

KIC 005294571

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})
005294571-01	OBS	No	0.919779	132.132304	1.5	0.765	10.9	0.4	10.32	6932	1.69	0.00
005294571-02	OBS	No	0.921182	132.122511	12.6	5.687	9.3	1.6	10.32	6932	3.77	0.00
005294571-03	OBS	No	118.675541	199.986190	1570.4	9.608	9.7	5.1	10.32	6932	48.74	449.11
005294571-04	OBS	No	18.646218	139.933167	964.7	4.491	9.0	9.0	10.32	6932	60.13	5297.25
005294571-05	OBS	No	84.819452	191.478039	483.3	6.919	8.5	2.6	10.32	6932	25.78	702.82
005294571-08	OBS	No	36.828276	167.368486	56.5	5.000	8.5	-1.0	10.32	6932	7.81	2137.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005294571-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_SATURATED
005294571-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—CENT_SATURATED
005294571-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005294571-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005294571-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST
005294571-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

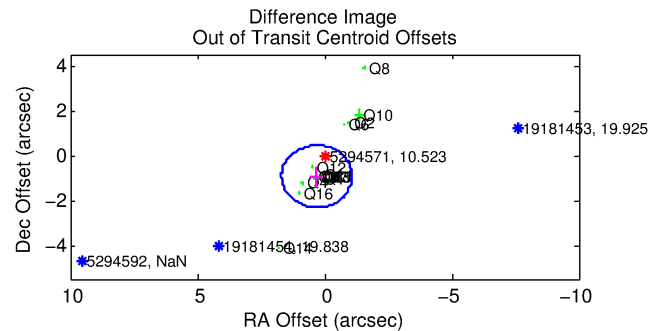
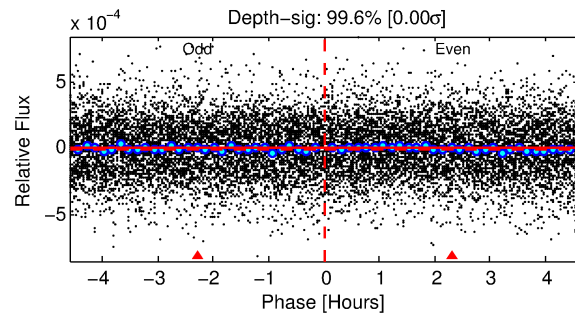
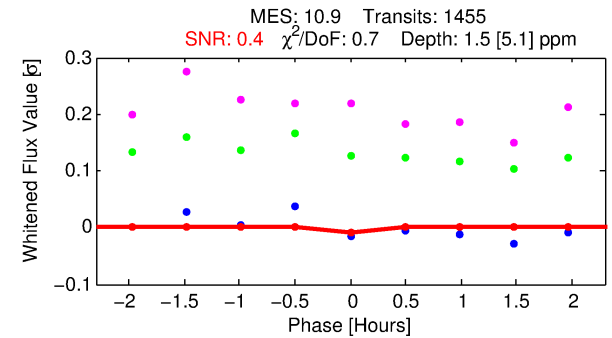
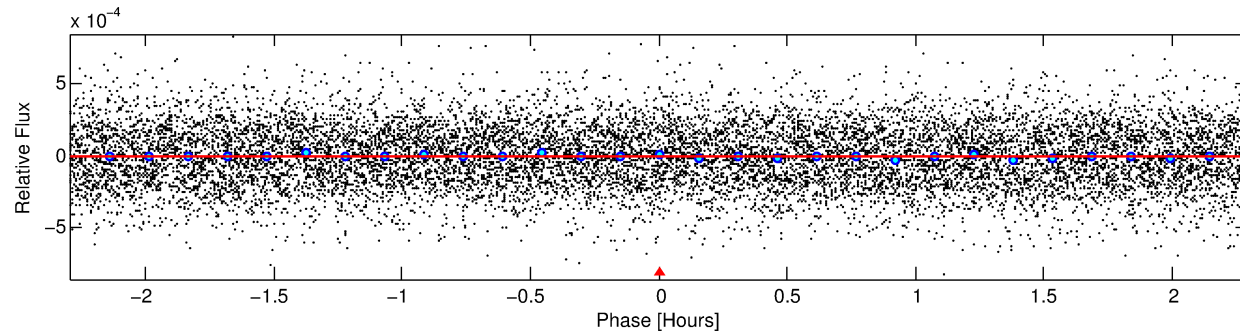
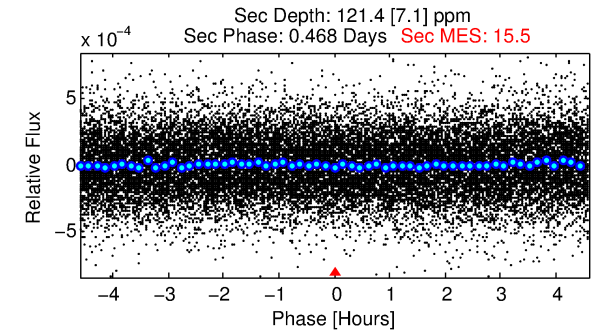
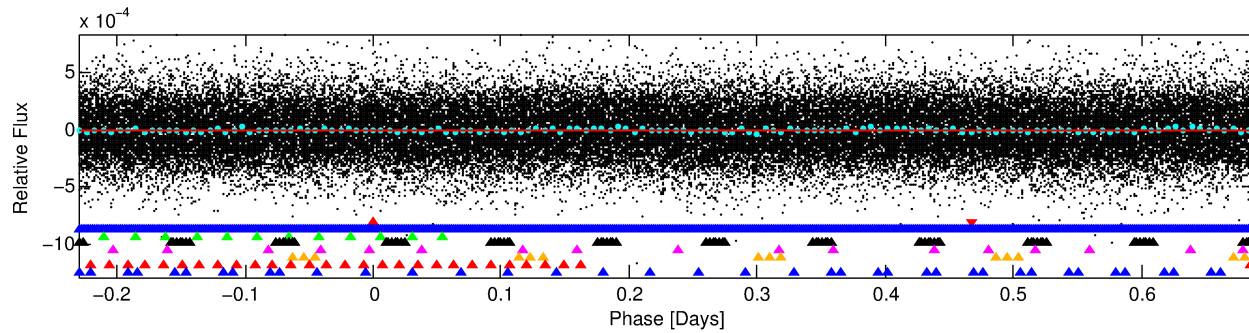
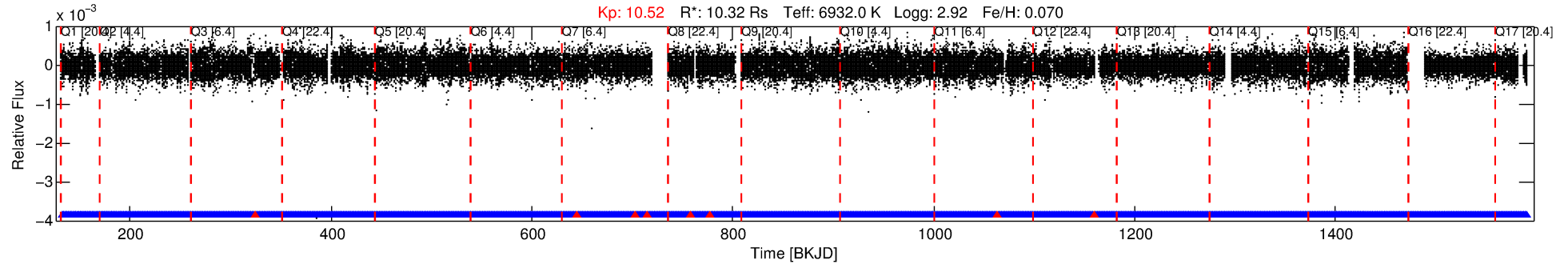
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005294571-01

No Significant Match Found

DV One-Page Summary

KIC: 5294571 Candidate: 1 of 8 Period: 0.920 d



DV Fit Results:

Period = 0.91978 [0.00023] d
Epoch = 132.1323 [0.0236] BKJD
Rp/R* = 0.0015 [0.0037]
a/R* = 1.94 [19.52]
b = 0.98 [0.43]
Seff = N/A
Teq = N/A
Rp = 1.69 [4.34] Re
a = N/A
Ag = N/A
Teffp = N/A

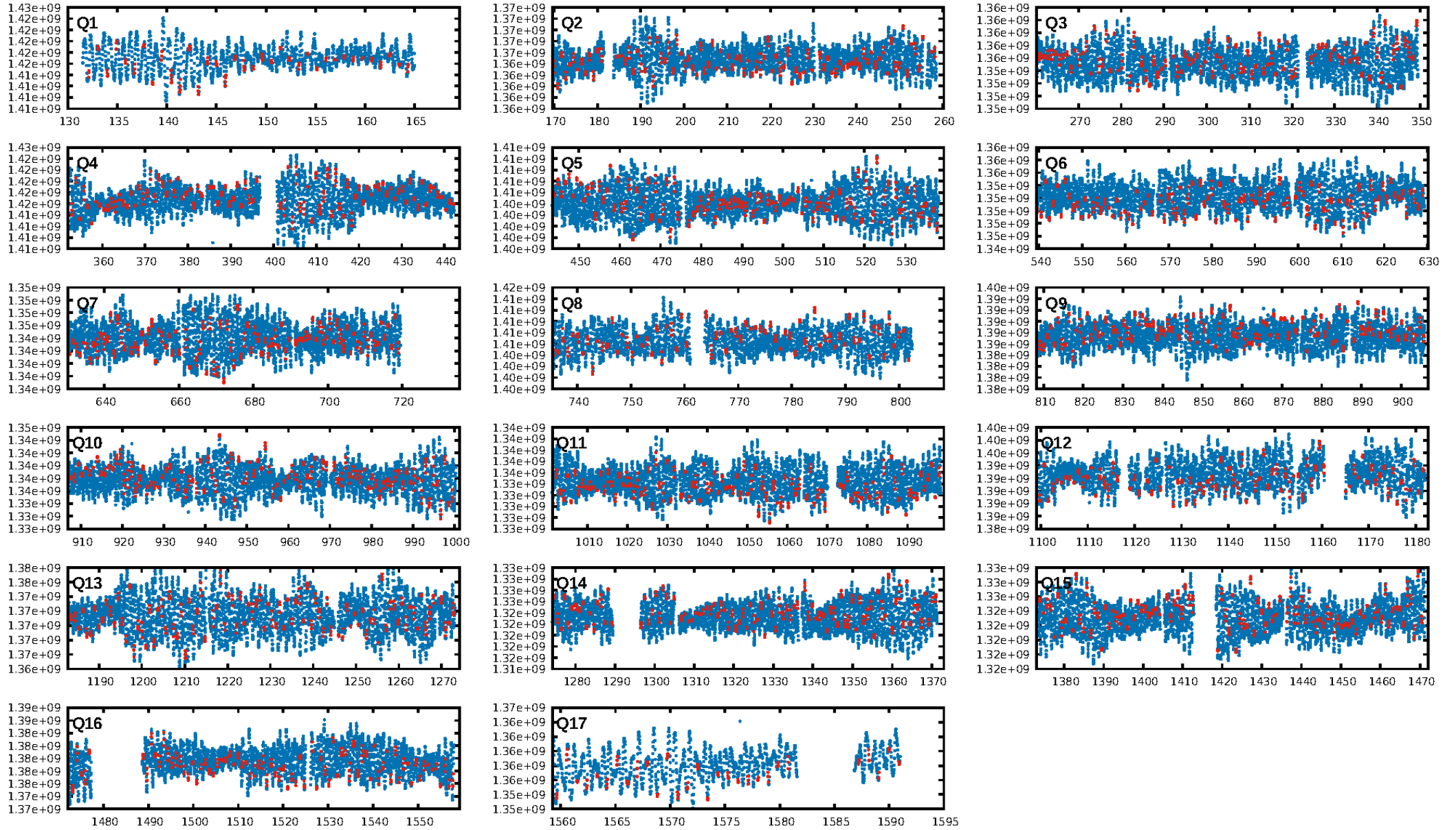
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.5% [0.01σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1382/1390]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.983 arcsec [2.13σ]
KicOffset-rm: 1.520 arcsec [2.99σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.35 [6/17]
DiffImageOverlap-fno: 0.35 [6/17]

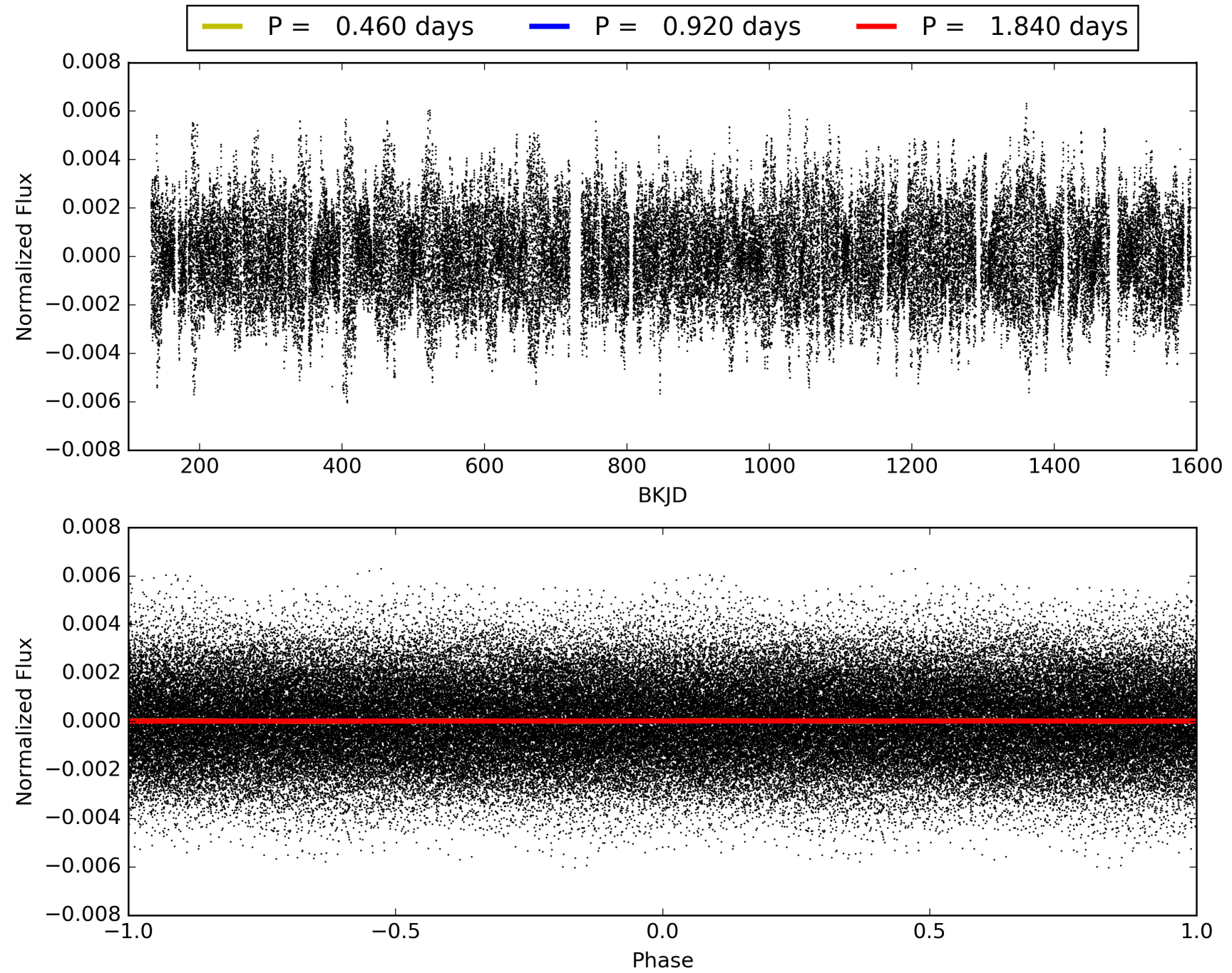
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:01:56 Z

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

TCE 005294571-01, PDC Light Curves

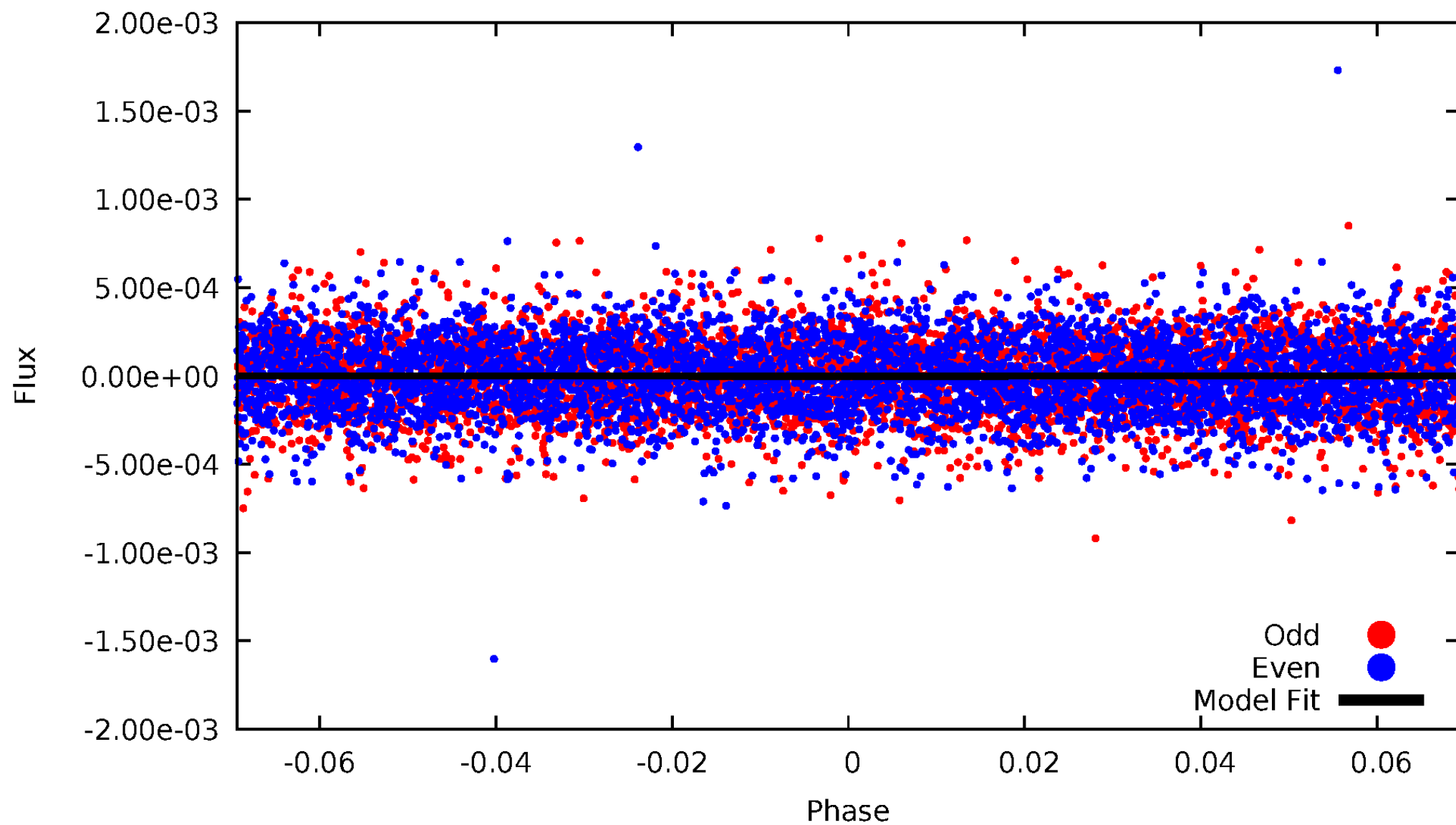


TCE 005294571-01



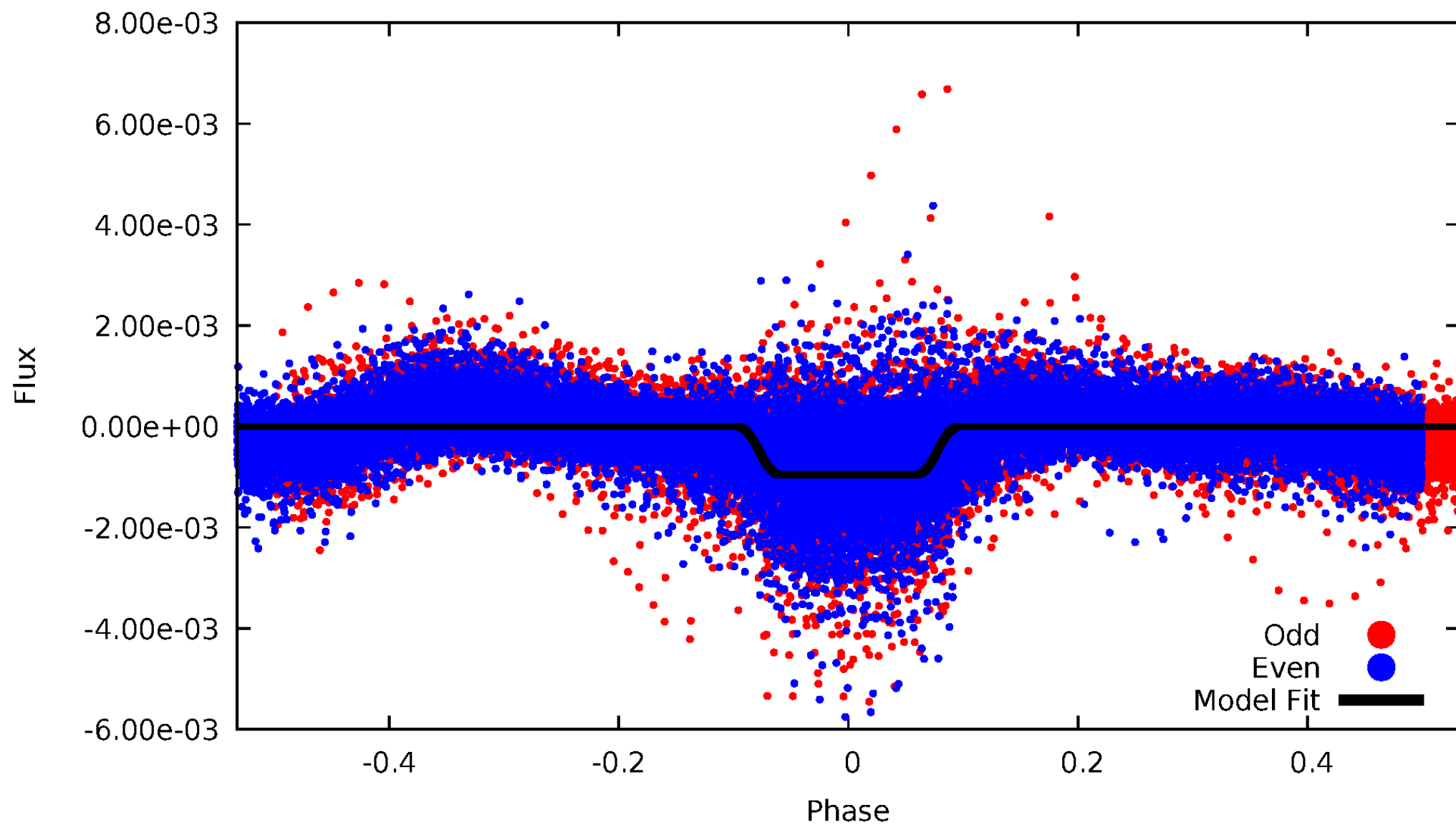
DV Odd/Even

TCE 005294571-01



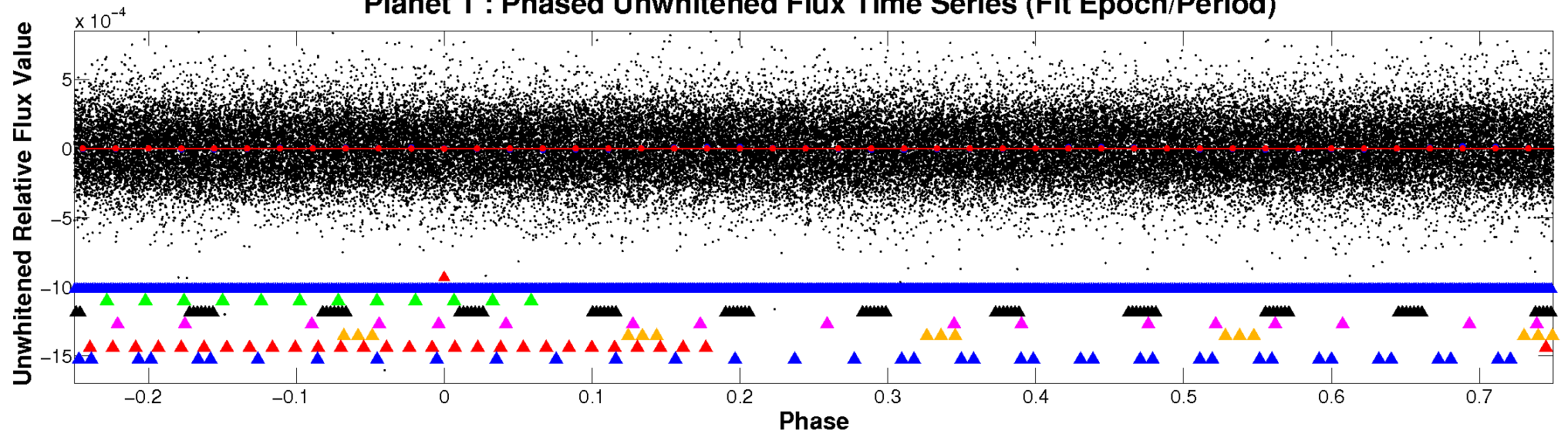
ALT Odd/Even

TCE 005294571-01

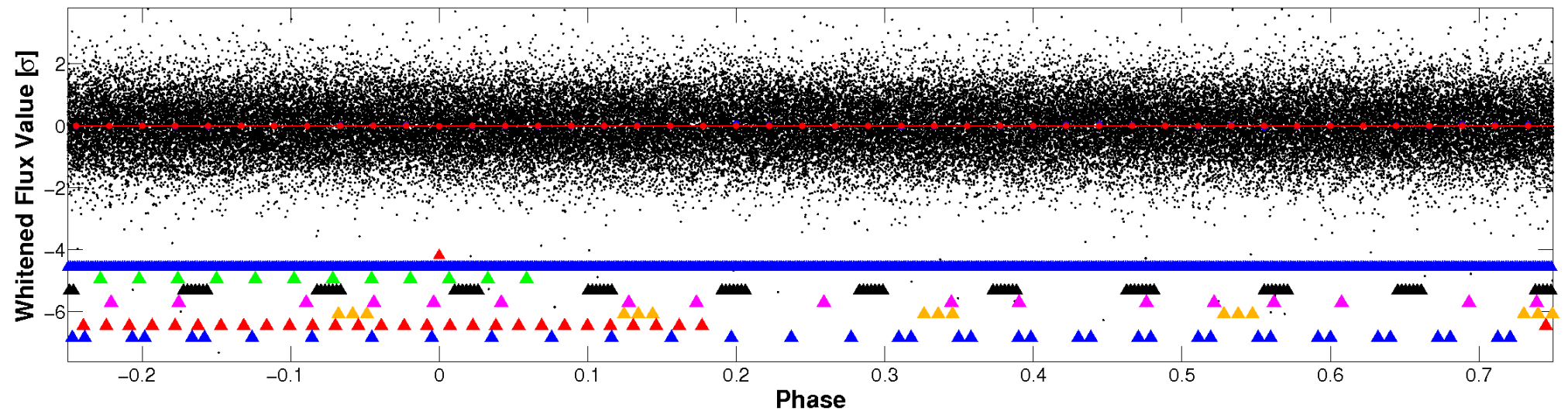


Non-Whitened Vs. Whitened Light Curve

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

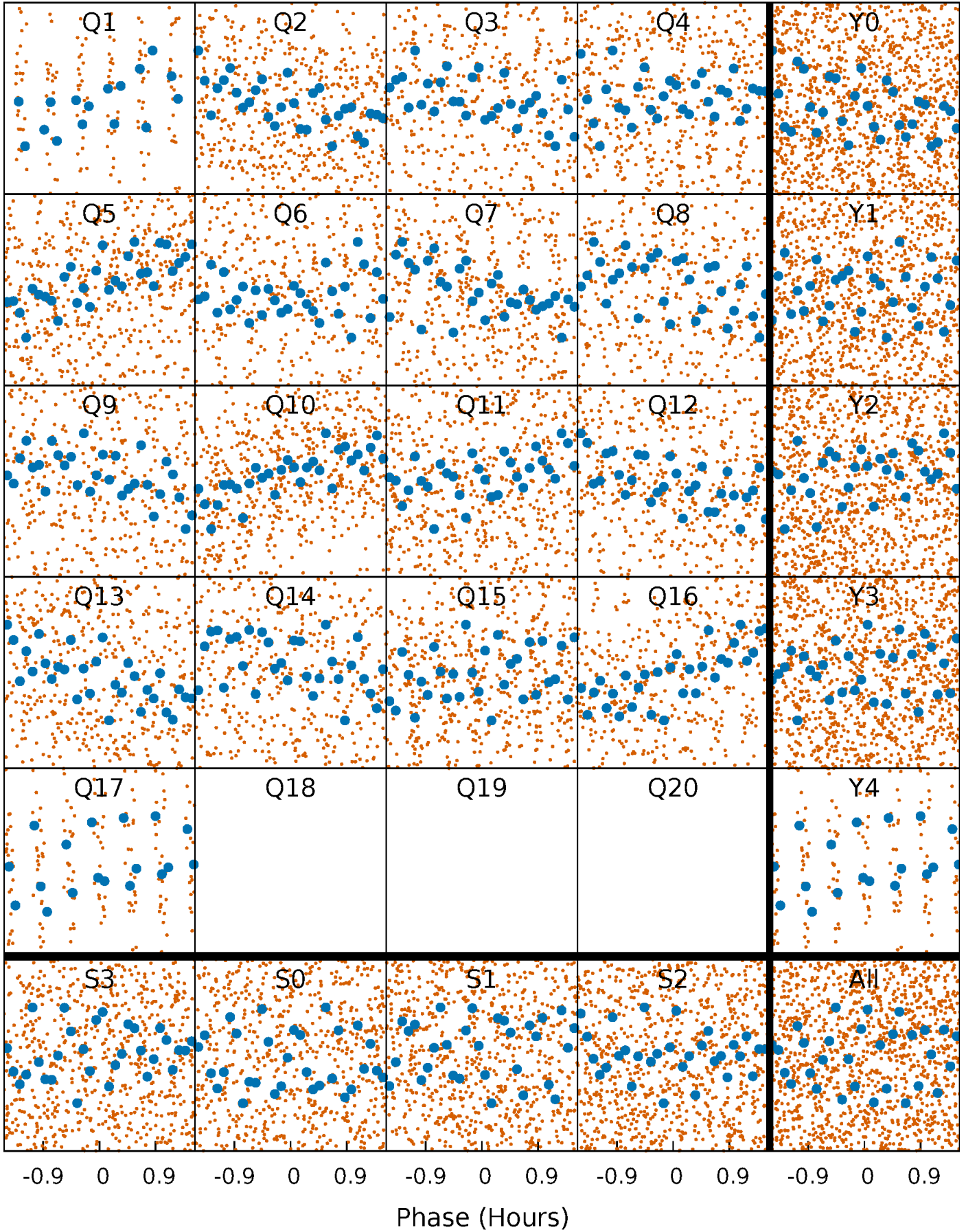


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



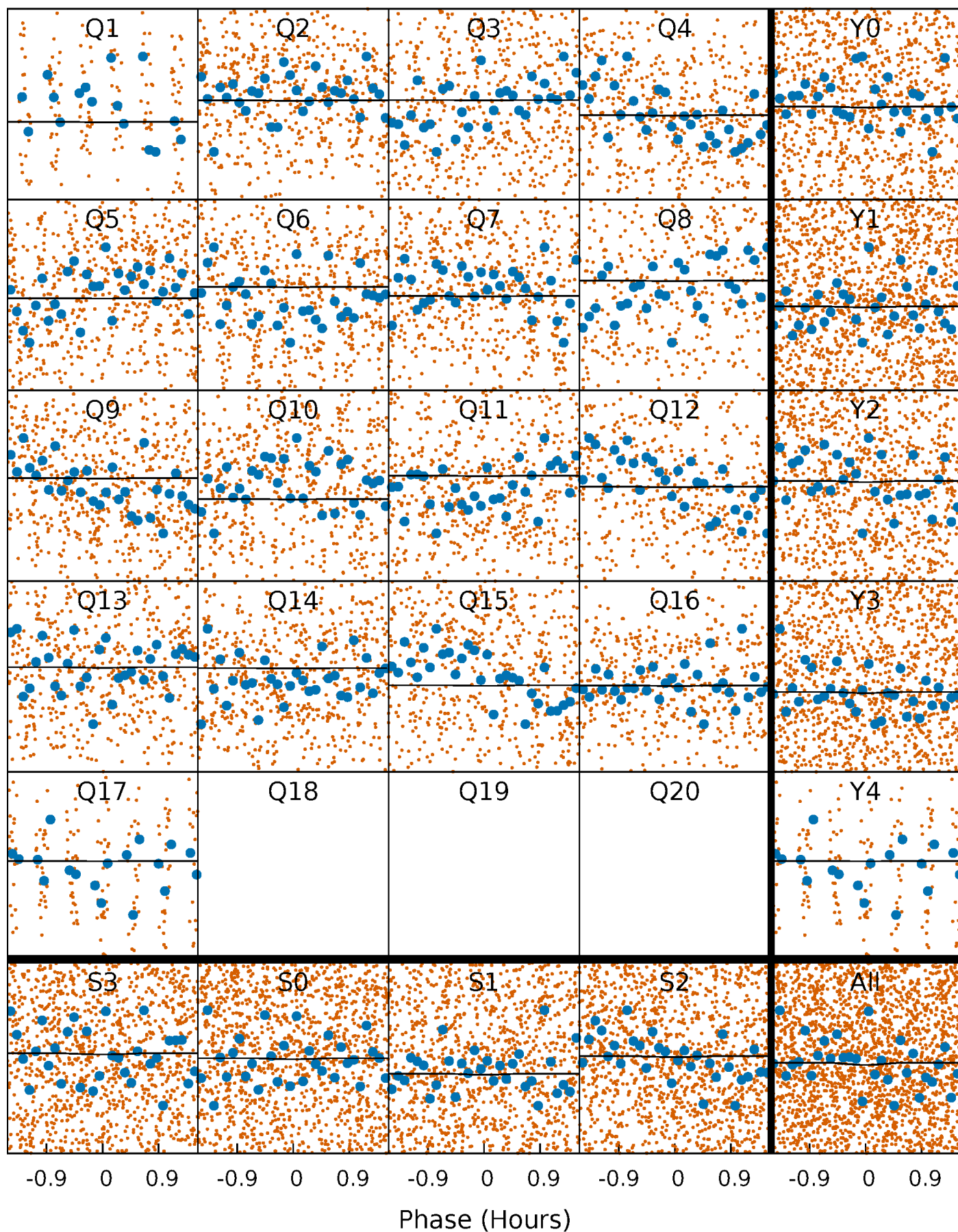
PDC Quarter-Phased Transit Curves

TCE 005294571-01 P= 0.919779 Days $T_0=132.132304$ (BKJD)



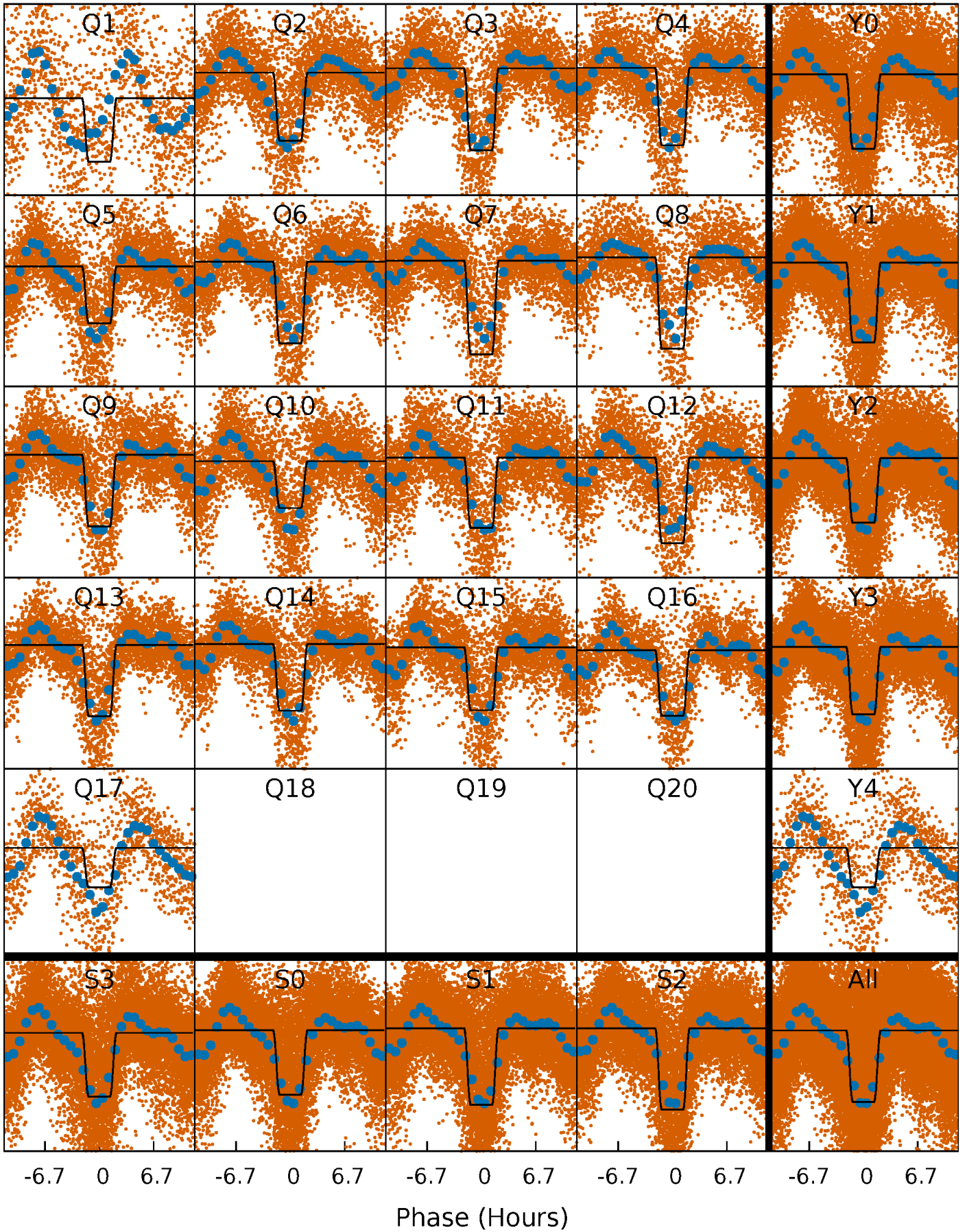
DV Quarter-Phased Transit Curves

TCE 005294571-01 P= 0.919779 Days $T_0=132.132304$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

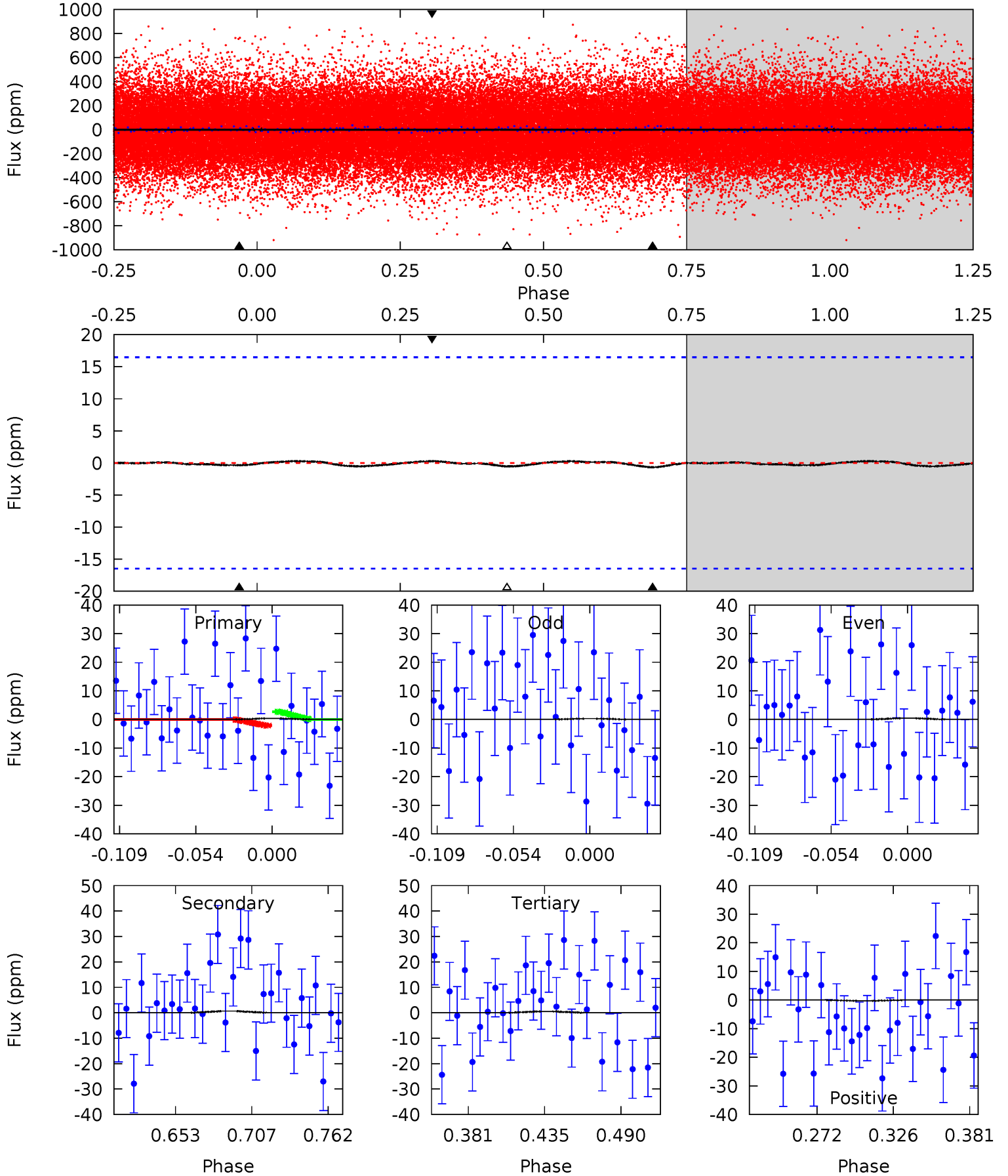
TCE 005294571-01 P= 0.920629 Days $T_0=132.180134$ (BKJD)



DV Model-Shift Uniqueness Test

005294571-01, P = 0.919779 Days, E = 131.212525 Days

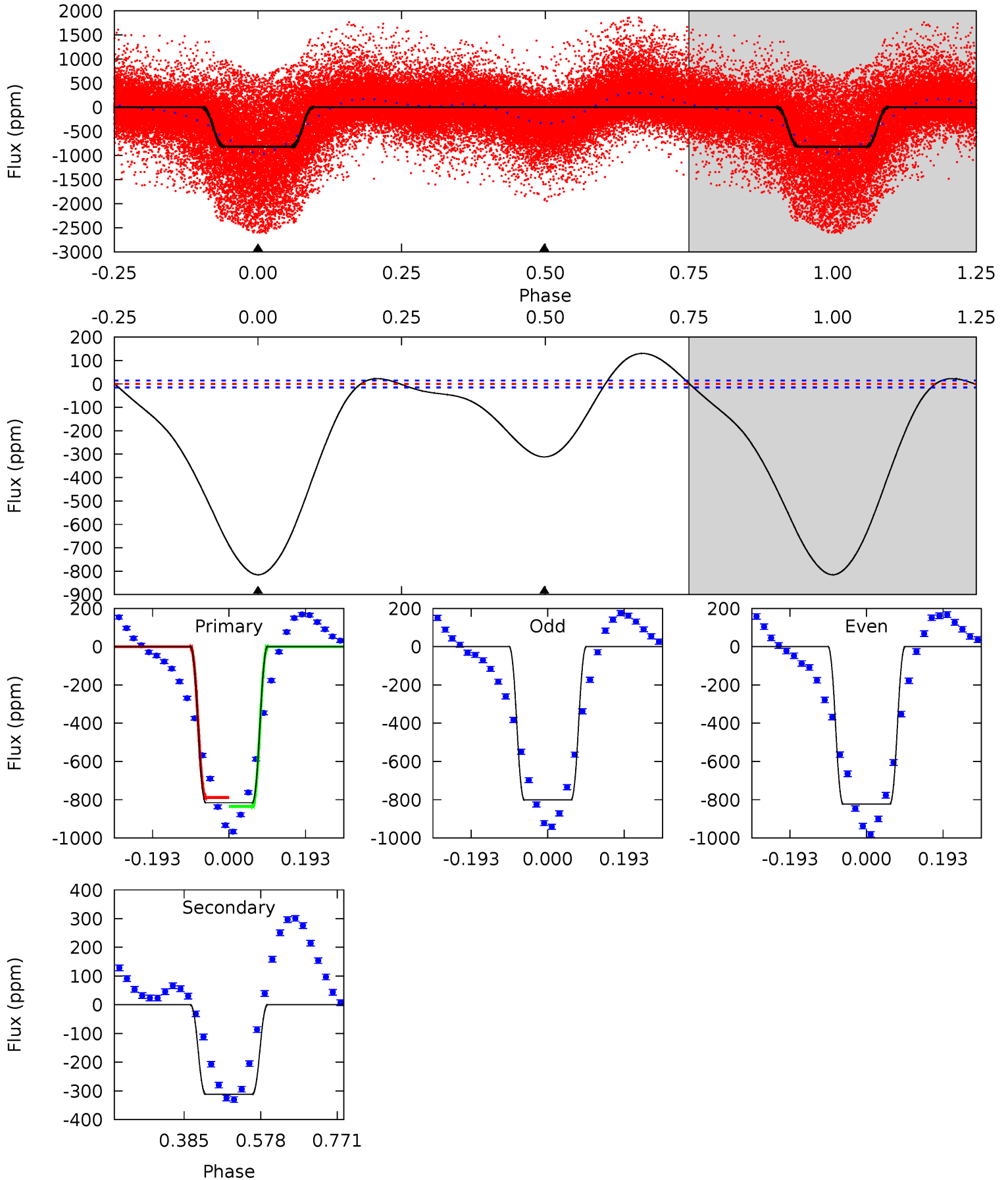
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.10	0.19	0.15	0.08	4.69	1.92	0.07	-0.05	0.02	0.04	0.11	0.02	-12.2	0.30	0.08



Alt Model-Shift Uniqueness Test

005294571-01, P = 0.920629 Days, E = 131.259505 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
244.1	93.3	0	0	4.43	1.30	15.9	244.1	244.1	93.3	93.3	3.18	1.04	0.14	6.98



Stellar Parameters For KIC 005294571

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6932^{+144}_{-288}	$2.923^{+0.630}_{-0.070}$	$0.070^{+0.200}_{-0.500}$	$10.322^{+1.100}_{-6.232}$	$3.255^{+0.072}_{-1.372}$	$0.004^{+0.042}_{-0.001}$
	+2%/-4%	+22%/-2%	+286%/-714%	+11%/-60%	+2%/-42%	+1019%/-23%
Source	PHO1	FLK73	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 005294571-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1 ± 4	$2.95^{+3.33}_{-2.06}$	7967^{+532}_{-1243}	-6284^{+11336}_{-987}	$0.015^{+0.456}_{-0.172}$
Alt.	-312 ± 3	$31.34^{+6.85}_{-10.20}$	7880^{+598}_{-1204}	-5654^{+1959}_{-594}	$0.129^{+0.135}_{-0.042}$

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

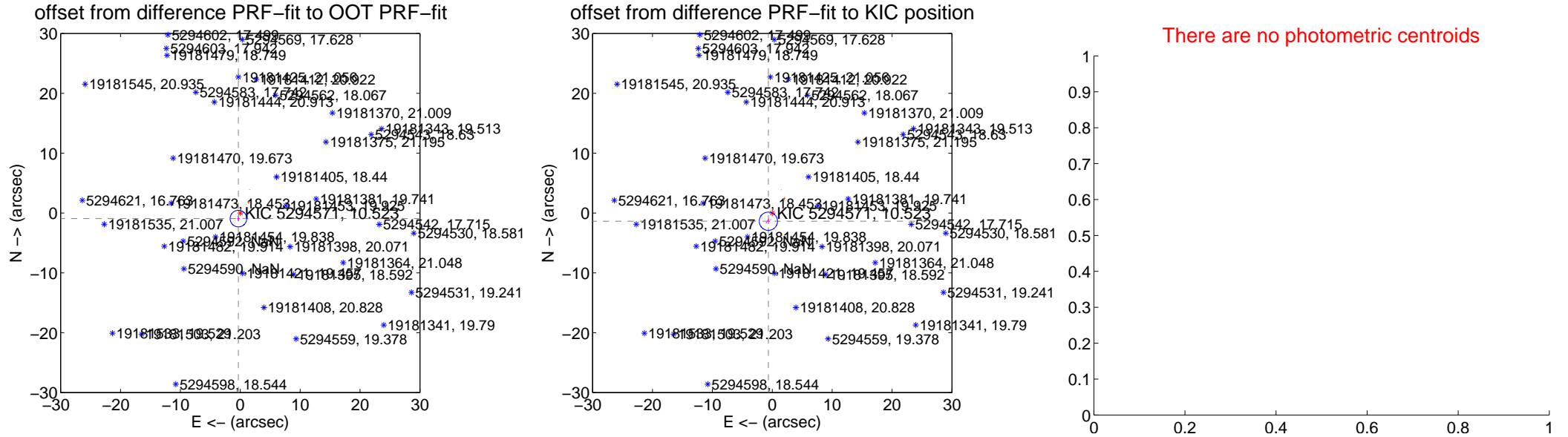
DV Centroid Data

Supplemental centroid analysis for 005294571-01. **Kepler magnitude: 10.52.** Transit SNR 0.38

There are 6 quarters with good PRF difference image offsets

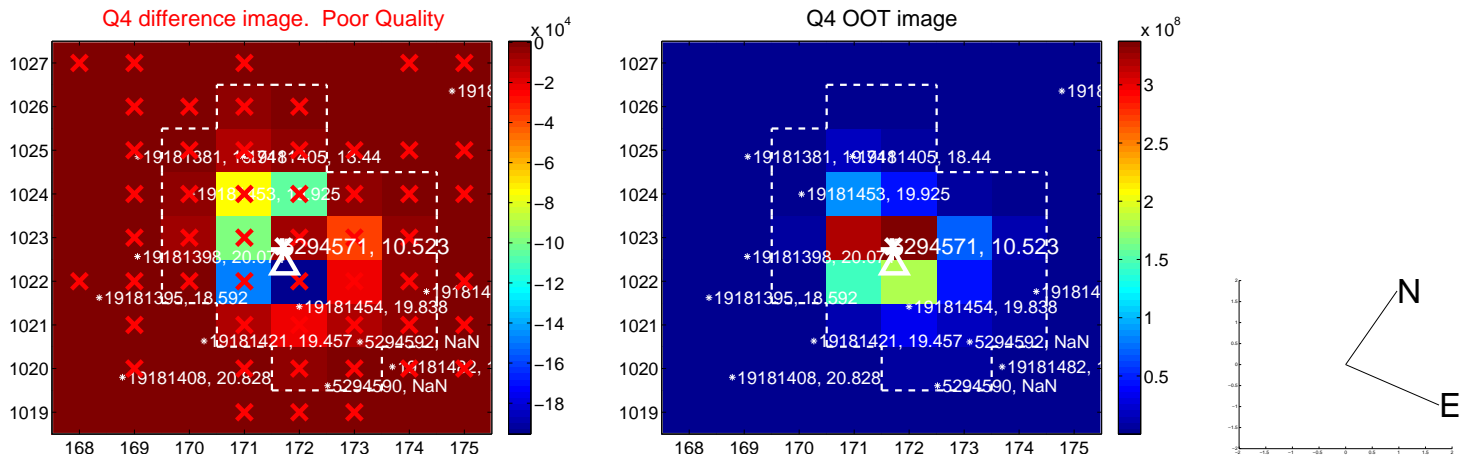
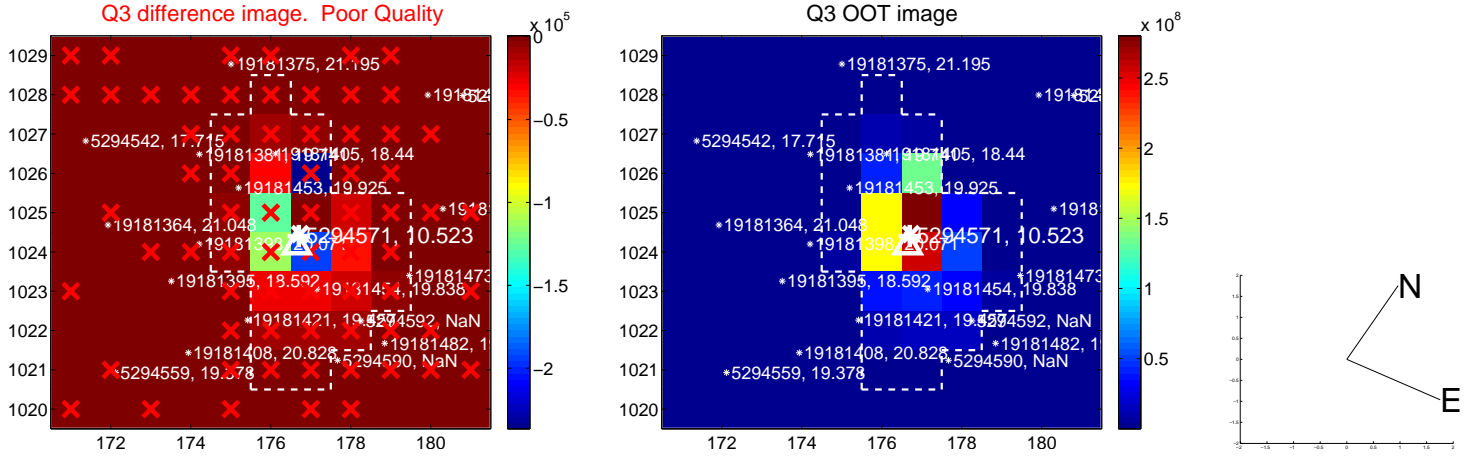
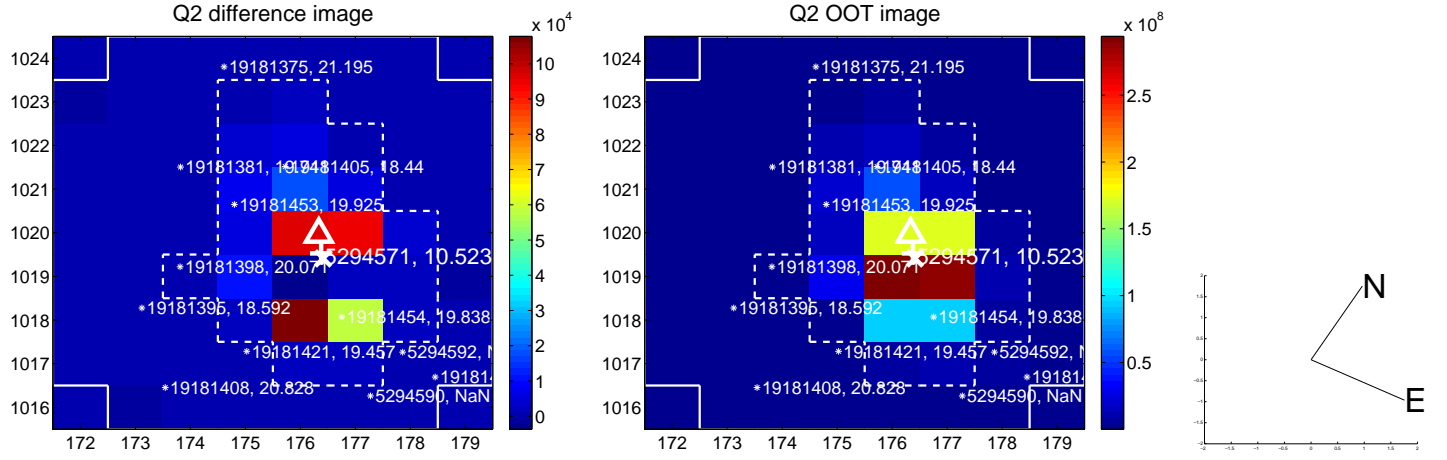
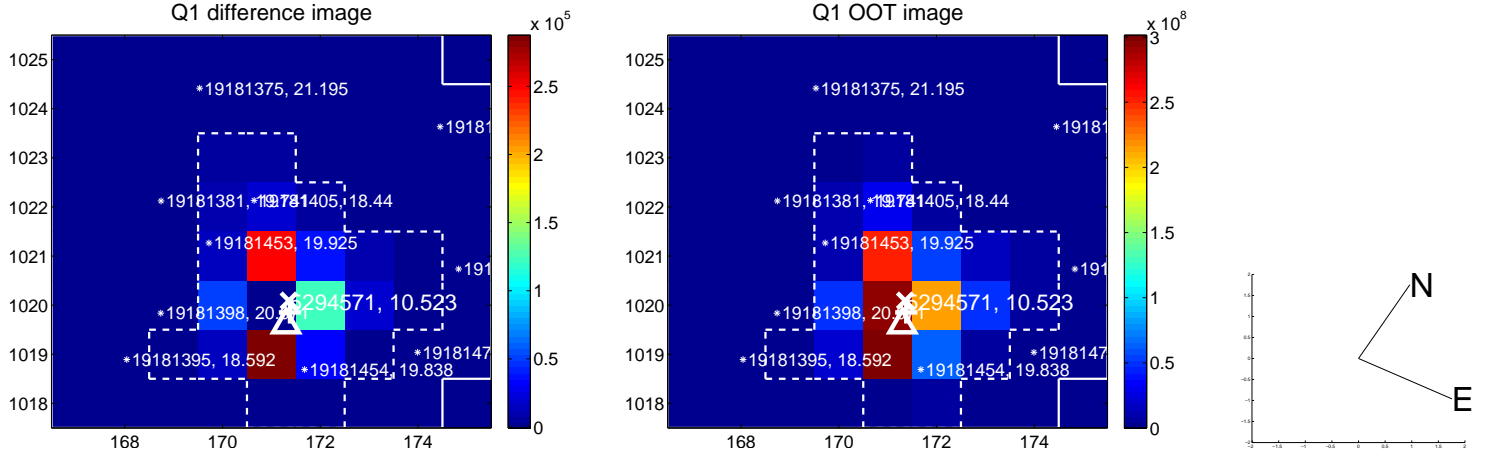
The direct PRF centroid is offset from the target star catalog position by about 0.87 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.983 ± 0.461	2.13	0.313 ± 0.210	-0.932 ± 0.422
PRF-fit source offset from KIC position	1.520 ± 0.508	2.99	0.649 ± 0.259	-1.374 ± 0.448
photometric centroid source offset	—	—	—	—

