

KIC 011955499

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})
011955499-01	OBS	1512.01	9.041895	137.866206	795.1	2.835	30.4	34.8	0.83	5237	3.71	66.92
011955499-02	OBS	No	9.041936	133.291171	163.2	2.394	7.3	8.0	0.83	5237	1.22	66.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011955499-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
011955499-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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

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

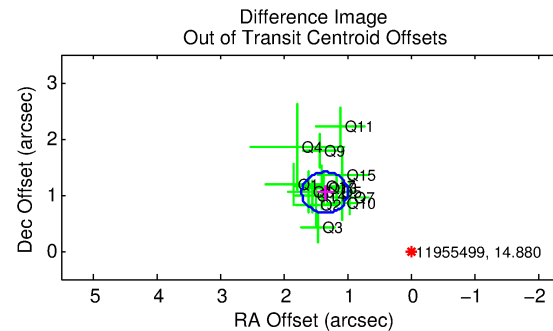
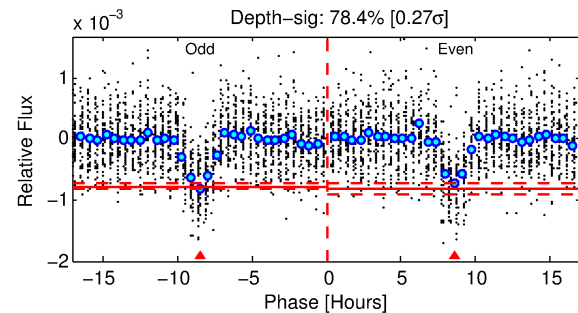
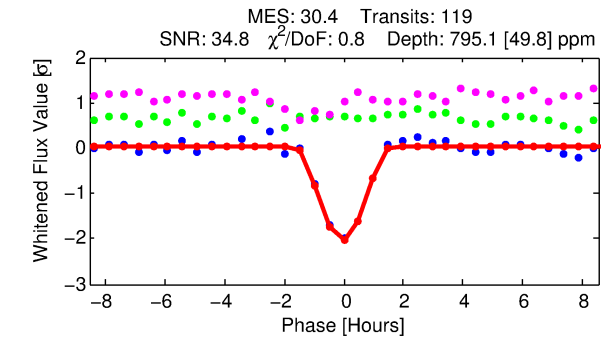
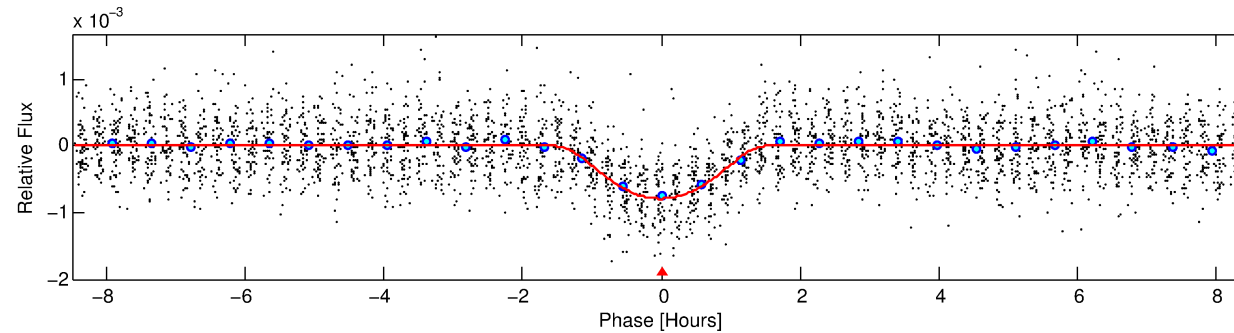
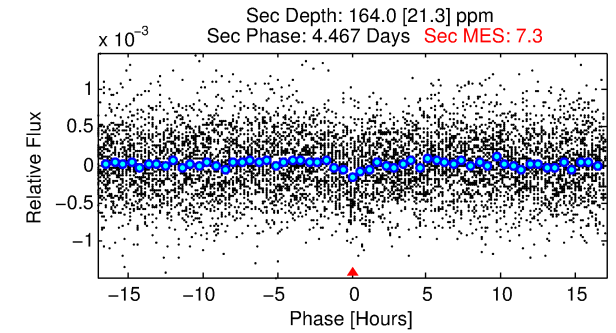
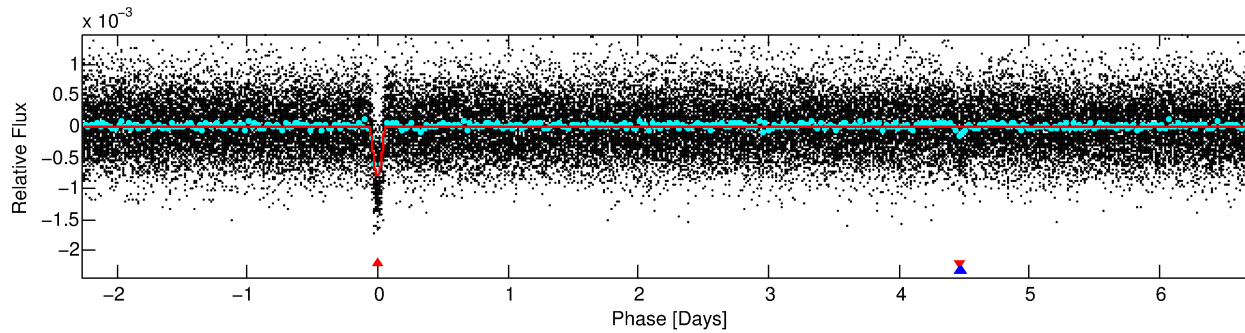
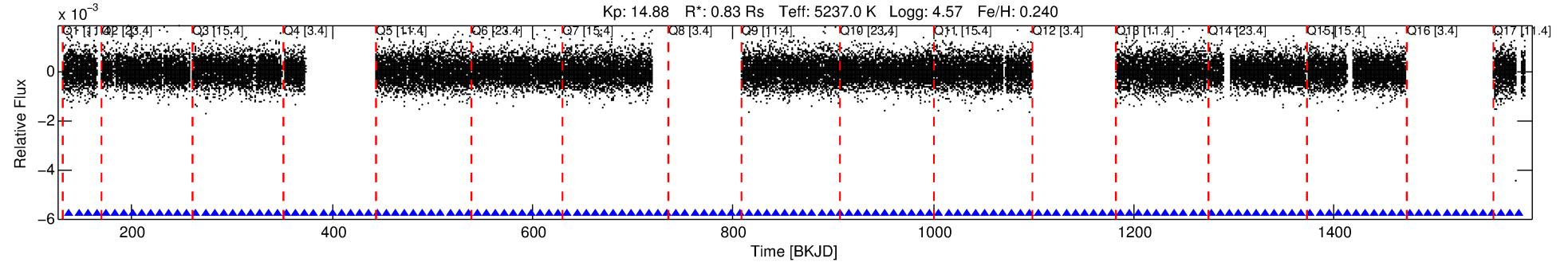
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011955499-01

No Significant Match Found

DV One-Page Summary

KIC: 11955499 Candidate: 1 of 2 Period: 9.042 d
KOI: K01512.01 Corr: 0.959



DV Fit Results:

Period = 9.04189 [0.00002] d
Epoch = 137.8662 [0.0019] BKJD
Rp/R* = 0.0412 [0.0210]
a/R* = 8.60 [1.73]
b = 0.98 [0.04]
Seff = 66.92 [15.54]
Teq = 729 [42] K
Rp = 3.71 [1.98] Re
a = 0.0829 [0.0109] AU
Ag = 44.97 [47.13] [0.93σ]
Teffp = 2920 [756] K [2.89σ]

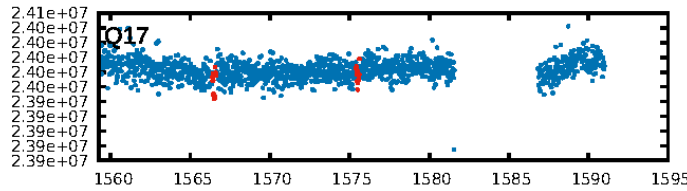
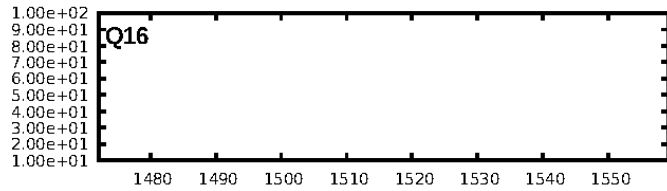
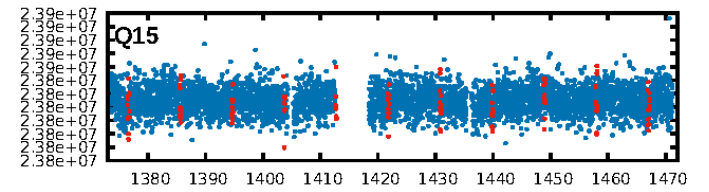
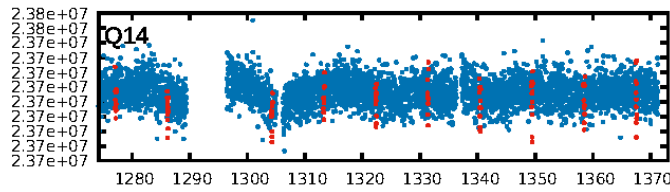
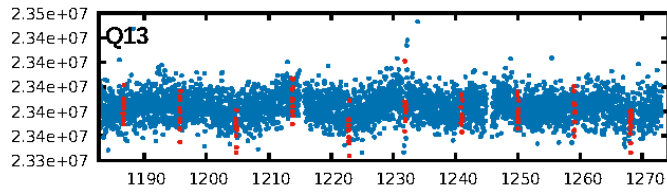
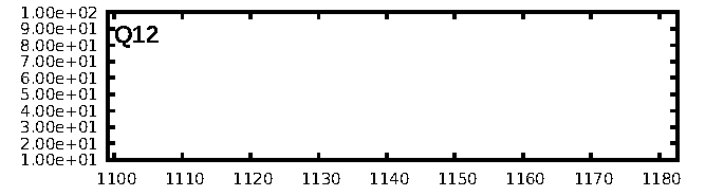
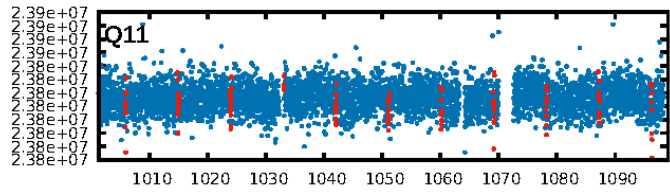
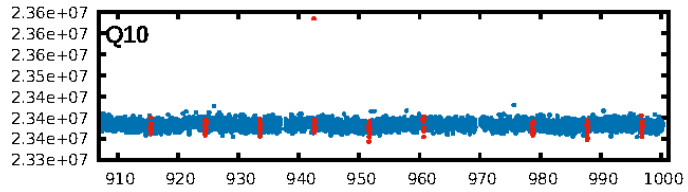
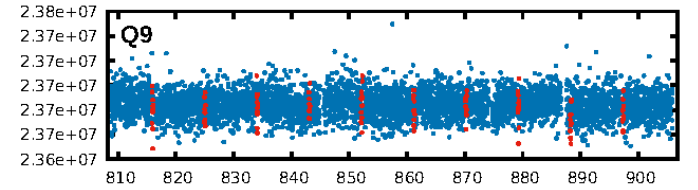
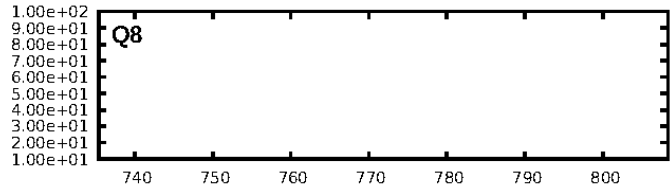
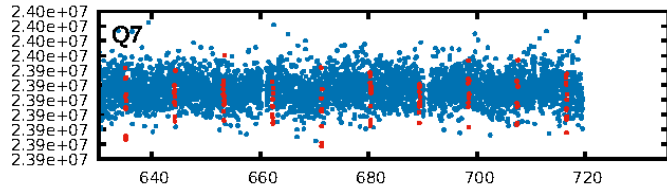
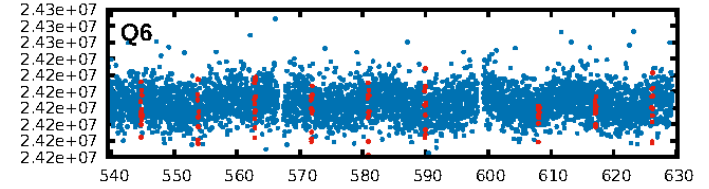
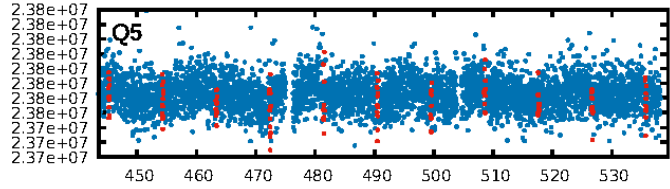
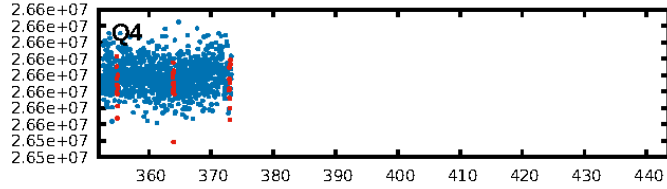
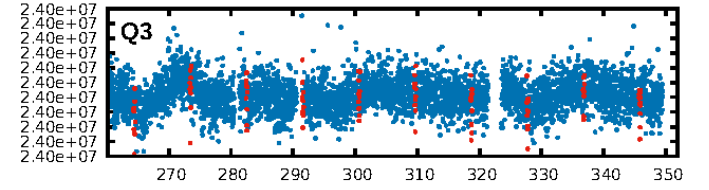
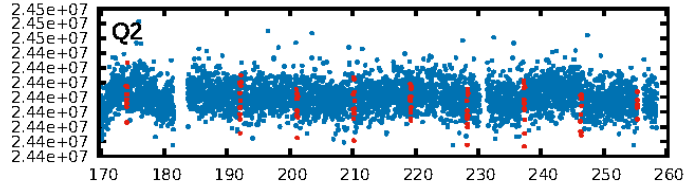
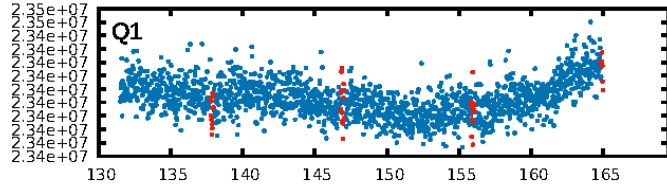
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 87.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.49e-194
RollingBand-fgt: 1.00 [110/110]
GhostDiagnostic-chr: 3.432
Centroid-sig: 0.0%
Centroid-so: 1.474 arcsec [3.06σ]
OotOffset-rm: 1.703 arcsec [14.09σ]
KicOffset-rm: 1.652 arcsec [13.65σ]
OotOffset-st: 4/4/1/5 [14]
KicOffset-st: 4/4/1/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

