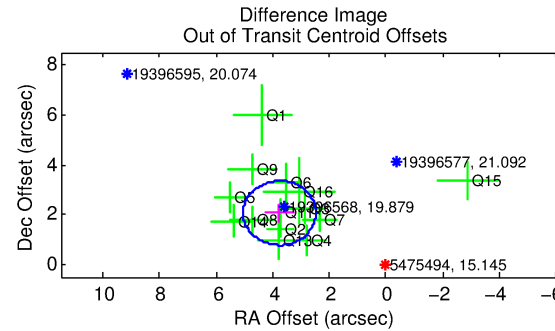
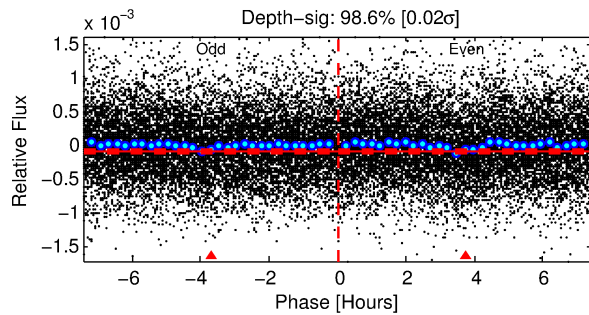
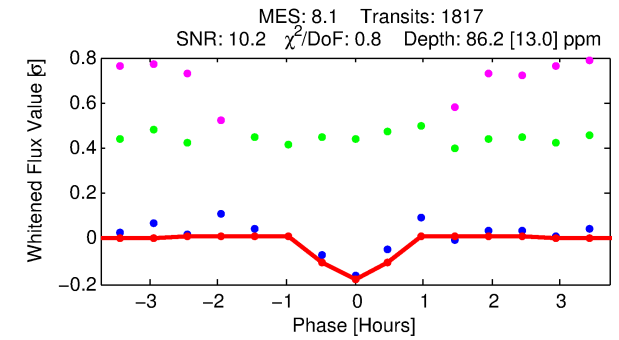
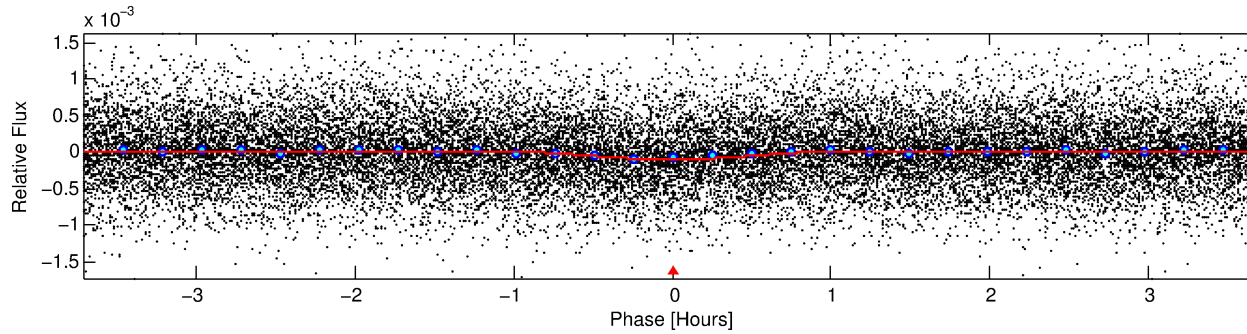
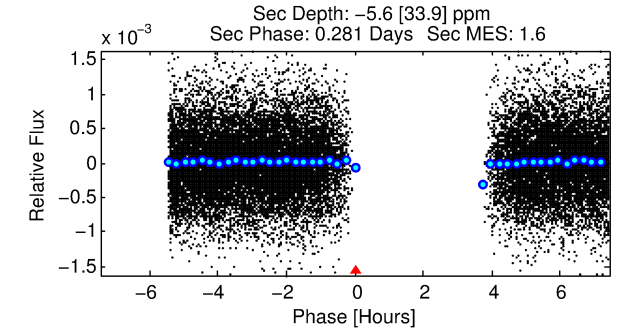
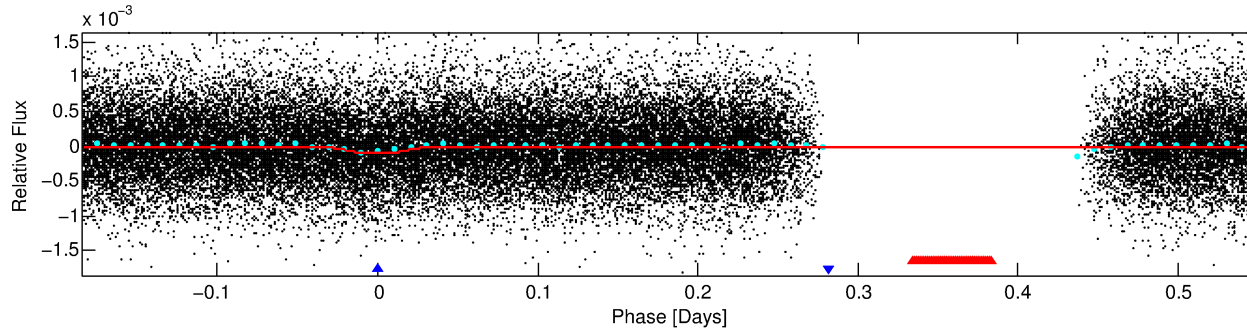
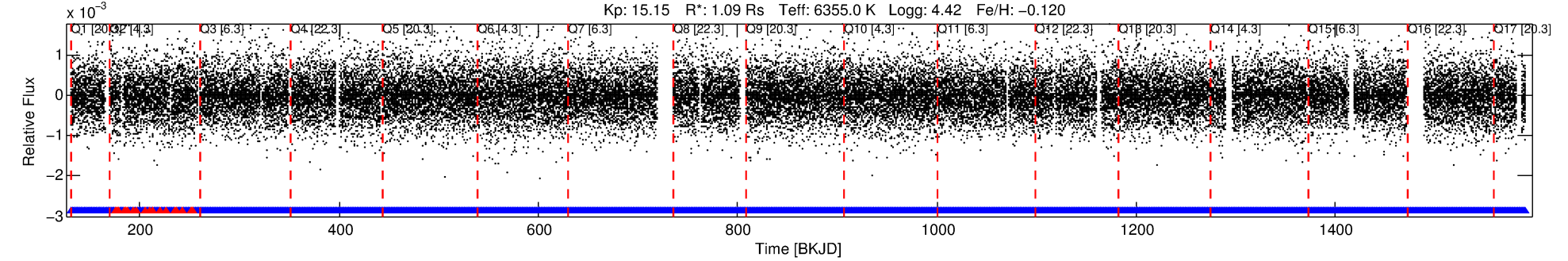
No Significant Match Found

DV One-Page Summary

KIC: 5475494 Candidate: 2 of 2 Period: 0.736 d

KOI: K03969 Corr: No Ephemeris Match

Kp: 15.15 R*: 1.09 Rs Teff: 6355.0 K Logg: 4.42 Fe/H: -0.120



DV Fit Results:

Period = 0.73621 [0.00001] d
Epoch = 131.7087 [0.0019] BKJD
Rp/R* = 0.0100 [0.0063]
a/R* = 2.29 [6.51]
b = 0.90 [0.76]
Seff = 6265.77 [2232.78]
Teq = 2269 [202] K
Rp = 1.19 [0.82] Re
a = 0.0166 [0.0038] AU
Ag = N/A
Teffp = N/A

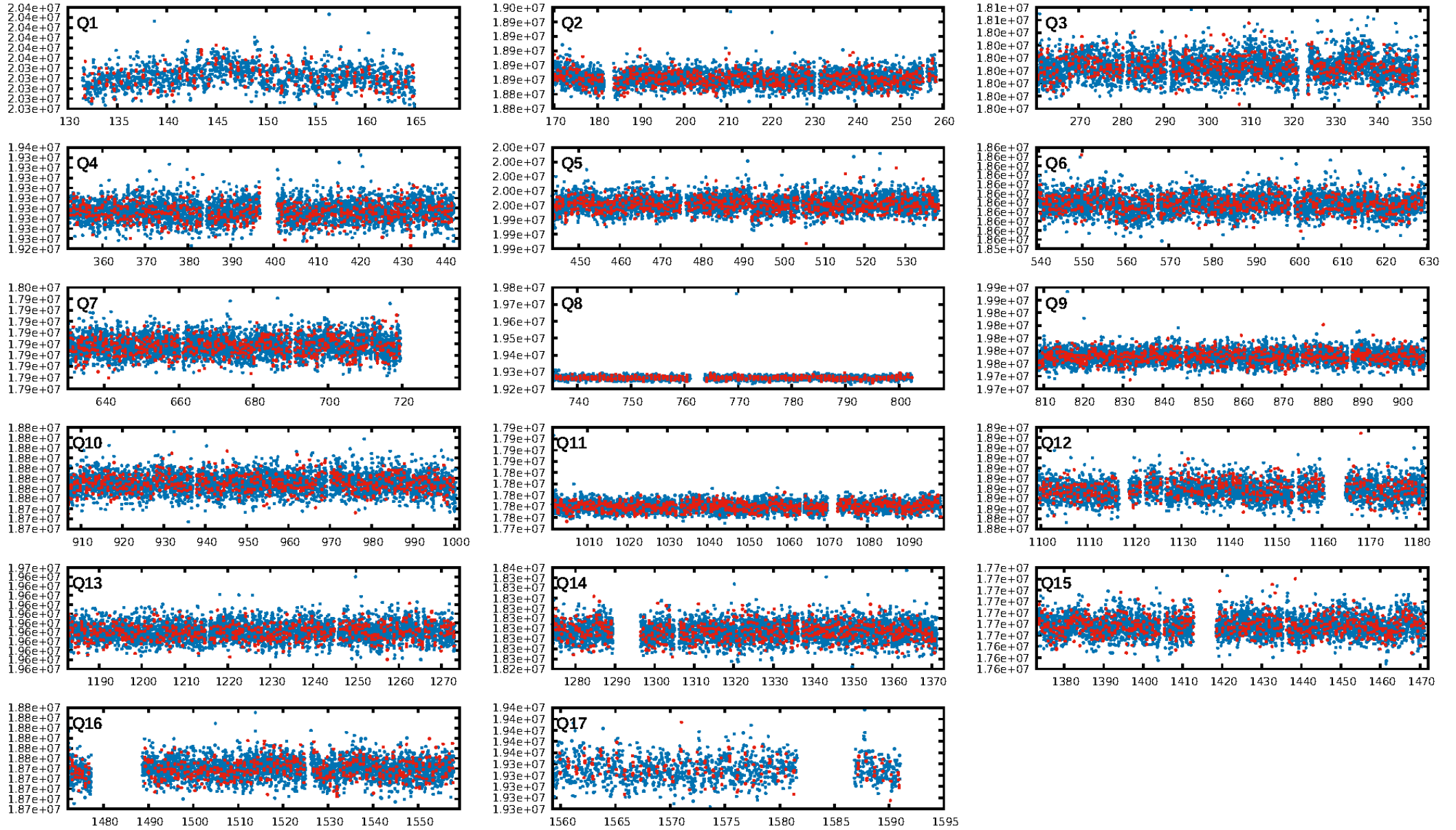
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.83e-19
RollingBand-fgt: 0.99 [1715/1734]
GhostDiagnostic-chr: 1.892
Centroid-sig: 0.0%
Centroid-so: 5.351 arcsec [4.01σ]
OotOffset-rm: 4.297 arcsec [10.00σ]
KicOffset-rm: 4.241 arcsec [7.89σ]
OotOffset-st: 3/4/3/4 [14]
KicOffset-st: 3/4/3/4 [14]
DiffImageQuality-fgm: 0.21 [3/14]
DiffImageOverlap-fno: 1.00 [17/17]

