

KIC 003352122

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})
003352122-01	OBS	No	2.202208	132.069511	221.0	7.500	12.0	-1.0	1.64	6526	2.45	3251.30
003352122-02	OBS	No	436.794590	267.748350	229.8	15.000	9.8	-1.0	1.64	6526	2.50	2.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003352122-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
003352122-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

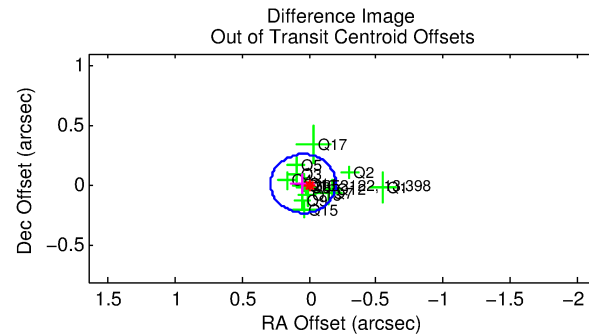
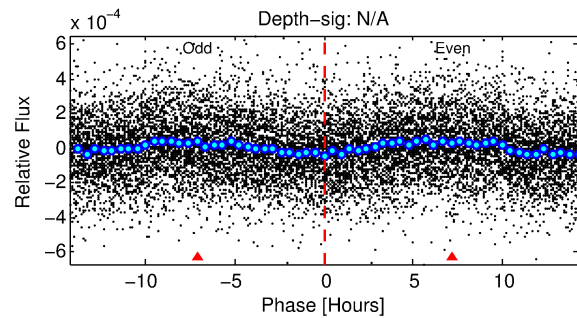
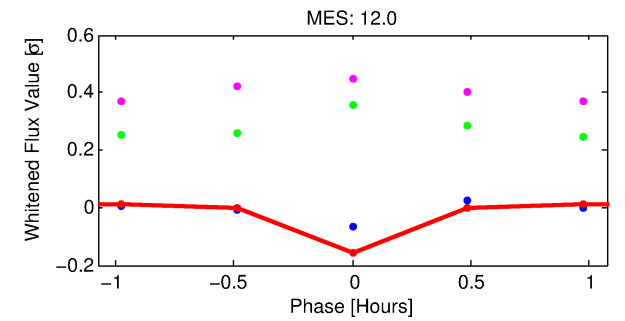
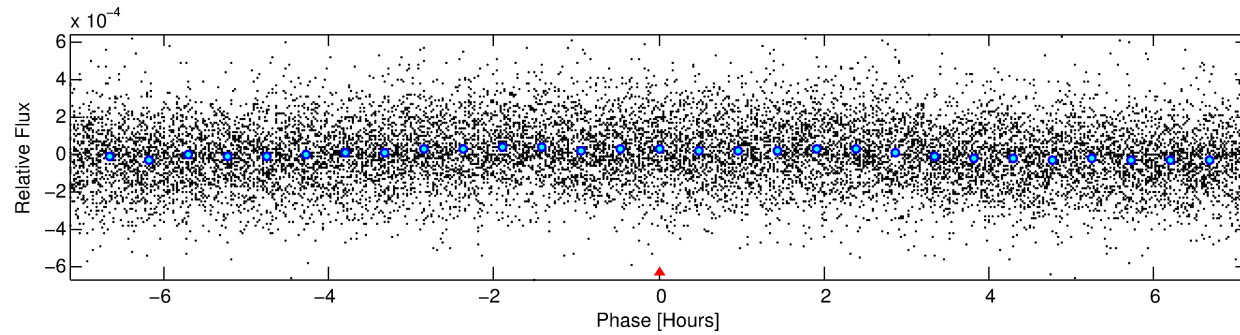
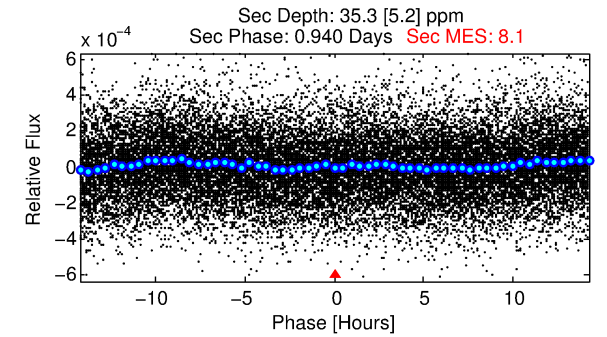
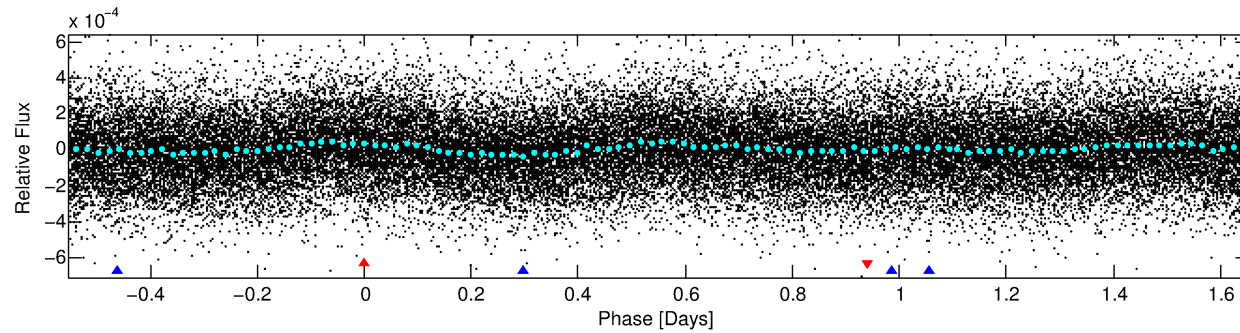
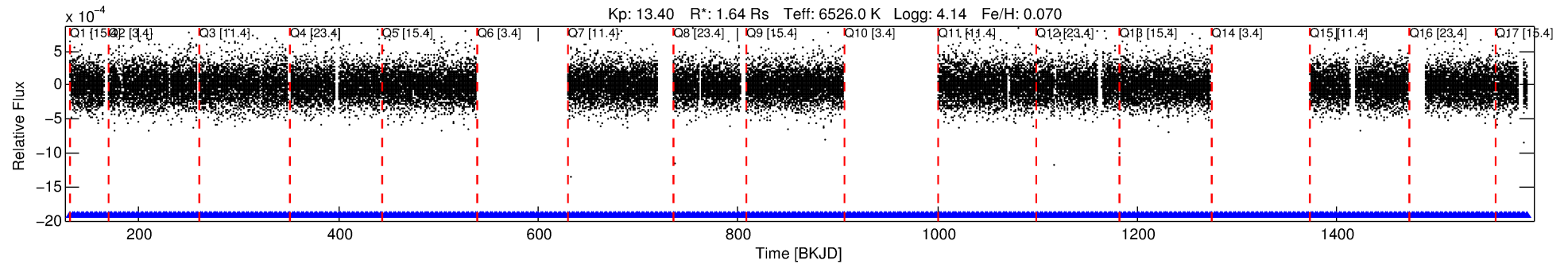
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003352122-01

No Significant Match Found

DV One-Page Summary

KIC: 3352122 Candidate: 1 of 2 Period: 2.202 d



TPS TCE Results:

Period = 2.20221 d
Epoch = 132.0695 BKJD

DV fit results are unavailable

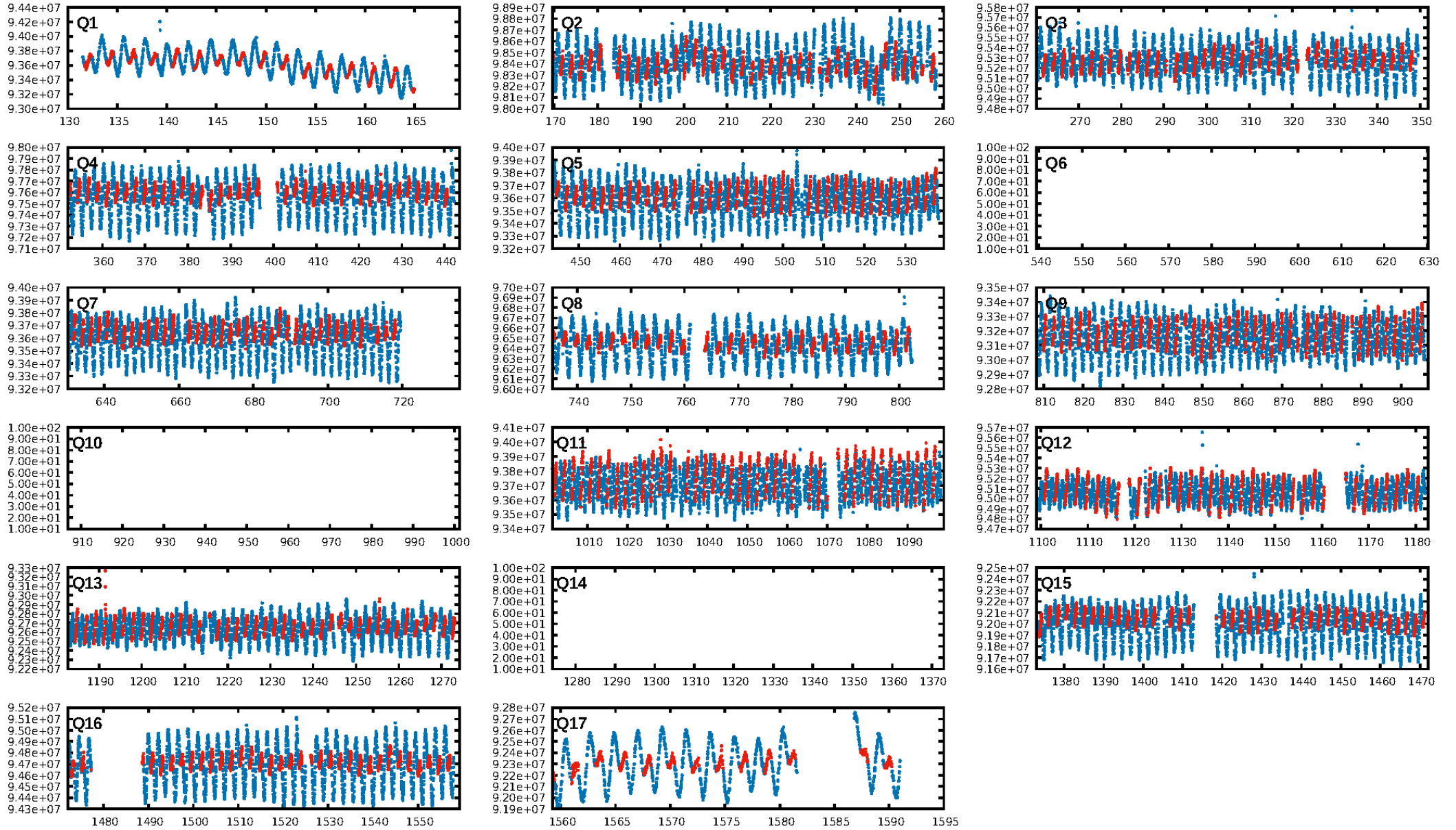
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [621.94σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.33e-21
RollingBand-fgt: 1.00 [450/450]
GhostDiagnostic-chr: 0.3568
Centroid-sig: 0.5%
Centroid-so: 6.419 arcsec [1.68σ]
OotOffset-rm: 0.048 arcsec [0.59σ]
KicOffset-rm: 0.046 arcsec [0.59σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

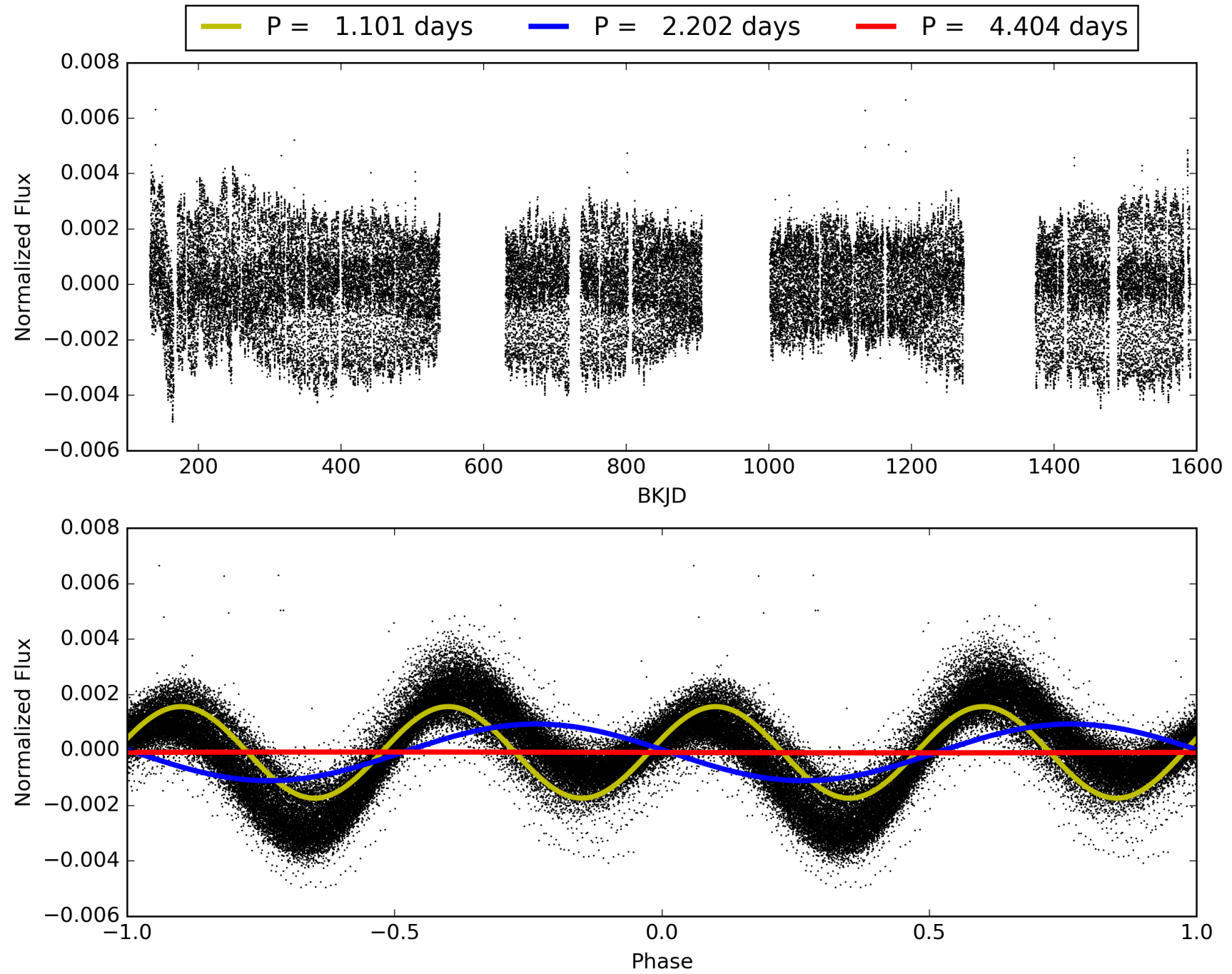
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:17:41 Z