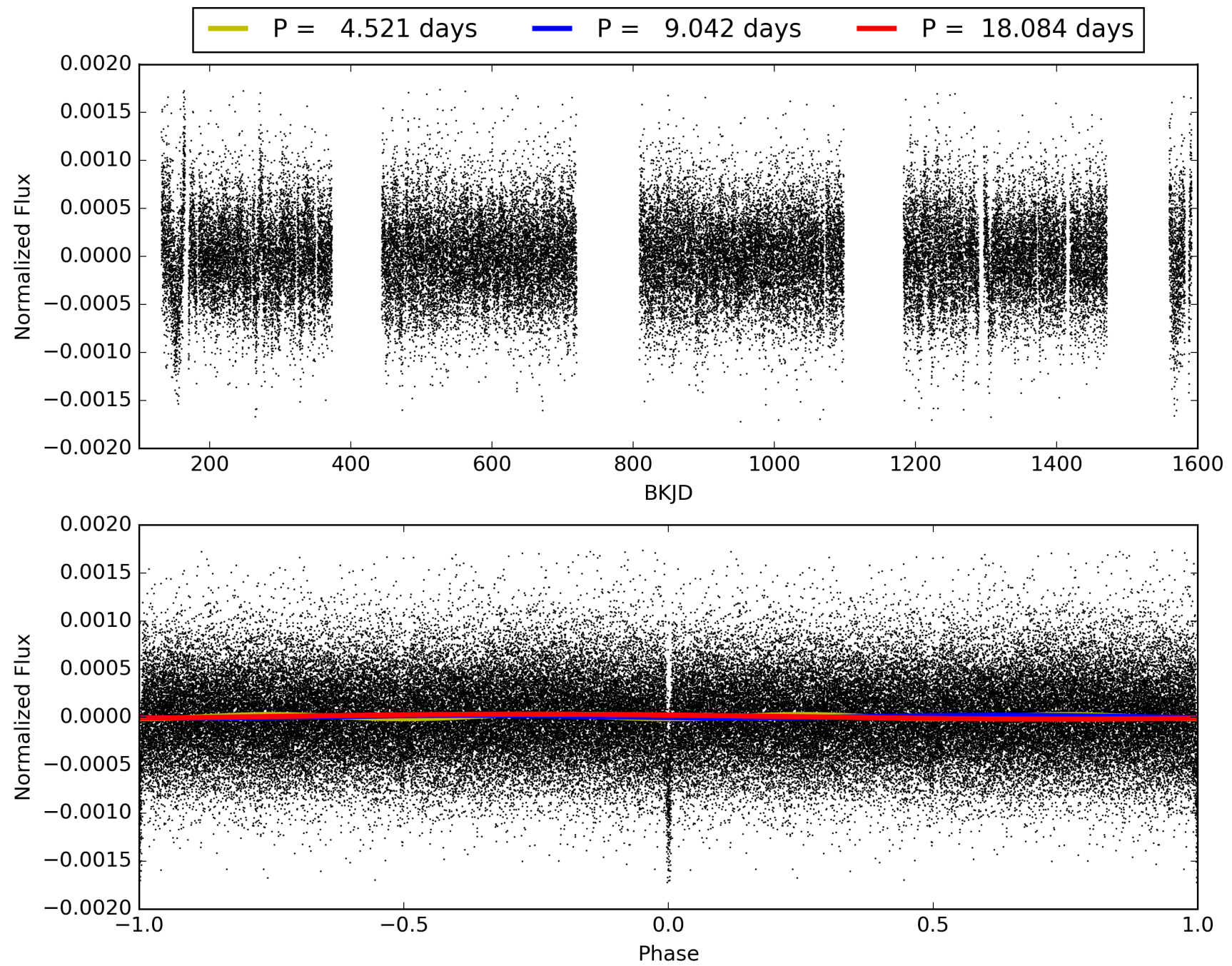
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 011955499-01, PDC Light Curves