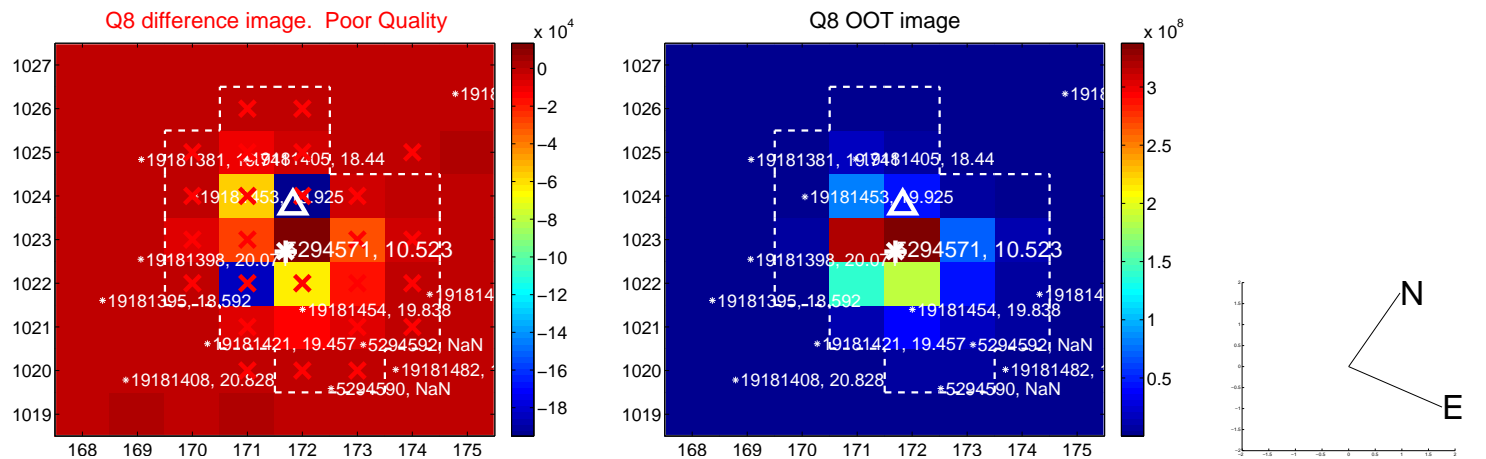
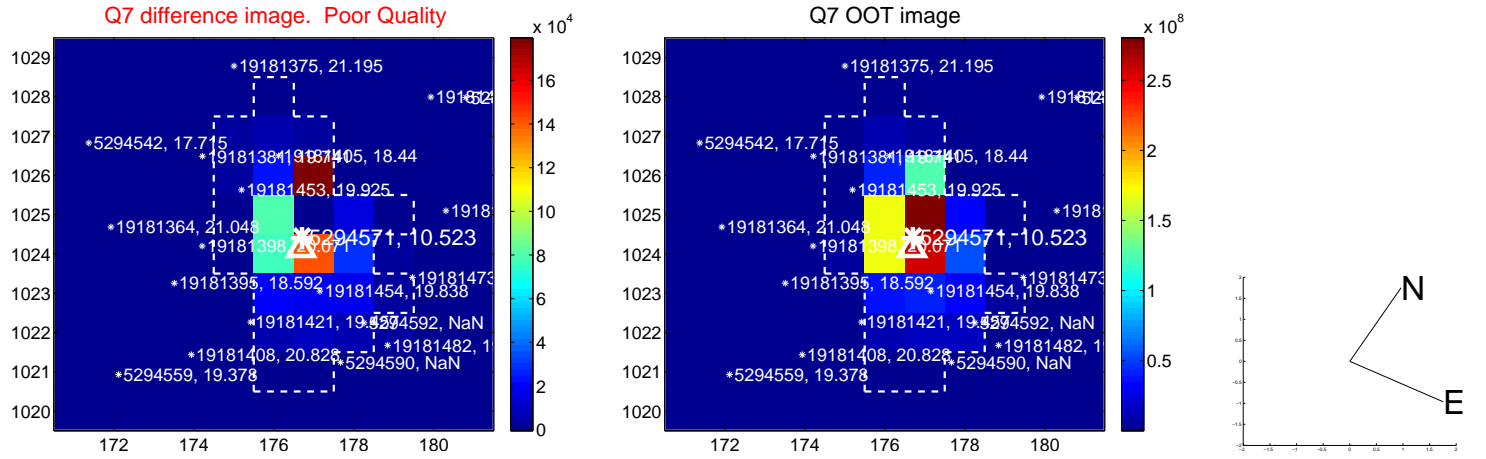
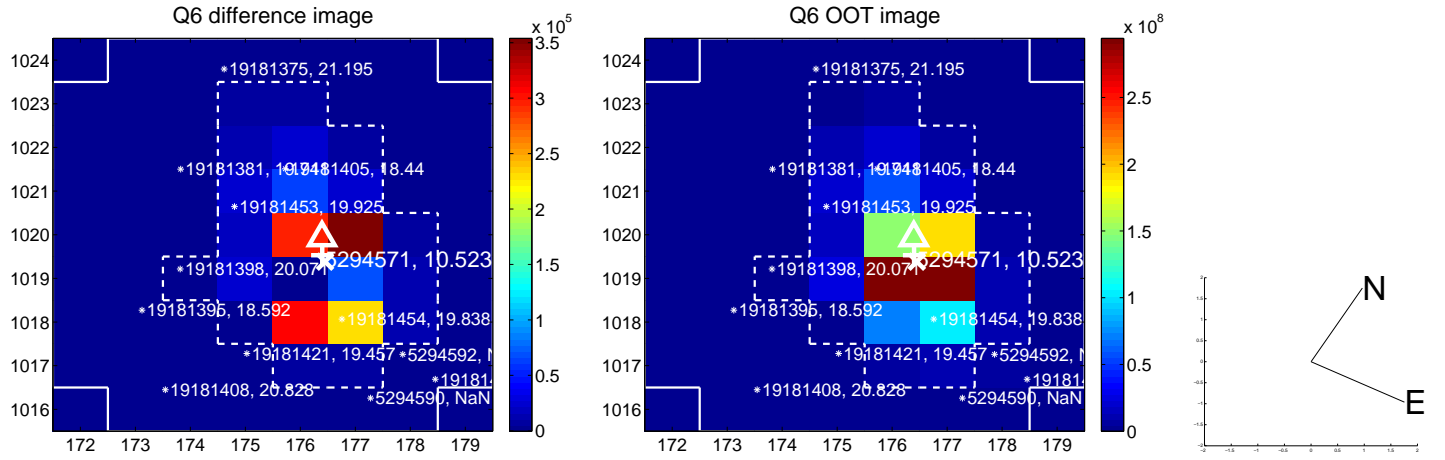
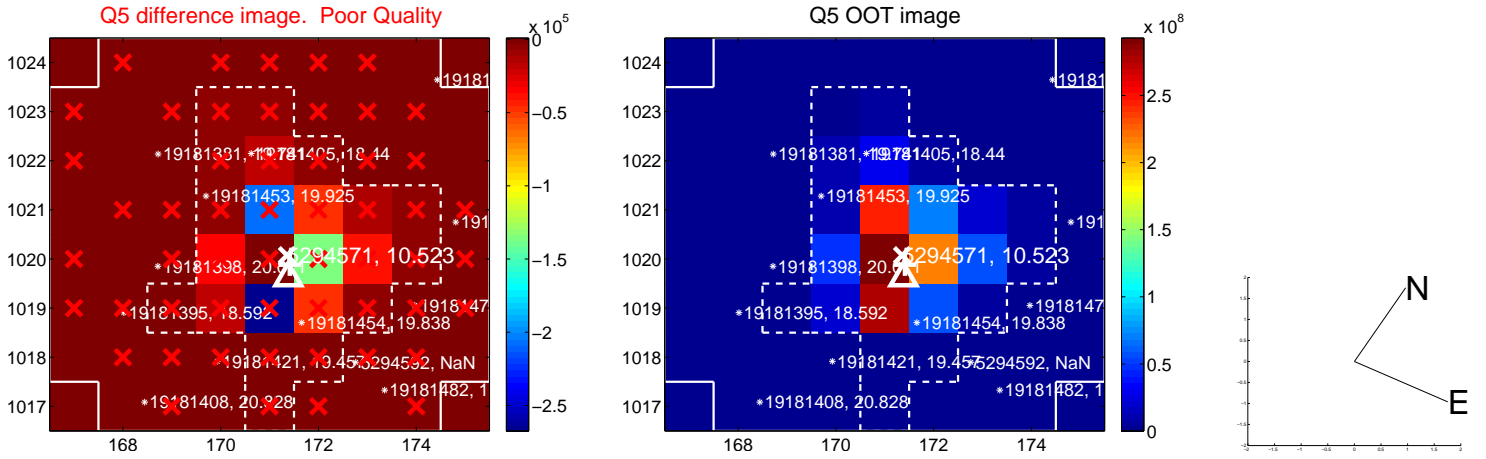


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

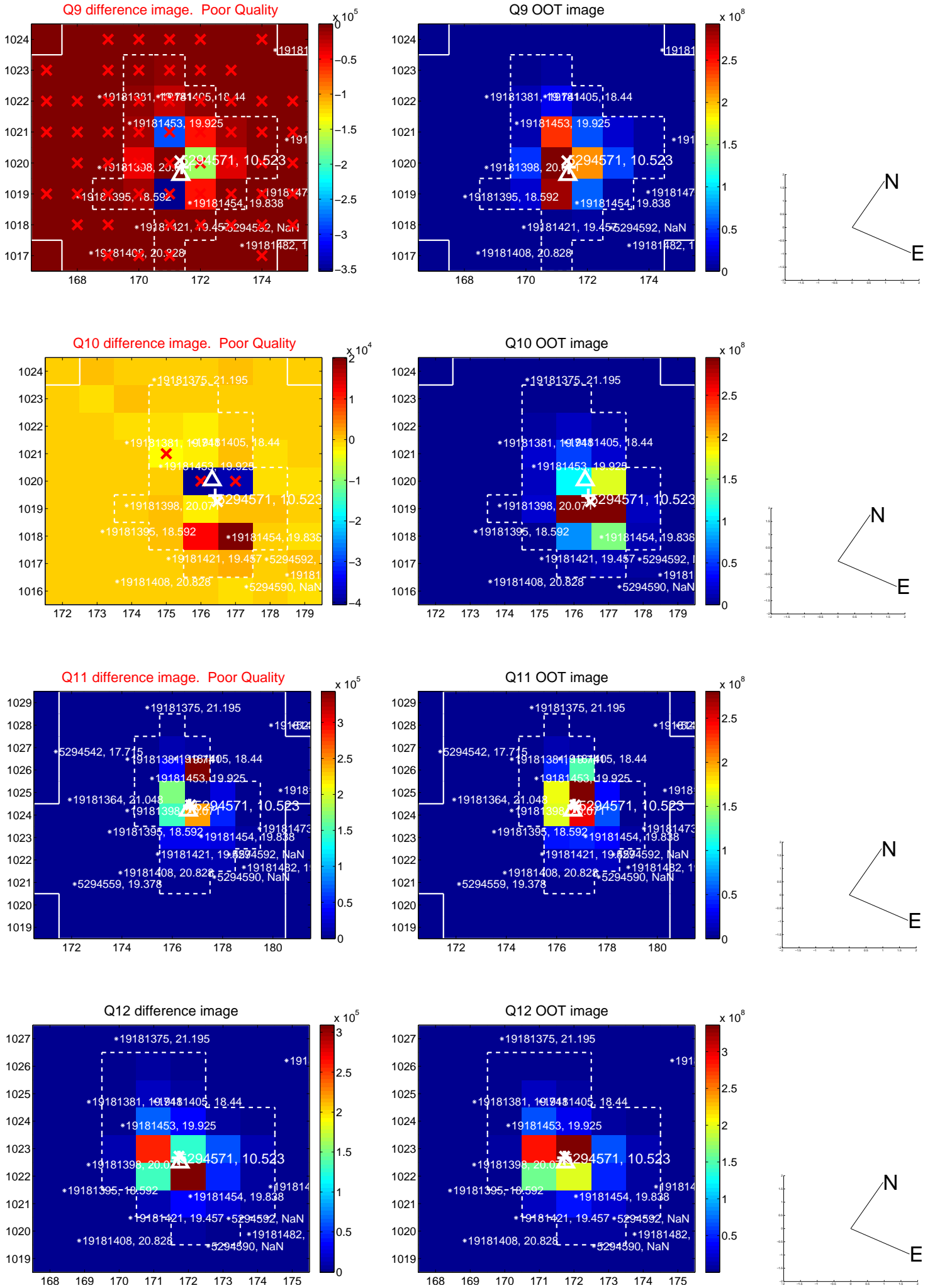
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



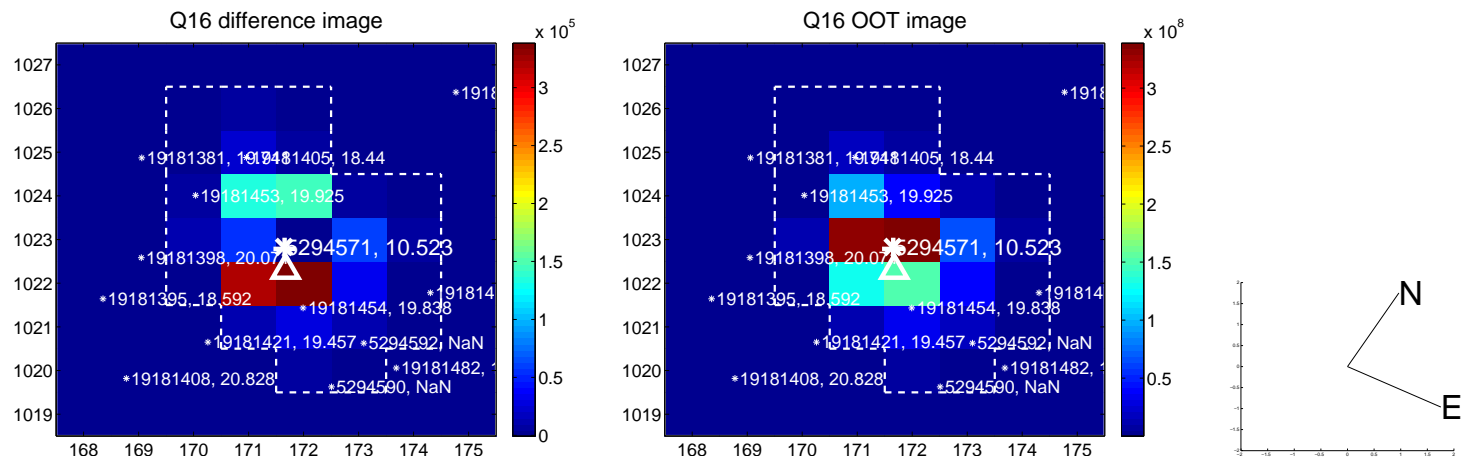
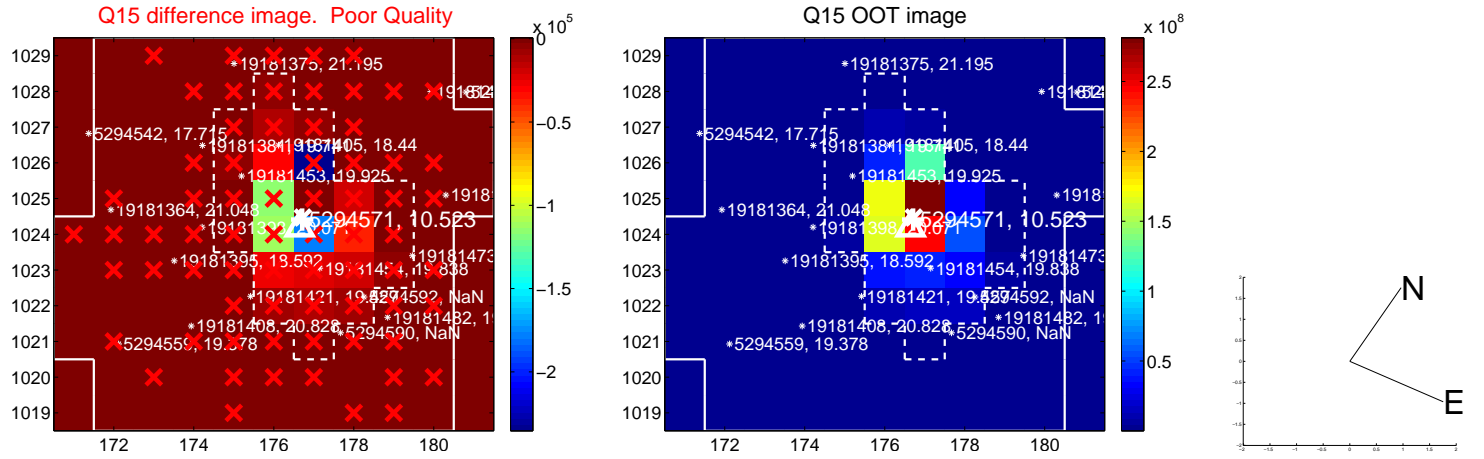
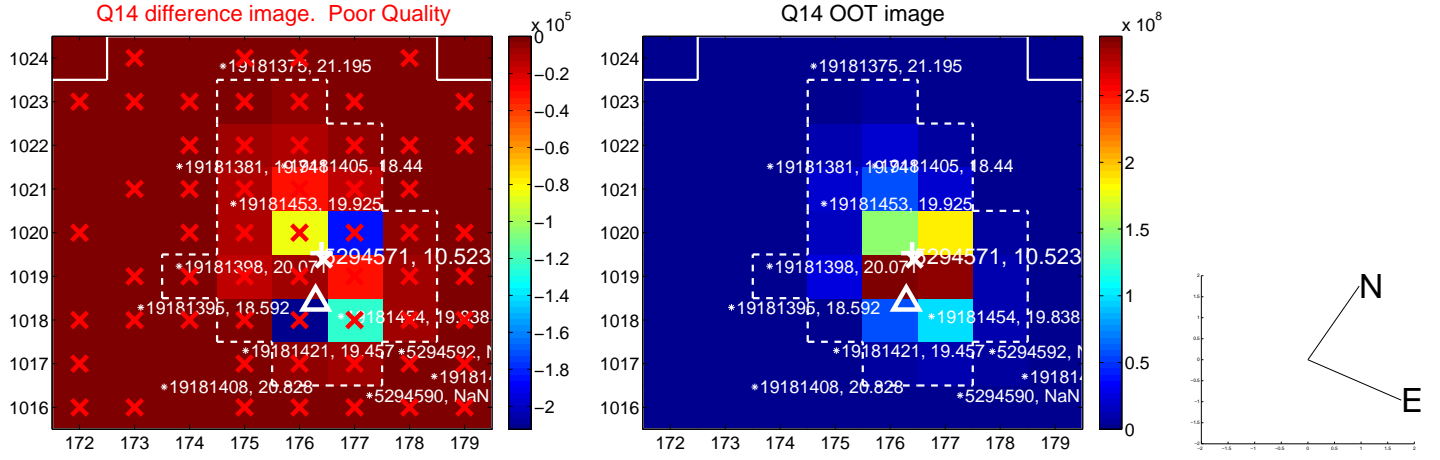
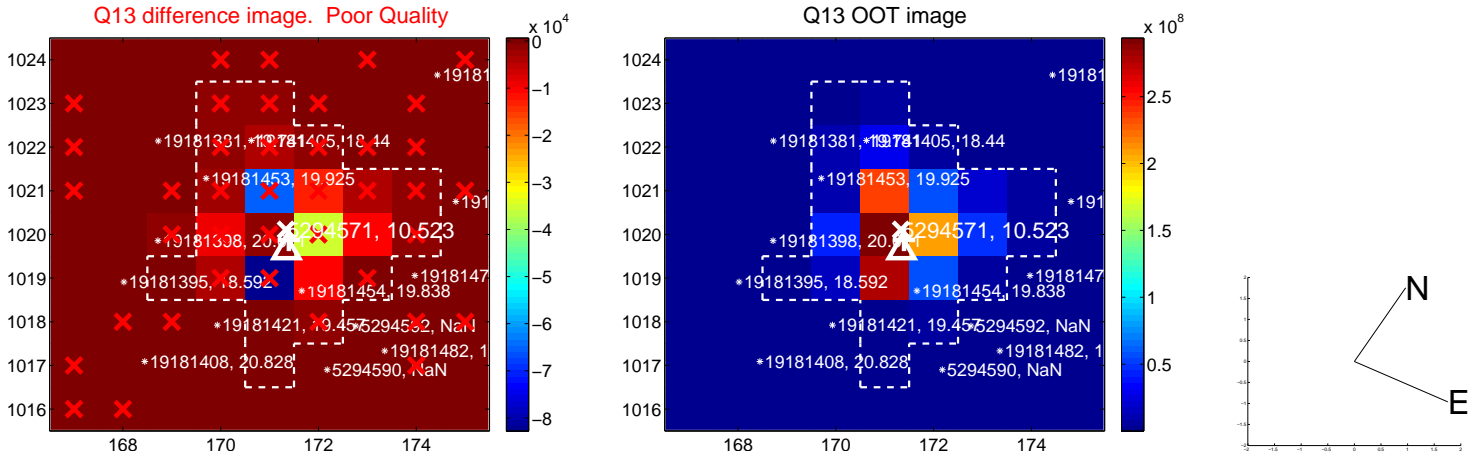
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



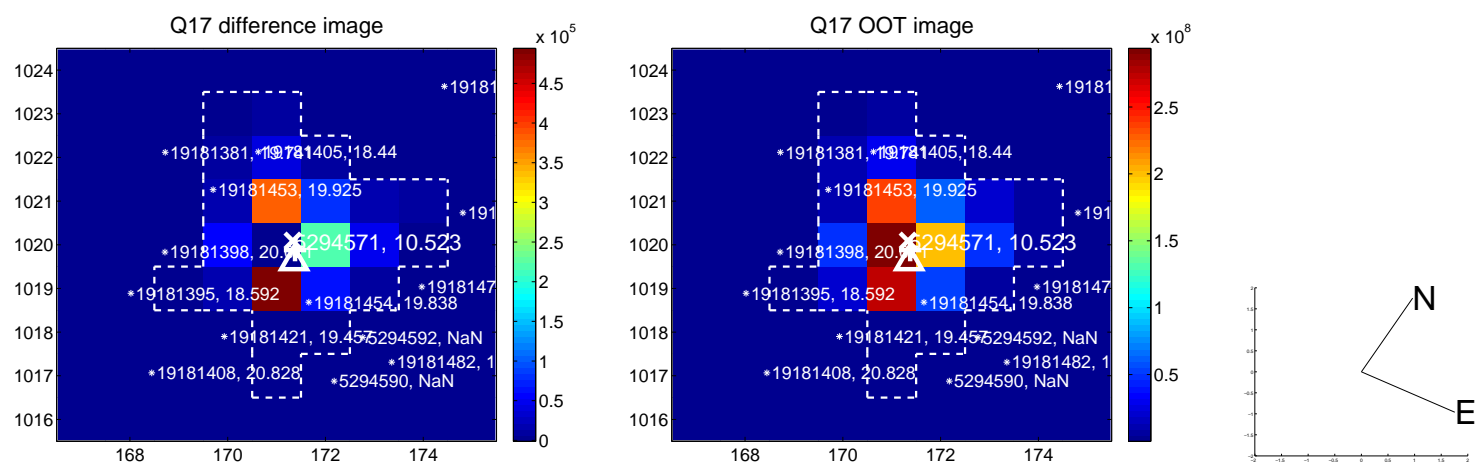
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

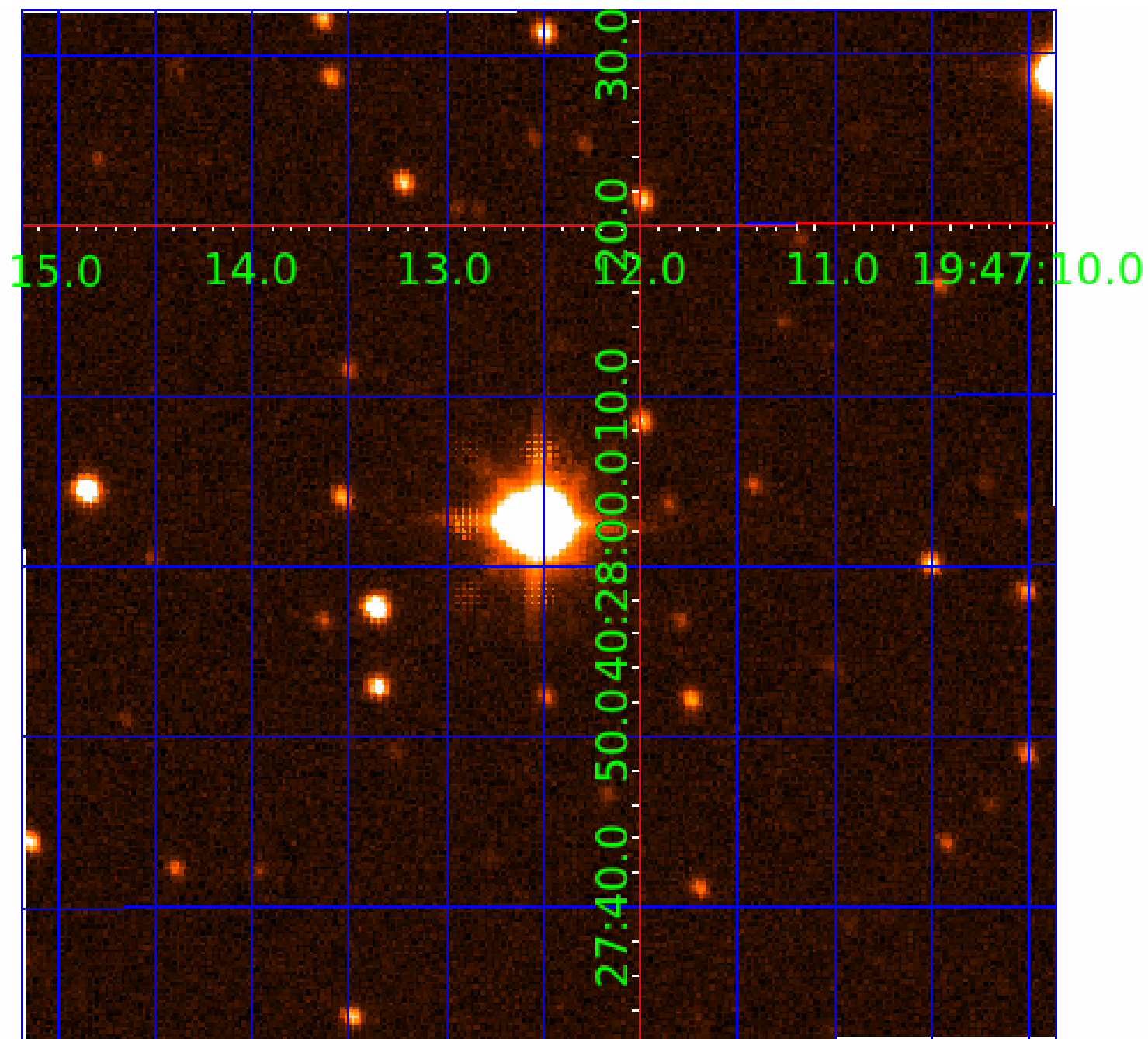


folded centroid time series figure for this object.



UKIRT Image

Declination



KIC 005294571

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})
005294571-01	OBS	No	0.919779	132.132304	1.5	0.765	10.9	0.4	10.32	6932	1.69	0.00
005294571-02	OBS	No	0.921182	132.122511	12.6	5.687	9.3	1.6	10.32	6932	3.77	0.00
005294571-03	OBS	No	118.675541	199.986190	1570.4	9.608	9.7	5.1	10.32	6932	48.74	449.11
005294571-04	OBS	No	18.646218	139.933167	964.7	4.491	9.0	9.0	10.32	6932	60.13	5297.25
005294571-05	OBS	No	84.819452	191.478039	483.3	6.919	8.5	2.6	10.32	6932	25.78	702.82
005294571-08	OBS	No	36.828276	167.368486	56.5	5.000	8.5	-1.0	10.32	6932	7.81	2137.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005294571-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_SATURATED
005294571-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—CENT_SATURATED
005294571-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005294571-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005294571-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST
005294571-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

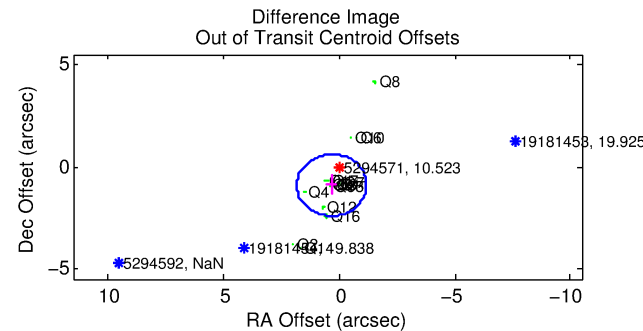
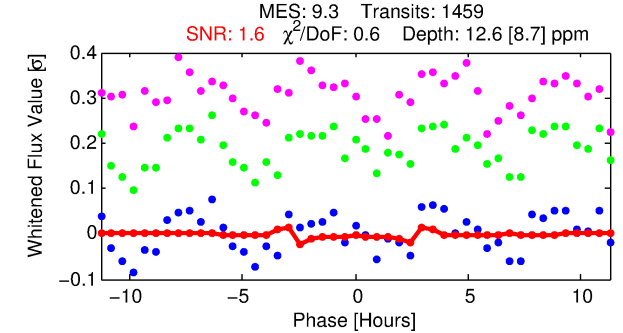
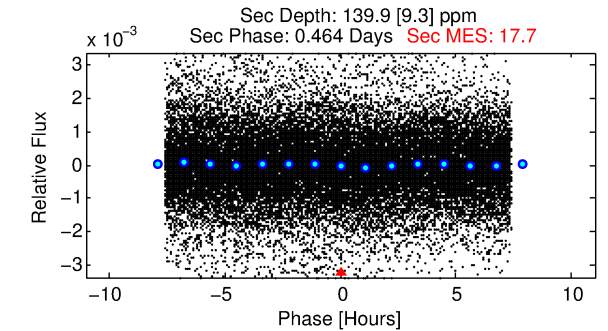
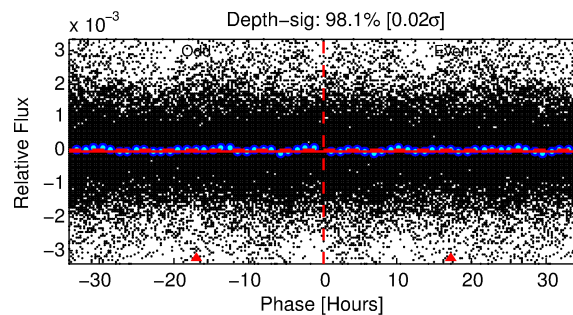
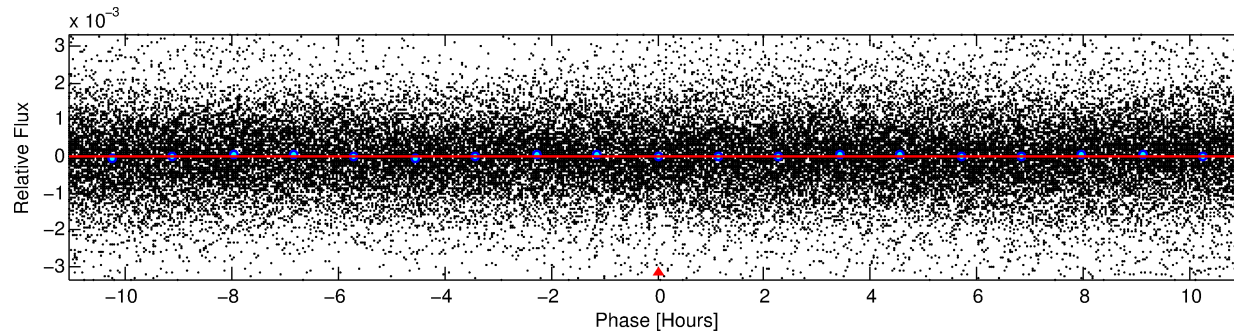
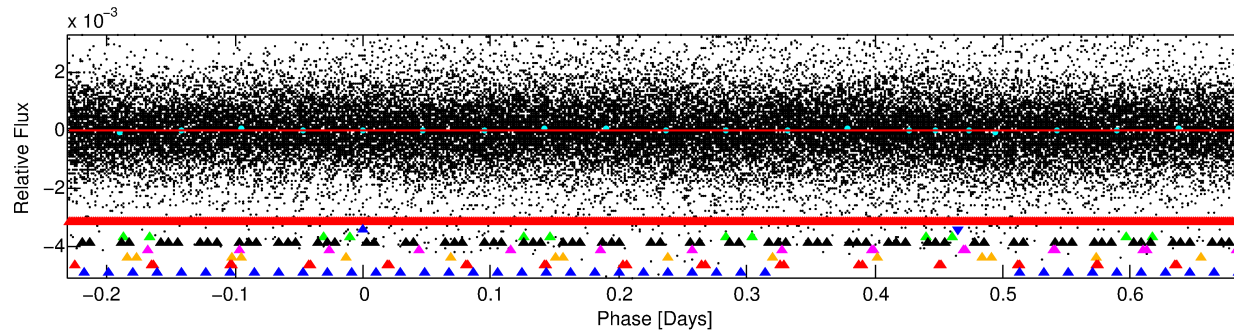
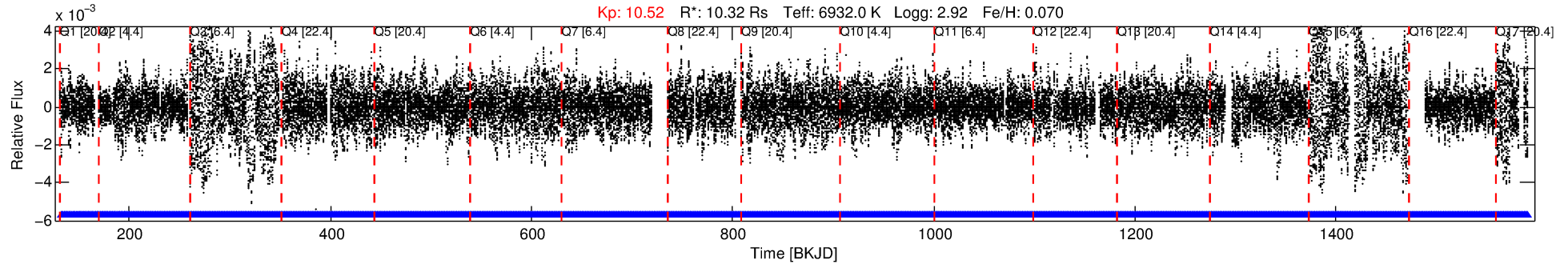
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005294571-02

No Significant Match Found

DV One-Page Summary

KIC: 5294571 Candidate: 2 of 8 Period: 0.921 d



DV Fit Results:

Period = 0.92118 [0.00005] d
Epoch = 132.1225 [0.0065] BKJD
Rp/R* = 0.0033 [0.0020]
a/R* = 1.32 [1.76]
b = 0.46 [5.43]
Seff = N/A
Teq = N/A
Rp = 3.77 [3.24] Re
a = N/A
Ag = N/A
Teff = N/A

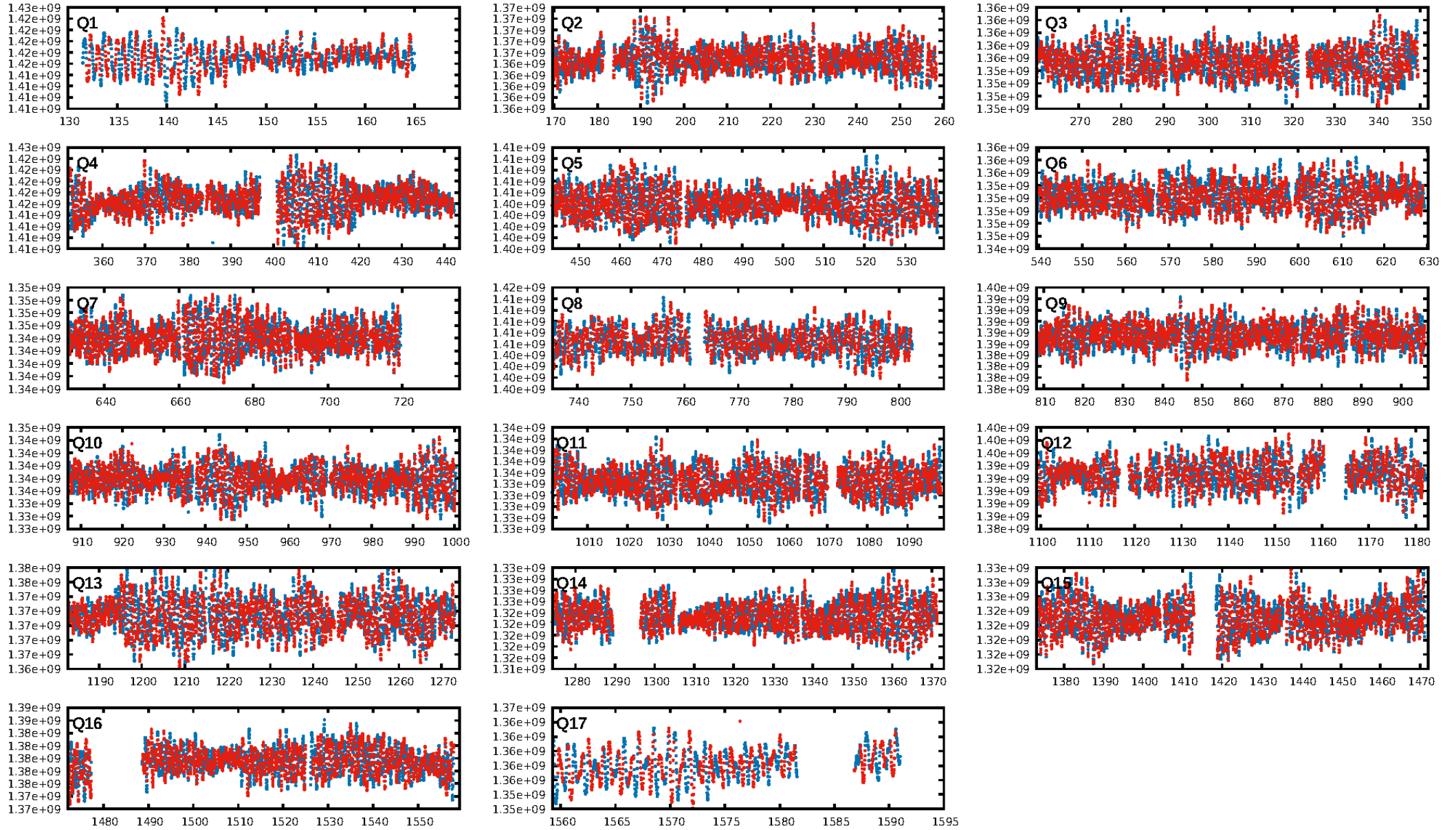
DV Diagnostic Results:

ShortPeriod-sig: 0.5% [0.01 σ]
LongPeriod-sig: 100.0% [58.70 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1395/1395]
GhostDiagnostic-chr: -0.3216
Centroid-sig: 0.1%
Centroid-so: 2.592 arcsec [2.54 σ]
OotOffset-rm: 0.963 arcsec [1.92 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 1.662 arcsec [3.23 σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.35 [6/17]
DiffImageOverlap-fno: 0.00 [0/17]

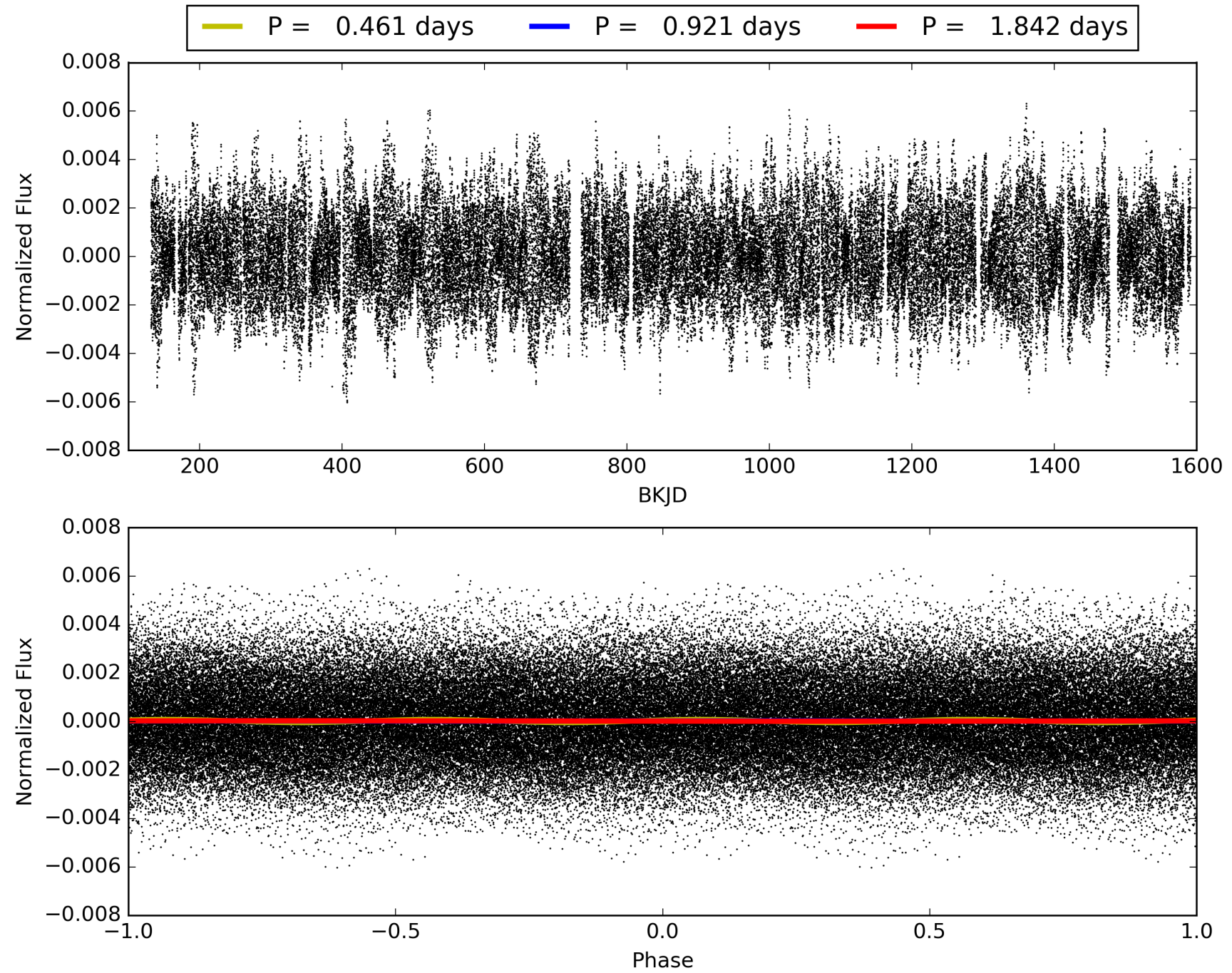
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:02:07 Z

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

TCE 005294571-02, PDC Light Curves

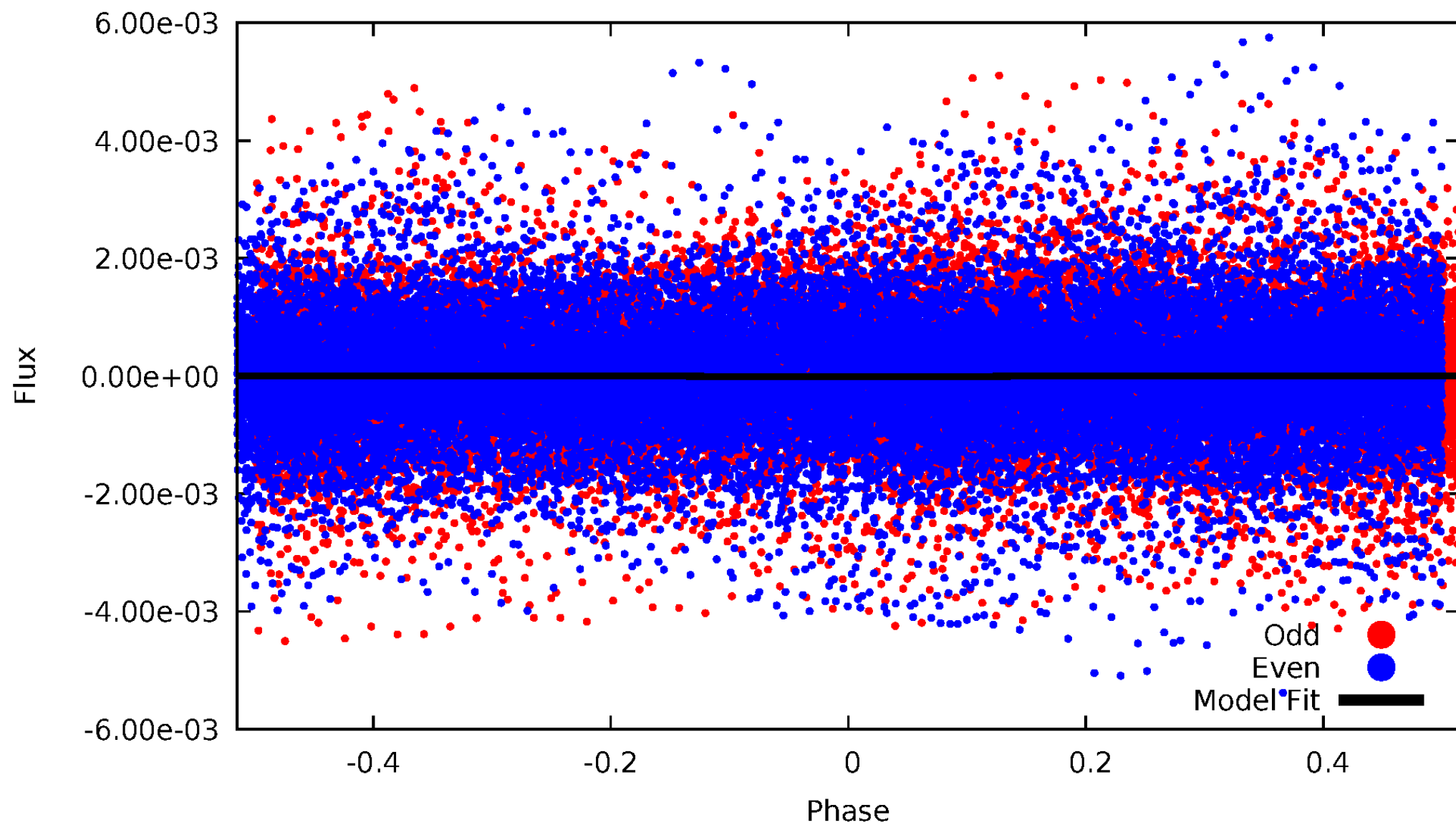


TCE 005294571-02



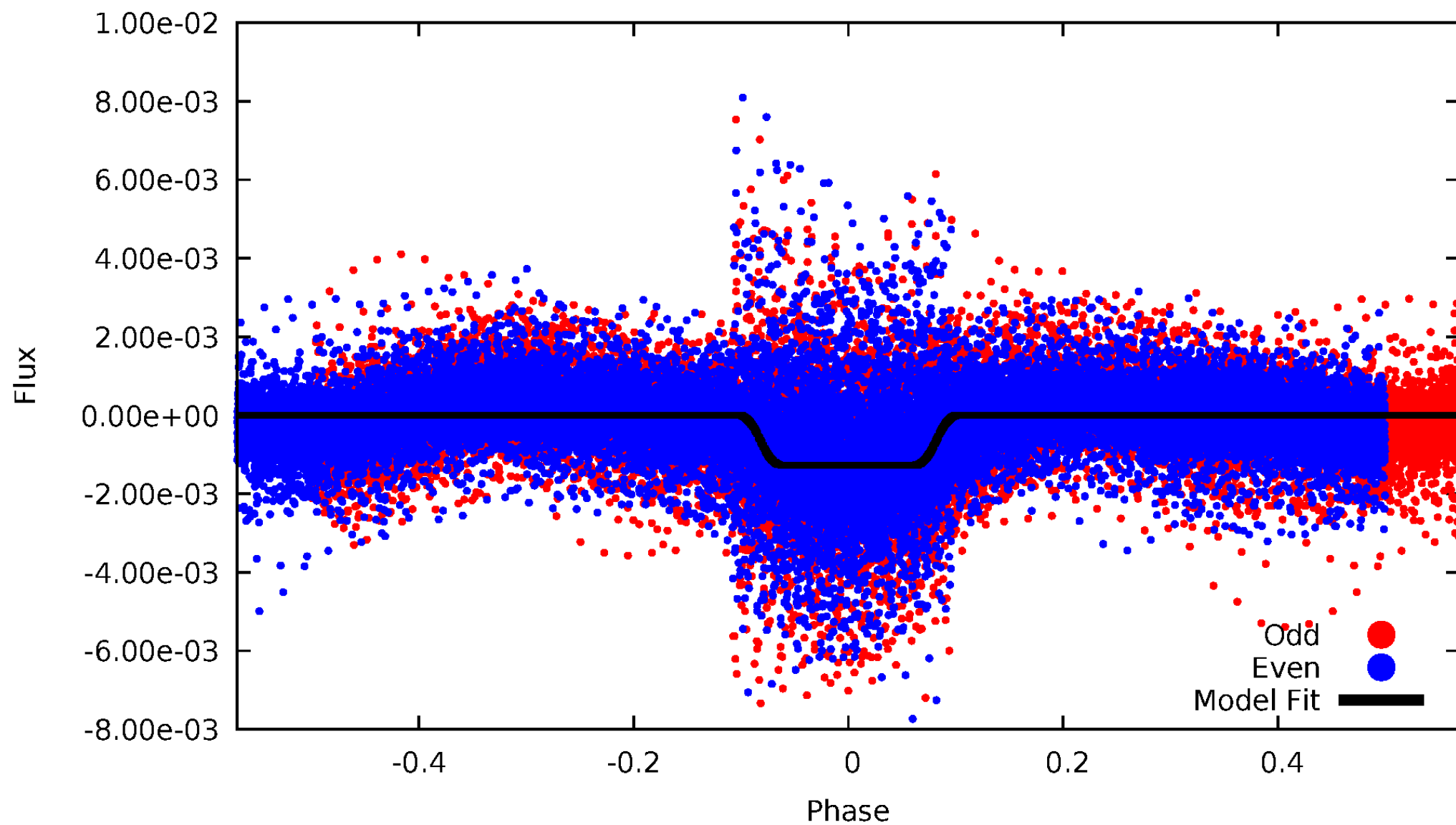
DV Odd/Even

TCE 005294571-02



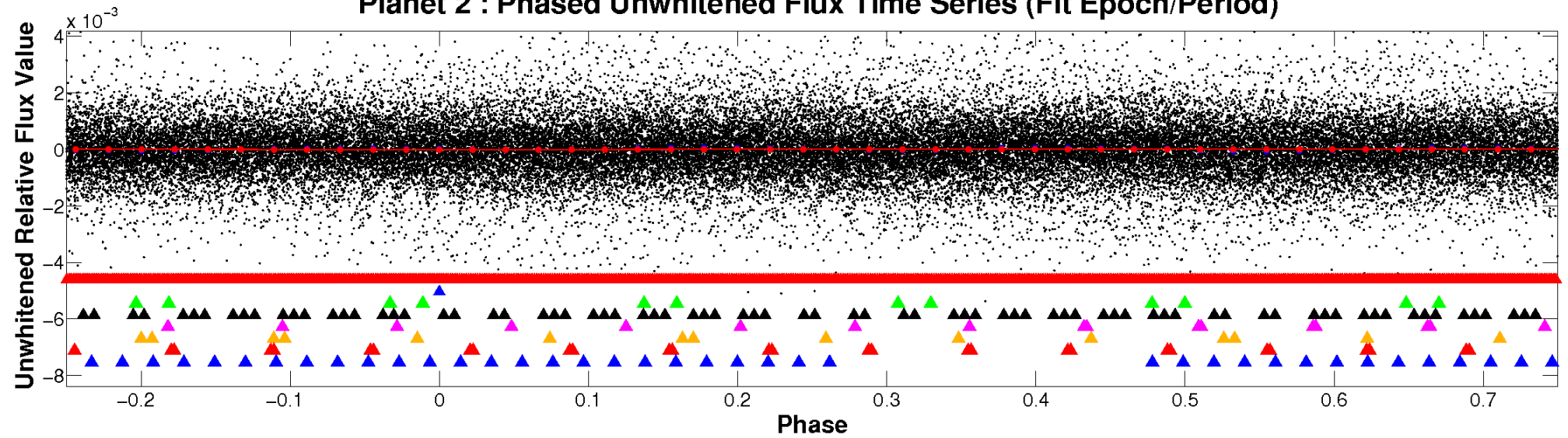
ALT Odd/Even

TCE 005294571-02

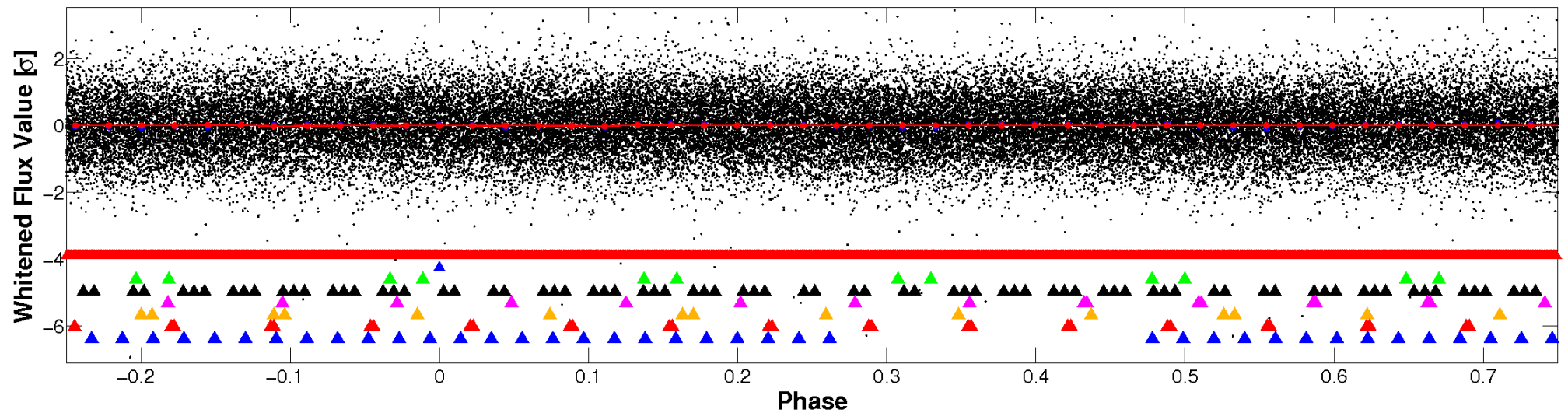


Non-Whitened Vs. Whitened Light Curve

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

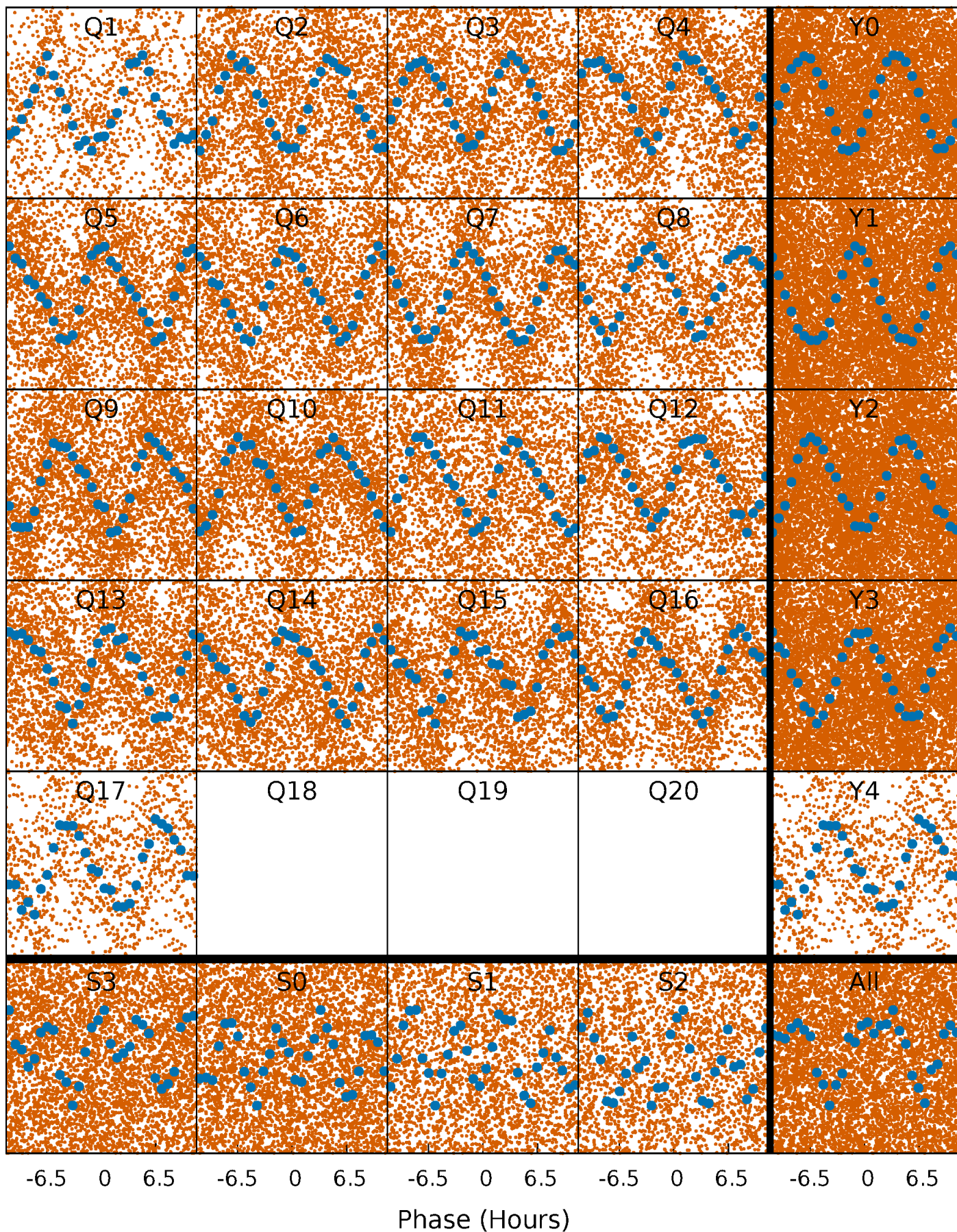


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



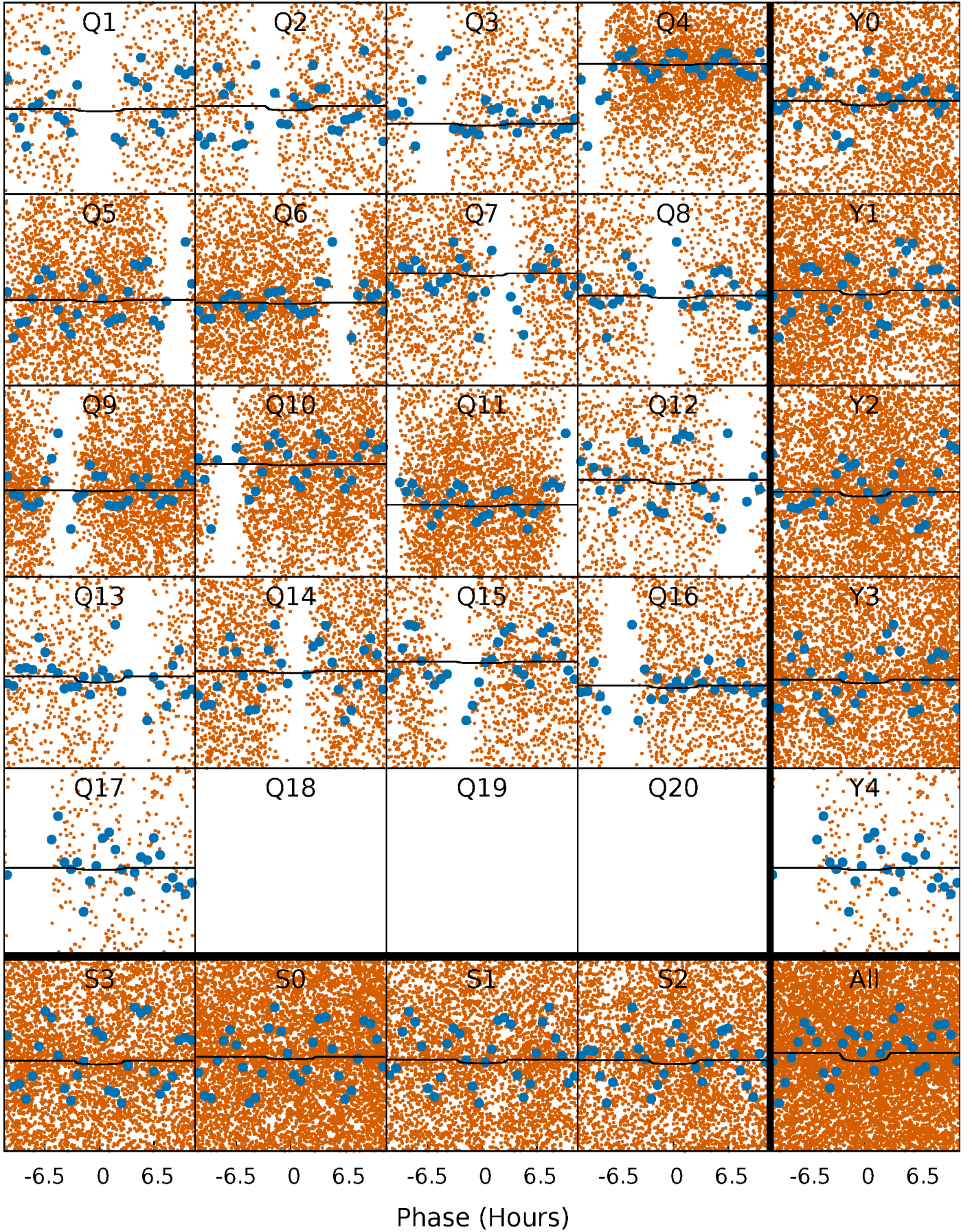
PDC Quarter-Phased Transit Curves

TCE 005294571-02 P= 0.921182 Days $T_0=132.122511$ (BKJD)



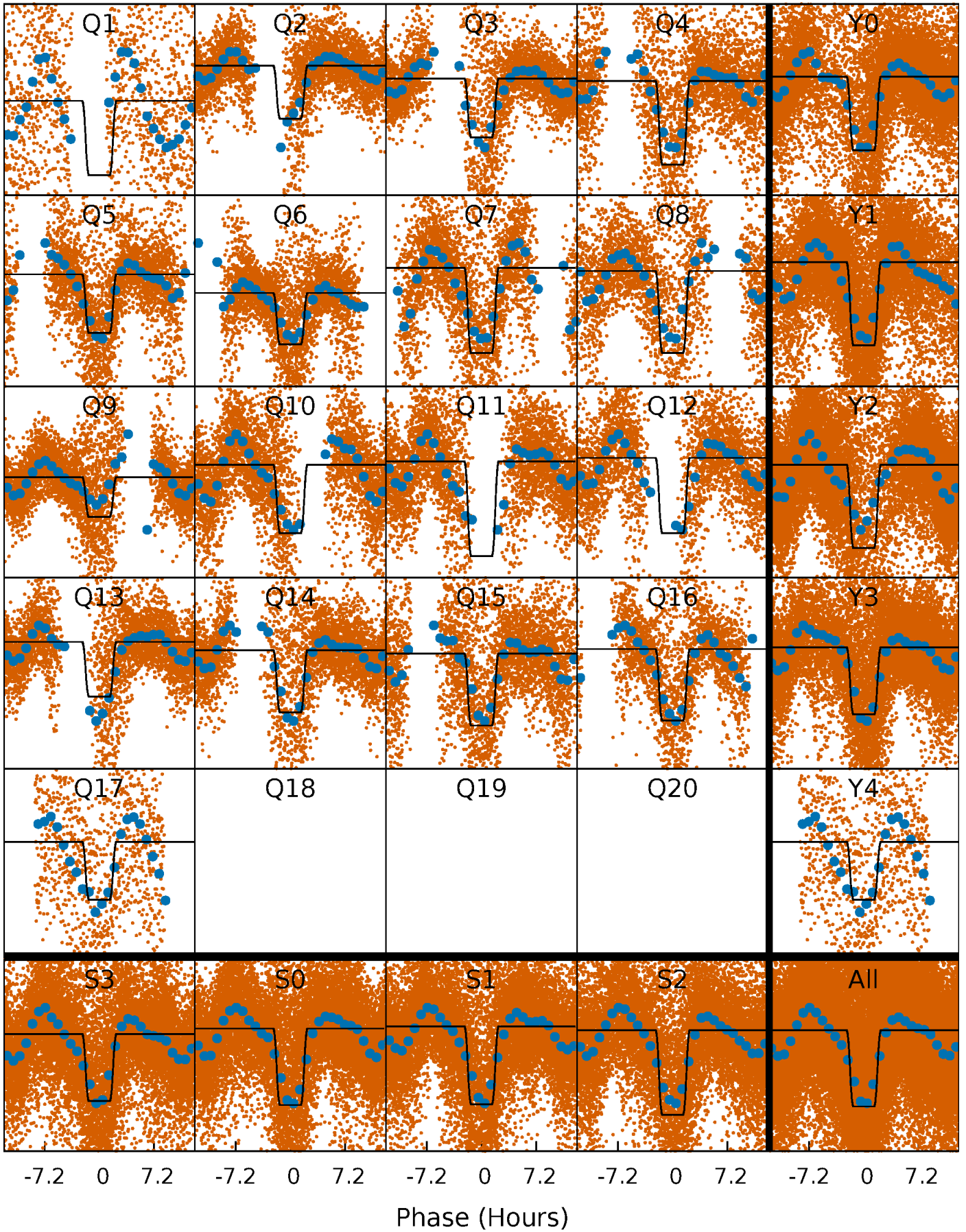
DV Quarter-Phased Transit Curves

TCE 005294571-02 P= 0.921182 Days $T_0=132.122511$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