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

TCE 003352122-01, PDC Light Curves

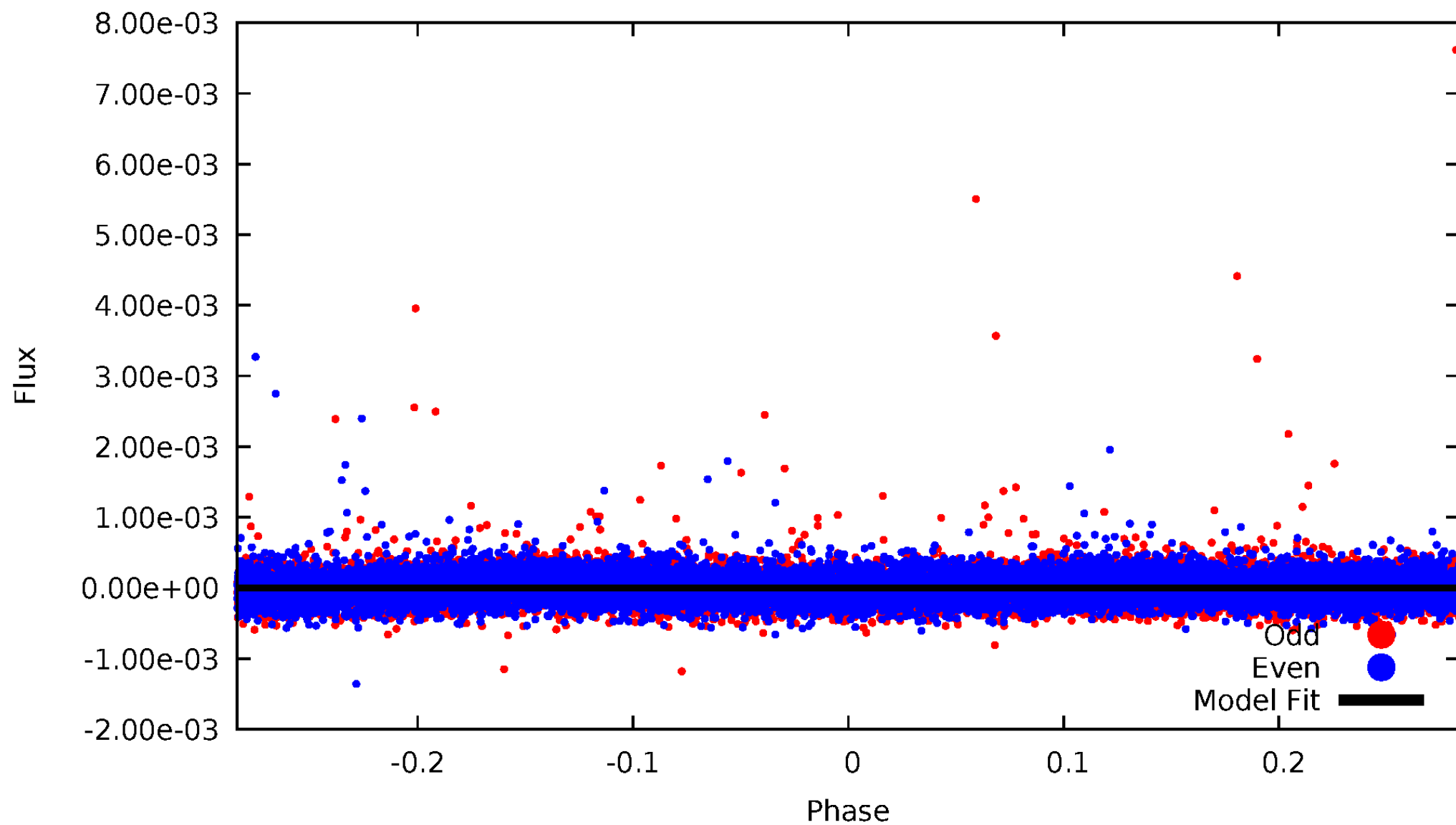


TCE 003352122-01



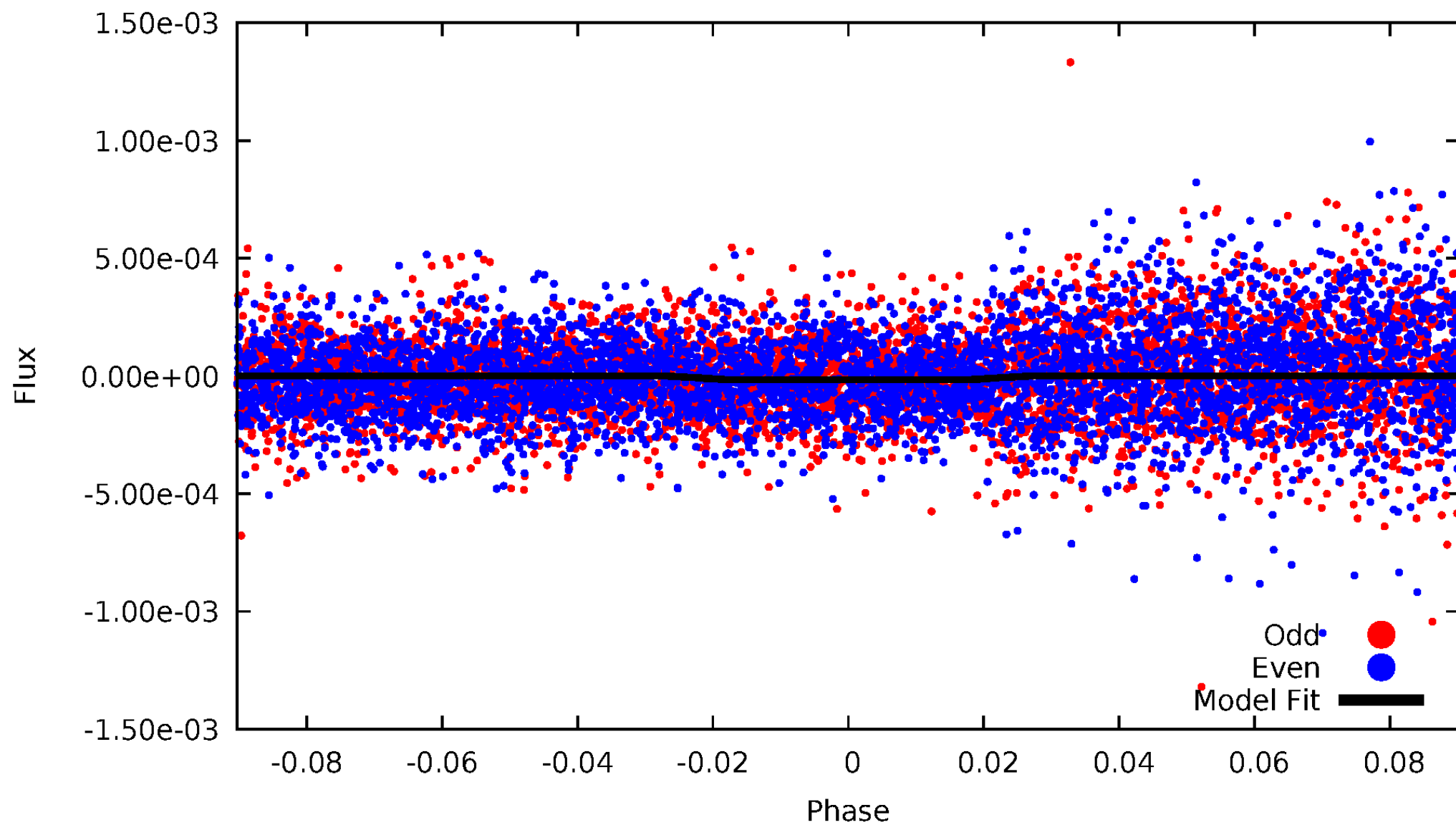
DV Odd/Even

TCE 003352122-01

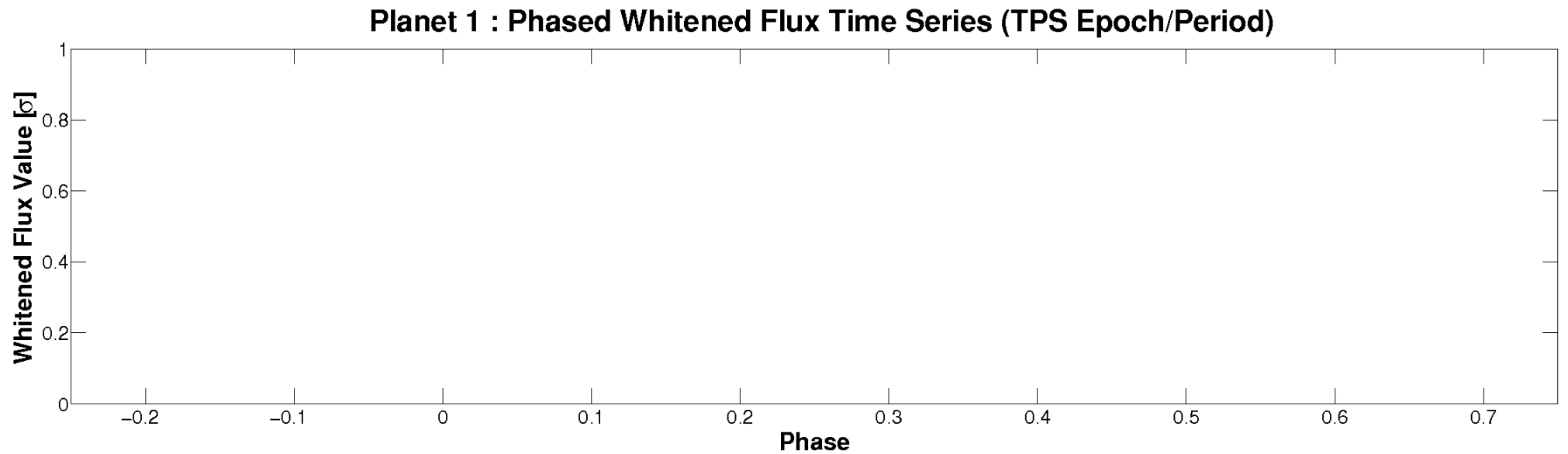
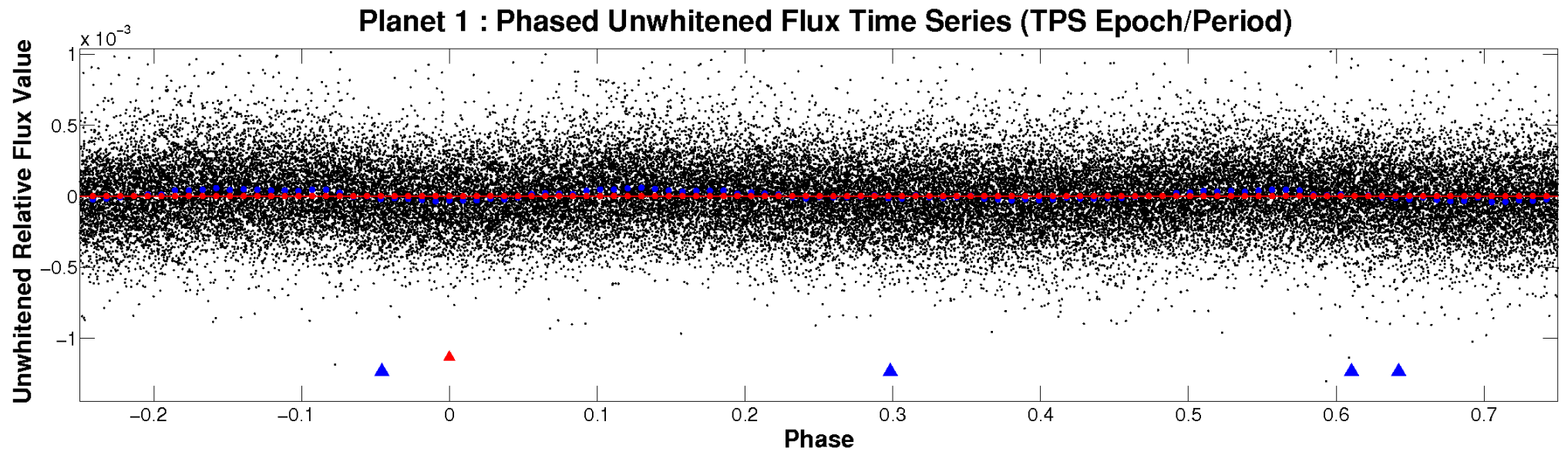


ALT Odd/Even

TCE 003352122-01

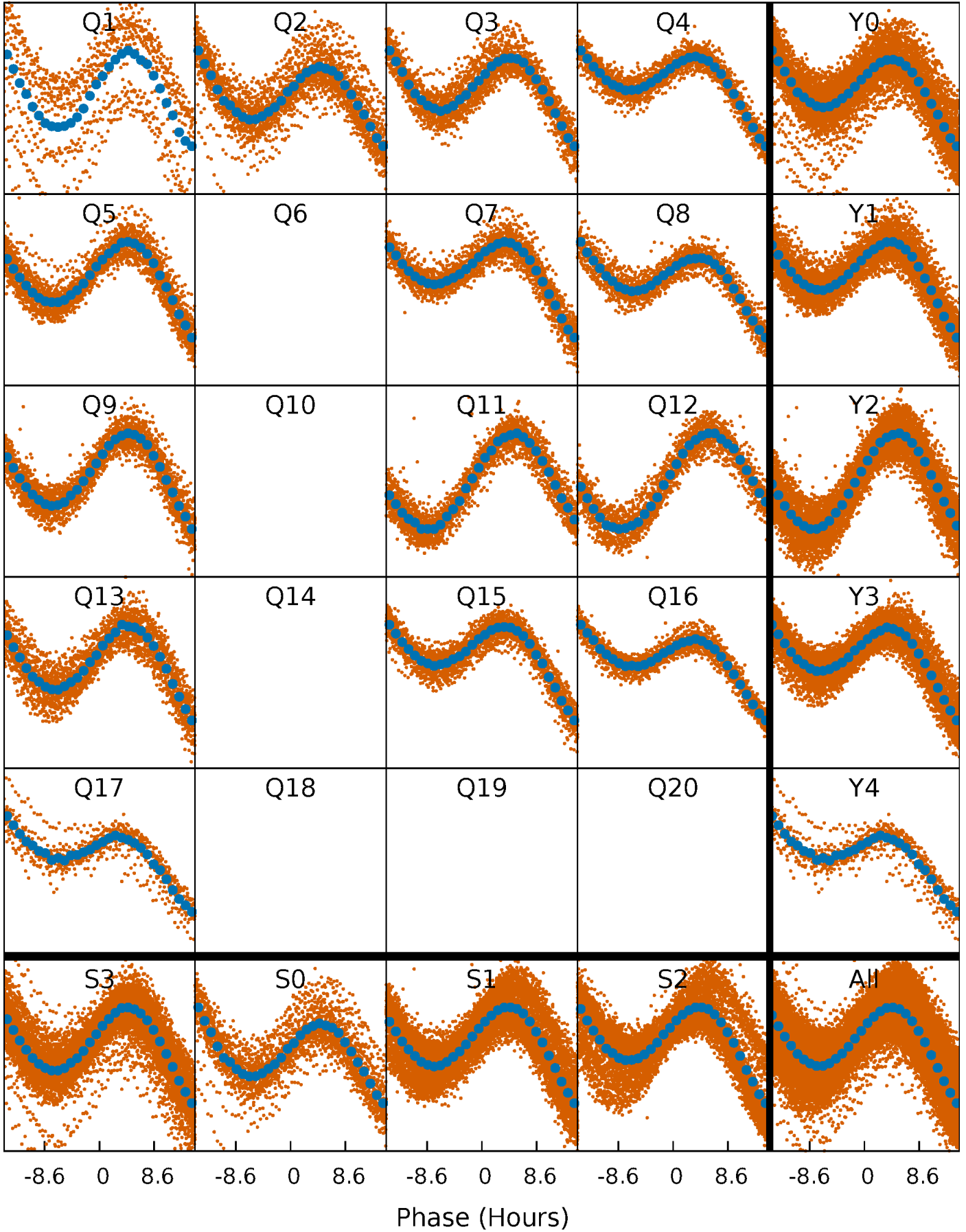


Non-Whitened Vs. Whitened Light Curve



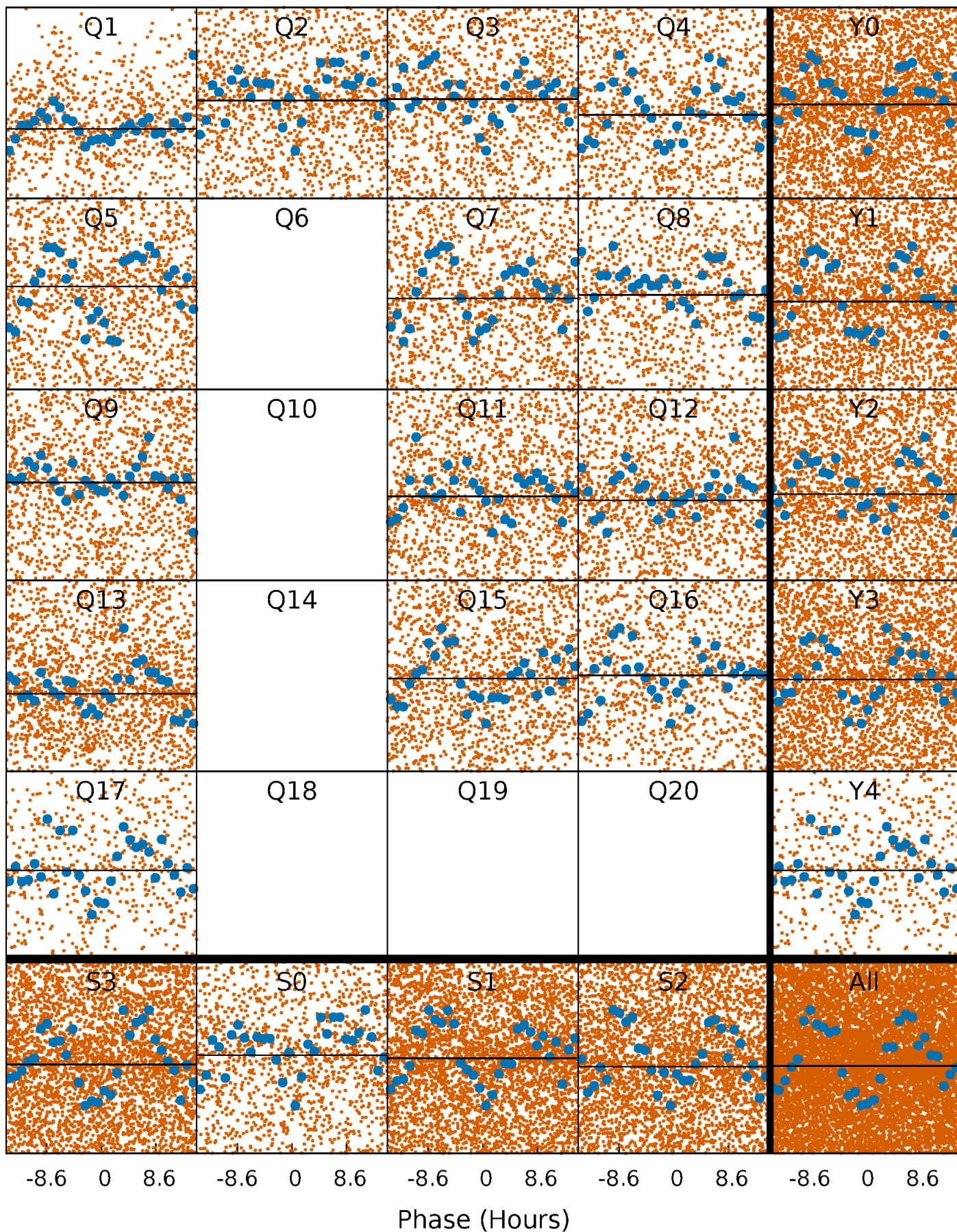
PDC Quarter-Phased Transit Curves

TCE 003352122-01 P= 2.202208 Days $T_0=132.069511$ (BKJD)



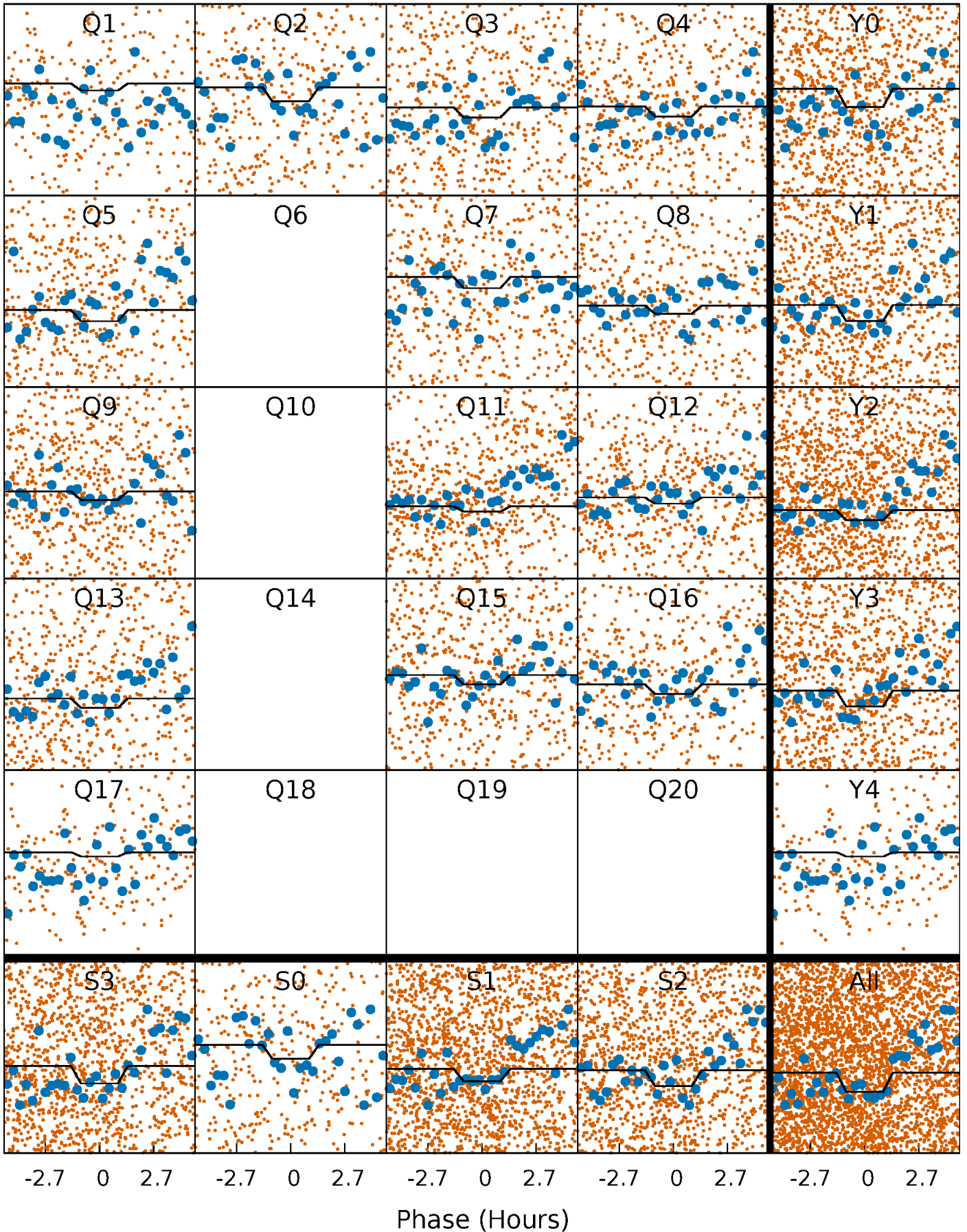
DV Quarter-Phased Transit Curves

TCE 003352122-01 P= 2.202208 Days $T_0=132.069511$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