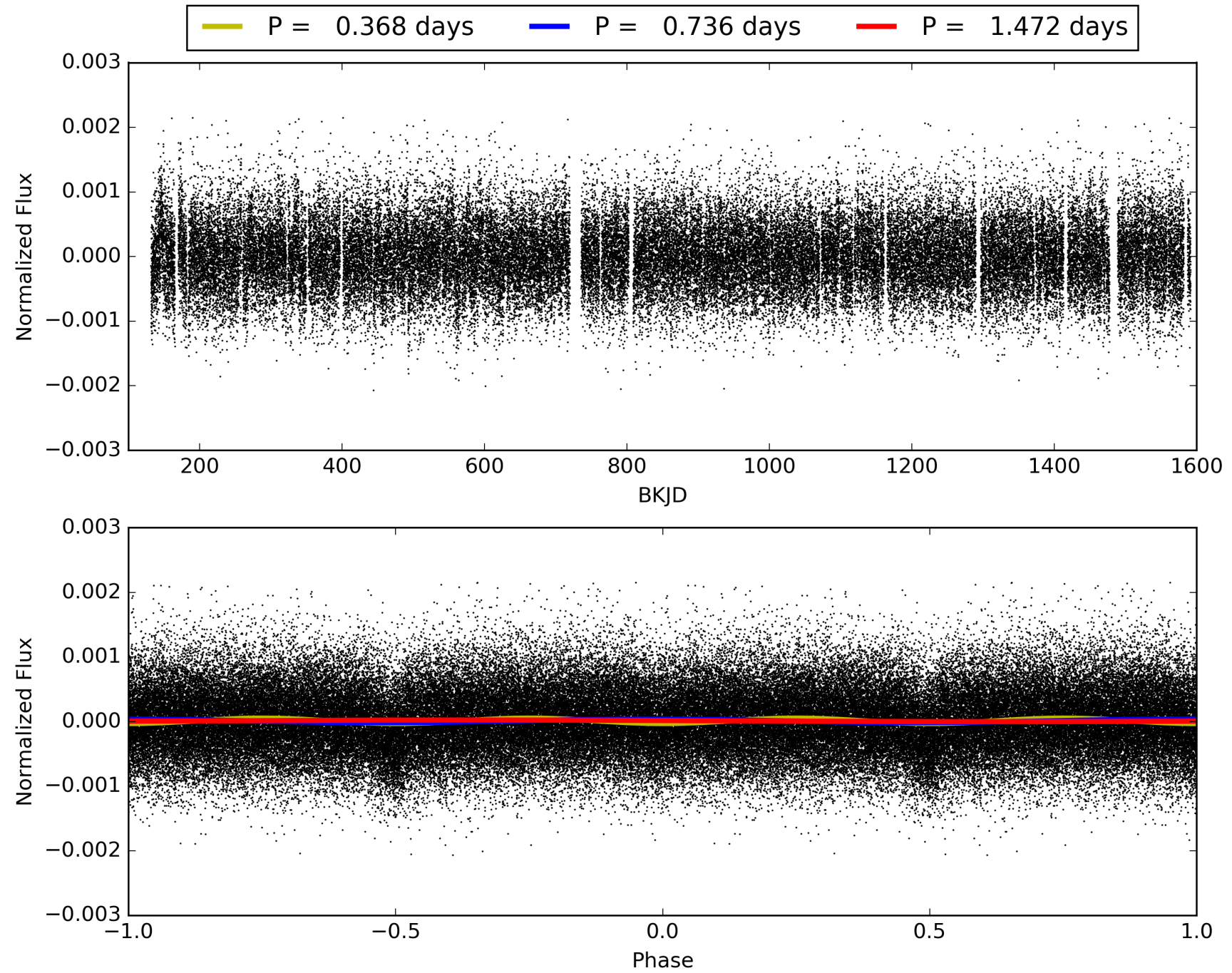
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:36:44 Z