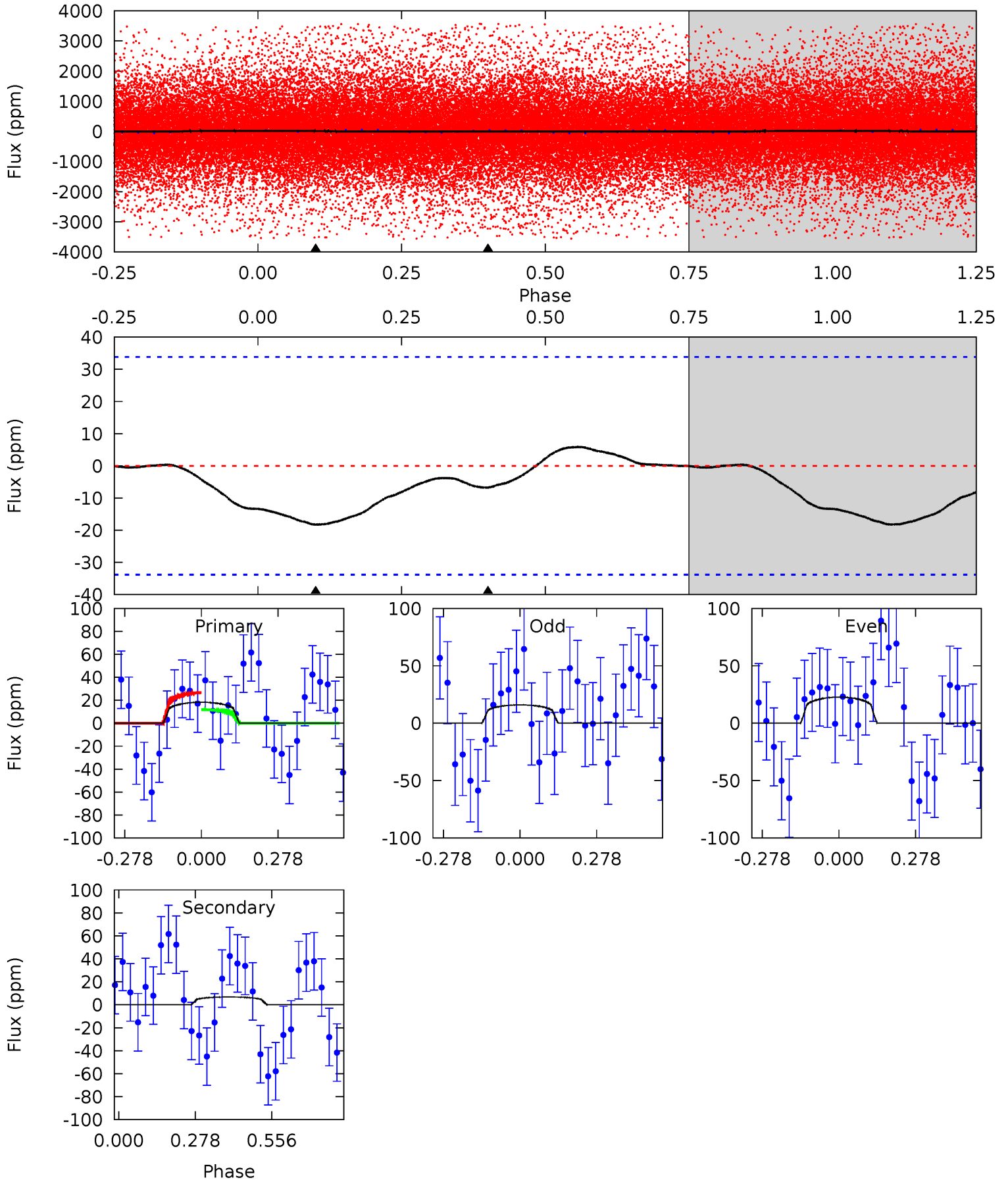
TCE 005294571-02 P= 0.920634 Days $T_0=132.171080$ (BKJD)



DV Model-Shift Uniqueness Test

005294571-02, $P = 0.921182$ Days, $E = 131.201329$ Days

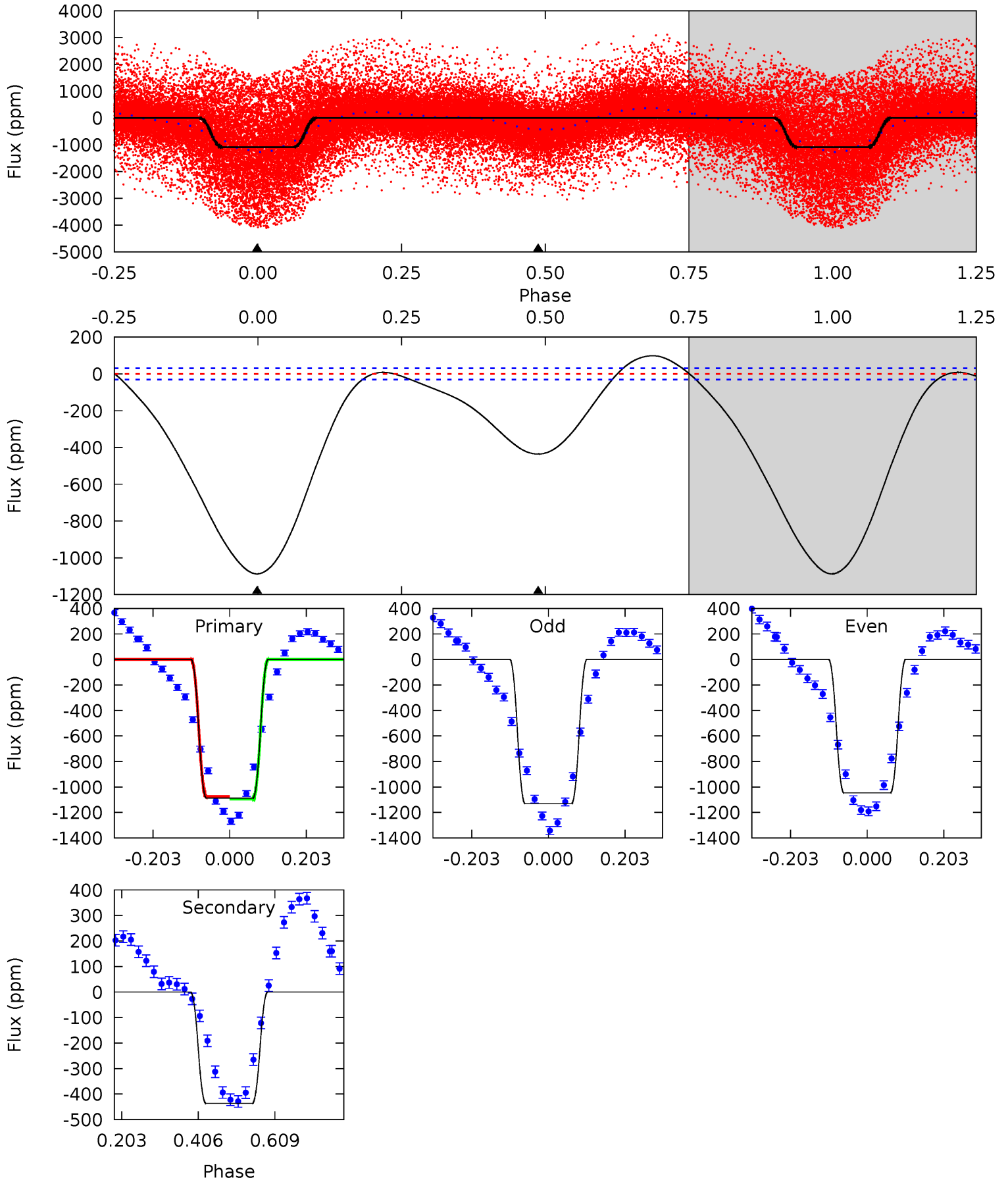
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.35	0.87	0	0	4.35	1.09	0.04	2.35	2.35	0.87	0.87	0.43	1.09	0.24	0.91



Alt Model-Shift Uniqueness Test

005294571-02, P = 0.920634 Days, E = 131.250446 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
154.9	62.1	0	0	4.41	1.27	7.72	154.9	154.9	62.1	62.1	6.01	1.00	0.08	1.48



Stellar Parameters For KIC 005294571

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6932^{+144}_{-288}	$2.923^{+0.630}_{-0.070}$	$0.070^{+0.200}_{-0.500}$	$10.322^{+1.100}_{-6.232}$	$3.255^{+0.072}_{-1.372}$	$0.004^{+0.042}_{-0.001}$
	+2%/-4%	+22%/-2%	+286%/-714%	+11%/-60%	+2%/-42%	+1019%/-23%
Source	PHO1	FLK73	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 005294571-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-7 ± 8	$3.22^{+2.37}_{-1.82}$	7905^{+610}_{-1260}	-5035^{+13546}_{-1725}	$0.179^{+1.095}_{-0.218}$
Alt.	-436 ± 7	$36.12^{+6.43}_{-11.73}$	7916^{+587}_{-1290}	-5610^{+2033}_{-604}	$0.133^{+0.133}_{-0.033}$

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

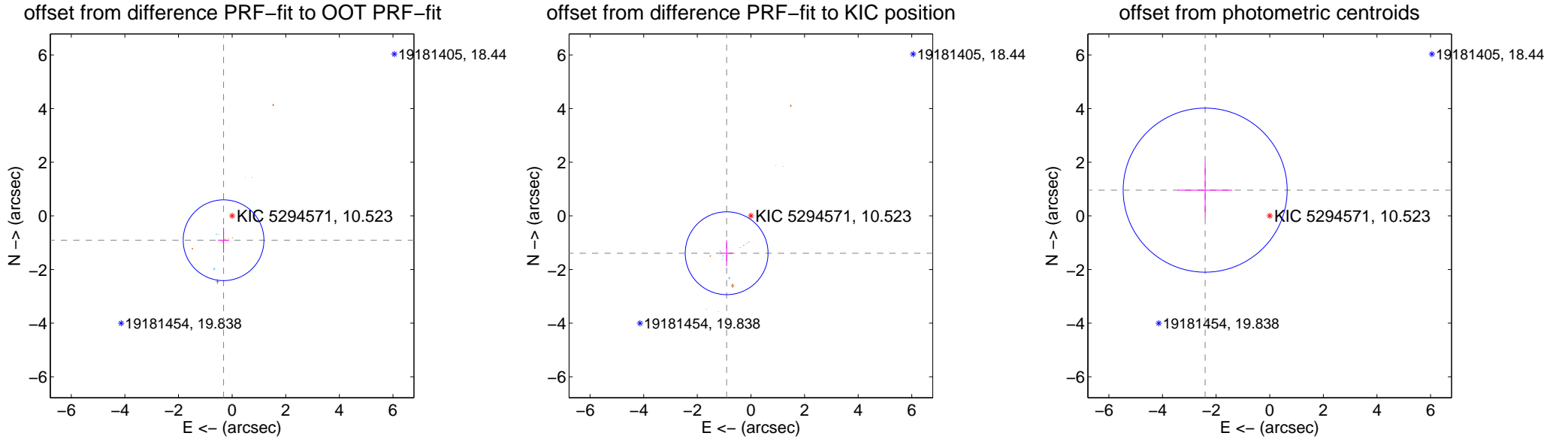
DV Centroid Data

Supplemental centroid analysis for 005294571-02. **Kepler magnitude: 10.52**. Transit SNR 1.58

There are 6 quarters with good PRF difference image offsets

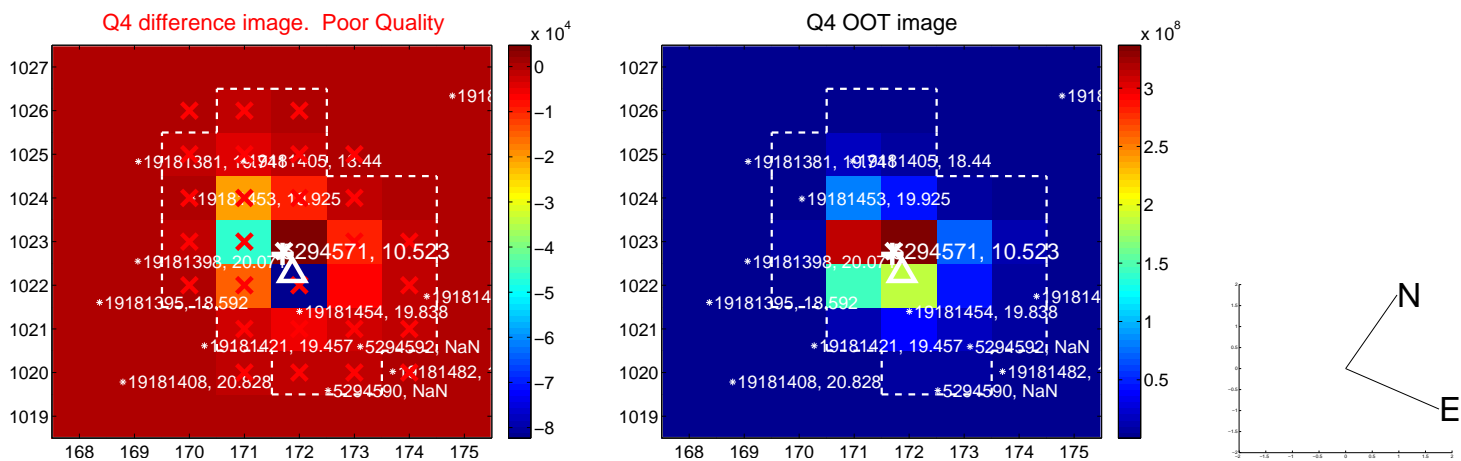
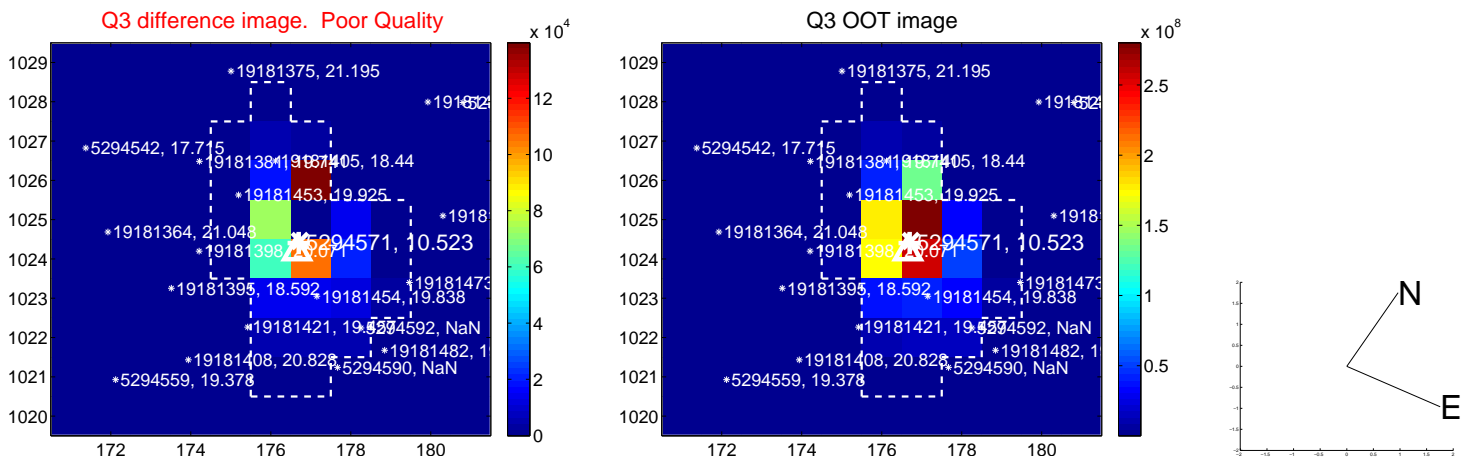
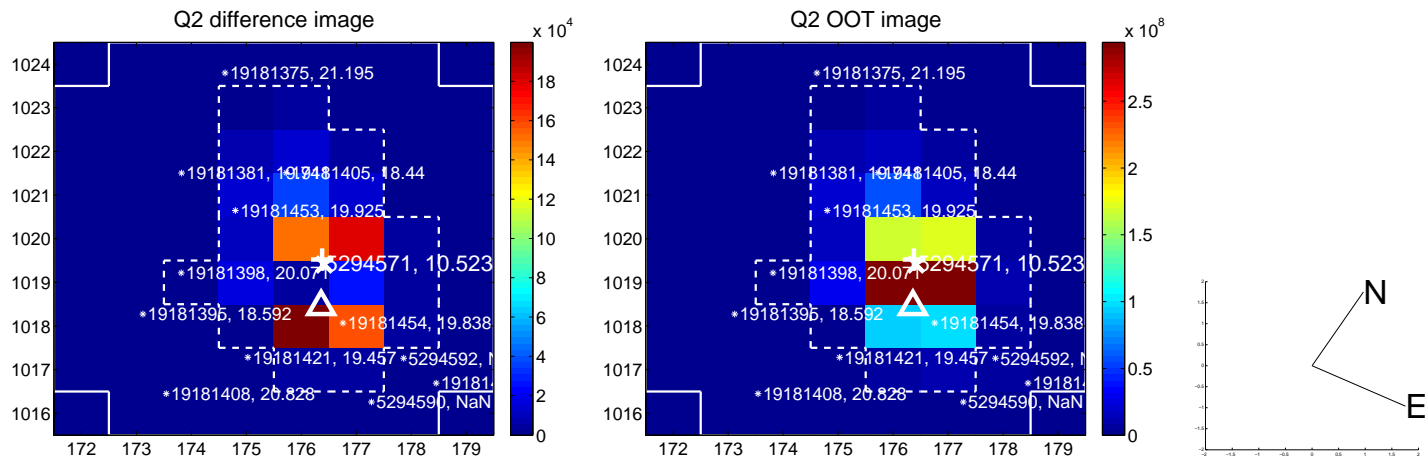
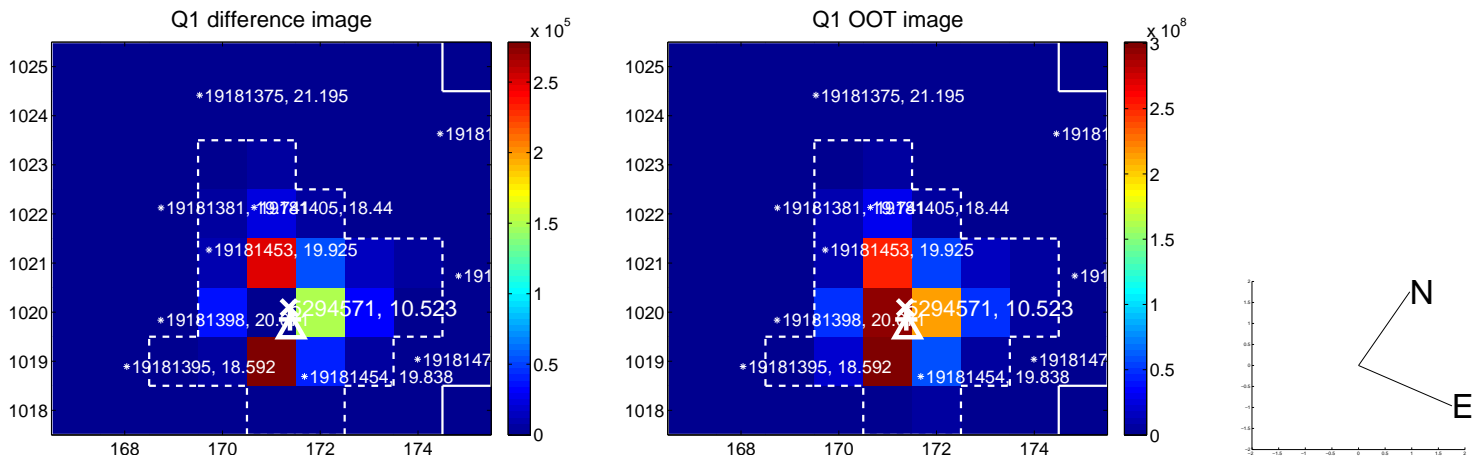
The direct PRF centroid is offset from the target star catalog position by about 0.84 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.963 ± 0.502	1.92	0.320 ± 0.214	-0.908 ± 0.465
PRF-fit source offset from KIC position	1.662 ± 0.515	3.23	0.906 ± 0.228	-1.393 ± 0.481
photometric centroid source offset	2.59 ± 1.02	2.54	2.41 ± 1.02	0.96 ± 1.04

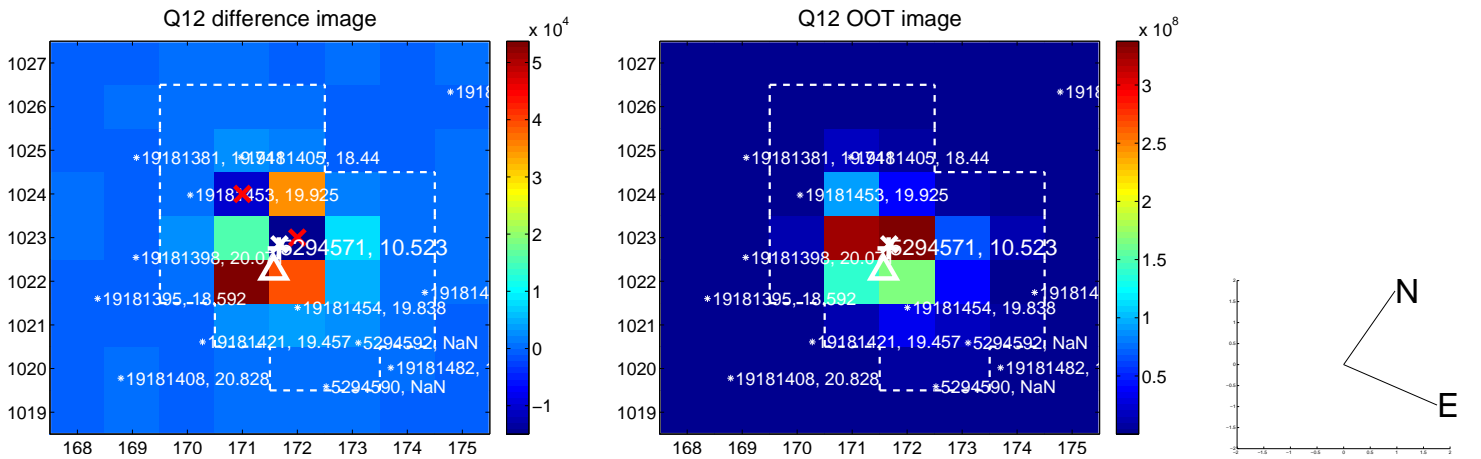
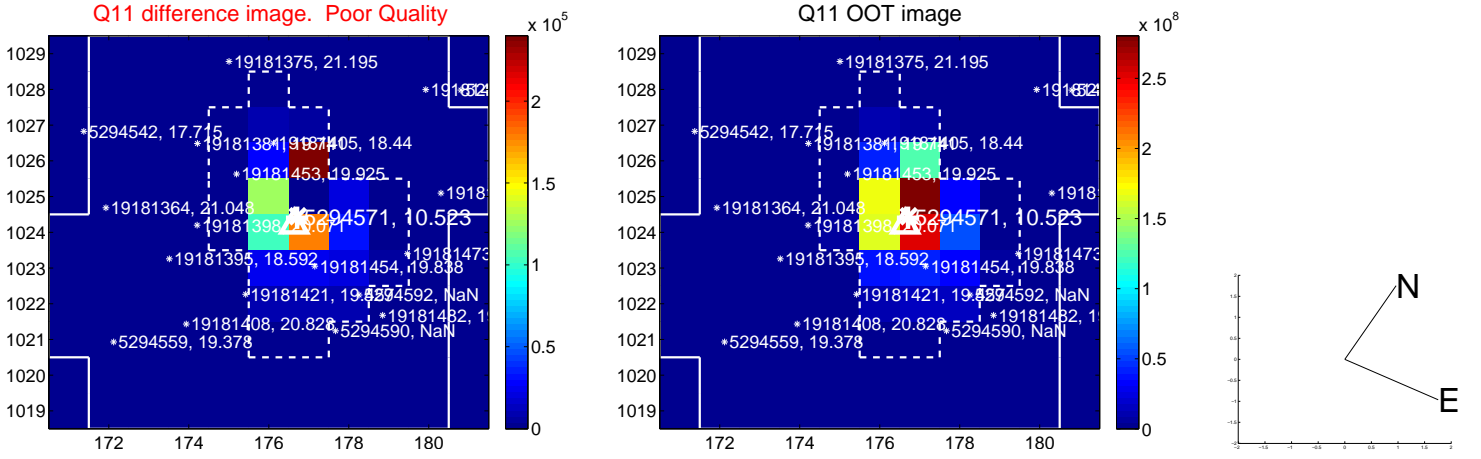
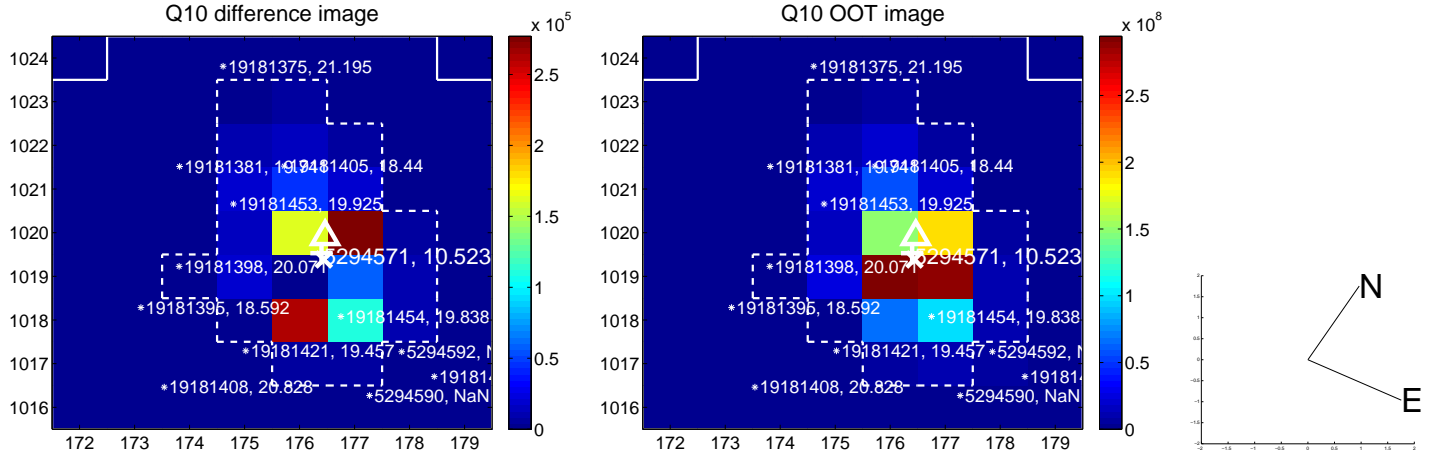
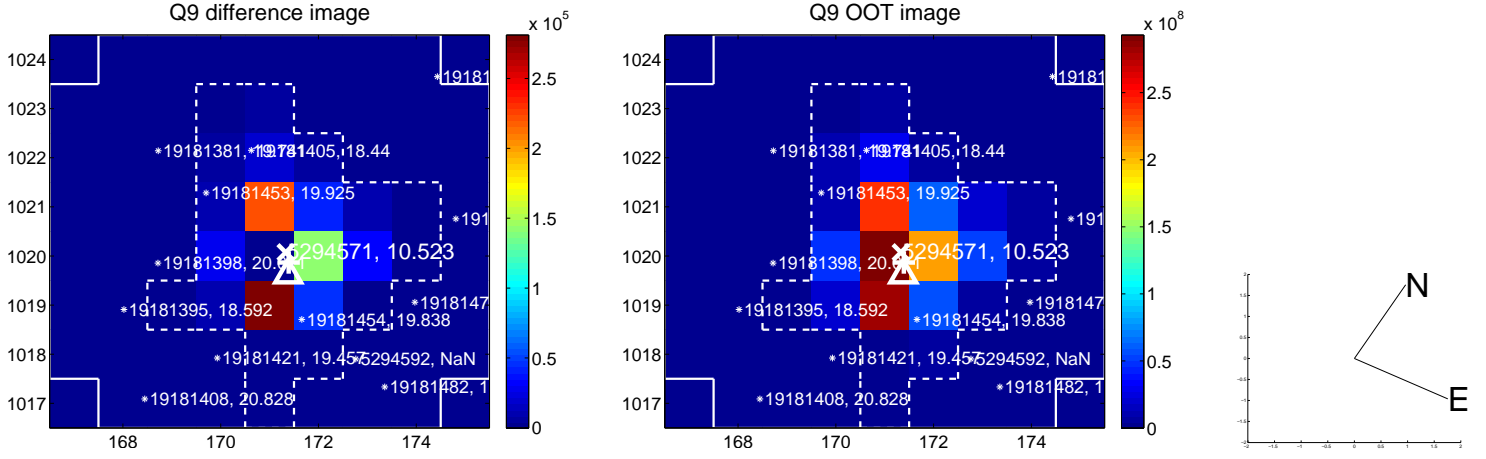


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

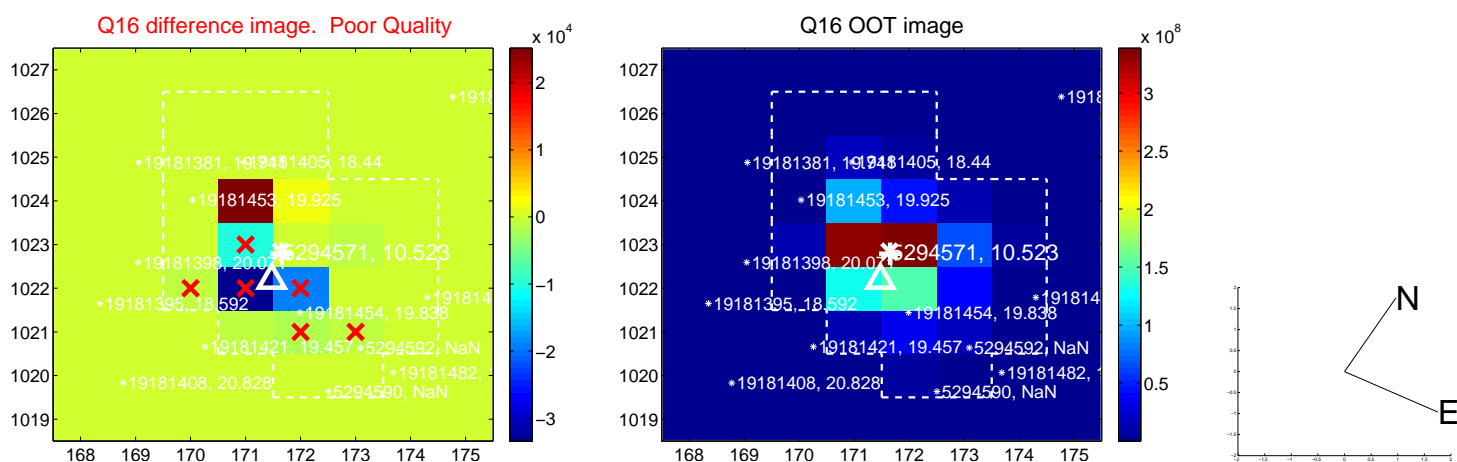
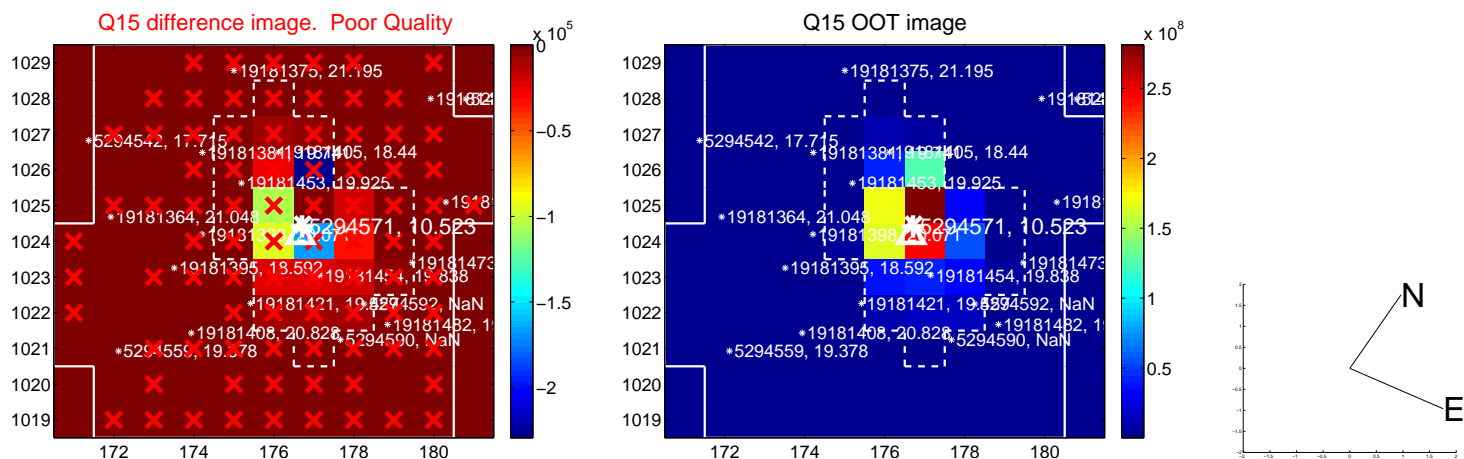
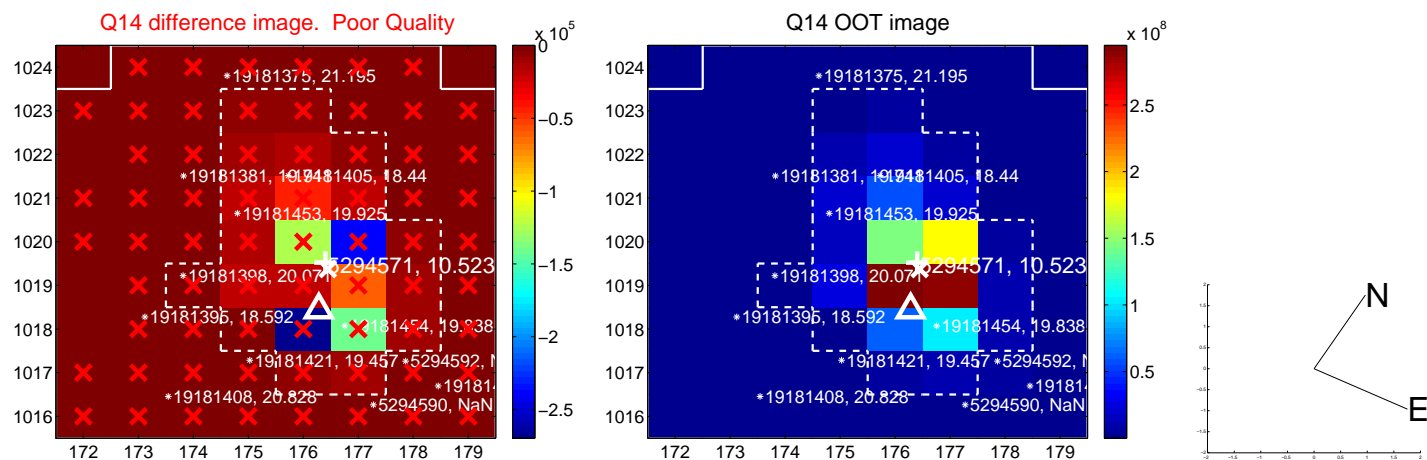
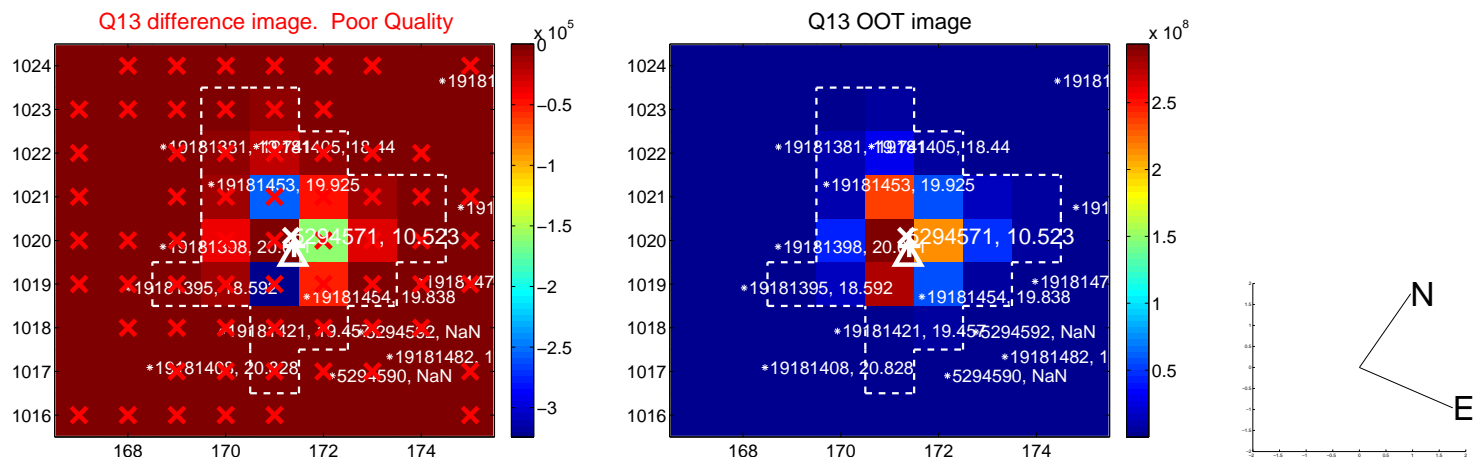
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



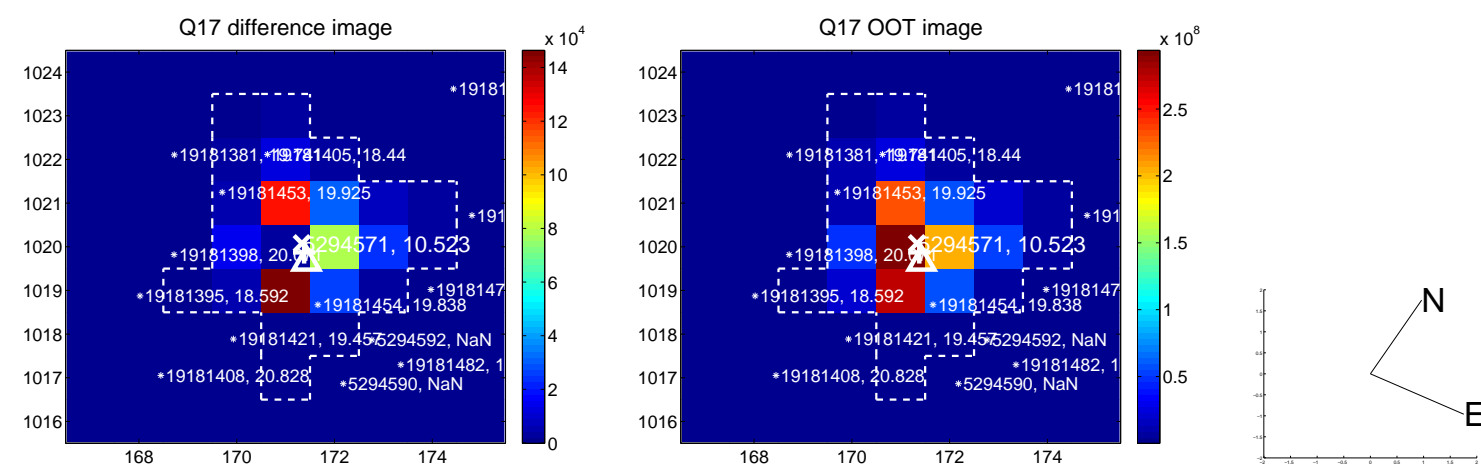
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



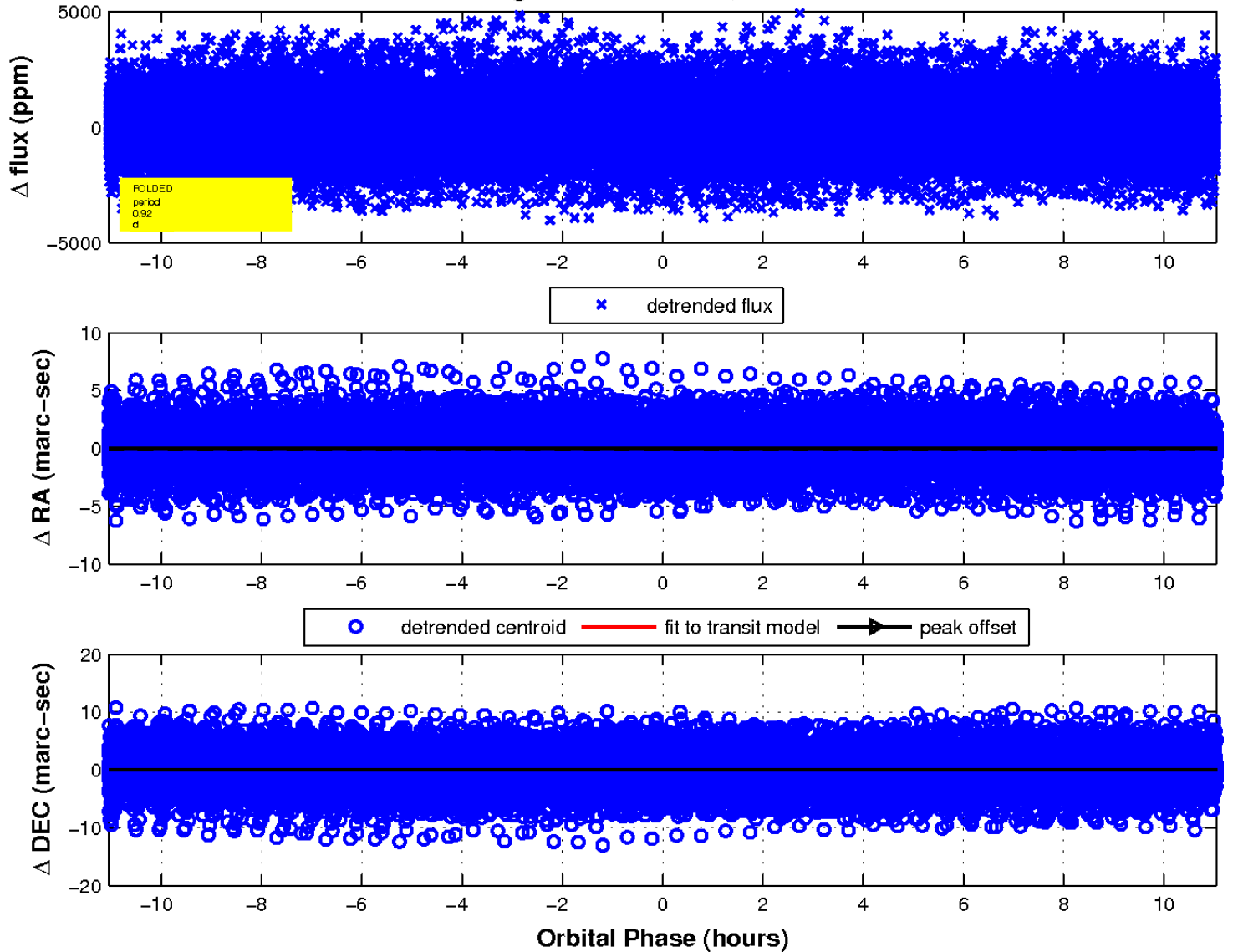
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

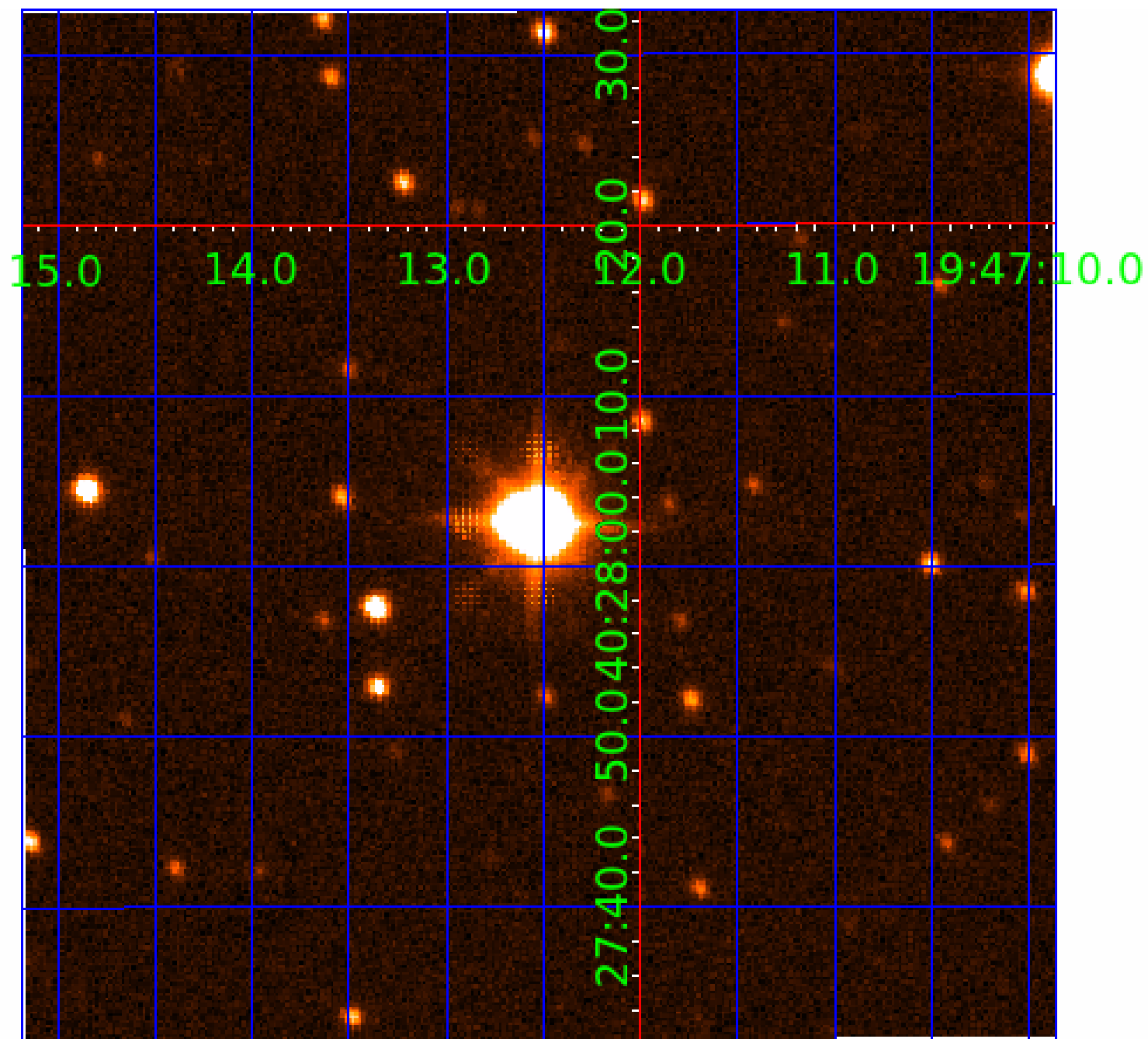


fluxWeightedCentroids, Planet 2 of 8



UKIRT Image

Declination



KIC 005294571

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})
005294571-01	OBS	No	0.919779	132.132304	1.5	0.765	10.9	0.4	10.32	6932	1.69	0.00
005294571-02	OBS	No	0.921182	132.122511	12.6	5.687	9.3	1.6	10.32	6932	3.77	0.00
005294571-03	OBS	No	118.675541	199.986190	1570.4	9.608	9.7	5.1	10.32	6932	48.74	449.11
005294571-04	OBS	No	18.646218	139.933167	964.7	4.491	9.0	9.0	10.32	6932	60.13	5297.25
005294571-05	OBS	No	84.819452	191.478039	483.3	6.919	8.5	2.6	10.32	6932	25.78	702.82
005294571-08	OBS	No	36.828276	167.368486	56.5	5.000	8.5	-1.0	10.32	6932	7.81	2137.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005294571-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_SATURATED
005294571-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—CENT_SATURATED
005294571-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005294571-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005294571-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST
005294571-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

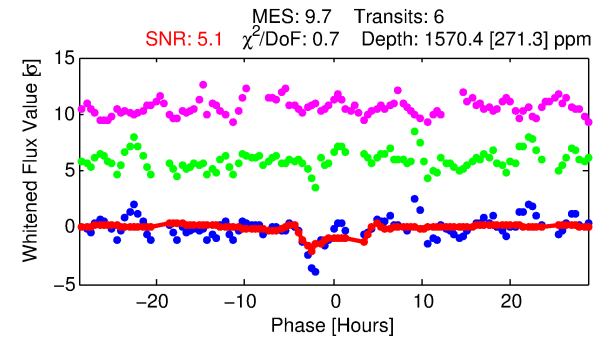
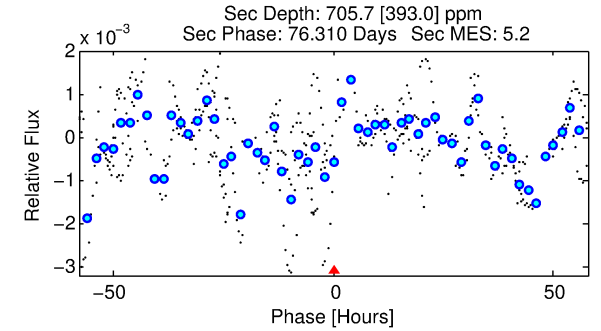
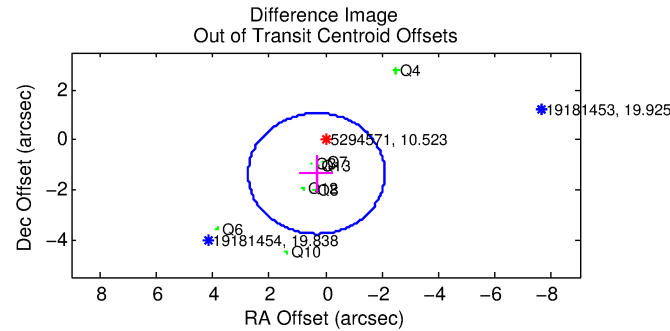
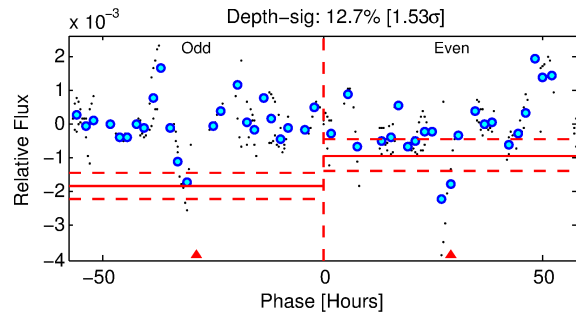
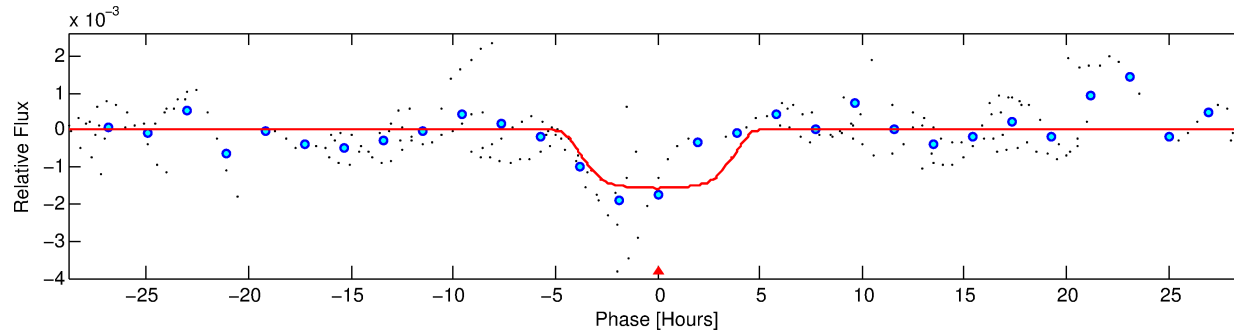
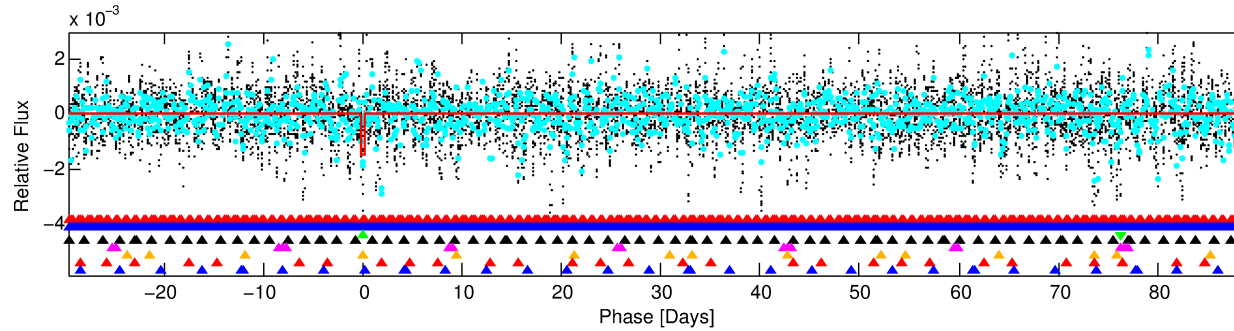
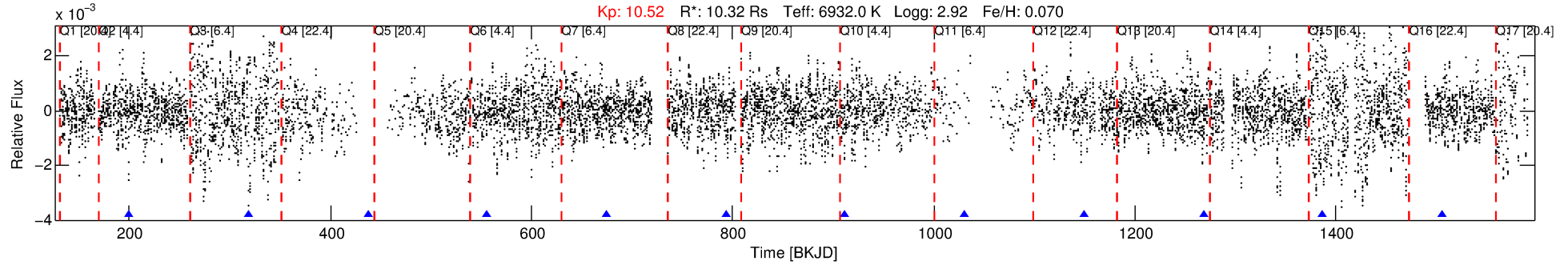
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005294571-03

No Significant Match Found

DV One-Page Summary

KIC: 5294571 Candidate: 3 of 8 Period: 118.676 d



DV Fit Results:

Period = 118.67554 [0.00361] d
Epoch = 199.9862 [0.0209] BKJD
Rp/R* = 0.0433 [0.0041]
a/R* = 45.89 [7.14]
b = 0.92 [0.03]
Seff = 449.11 [476.33]
Teq = 1174 [311] K
Rp = 48.74 [29.79] Re
a = 0.7006 [0.4408] AU
Ag = 80.22 [96.37] [0.82 σ]
Teffp = 5432 [830] K [4.80 σ]

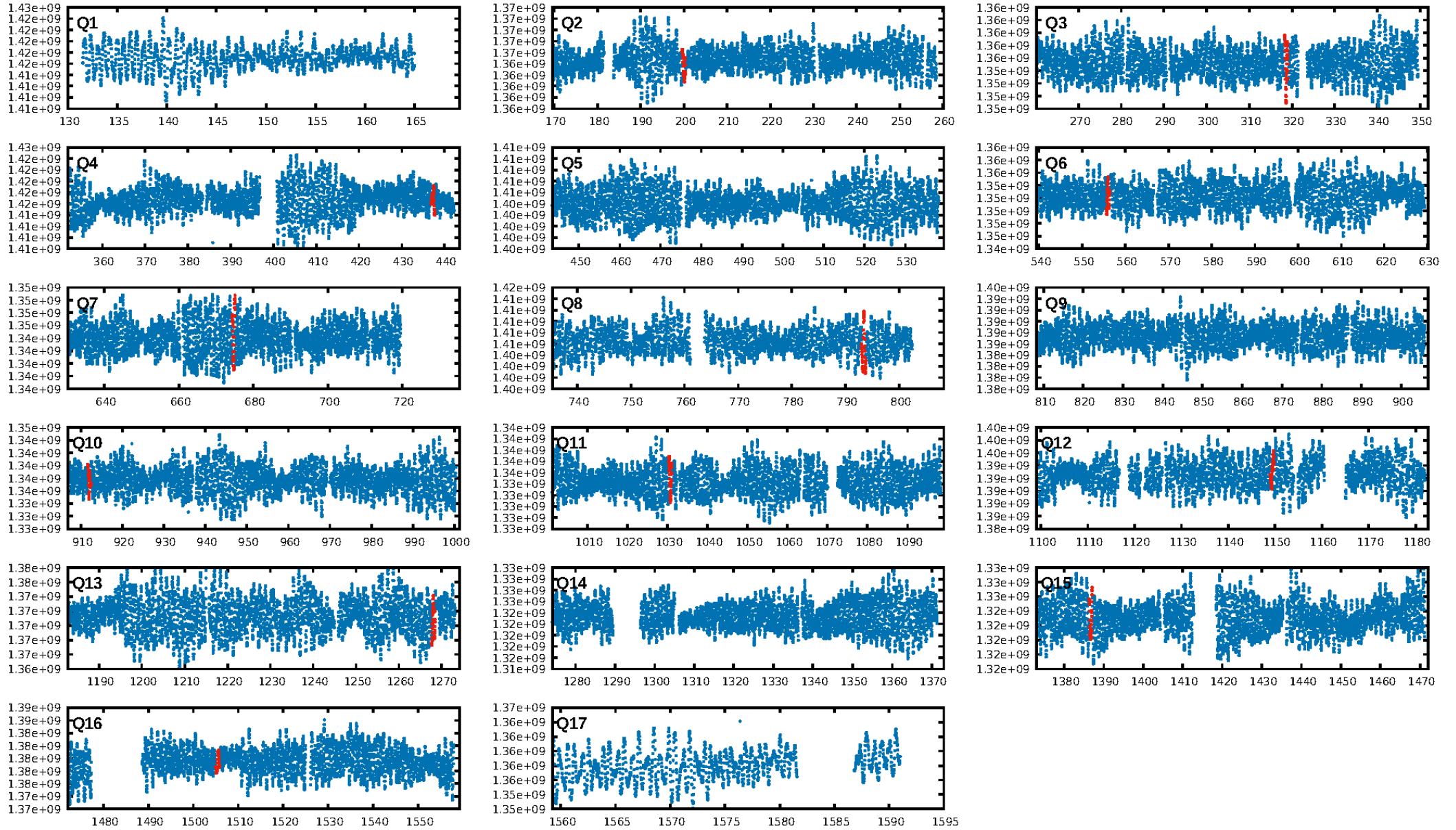
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [44.99 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 58.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -0.961
Centroid-sig: 4.2%
Centroid-so: 0.257 arcsec [1.80 σ]
OotOffset-rm: 1.397 arcsec [1.73 σ]
OotOffset-st: 2/2/3/1 [8]
KicOffset-rm: 1.586 arcsec [2.20 σ]
KicOffset-st: 2/2/3/1 [8]
DiffImageQuality-fgm: 0.25 [2/8]
DiffImageOverlap-fno: 0.00 [0/8]

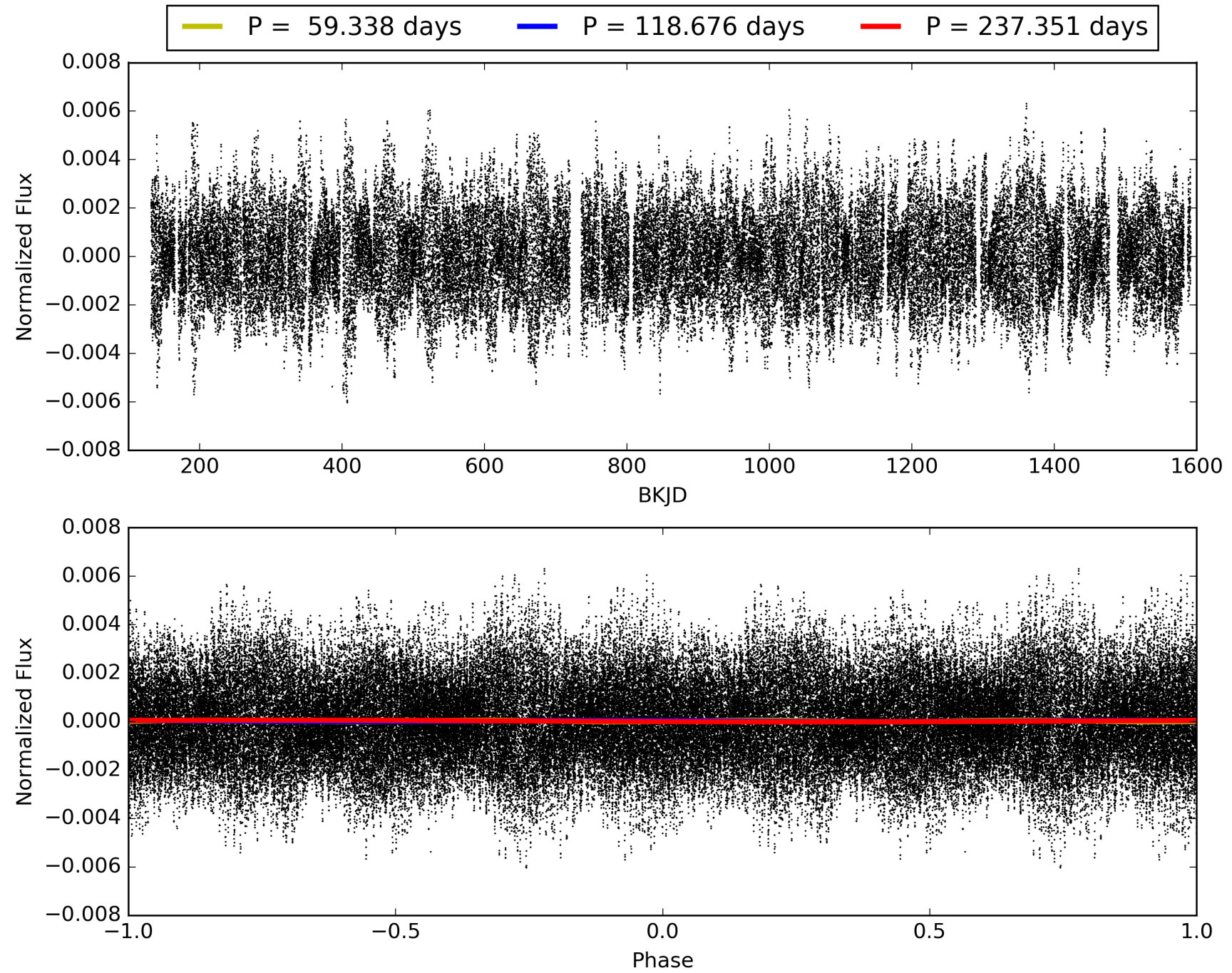
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:02:16 Z