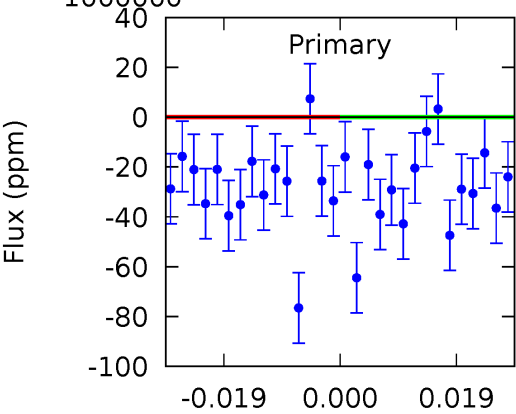
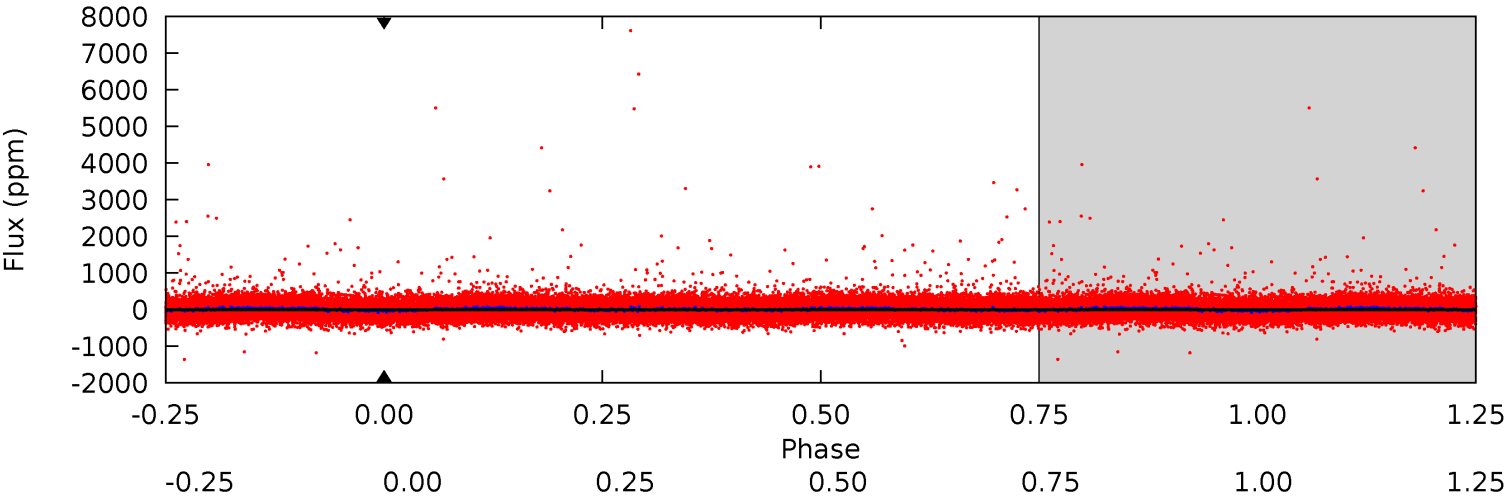
TCE 003352122-01 P= 2.202208 Days $T_0=131.784289$ (BKJD)



DV Model-Shift Uniqueness Test

003352122-01, P = 2.202208 Days, E = 129.867303 Days

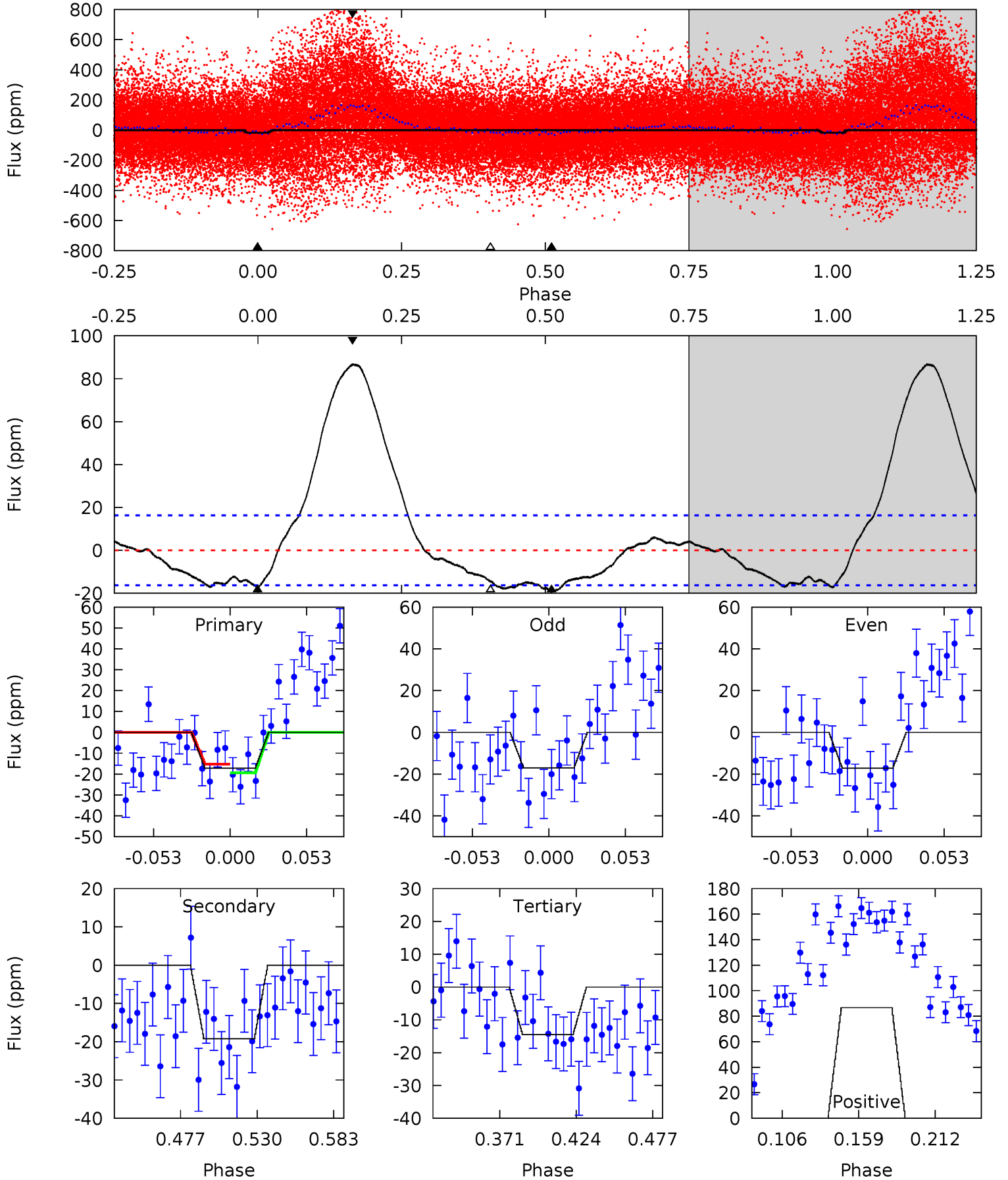
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

003352122-01, P = 2.202208 Days, E = 129.582081 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.96	5.55	4.17	25.0	4.70	1.93	8.46	0.78	-20.0	1.38	-19.4	0.02	1.11	0.82	0.59



Stellar Parameters For KIC 003352122

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6526^{+71}_{-84}	$4.140^{+0.138}_{-0.125}$	$0.070^{+0.150}_{-0.200}$	$1.639^{+0.297}_{-0.297}$	$1.350^{+0.111}_{-0.123}$	$0.432^{+0.298}_{-0.150}$
	+1%/-1%	+3%/-3%	+214%/-286%	+18%/-18%	+8%/-9%	+69%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 003352122-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$13.31^{+14.79}_{-8.78}$	2691^{+125}_{-133}	-4824^{+31788}_{-21356}	$-5.759^{+703.838}_{-640.404}$
Alt.	-19 ± 3	$12.36^{+13.75}_{-8.89}$	2683^{+129}_{-127}	-2737^{+6070}_{-162}	$0.093^{+1.048}_{-0.073}$

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

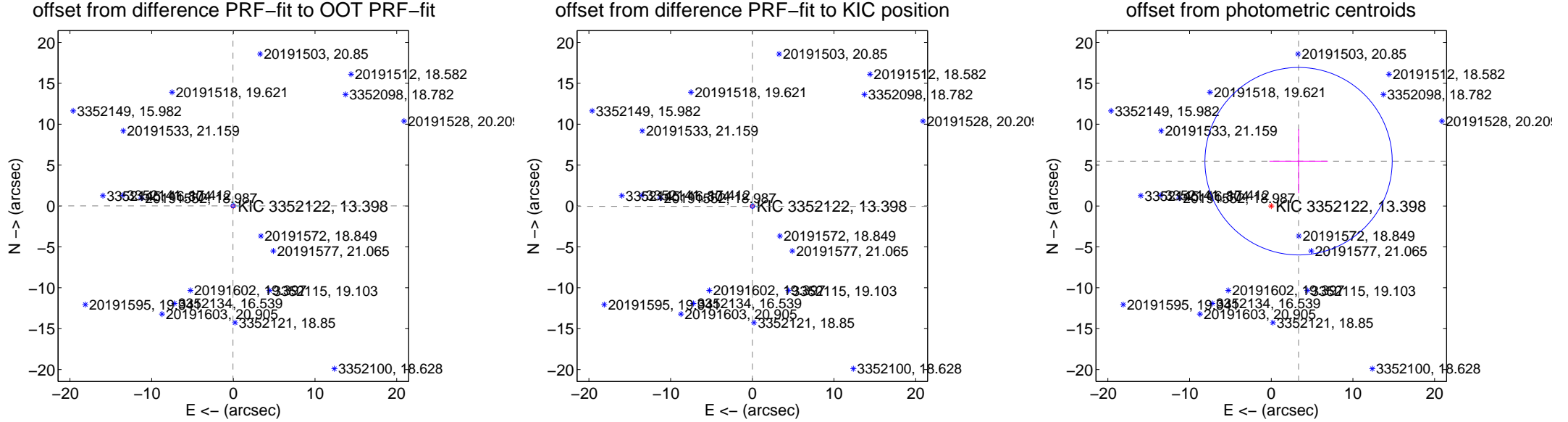
DV Centroid Data

Supplemental centroid analysis for 003352122-01. Kepler magnitude: 13.40. Transit SNR -1.00

There are 14 quarters with good PRF difference image offsets

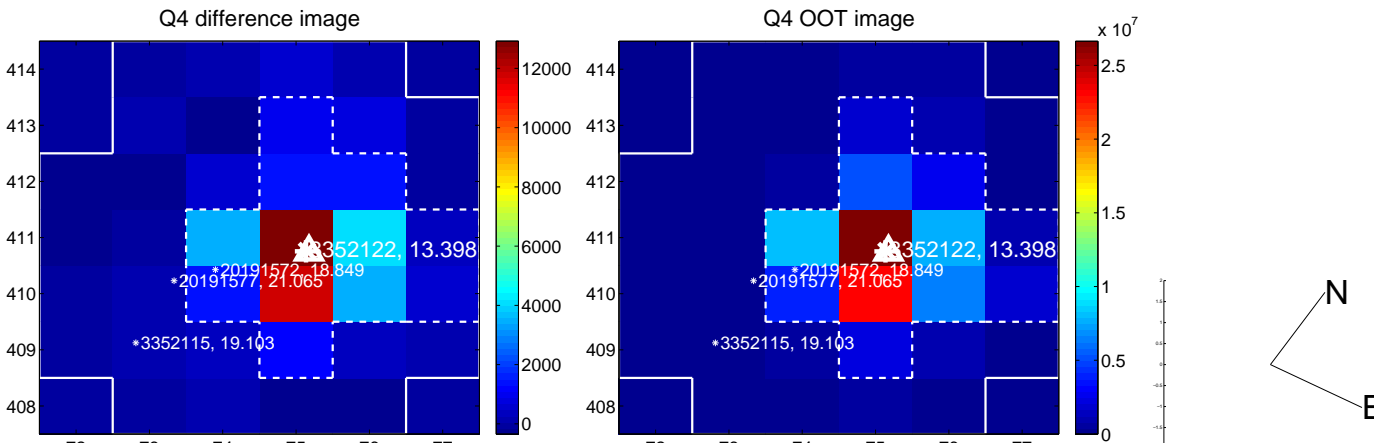
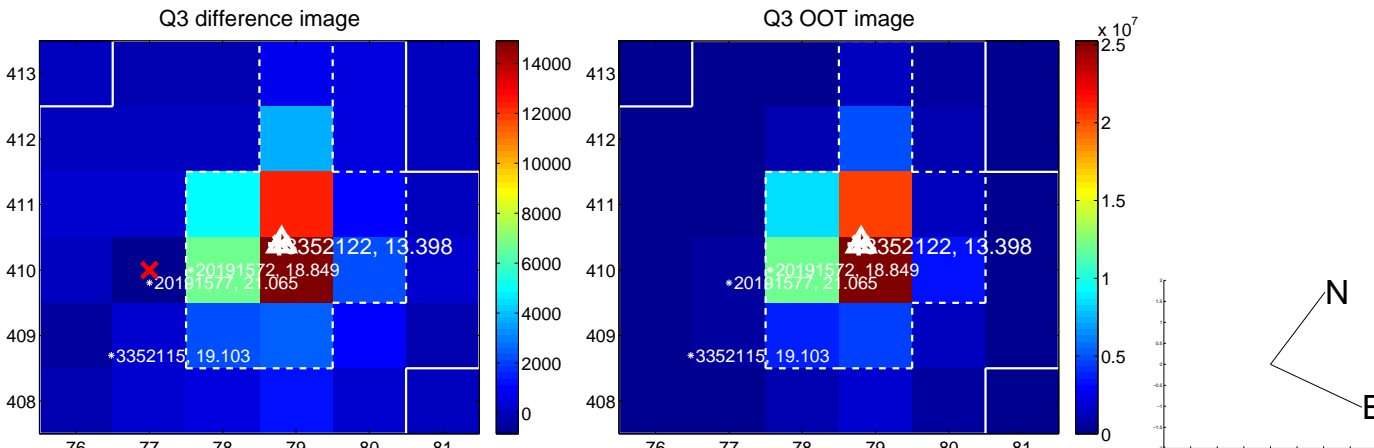
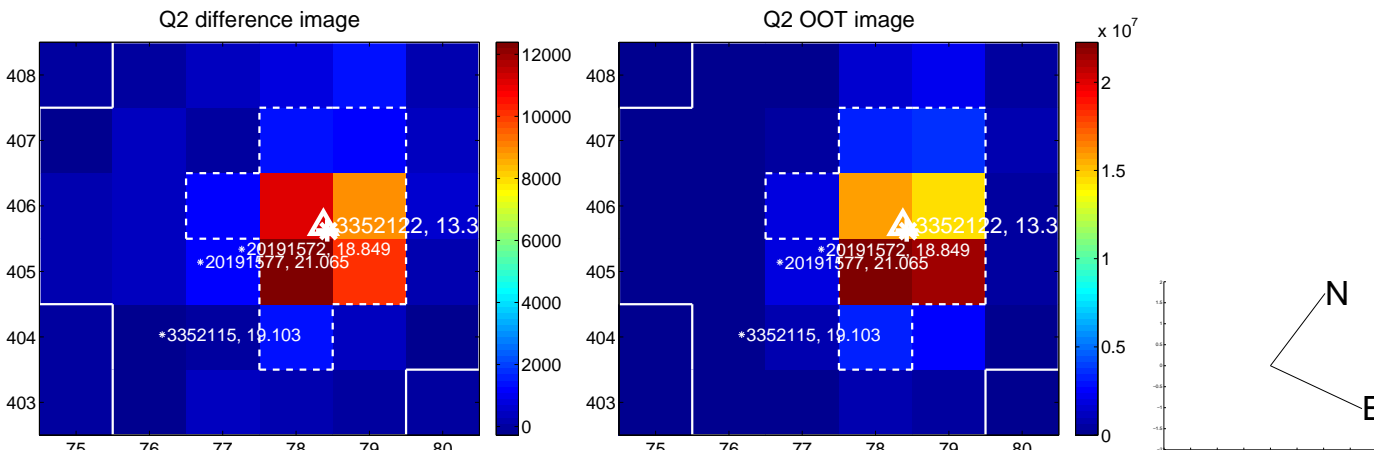
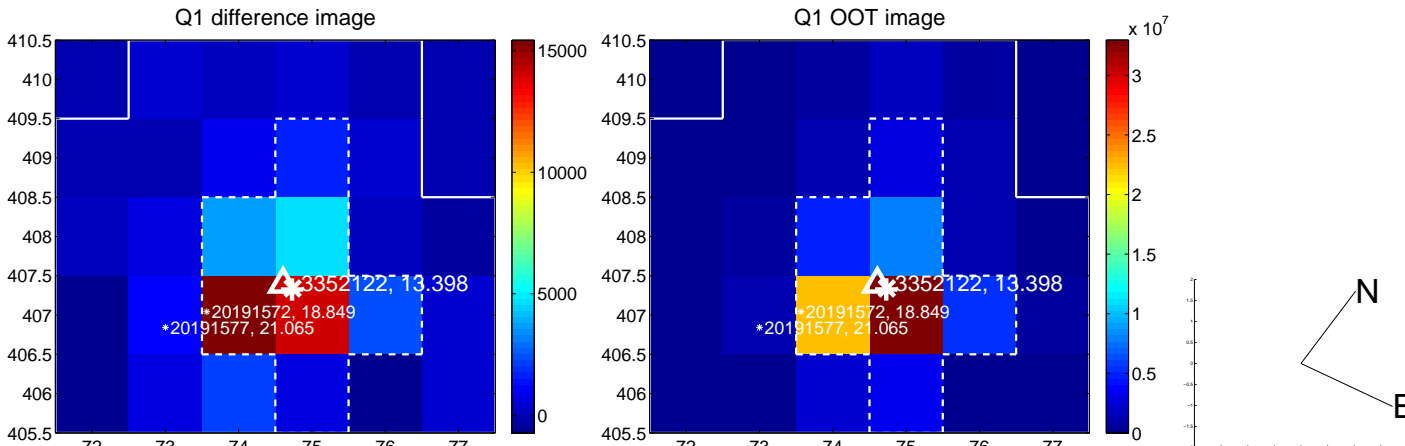
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.048 ± 0.081	0.59	0.045 ± 0.083	0.018 ± 0.075
PRF-fit source offset from KIC position	0.046 ± 0.079	0.59	-0.017 ± 0.086	-0.043 ± 0.078
photometric centroid source offset	6.42 ± 3.82	1.68	-3.35 ± 3.57	5.48 ± 3.91