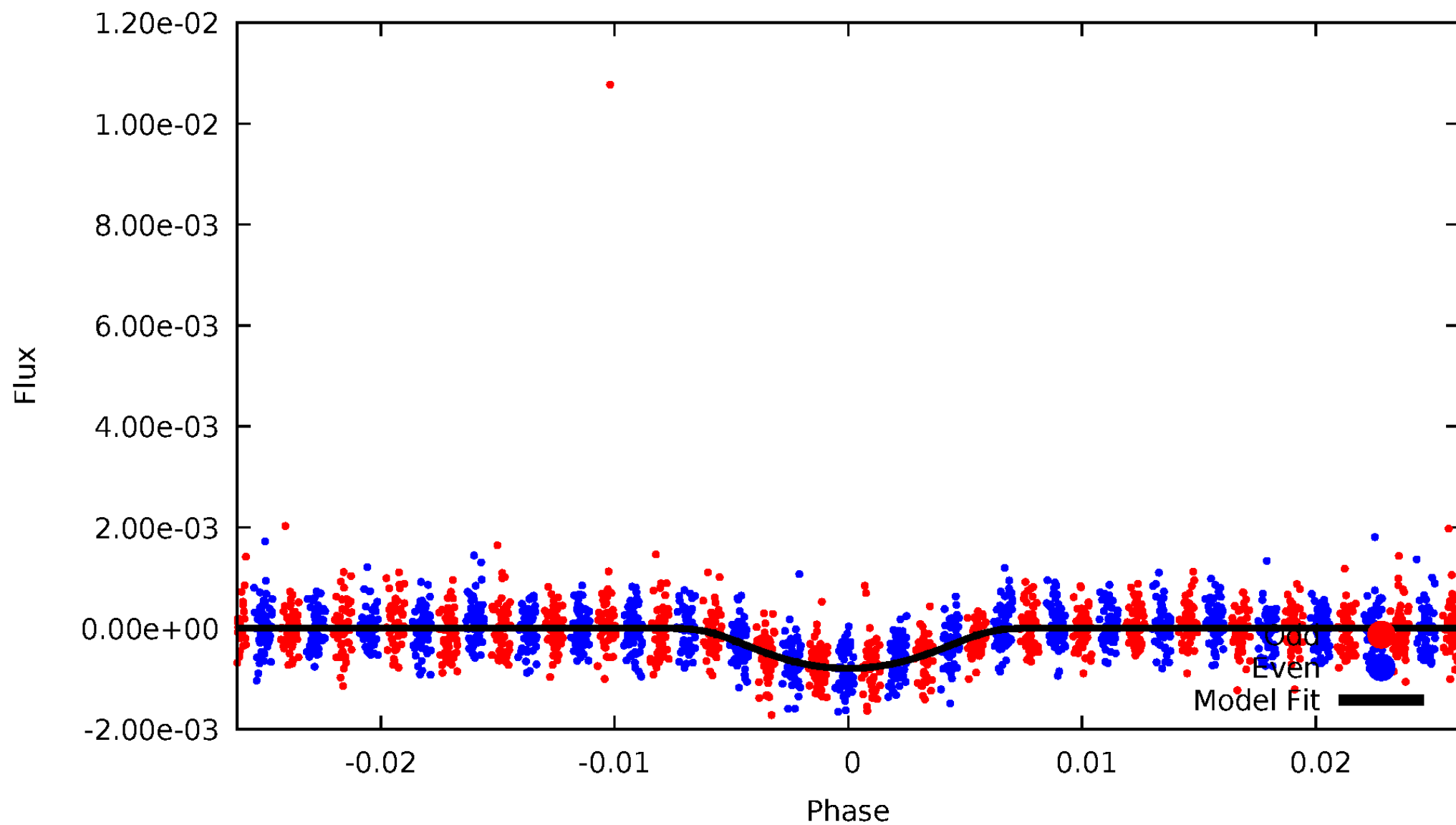


TCE 011955499-01



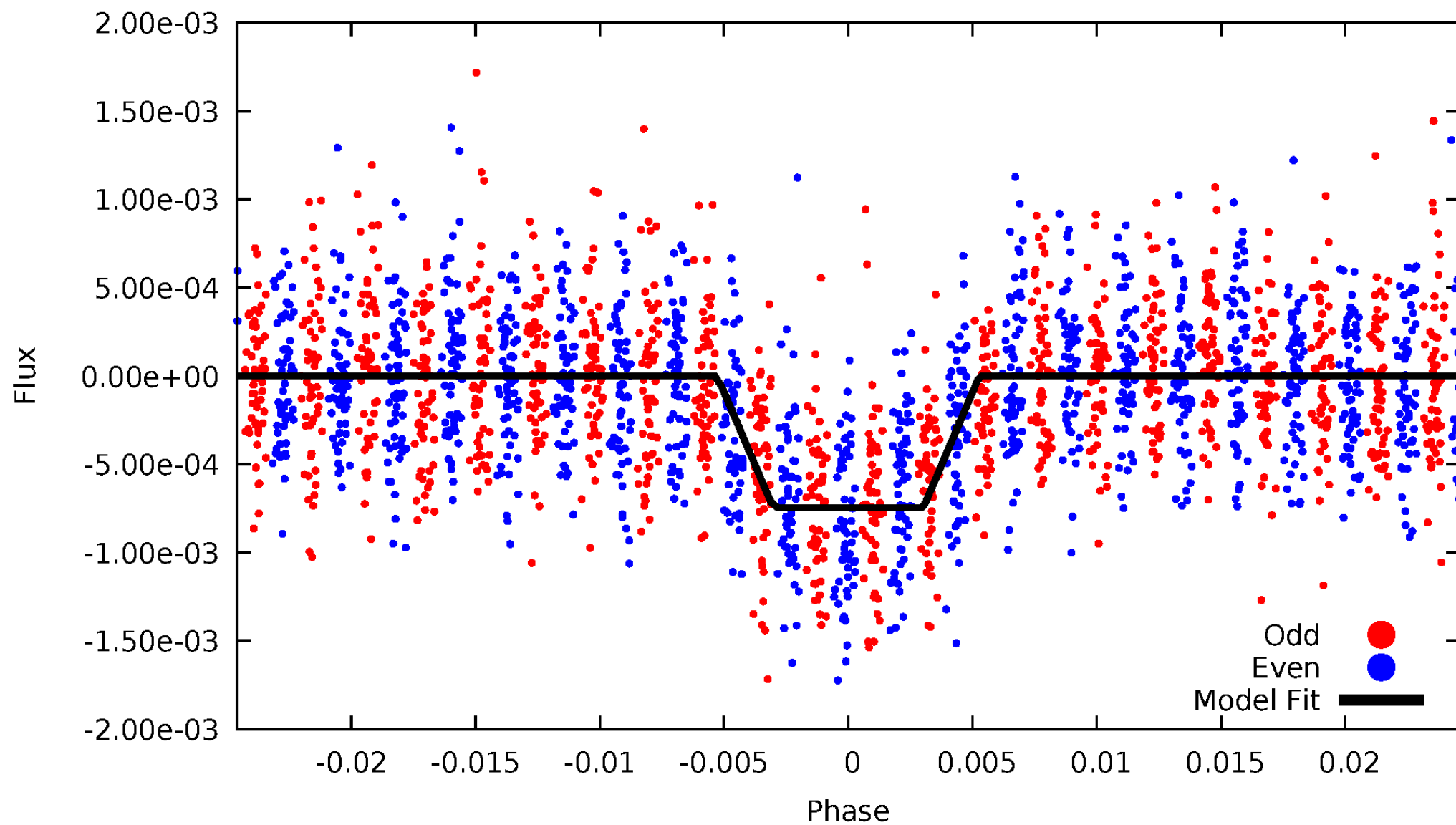
DV Odd/Even

TCE 011955499-01



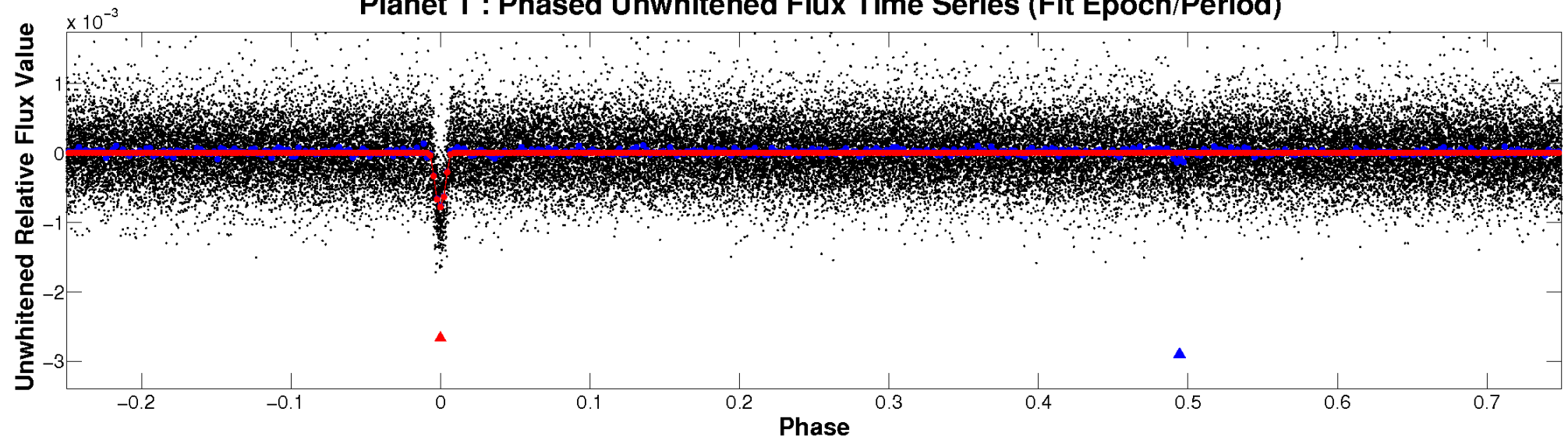
ALT Odd/Even

TCE 011955499-01

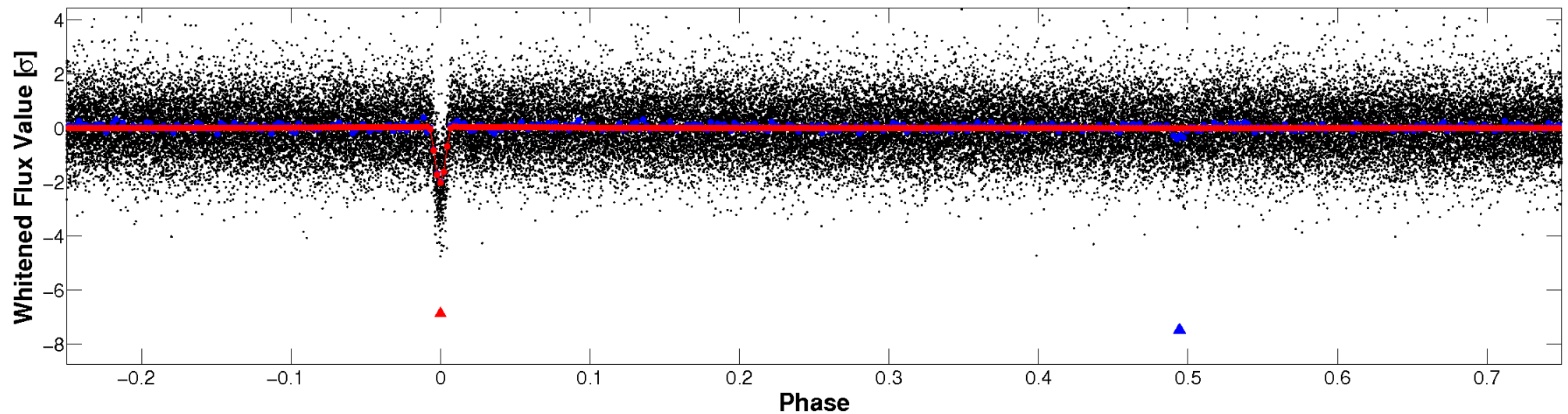


Non-Whitened Vs. Whitened Light Curve

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

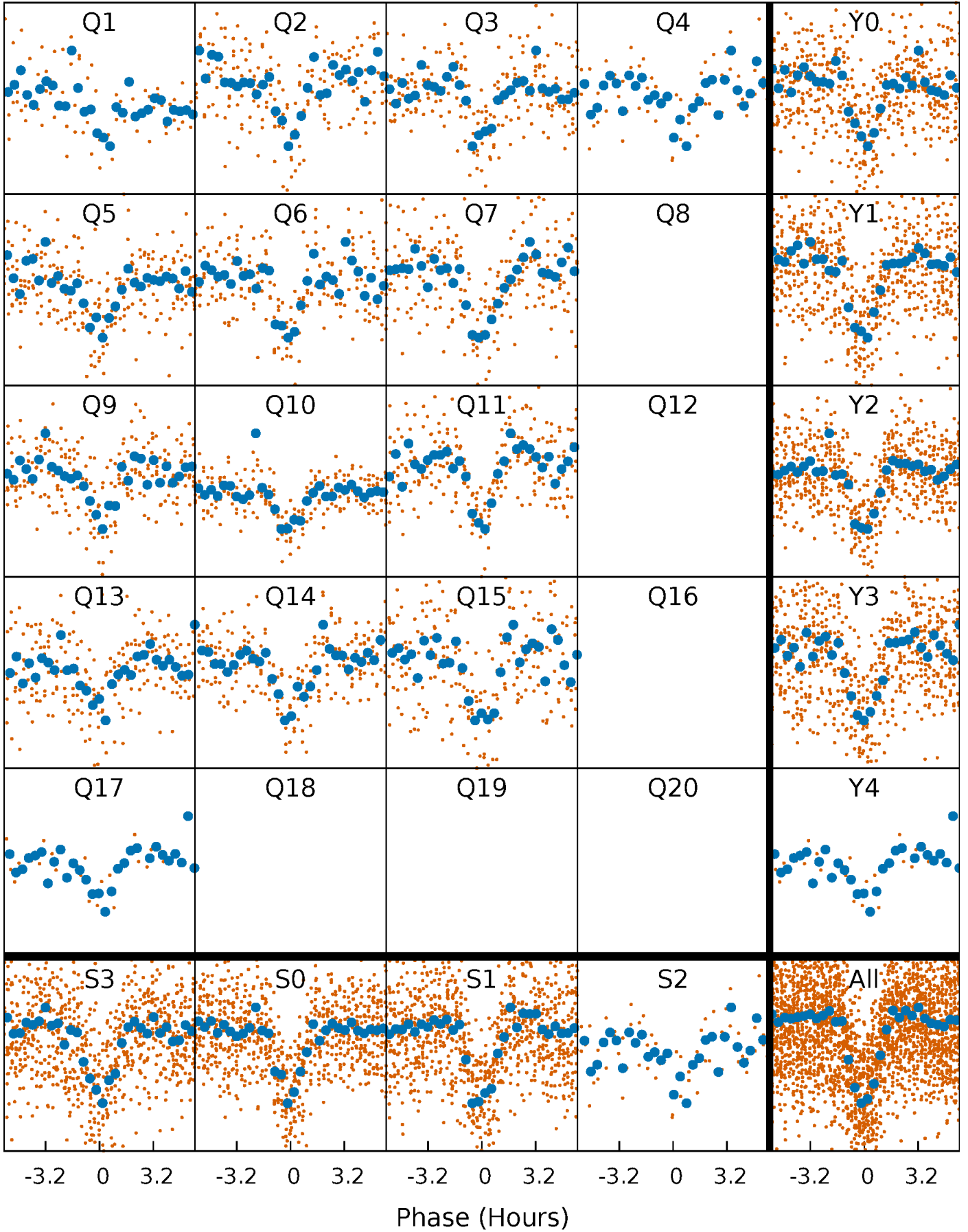


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



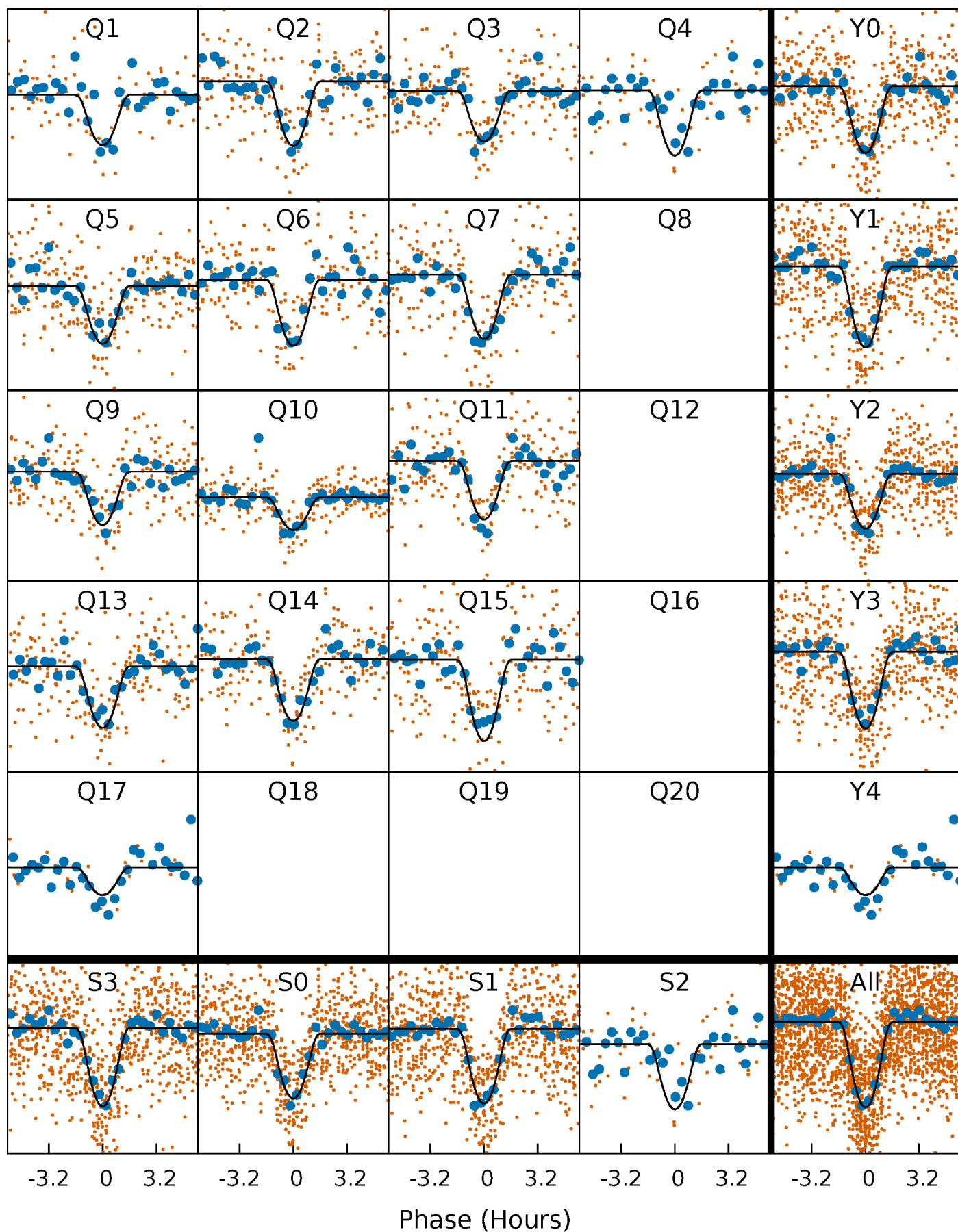
PDC Quarter-Phased Transit Curves

TCE 011955499-01 P= 9.041895 Days $T_0=137.866206$ (BKJD)



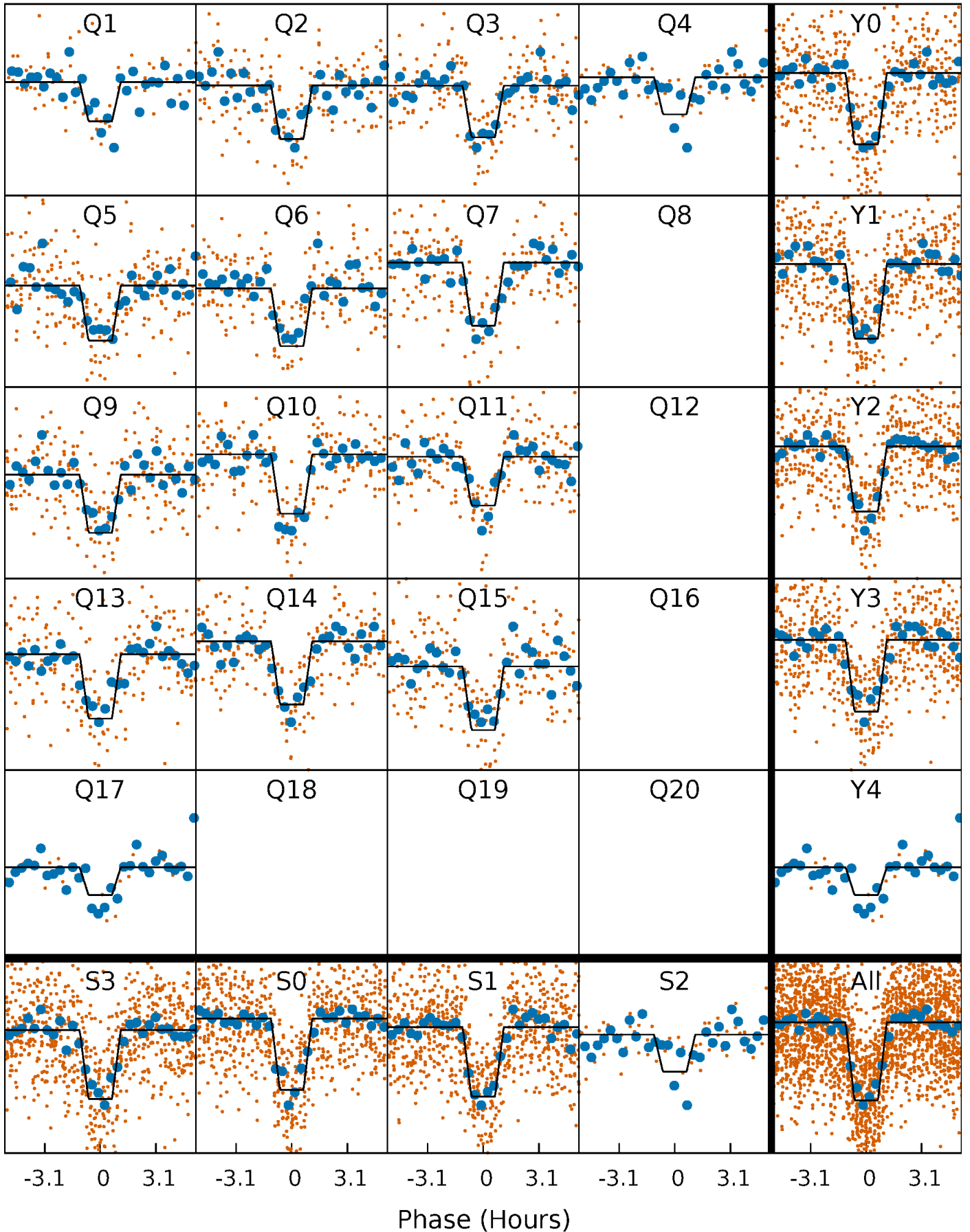
DV Quarter-Phased Transit Curves

TCE 011955499-01 P= 9.041895 Days $T_0=137.866206$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

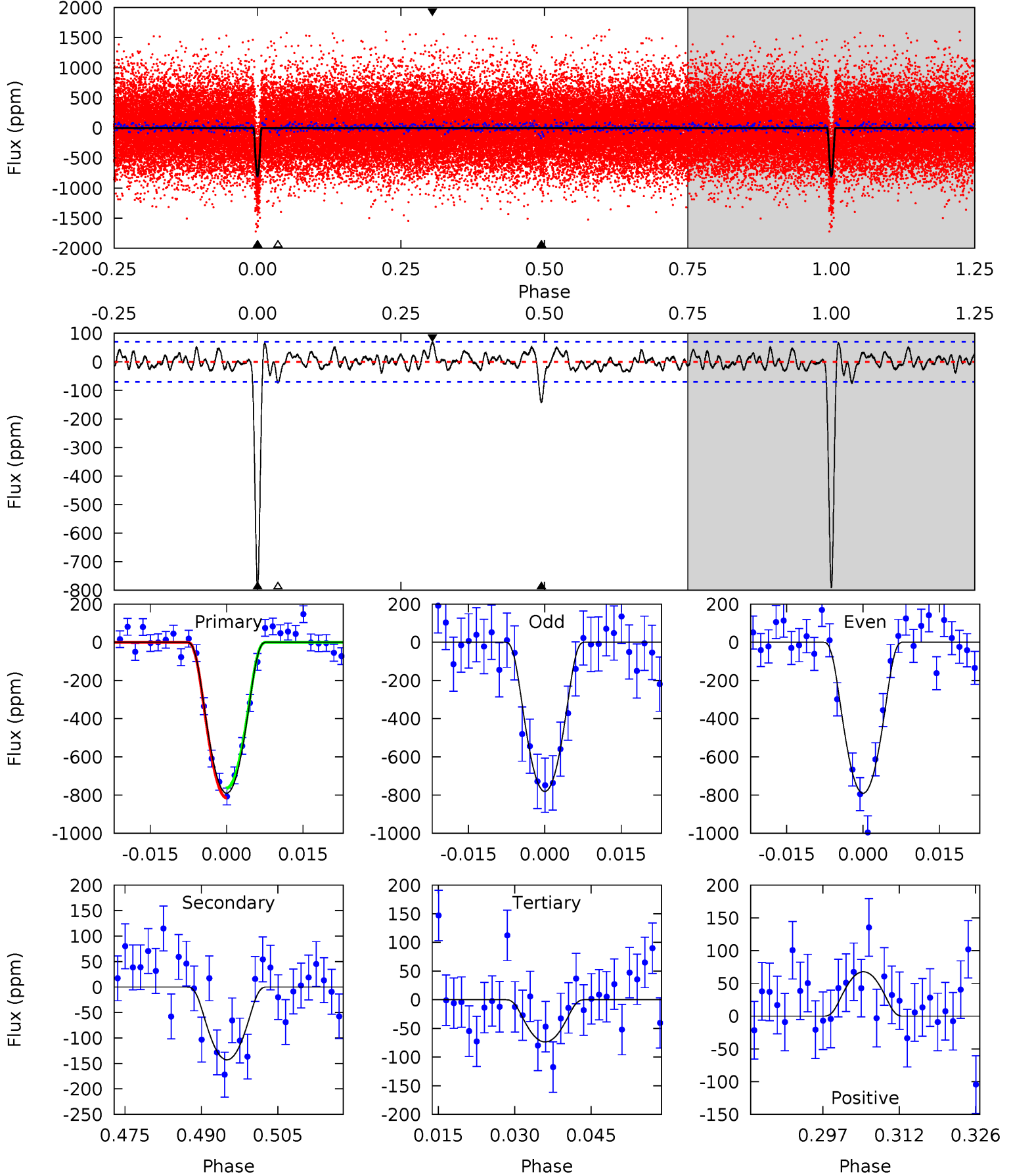
TCE 011955499-01 P= 9.041899 Days $T_0=137.865762$ (BKJD)