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

TCE 005475494-02, PDC Light Curves

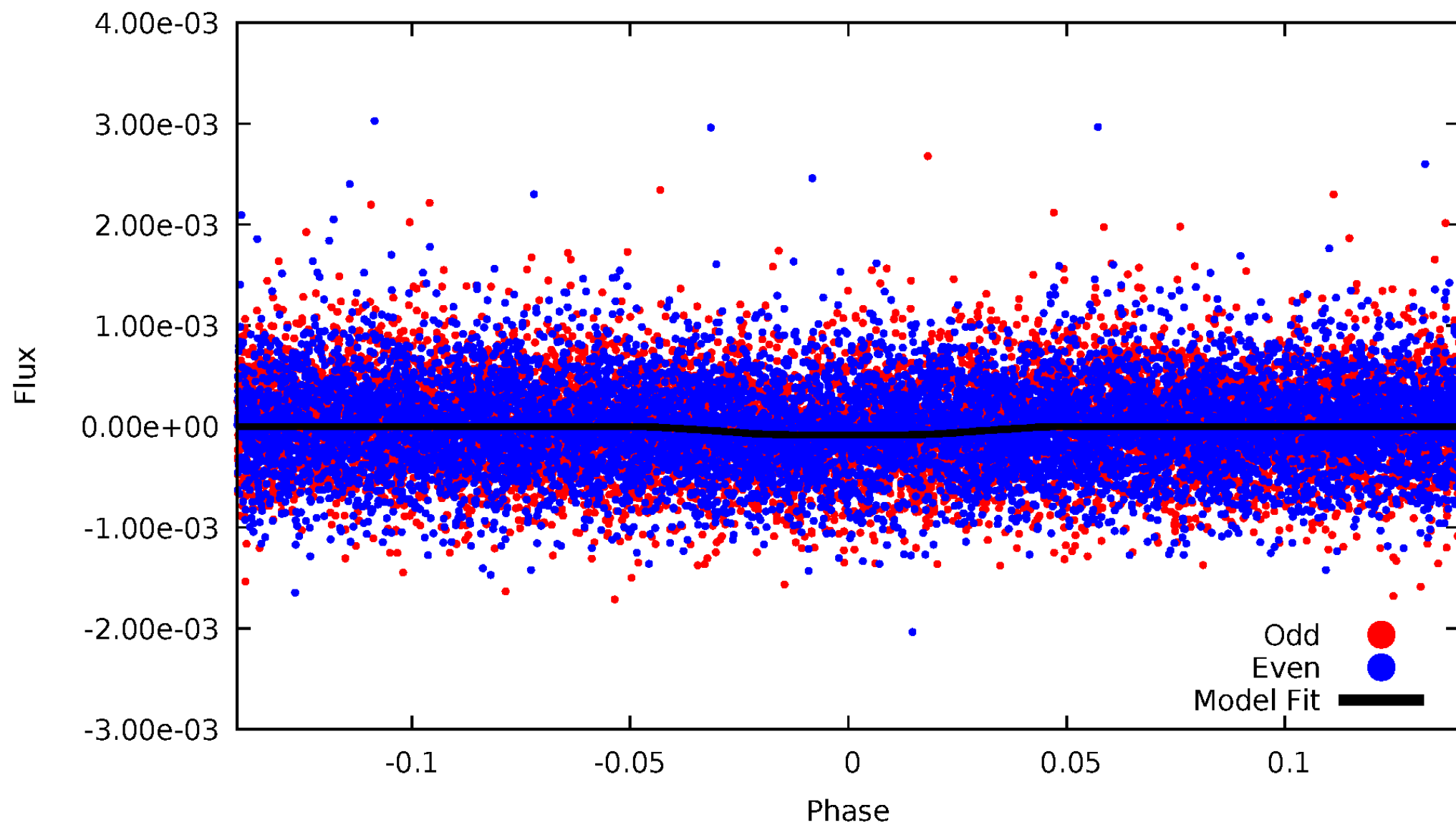


TCE 005475494-02



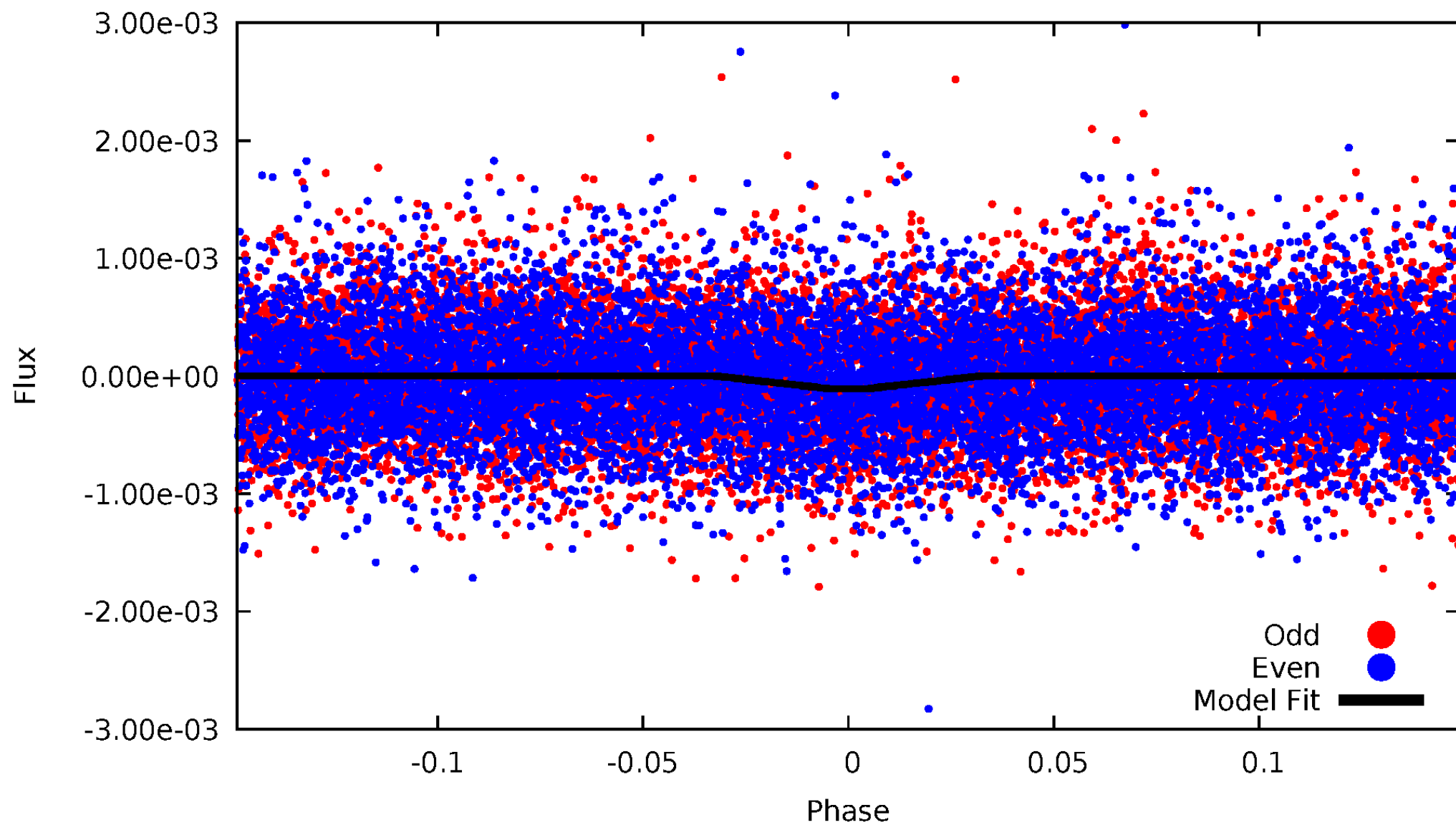
DV Odd/Even

TCE 005475494-02



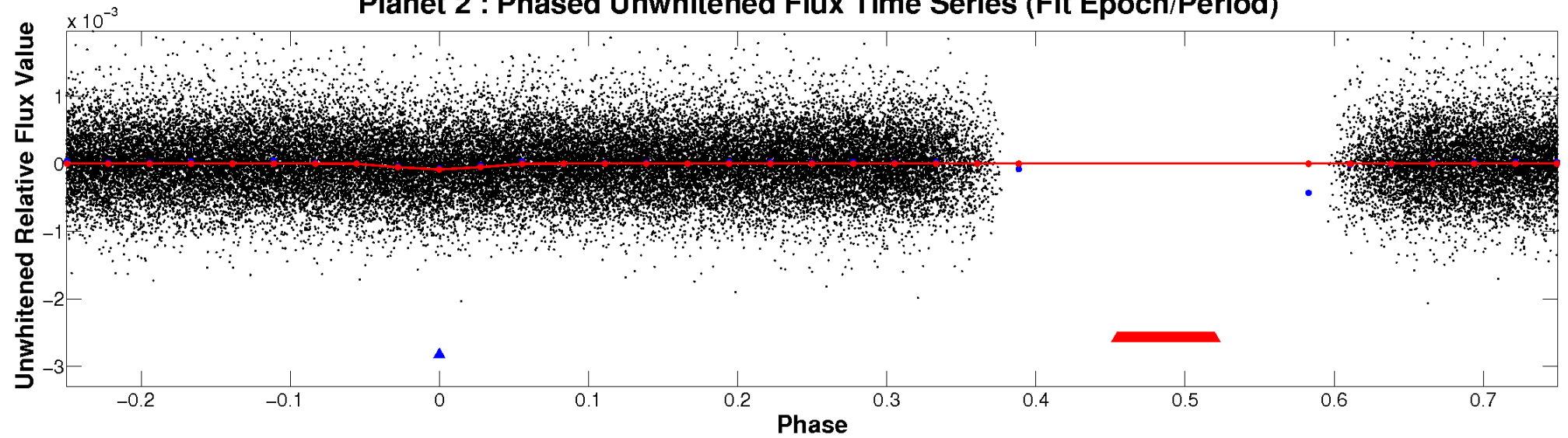
ALT Odd/Even

TCE 005475494-02

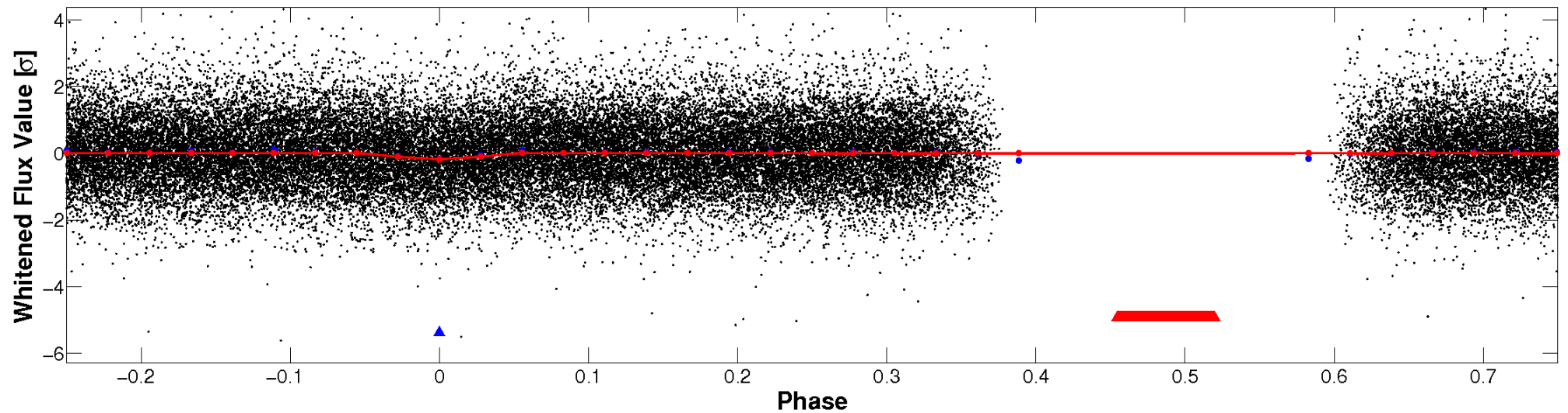


Non-Whitened Vs. Whitened Light Curve

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

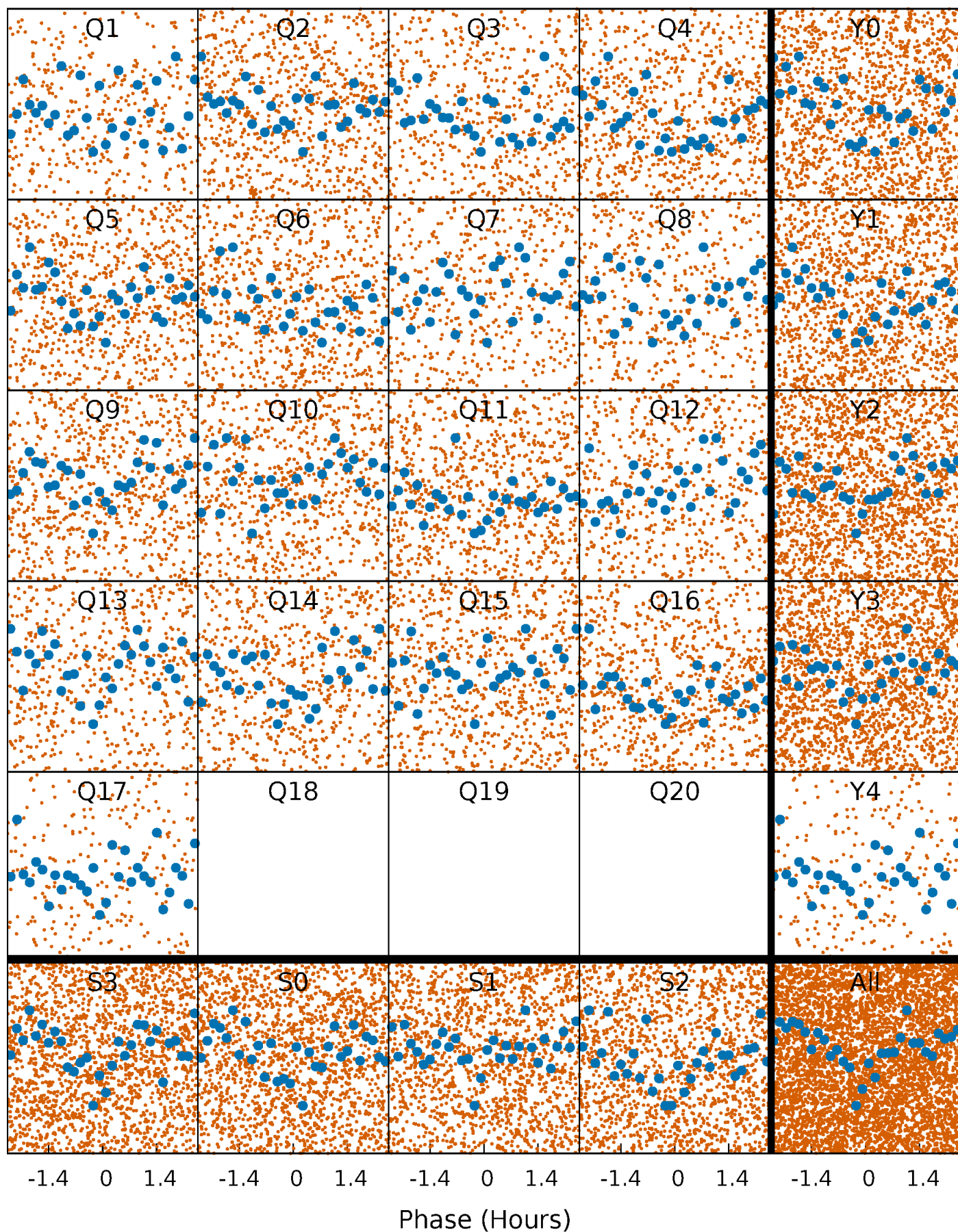