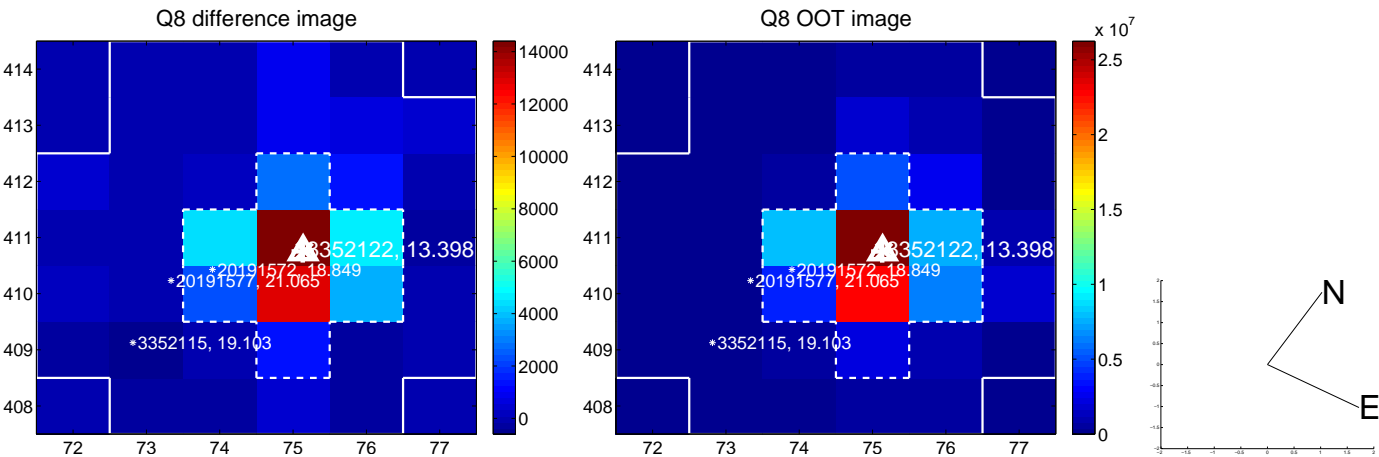
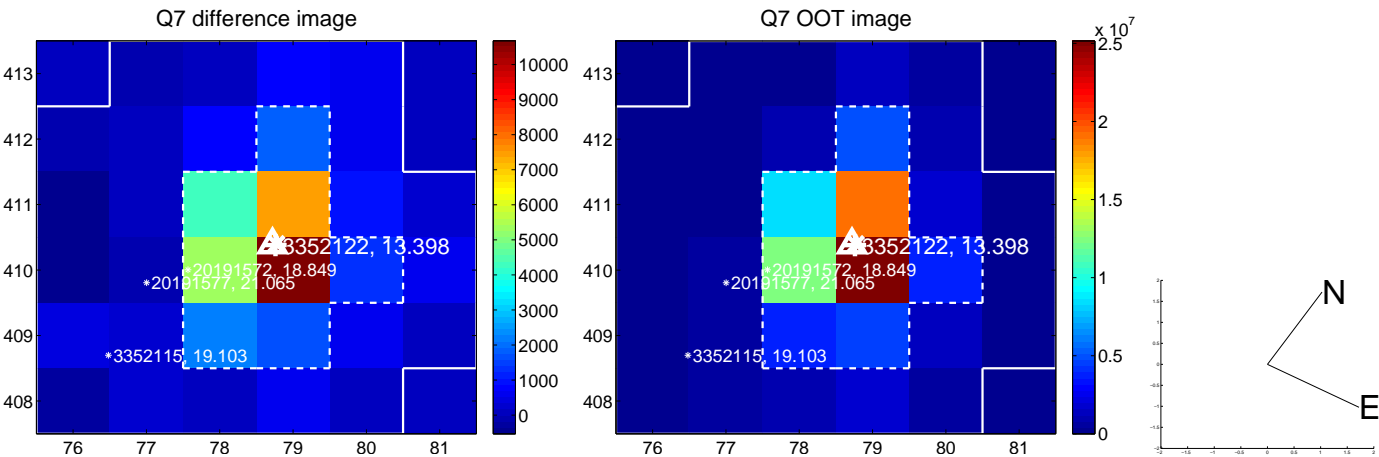
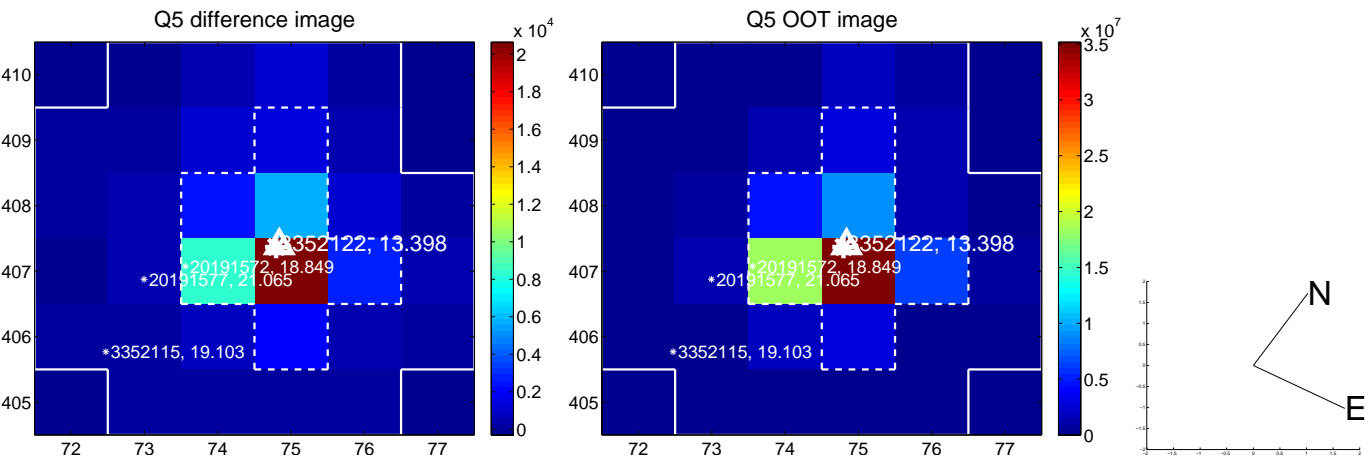


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

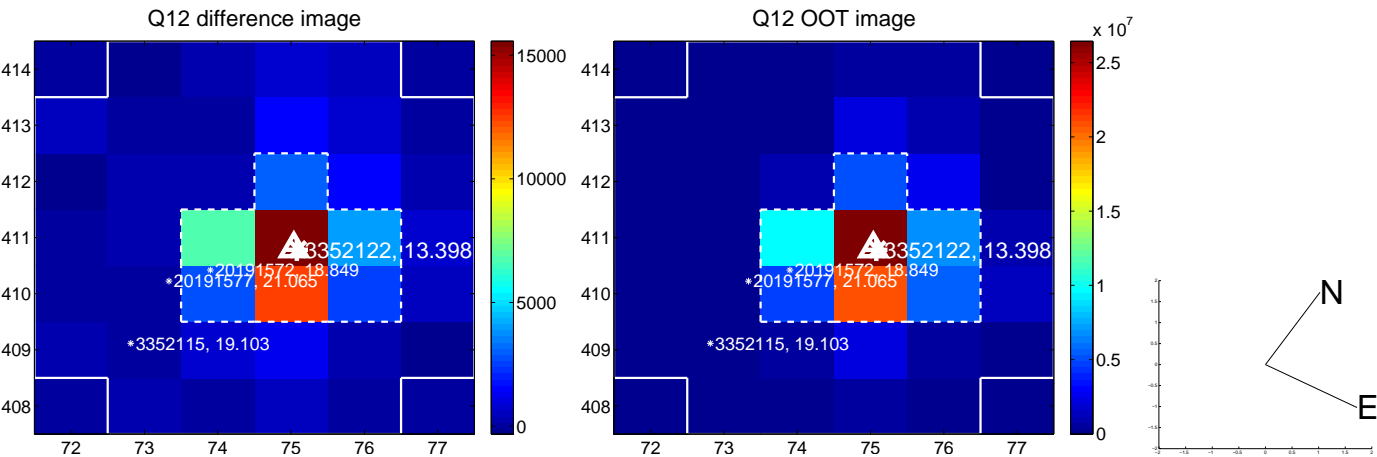
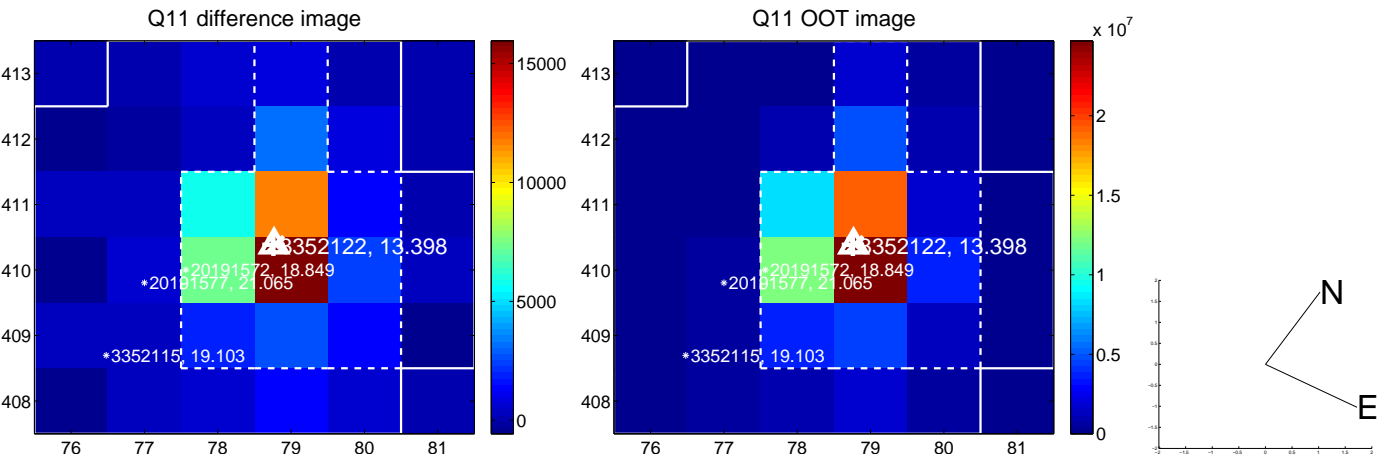
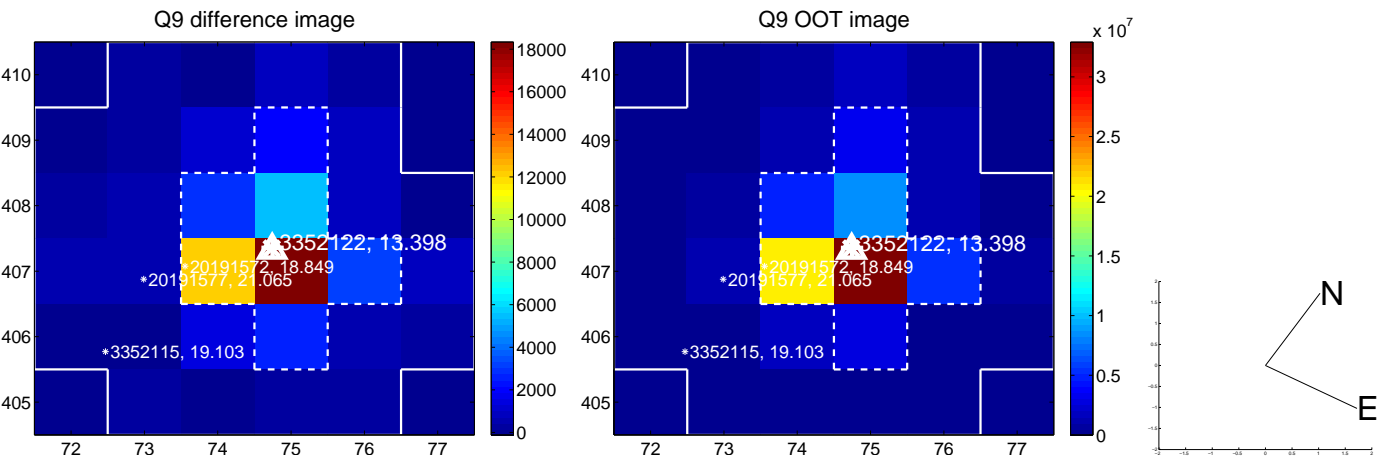
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



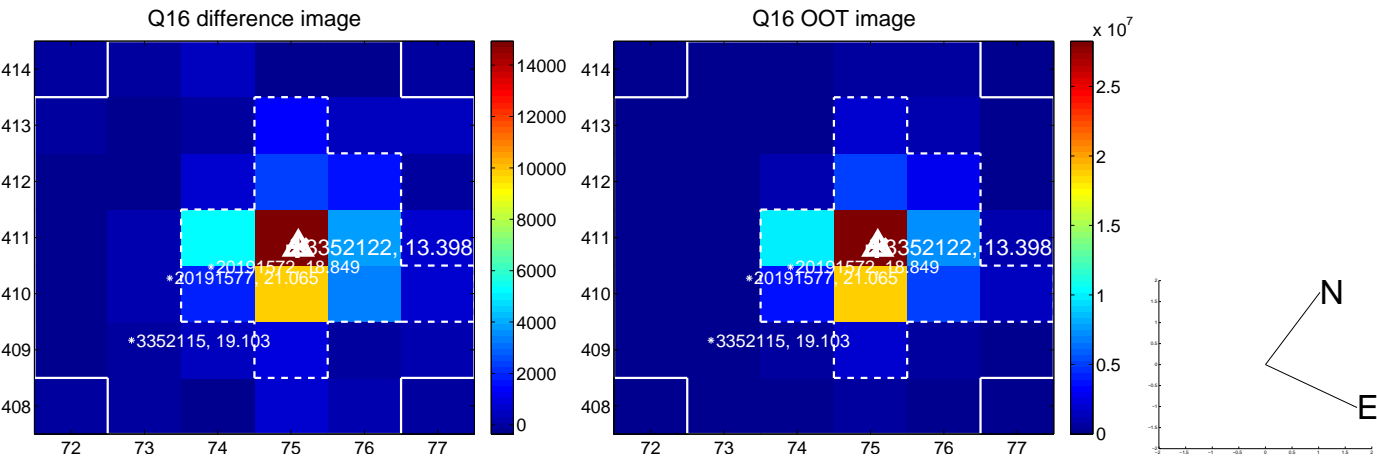
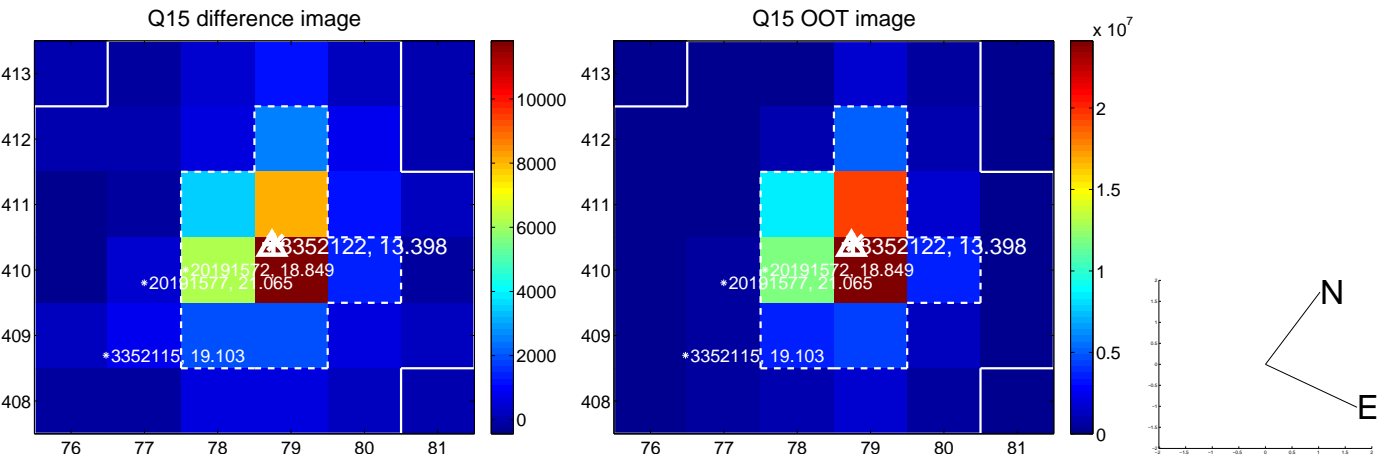
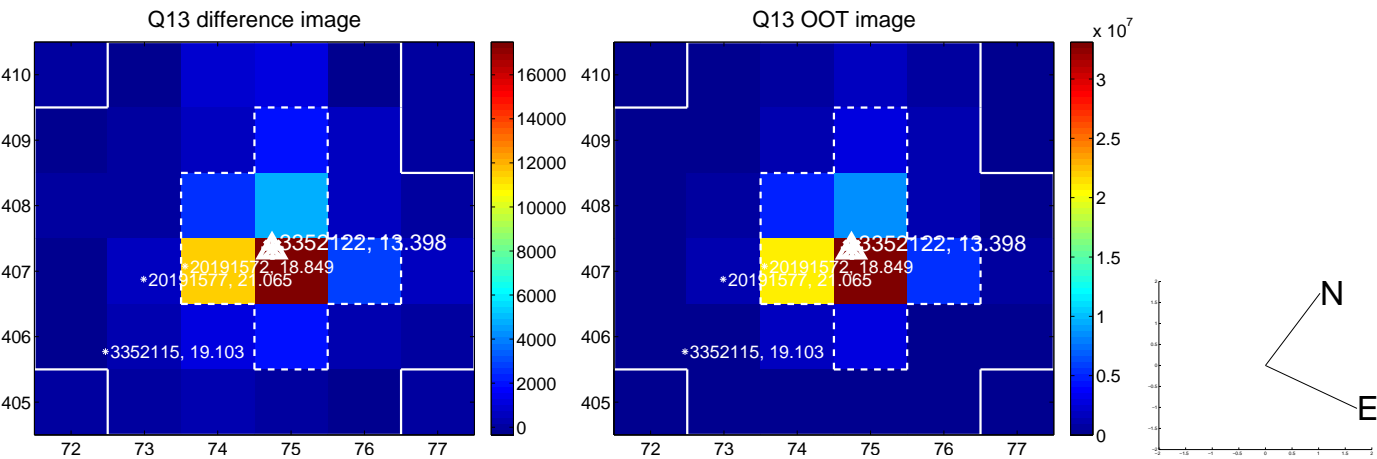
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



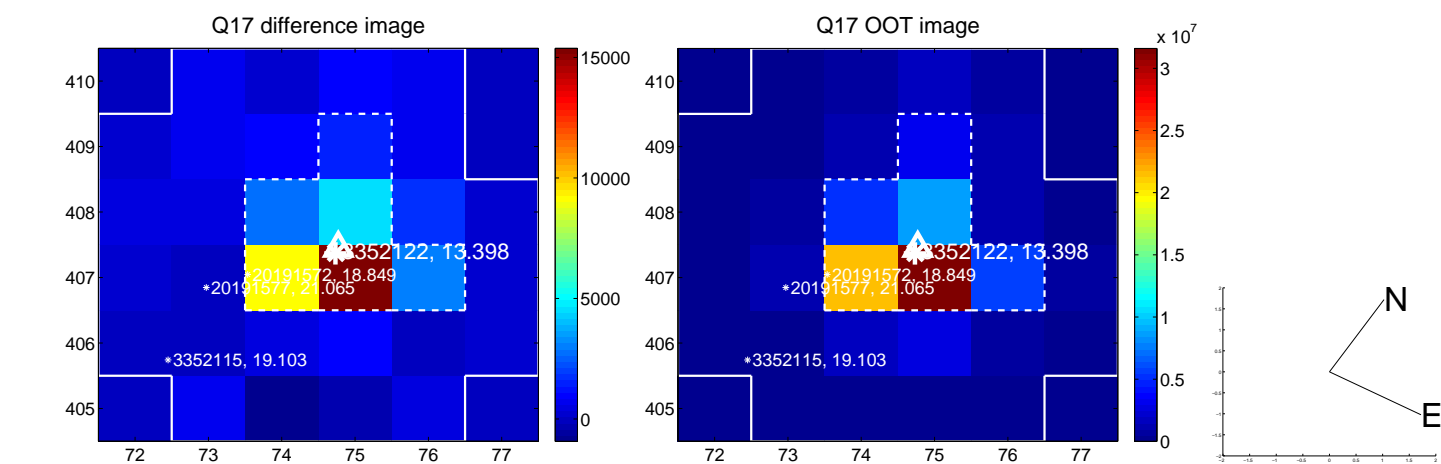
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