DV Model-Shift Uniqueness Test

011955499-01, P = 9.041895 Days, E = 128.824311 Days

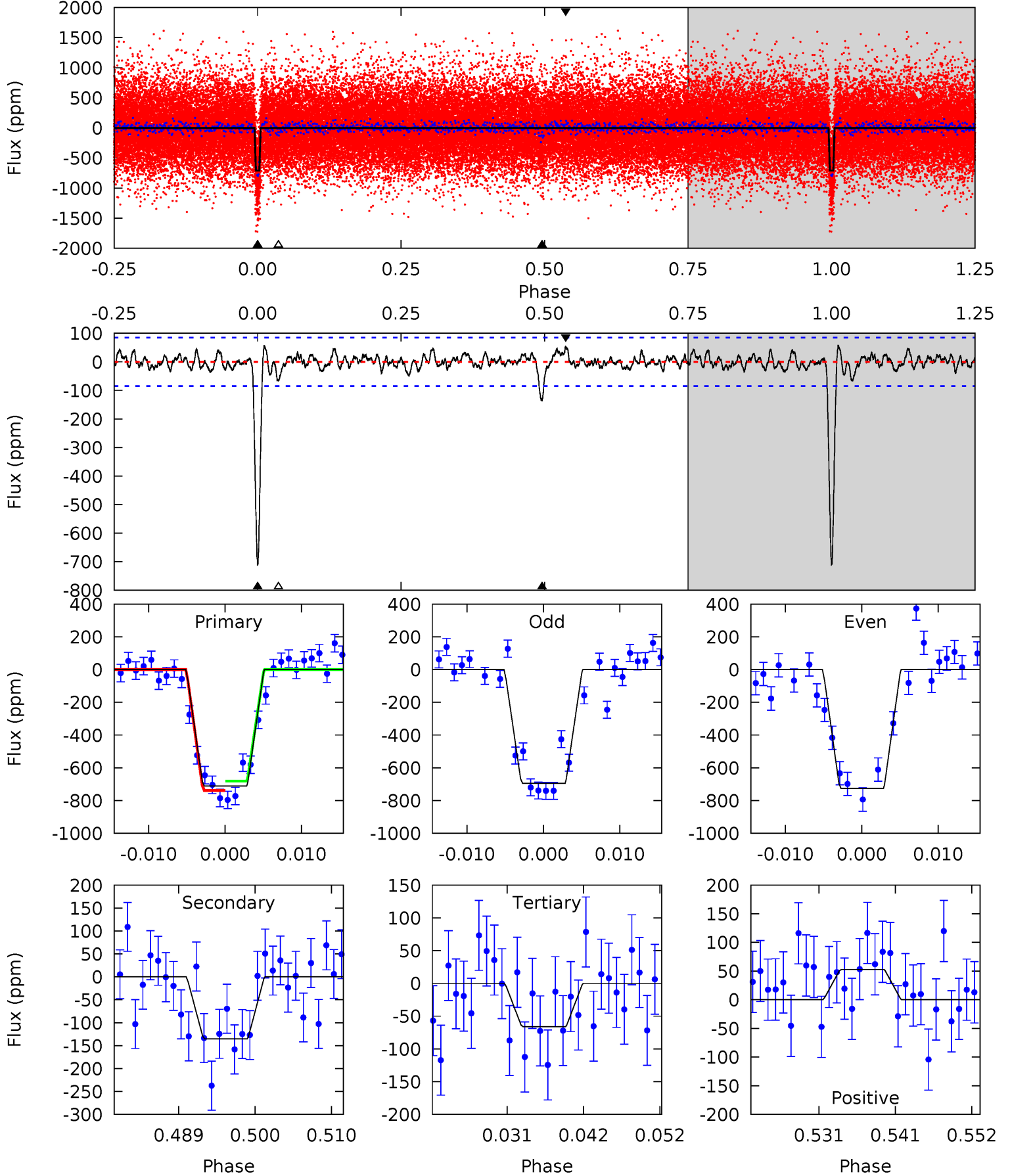
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
55.6	10.1	5.18	4.77	4.95	2.44	1.46	50.5	50.9	4.88	5.30	0.33	1.00	0.08	1.81



Alt Model-Shift Uniqueness Test

011955499-01, P = 9.041899 Days, E = 128.823863 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
41.9	7.99	3.91	3.12	5.02	2.56	1.10	38.0	38.8	4.08	4.87	0.88	1.02	0.08	1.68



Stellar Parameters For KIC 011955499

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5237^{+157}_{-157}	$4.572^{+0.028}_{-0.112}$	$0.240^{+0.200}_{-0.300}$	$0.826^{+0.124}_{-0.057}$	$0.927^{+0.046}_{-0.093}$	$2.315^{+0.376}_{-0.723}$
	+3%/-3%	+1%/-2%	+83%/-125%	+15%/-7%	+5%/-10%	+16%/-31%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011955499-01 / KOI 1512.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-143 ± 14	$3.88^{+1.99}_{-1.83}$	1035^{+45}_{-39}	3308^{+759}_{-367}	35^{+93}_{-19}
Alt.	-135 ± 17	$2.71^{+1.86}_{-1.57}$	1032^{+46}_{-38}	3658^{+1412}_{-540}	66^{+319}_{-41}

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

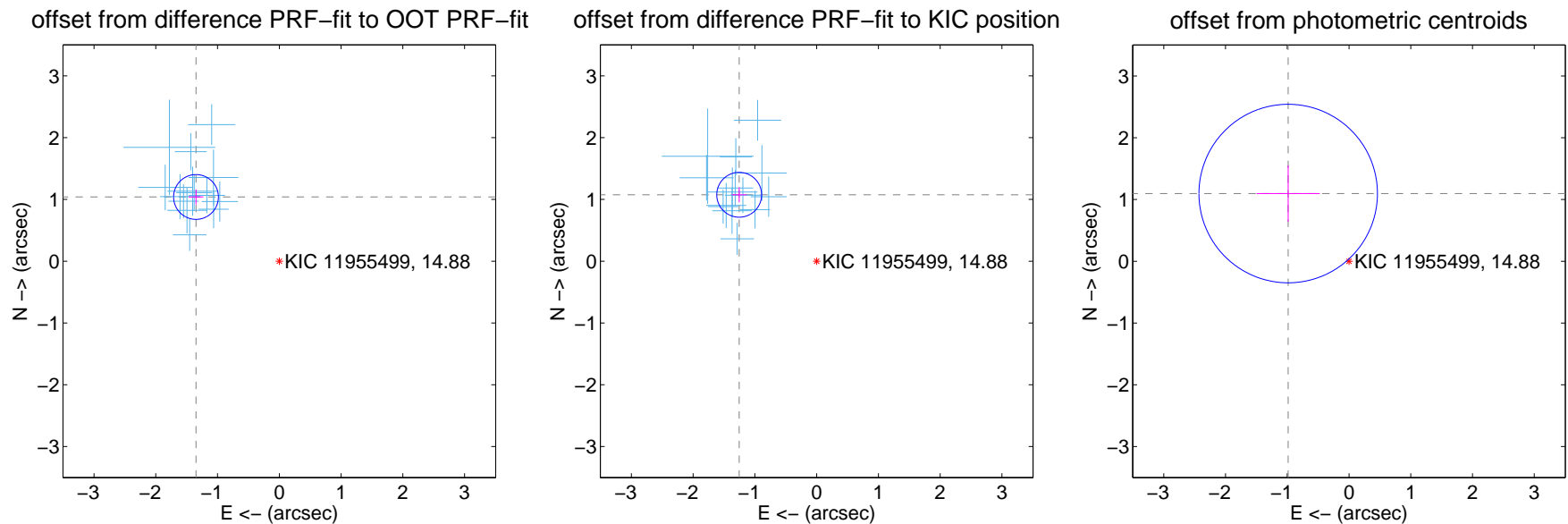
DV Centroid Data

Supplemental centroid analysis for 011955499-01. Kepler magnitude: 14.88. Transit SNR 34.79

There are 14 quarters with good PRF difference image offsets

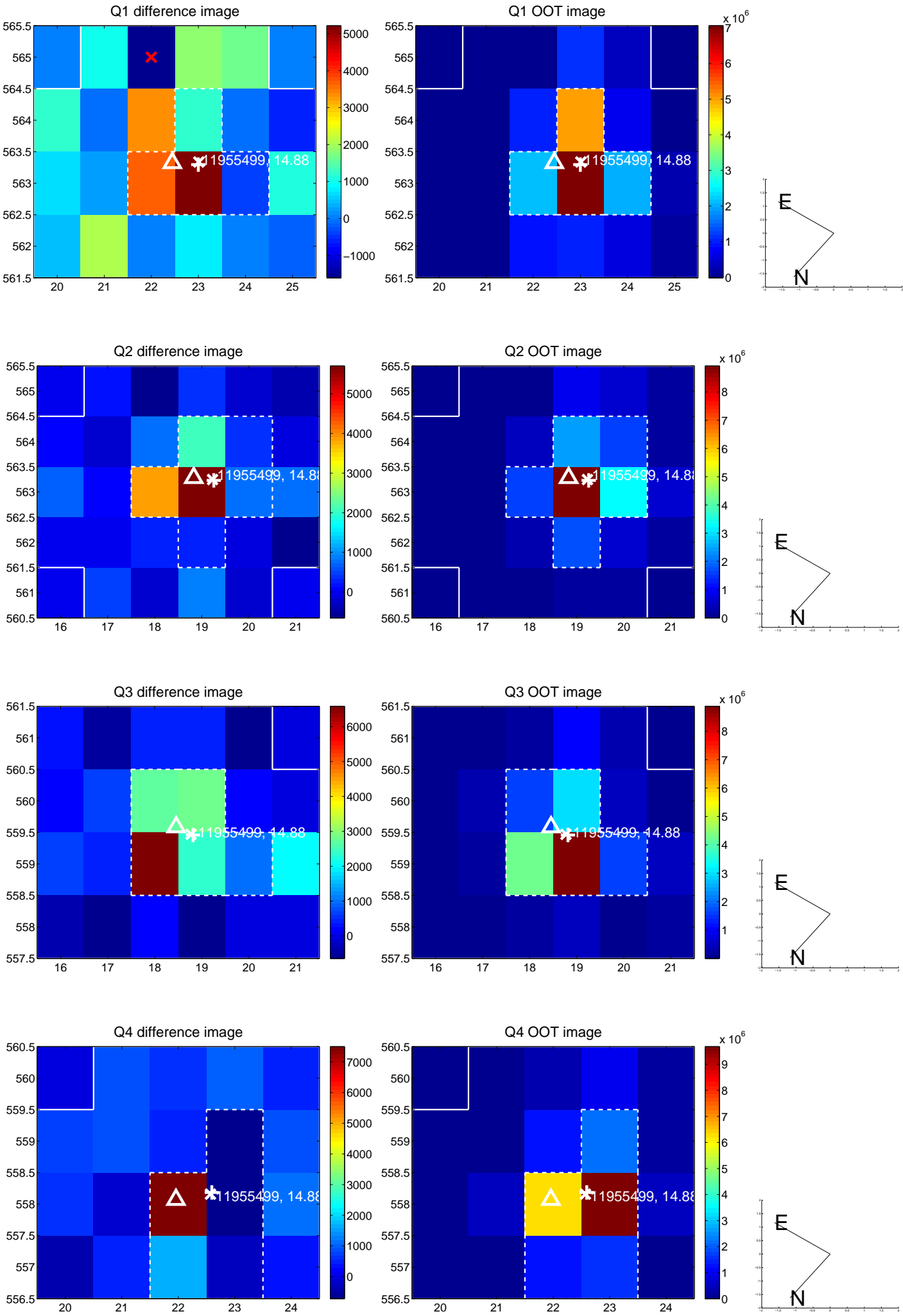
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.703 ± 0.121	14.09	1.349 ± 0.120	1.040 ± 0.123
PRF-fit source offset from KIC position	1.652 ± 0.121	13.65	1.255 ± 0.120	1.075 ± 0.123
photometric centroid source offset	1.47 ± 0.48	3.06	0.99 ± 0.51	1.10 ± 0.46