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



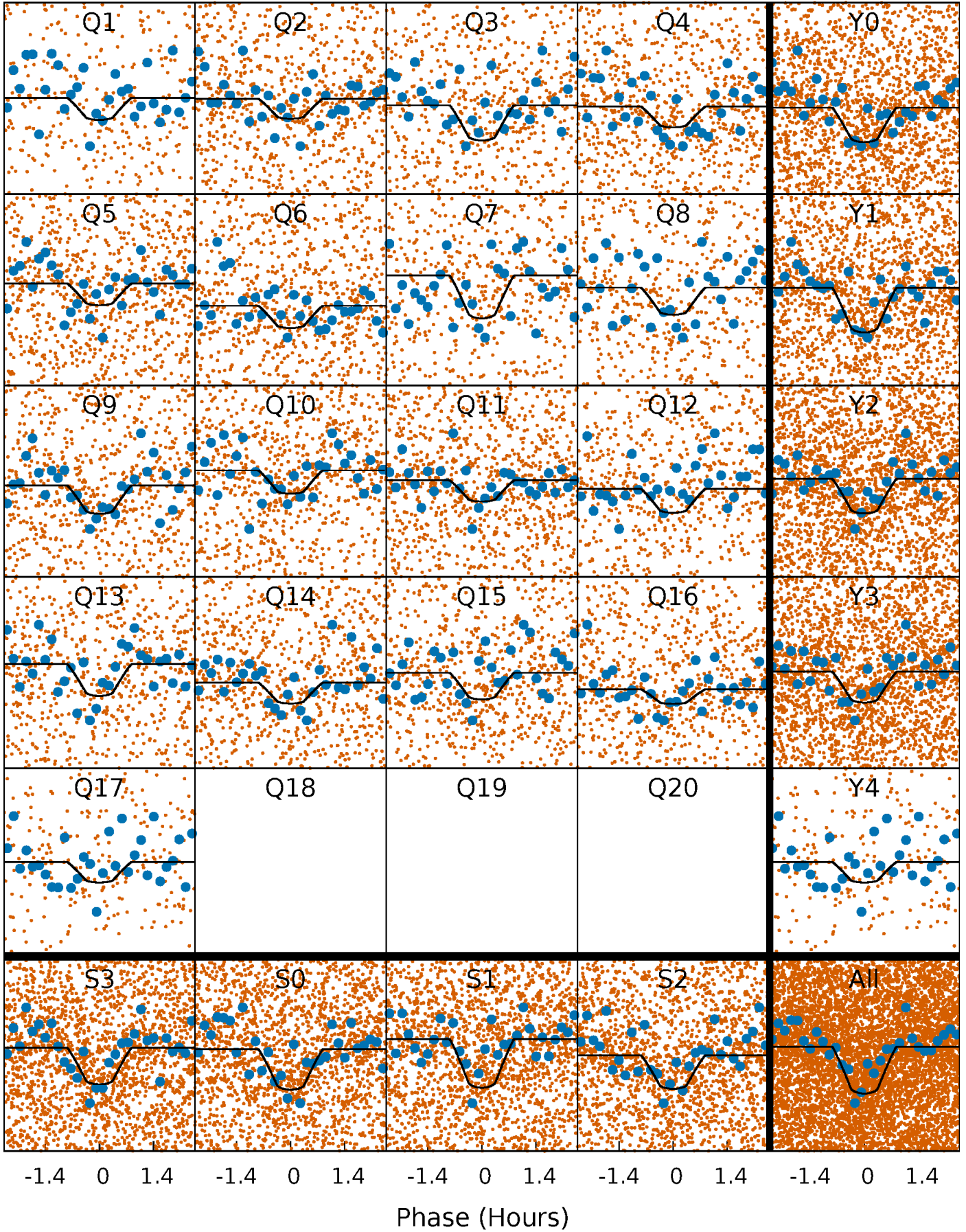
PDC Quarter-Phased Transit Curves

TCE 005475494-02 P= 0.736207 Days $T_0=131.708706$ (BKJD)



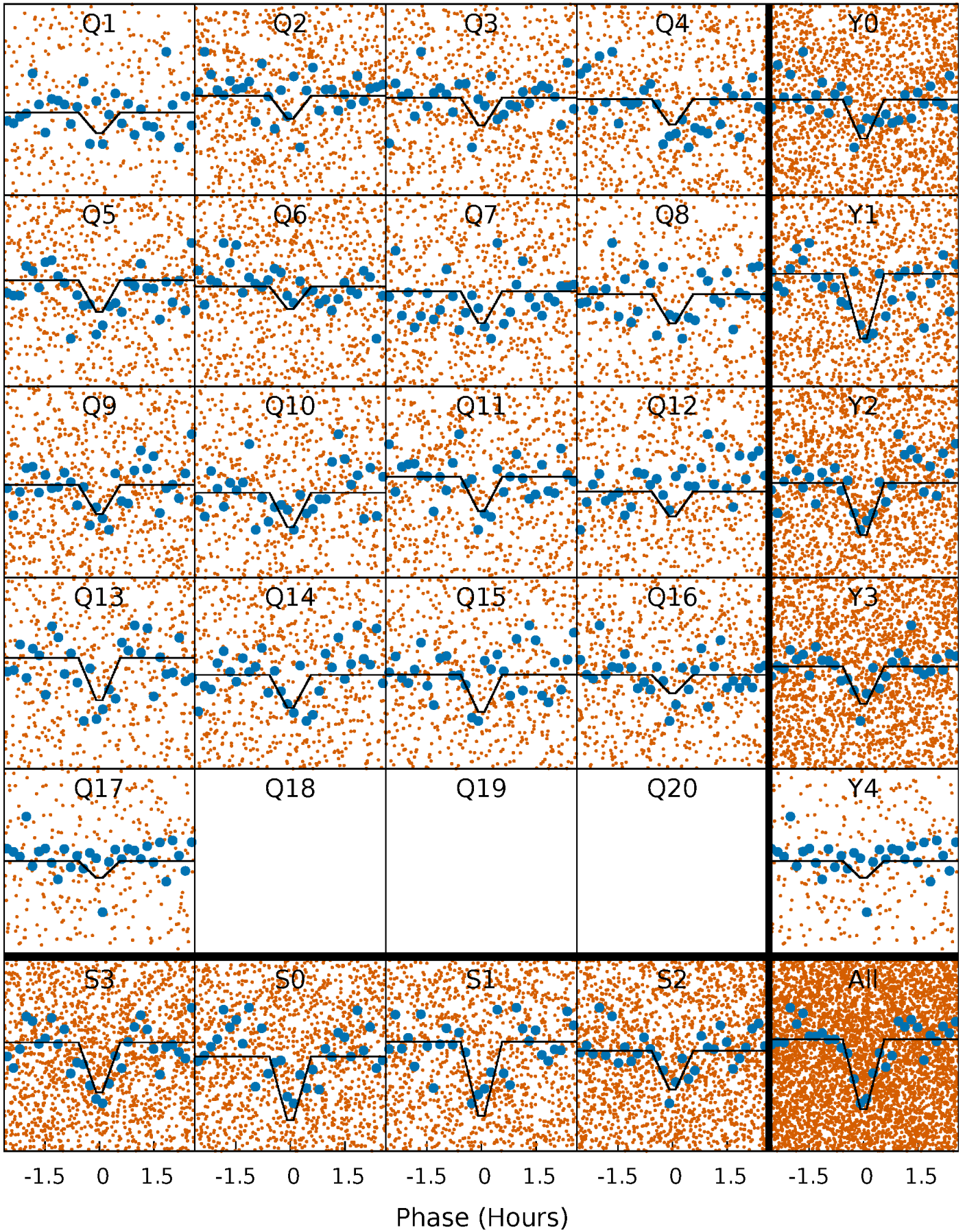
DV Quarter-Phased Transit Curves

TCE 005475494-02 P= 0.736207 Days $T_0=131.708706$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

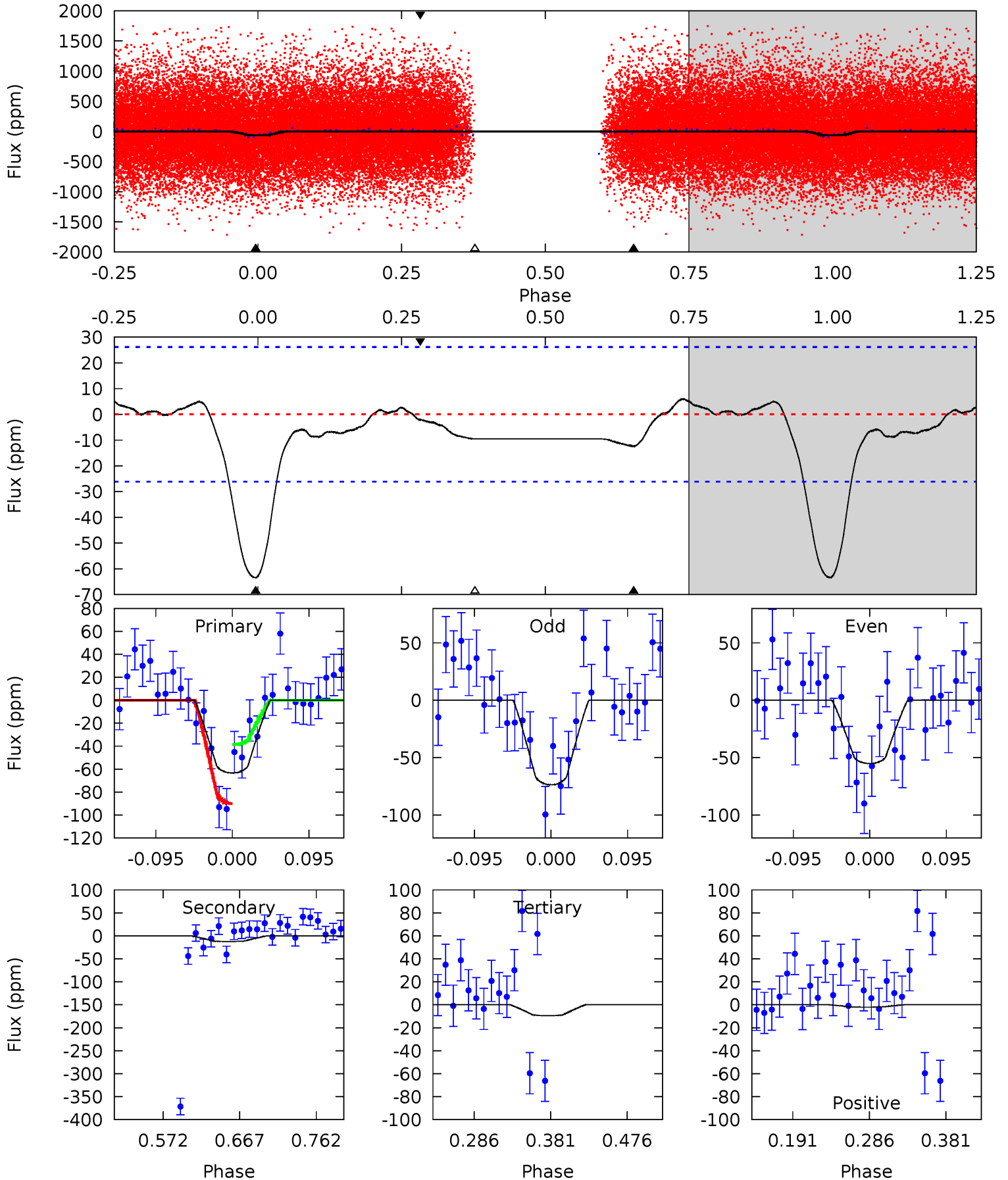
TCE 005475494-02 P= 0.736203 Days $T_0=131.707318$ (BKJD)