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

TCE 005294571-03, PDC Light Curves

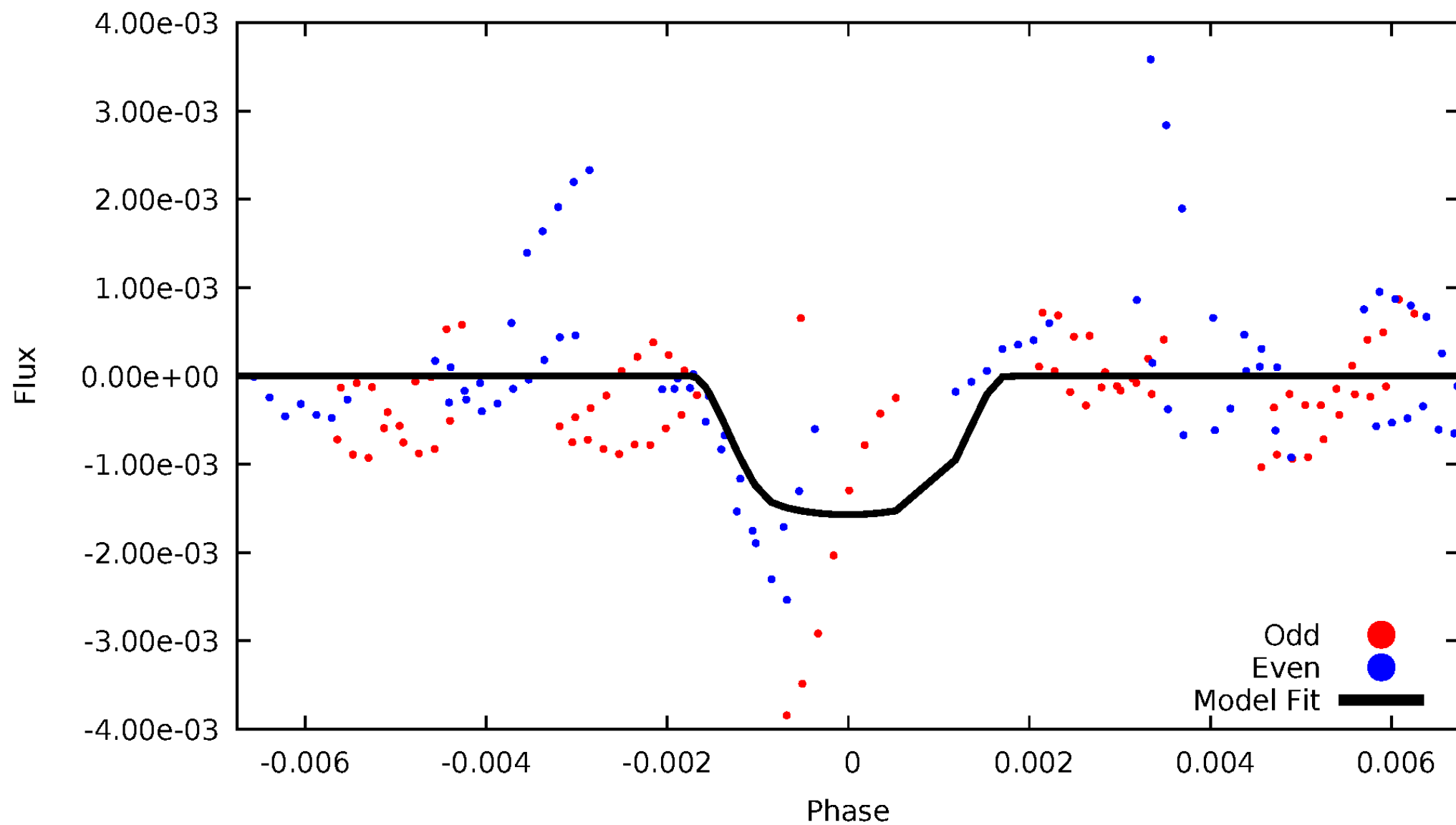


TCE 005294571-03



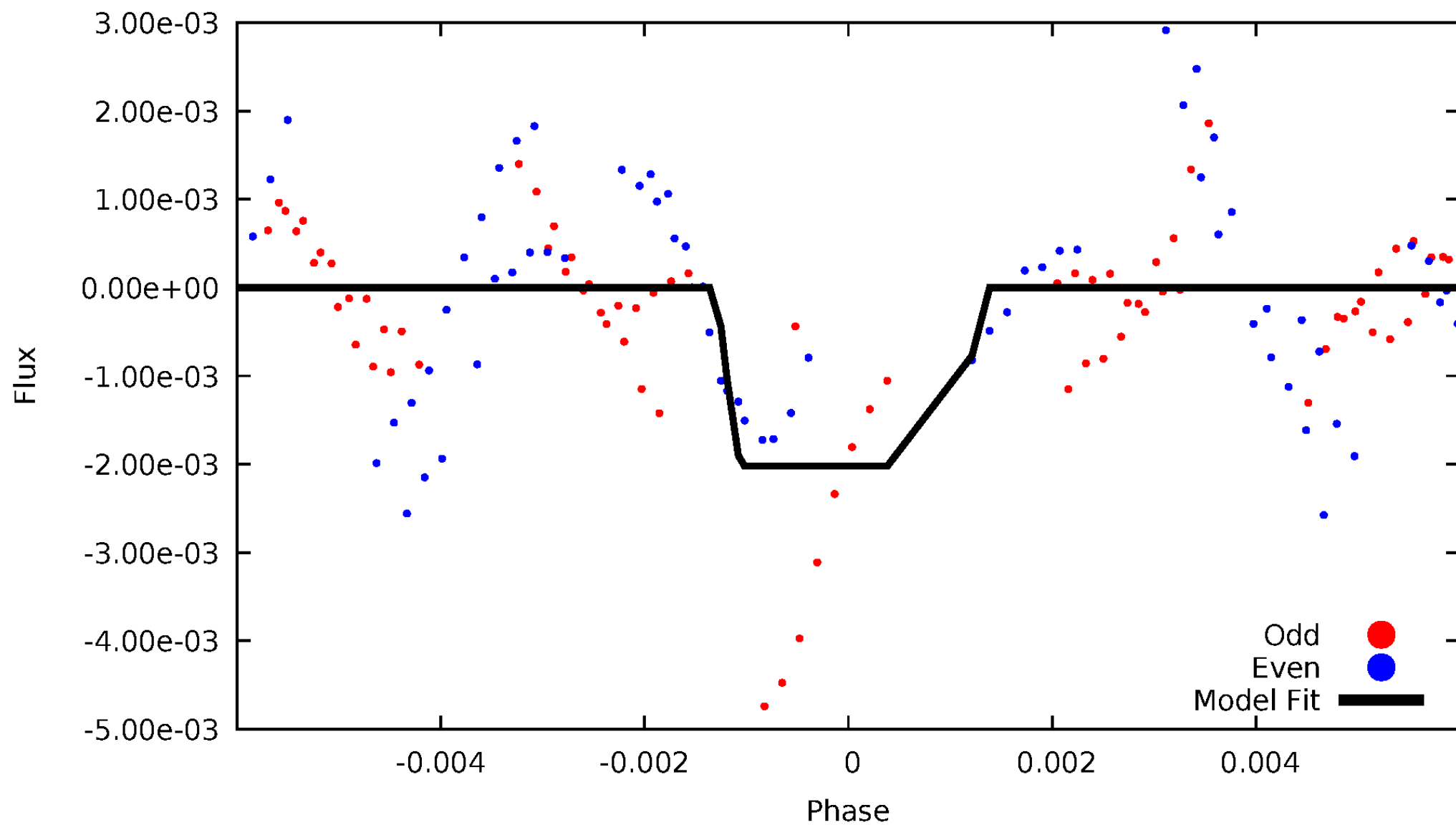
DV Odd/Even

TCE 005294571-03



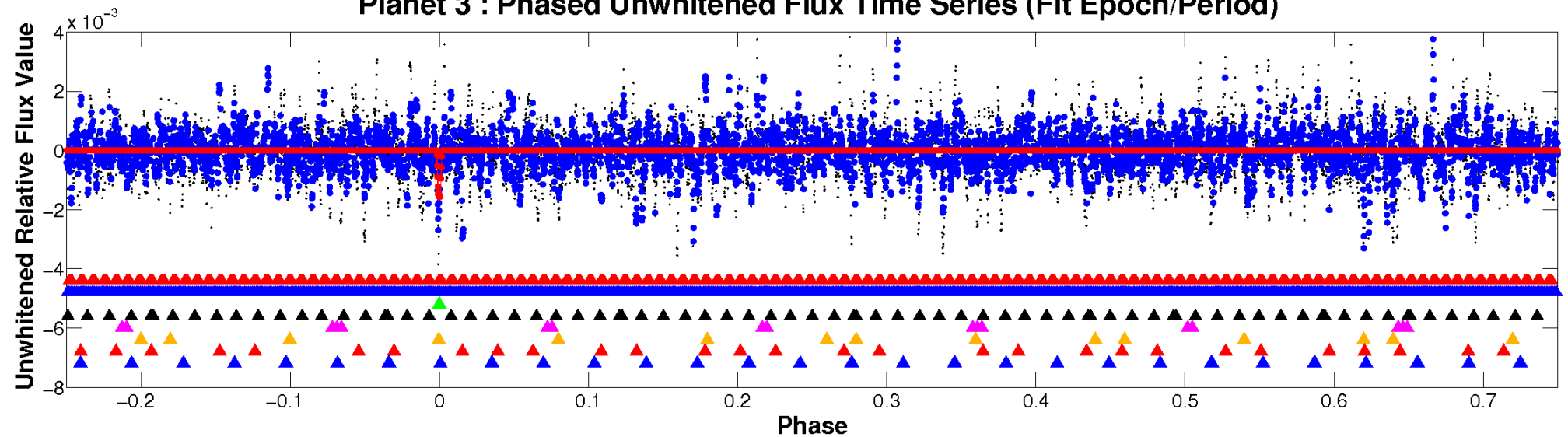
ALT Odd/Even

TCE 005294571-03

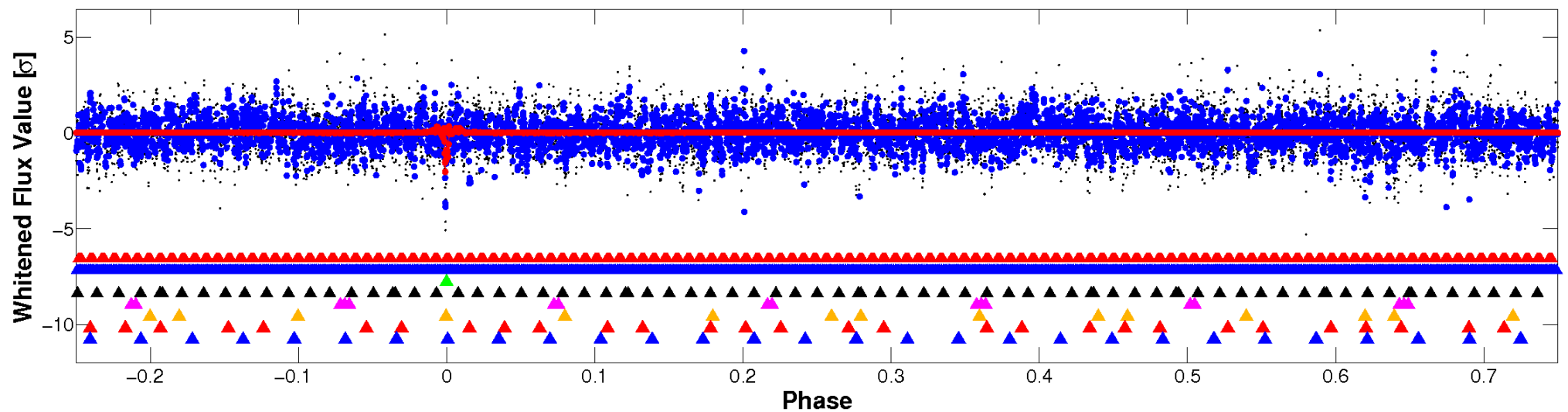


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

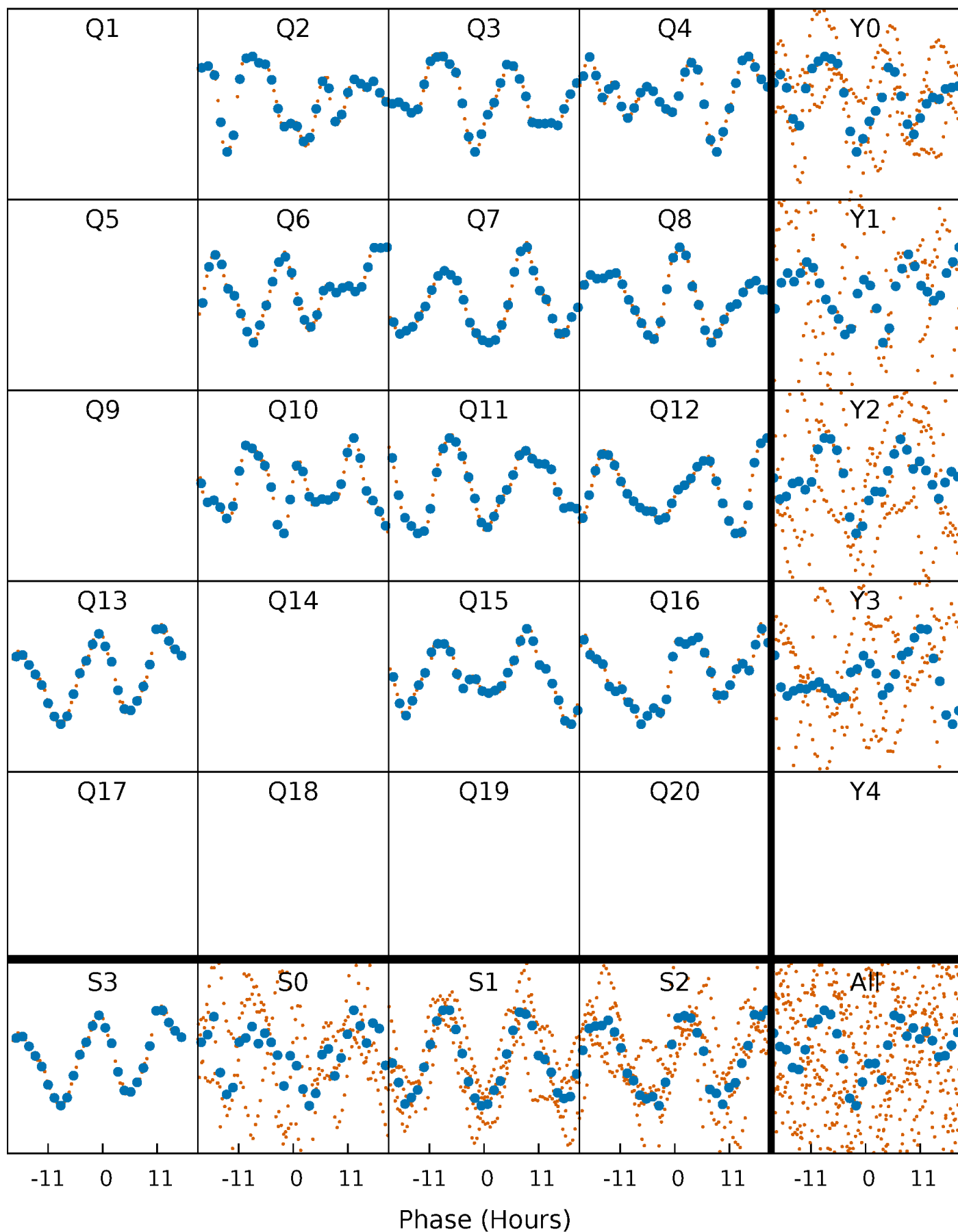


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



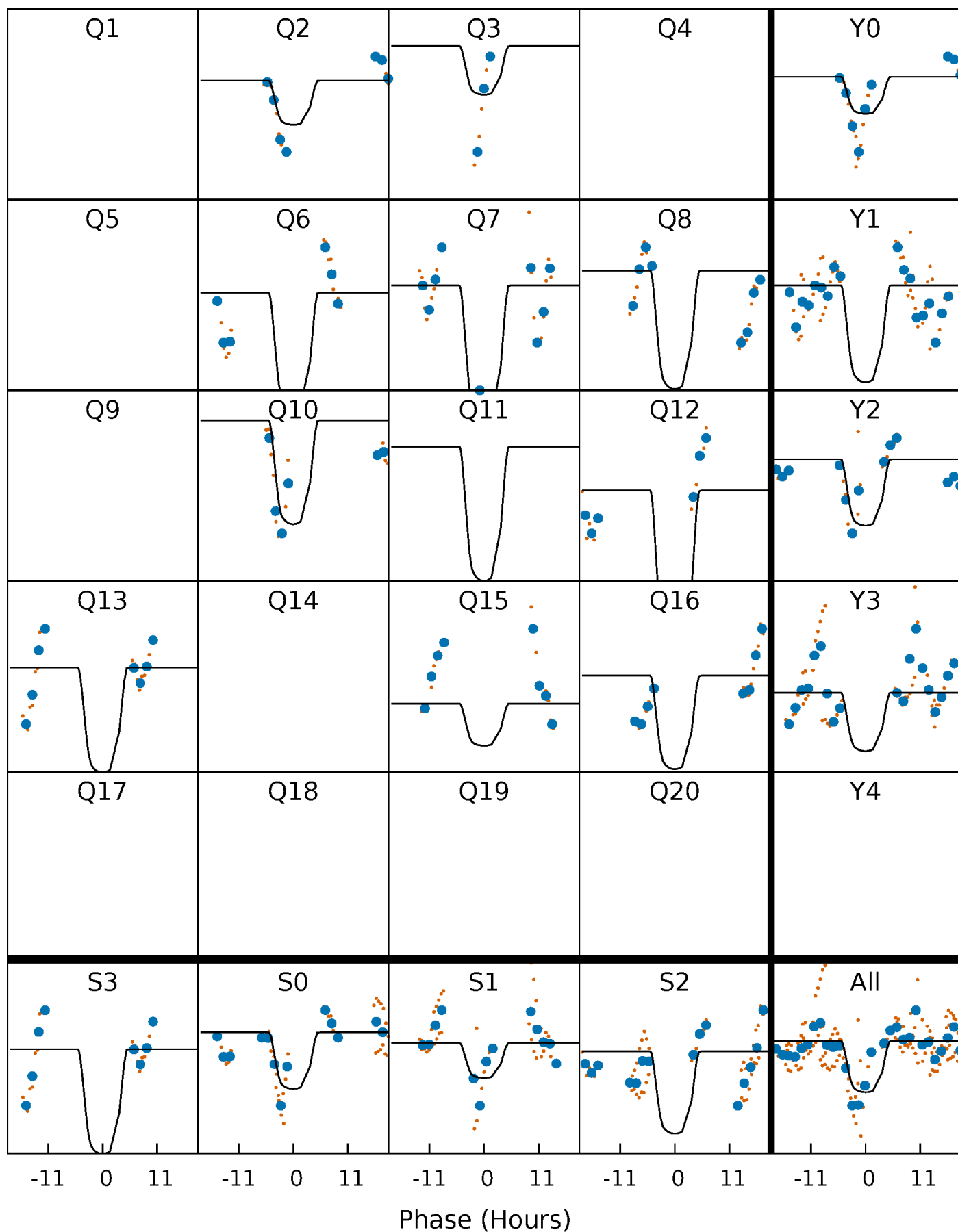
PDC Quarter-Phased Transit Curves

TCE 005294571-03 P=118.675541 Days $T_0=199.986190$ (BKJD)



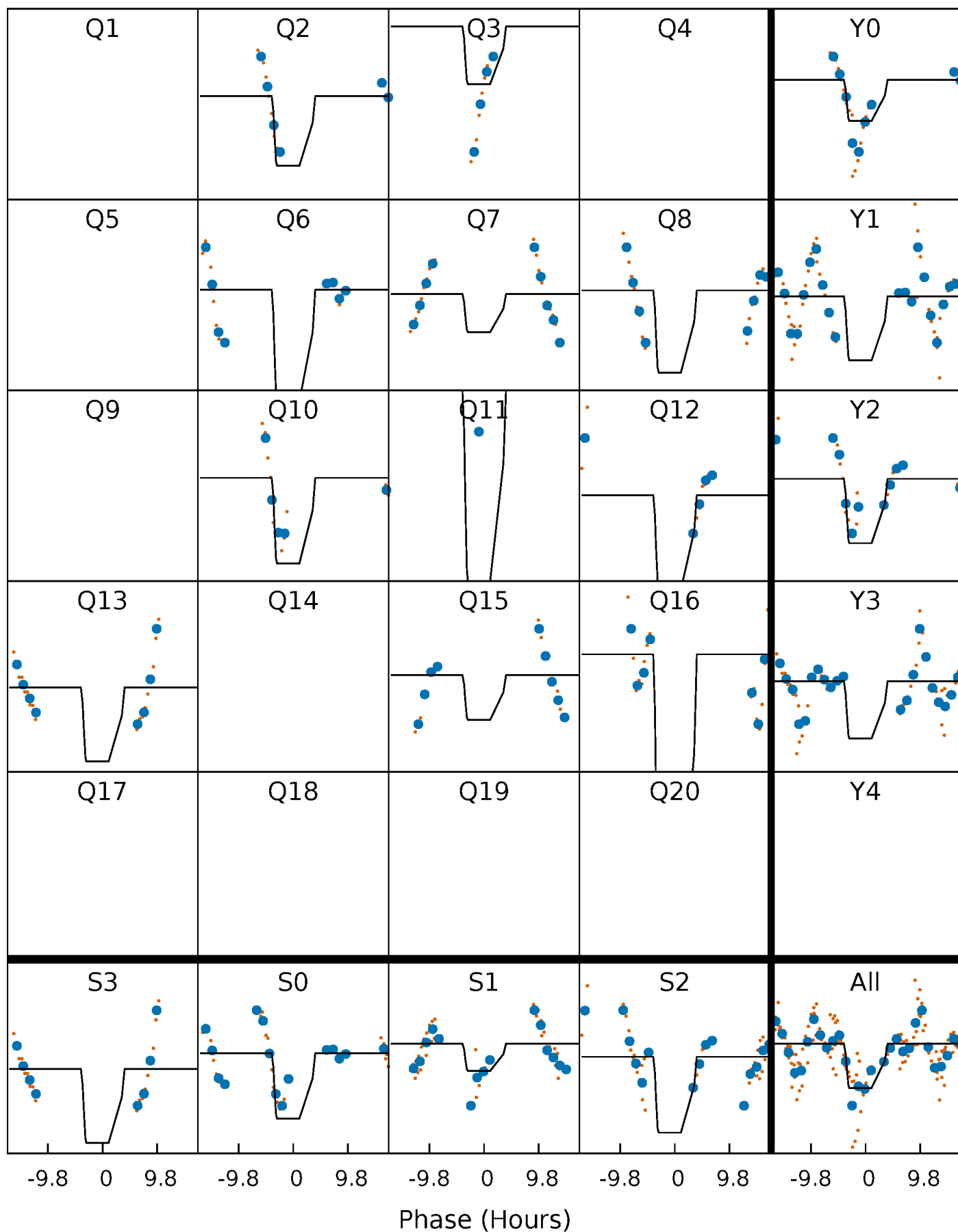
DV Quarter-Phased Transit Curves

TCE 005294571-03 P=118.675541 Days $T_0=199.986190$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

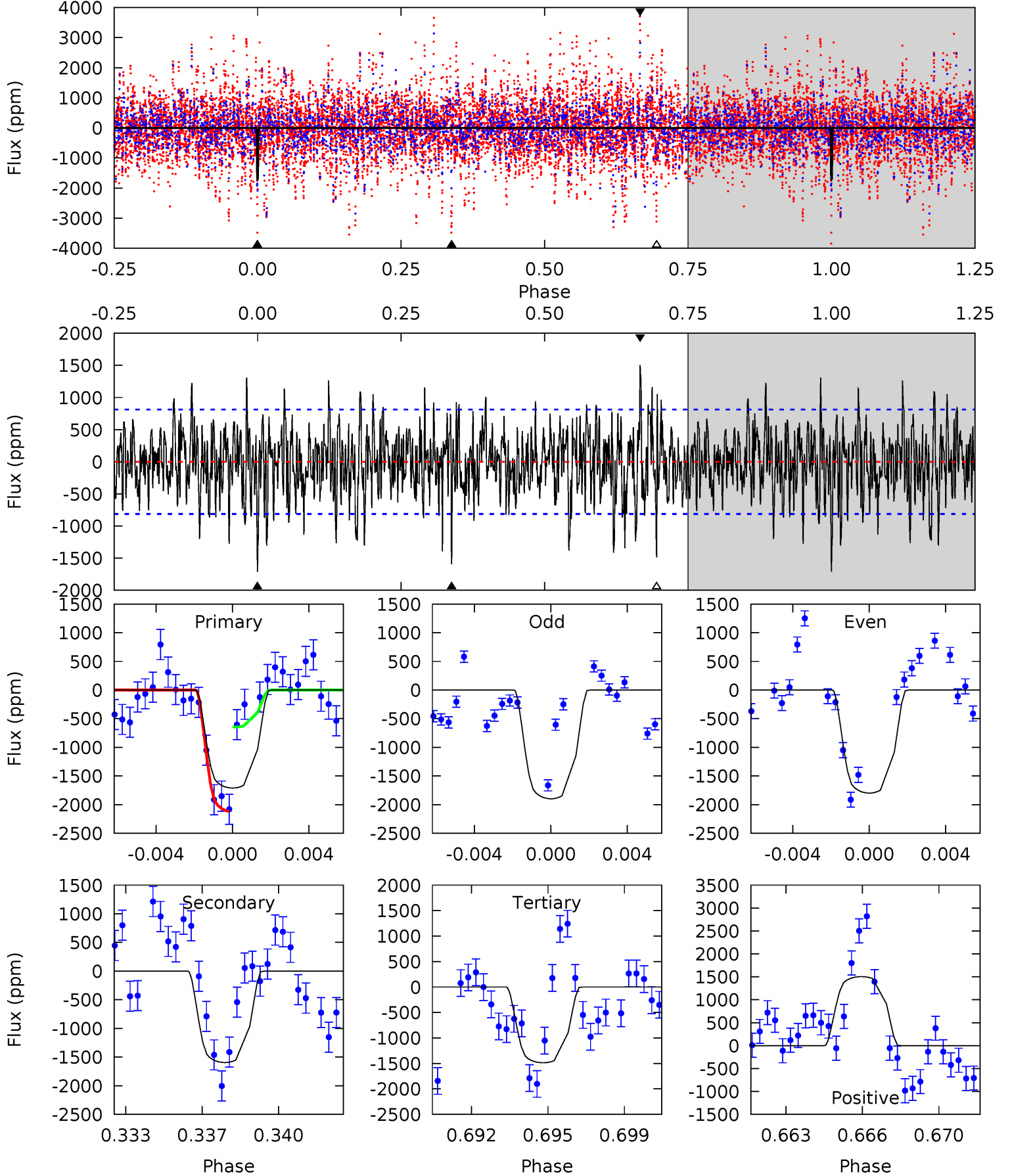
TCE 005294571-03 P=118.672628 Days $T_0=200.006076$ (BKJD)



DV Model-Shift Uniqueness Test

005294571-03, $P = 118.675541$ Days, $E = 81.310649$ Days

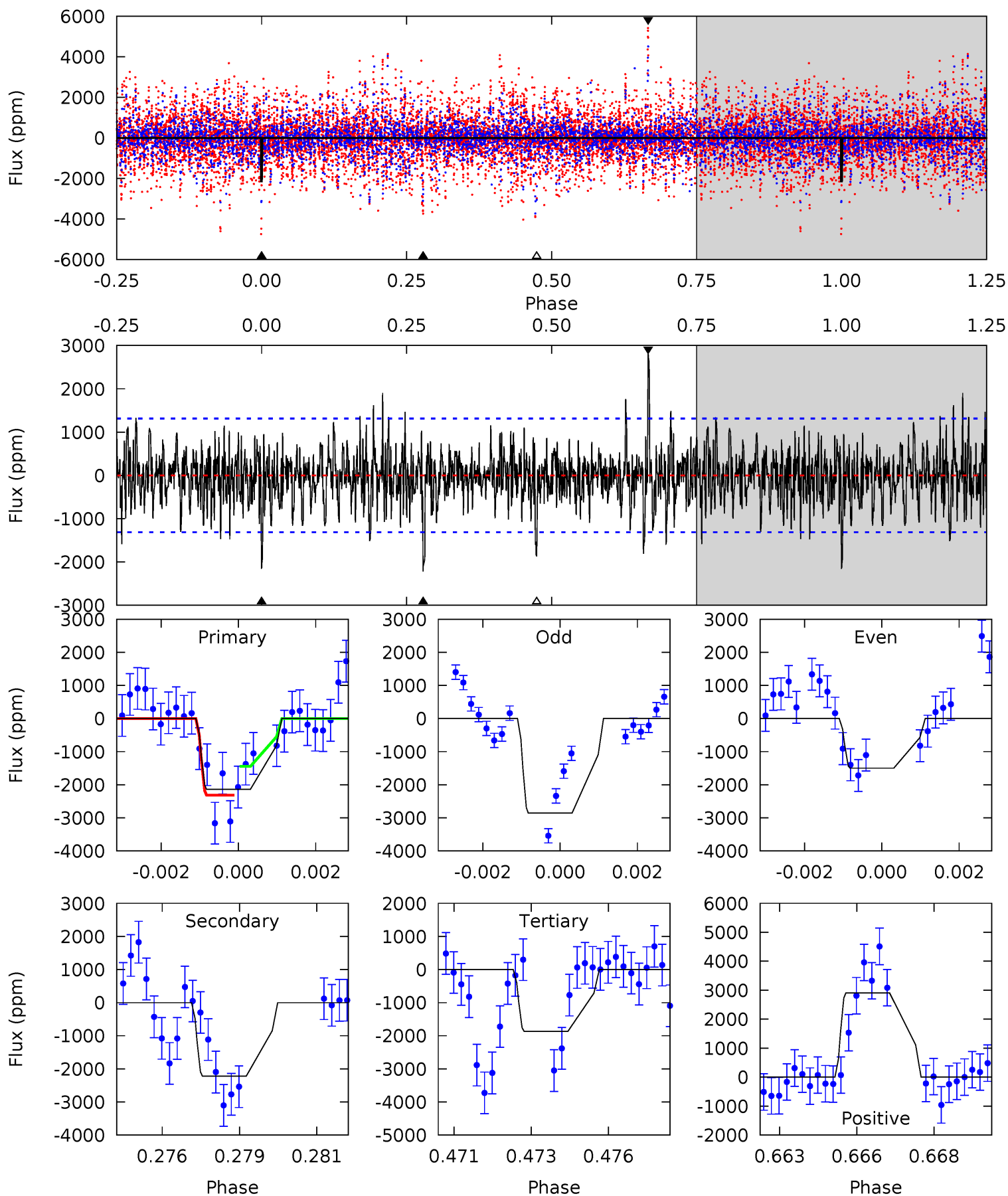
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	10.2	9.55	9.67	5.22	2.91	2.70	1.44	1.32	0.70	0.58	0.30	0.89	0.47	4.31



Alt Model-Shift Uniqueness Test

005294571-03, P = 118.672628 Days, E = 81.333448 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.62	8.95	7.53	11.7	5.29	3.03	1.84	1.10	-3.08	1.42	-2.76	2.63	1.17	0.57	1.36



Stellar Parameters For KIC 005294571

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6932^{+144}_{-288}	$2.923^{+0.630}_{-0.070}$	$0.070^{+0.200}_{-0.500}$	$10.322^{+1.100}_{-6.232}$	$3.255^{+0.072}_{-1.372}$	$0.004^{+0.042}_{-0.001}$
	+2%/-4%	+22%/-2%	+286%/-714%	+11%/-60%	+2%/-42%	+1019%/-23%
Source	PHO1	FLK73	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 005294571-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1596 ± 156	$43.71^{+9.20}_{-14.00}$	1563^{+118}_{-223}	6597^{+462}_{-397}	220^{+189}_{-67}
Alt.	-2220 ± 248	$46.08^{+8.87}_{-14.81}$	1573^{+110}_{-242}	7051^{+505}_{-458}	277^{+271}_{-83}

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

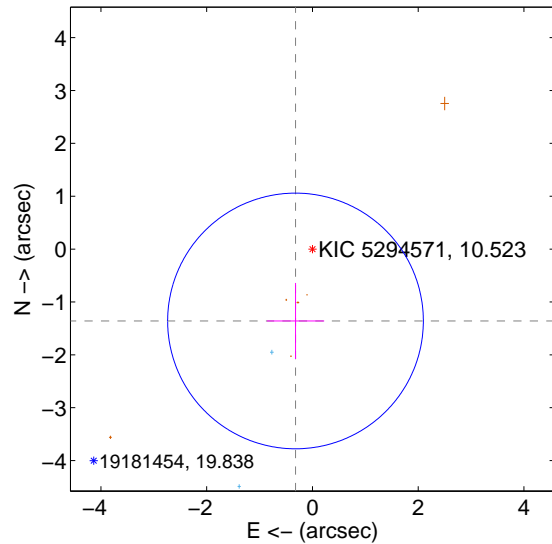
Supplemental centroid analysis for 005294571-03. **Kepler magnitude: 10.52.** Transit SNR 5.08

There are 2 quarters with good PRF difference image offsets

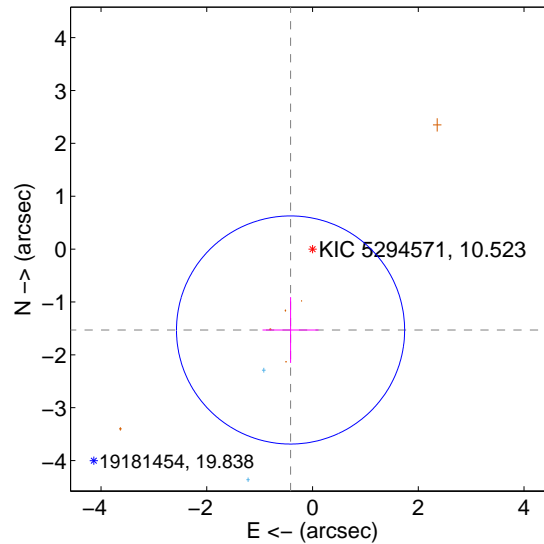
The direct PRF centroid is offset from the target star catalog position by about 0.73 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.397 ± 0.806	1.73	0.320 ± 0.543	-1.360 ± 0.719
PRF-fit source offset from KIC position	1.586 ± 0.719	2.20	0.416 ± 0.530	-1.530 ± 0.622
photometric centroid source offset	0.26 ± 0.14	1.80	0.17 ± 0.13	-0.20 ± 0.15

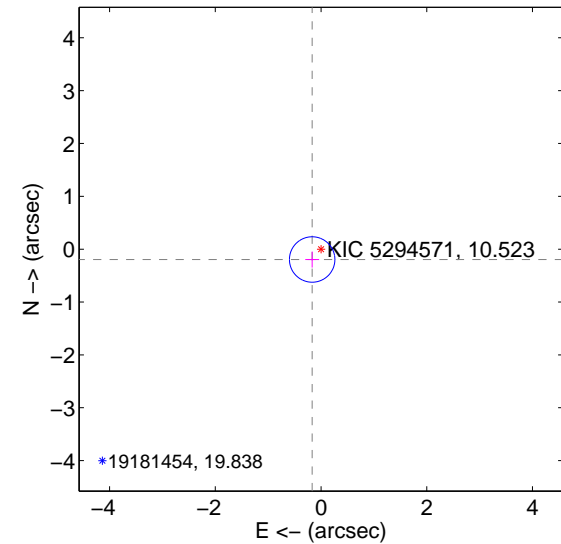
offset from difference PRF-fit to OOT PRF-fit



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.

Q1 no difference image



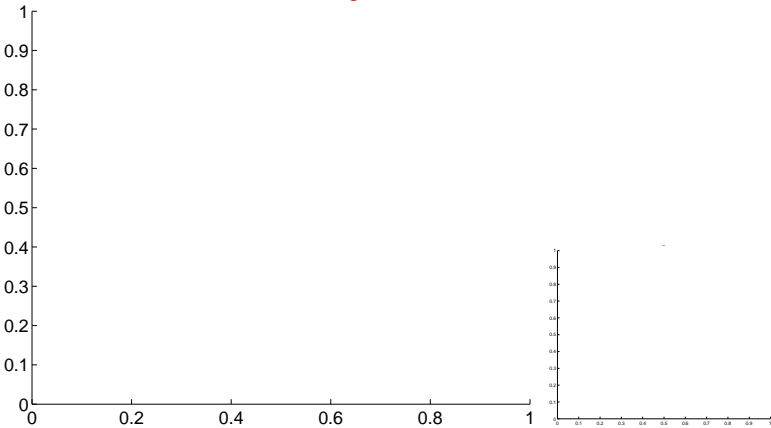
Q1 no OOT image



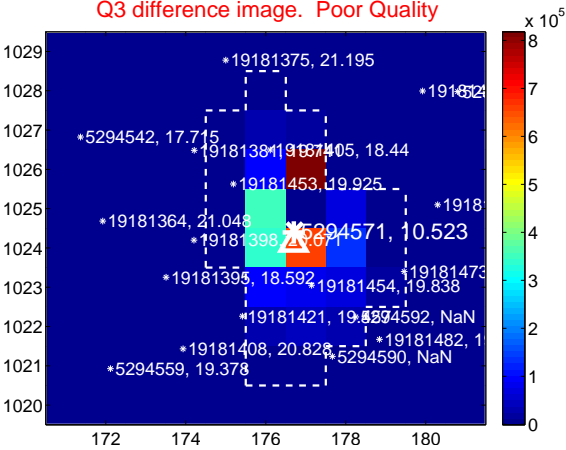
Q2 no difference image



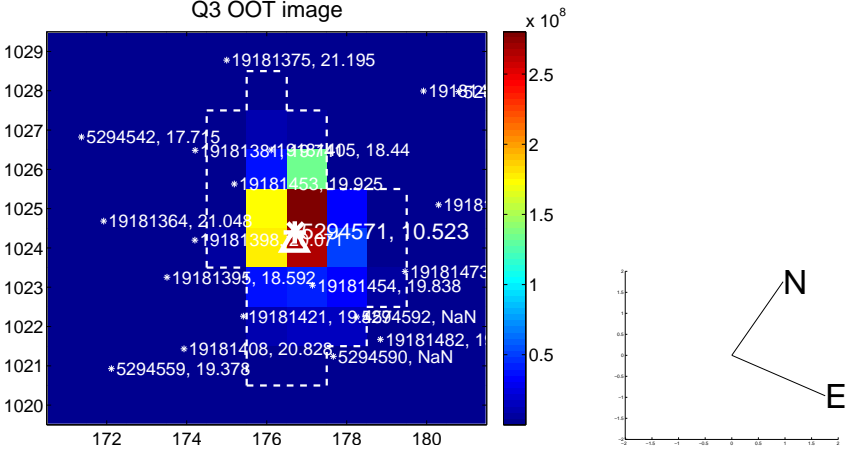
Q2 no OOT image



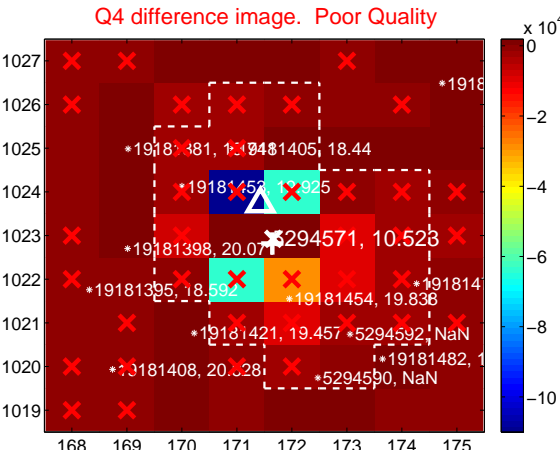
Q3 difference image. Poor Quality



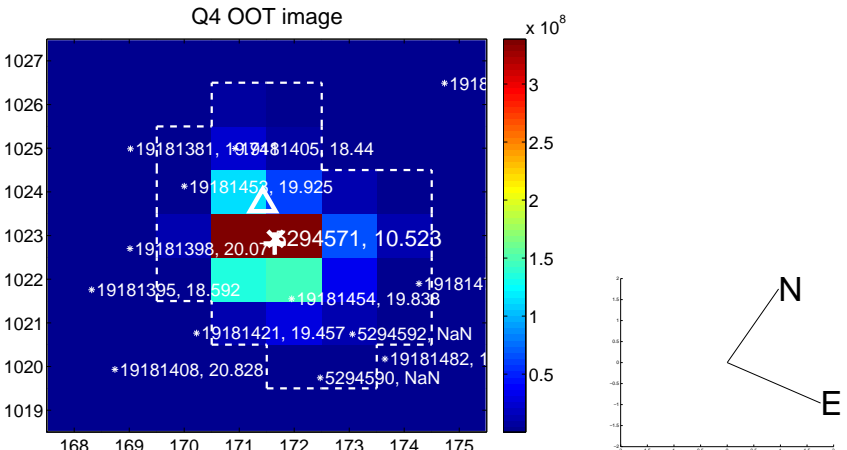
Q3 OOT image



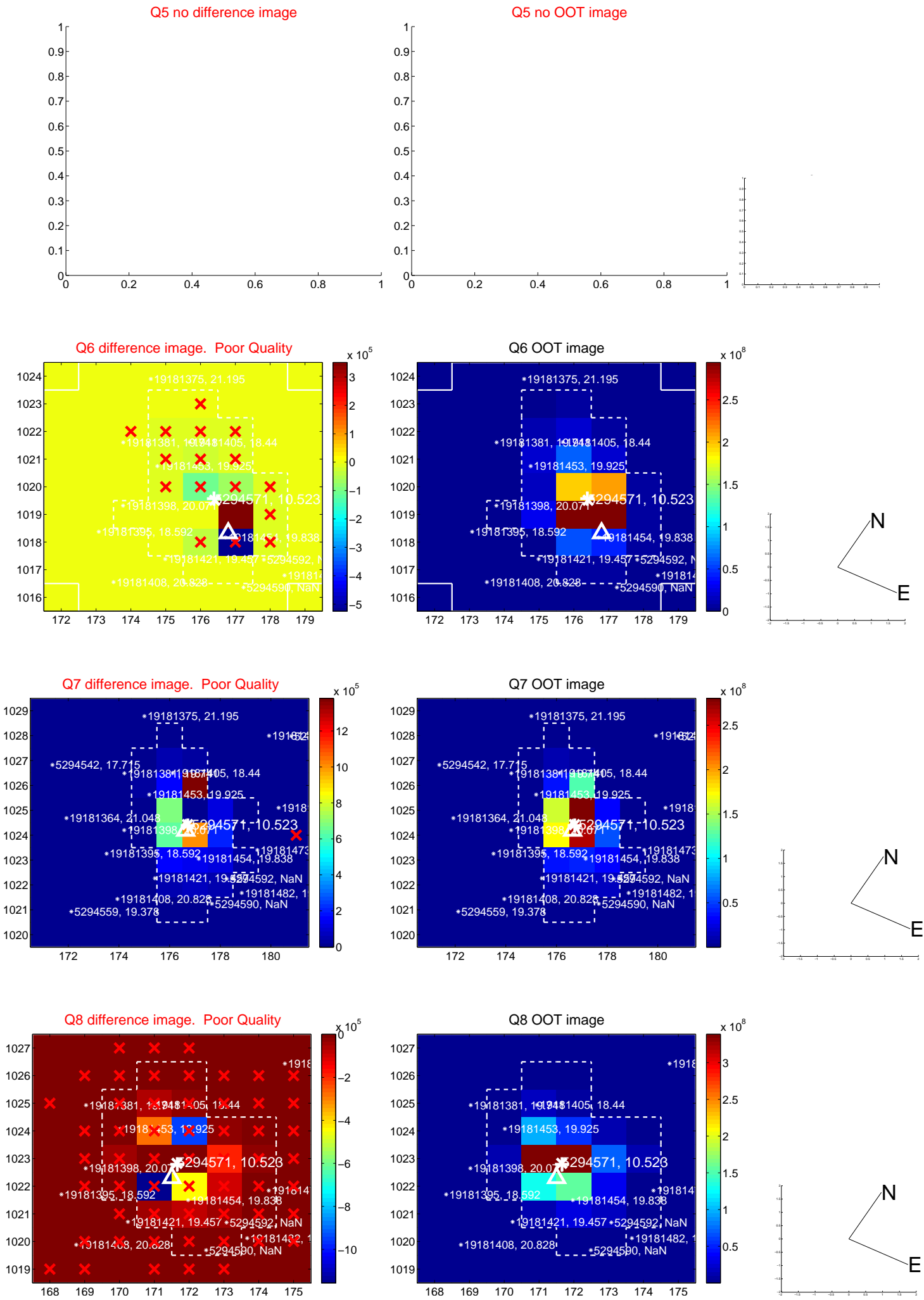
Q4 difference image. Poor Quality



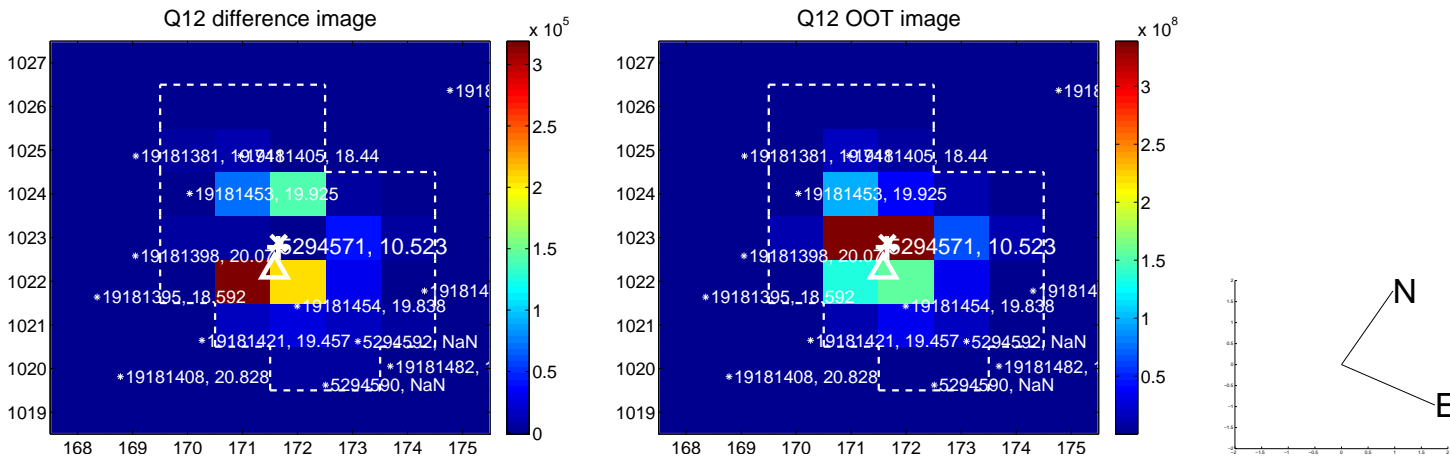
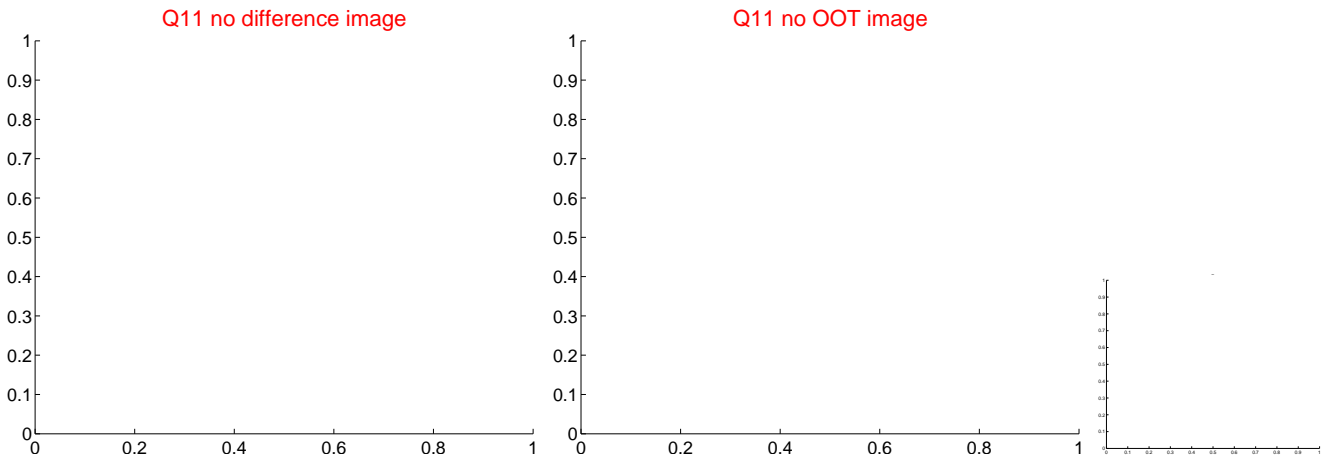
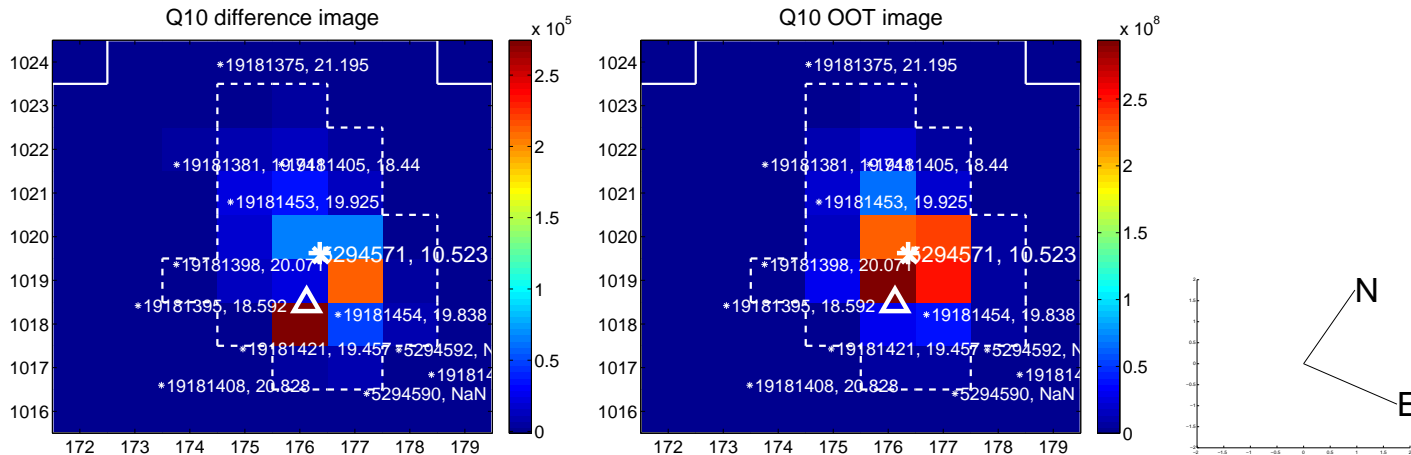
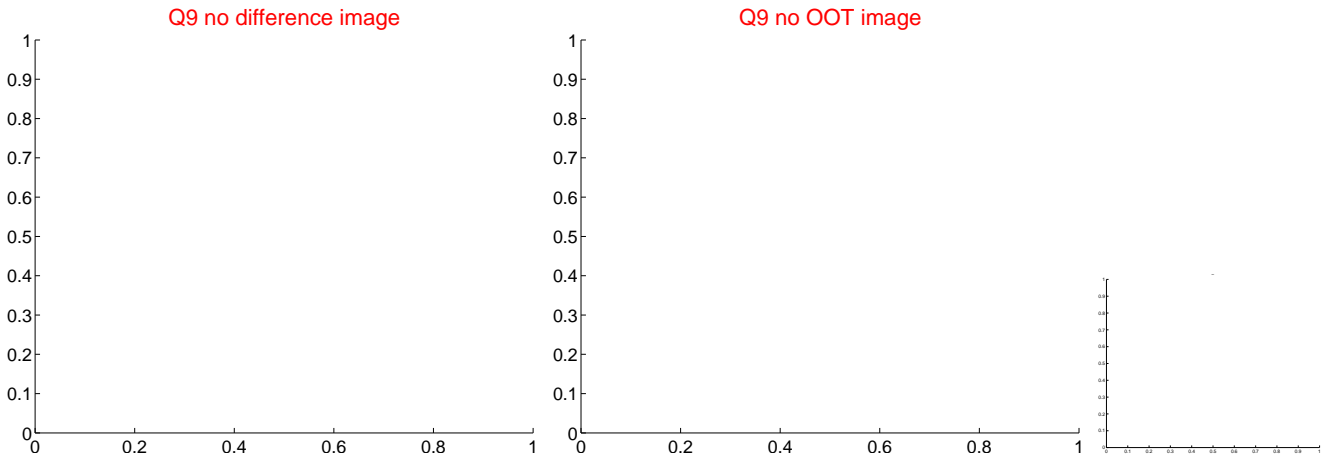
Q4 OOT image



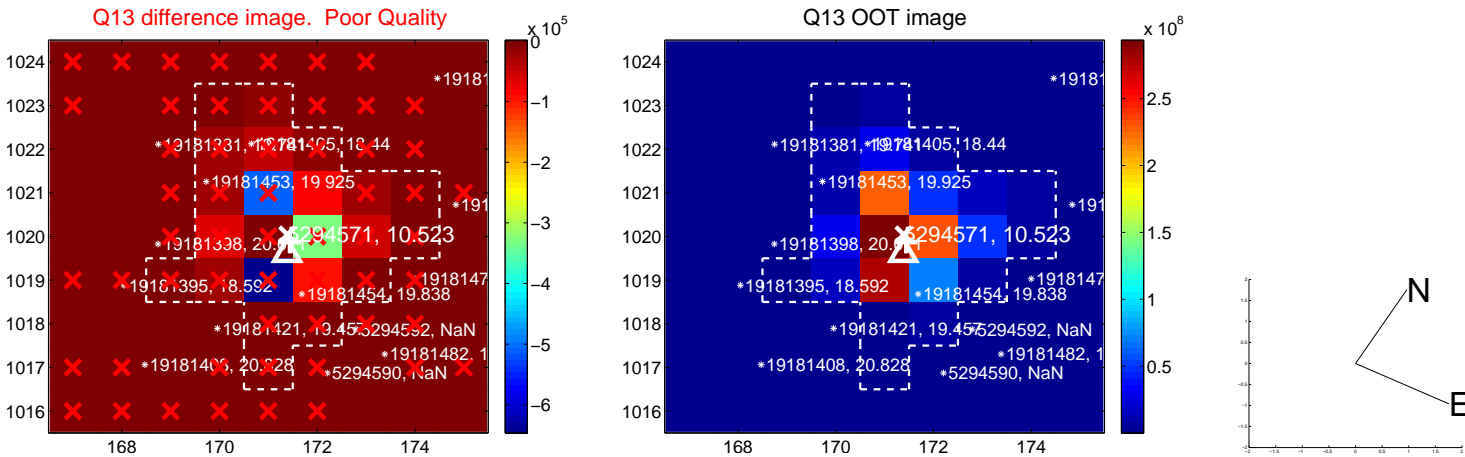
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



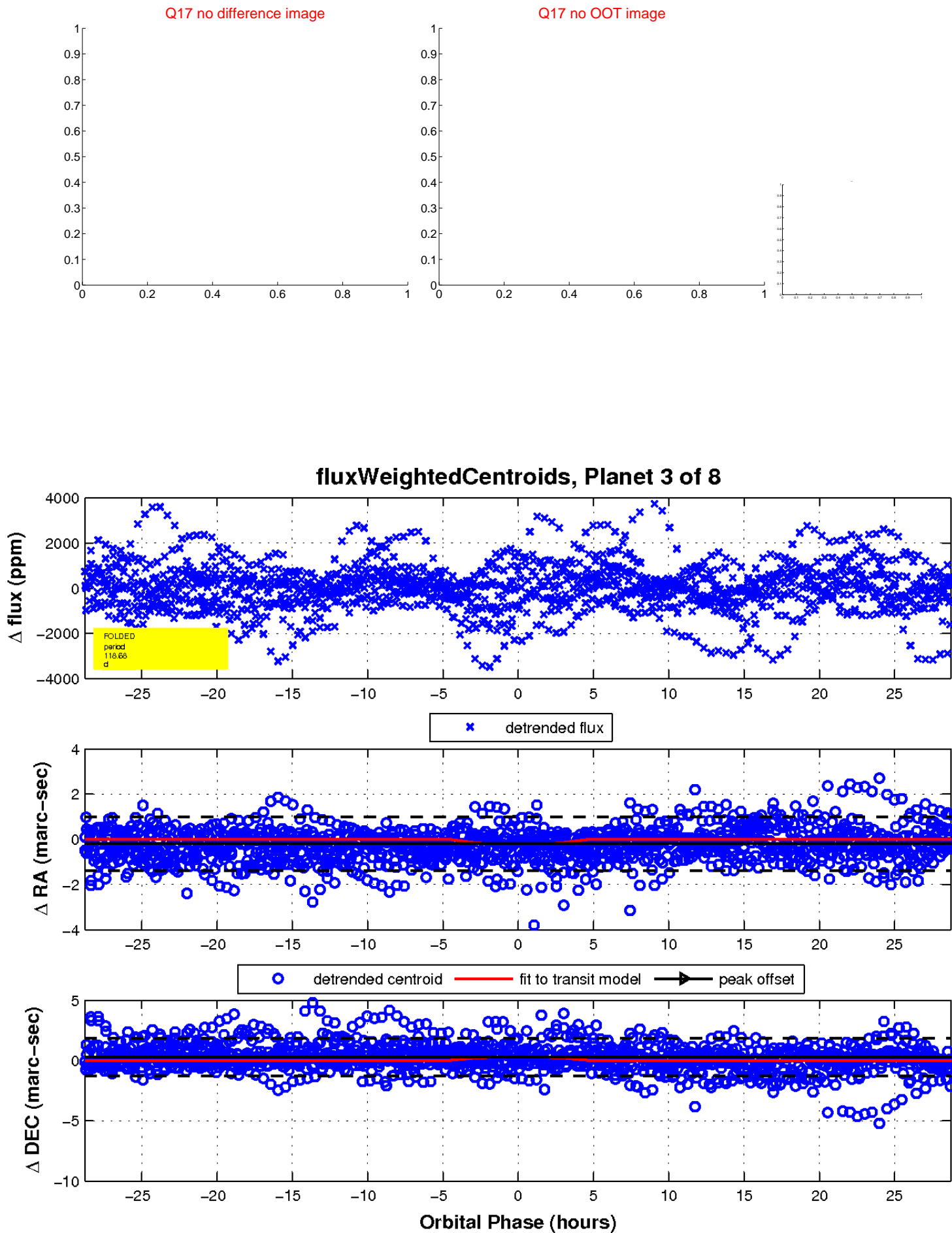
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

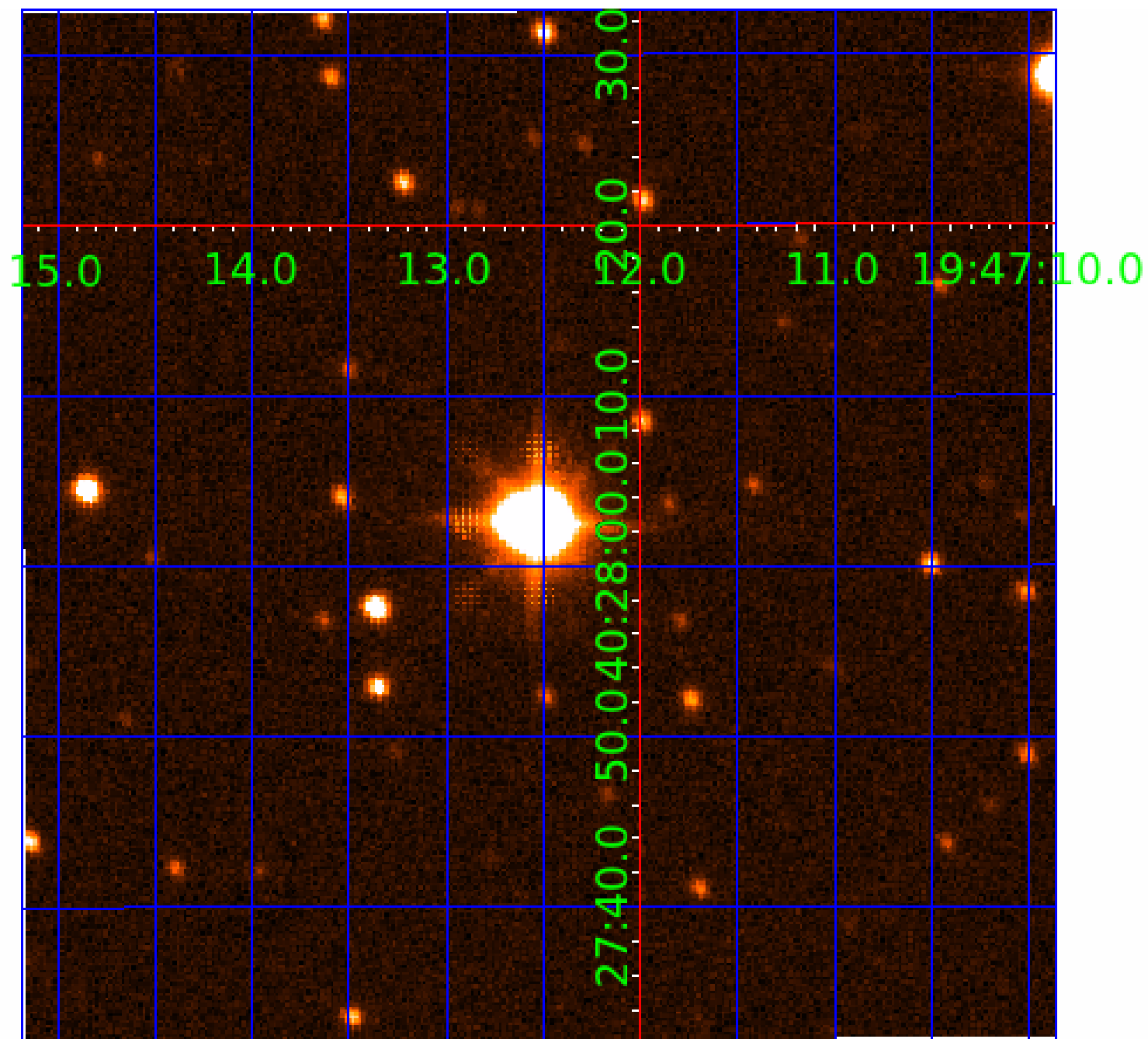


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005294571

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})
005294571-01	OBS	No	0.919779	132.132304	1.5	0.765	10.9	0.4	10.32	6932	1.69	0.00
005294571-02	OBS	No	0.921182	132.122511	12.6	5.687	9.3	1.6	10.32	6932	3.77	0.00
005294571-03	OBS	No	118.675541	199.986190	1570.4	9.608	9.7	5.1	10.32	6932	48.74	449.11
005294571-04	OBS	No	18.646218	139.933167	964.7	4.491	9.0	9.0	10.32	6932	60.13	5297.25
005294571-05	OBS	No	84.819452	191.478039	483.3	6.919	8.5	2.6	10.32	6932	25.78	702.82
005294571-08	OBS	No	36.828276	167.368486	56.5	5.000	8.5	-1.0	10.32	6932	7.81	2137.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005294571-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_SATURATED
005294571-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—CENT_SATURATED
005294571-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005294571-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005294571-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST
005294571-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