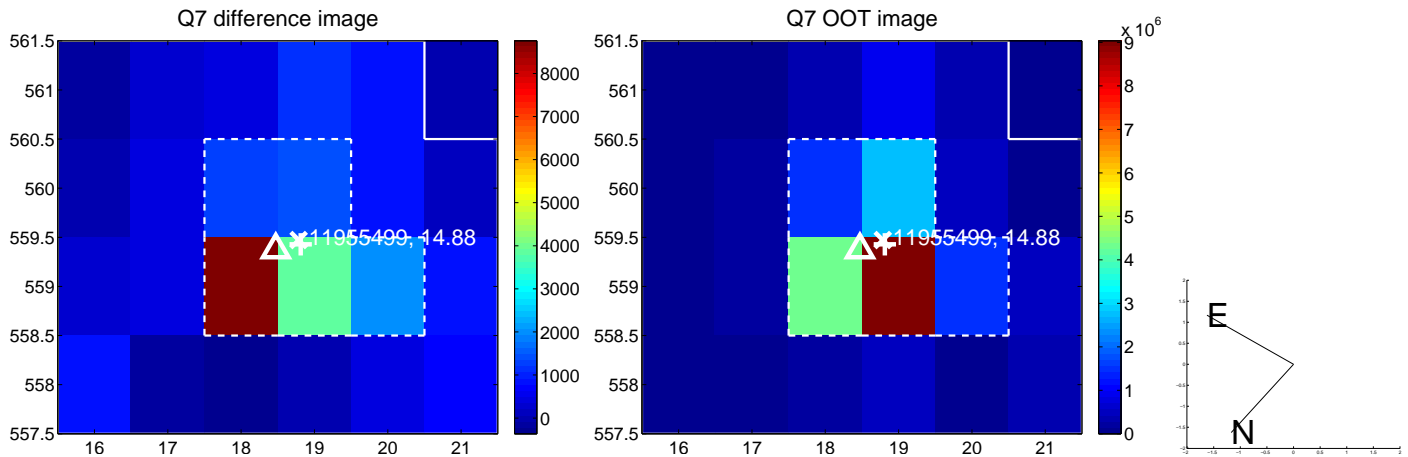
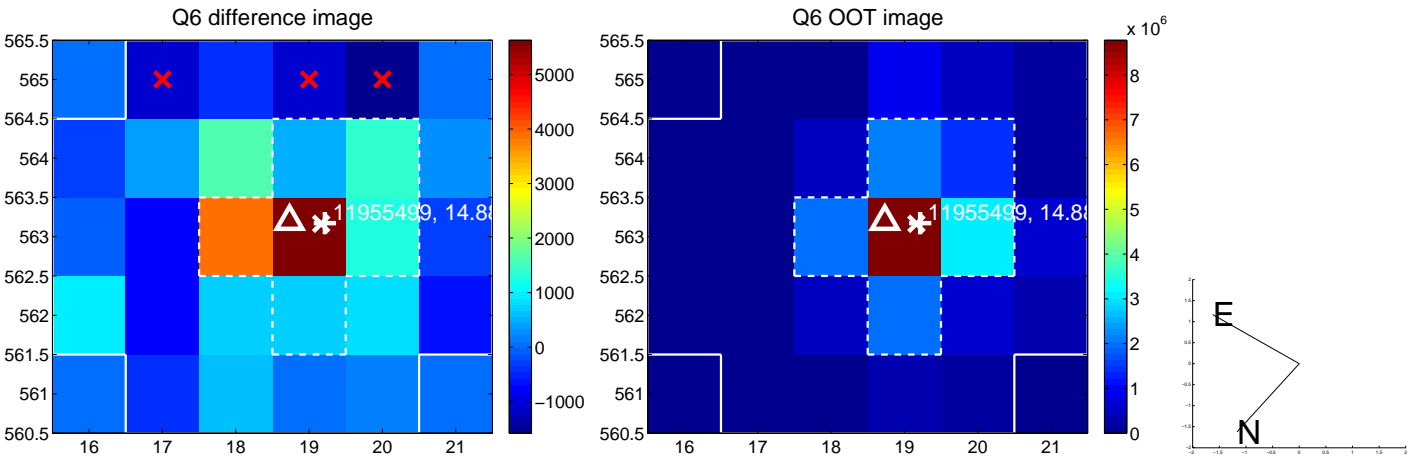
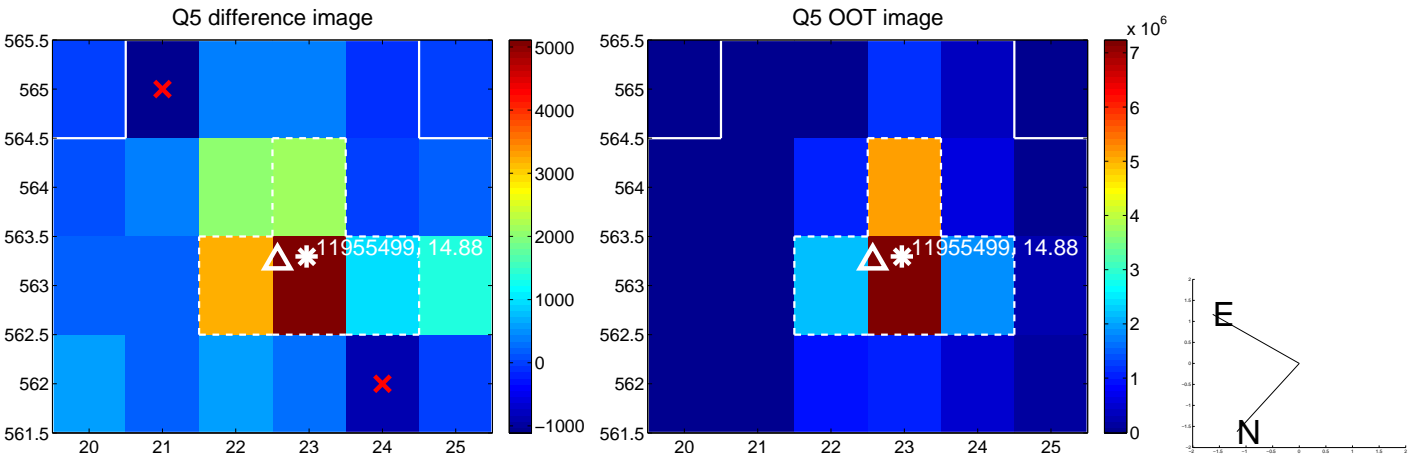


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

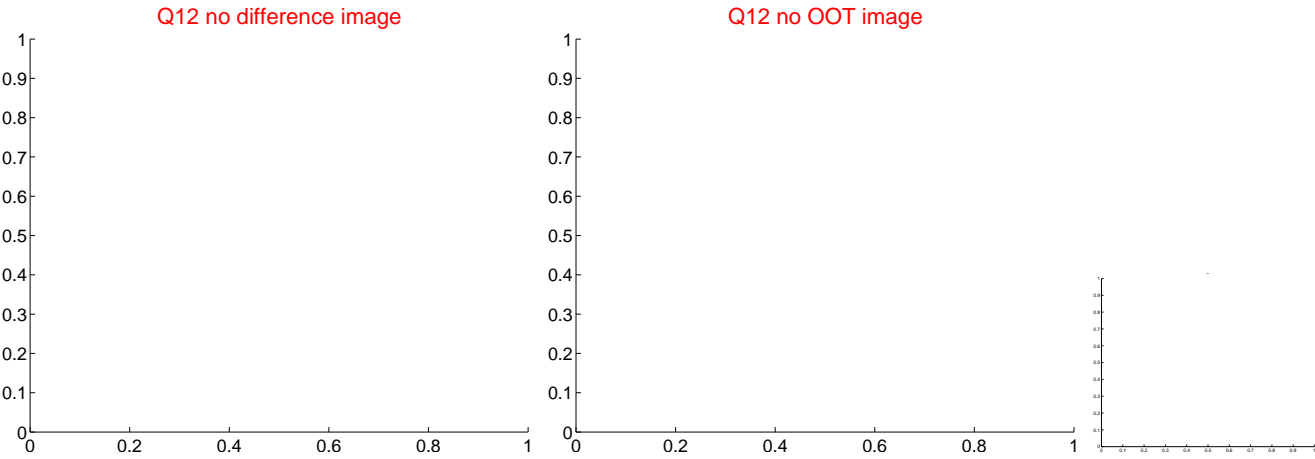
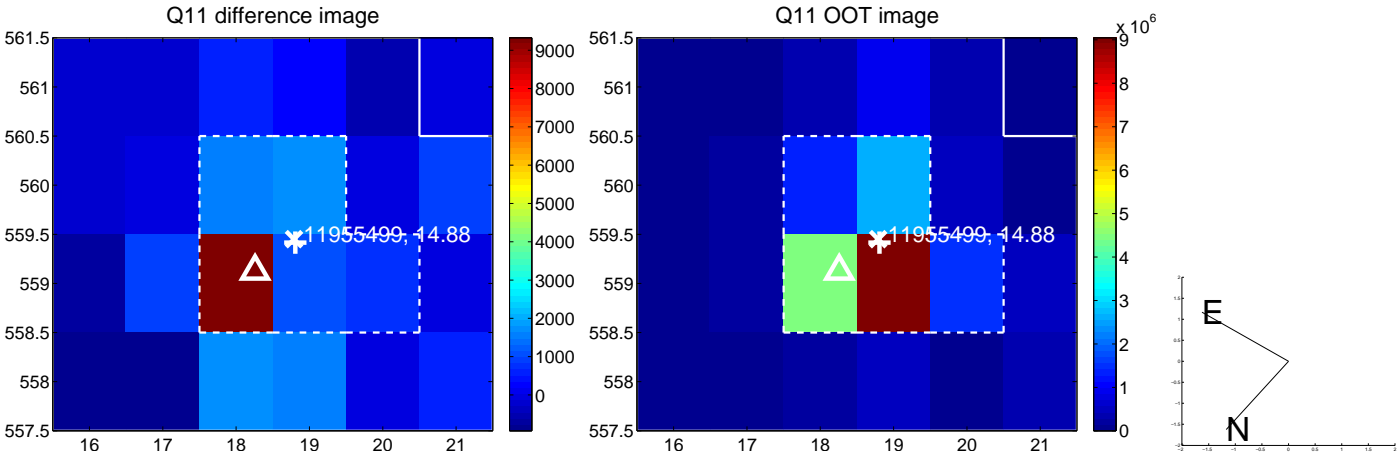
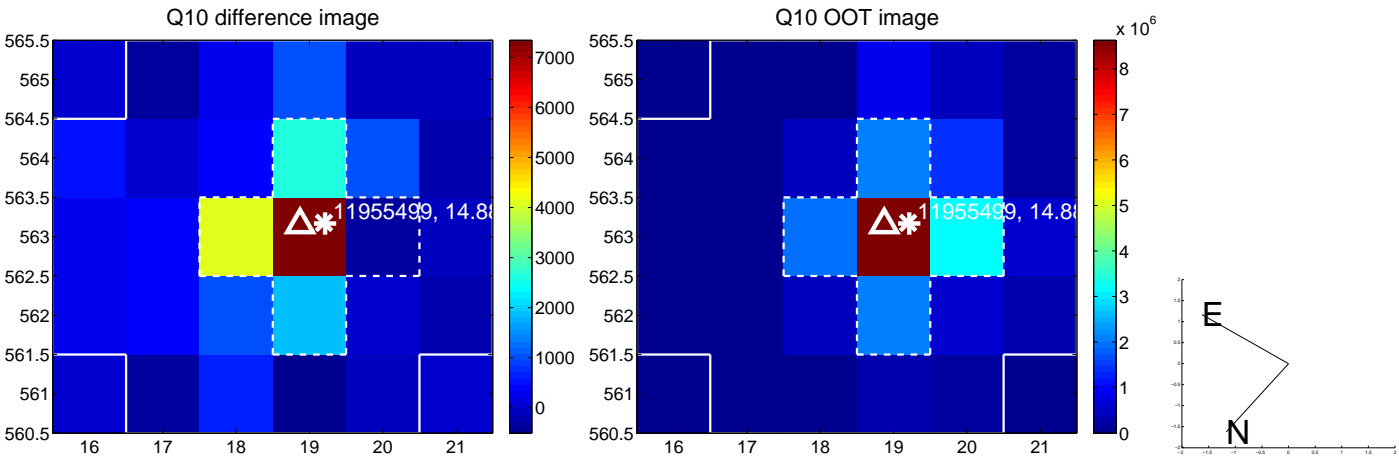
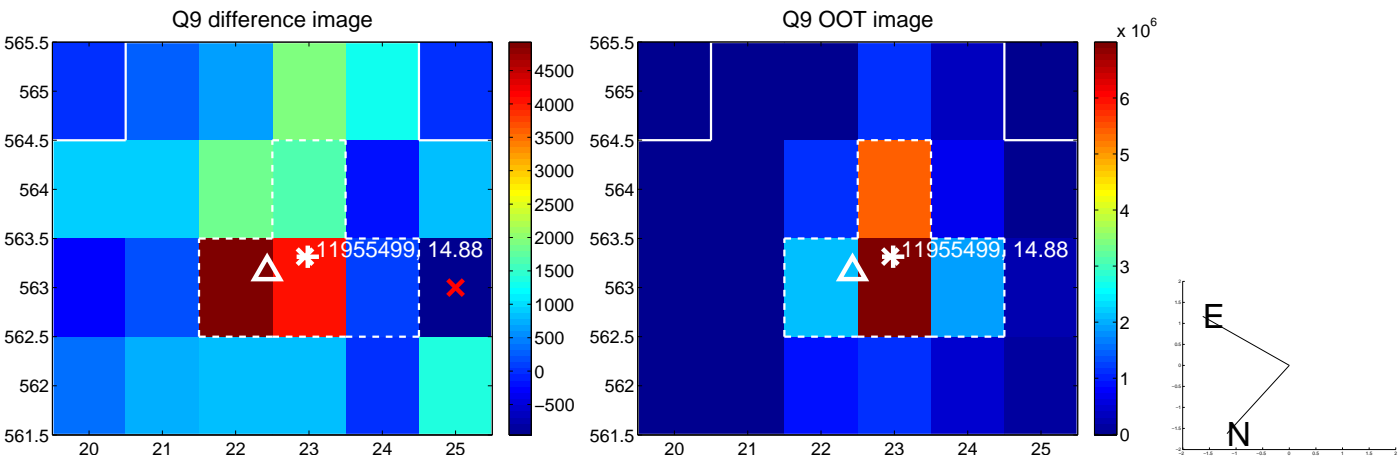
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