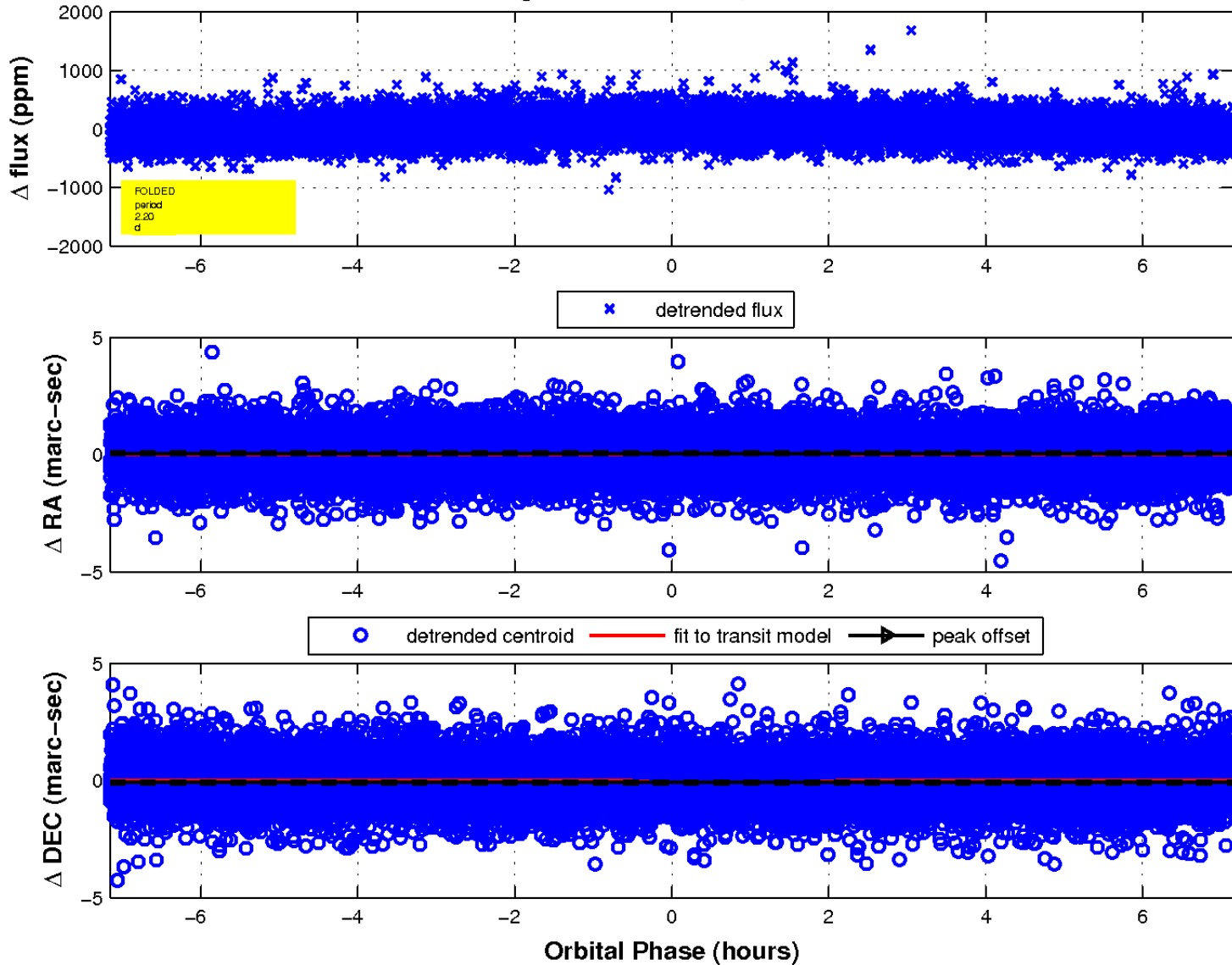
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

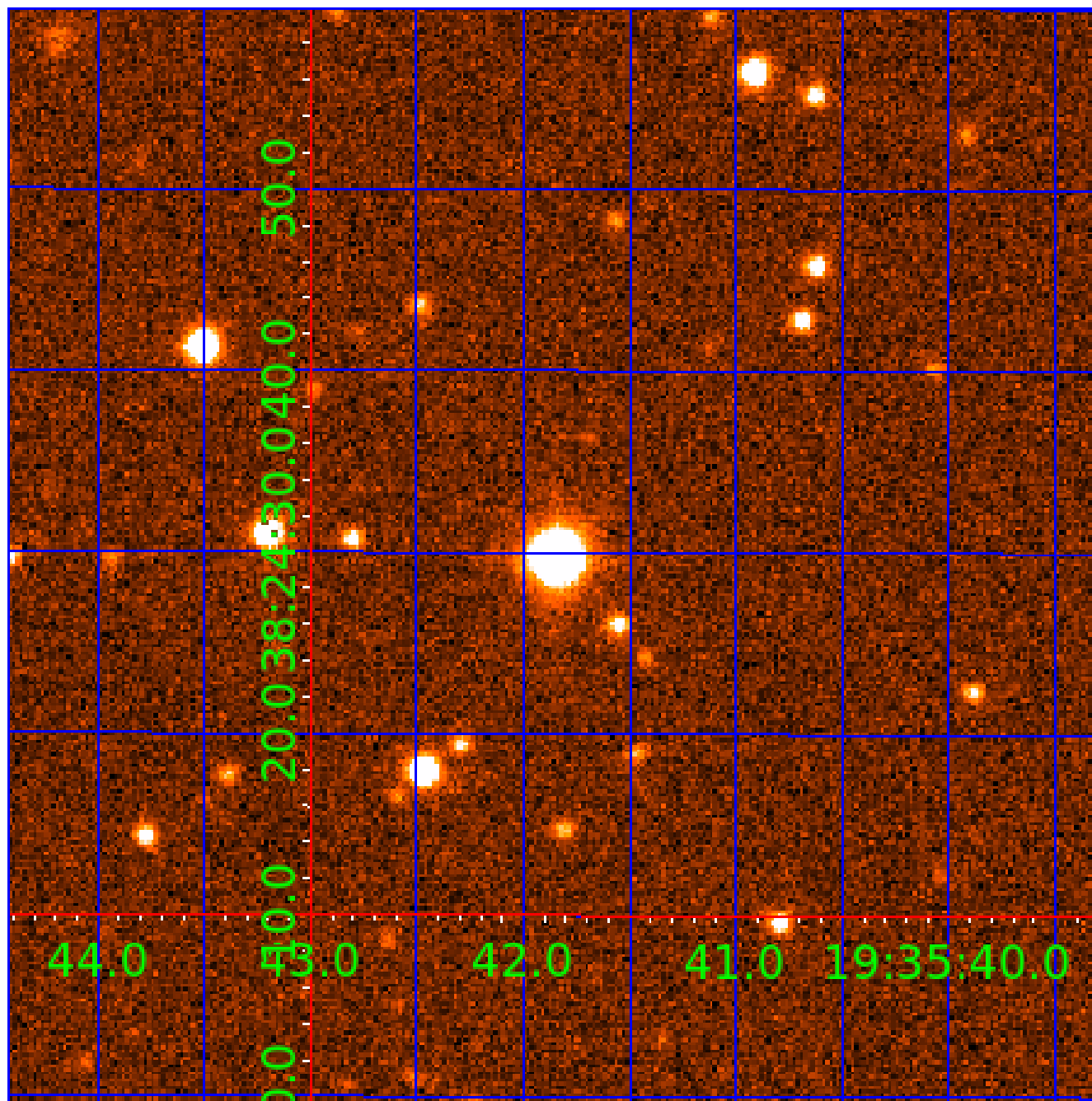


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 003352122

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})
003352122-01	OBS	No	2.202208	132.069511	221.0	7.500	12.0	-1.0	1.64	6526	2.45	3251.30
003352122-02	OBS	No	436.794590	267.748350	229.8	15.000	9.8	-1.0	1.64	6526	2.50	2.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003352122-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
003352122-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

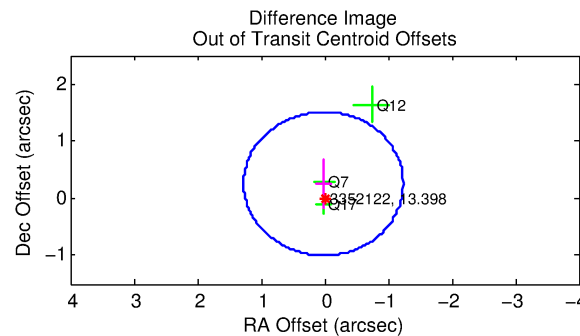
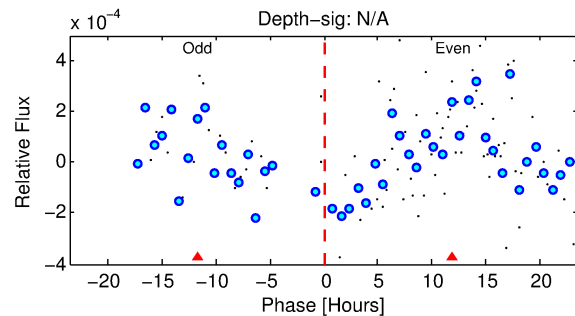
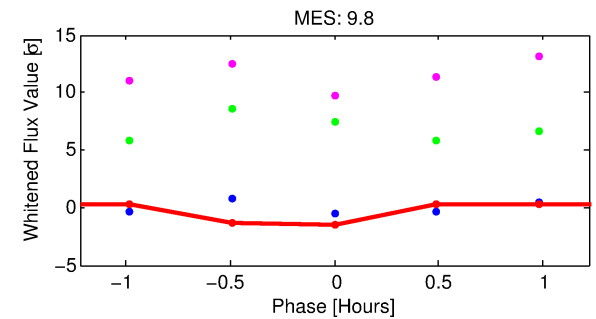
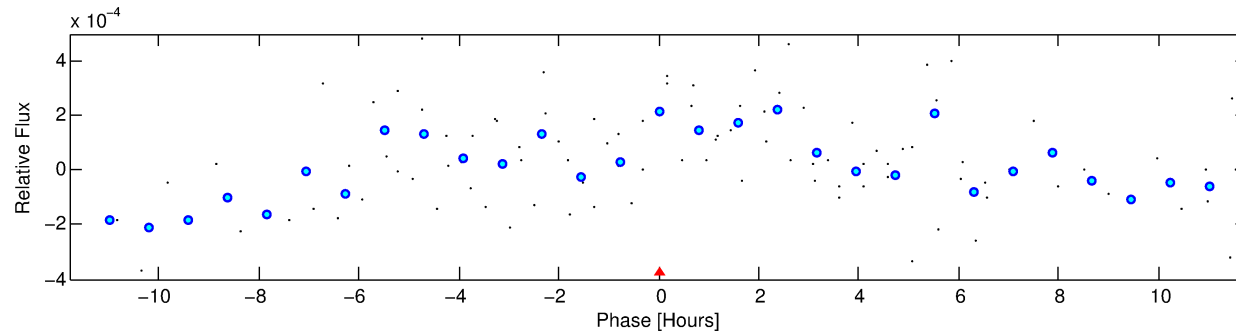
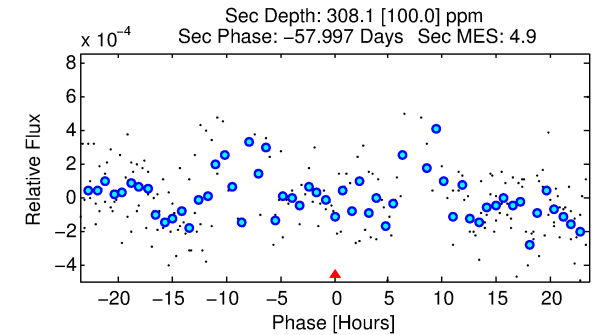
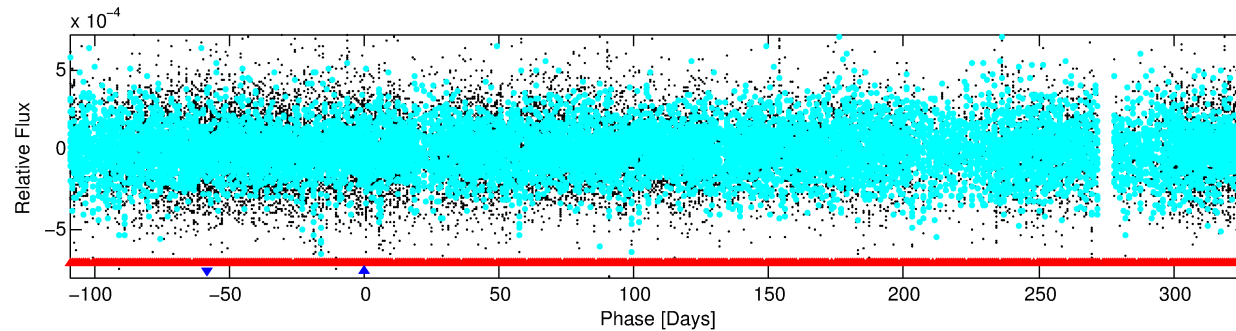
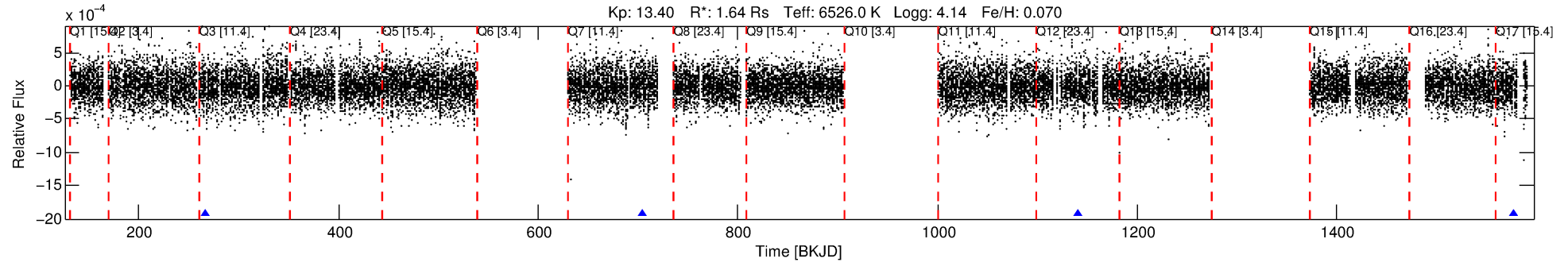
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003352122-02

No Significant Match Found

DV One-Page Summary

KIC: 3352122 Candidate: 2 of 2 Period: 436.795 d



TPS TCE Results:

Period = 436.79459 d
Epoch = 267.7483 BKJD

DV fit results are unavailable

DV Diagnostic Results:

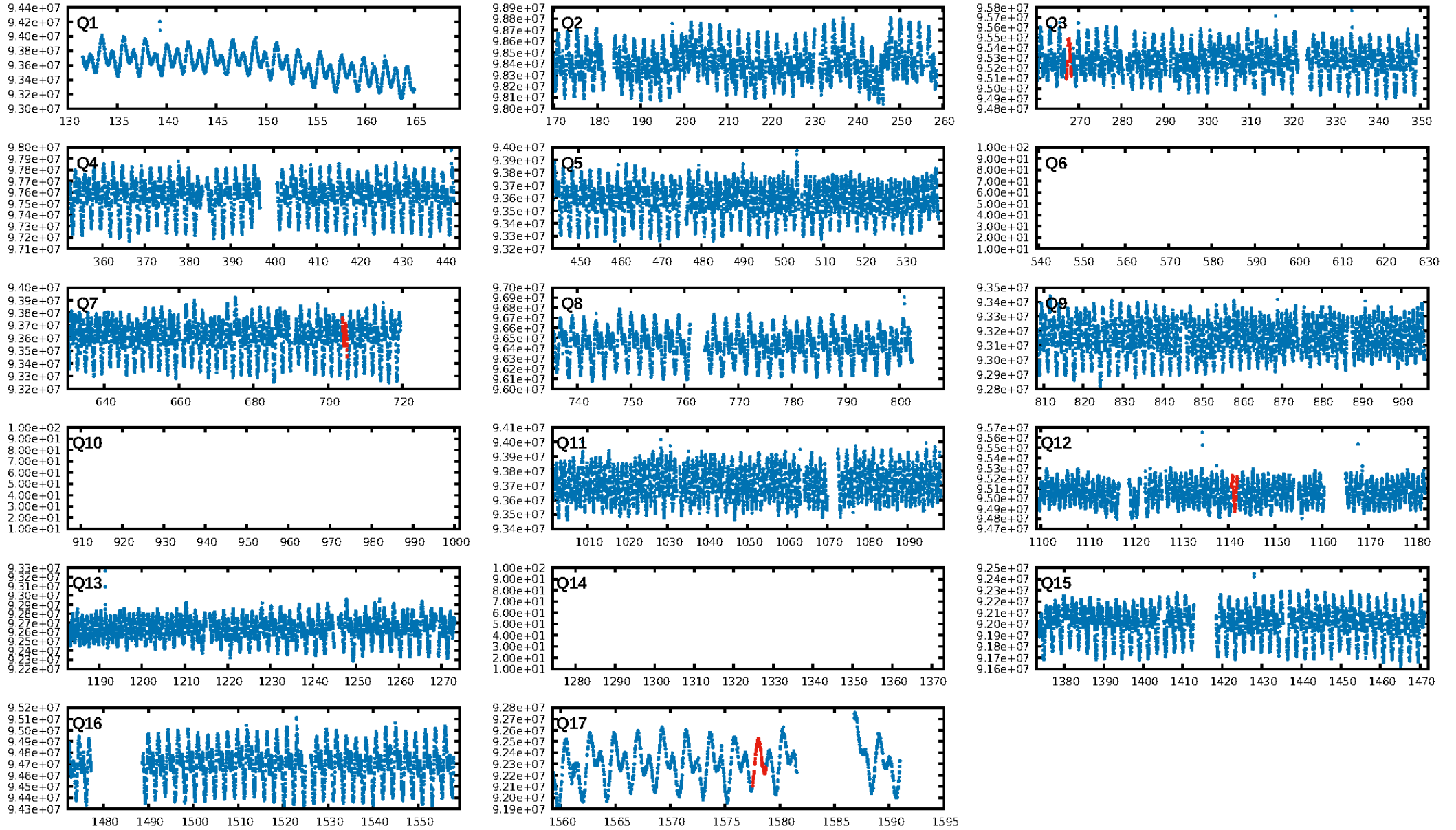
ShortPeriod-sig: 100.0% [621.94σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.87e-13
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -6.266