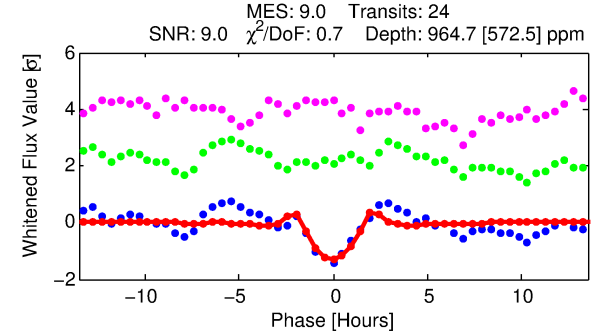
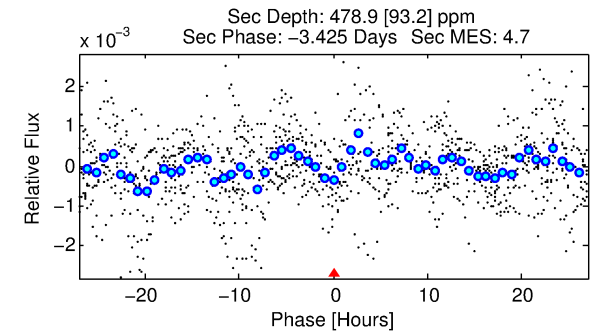
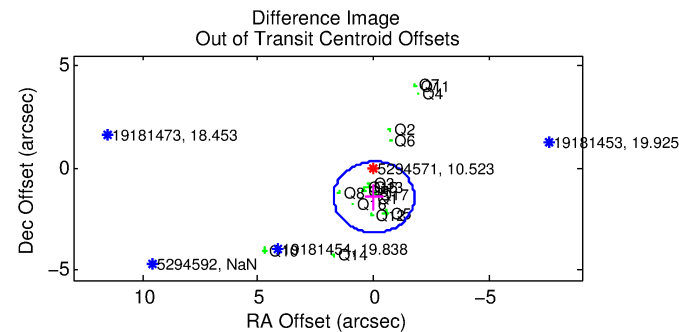
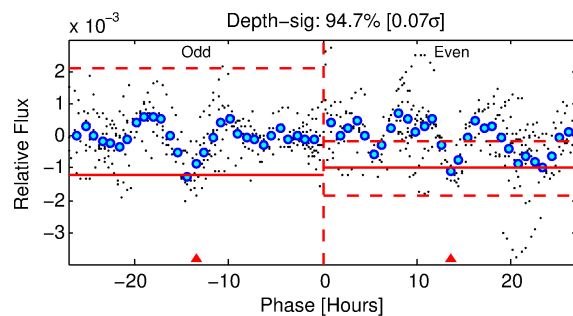
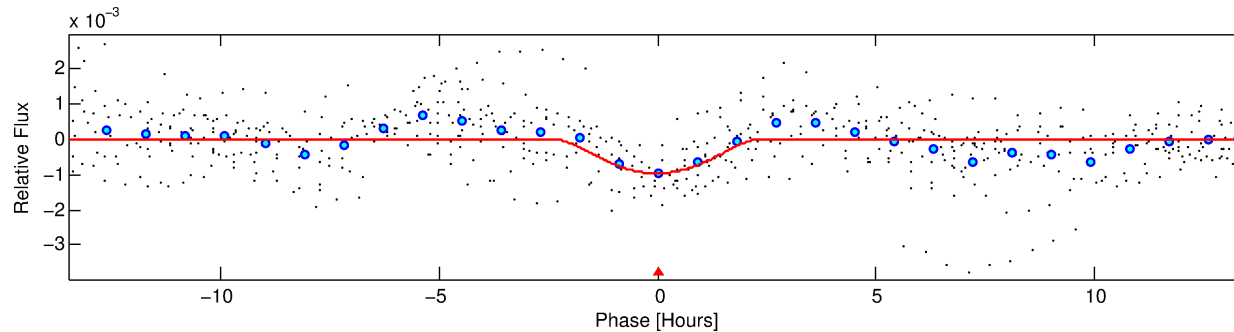
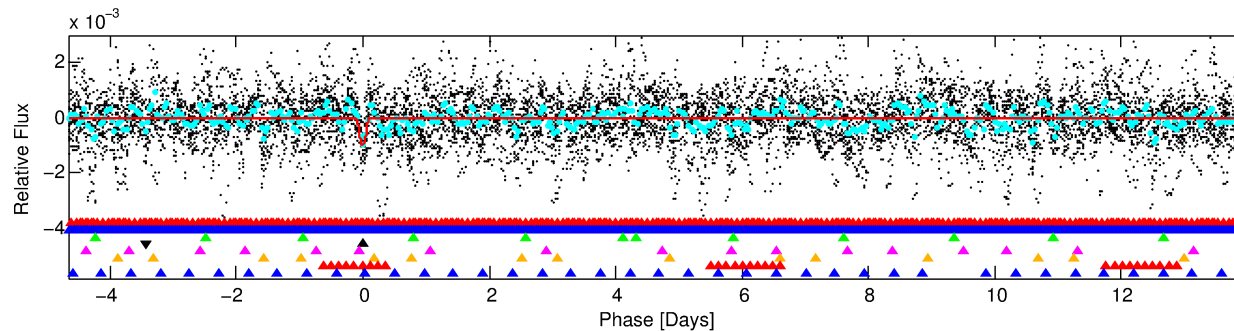
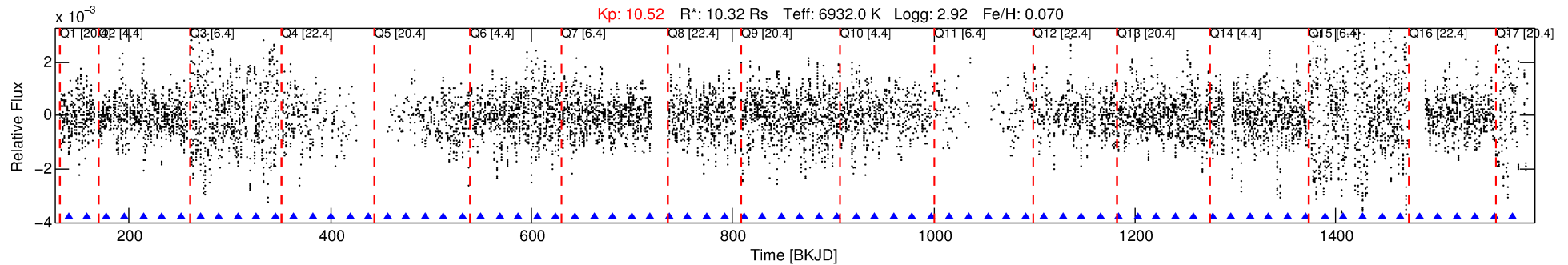
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005294571-04

No Significant Match Found

DV One-Page Summary

KIC: 5294571 Candidate: 4 of 8 Period: 18.646 d



DV Fit Results:

Period = 18.64622 [0.00016] d
Epoch = 139.9332 [0.0069] BKJD
Rp/R* = 0.0534 [0.0849]
a/R* = 10.55 [4.08]
b = 1.00 [0.10]
Seff = 5297.25 [5618.29]
Teq = 2175 [577] K
Rp = 60.13 [102.32] Re
a = 0.2040 [0.1283] AU
Ag = 3.03 [10.17] [0.20 σ]
Teff = 4438 [3542] K [0.63 σ]

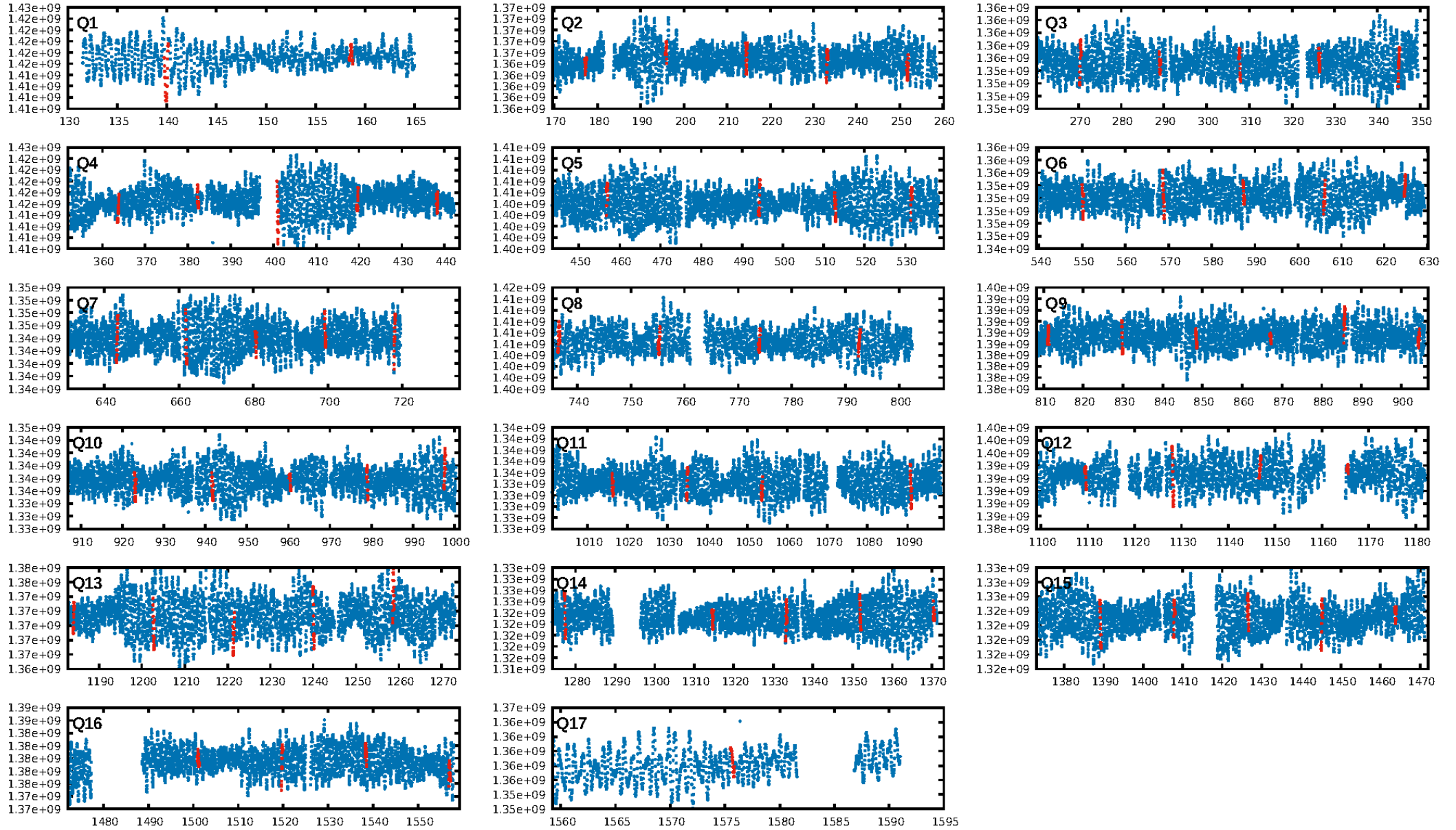
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [58.70 σ]
LongPeriod-sig: 100.0% [64.93 σ]
ModelChiSquare2-sig: 36.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [23/23]
GhostDiagnostic-chr: 1.729
Centroid-sig: 73.5%
Centroid-so: 0.020 arcsec [0.26 σ]
OotOffset-rm: 1.444 arcsec [2.48 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 1.937 arcsec [3.53 σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.47 [8/17]
DiffImageOverlap-fno: 0.00 [0/17]

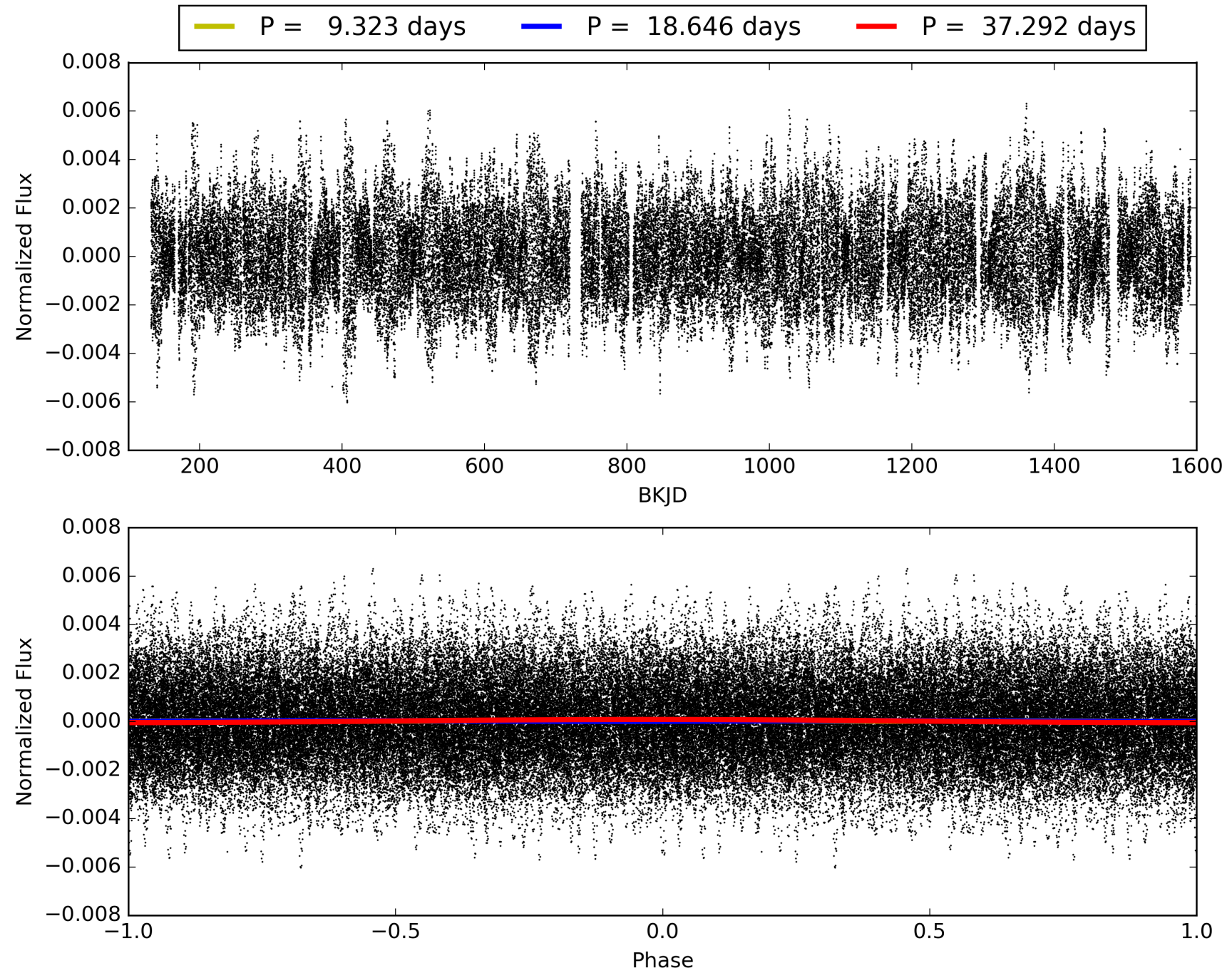
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:02:20 Z

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

TCE 005294571-04, PDC Light Curves

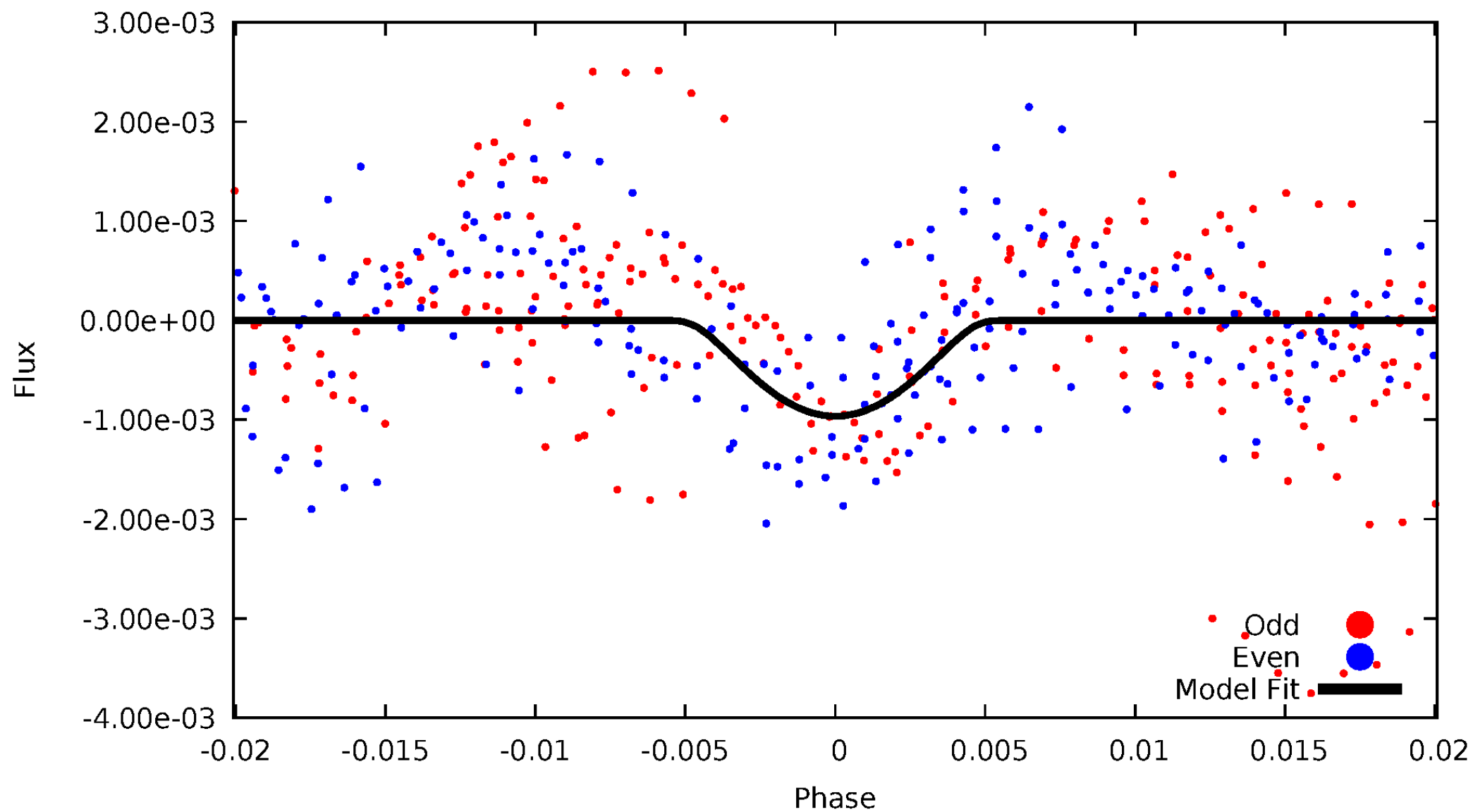


TCE 005294571-04



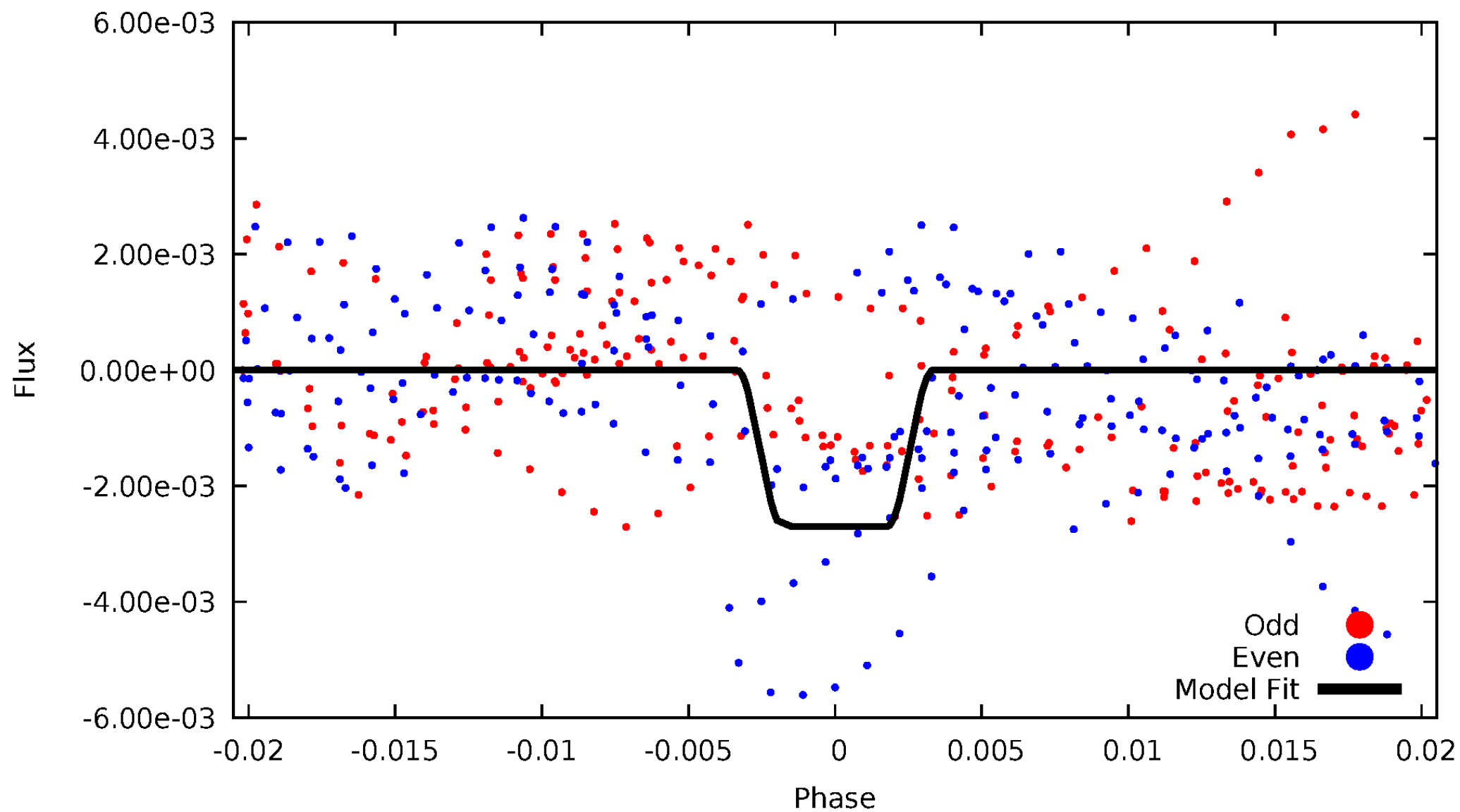
DV Odd/Even

TCE 005294571-04



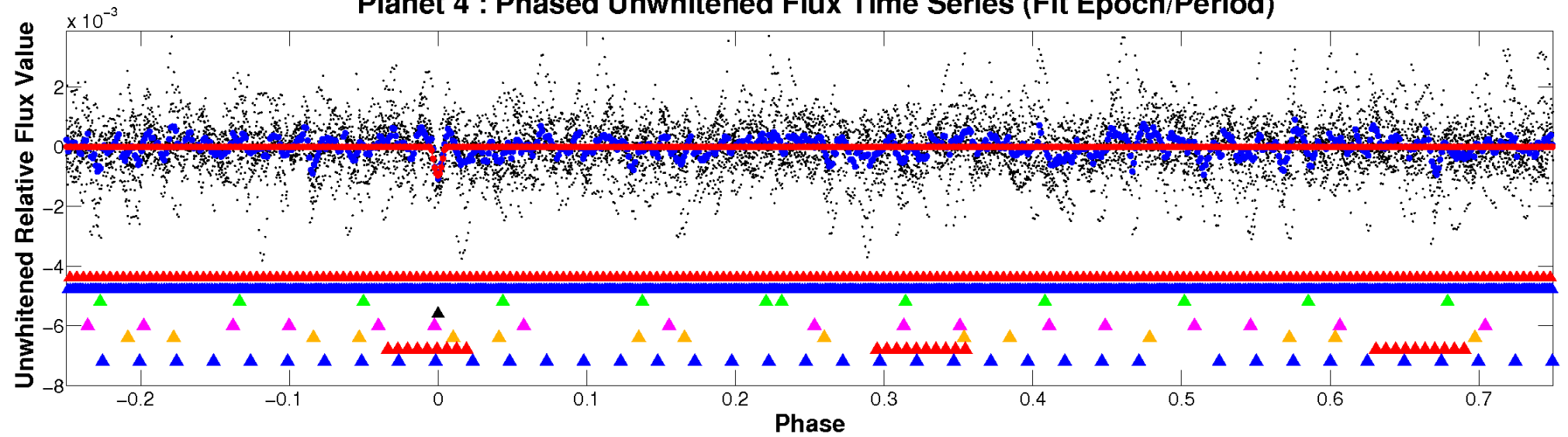
ALT Odd/Even

TCE 005294571-04

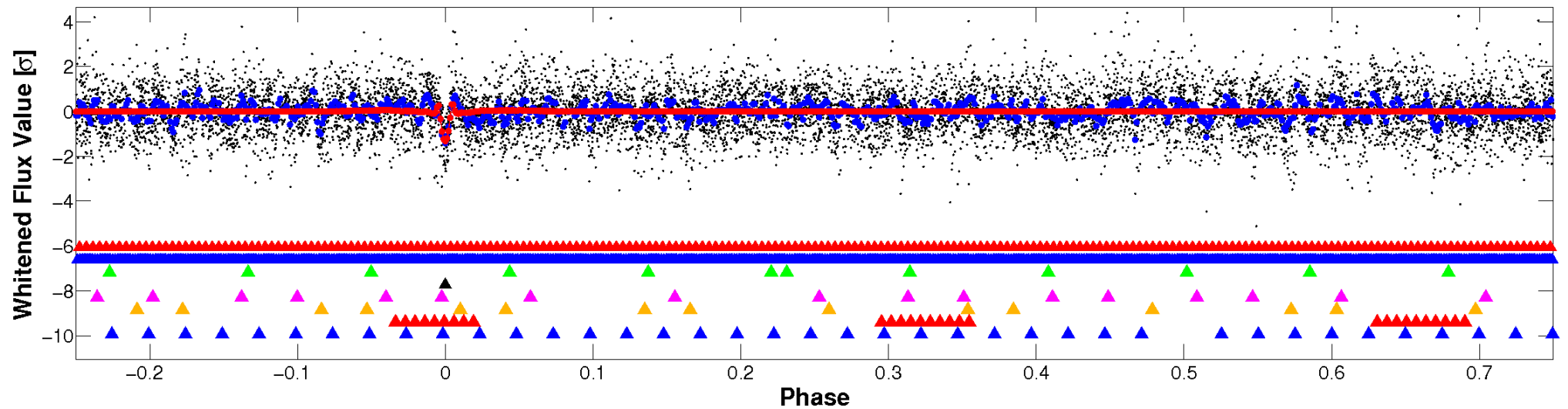


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

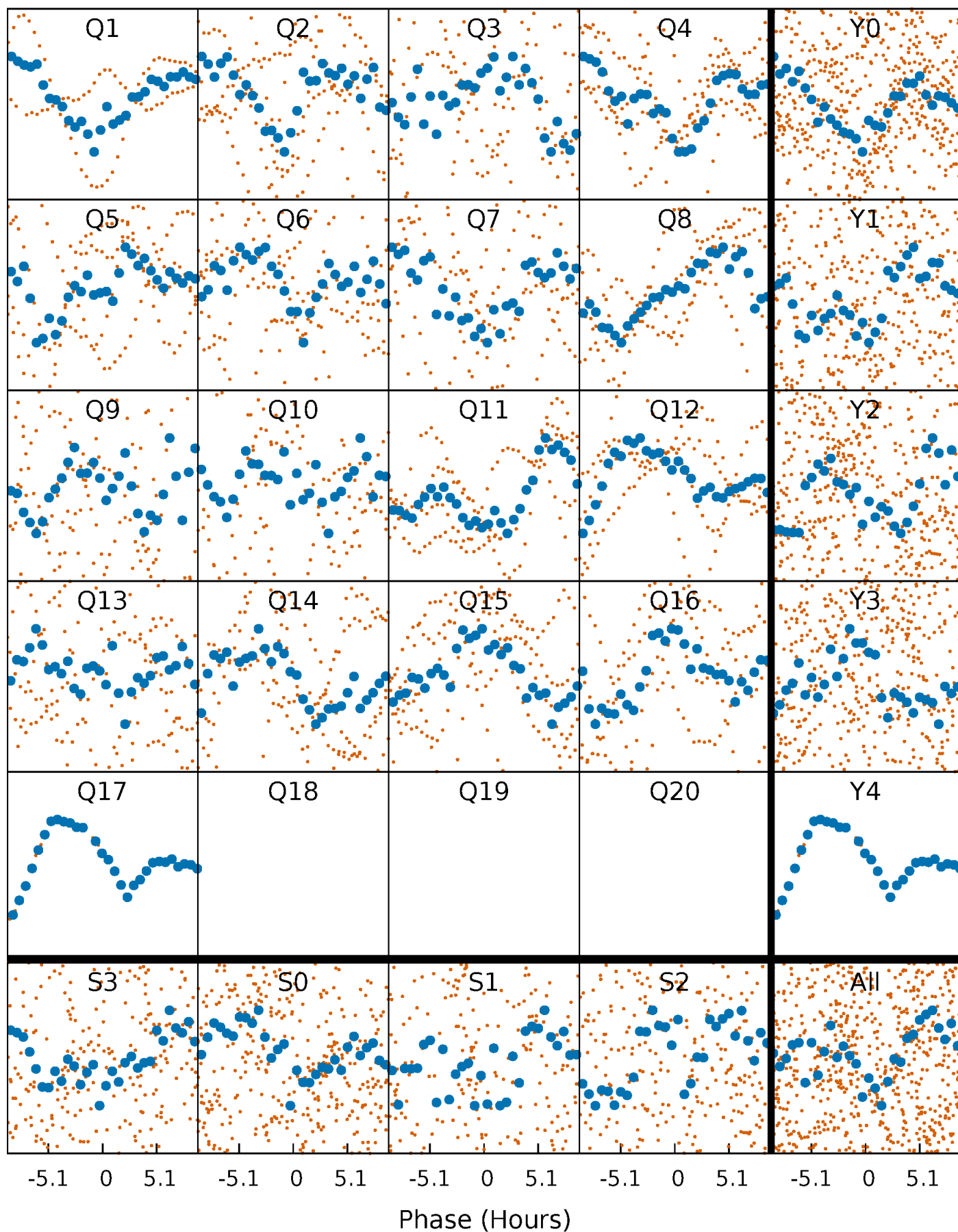


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



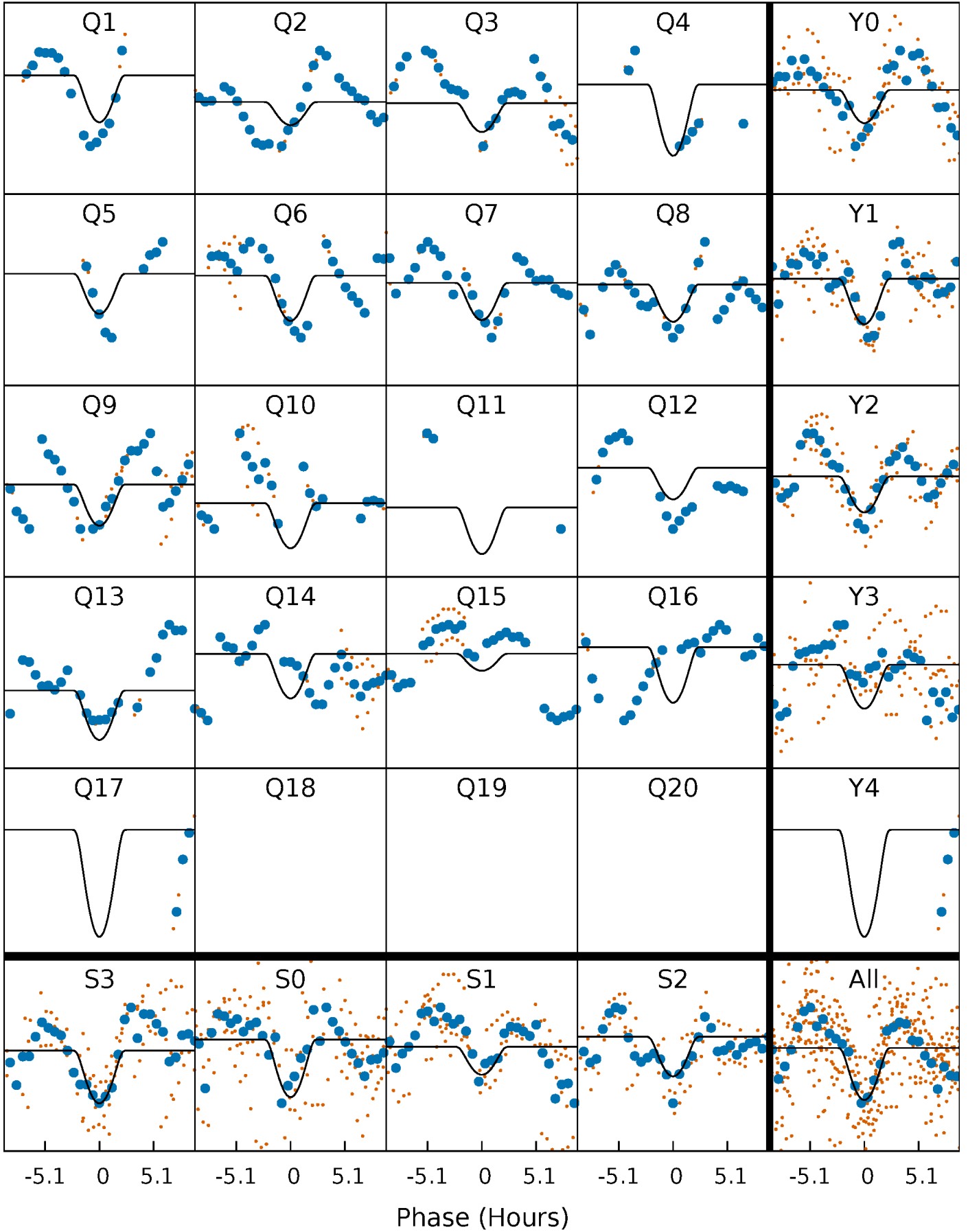
PDC Quarter-Phased Transit Curves

TCE 005294571-04 P= 18.646218 Days $T_0=139.933167$ (BKJD)



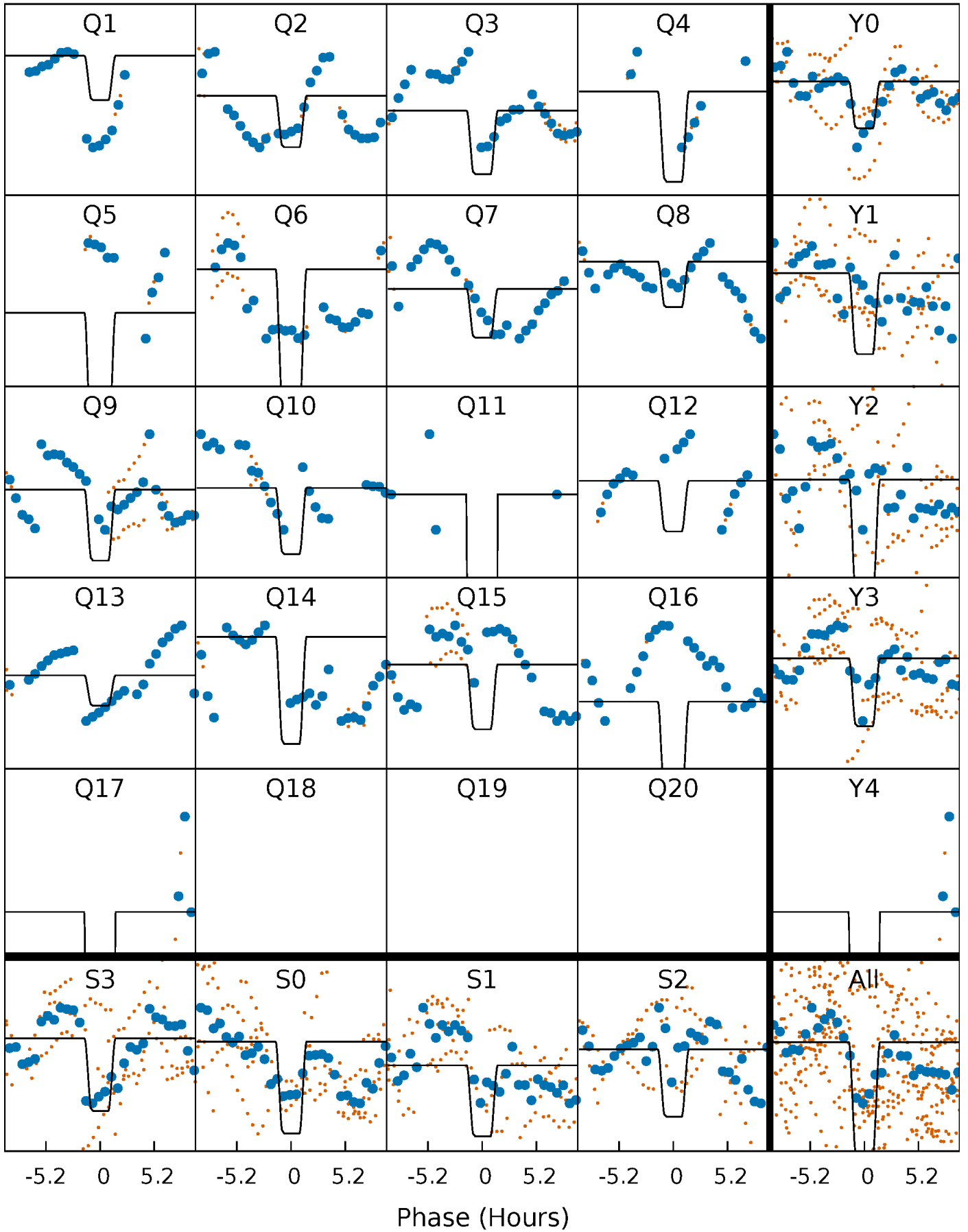
DV Quarter-Phased Transit Curves

TCE 005294571-04 P= 18.646218 Days $T_0=139.933167$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

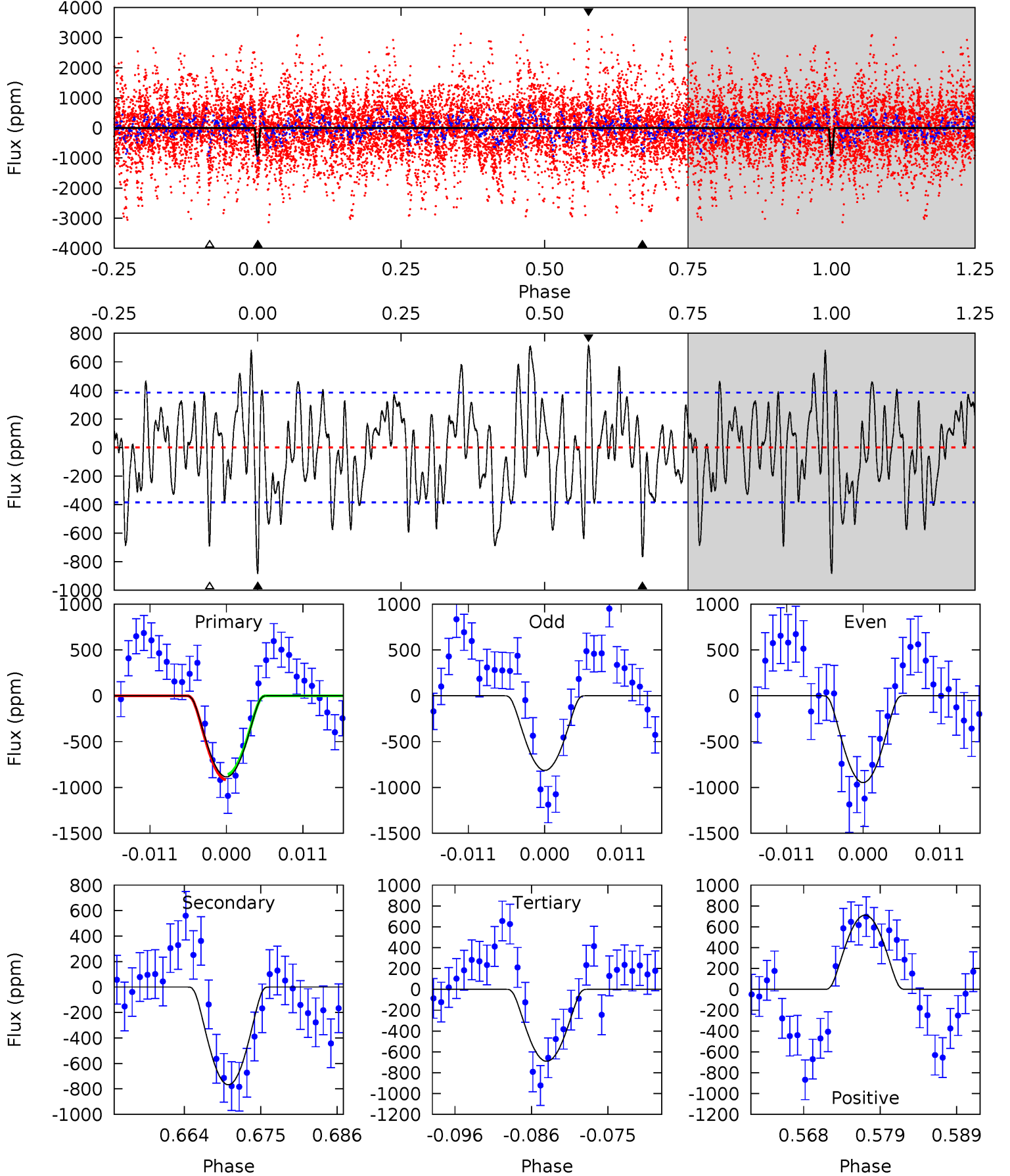
TCE 005294571-04 P= 18.646087 Days $T_0=139.931176$ (BKJD)



DV Model-Shift Uniqueness Test

005294571-04, P = 18.646218 Days, E = 121.286949 Days

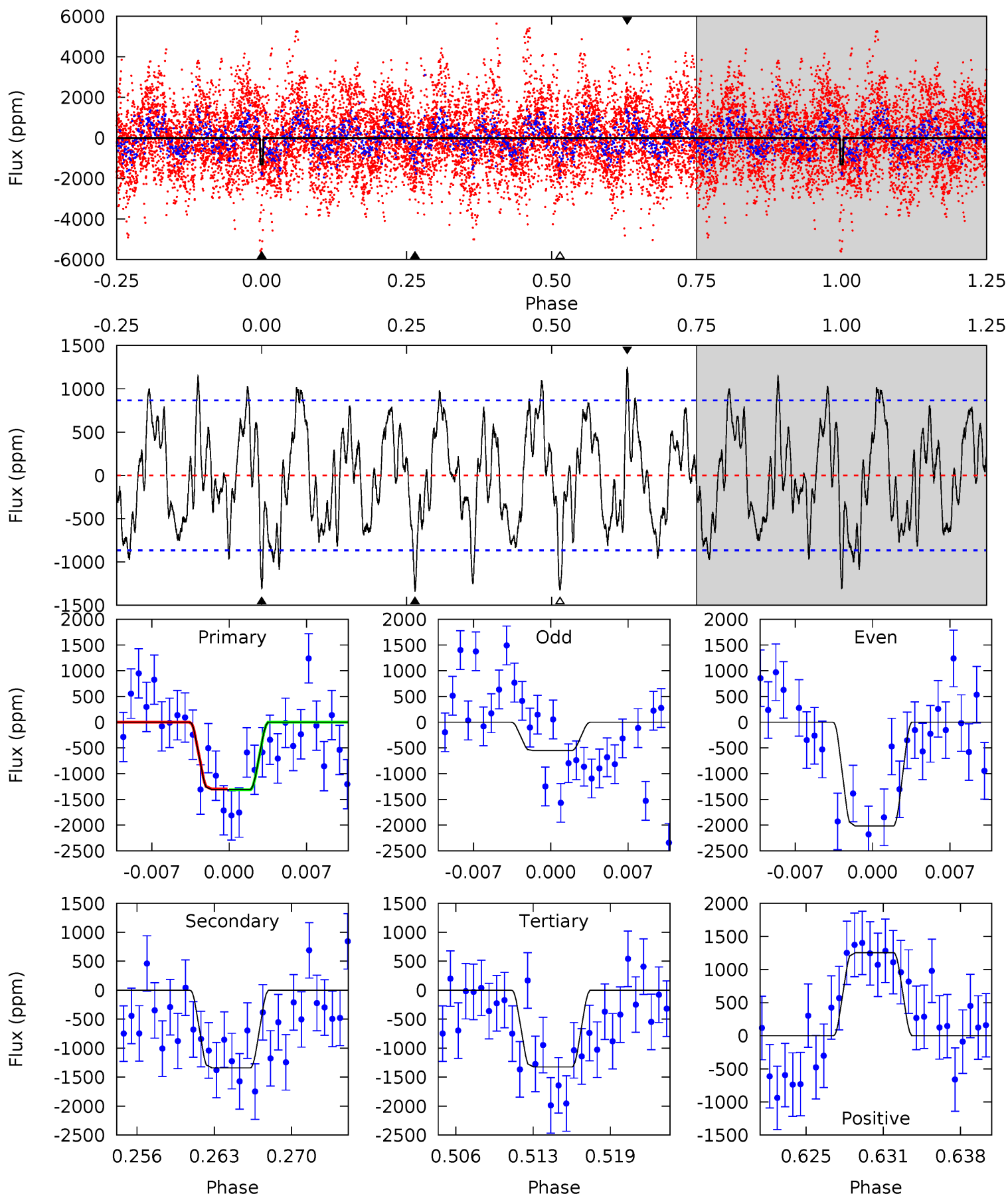
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	9.98	8.98	9.26	5.01	2.55	3.55	2.53	2.25	1.00	0.72	0.87	0.42	0.45	0.38



Alt Model-Shift Uniqueness Test

005294571-04, P = 18.646087 Days, E = 121.285089 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.70	7.90	7.81	7.39	5.11	2.72	3.08	-0.10	0.32	0.10	0.52	4.31	0.72	0.48	0.05



Stellar Parameters For KIC 005294571

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6932^{+144}_{-288}	$2.923^{+0.630}_{-0.070}$	$0.070^{+0.200}_{-0.500}$	$10.322^{+1.100}_{-6.232}$	$3.255^{+0.072}_{-1.372}$	$0.004^{+0.042}_{-0.001}$
	+2%/-4%	+22%/-2%	+286%/-714%	+11%/-60%	+2%/-42%	+1019%/-23%
Source	PHO1	FLK73	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 005294571-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-767 ± 77	$73.07^{+78.26}_{-49.90}$	2908^{+217}_{-432}	4231^{+2802}_{-1049}	$3.022^{+26.621}_{-2.272}$
Alt.	-1341 ± 170	$73.25^{+72.25}_{-51.04}$	2904^{+214}_{-507}	4711^{+4049}_{-1100}	$5.637^{+54.081}_{-4.276}$

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

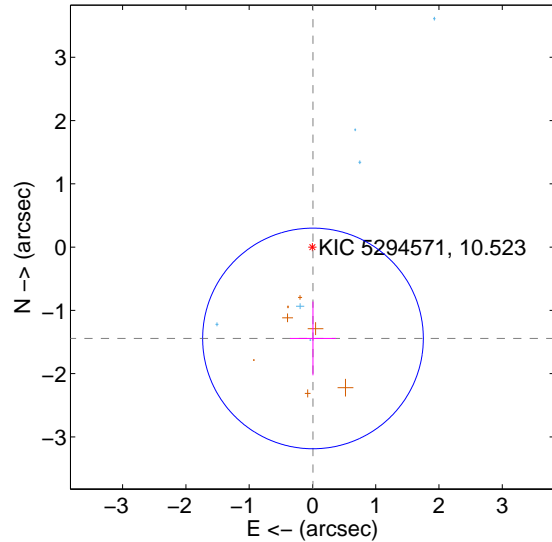
Supplemental centroid analysis for 005294571-04. **Kepler magnitude: 10.52.** Transit SNR 8.99

There are 8 quarters with good PRF difference image offsets

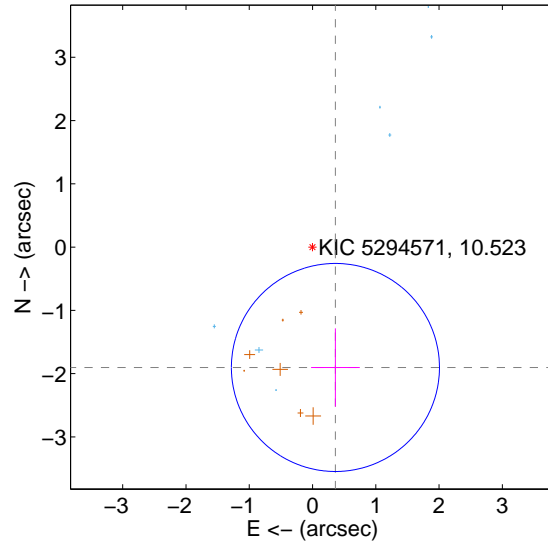
The direct PRF centroid is offset from the target star catalog position by about 0.85 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.444 ± 0.581	2.48	-0.009 ± 0.364	-1.444 ± 0.583
PRF-fit source offset from KIC position	1.937 ± 0.548	3.53	-0.362 ± 0.384	-1.903 ± 0.618
photometric centroid source offset	0.02 ± 0.08	0.26	0.02 ± 0.08	0.00 ± 0.08

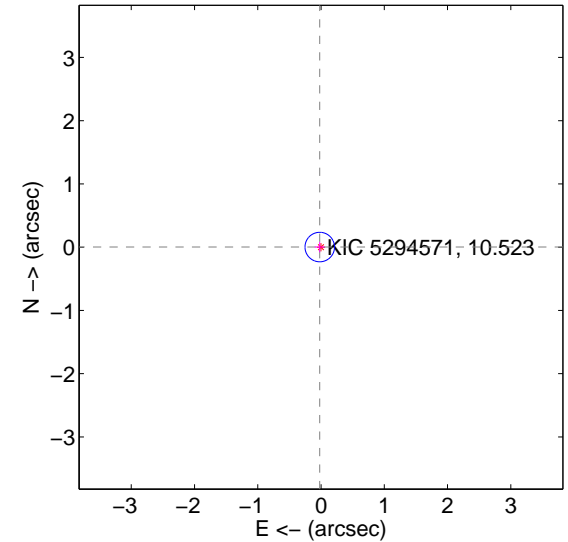
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

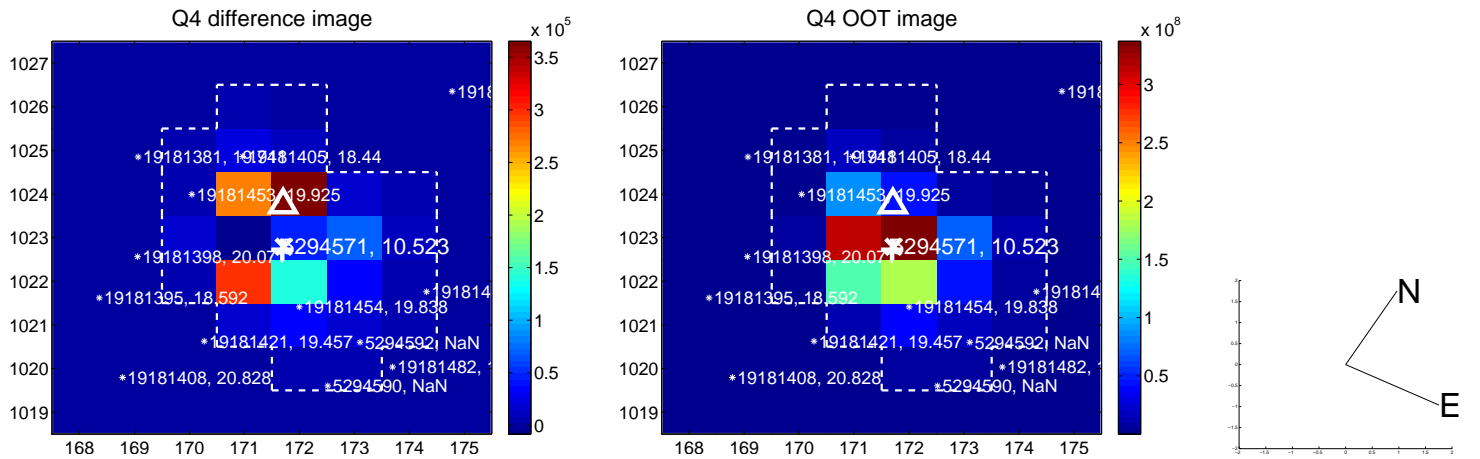
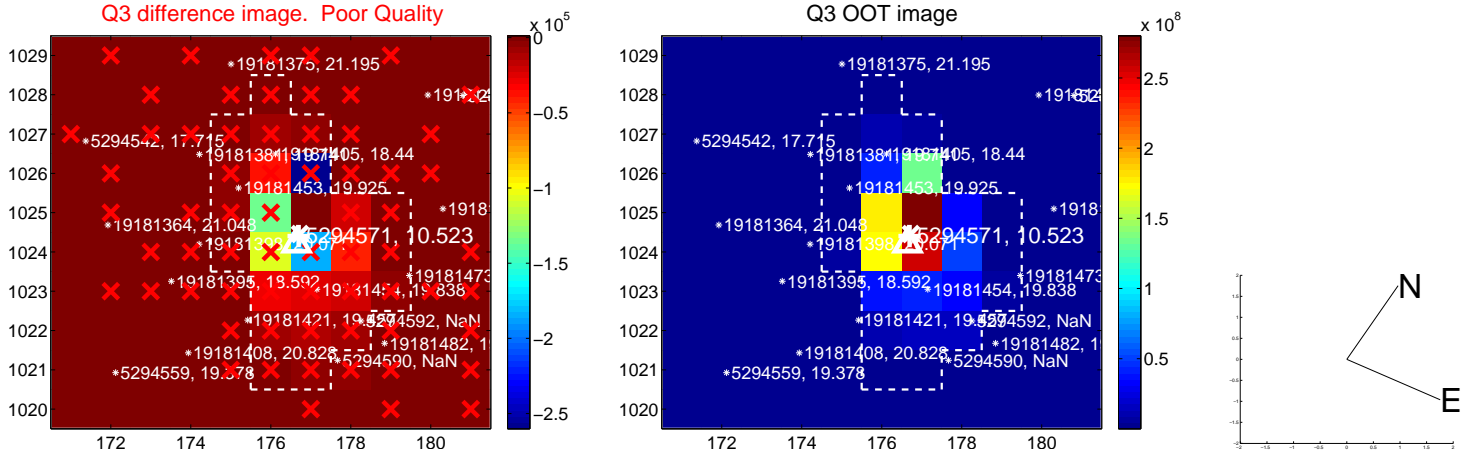
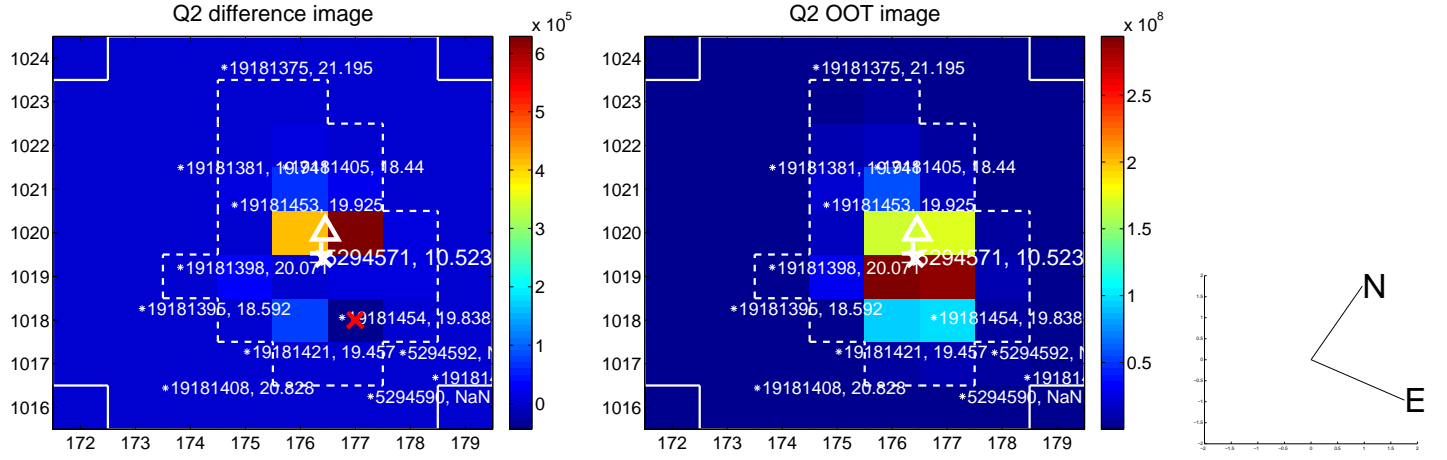
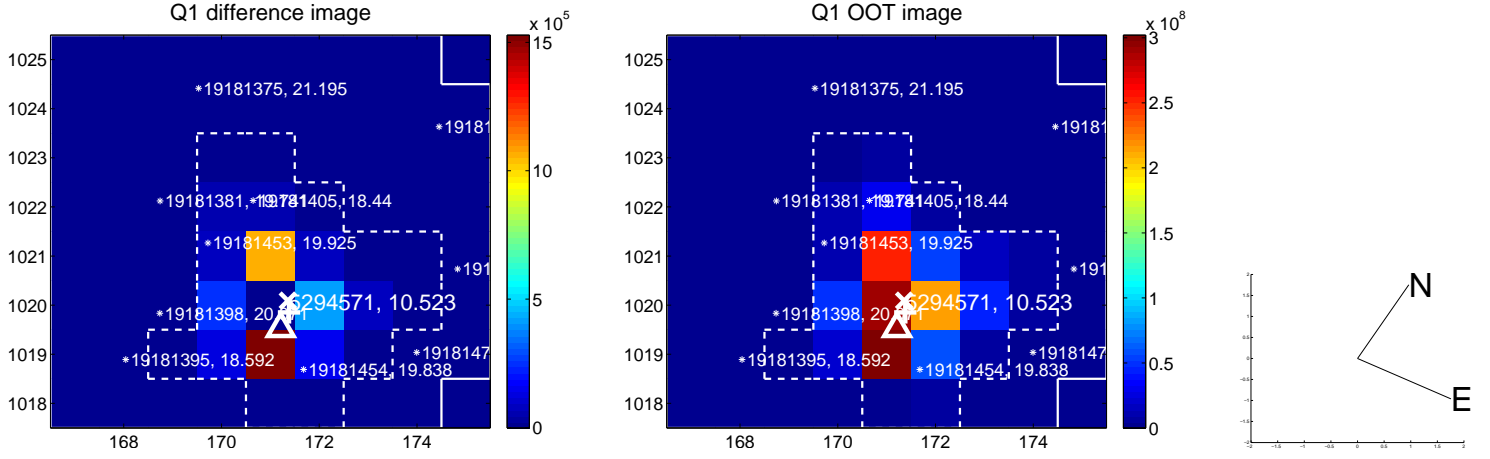


offset from photometric centroids

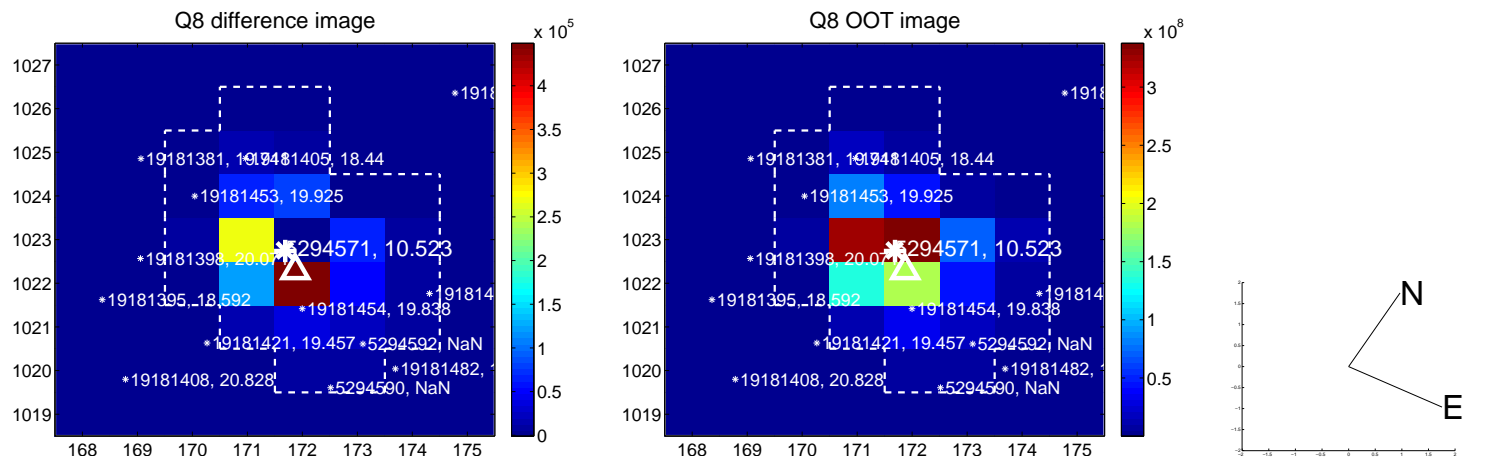
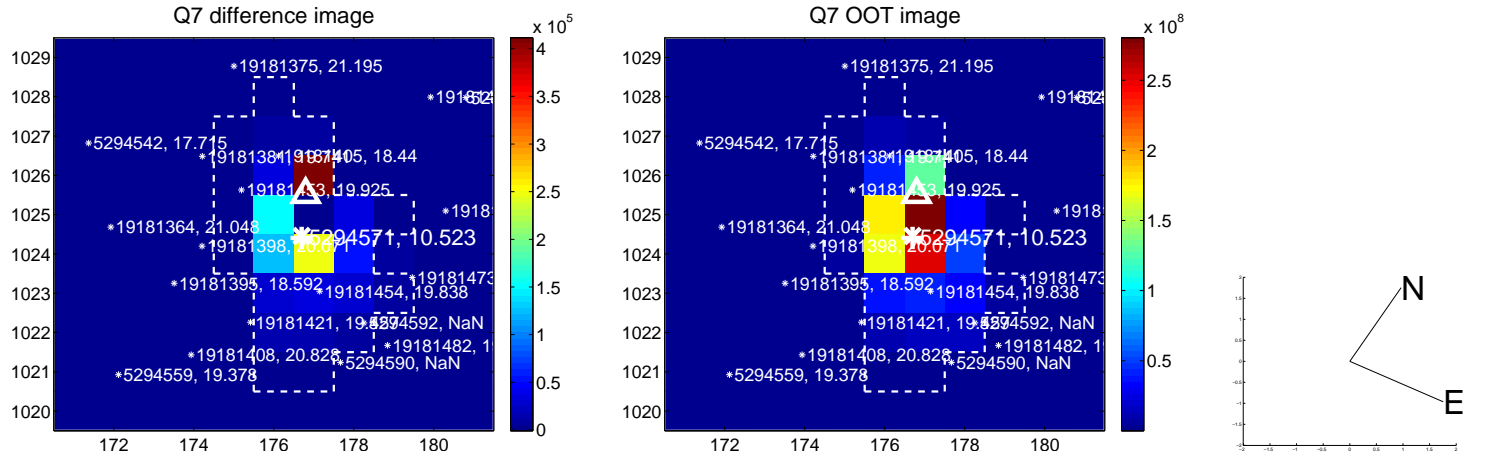
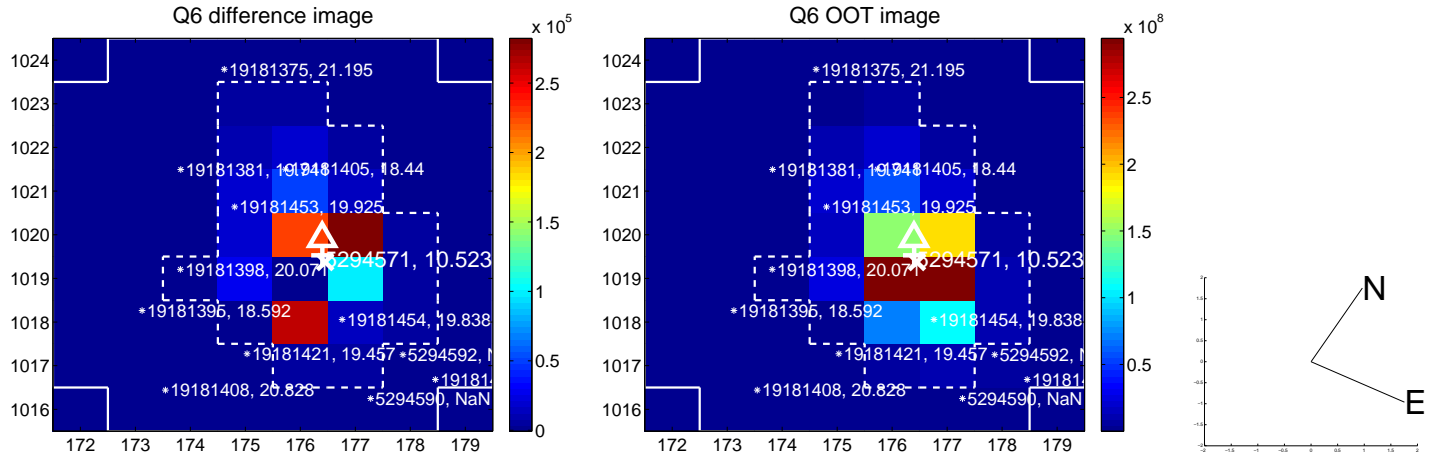
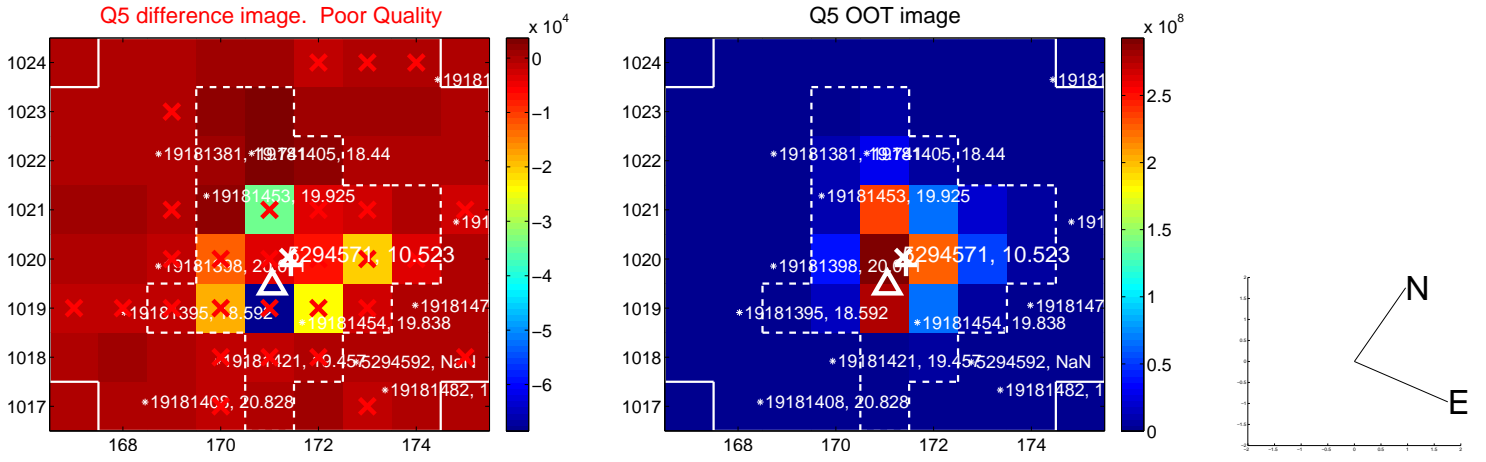