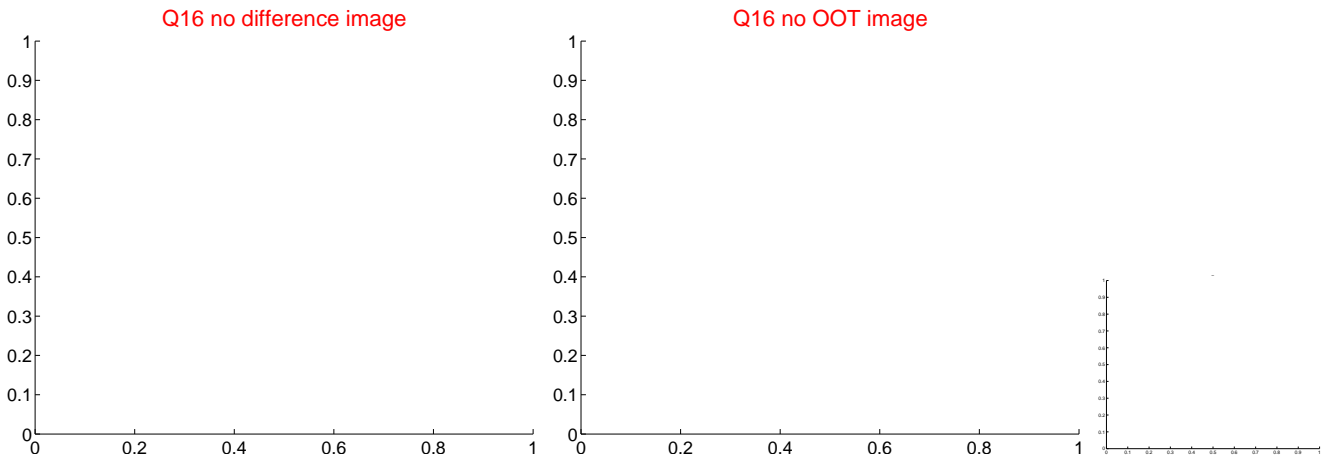
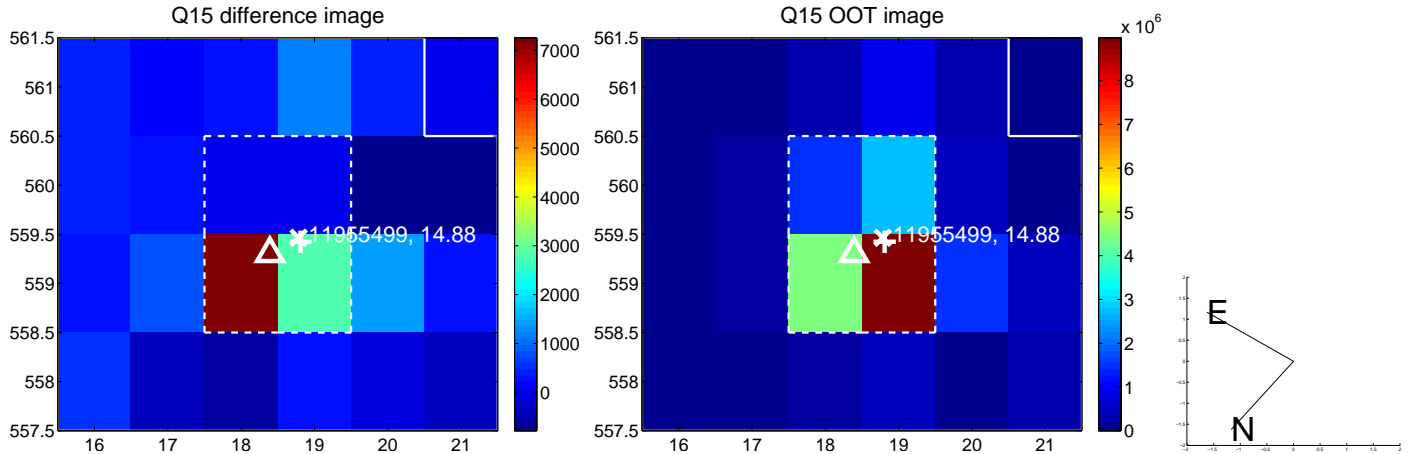
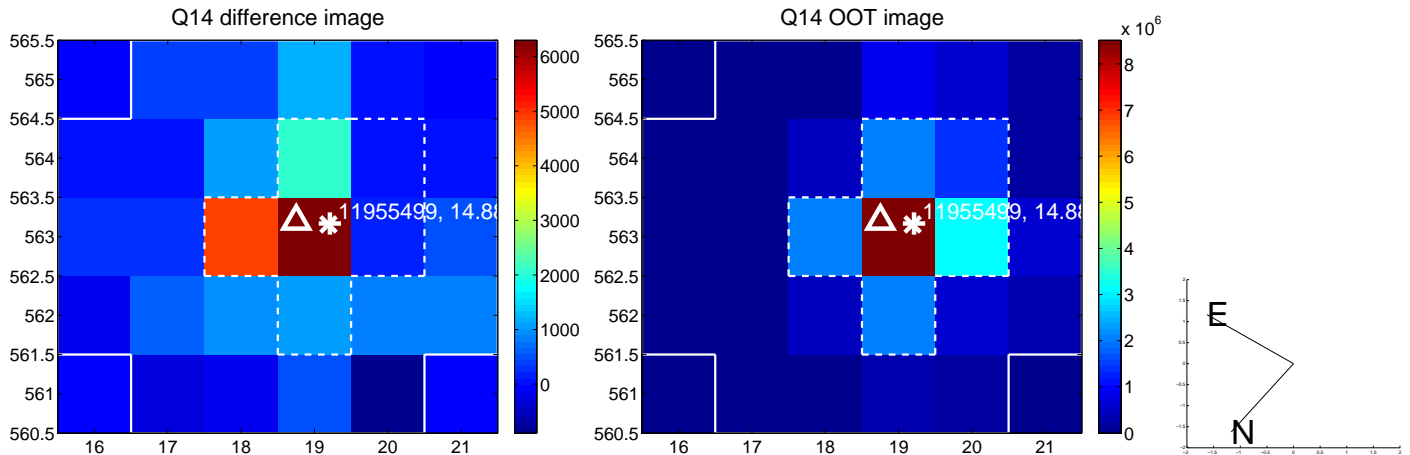
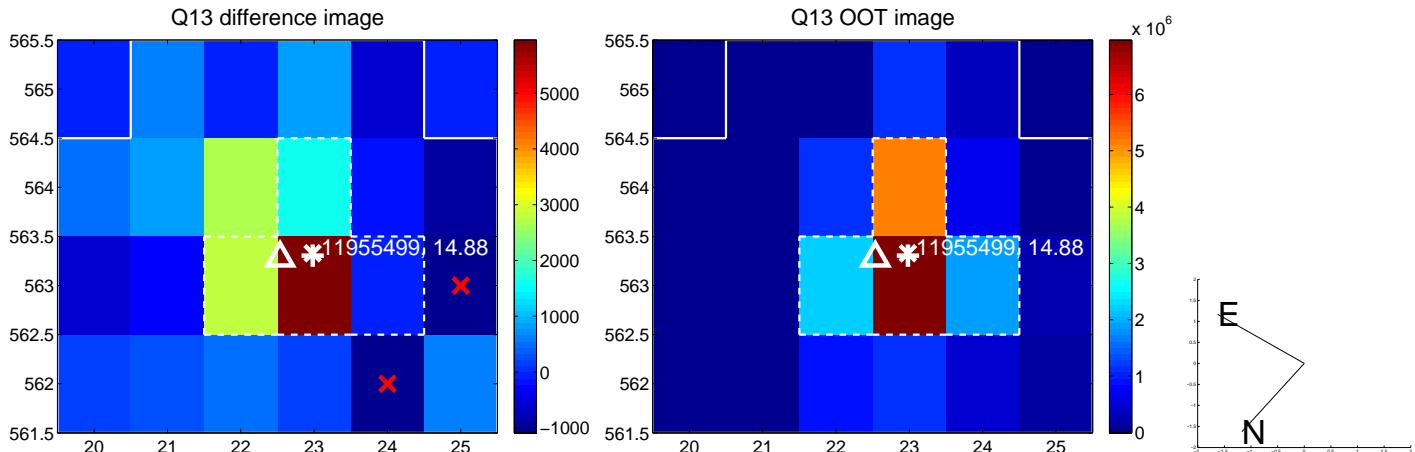
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



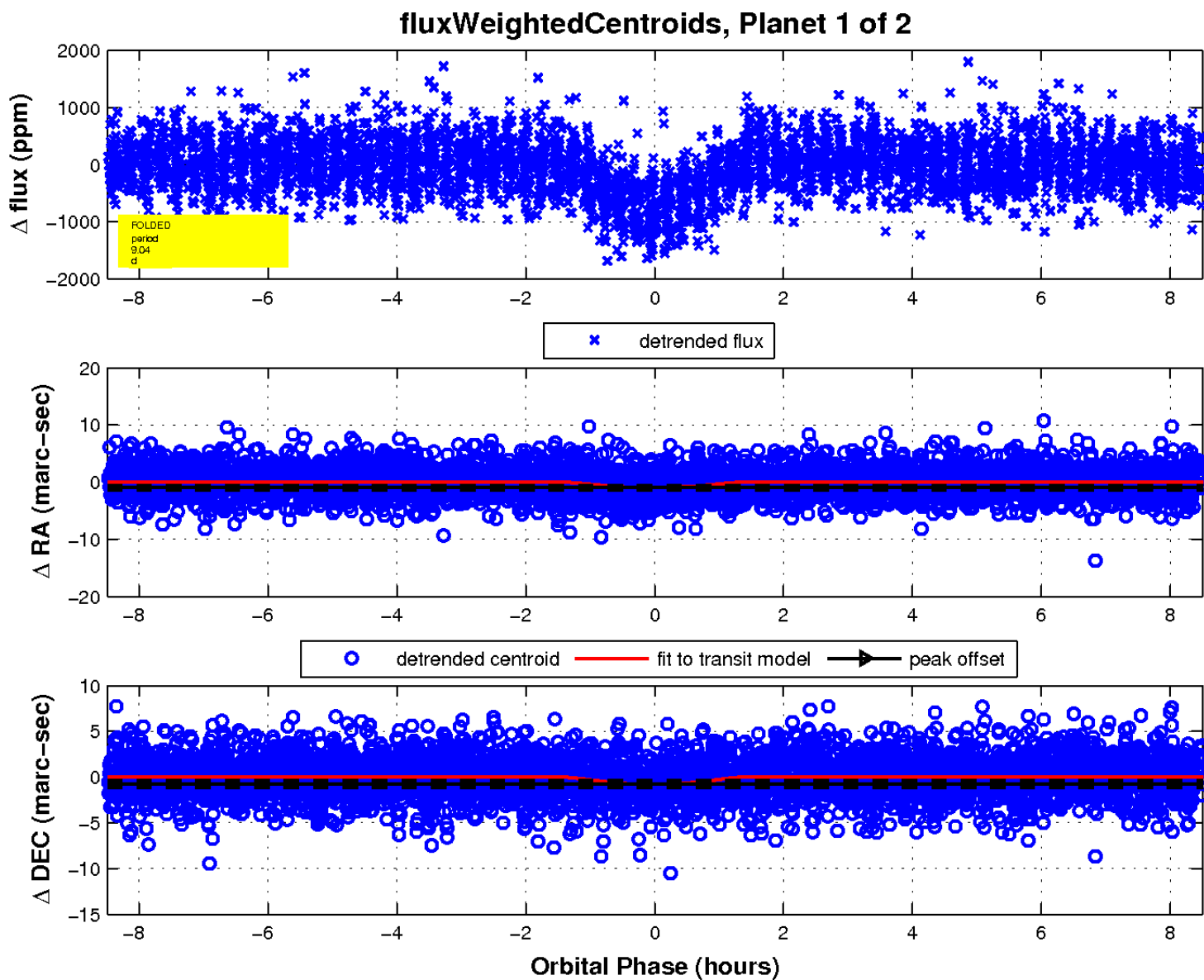
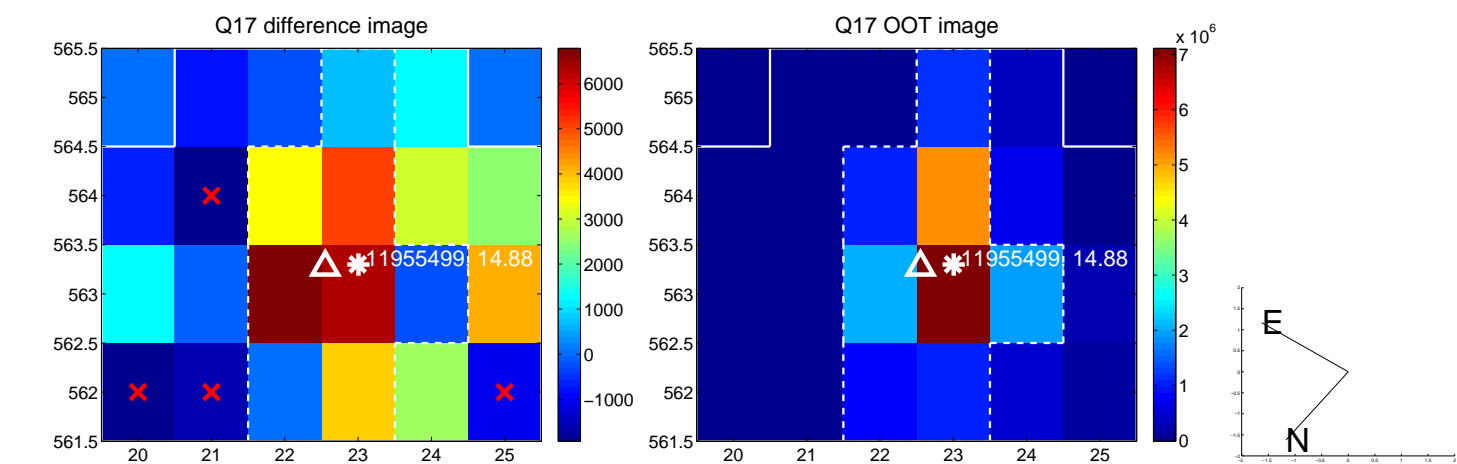
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

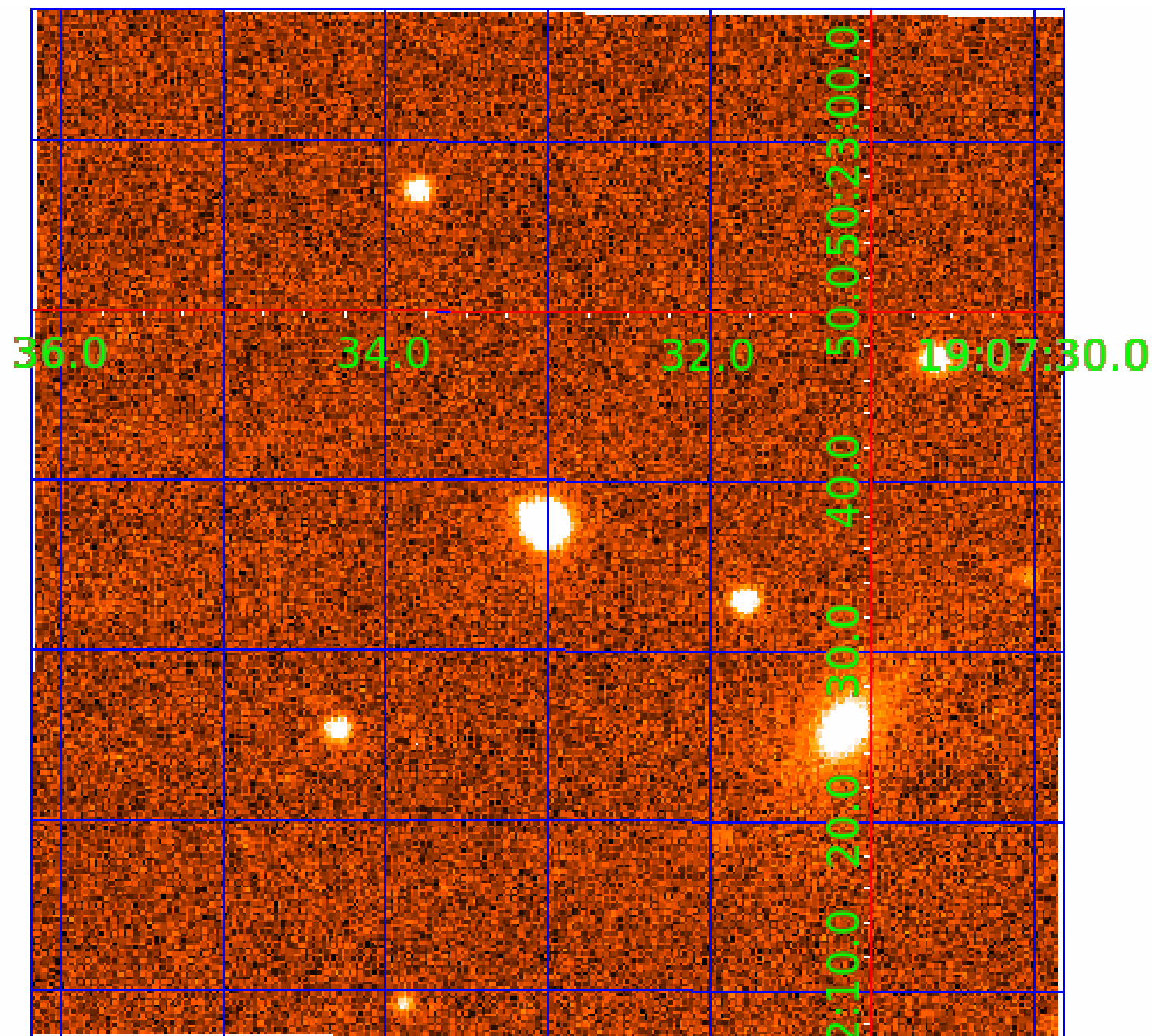


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011955499

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})
011955499-01	OBS	1512.01	9.041895	137.866206	795.1	2.835	30.4	34.8	0.83	5237	3.71	66.92
011955499-02	OBS	No	9.041936	133.291171	163.2	2.394	7.3	8.0	0.83	5237	1.22	66.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011955499-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
011955499-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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 011955499-02