Centroid-sig: 0.1%
Centroid-so: 57.777 arcsec [1.93σ]
OotOffset-rm: 0.257 arcsec [0.61σ]
KicOffset-rm: 0.211 arcsec [0.45σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-st: 0/1/1/1 [3]
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DiffImageOverlap-fno: 0.67 [2/3]

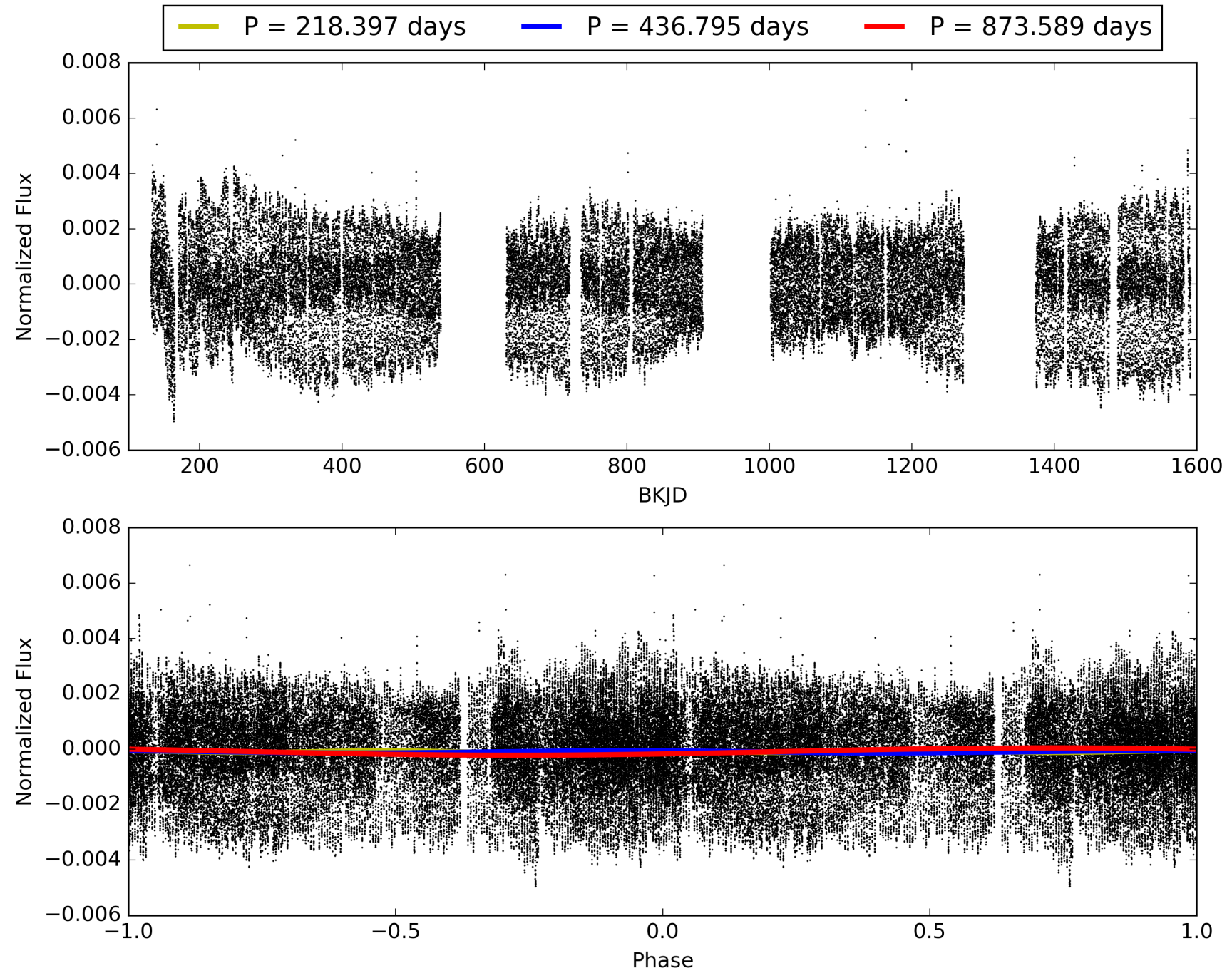
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:17:53 Z

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TCE 003352122-02, PDC Light Curves