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

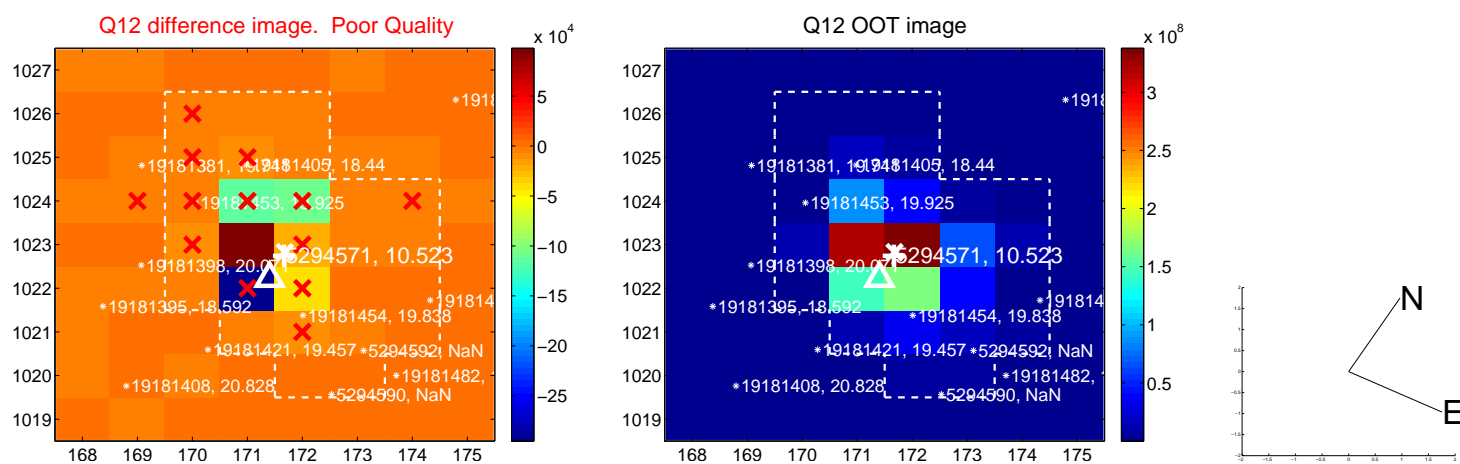
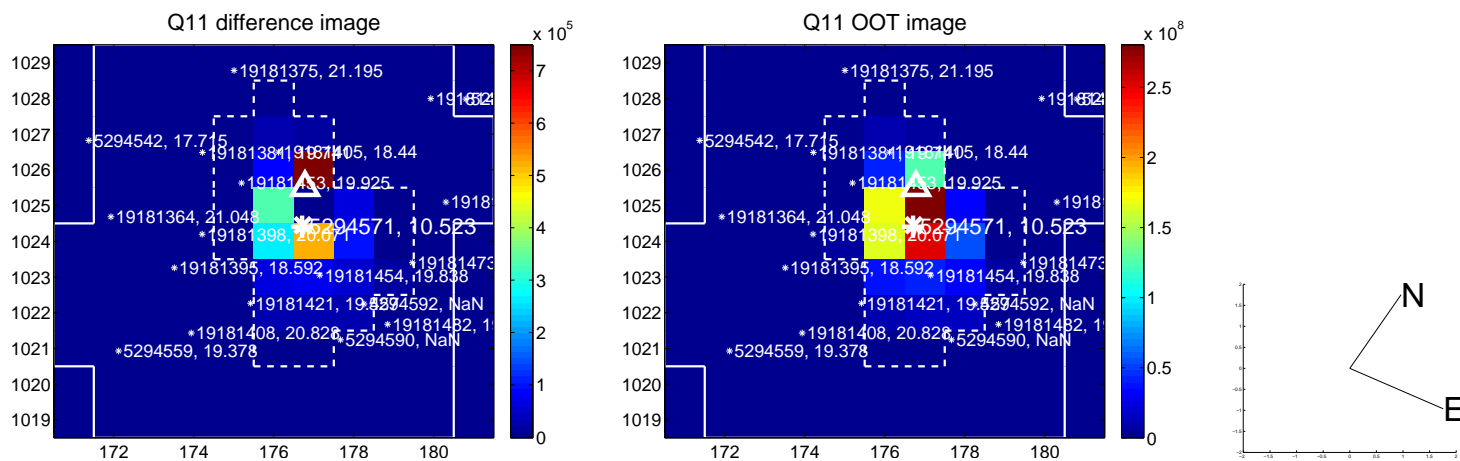
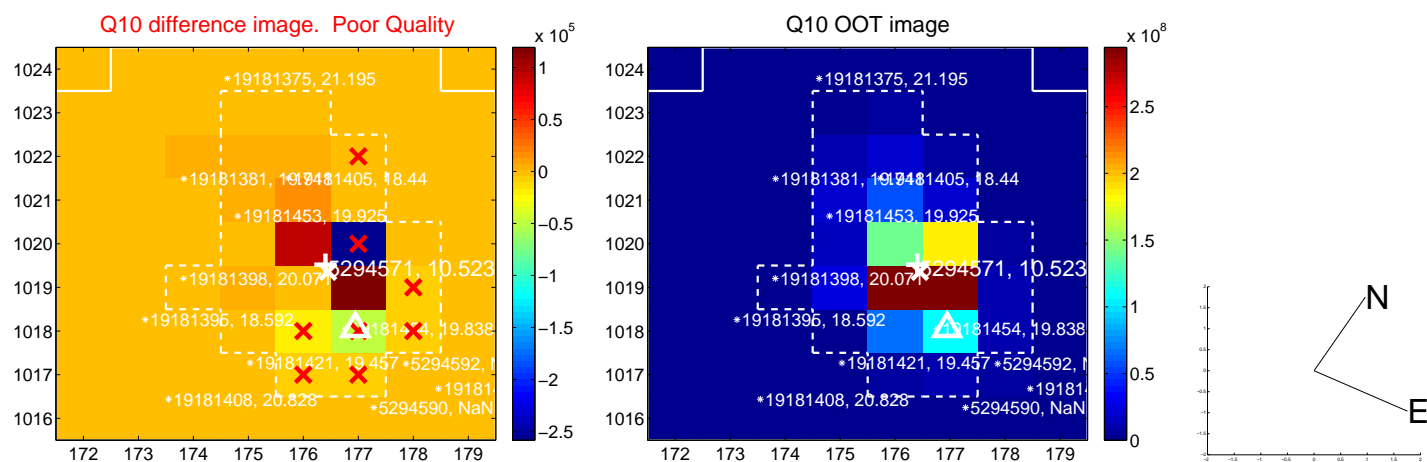
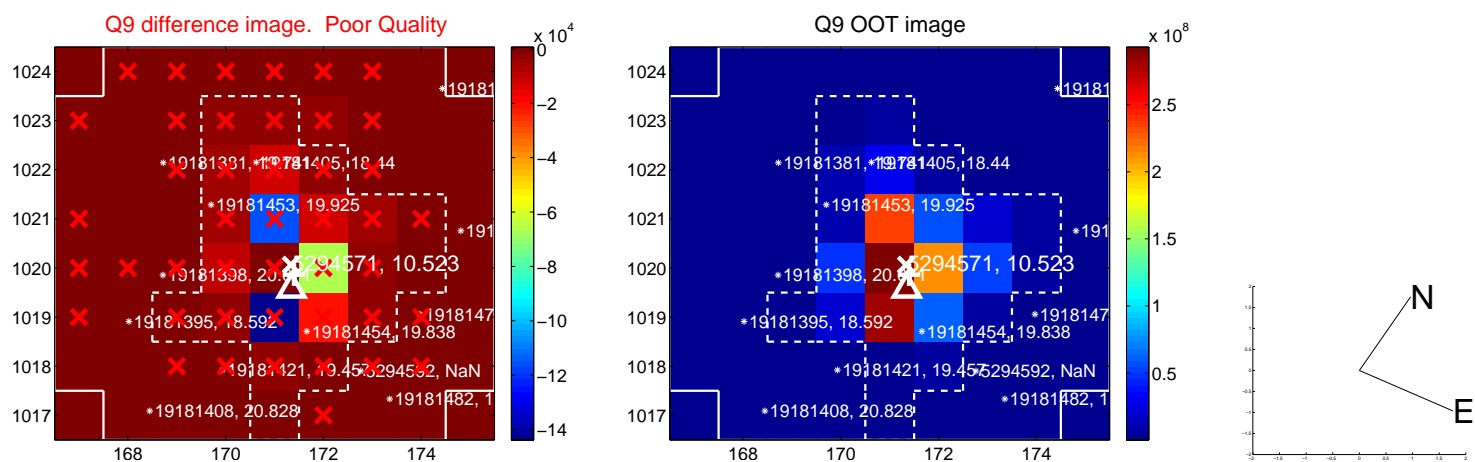
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



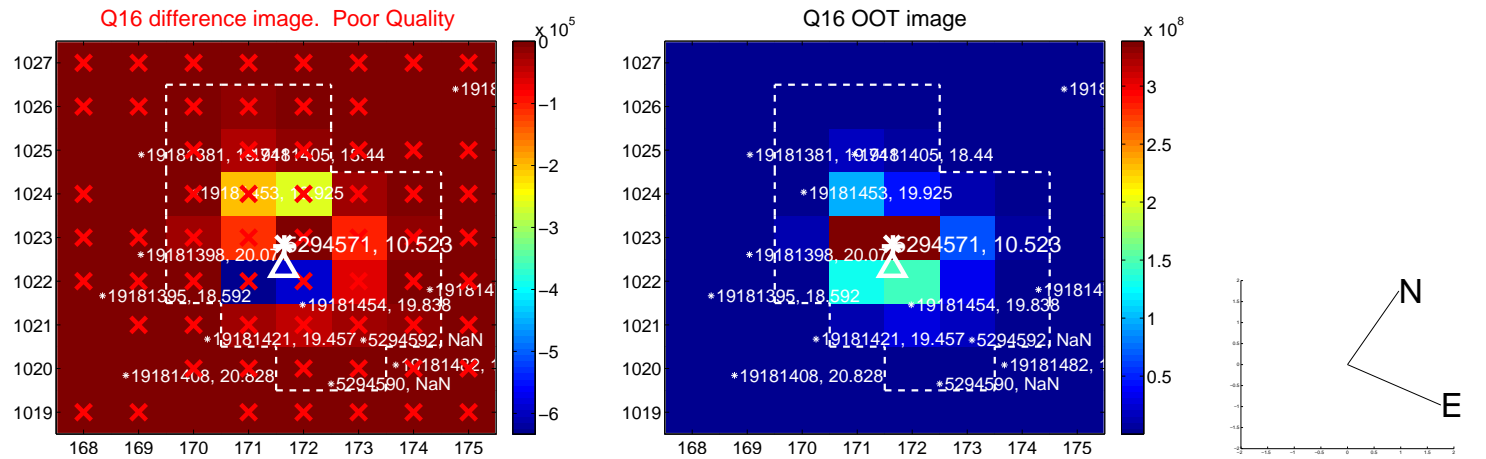
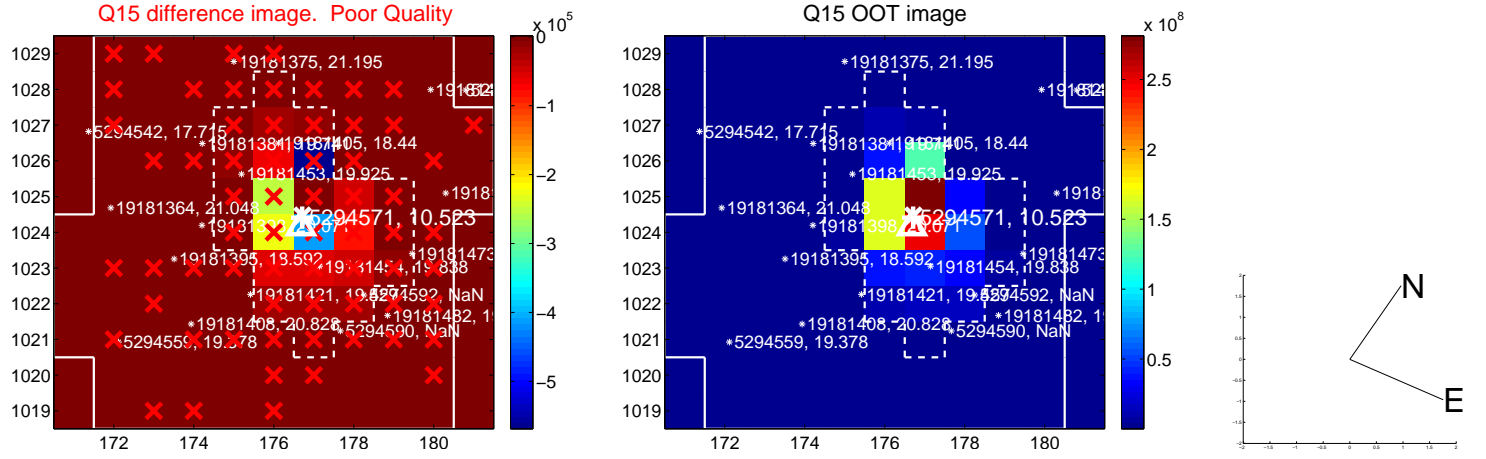
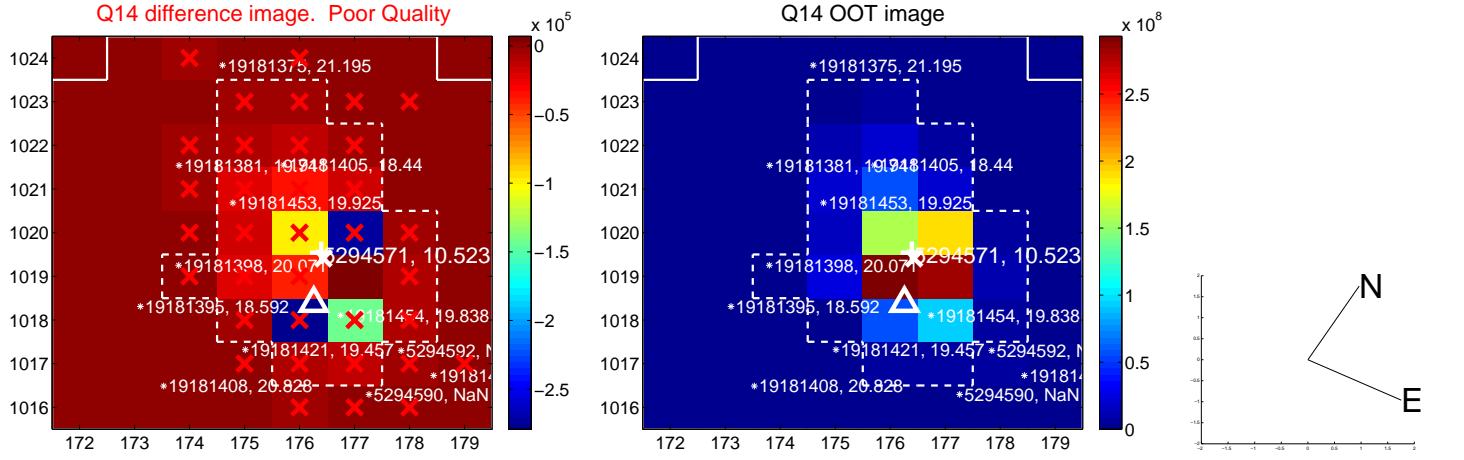
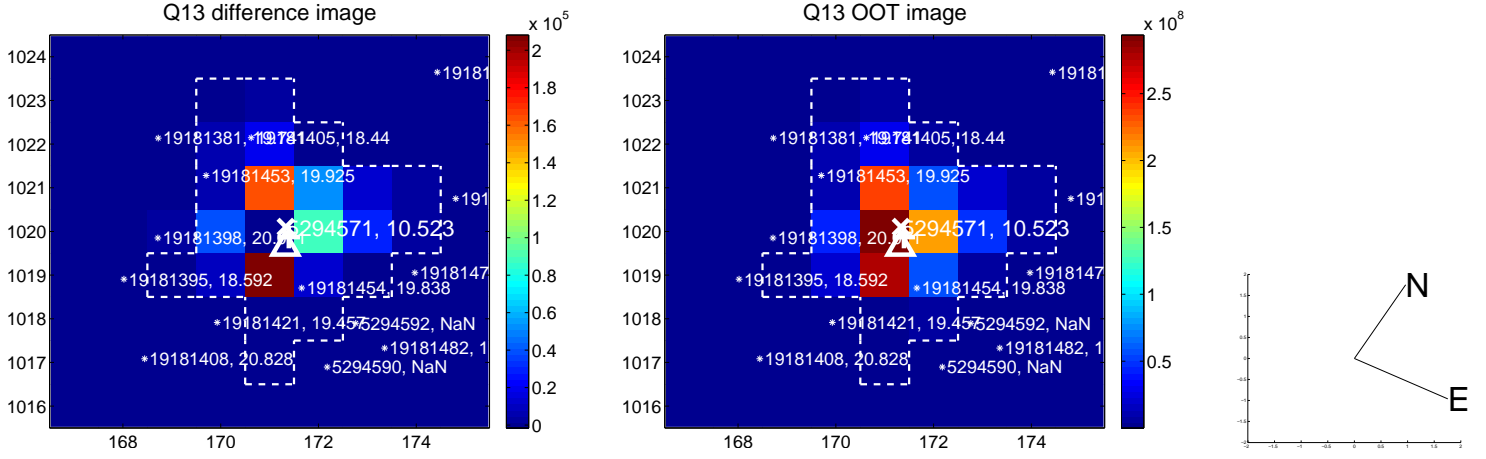
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



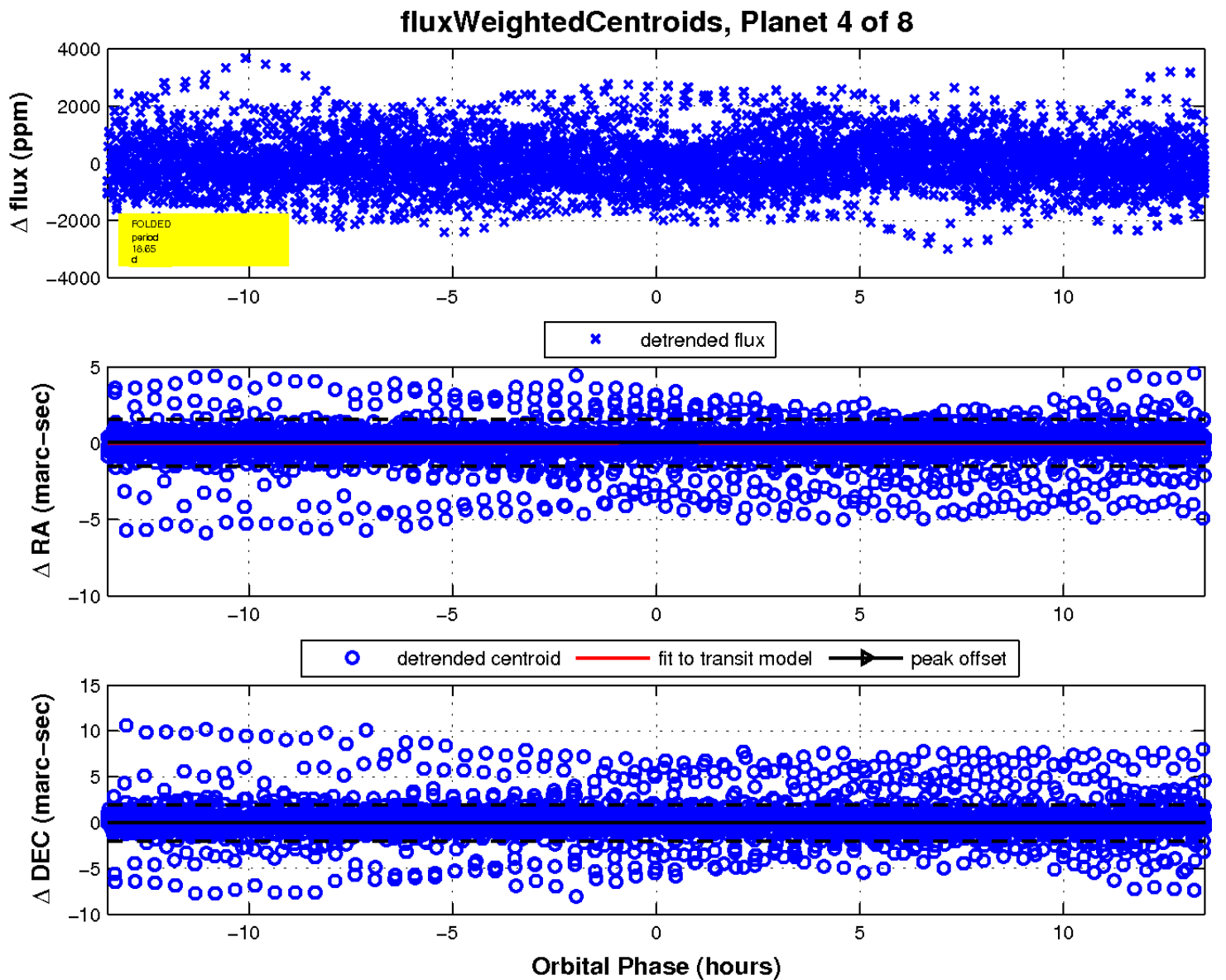
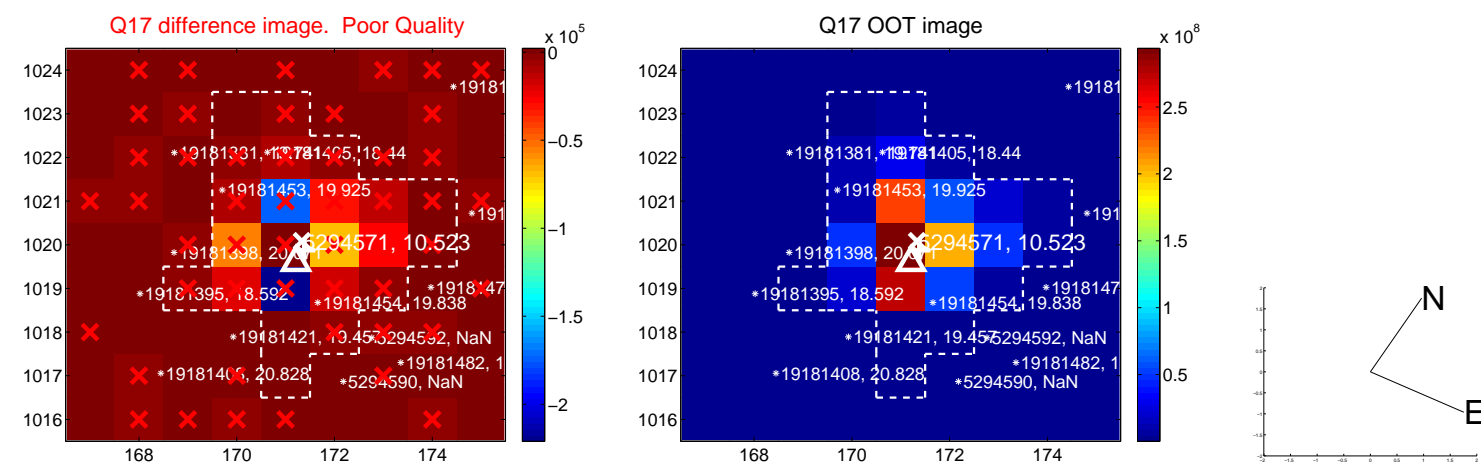
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



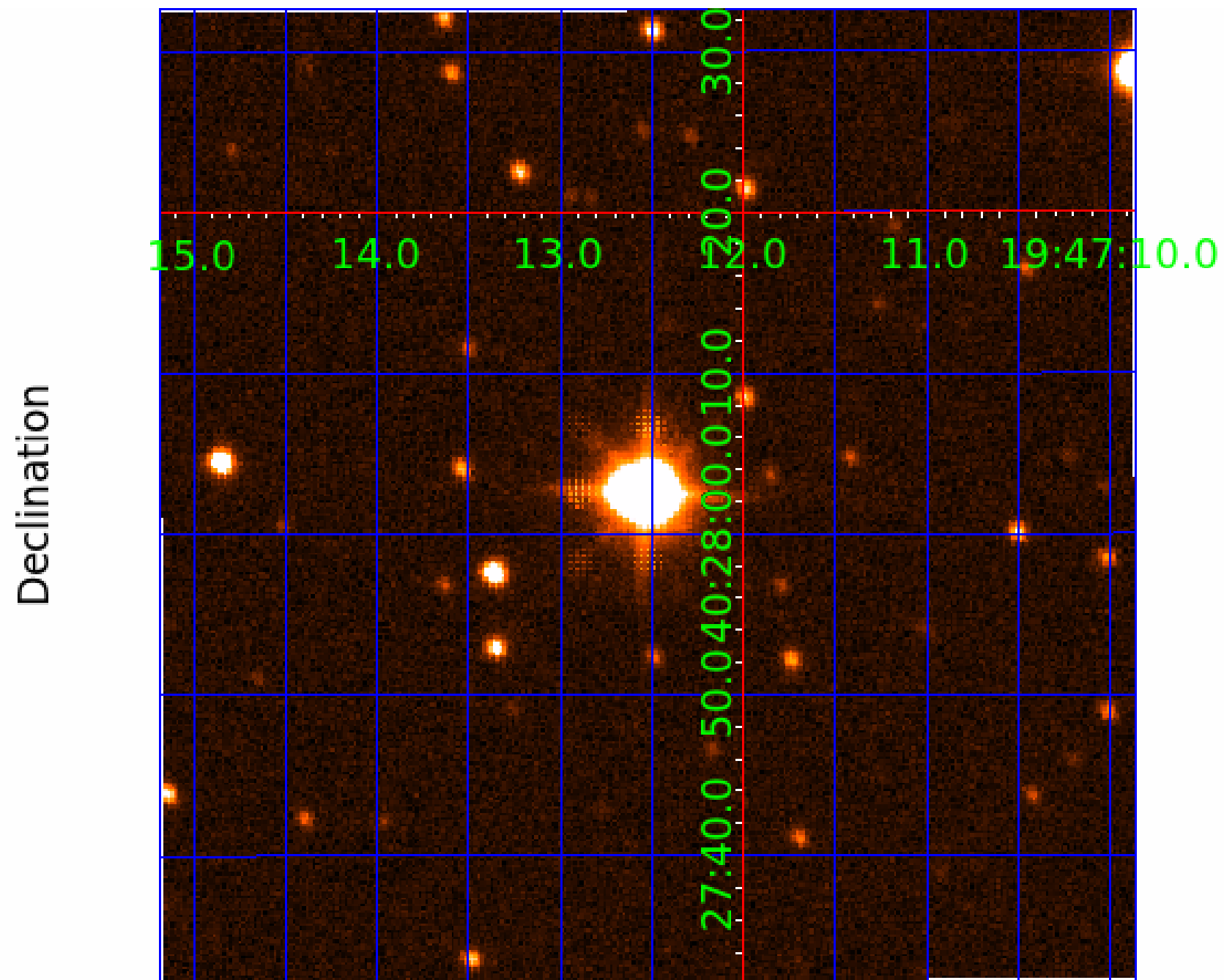
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 005294571

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})
005294571-01	OBS	No	0.919779	132.132304	1.5	0.765	10.9	0.4	10.32	6932	1.69	0.00
005294571-02	OBS	No	0.921182	132.122511	12.6	5.687	9.3	1.6	10.32	6932	3.77	0.00
005294571-03	OBS	No	118.675541	199.986190	1570.4	9.608	9.7	5.1	10.32	6932	48.74	449.11
005294571-04	OBS	No	18.646218	139.933167	964.7	4.491	9.0	9.0	10.32	6932	60.13	5297.25
005294571-05	OBS	No	84.819452	191.478039	483.3	6.919	8.5	2.6	10.32	6932	25.78	702.82
005294571-08	OBS	No	36.828276	167.368486	56.5	5.000	8.5	-1.0	10.32	6932	7.81	2137.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005294571-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_SATURATED
005294571-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—CENT_SATURATED
005294571-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005294571-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005294571-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST
005294571-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

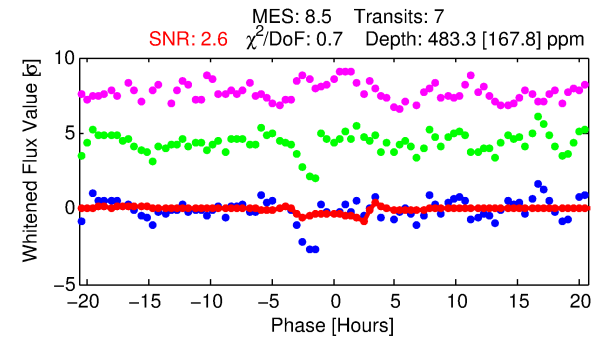
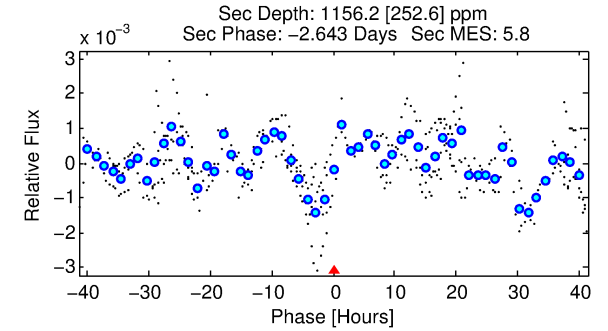
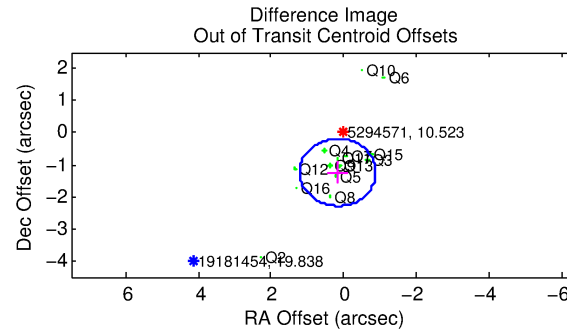
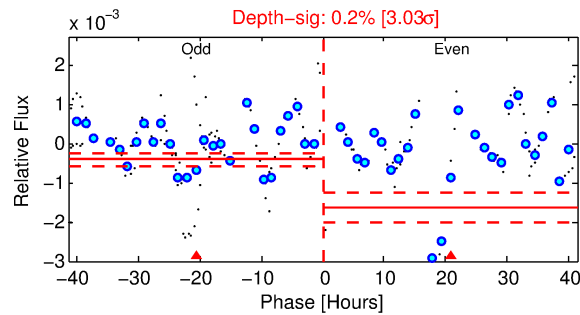
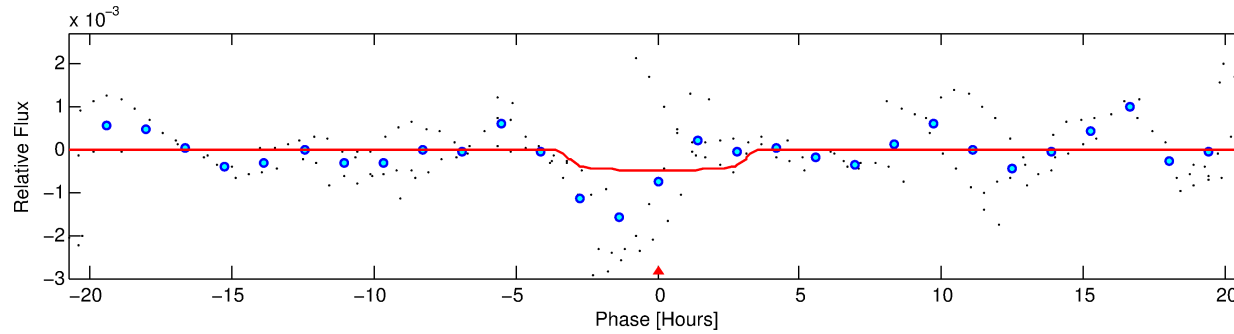
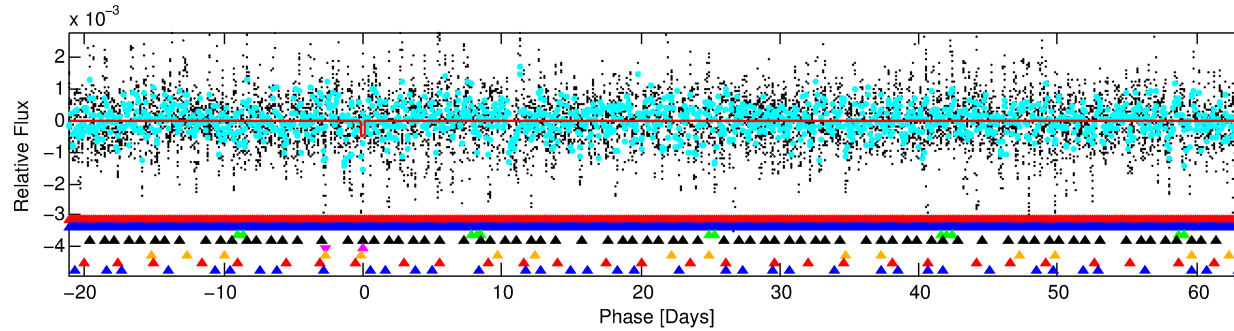
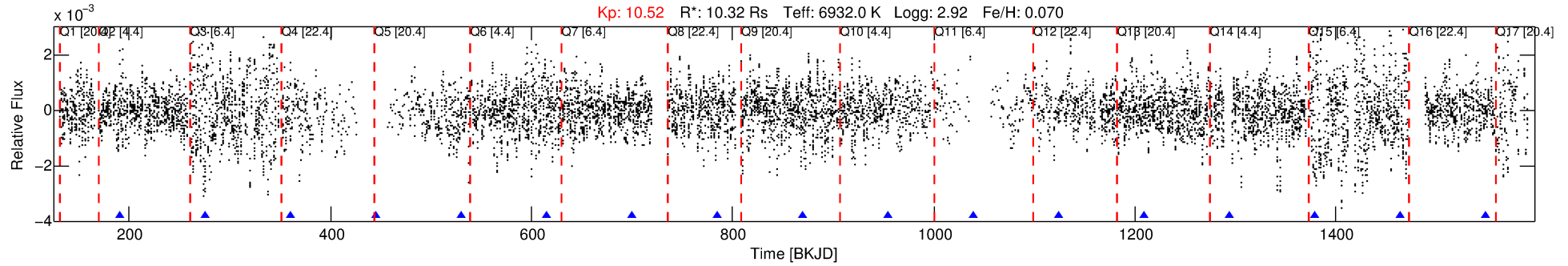
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005294571-05

No Significant Match Found

DV One-Page Summary

KIC: 5294571 Candidate: 5 of 8 Period: 84.819 d



DV Fit Results:

Period = 84.81945 [0.00140] d
Epoch = 191.4780 [0.0151] BKJD
Rp/R* = 0.0229 [0.0118]
a/R* = 51.86 [136.81]
b = 0.86 [0.81]
Seff = 702.82 [745.41]
Teq = 1313 [348] K
Rp = 25.78 [20.45] Re
a = 0.5600 [0.3523] AU
Ag = 300.15 [445.51] [0.67 σ]
Teffp = 8449 [2249] K [3.14 σ]

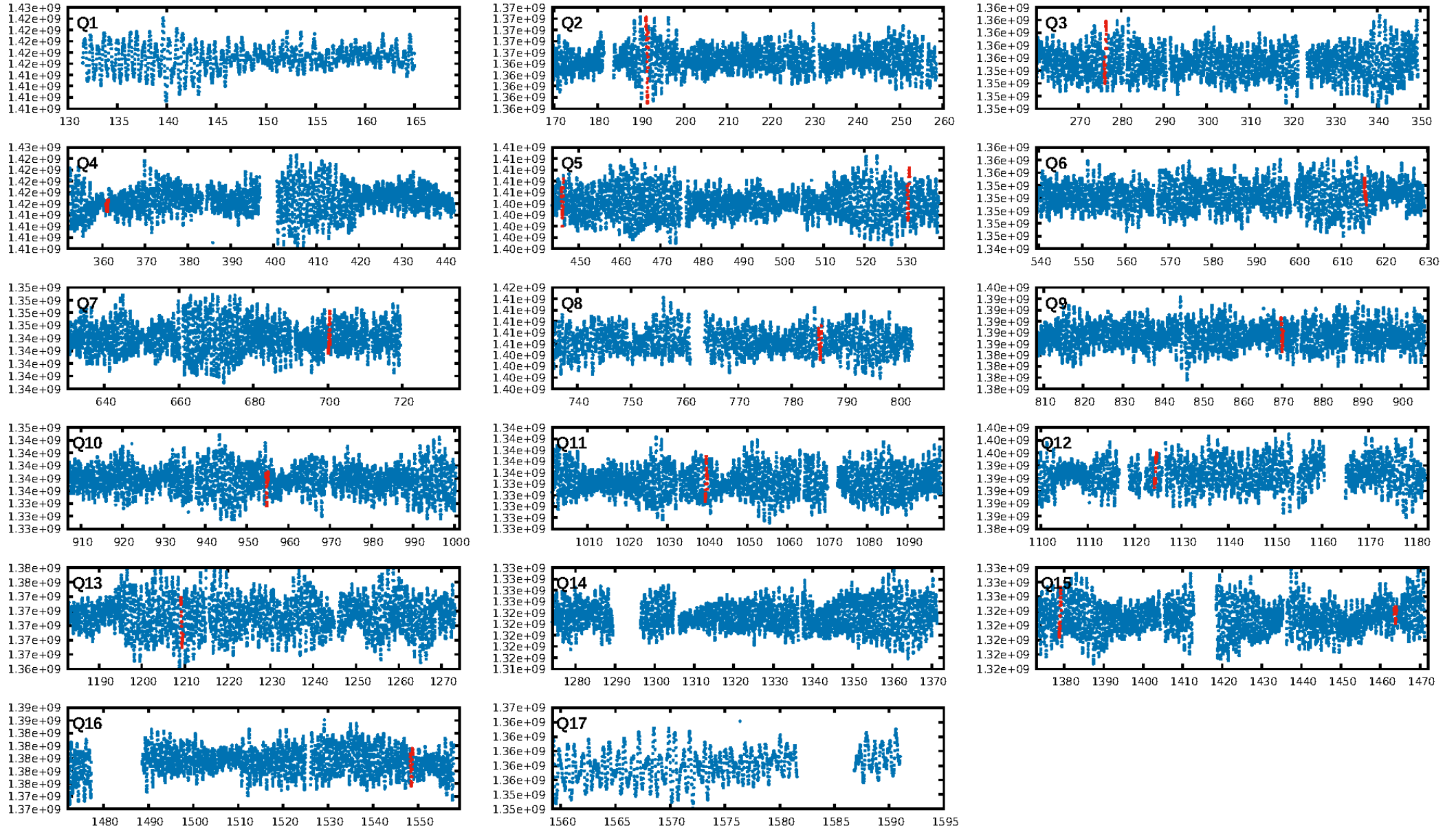
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [100.60 σ]
LongPeriod-sig: 100.0% [32.44 σ]
ModelChiSquare2-sig: 7.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -0.2264
Centroid-sig: 0.1%
Centroid-so: 0.568 arcsec [1.97 σ]
OotOffset-rm: 1.255 arcsec [3.60 σ]
KicOffset-rm: 1.575 arcsec [3.39 σ]
OotOffset-st: 3/4/4/3 [14]
KicOffset-st: 3/4/4/3 [14]
DiffImageQuality-fgm: 0.43 [6/14]
DiffImageOverlap-fno: 0.00 [0/14]

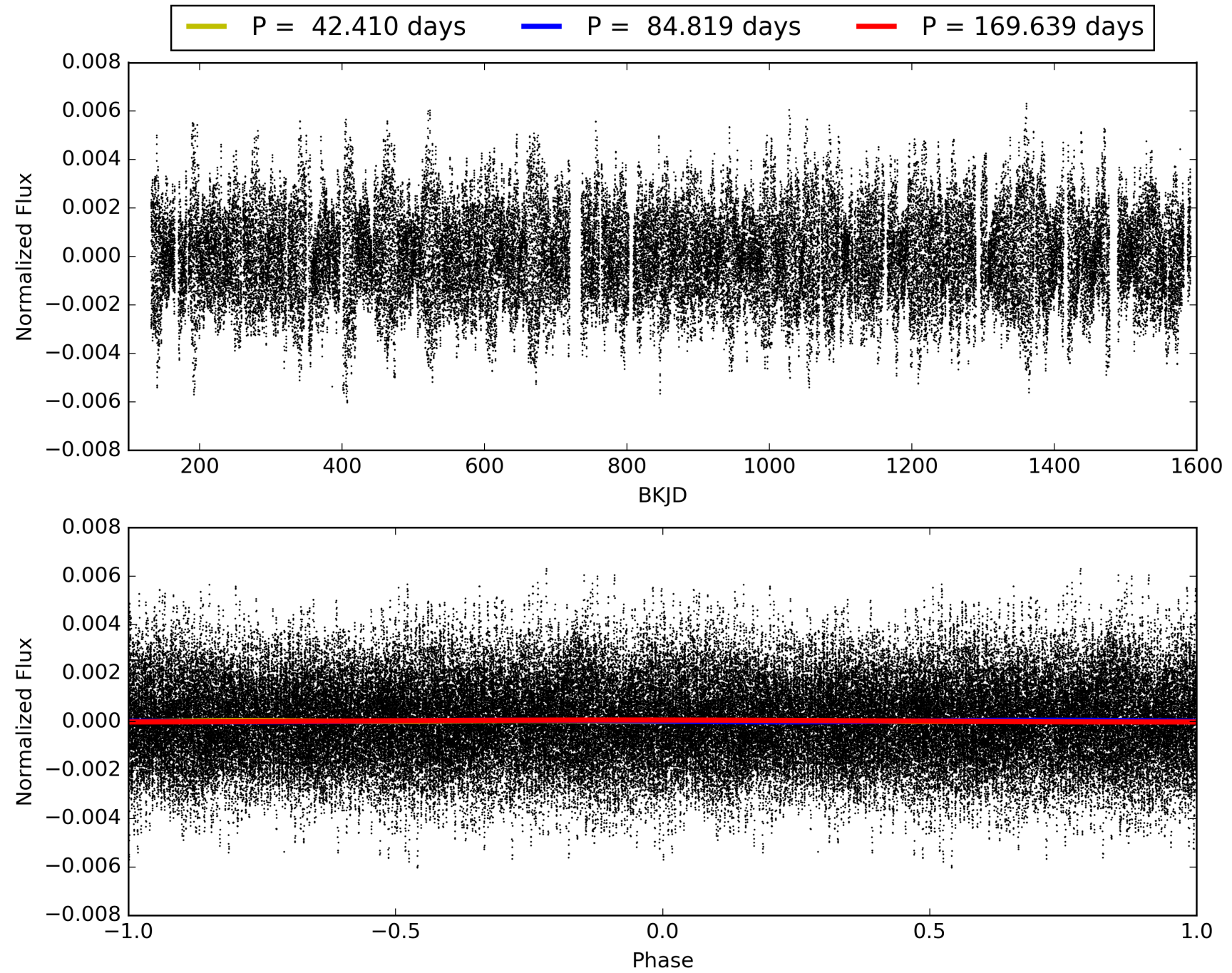
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:02:24 Z

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

TCE 005294571-05, PDC Light Curves

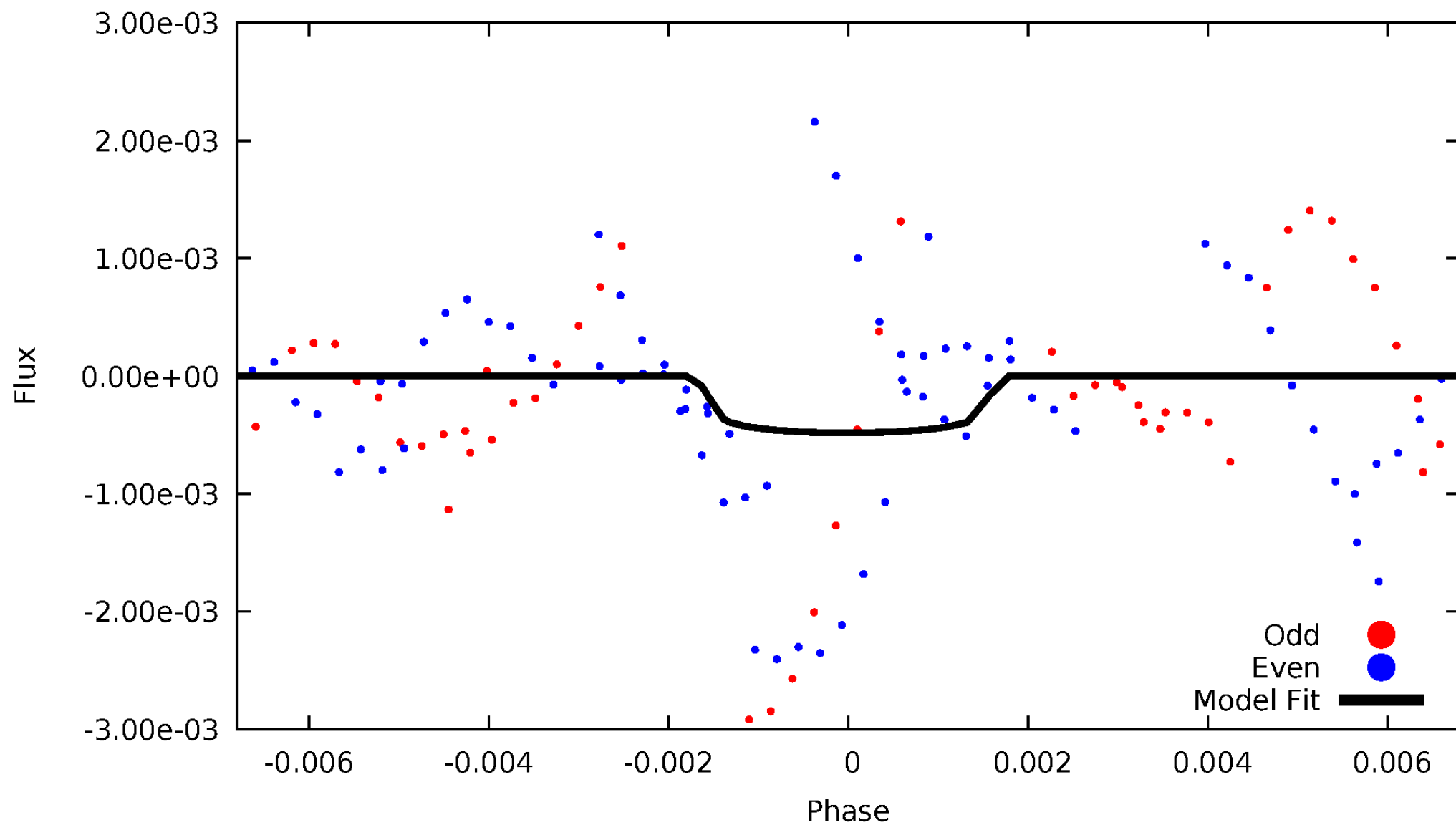


TCE 005294571-05



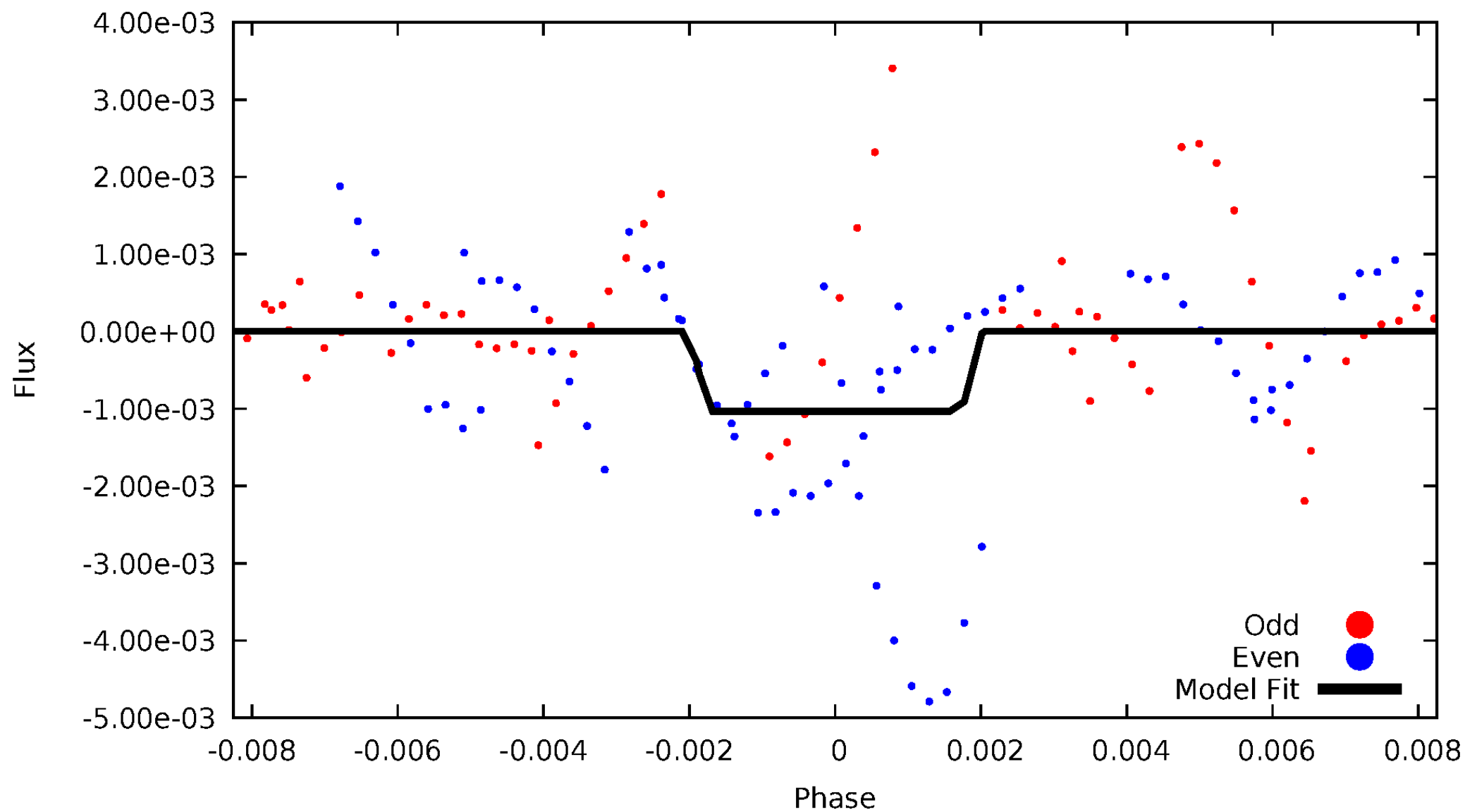
DV Odd/Even

TCE 005294571-05



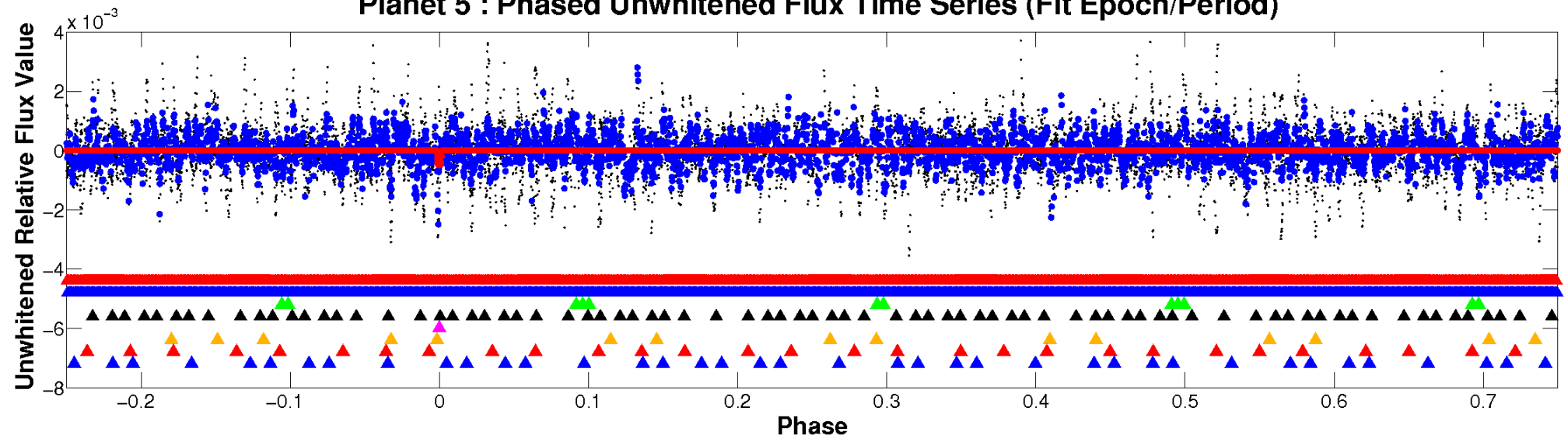
ALT Odd/Even

TCE 005294571-05

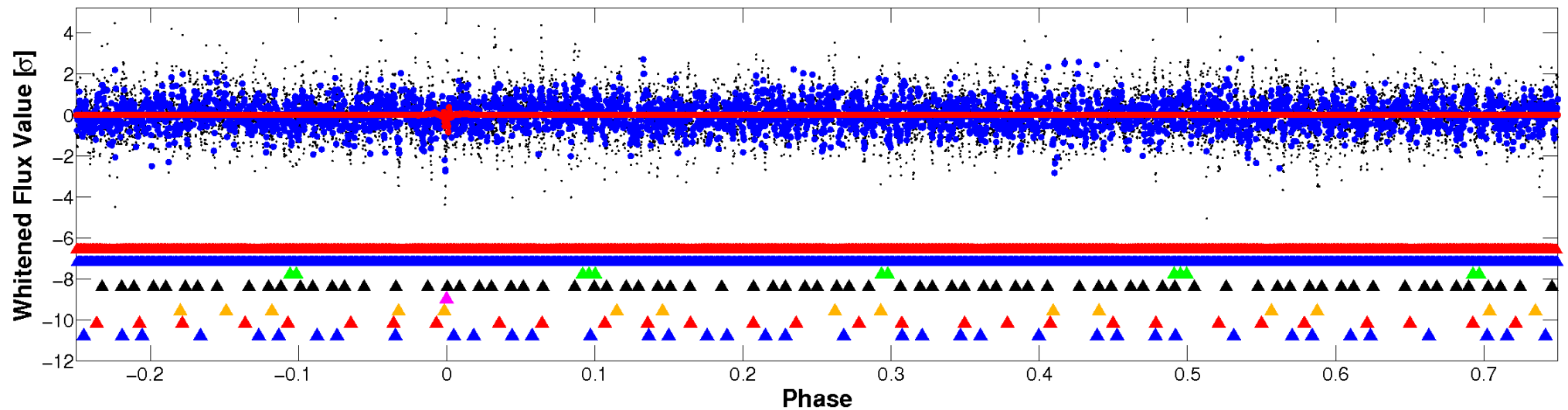


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

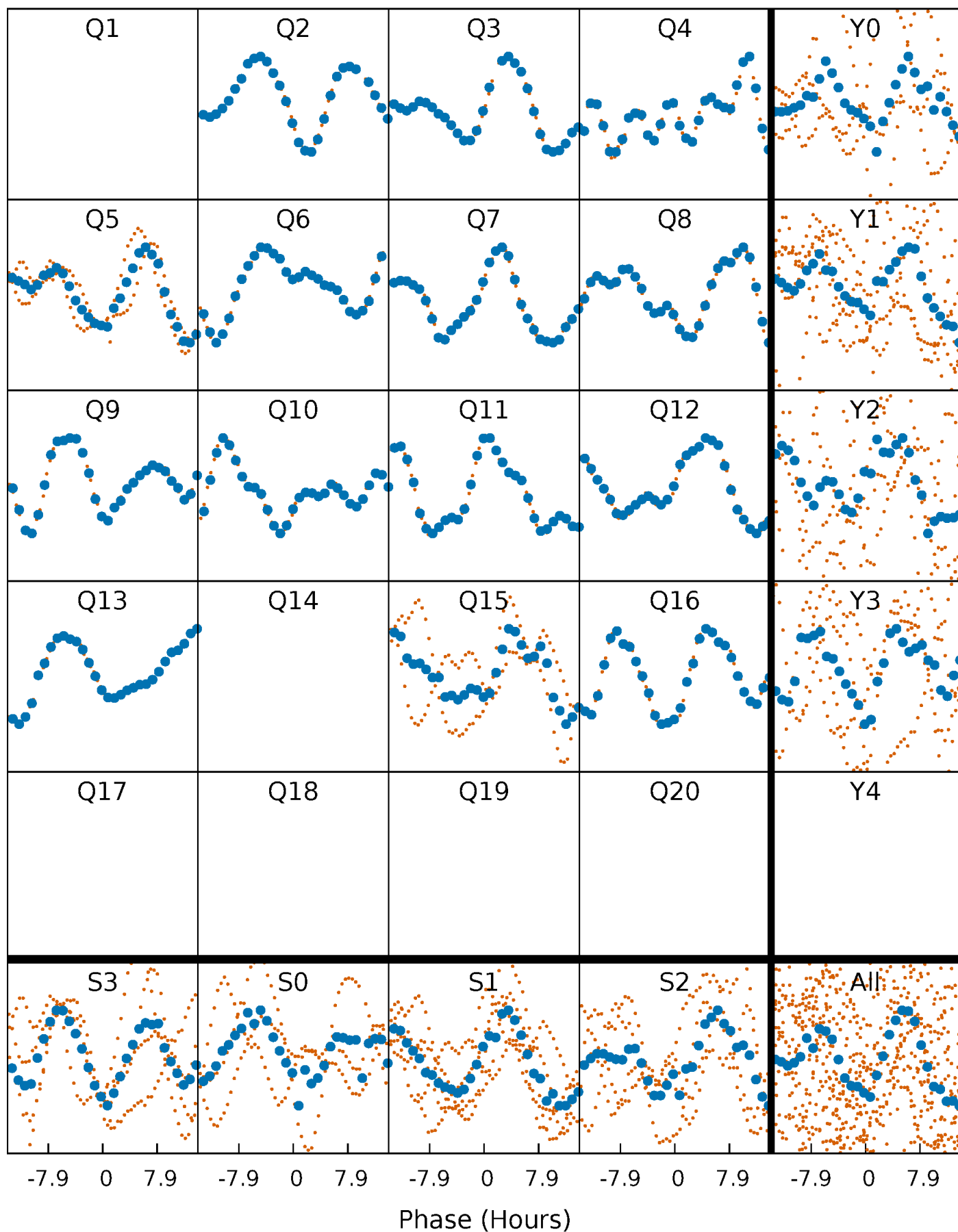


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



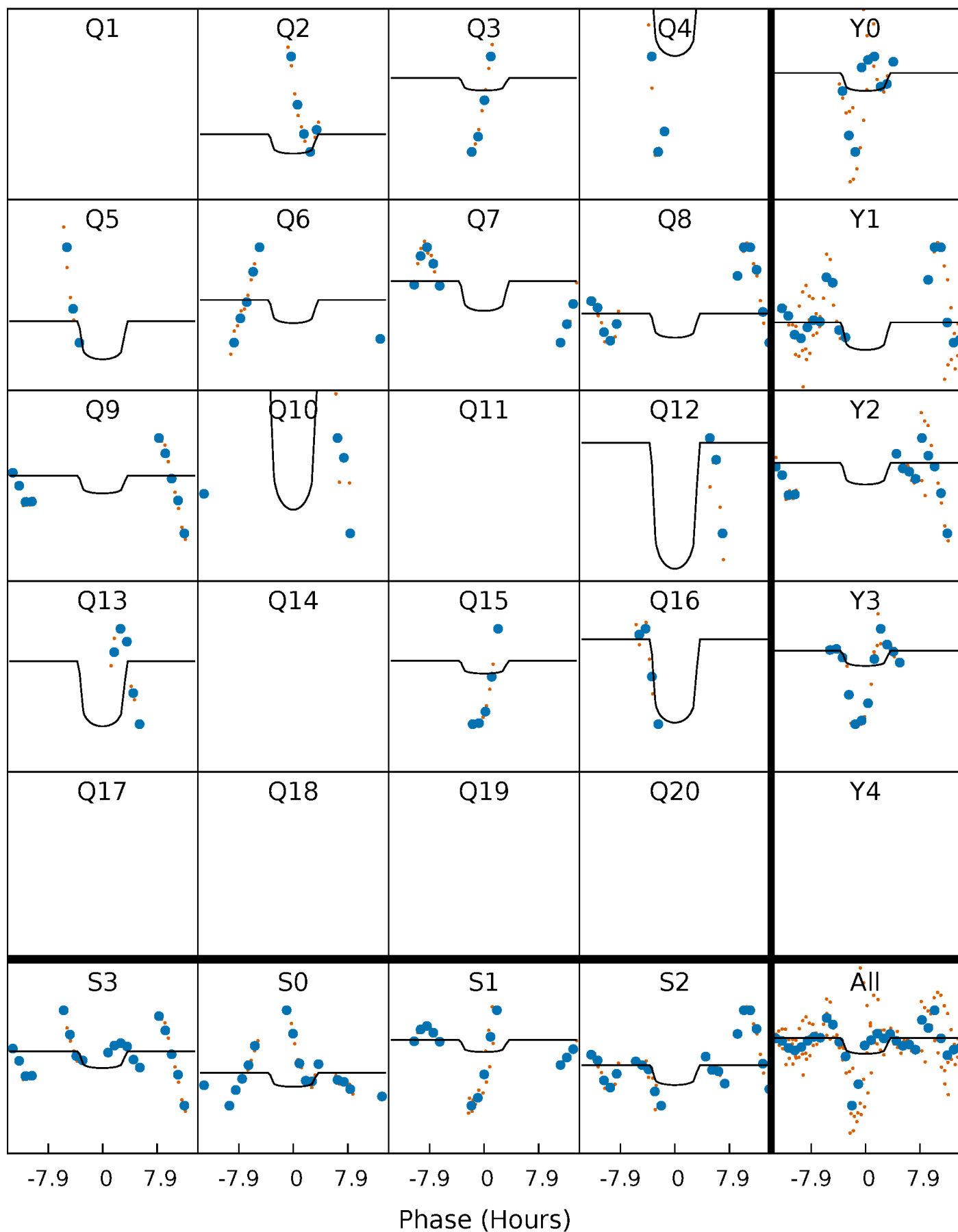
PDC Quarter-Phased Transit Curves

TCE 005294571-05 P= 84.819452 Days $T_0=191.478039$ (BKJD)