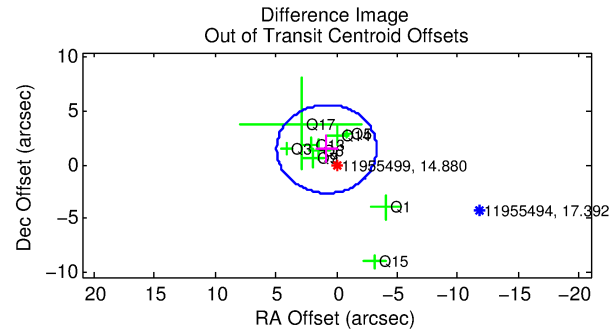
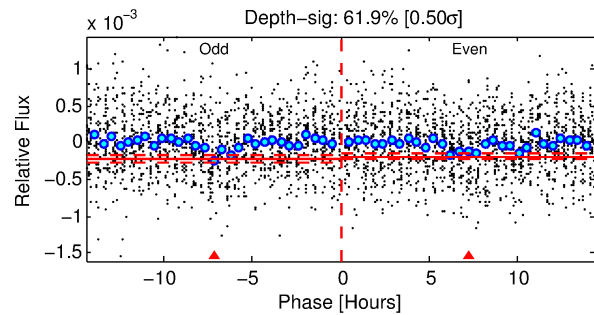
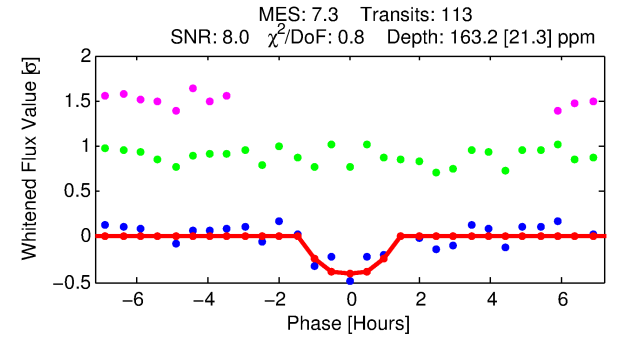
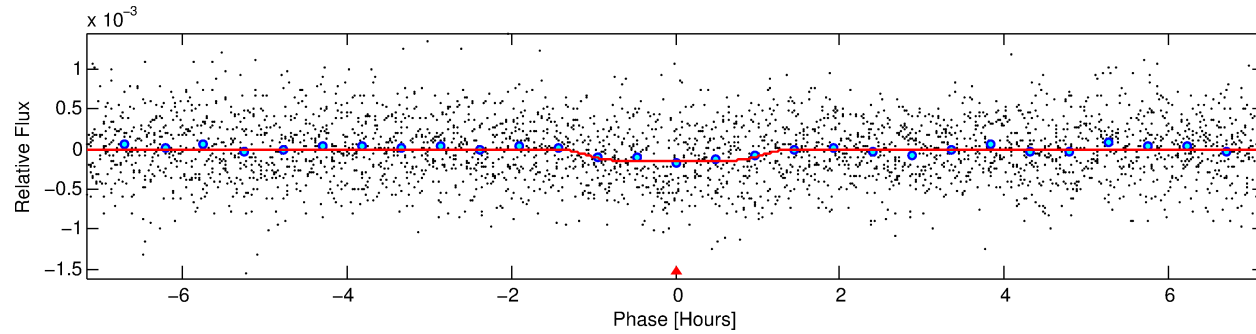
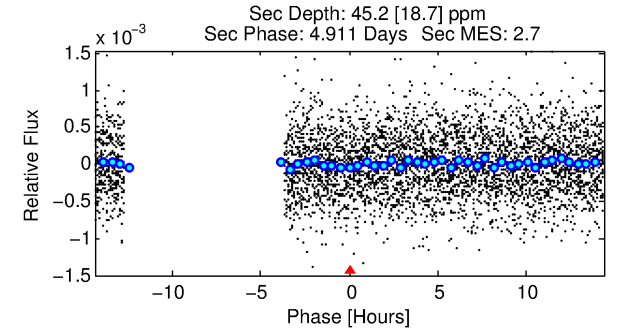
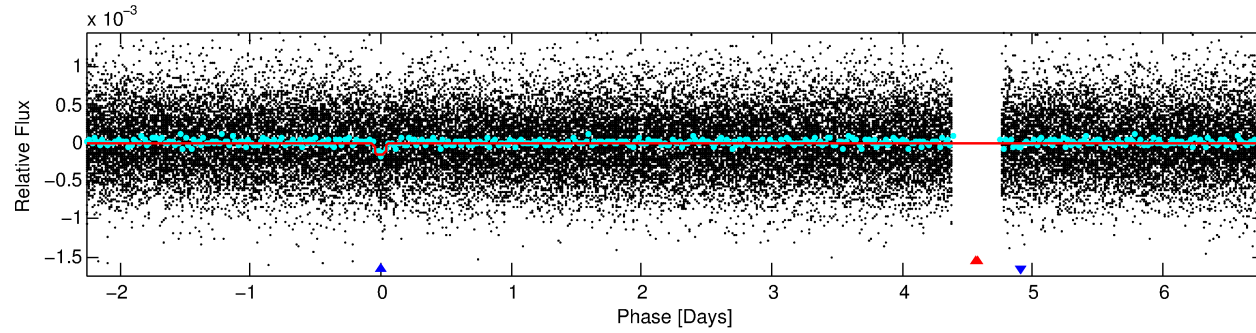
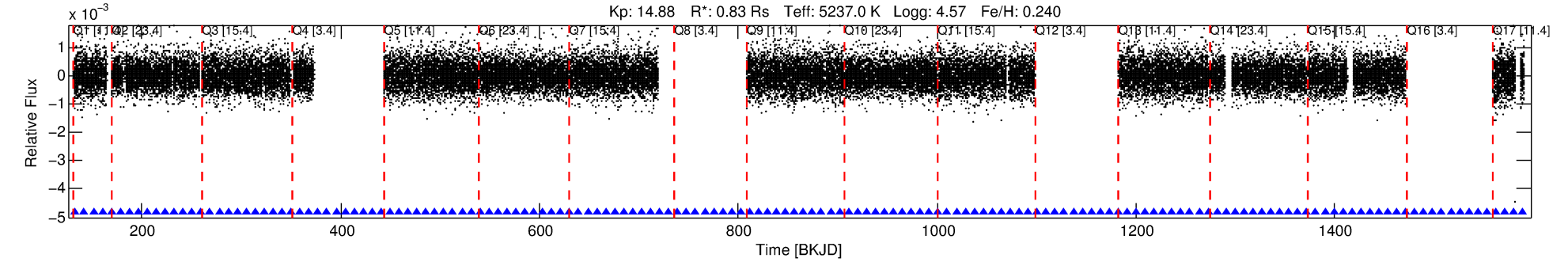
No Significant Match Found

DV One-Page Summary

KIC: 11955499 Candidate: 2 of 2 Period: 9.042 d

KOI: K01512 Corr: No Ephemeris Match

Kp: 14.88 R*: 0.83 Rs Teff: 5237.0 K Logg: 4.57 Fe/H: 0.240



DV Fit Results:

Period = 9.04194 [0.00008] d
Epoch = 133.2912 [0.0068] BKJD
Rp/R* = 0.0136 [0.0179]
a/R* = 15.87 [81.68]
b = 0.85 [1.71]
Seff = 66.92 [15.54]
Teq = 729 [42] K
Rp = 1.22 [1.63] Re
a = 0.0829 [0.0109] AU
Ag = 114.01 [305.46] [0.37σ]
Teffp = 3685 [2464] K [1.20σ]

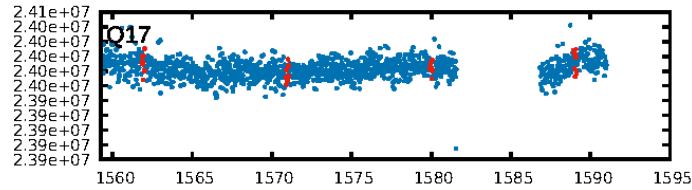
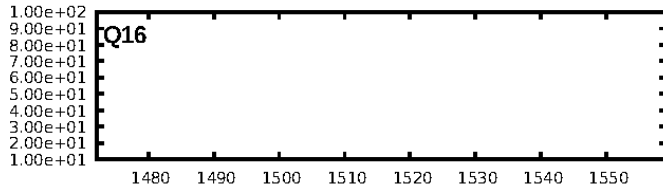
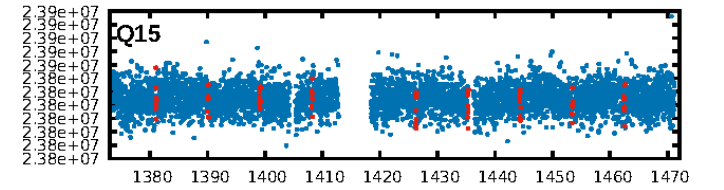
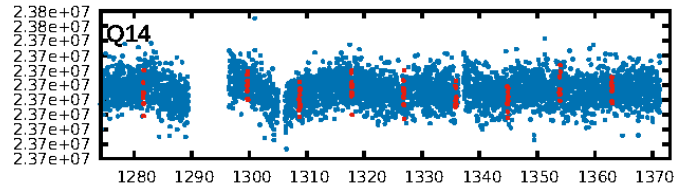
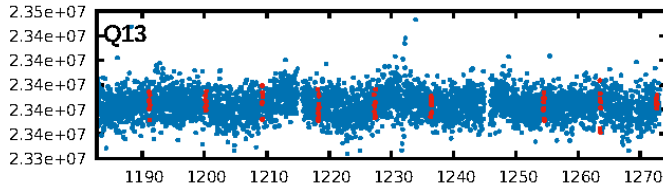
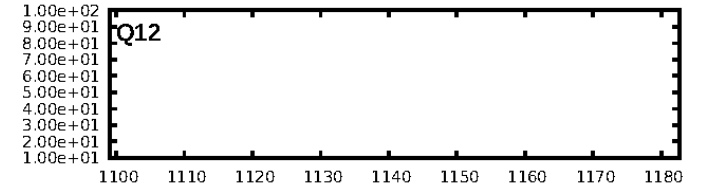
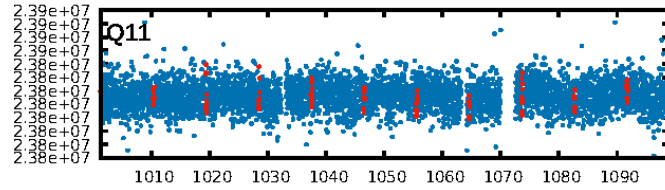
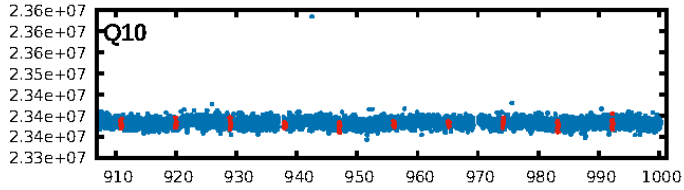
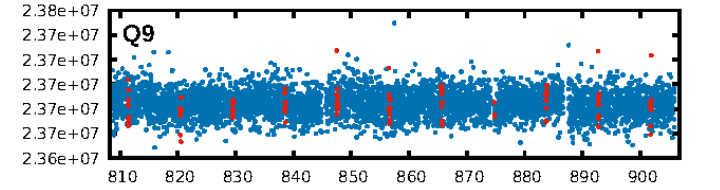
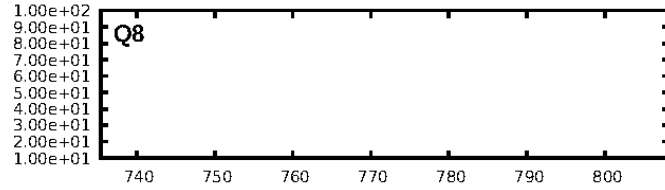
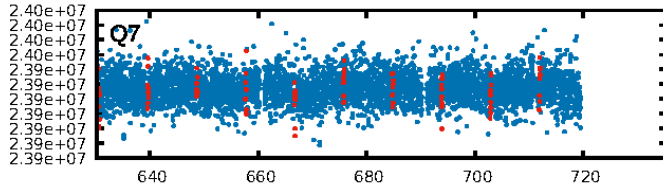
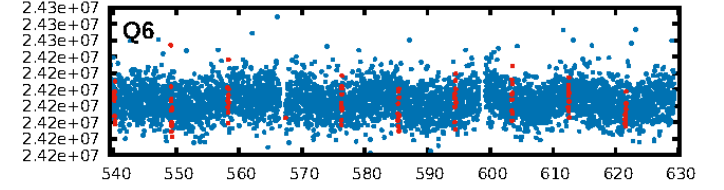
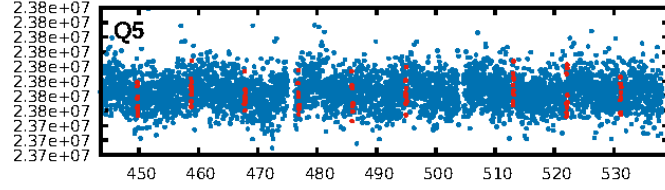
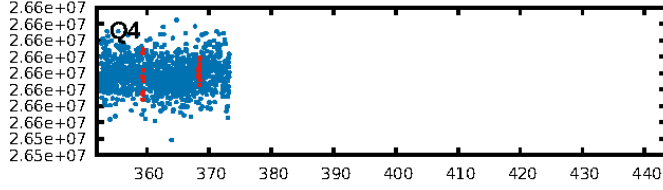
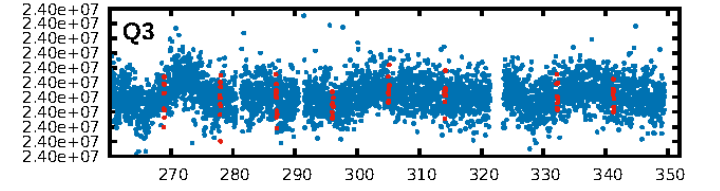
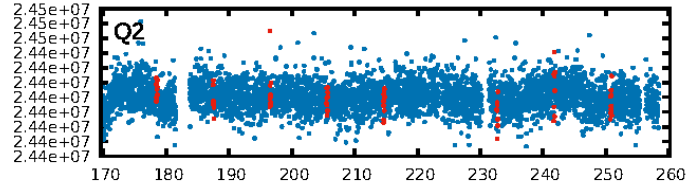
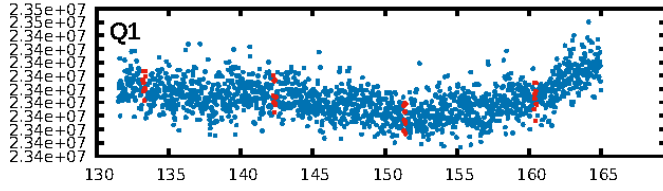
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.07e-13
RollingBand-fgt: 1.00 [103/103]
GhostDiagnostic-chr: 0.6358
Centroid-sig: 0.2%
Centroid-so: 5.411 arcsec [2.42σ]
OotOffset-rm: 1.674 arcsec [1.22σ]
KicOffset-rm: 1.613 arcsec [1.28σ]
OotOffset-st: 2/3/0/5 [10]
KicOffset-st: 2/3/0/5 [10]
DiffImageQuality-fgm: 0.50 [5/10]
DiffImageOverlap-fno: 1.00 [14/14]