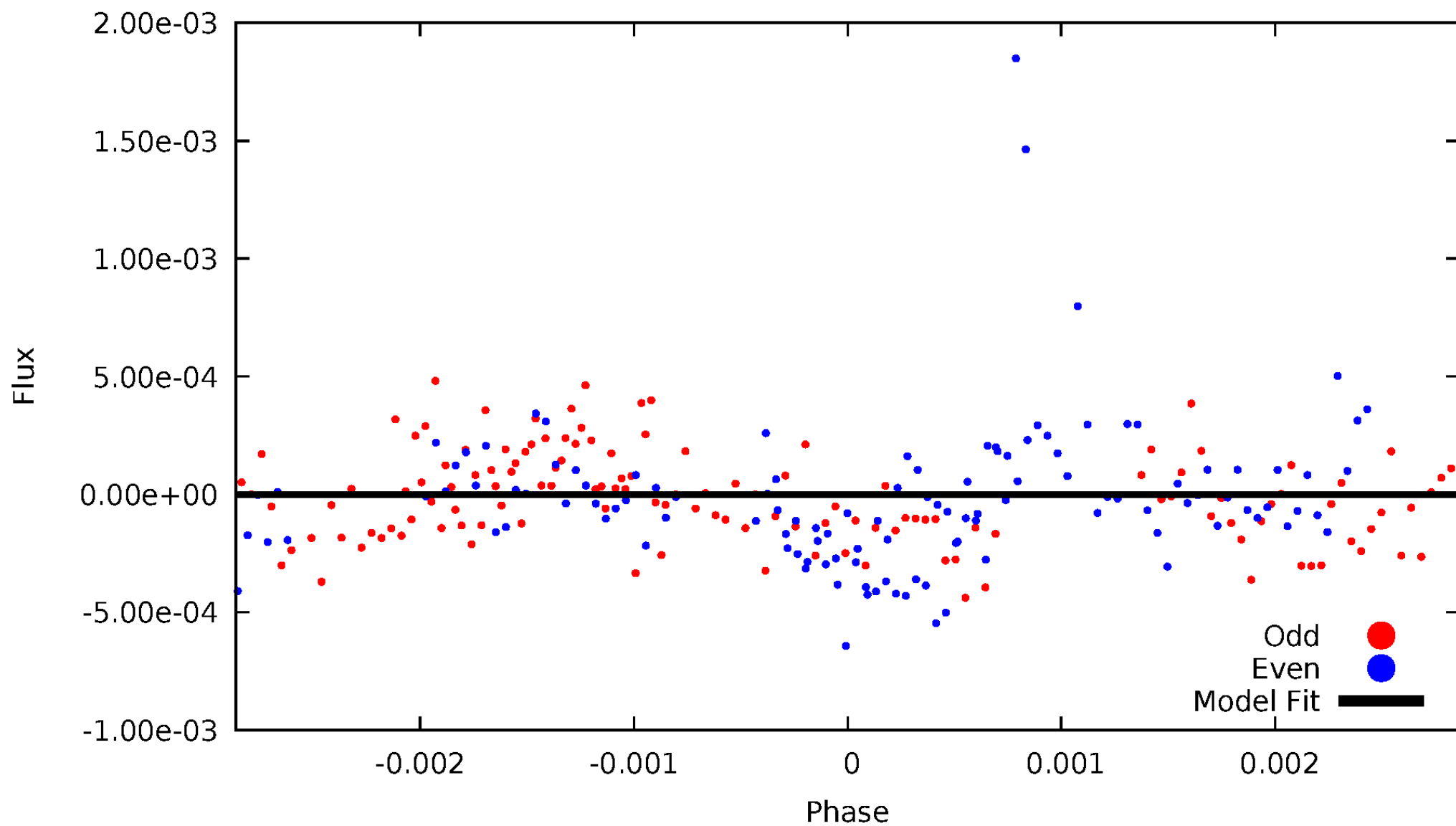


TCE 003352122-02



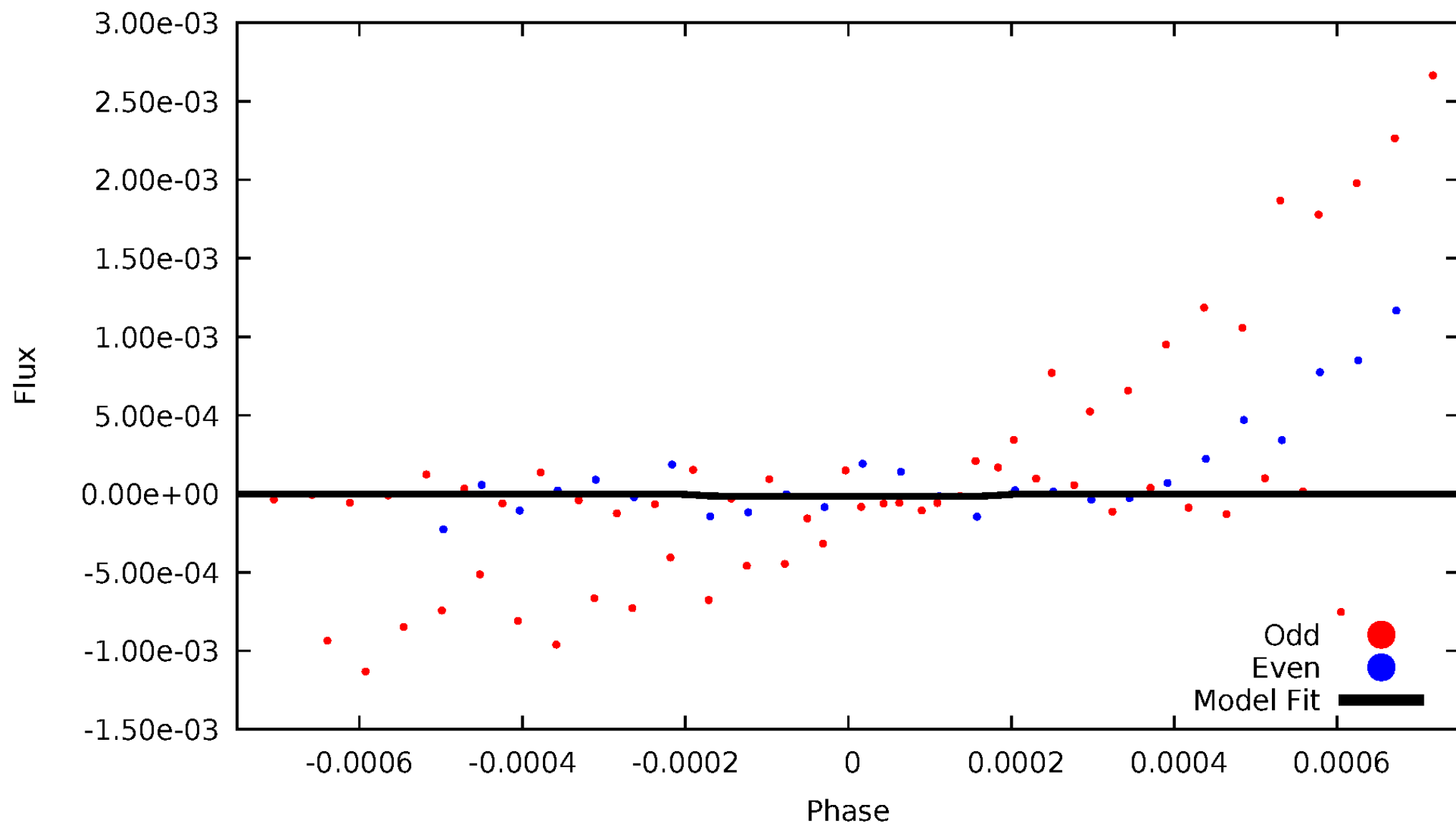
DV Odd/Even

TCE 003352122-02



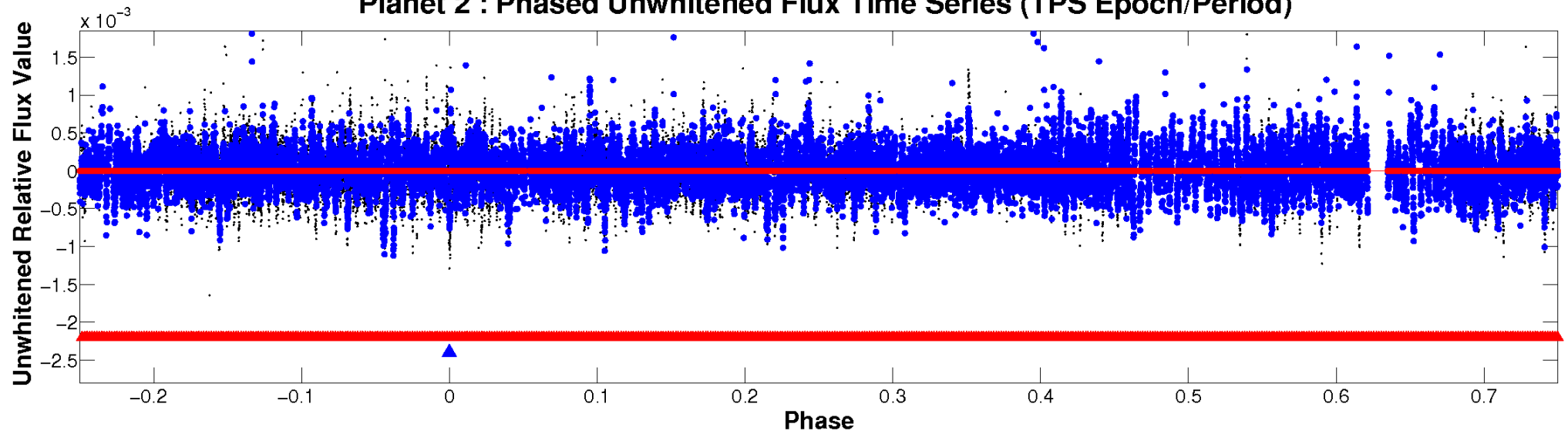
ALT Odd/Even

TCE 003352122-02

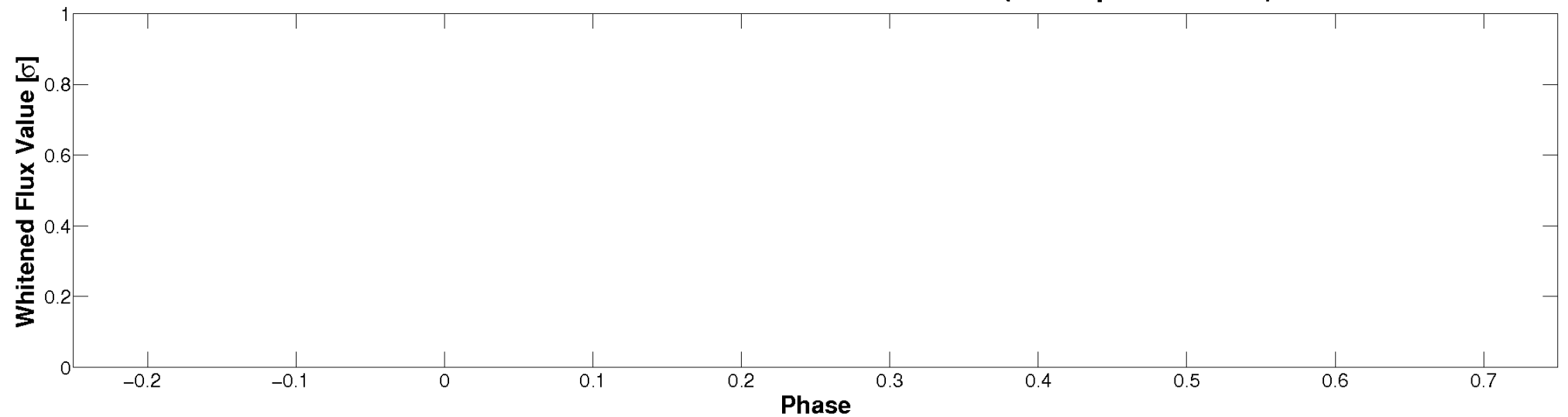


Non-Whitened Vs. Whitened Light Curve

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

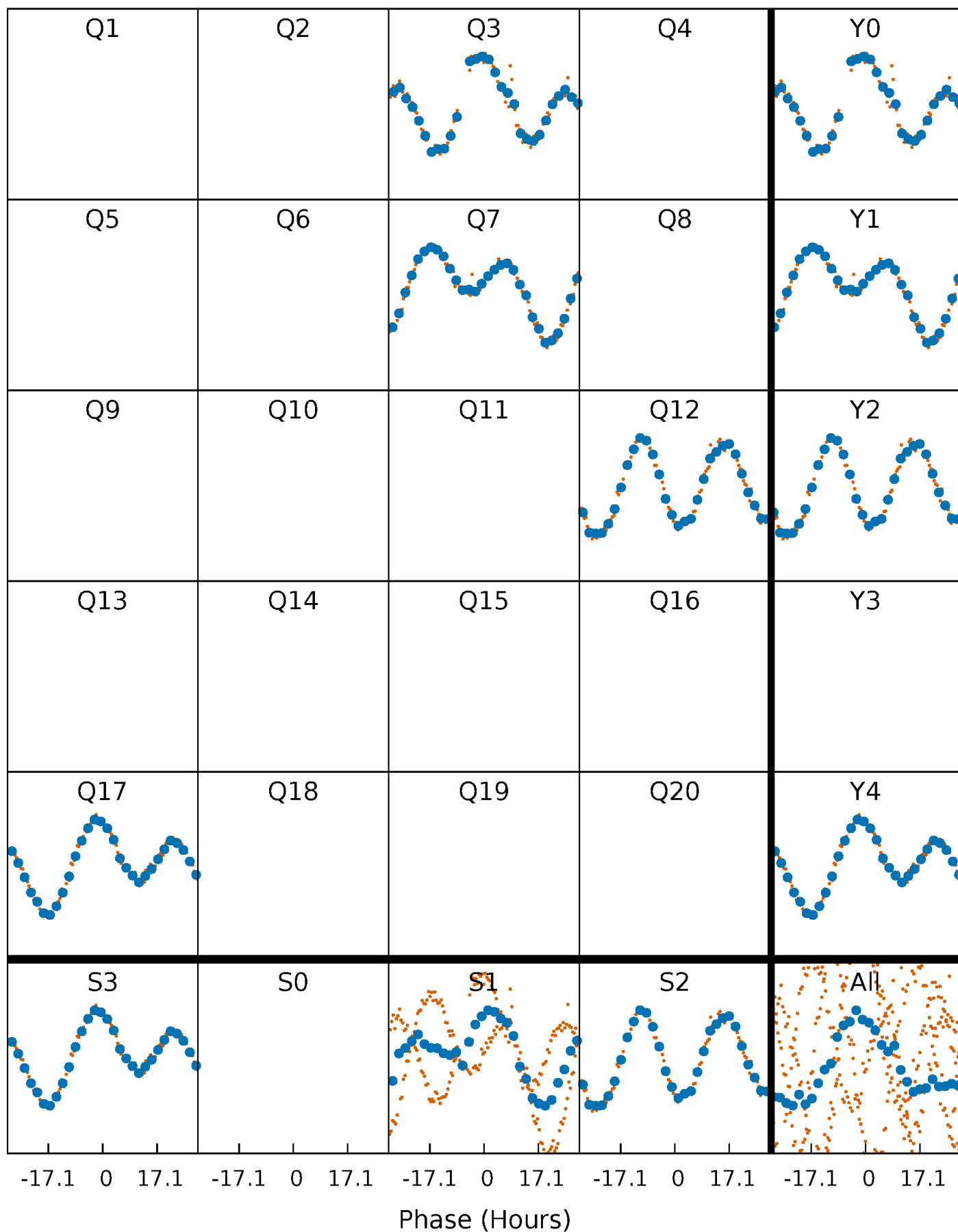


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



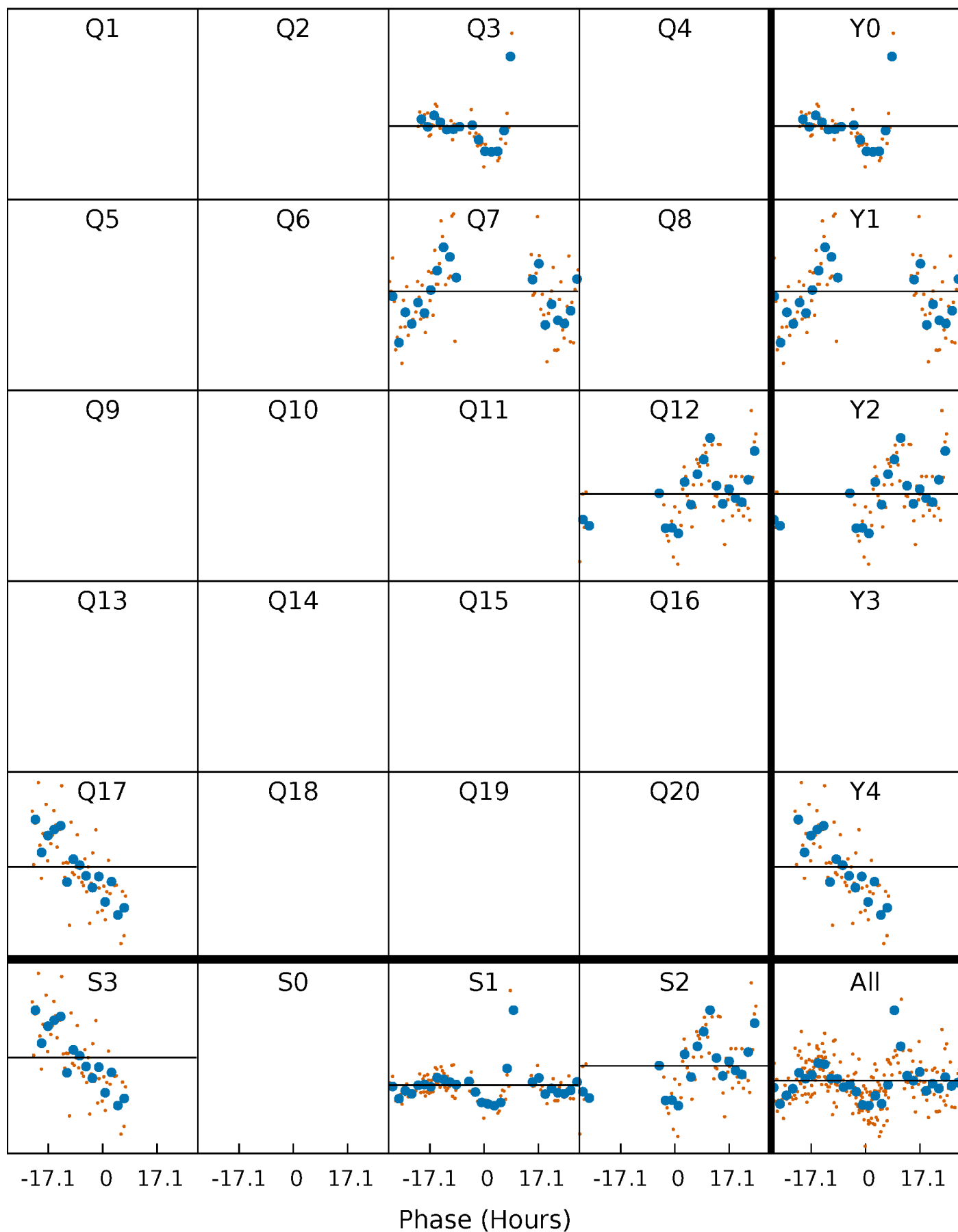
PDC Quarter-Phased Transit Curves

TCE 003352122-02 $P=436.794590$ Days $T_0=267.748350$ (BKJD)



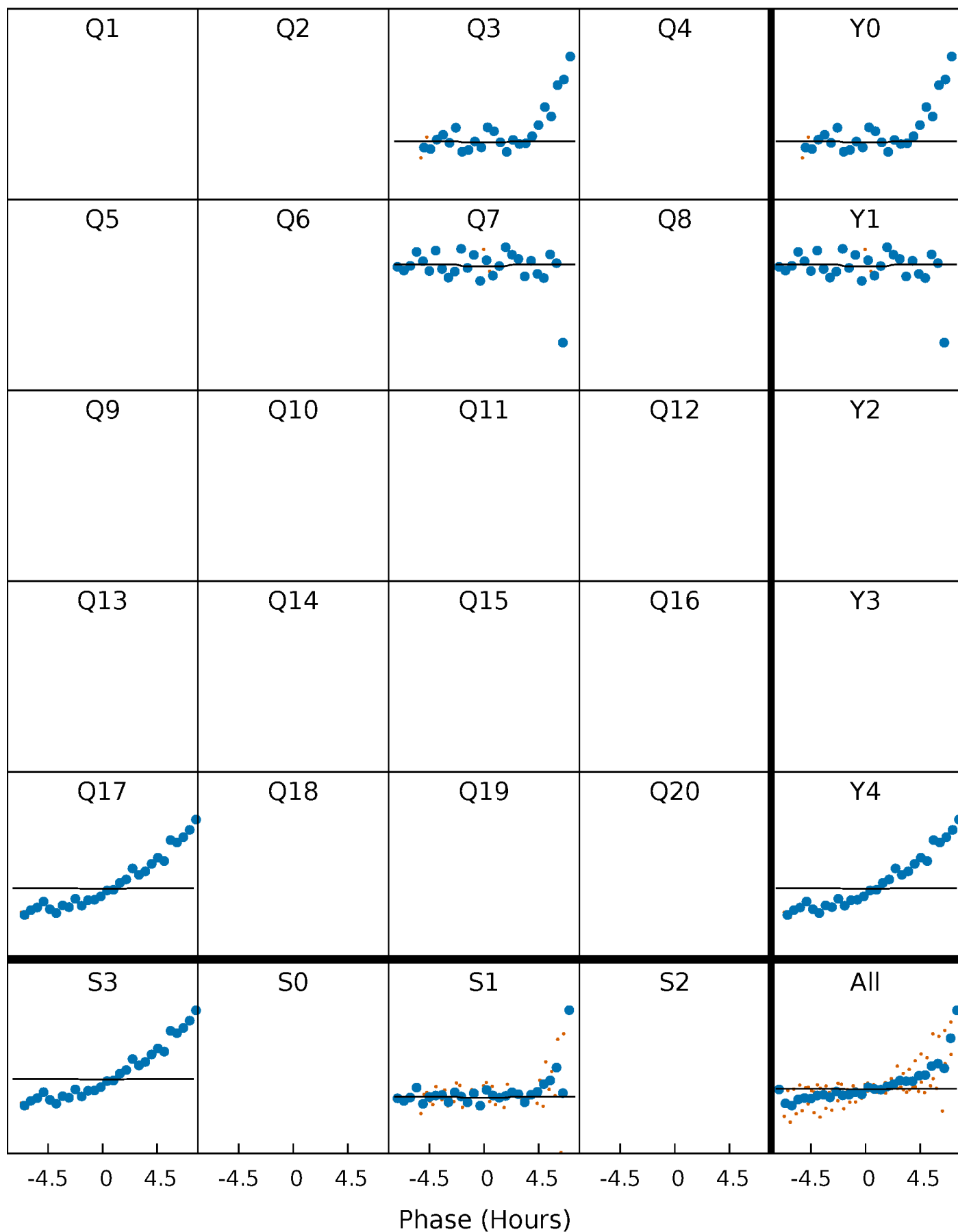
DV Quarter-Phased Transit Curves

TCE 003352122-02 $P=436.794590$ Days $T_0=267.748350$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

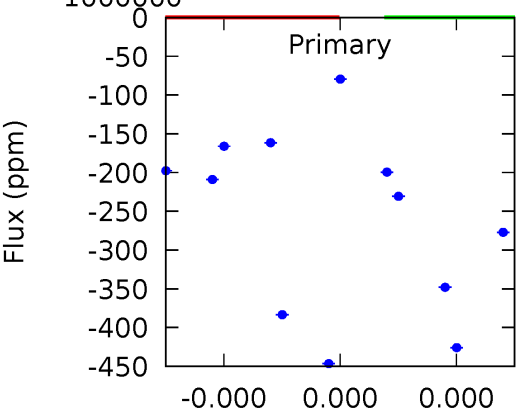
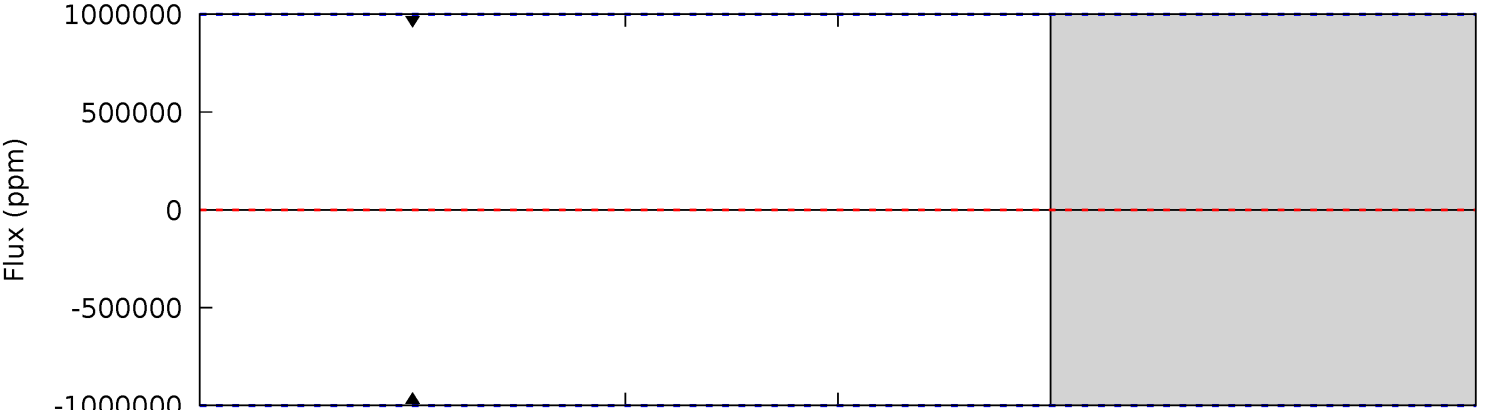
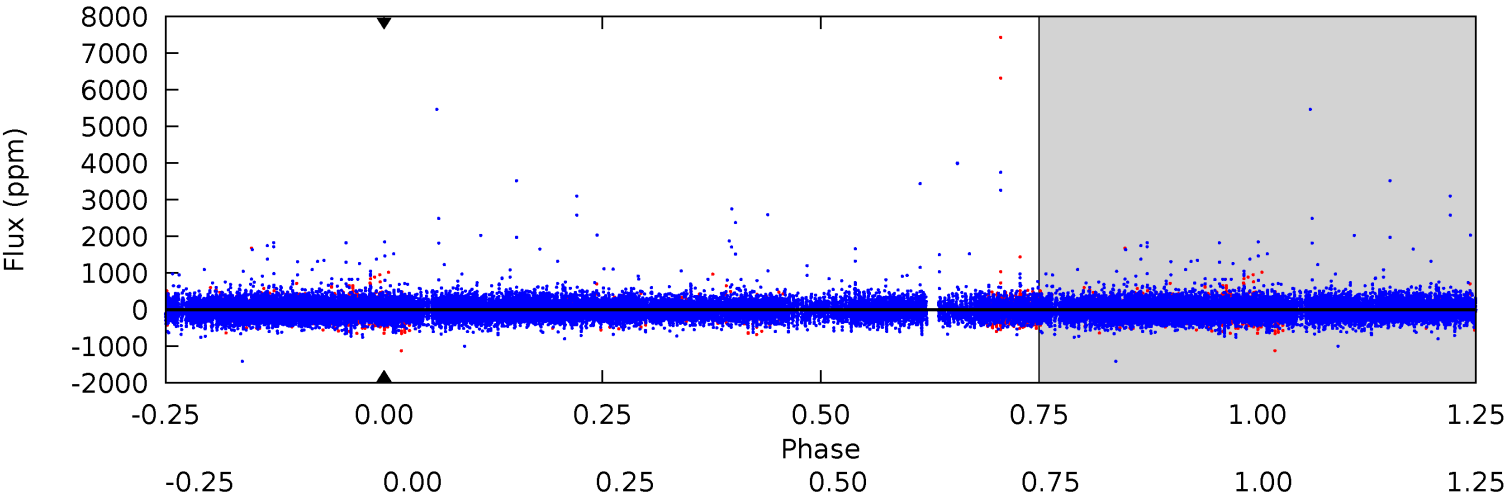
TCE 003352122-02 P=436.794590 Days $T_0=267.103384$ (BKJD)



DV Model-Shift Uniqueness Test

003352122-02, P = 436.794590 Days, E = 267.748350 Days

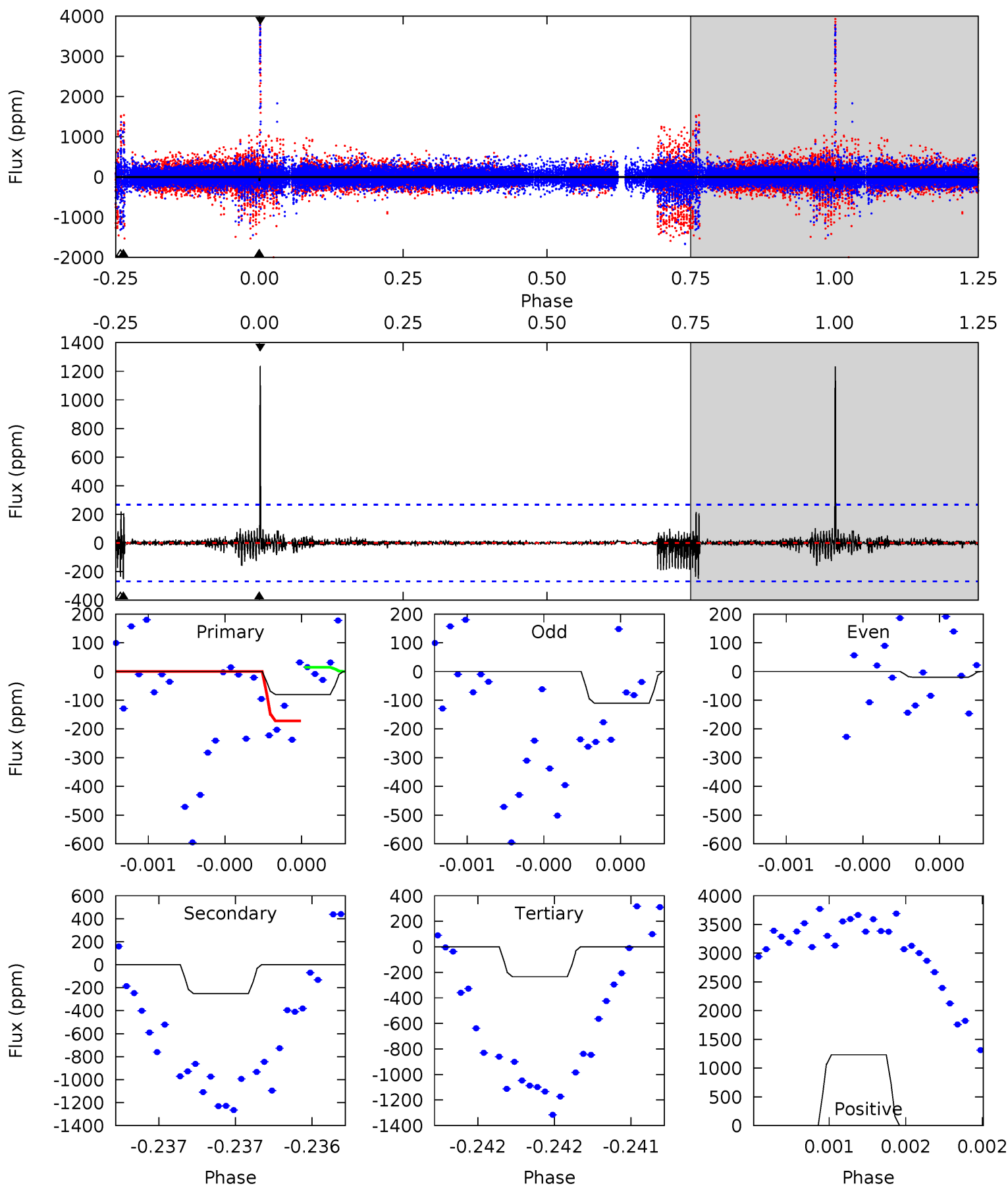
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

003352122-02, P = 436.794590 Days, E = 267.103384 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.67	5.25	4.90	25.7	5.60	3.53	1.08	-3.23	-24.1	0.35	-20.5	0.79	3.88	0.83	1.69



Stellar Parameters For KIC 003352122

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6526^{+71}_{-84}	$4.140^{+0.138}_{-0.125}$	$0.070^{+0.150}_{-0.200}$	$1.639^{+0.297}_{-0.297}$	$1.350^{+0.111}_{-0.123}$	$0.432^{+0.298}_{-0.150}$
	+1%/-1%	+3%/-3%	+214%/-286%	+18%/-18%	+8%/-9%	+69%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 003352122-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$13.36^{+13.57}_{-9.11}$	461^{+23}_{-22}	5115^{+23082}_{-31449}	$8833^{+909888}_{-796209}$
Alt.	-251 ± 48	$12.43^{+12.63}_{-9.19}$	462^{+24}_{-23}	3604^{+2500}_{-709}	1485^{+19283}_{-1153}