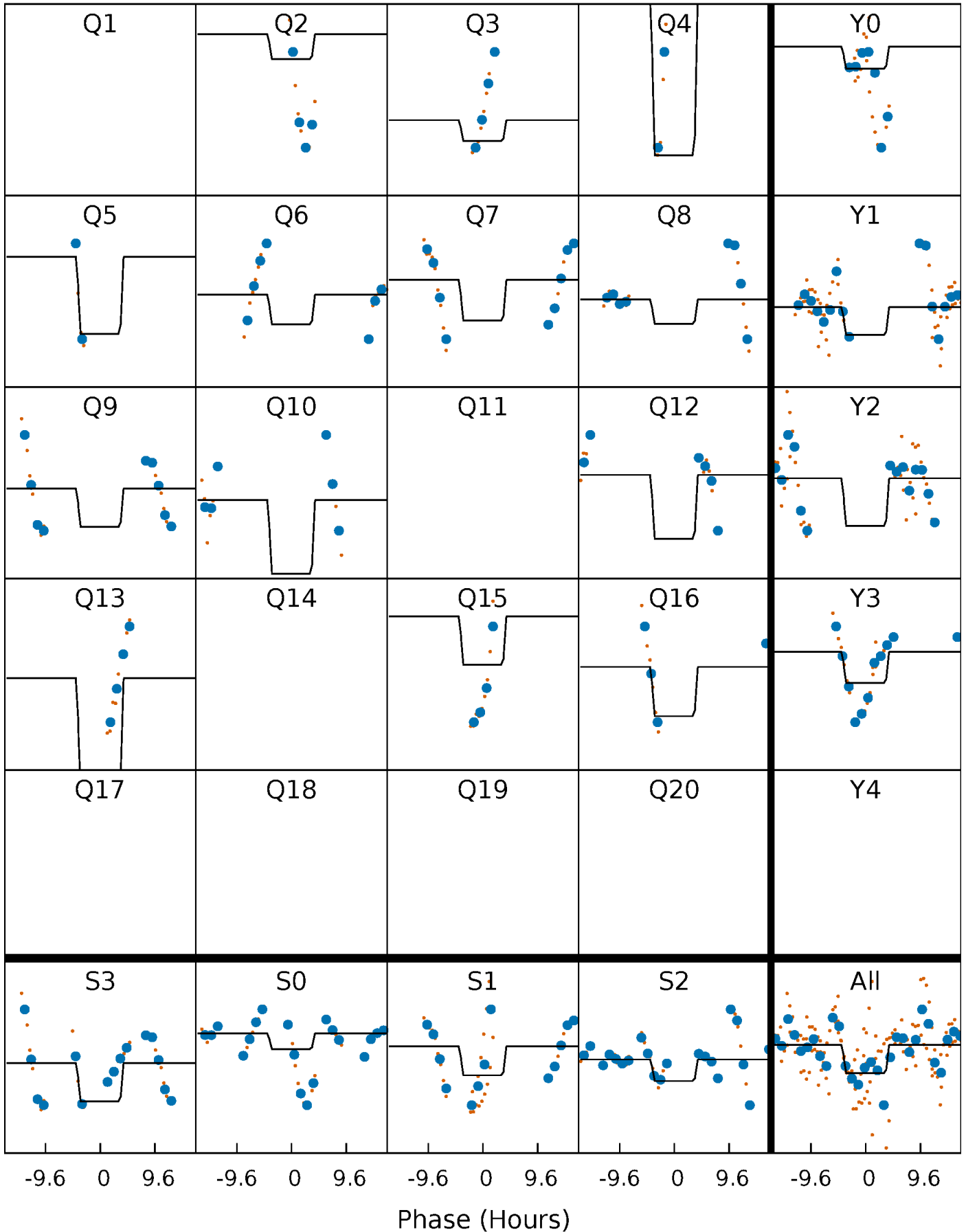
DV Quarter-Phased Transit Curves

TCE 005294571-05 $P = 84.819452$ Days $T_0 = 191.478039$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

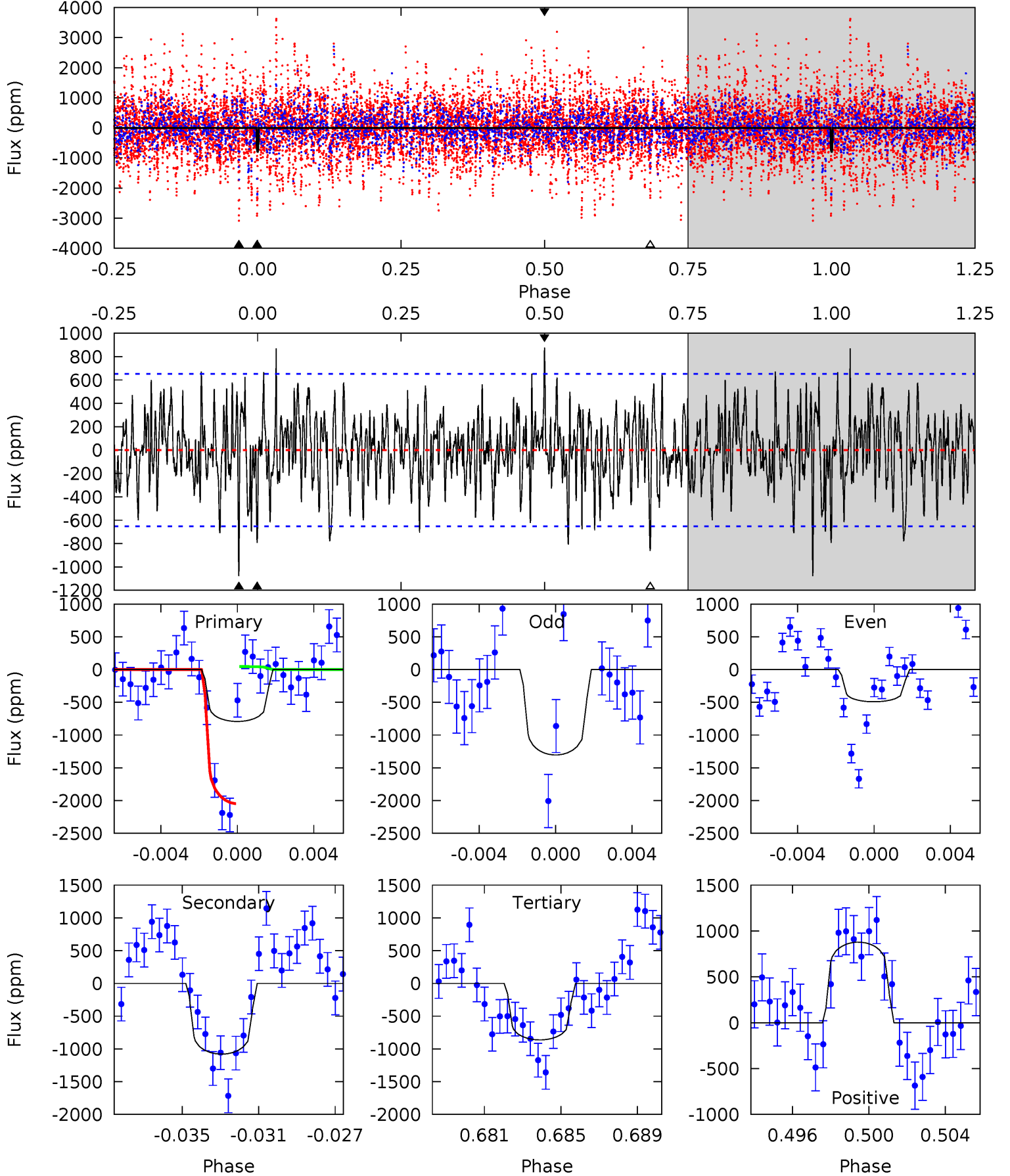
TCE 005294571-05 $P = 84.820933$ Days $T_0 = 191.459214$ (BKJD)



DV Model-Shift Uniqueness Test

005294571-05, P = 84.819452 Days, E = 106.658587 Days

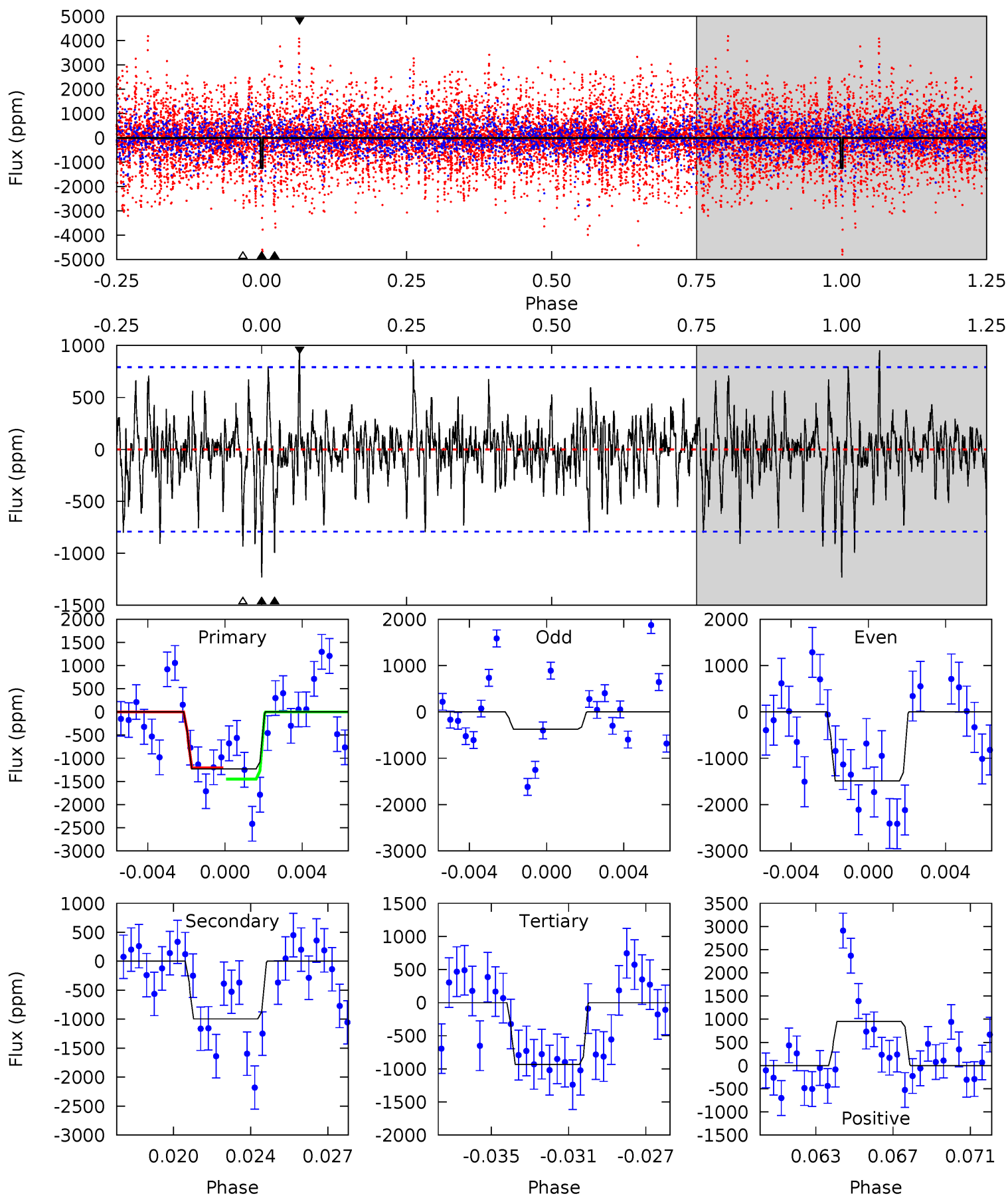
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.33	8.61	6.88	7.01	5.21	2.89	2.13	-0.56	-0.68	1.73	1.61	2.59	0.70	0.45	7.92



Alt Model-Shift Uniqueness Test

005294571-05, P = 84.820933 Days, E = 106.638281 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.09	6.55	6.14	6.26	5.20	2.88	1.68	1.95	1.83	0.40	0.29	2.90	0.96	0.44	0.80



Stellar Parameters For KIC 005294571

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6932^{+144}_{-288}	$2.923^{+0.630}_{-0.070}$	$0.070^{+0.200}_{-0.500}$	$10.322^{+1.100}_{-6.232}$	$3.255^{+0.072}_{-1.372}$	$0.004^{+0.042}_{-0.001}$
	+2%/-4%	+22%/-2%	+286%/-714%	+11%/-60%	+2%/-42%	+1019%/-23%
Source	PHO1	FLK73	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 005294571-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1079 \pm 125	$21.92^{+13.55}_{-11.87}$	1747^{+133}_{-267}	8406^{+5378}_{-1736}	366^{+1305}_{-220}
Alt.	-996 \pm 152	$31.20^{+14.37}_{-15.37}$	1735^{+140}_{-278}	6693^{+2107}_{-999}	172^{+390}_{-94}

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

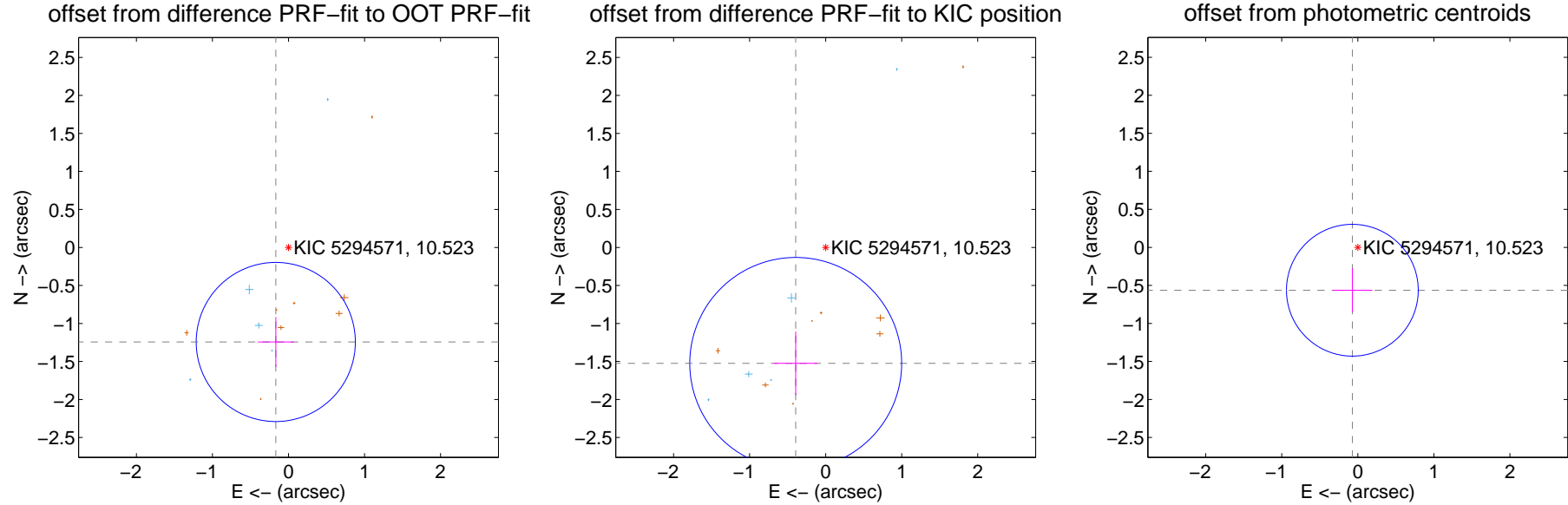
DV Centroid Data

Supplemental centroid analysis for 005294571-05. **Kepler magnitude: 10.52.** Transit SNR 2.62

There are 6 quarters with good PRF difference image offsets

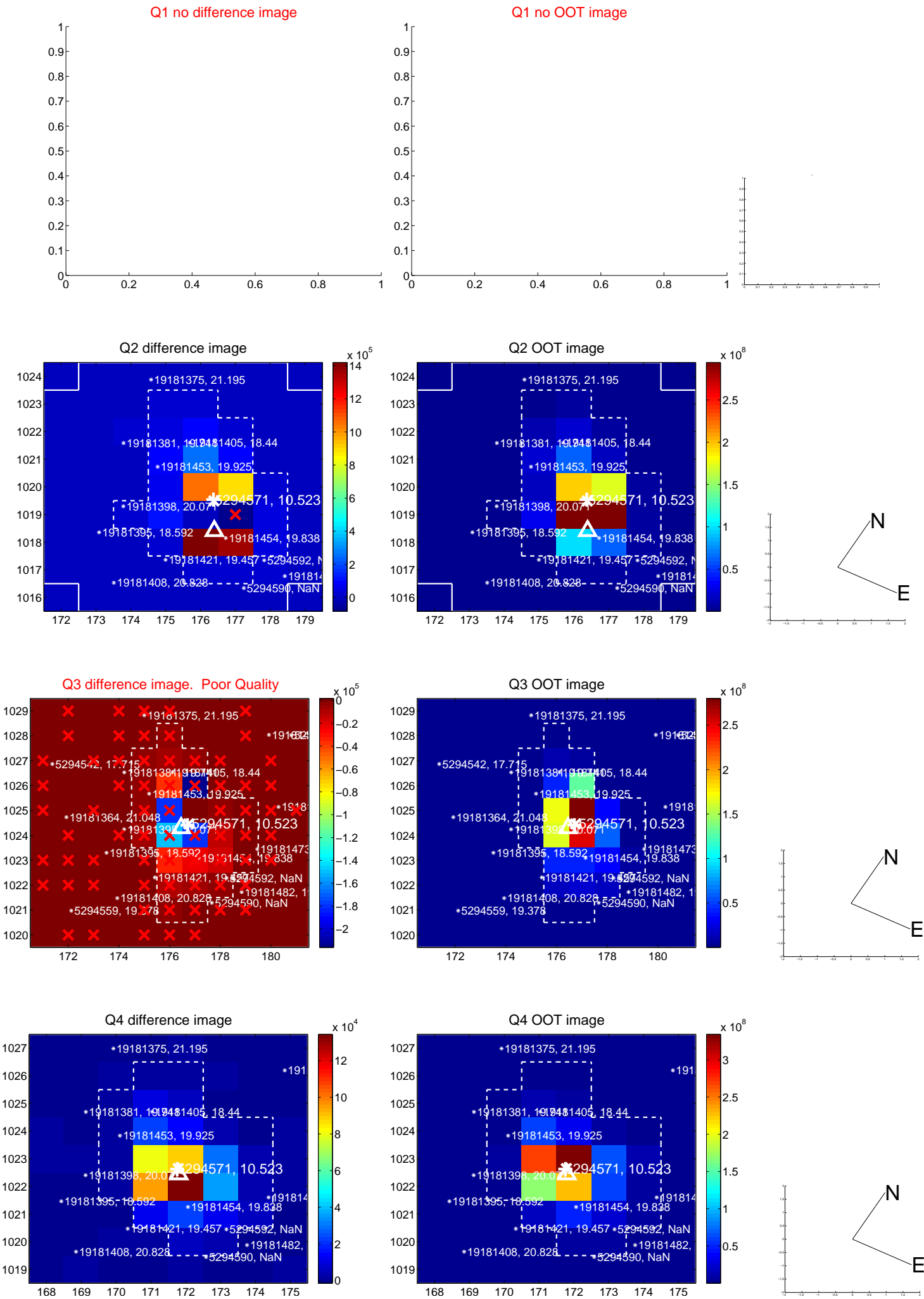
The direct PRF centroid is offset from the target star catalog position by about 0.36 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.255 ± 0.349	3.60	0.167 ± 0.237	-1.244 ± 0.329
PRF-fit source offset from KIC position	1.575 ± 0.464	3.39	0.394 ± 0.287	-1.525 ± 0.418
photometric centroid source offset	0.57 ± 0.29	1.97	0.07 ± 0.26	-0.56 ± 0.29

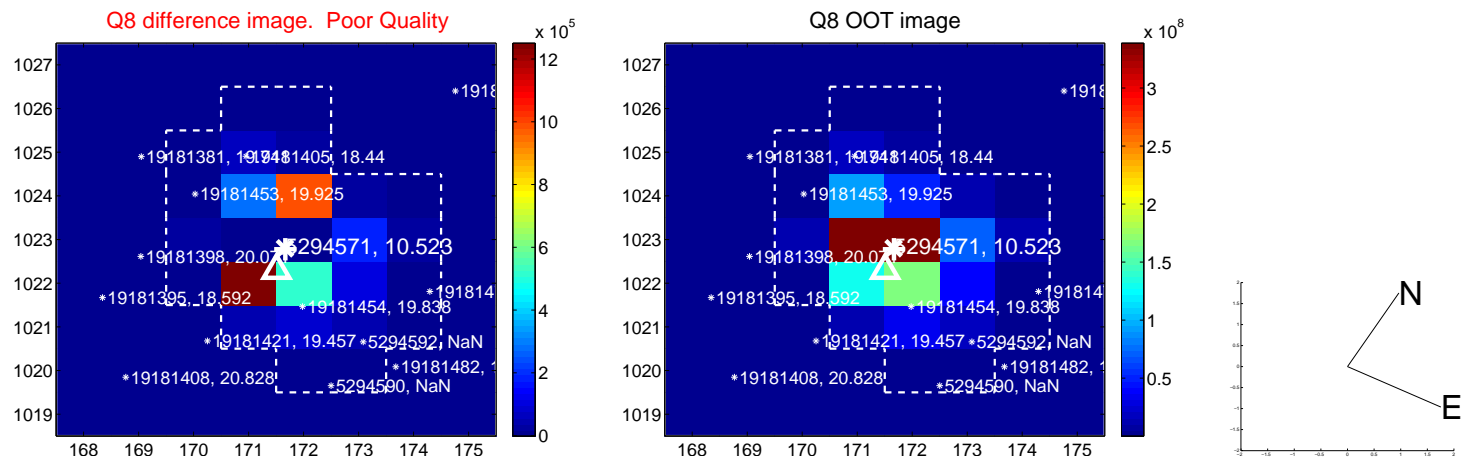
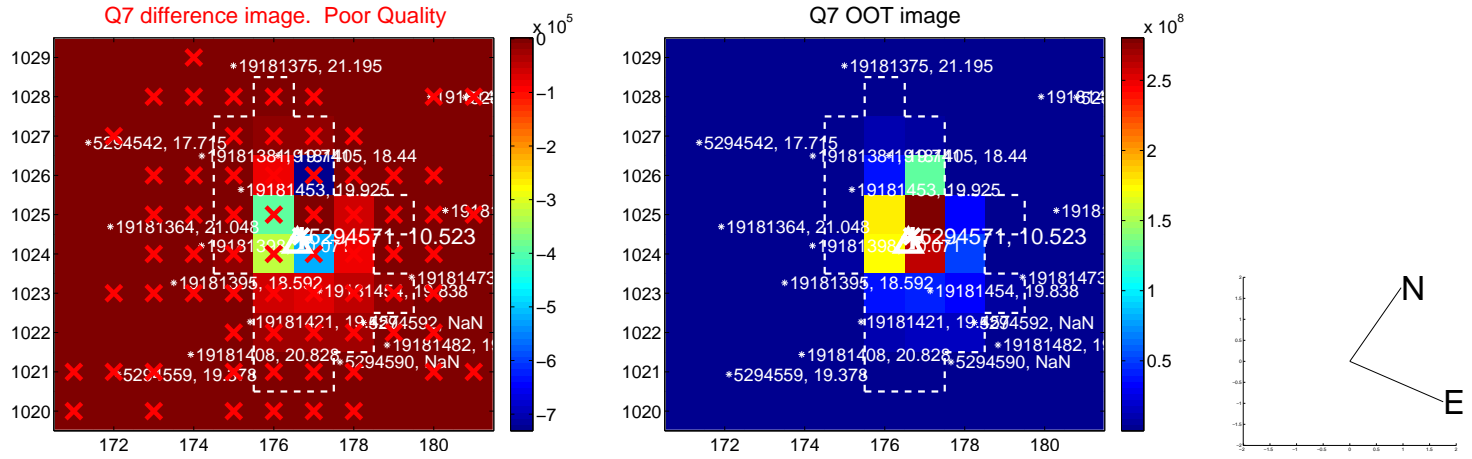
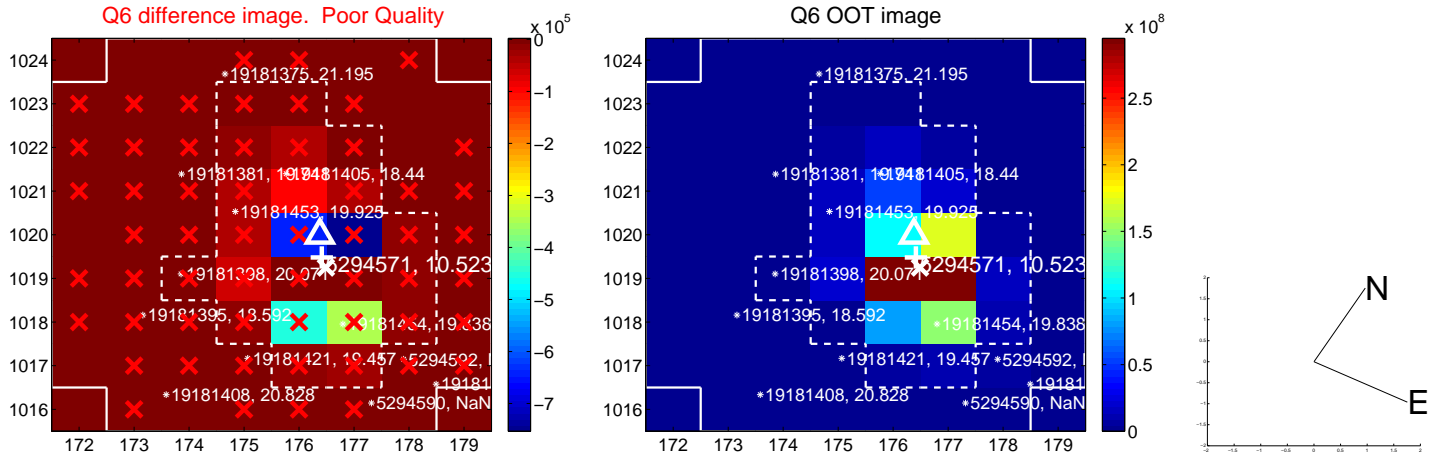
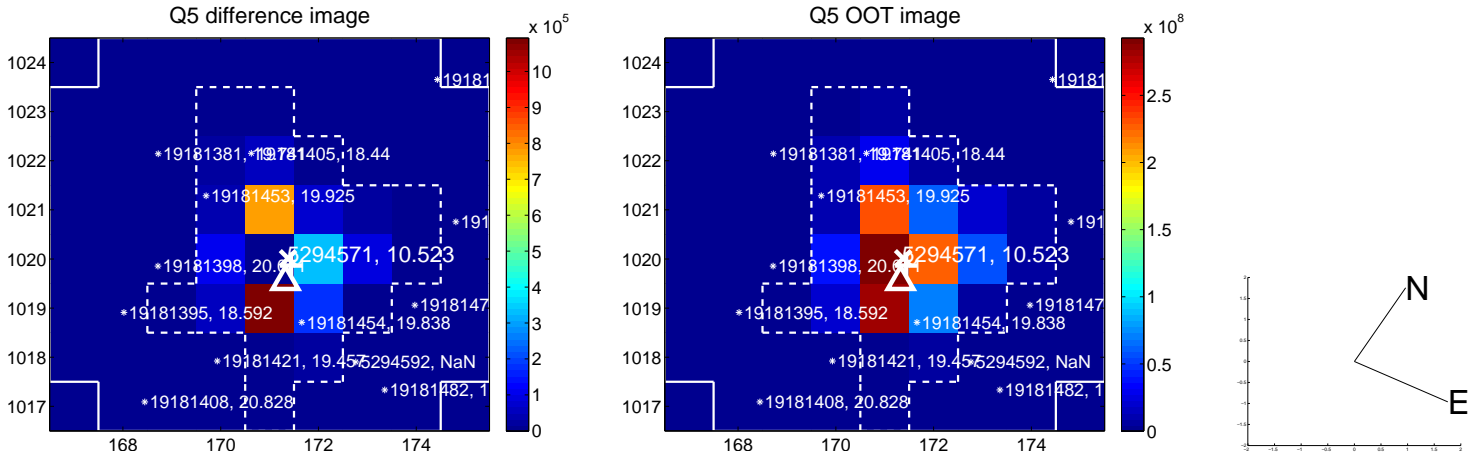


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

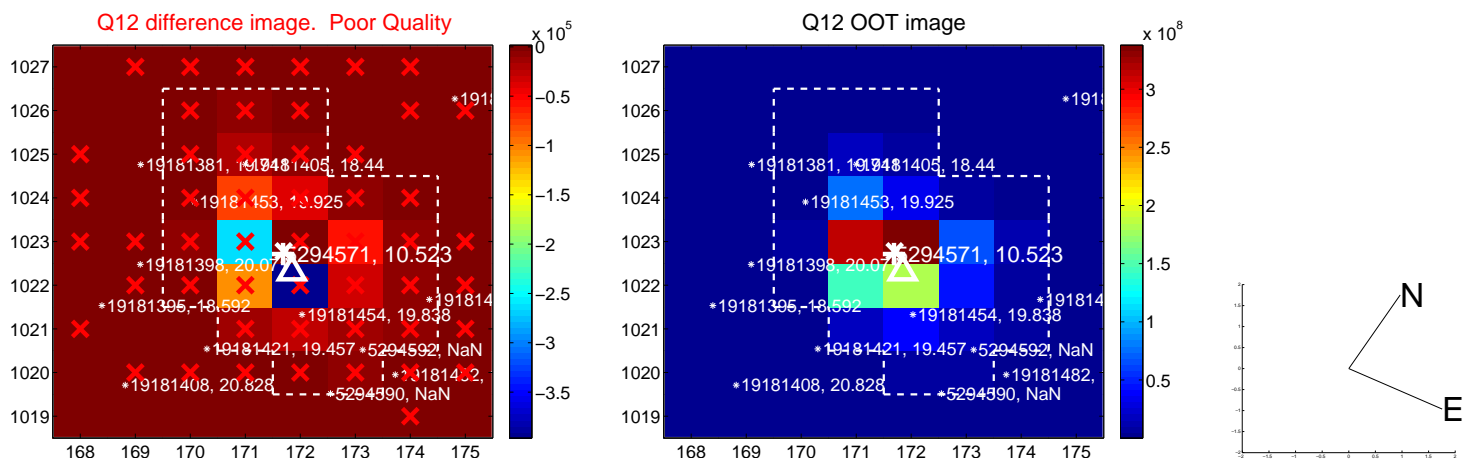
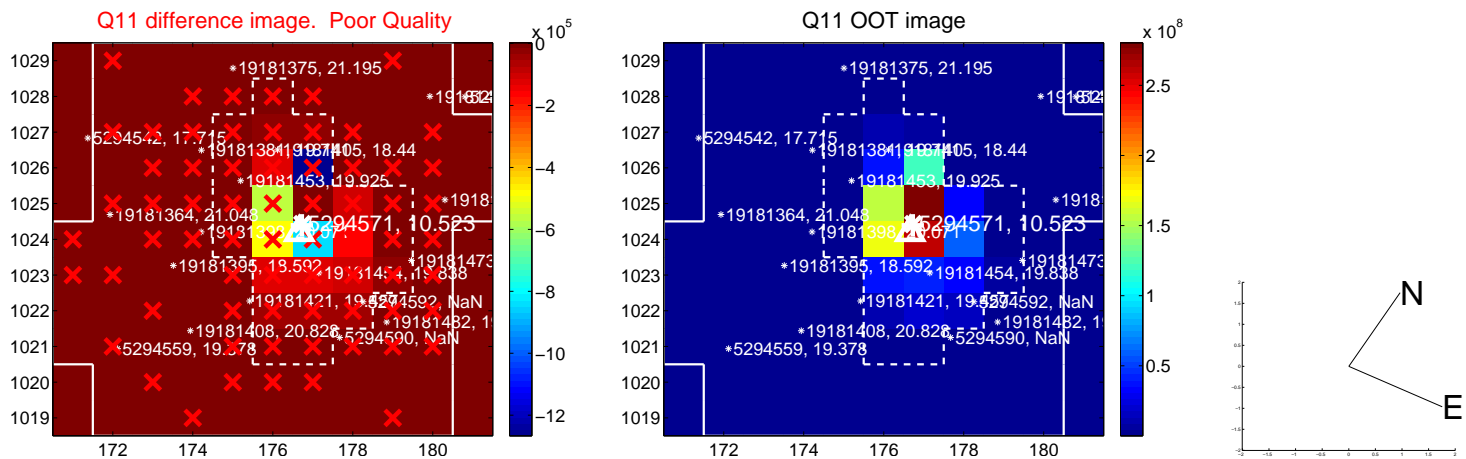
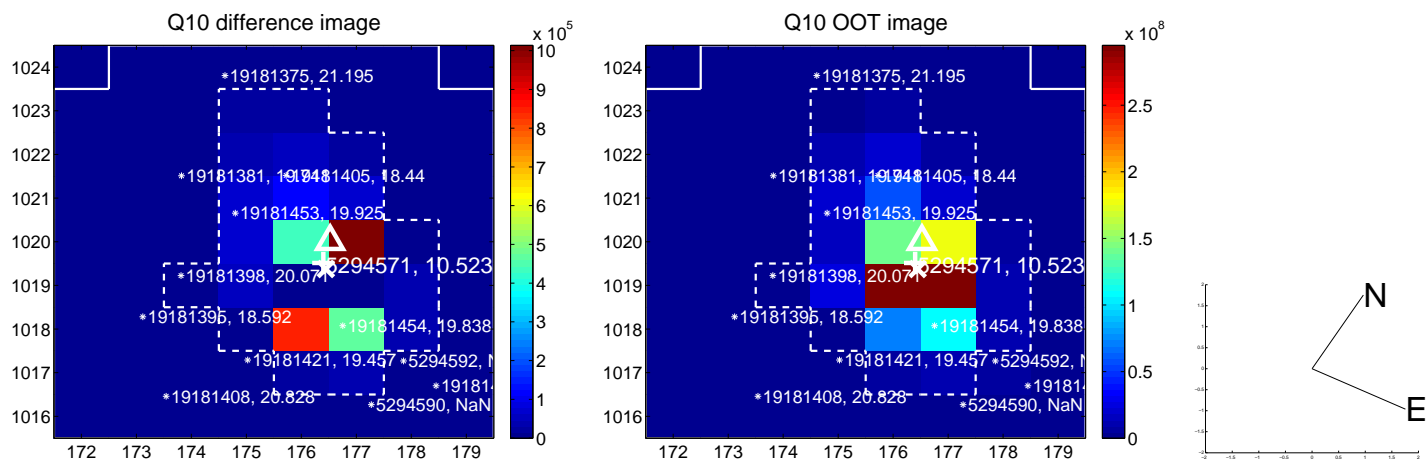
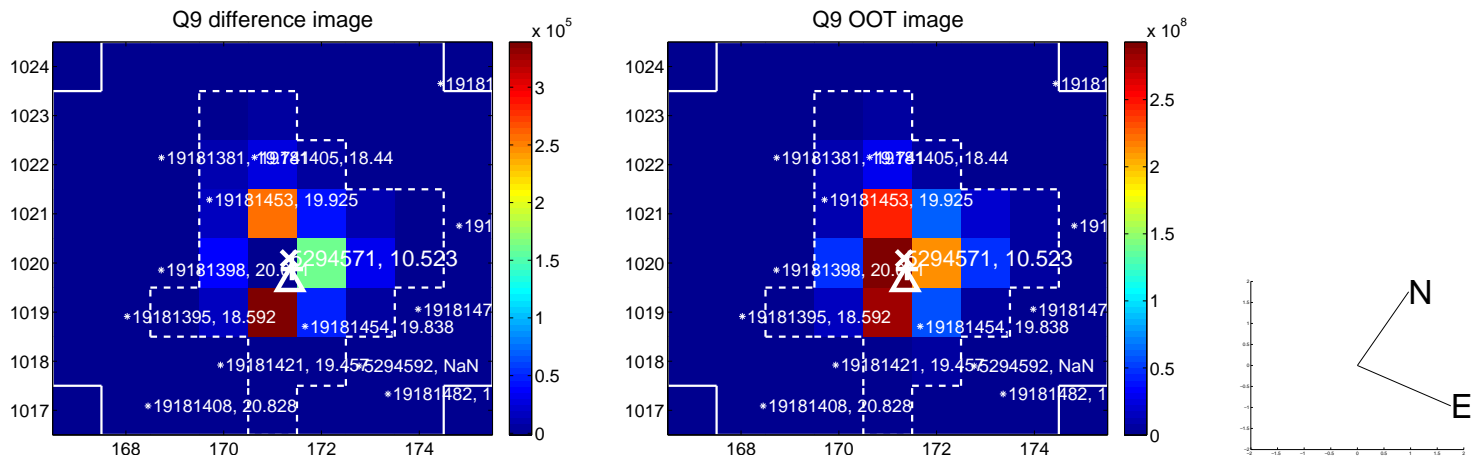
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



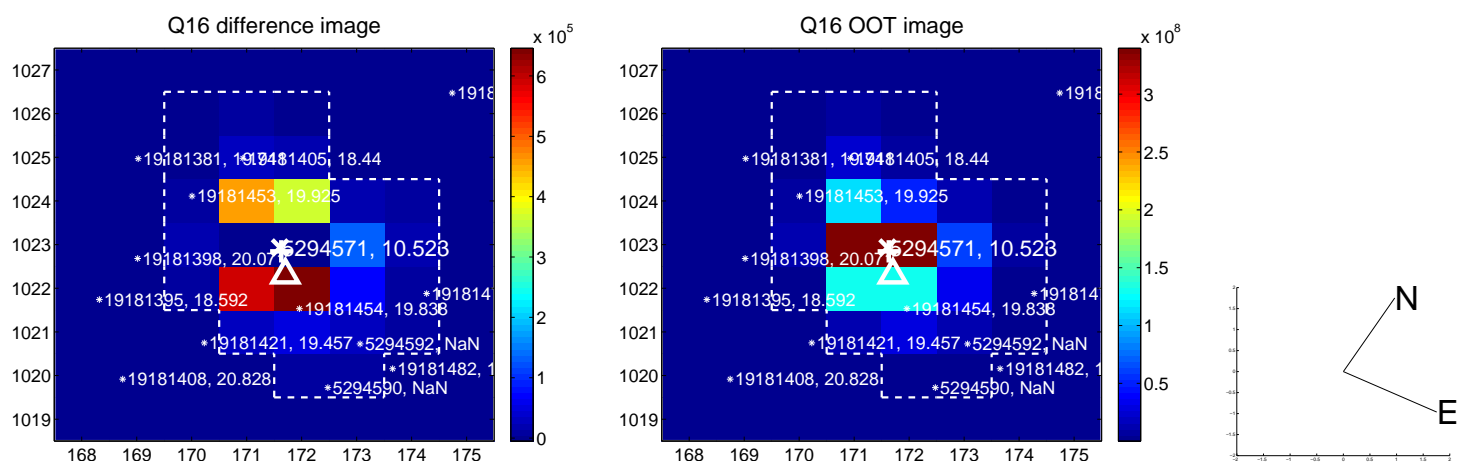
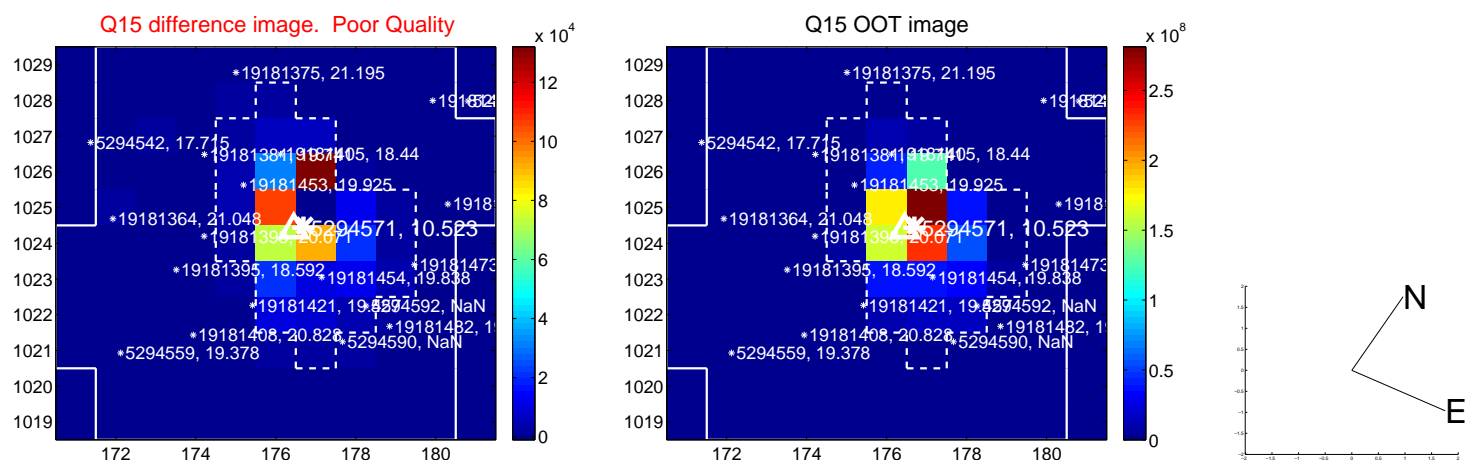
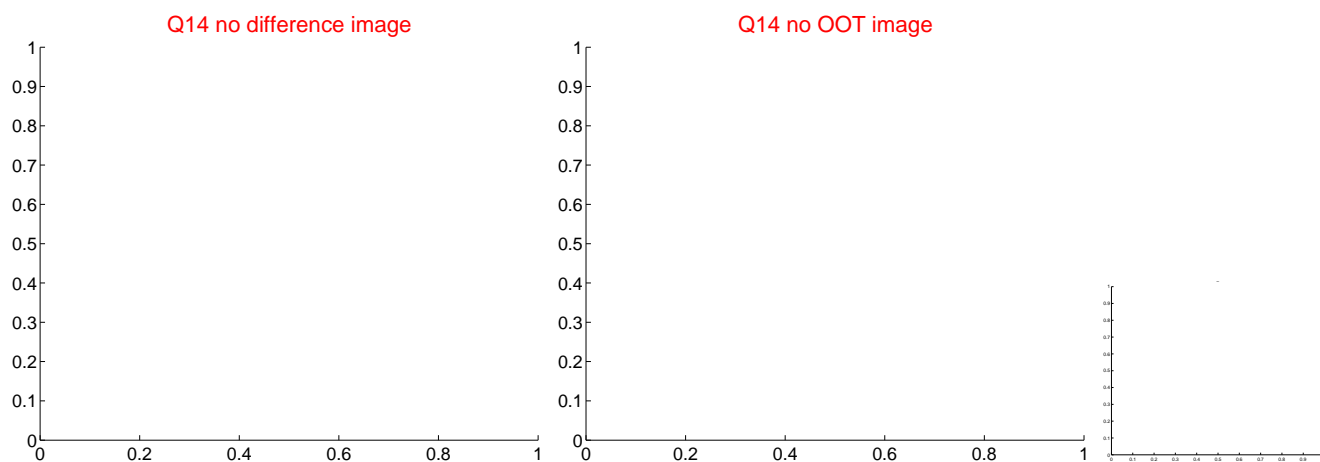
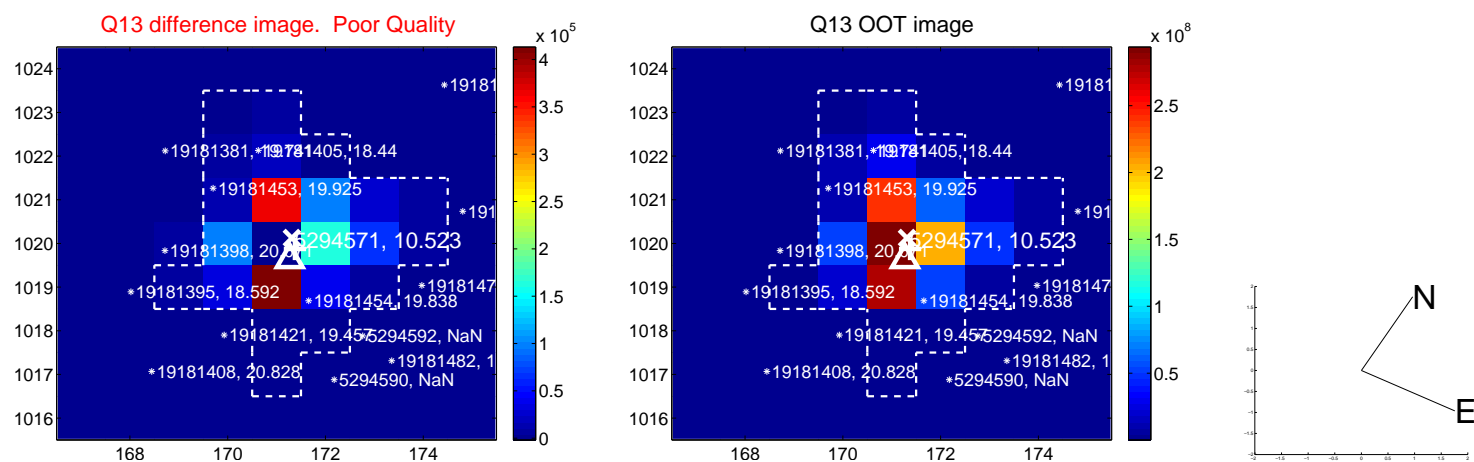
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



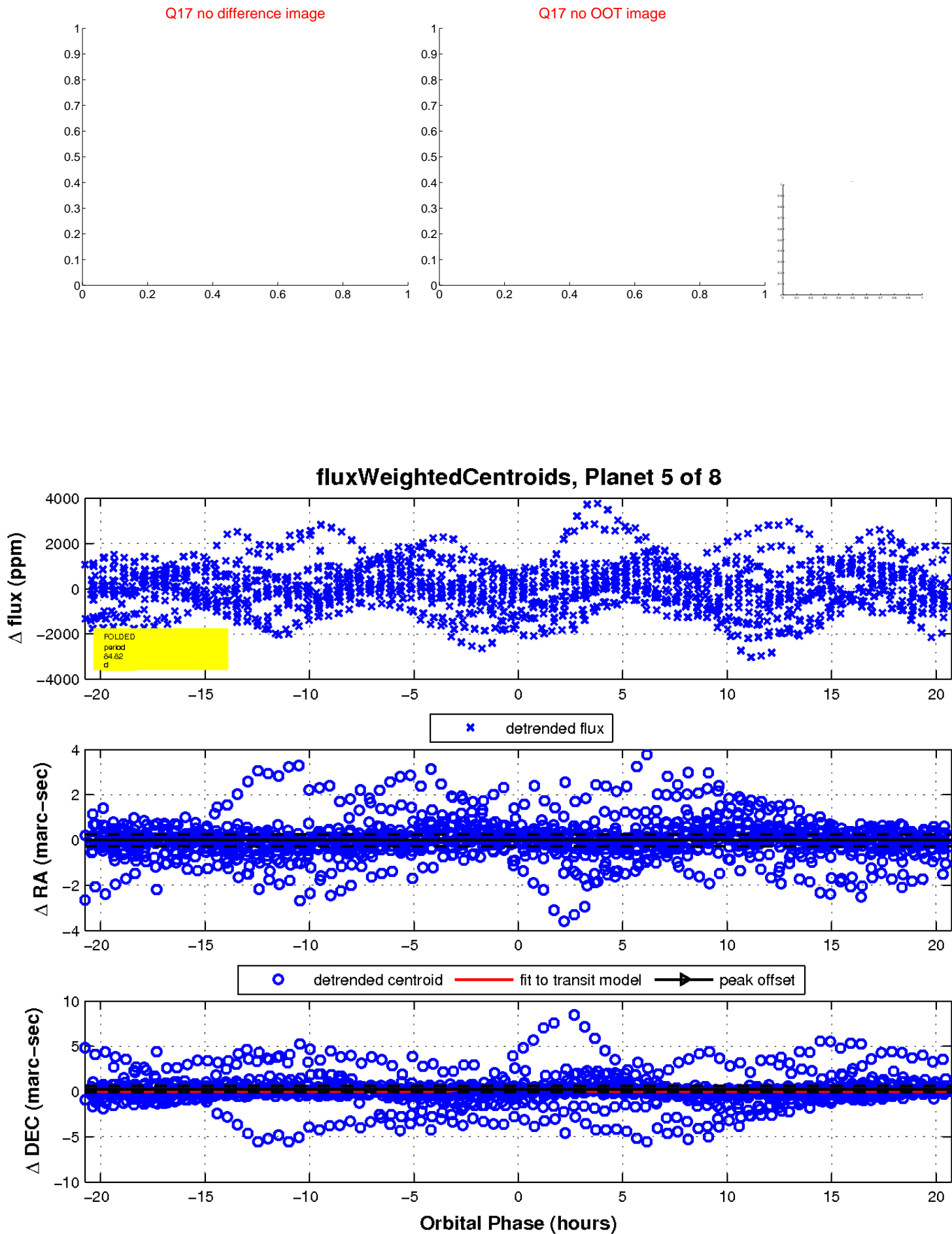
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

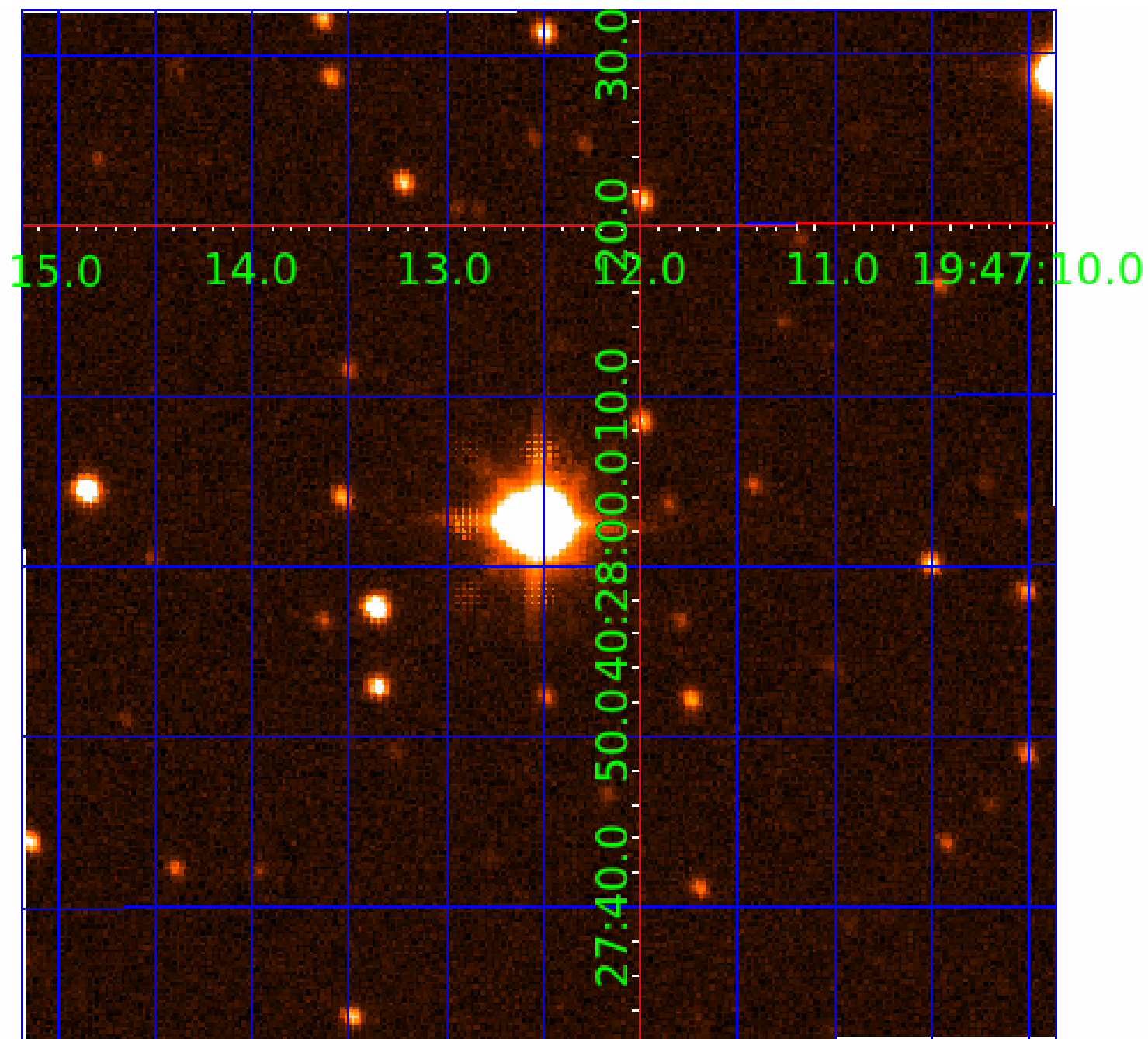


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005294571

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})
005294571-01	OBS	No	0.919779	132.132304	1.5	0.765	10.9	0.4	10.32	6932	1.69	0.00
005294571-02	OBS	No	0.921182	132.122511	12.6	5.687	9.3	1.6	10.32	6932	3.77	0.00
005294571-03	OBS	No	118.675541	199.986190	1570.4	9.608	9.7	5.1	10.32	6932	48.74	449.11
005294571-04	OBS	No	18.646218	139.933167	964.7	4.491	9.0	9.0	10.32	6932	60.13	5297.25
005294571-05	OBS	No	84.819452	191.478039	483.3	6.919	8.5	2.6	10.32	6932	25.78	702.82
005294571-08	OBS	No	36.828276	167.368486	56.5	5.000	8.5	-1.0	10.32	6932	7.81	2137.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005294571-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_SATURATED
005294571-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—CENT_SATURATED
005294571-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005294571-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005294571-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST
005294571-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

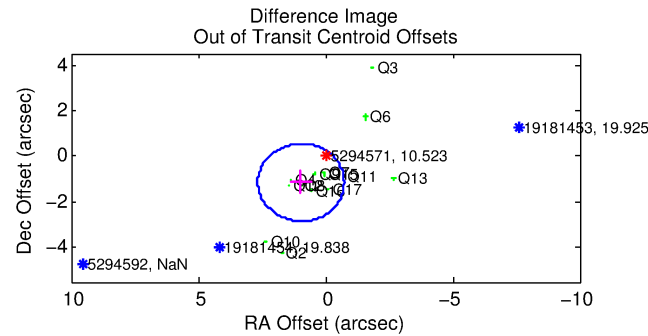
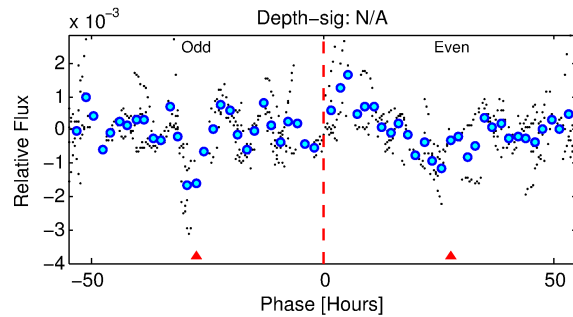
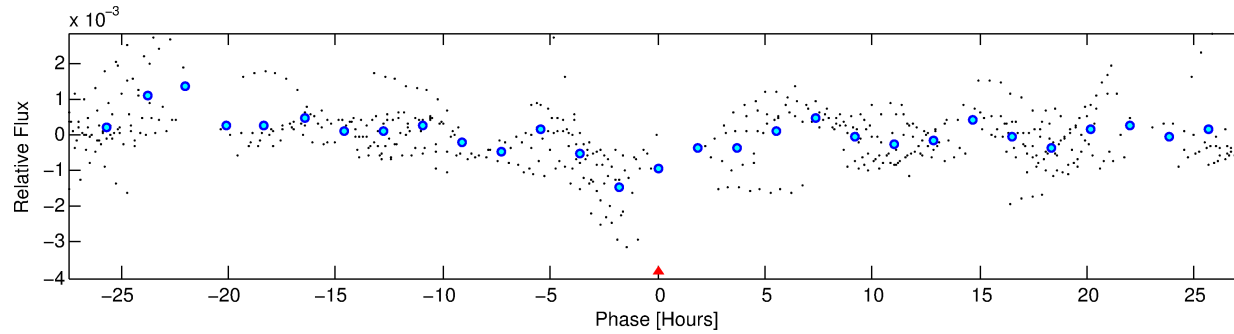
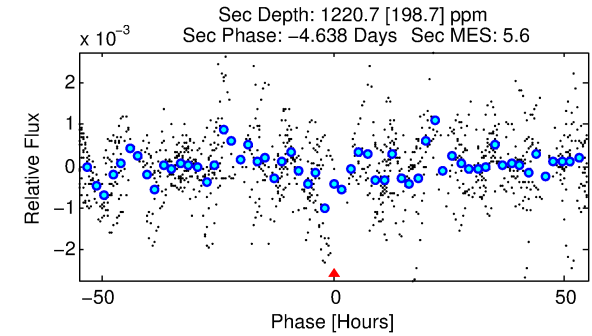
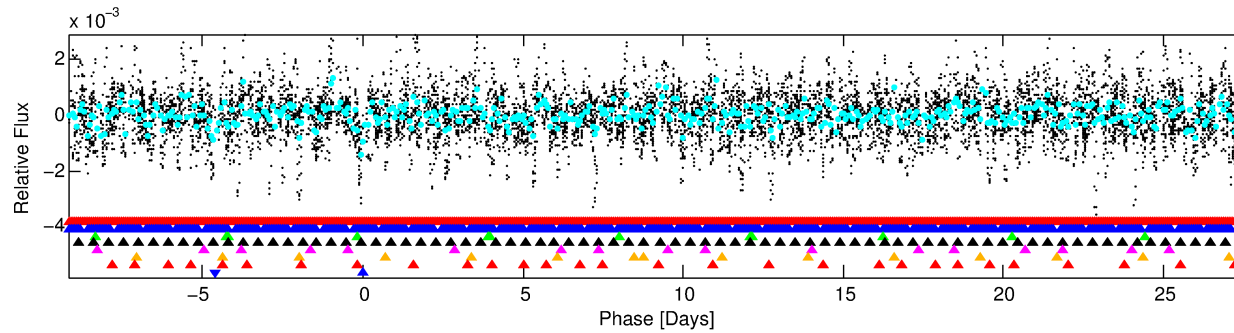
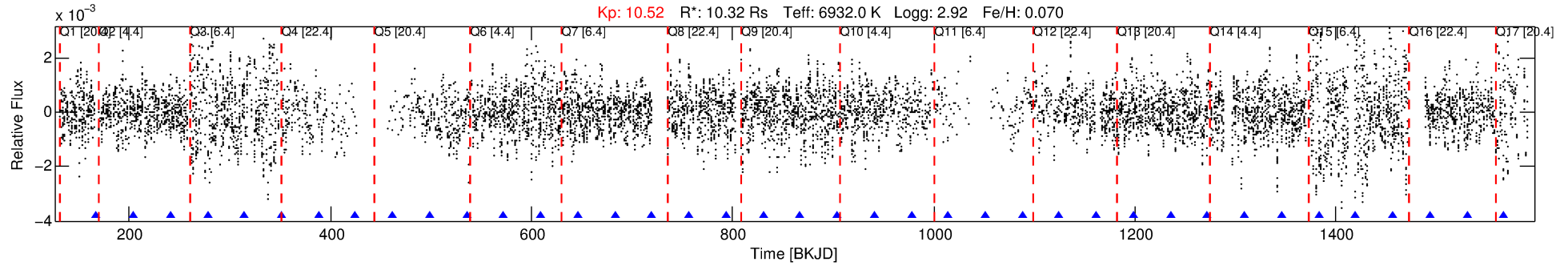
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005294571-08

No Significant Match Found

DV One-Page Summary

KIC: 5294571 Candidate: 8 of 8 Period: 36.828 d



TPS TCE Results:

Period = 36.82828 d
Epoch = 167.3685 BKJD

DV fit results are unavailable

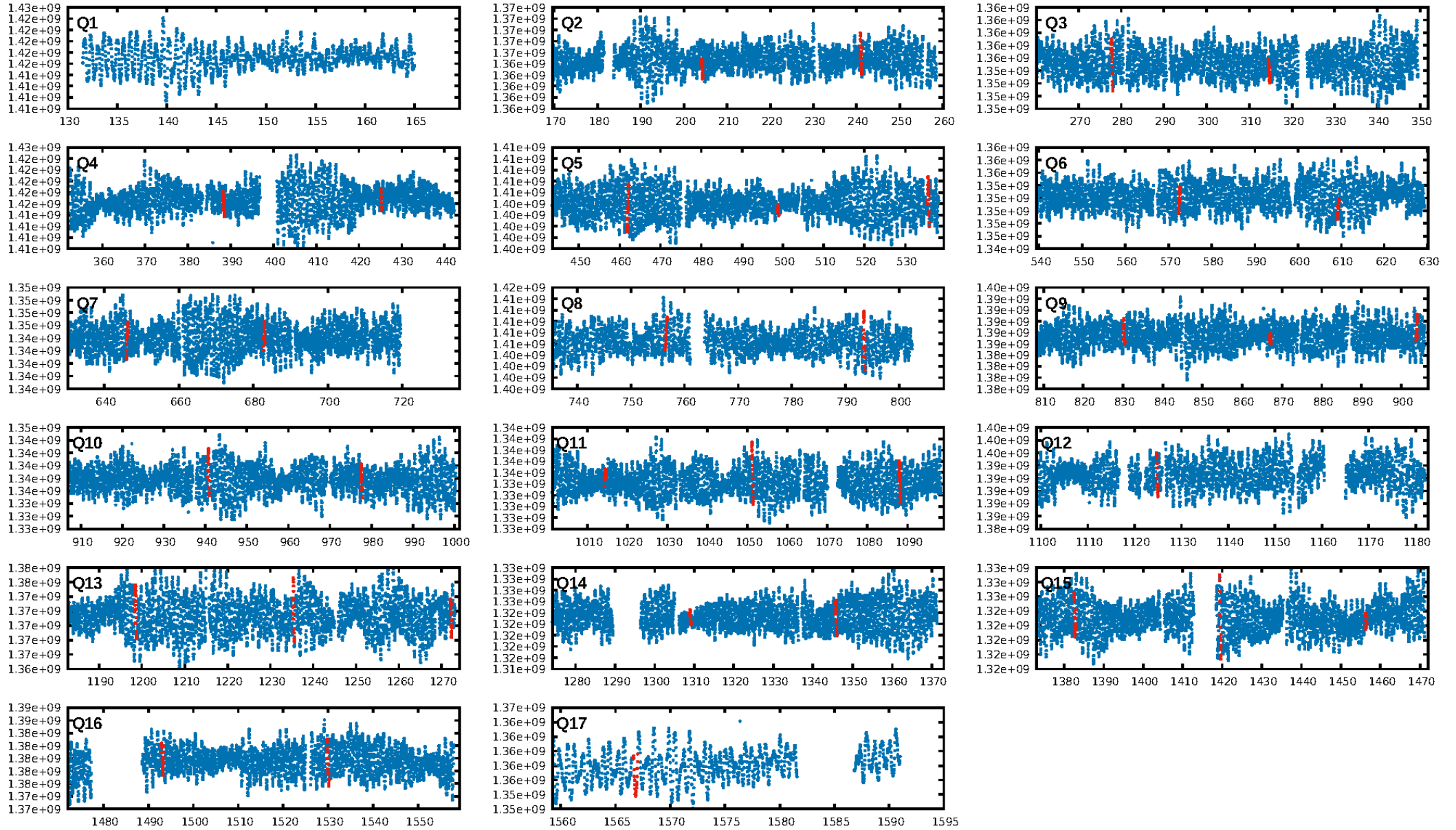
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [64.93 σ]
LongPeriod-sig: 100.0% [44.81 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [15/15]
GhostDiagnostic-chr: 0.4507
Centroid-sig: 25.7%
Centroid-so: 0.076 arcsec [2.16 σ]
OotOffset-rm: 1.493 arcsec [2.63 σ]
OotOffset-st: 3/4/4/3 [14]
KicOffset-rm: 1.718 arcsec [3.36 σ]
KicOffset-st: 3/4/4/3 [14]
DiffImageQuality-fgm: 0.50 [7/14]
DiffImageOverlap-fno: 0.00 [0/16]

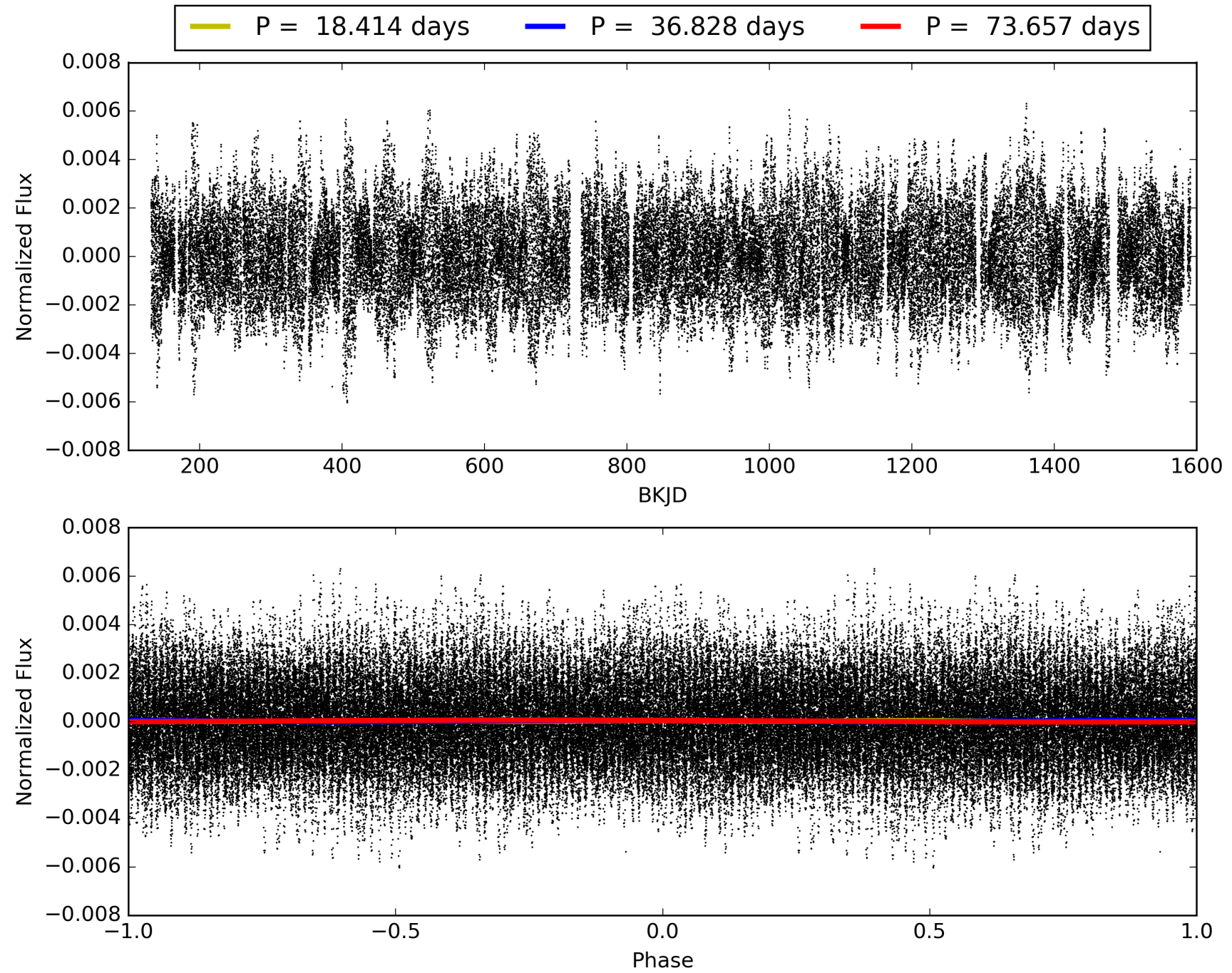
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:02:34 Z

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

TCE 005294571-08, PDC Light Curves

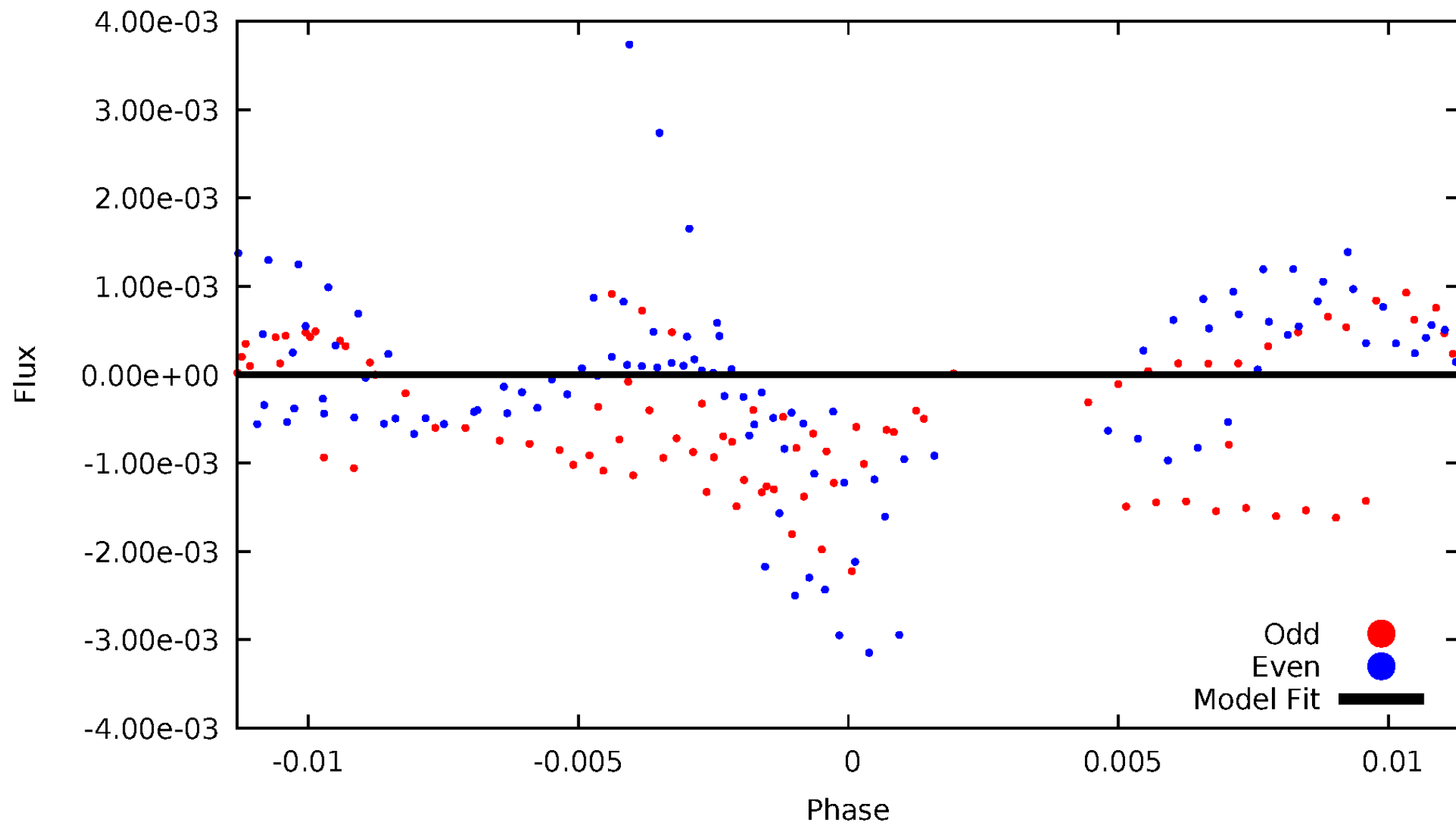


TCE 005294571-08



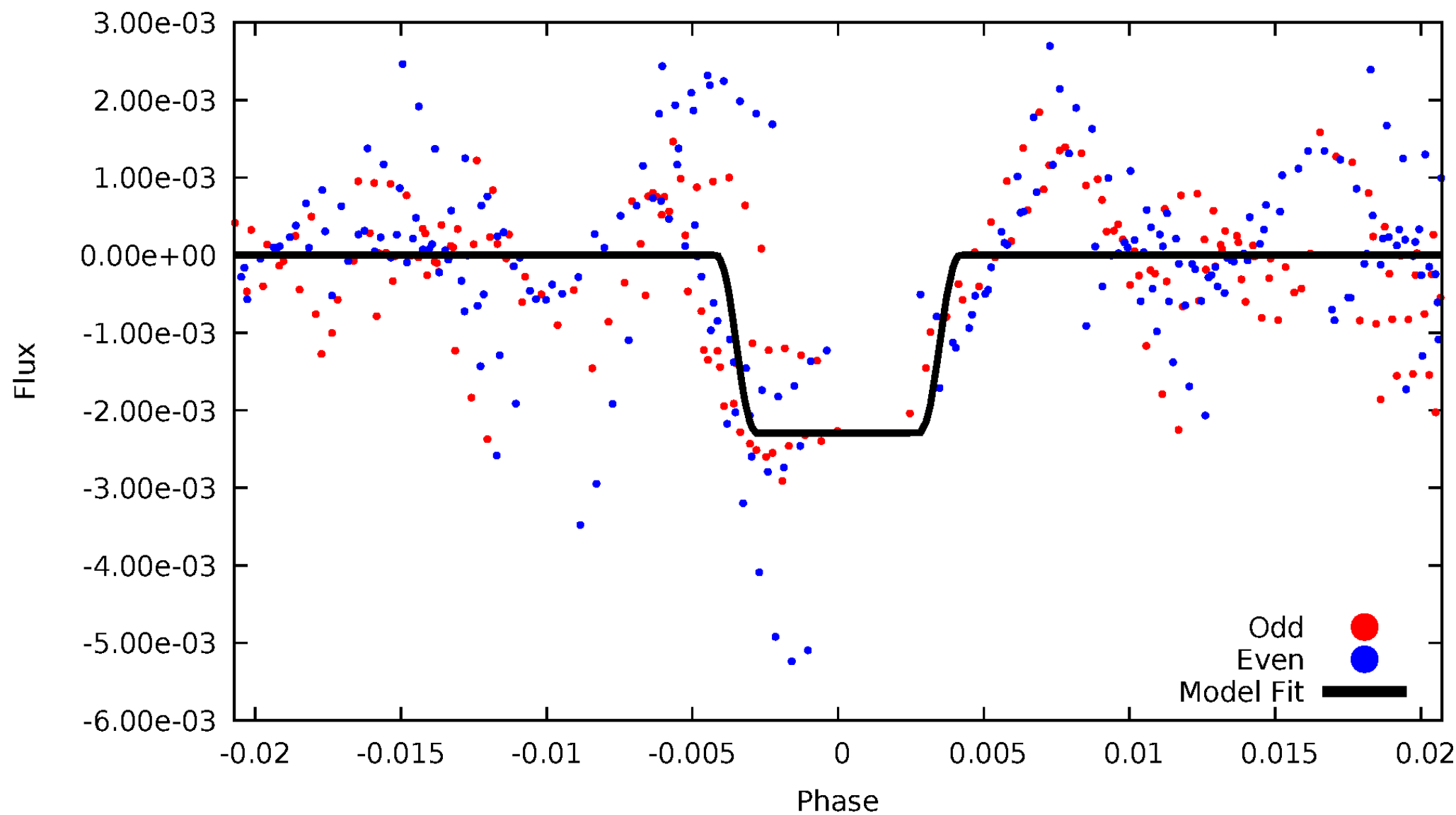
DV Odd/Even

TCE 005294571-08



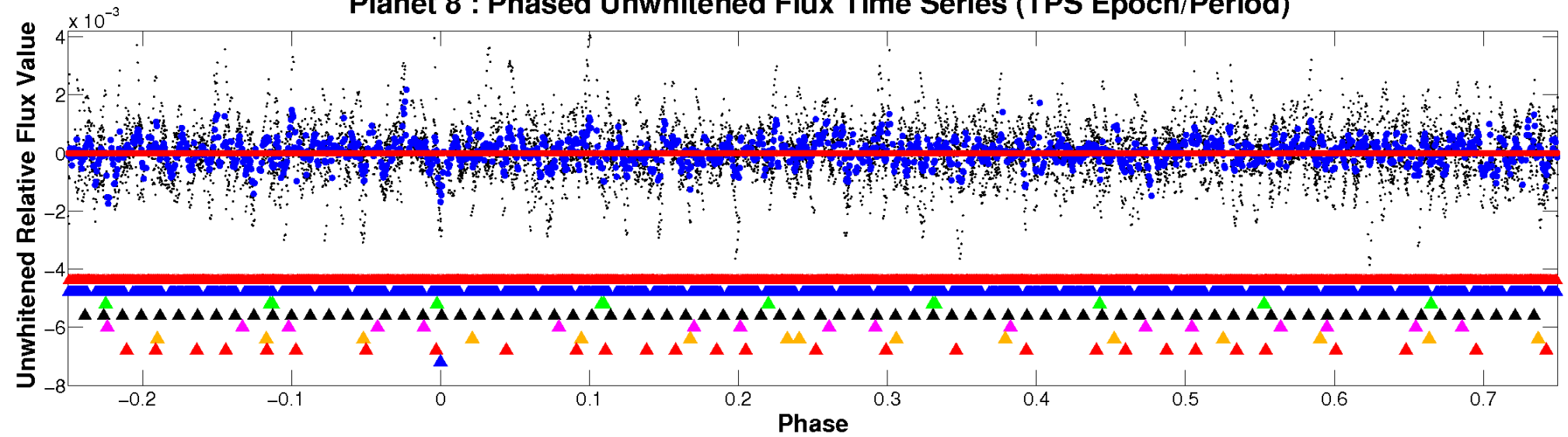
ALT Odd/Even

TCE 005294571-08

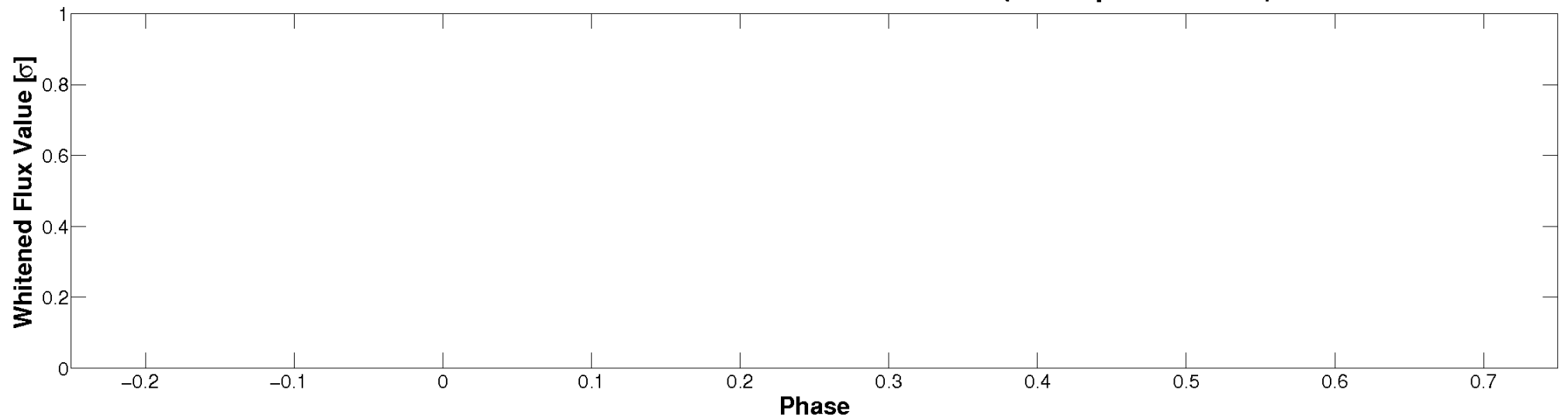


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

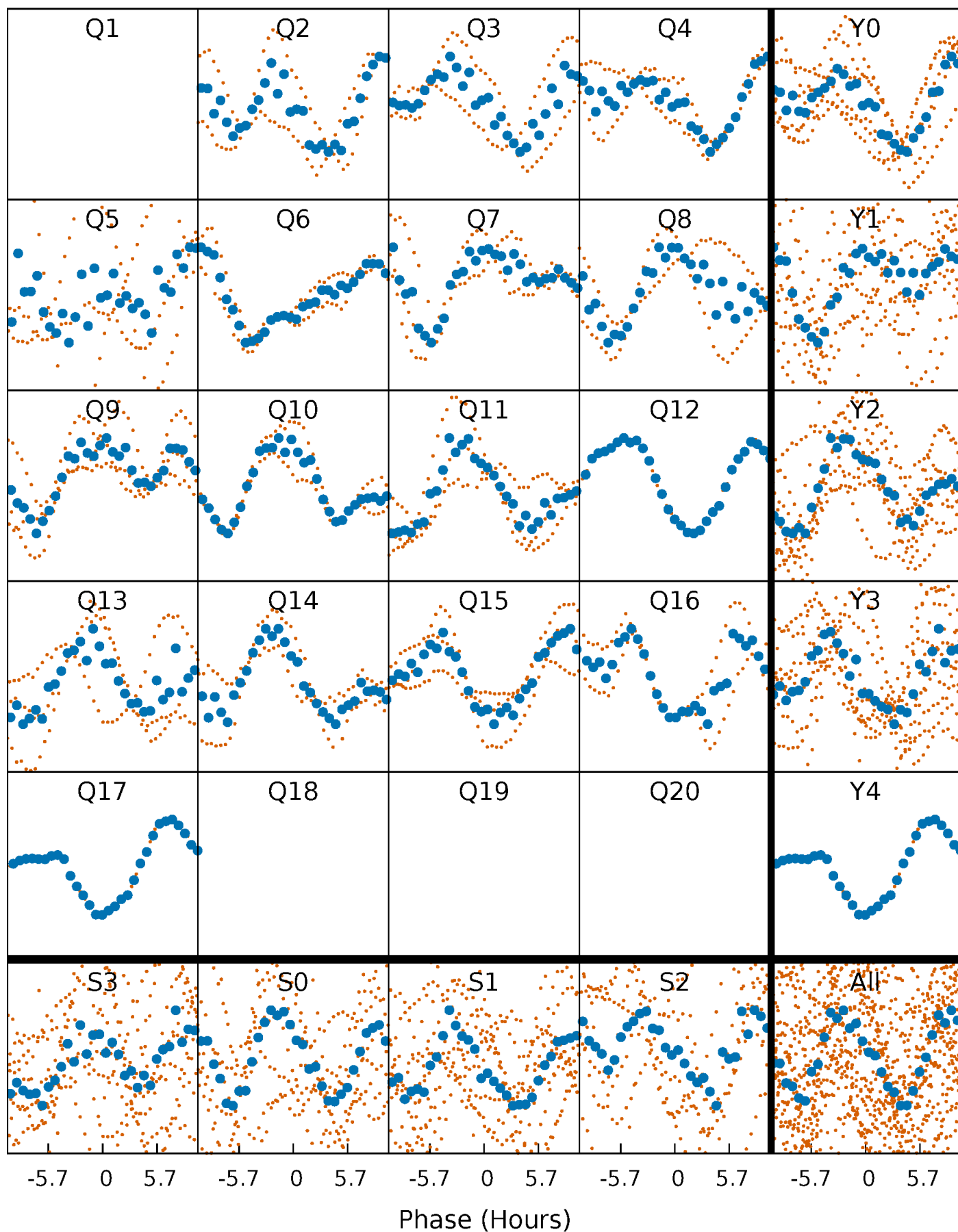


Planet 8 : Phased Whitened Flux Time Series (TPS Epoch/Period)



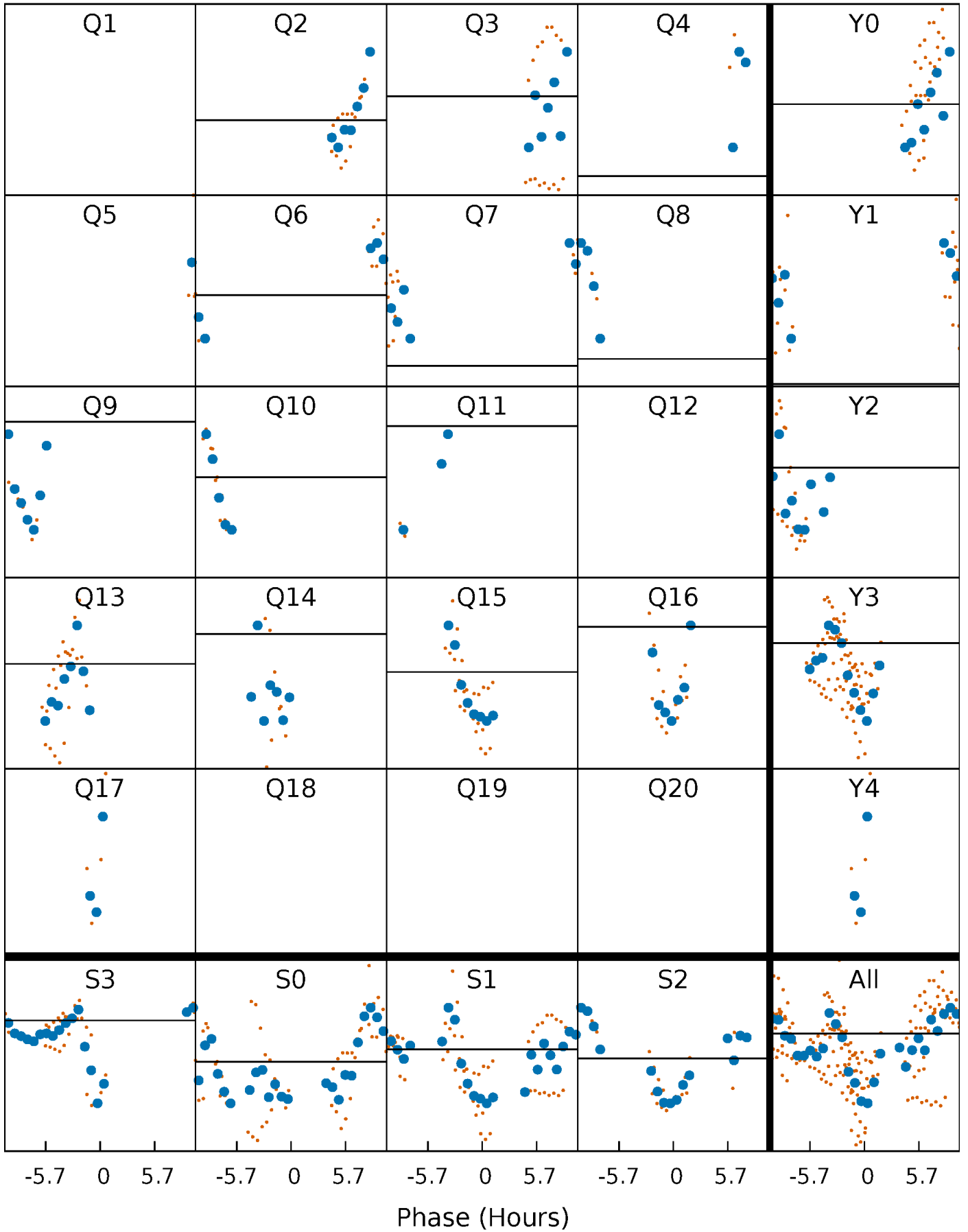
PDC Quarter-Phased Transit Curves

TCE 005294571-08 $P = 36.828276$ Days $T_0 = 167.368486$ (BKJD)



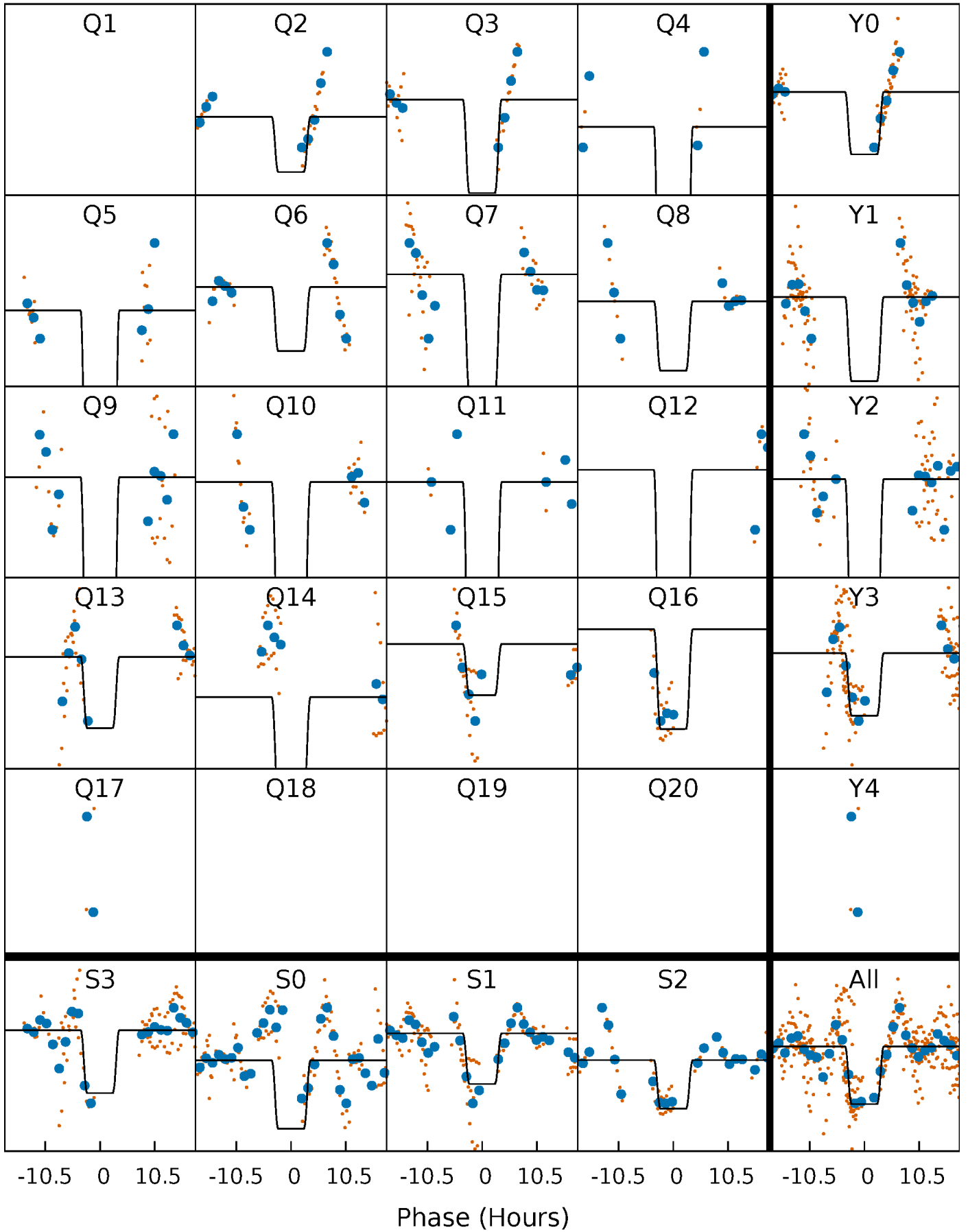
DV Quarter-Phased Transit Curves

TCE 005294571-08 P= 36.828276 Days $T_0=167.368486$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

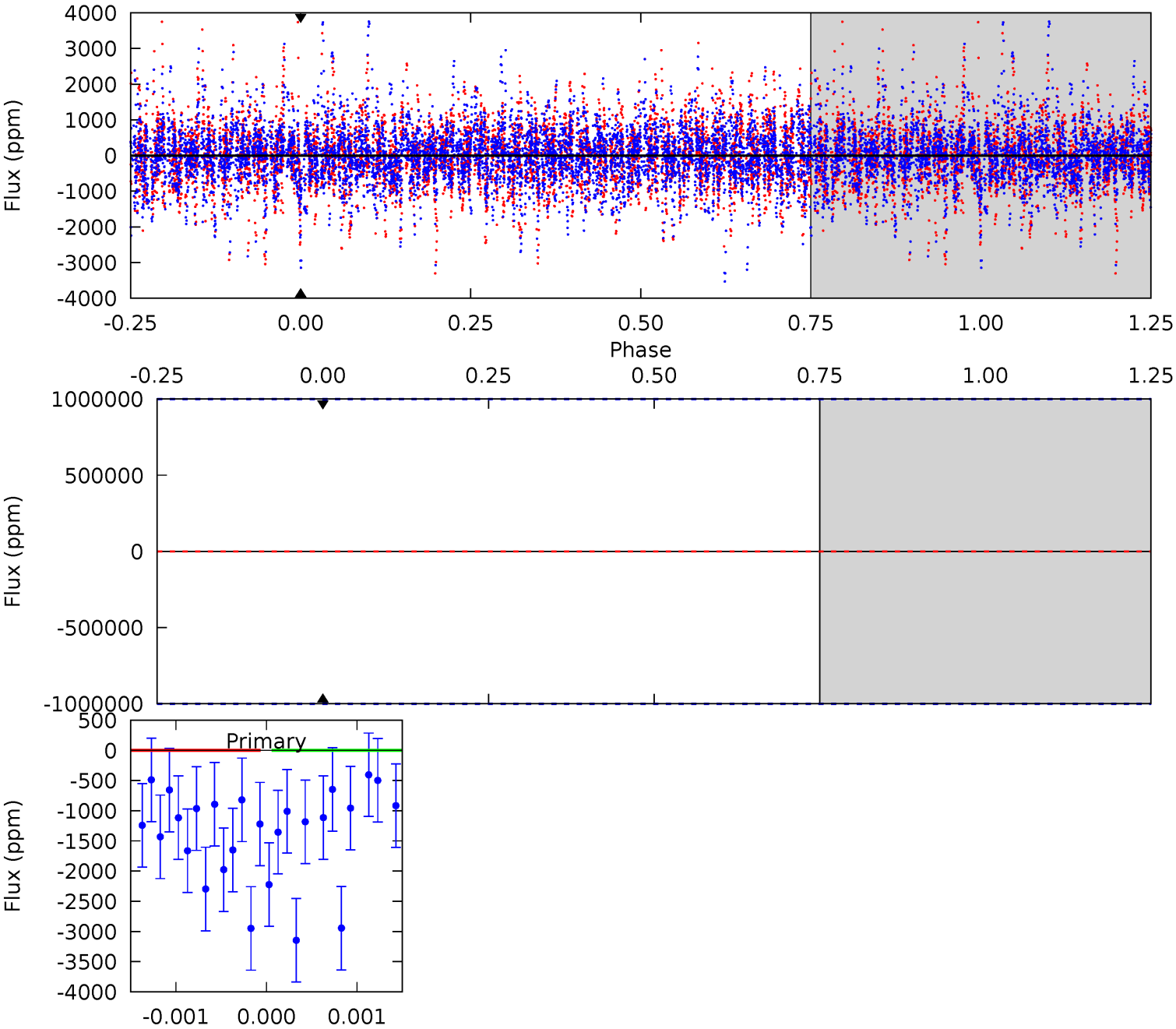
TCE 005294571-08 P= 36.828276 Days $T_0=167.441256$ (BKJD)



DV Model-Shift Uniqueness Test

005294571-08, P = 36.828276 Days, E = 130.540210 Days

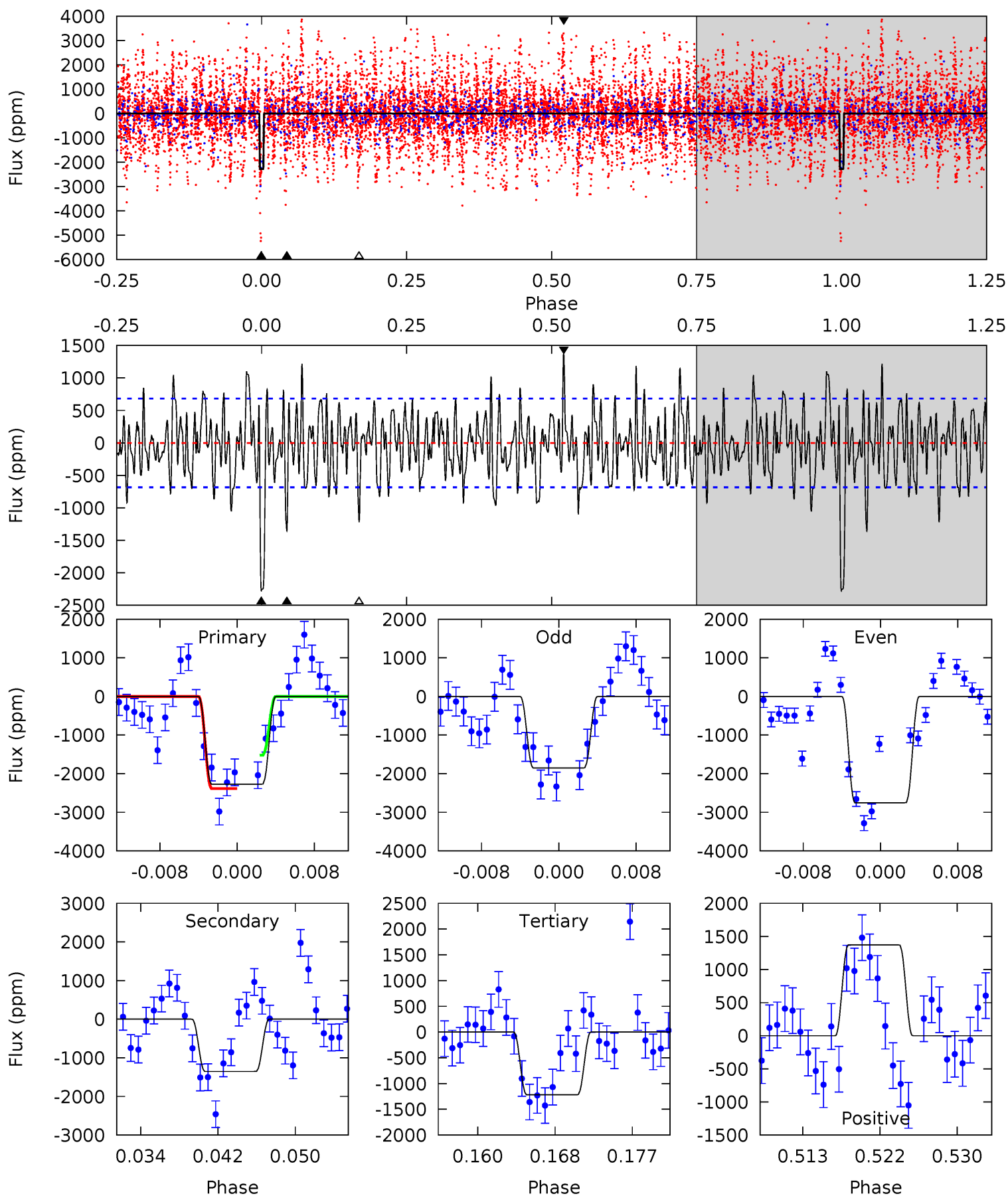
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005294571-08, $P = 36.828276$ Days, $E = 130.612980$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.8	10.0	9.02	10.2	5.06	2.64	2.93	7.82	6.68	1.01	-0.14	3.26	0.97	0.38	2.55



Stellar Parameters For KIC 005294571

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6932^{+144}_{-288}	$2.923^{+0.630}_{-0.070}$	$0.070^{+0.200}_{-0.500}$	$10.322^{+1.100}_{-6.232}$	$3.255^{+0.072}_{-1.372}$	$0.004^{+0.042}_{-0.001}$
	+2%/-4%	+22%/-2%	+286%/-714%	+11%/-60%	+2%/-42%	+1019%/-23%
Source	PHO1	FLK73	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 005294571-08 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$65.91^{+81.48}_{-46.38}$	2310^{+175}_{-370}	-4712^{+38013}_{-29735}	$-12.329^{+2357.191}_{-2169.835}$
Alt.	-1354 ± 135	$85.87^{+85.89}_{-59.86}$	2304^{+177}_{-348}	4487^{+3266}_{-950}	$9.918^{+95.363}_{-7.370}$

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

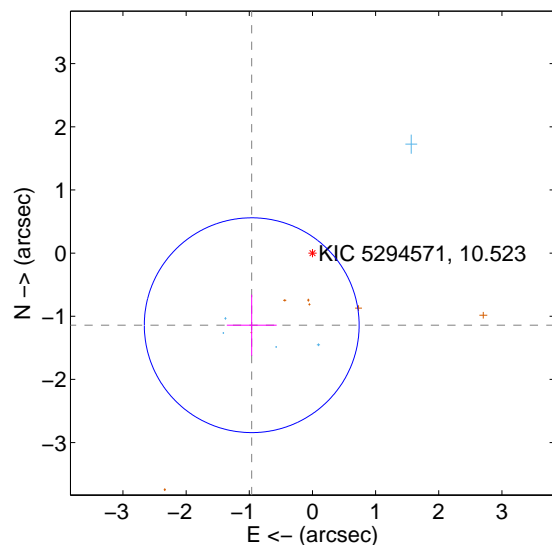
Supplemental centroid analysis for 005294571-08. **Kepler magnitude: 10.52.** Transit SNR -1.00

There are 7 quarters with good PRF difference image offsets

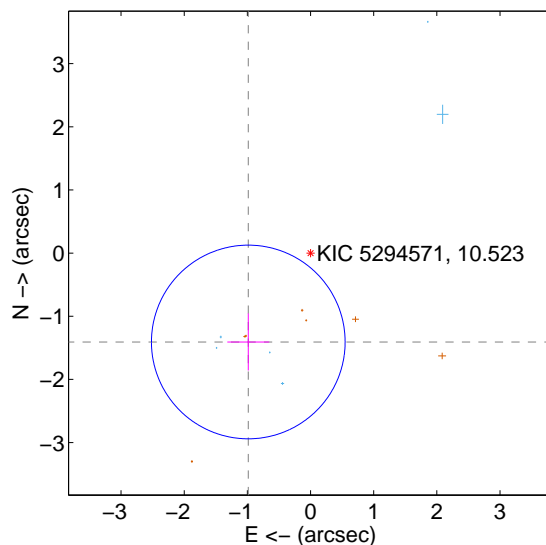
The direct PRF centroid is offset from the target star catalog position by about 0.82 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.493 ± 0.567	2.63	0.961 ± 0.395	-1.142 ± 0.483
PRF-fit source offset from KIC position	1.718 ± 0.511	3.36	0.986 ± 0.332	-1.407 ± 0.453
photometric centroid source offset	0.08 ± 0.04	2.16	0.05 ± 0.04	-0.05 ± 0.03

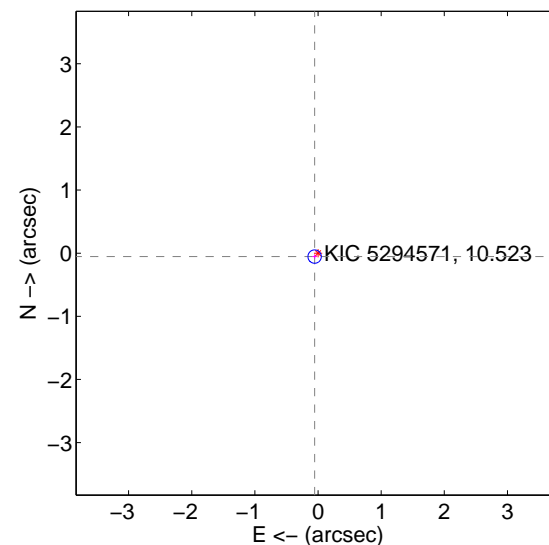
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

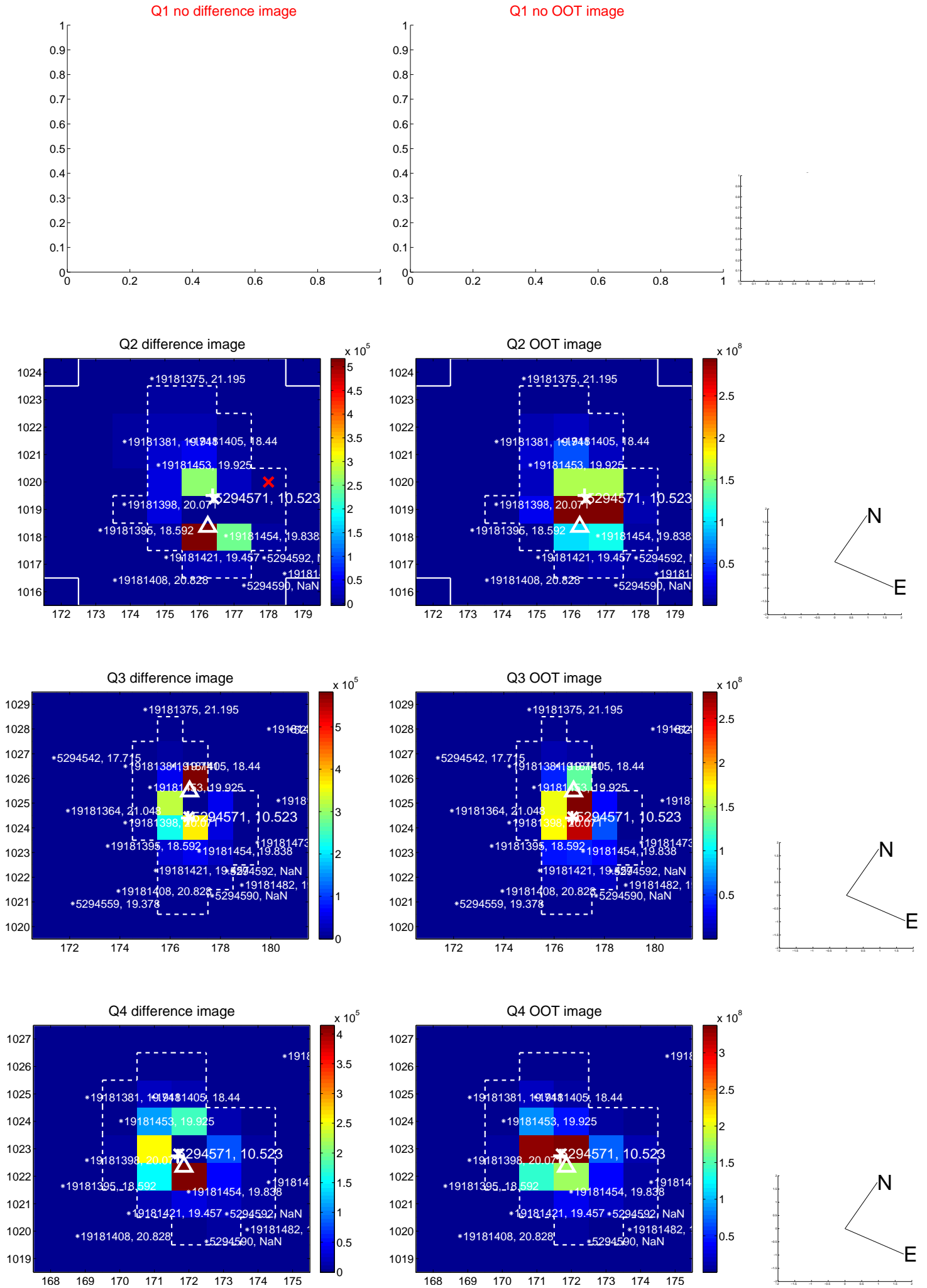


offset from photometric centroids

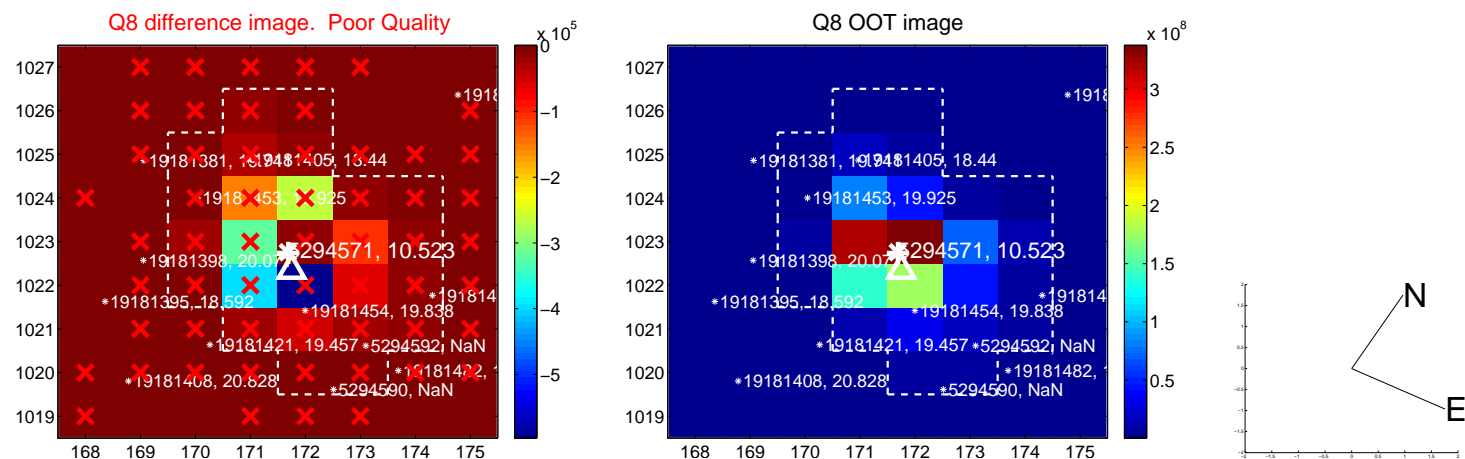
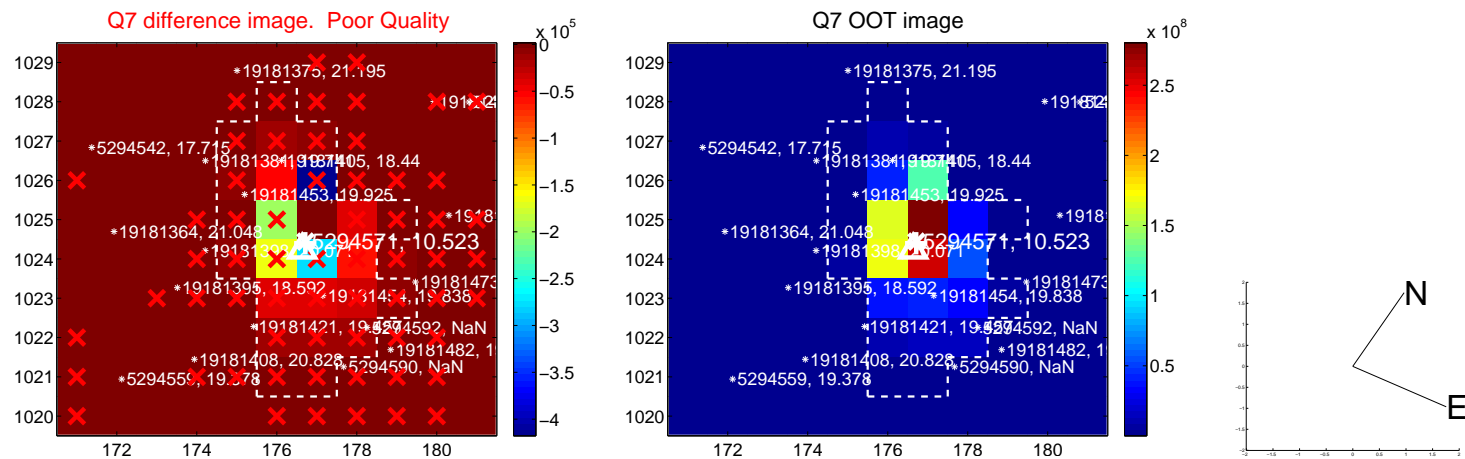
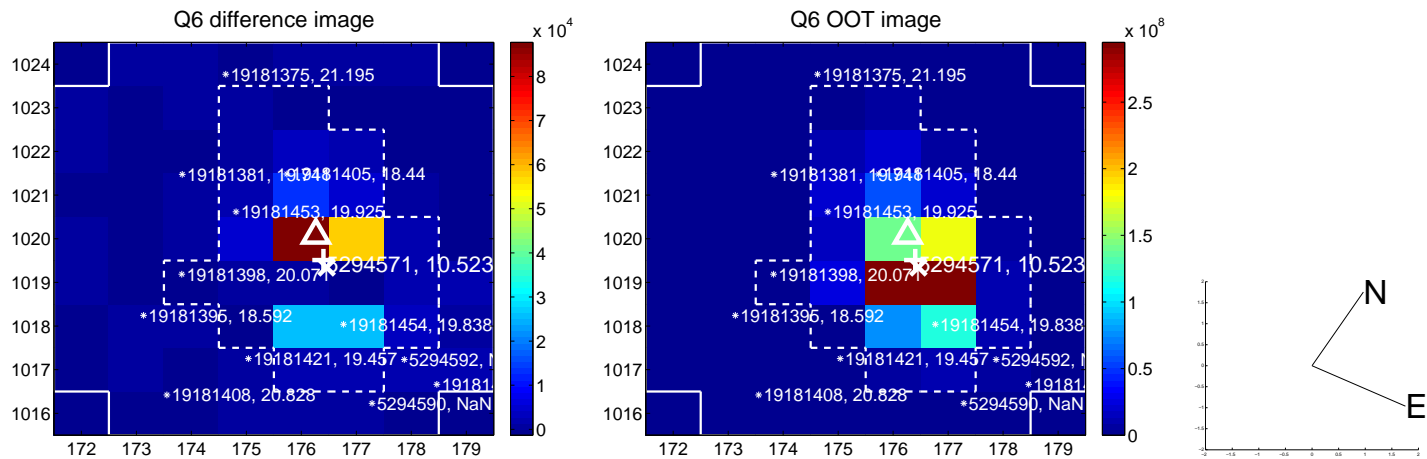
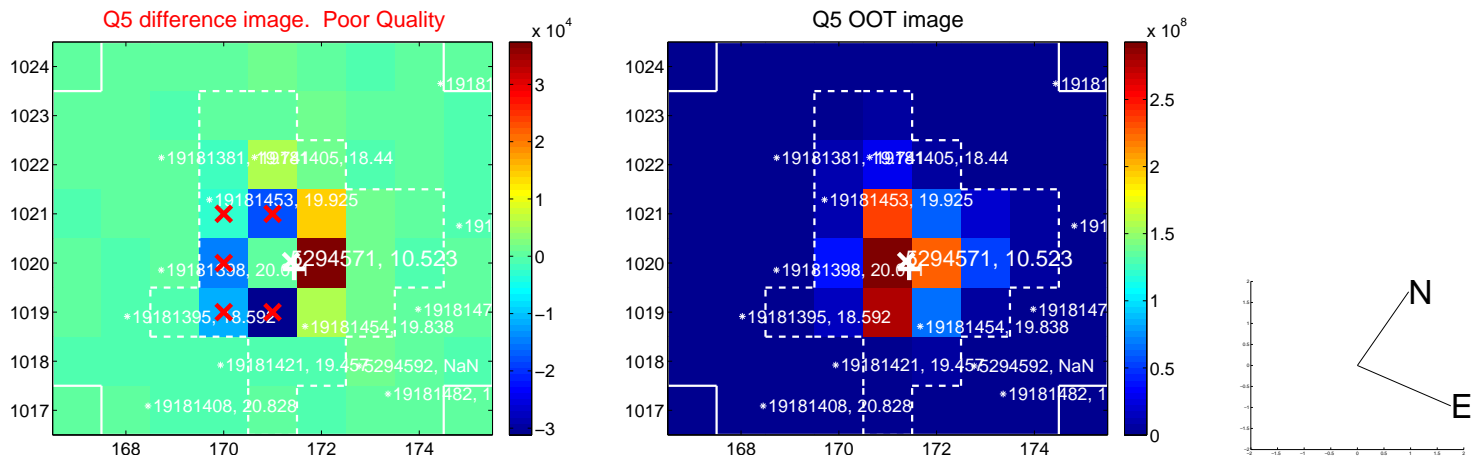


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

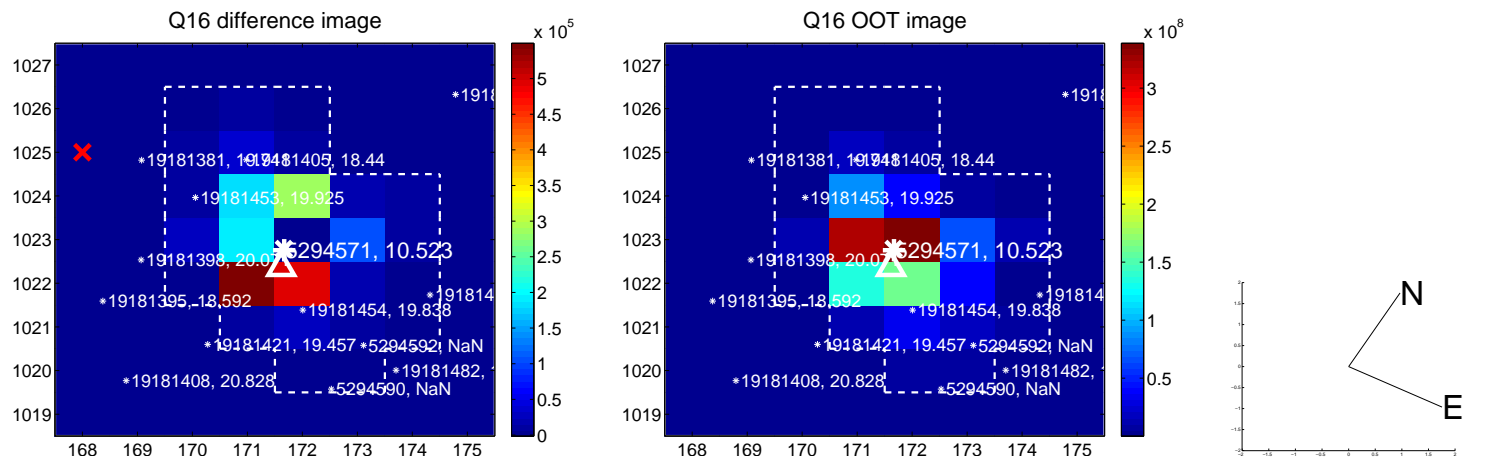
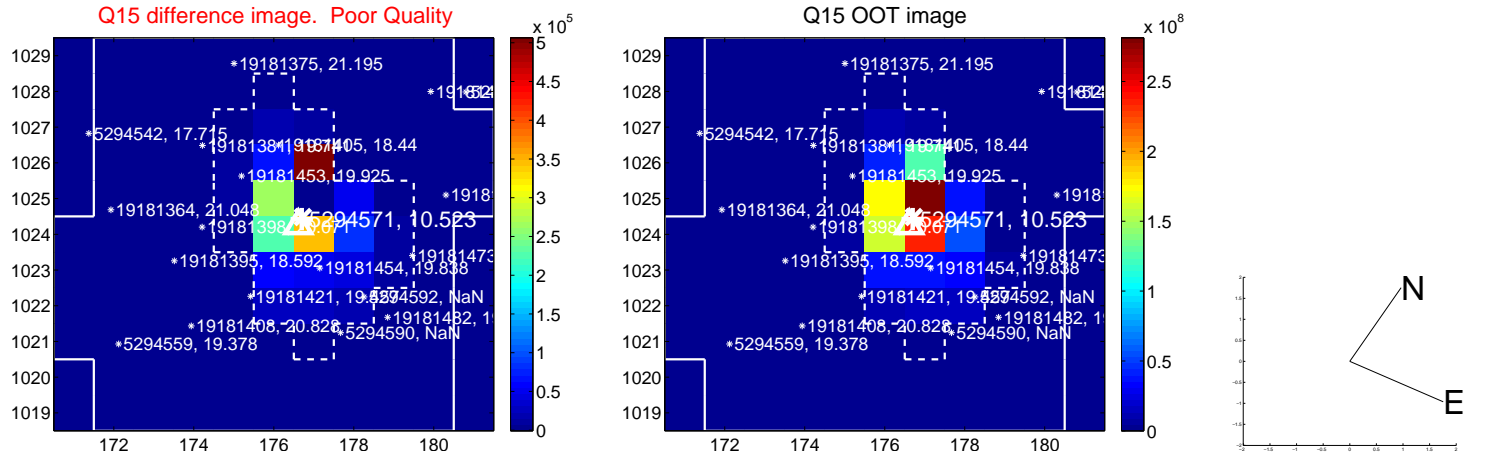
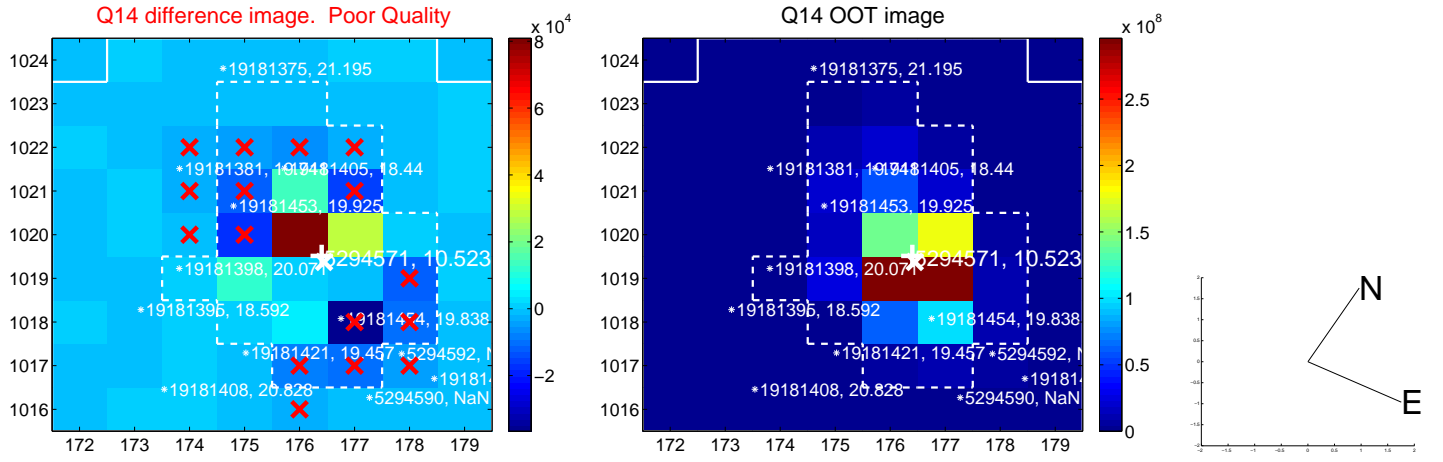
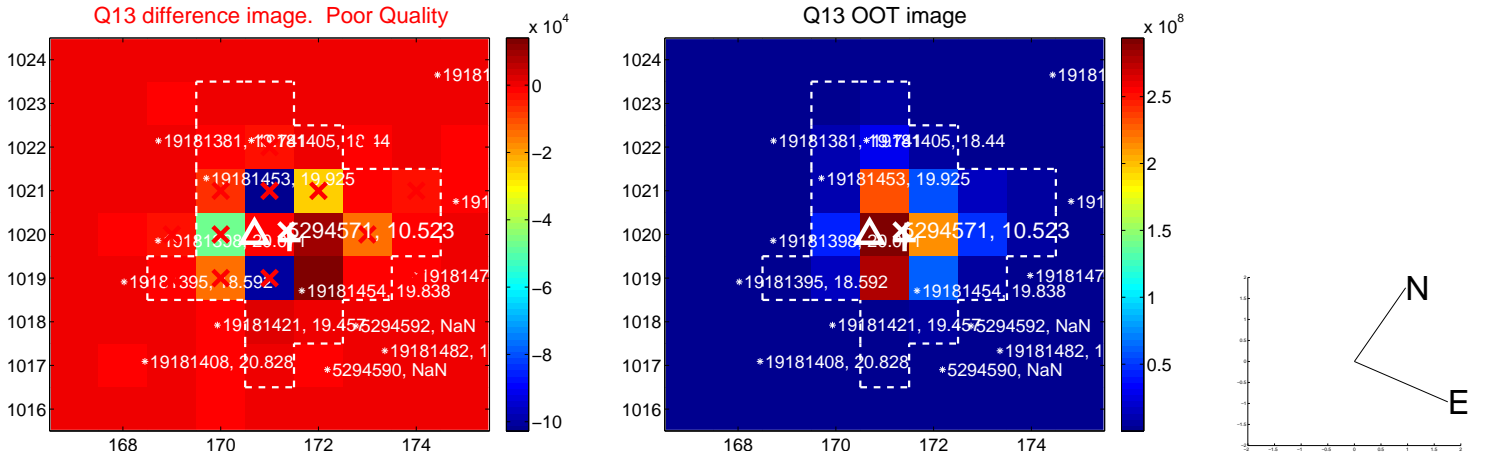
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