DV Model-Shift Uniqueness Test

005475494-02, P = 0.736207 Days, E = 130.972499 Days

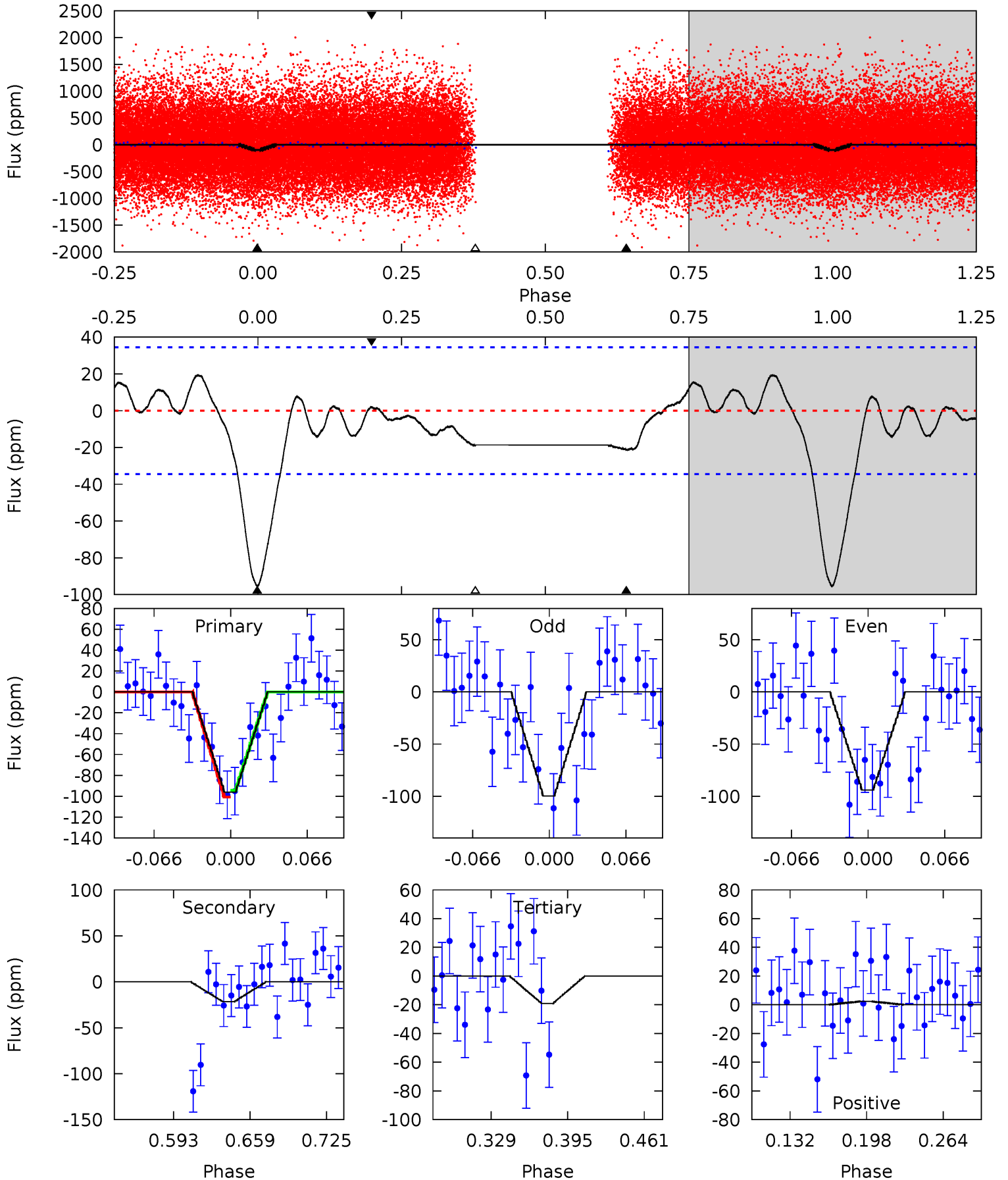
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	2.17	1.67	-0.36	4.57	1.67	0.71	9.43	11.5	0.50	2.53	1.62	0.88	0.09	4.52



Alt Model-Shift Uniqueness Test

005475494-02, P = 0.736203 Days, E = 130.971115 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	2.93	2.58	0.32	4.65	1.84	1.18	10.4	12.6	0.35	2.61	0.38	0.96	0.17	0.45



Stellar Parameters For KIC 005475494

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6355^{+172}_{-211}	$4.418^{+0.060}_{-0.180}$	$-0.120^{+0.250}_{-0.300}$	$1.090^{+0.297}_{-0.127}$	$1.134^{+0.150}_{-0.150}$	$1.234^{+0.399}_{-0.596}$
	+3%/-3%	+1%/-4%	+208%/-250%	+27%/-12%	+13%/-13%	+32%/-48%
Source	PHO1	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 005475494-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-12 ± 6	$1.25^{+0.81}_{-0.70}$	3219^{+225}_{-156}	3795^{+1720}_{-1374}	$1.135^{+4.568}_{-0.800}$
Alt.	-22 ± 7	$1.29^{+0.82}_{-0.70}$	3208^{+199}_{-146}	4259^{+2150}_{-918}	$1.848^{+8.709}_{-1.174}$

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

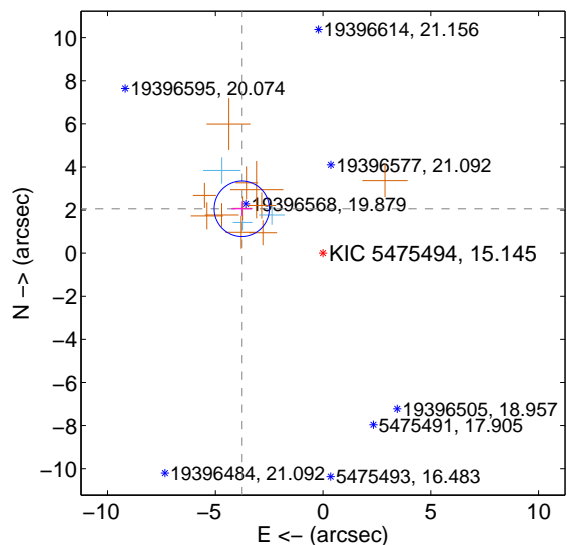
Supplemental centroid analysis for 005475494-02. Kepler magnitude: 15.14. Transit SNR 10.20

There are 3 quarters with good PRF difference image offsets

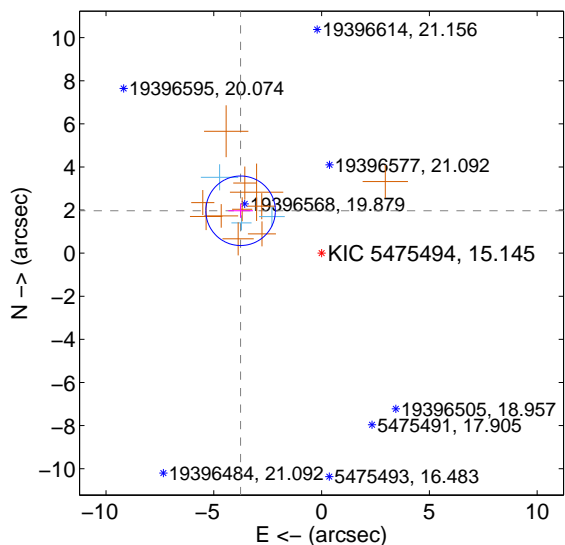
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.297 \pm 0.430	10.00	3.771 \pm 0.493	2.060 \pm 0.341
PRF-fit source offset from KIC position	4.241 \pm 0.538	7.89	3.757 \pm 0.570	1.968 \pm 0.328
photometric centroid source offset	5.35 \pm 1.33	4.01	5.01 \pm 1.35	1.88 \pm 1.19

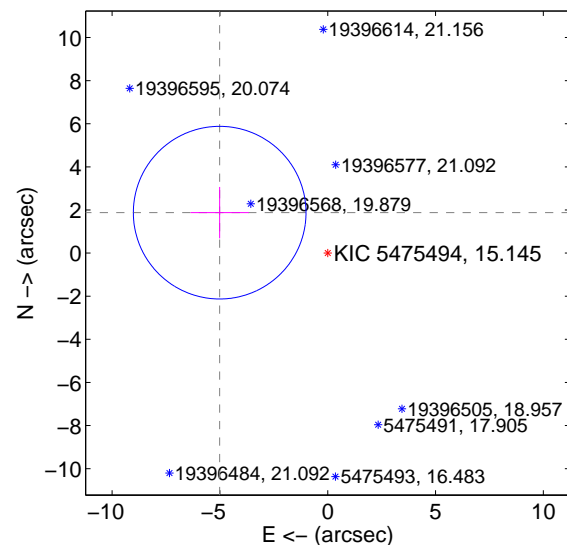
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