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 $A_{obs} \gg 1.0$

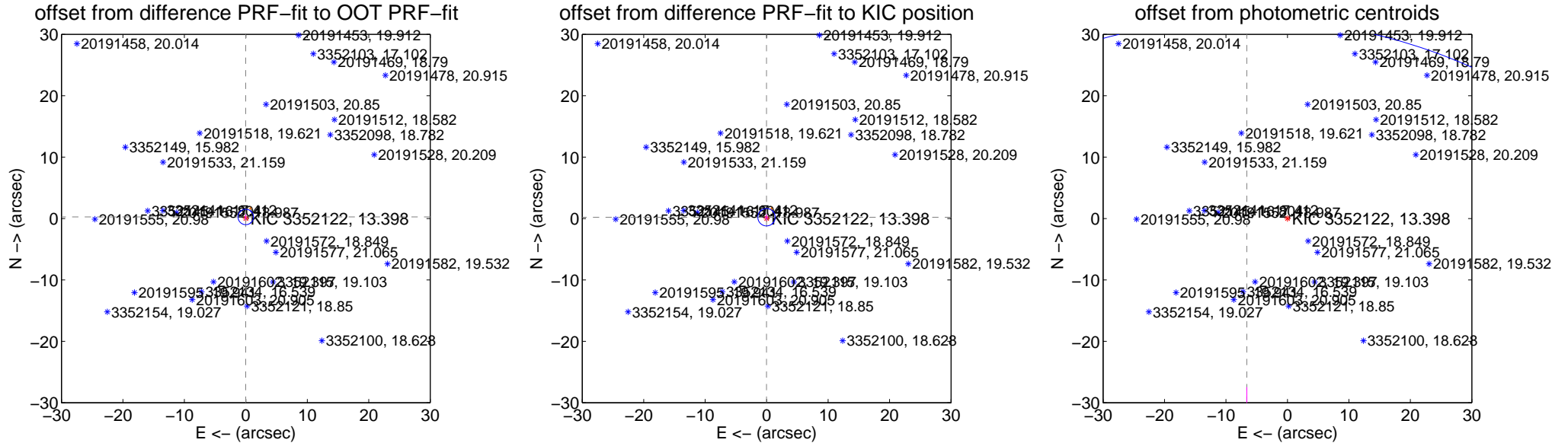
DV Centroid Data

Supplemental centroid analysis for 003352122-02. Kepler magnitude: 13.40. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.257 ± 0.419	0.61	0.018 ± 0.108	0.256 ± 0.420
PRF-fit source offset from KIC position	0.211 ± 0.471	0.45	0.021 ± 0.242	0.210 ± 0.496
photometric centroid source offset	57.78 ± 29.94	1.93	6.61 ± 29.37	-57.40 ± 29.95

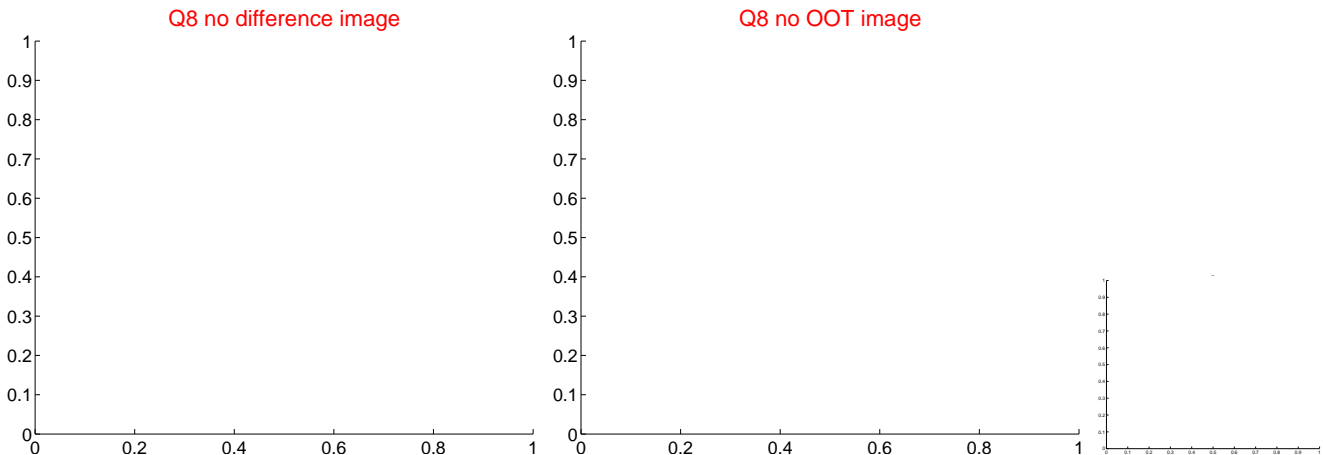
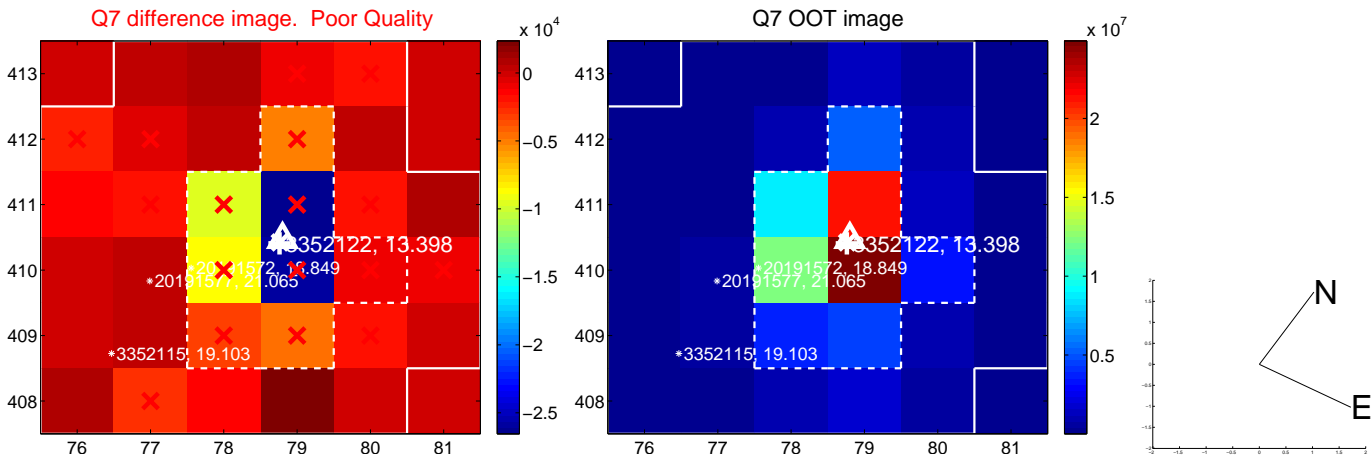
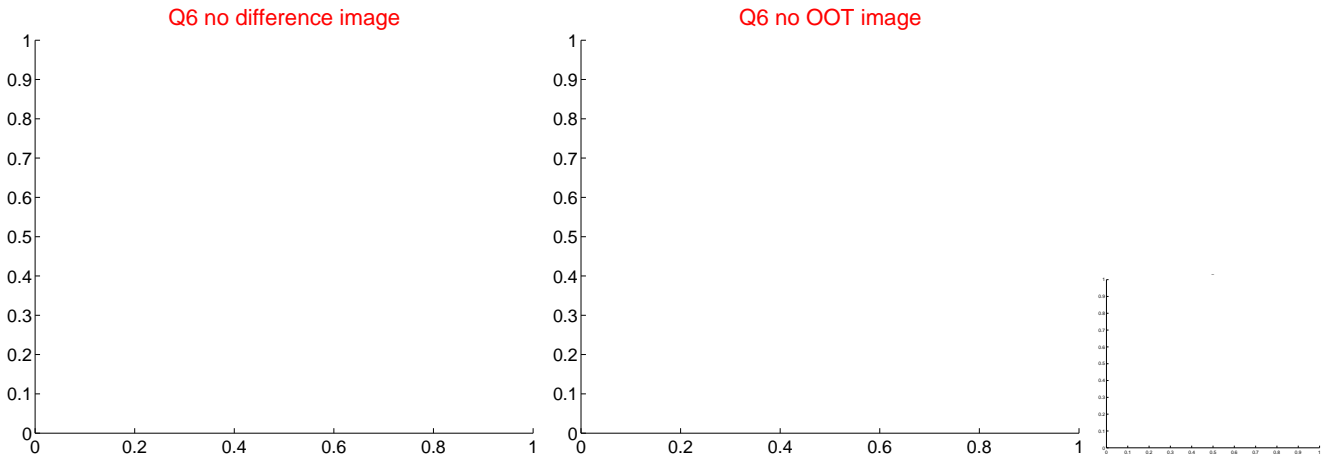
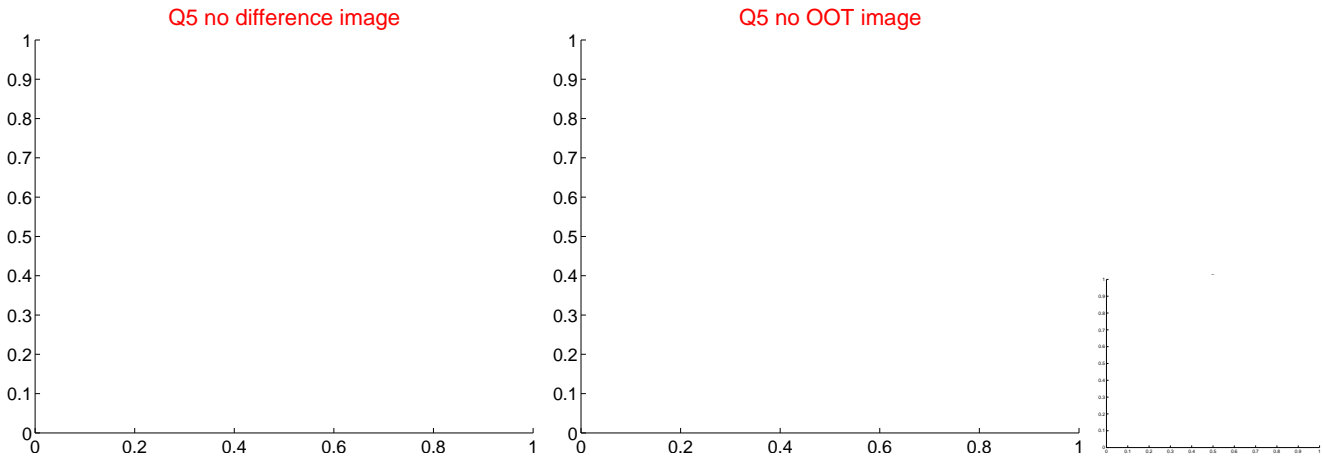


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

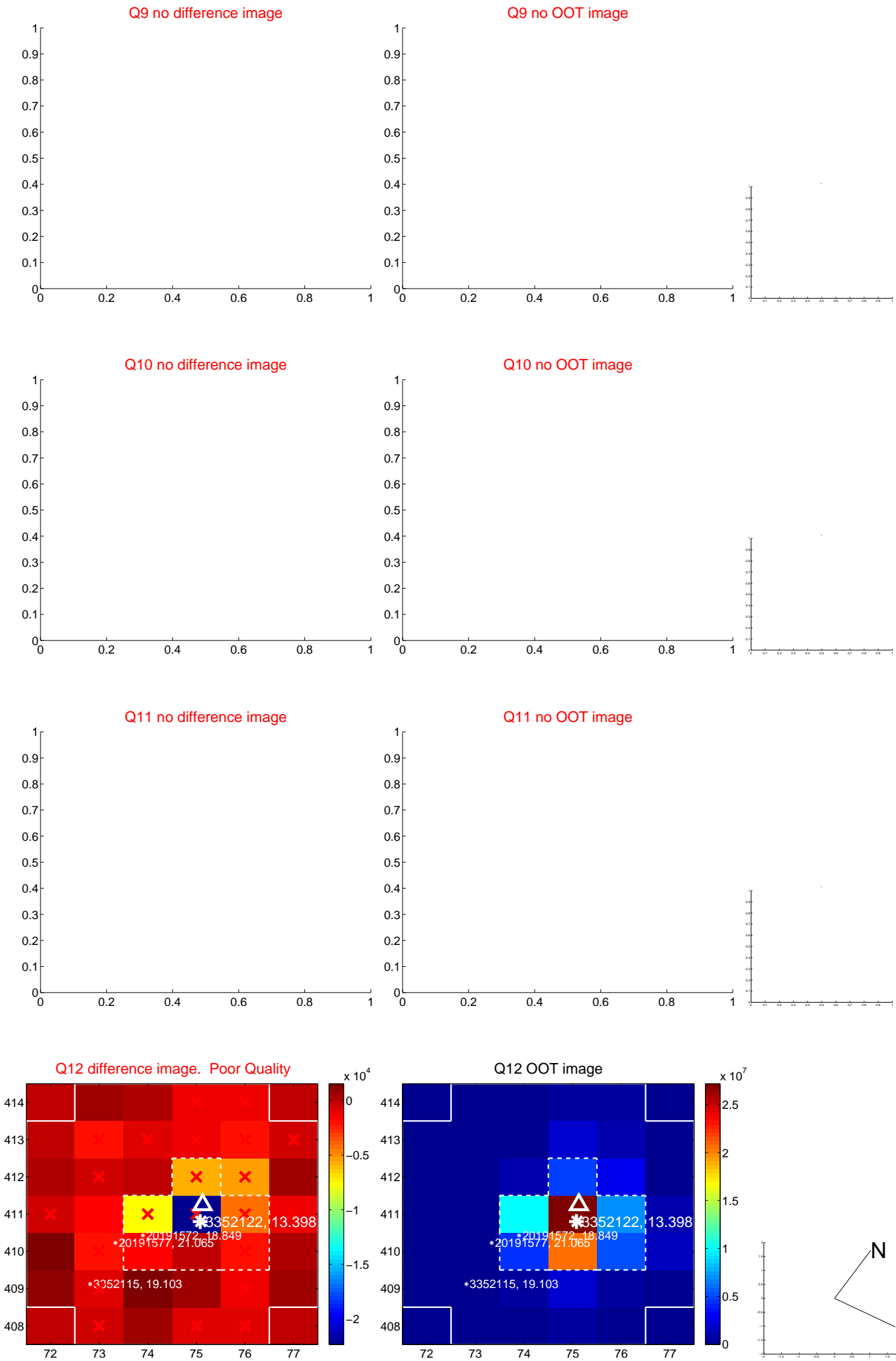
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



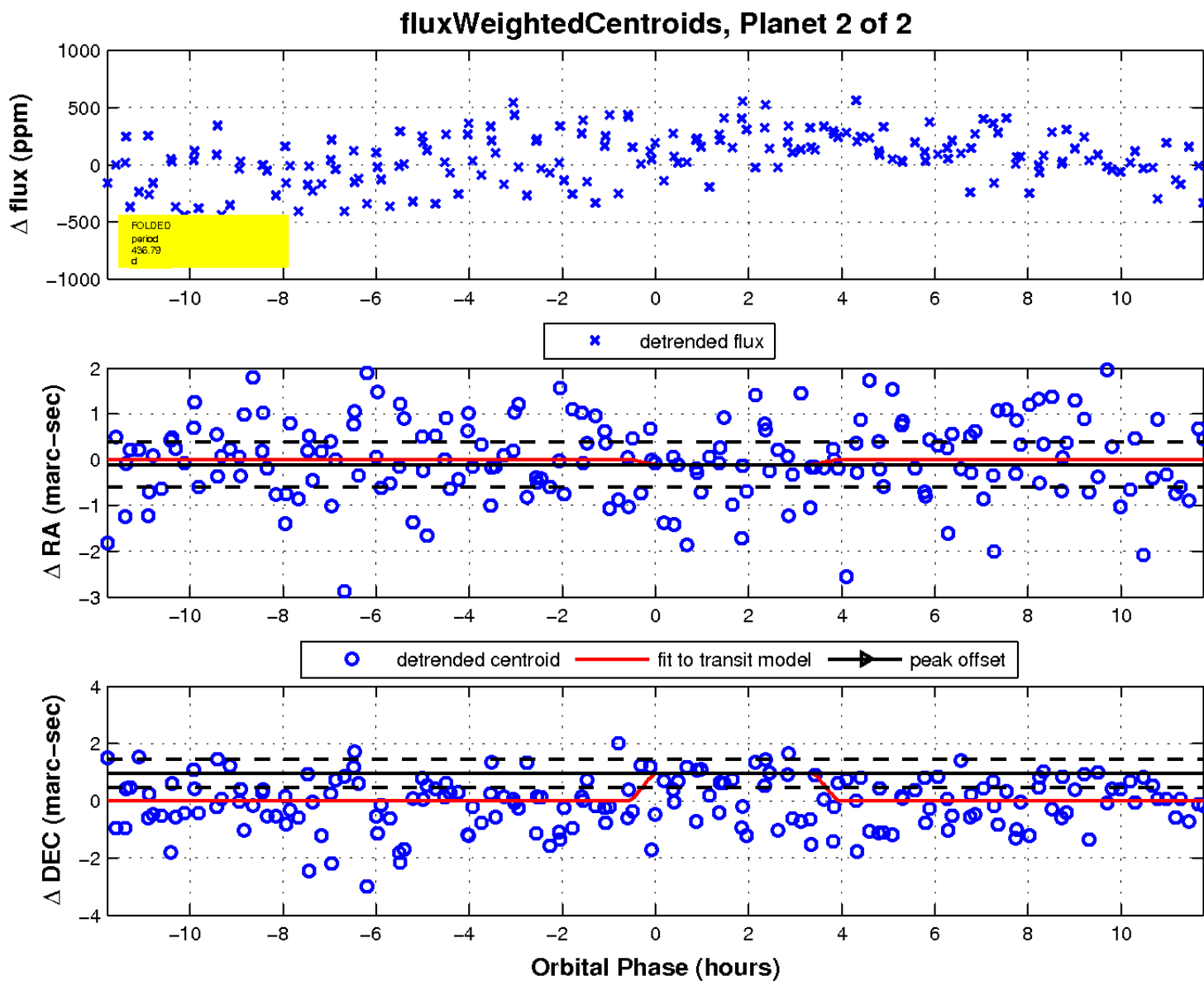
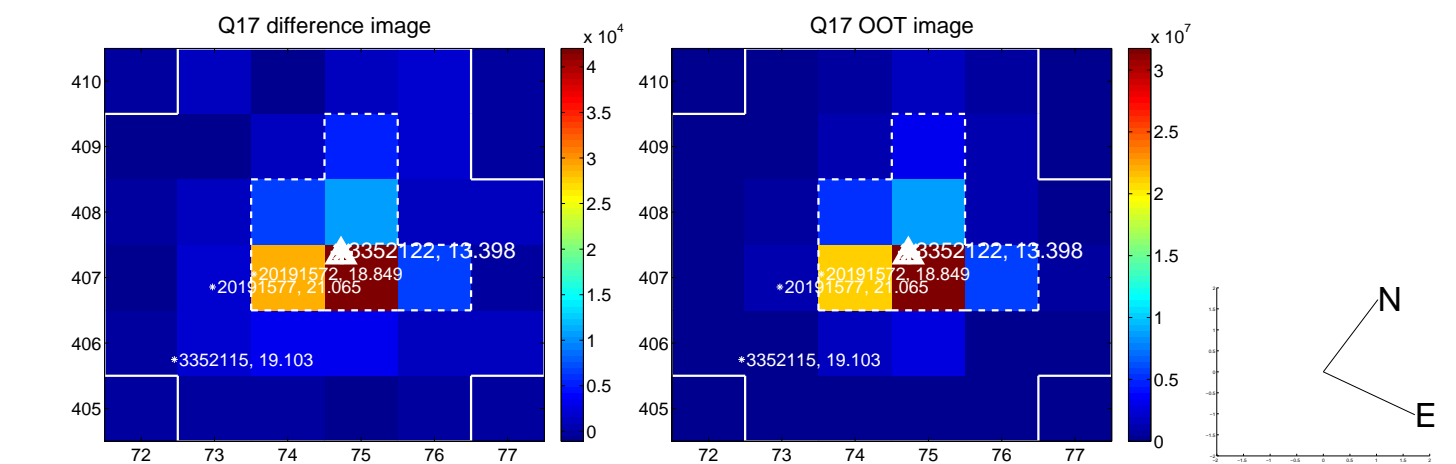
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