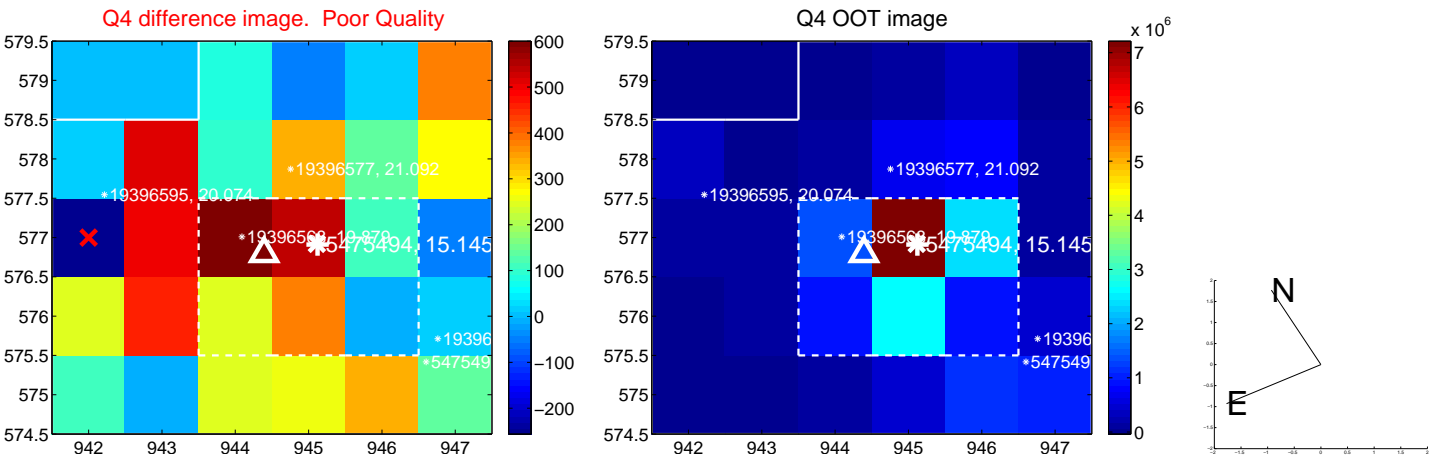
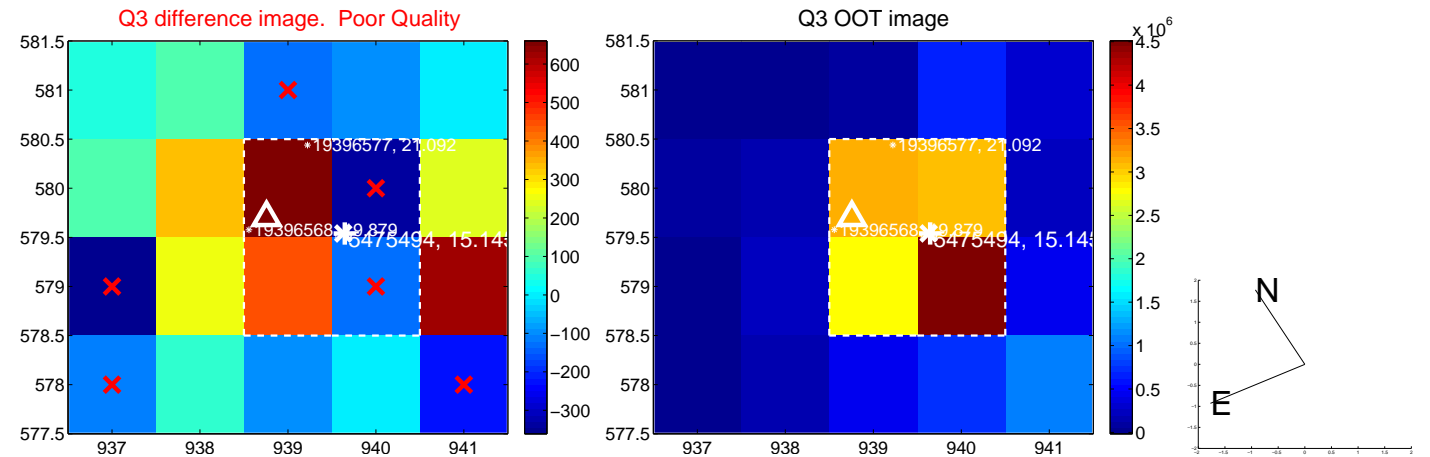
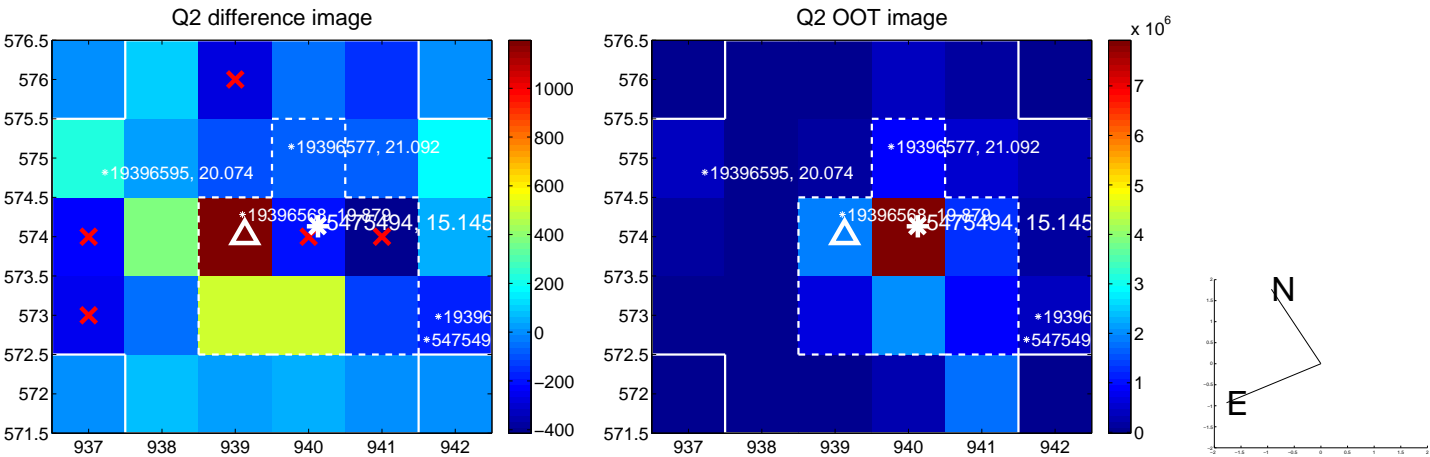
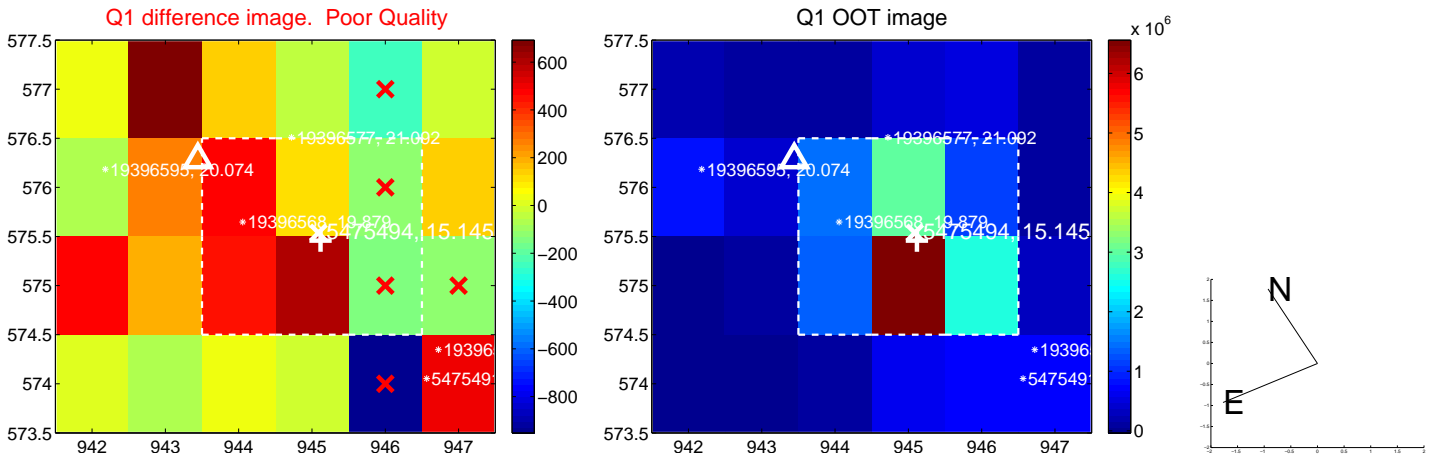


offset from photometric centroids

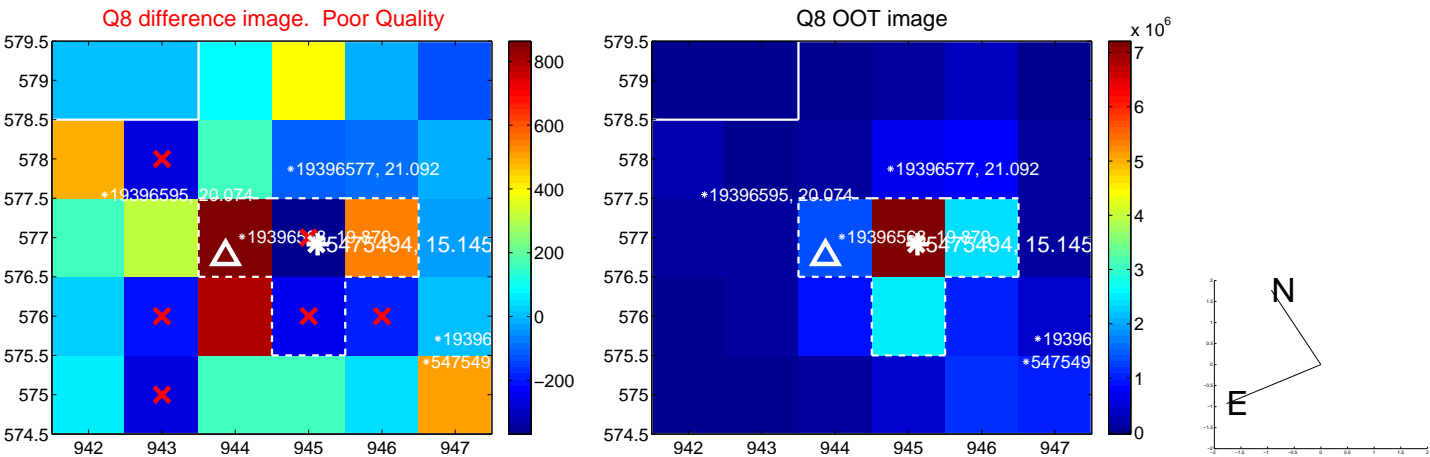
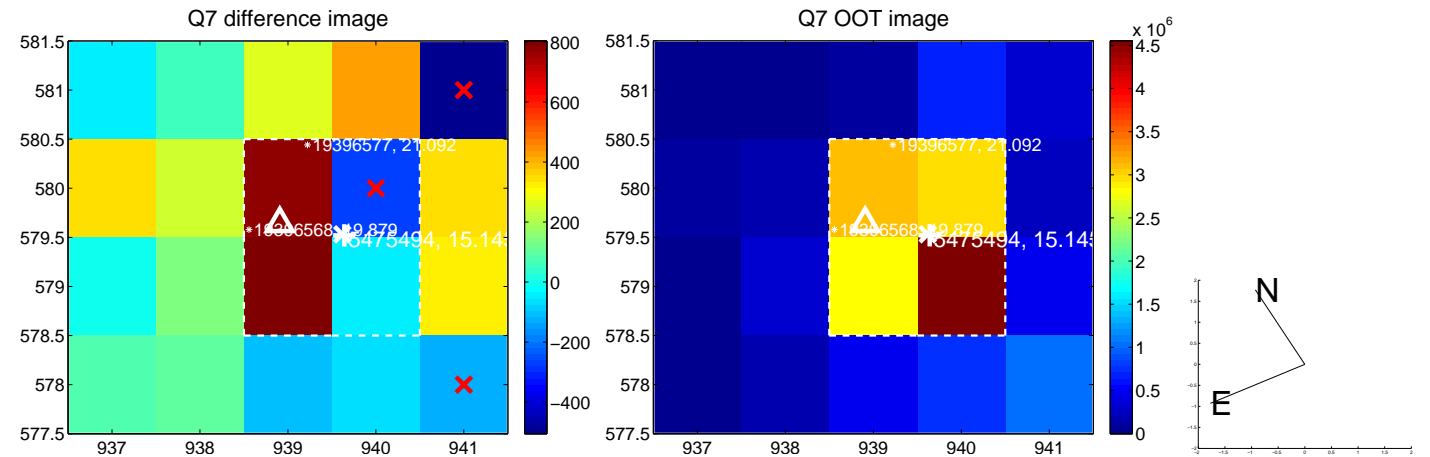
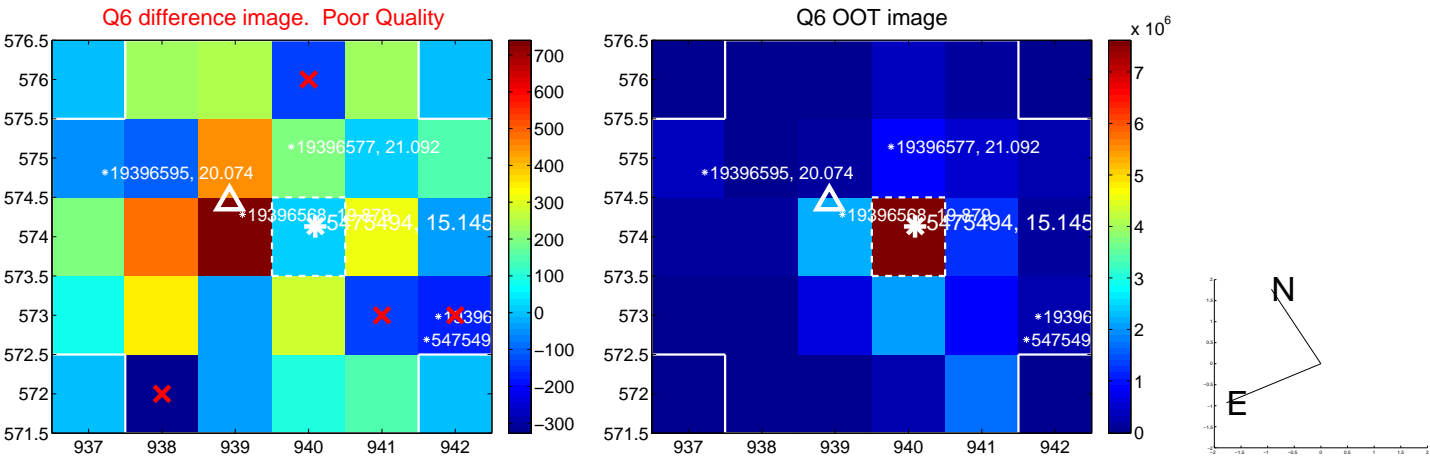
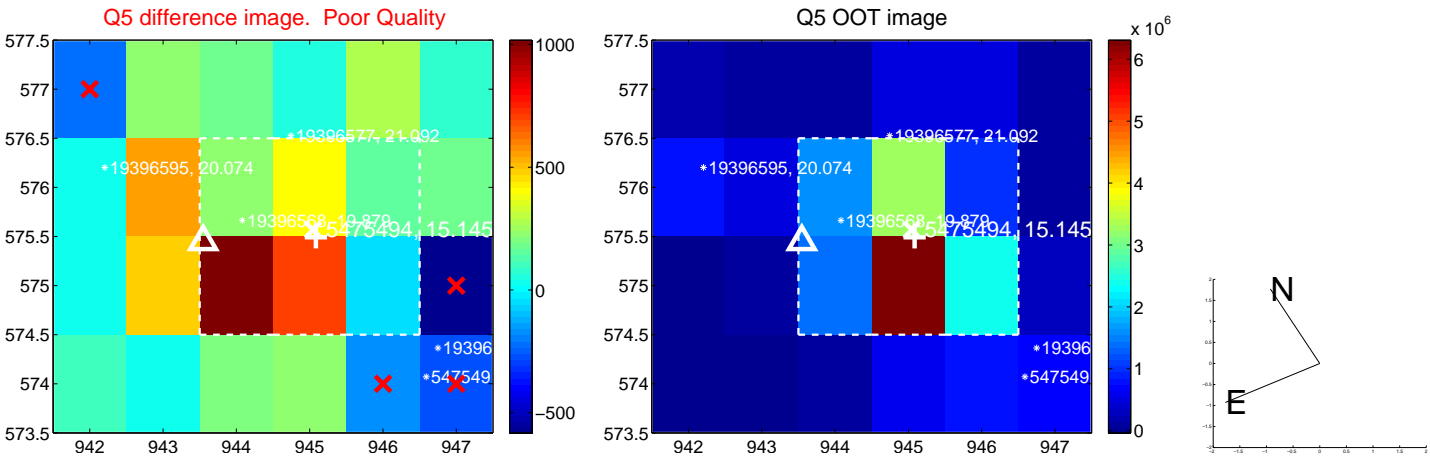


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

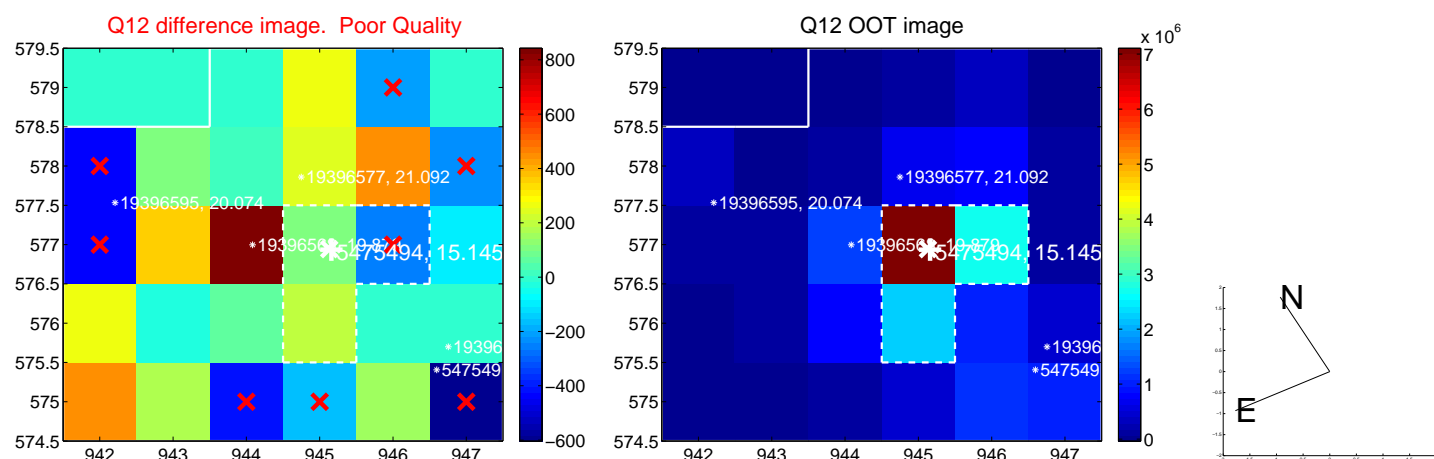
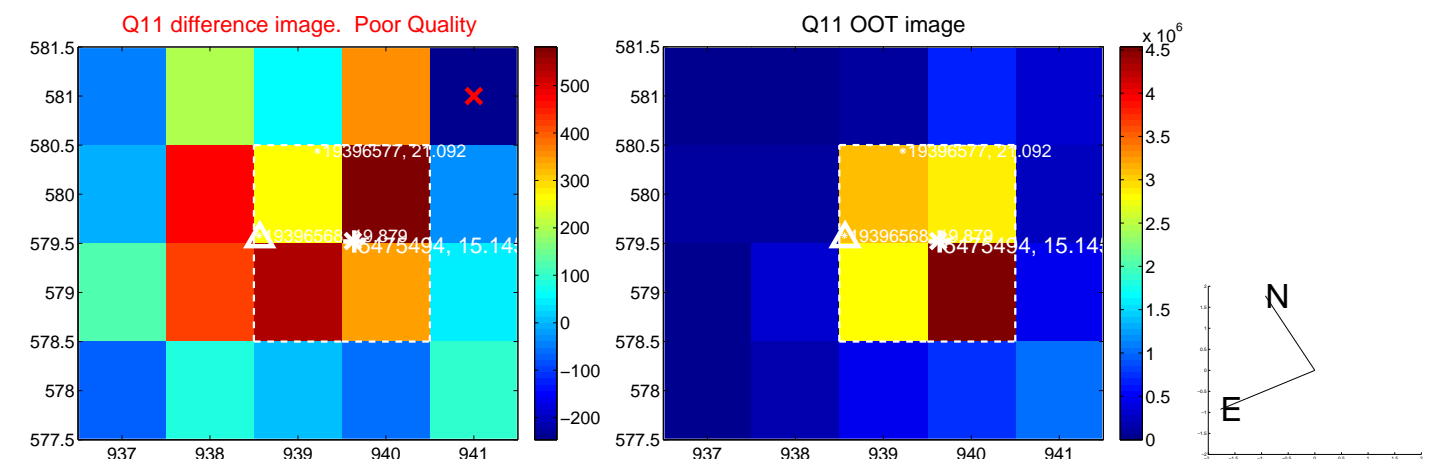
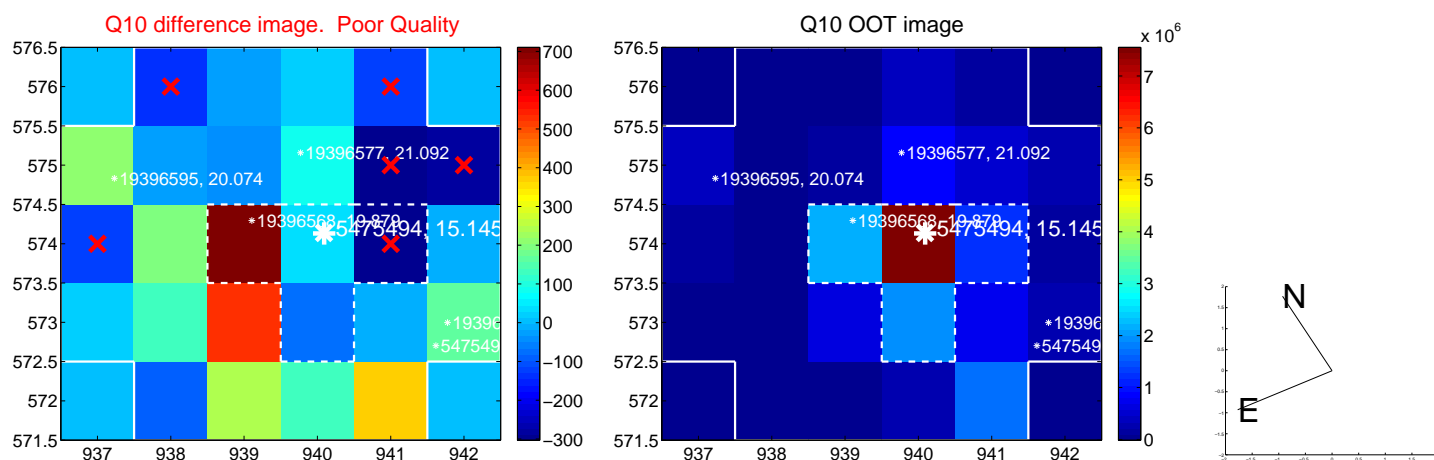
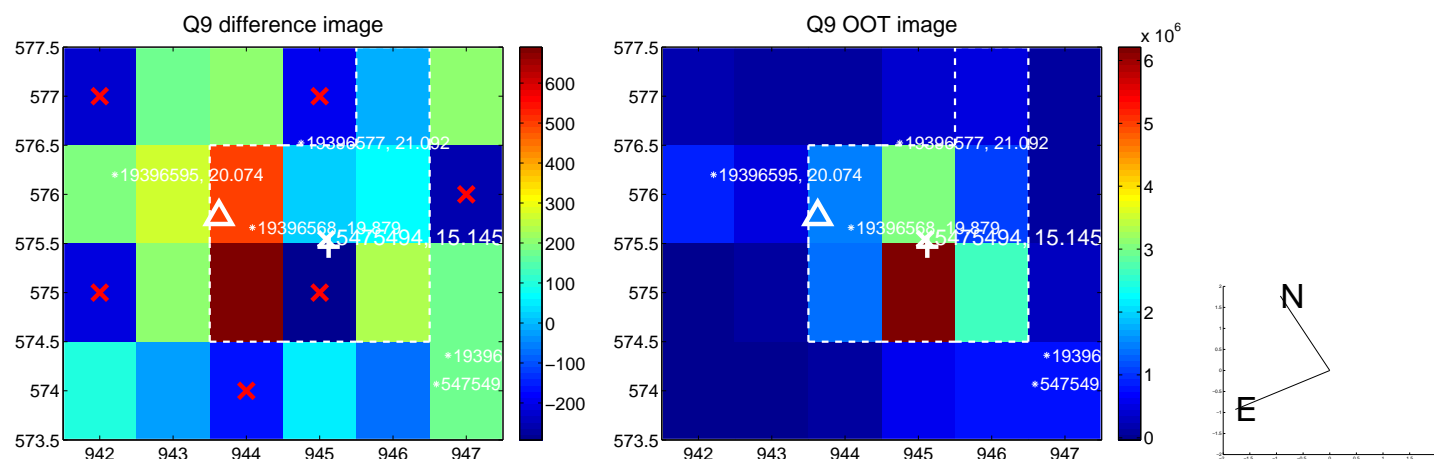
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



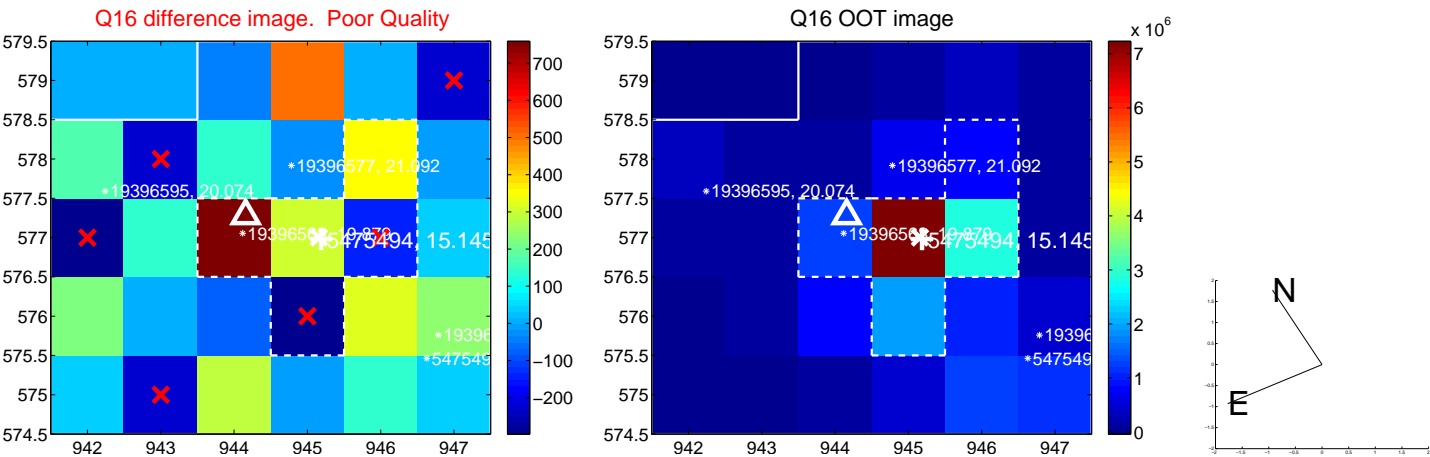
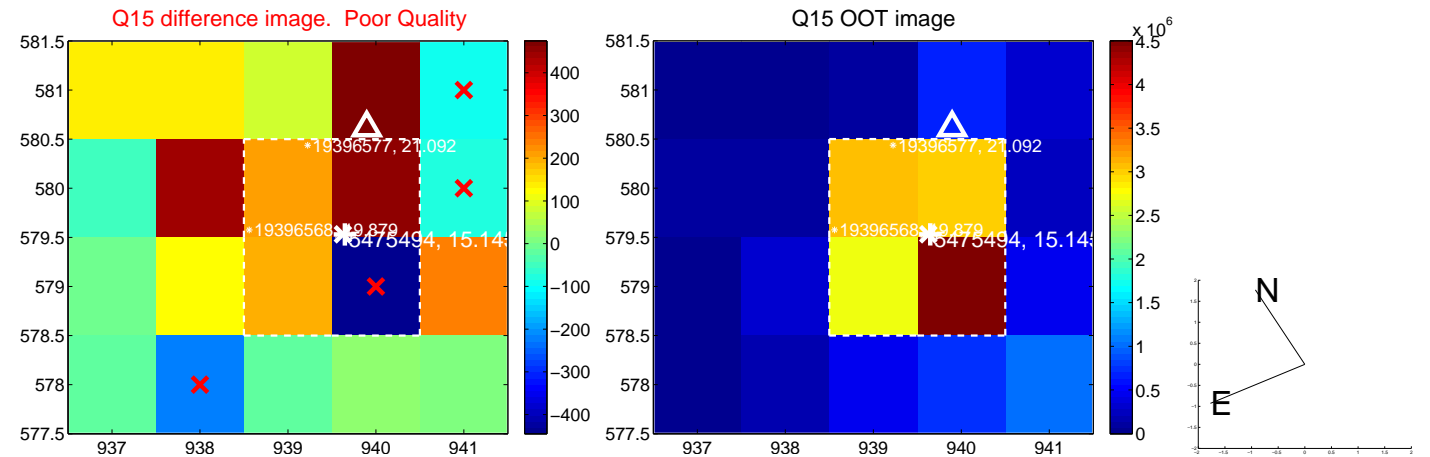
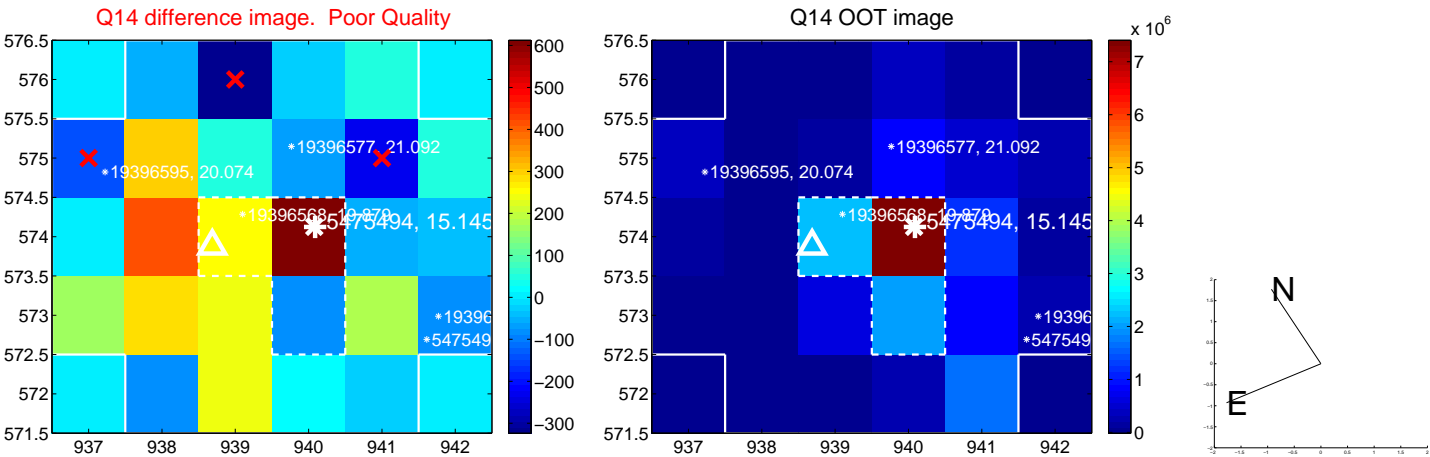
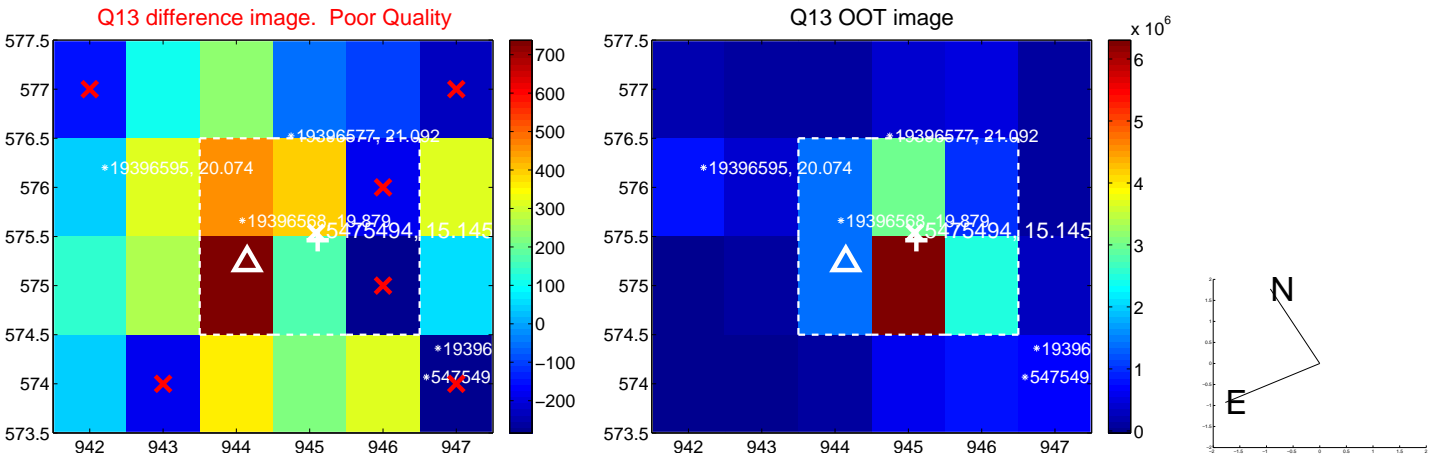
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