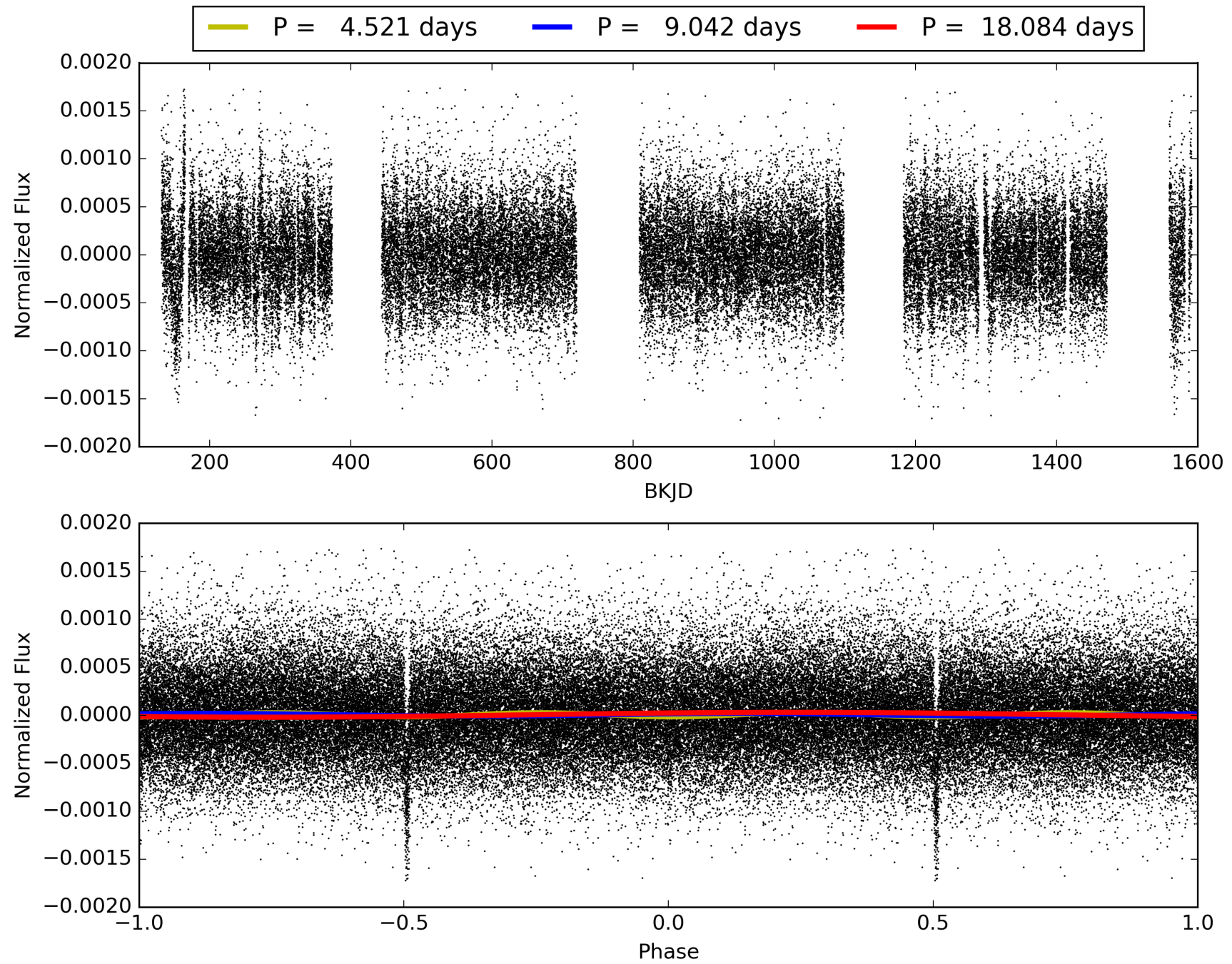
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:35:13 Z

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

TCE 011955499-02, PDC Light Curves

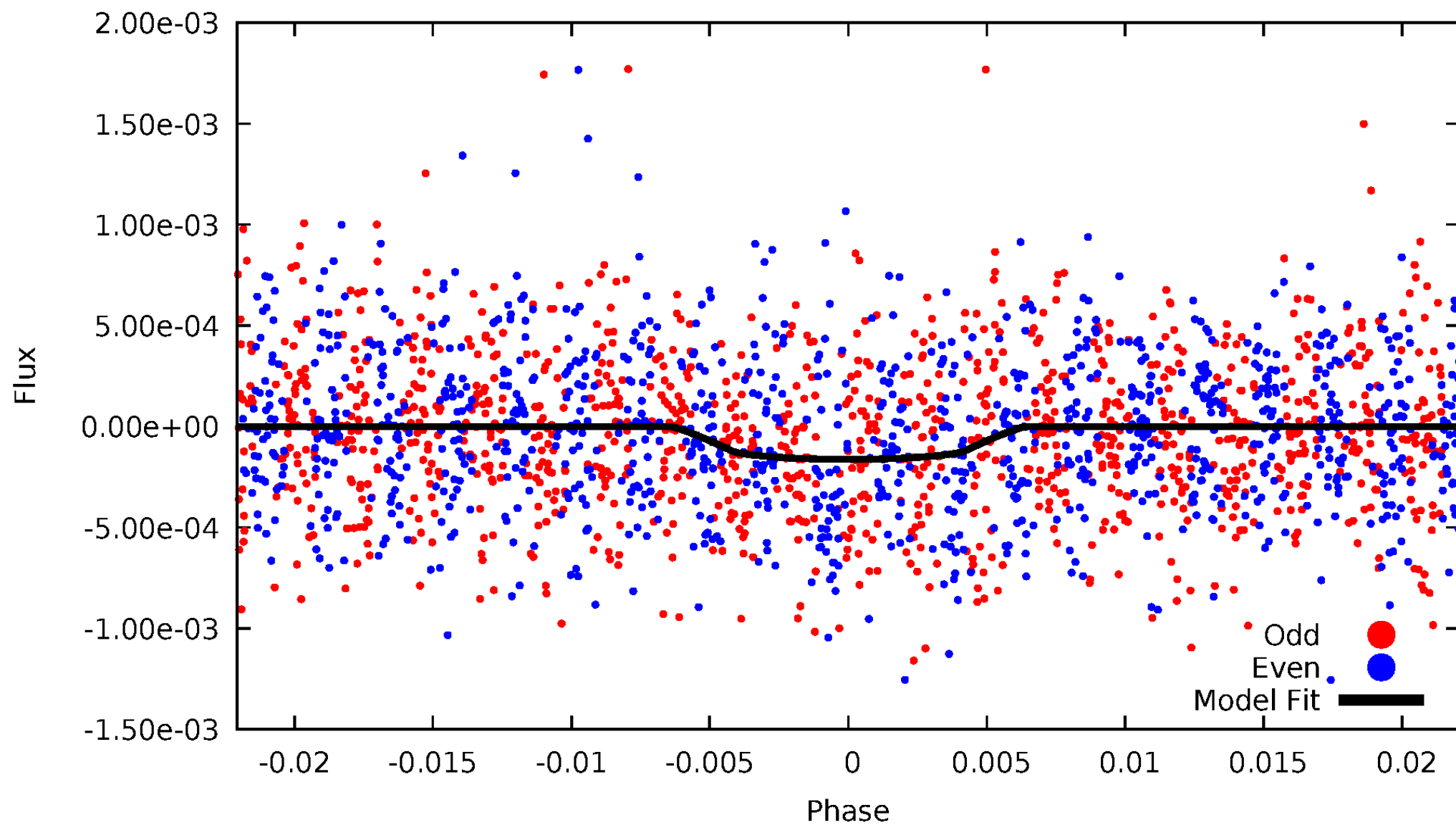


TCE 011955499-02



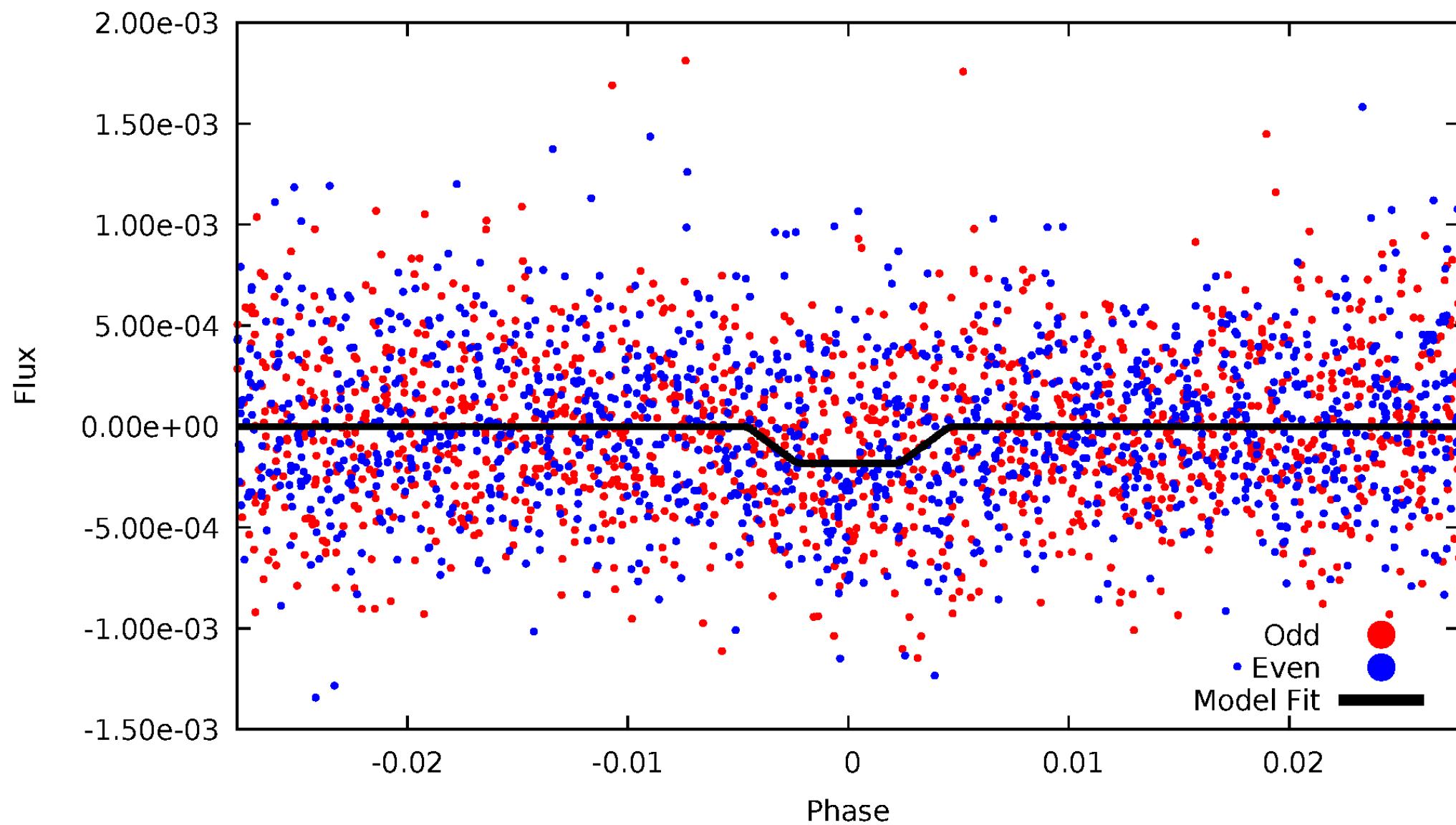
DV Odd/Even

TCE 011955499-02



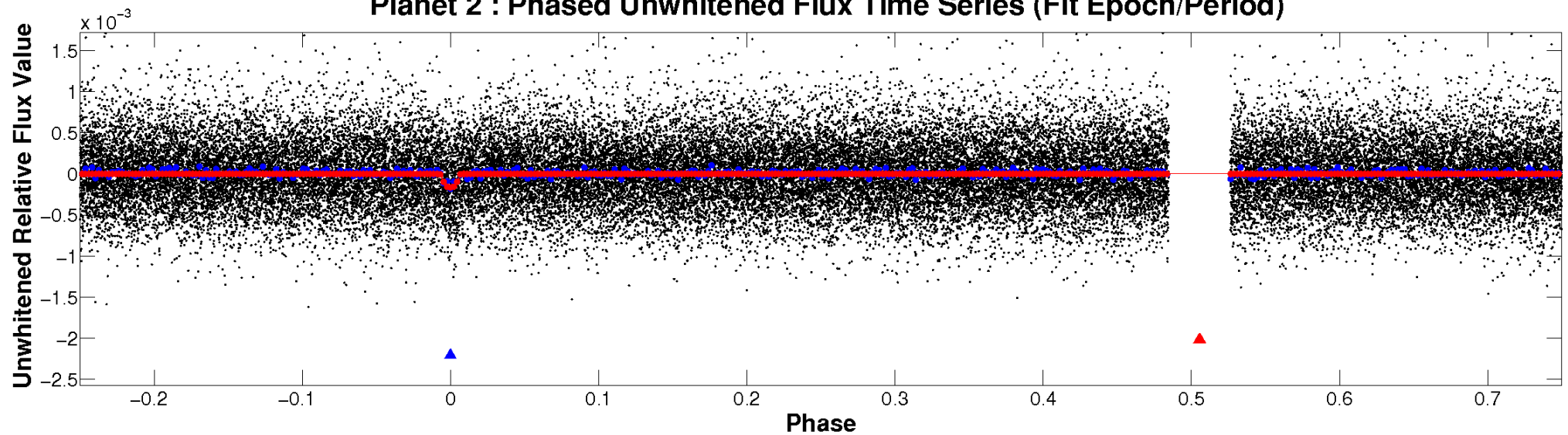
ALT Odd/Even

TCE 011955499-02

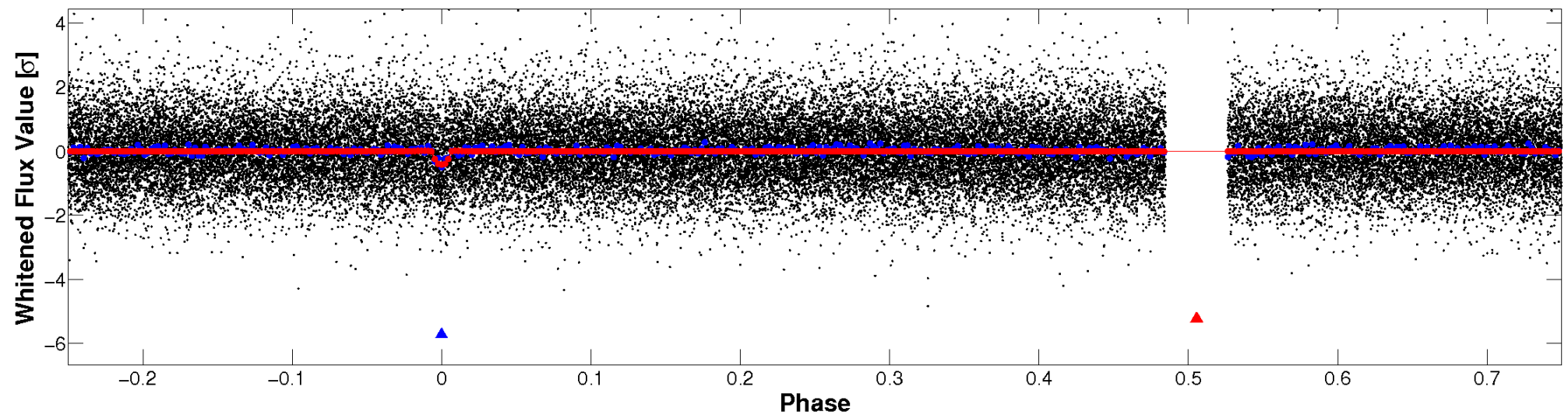


Non-Whitened Vs. Whitened Light Curve

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

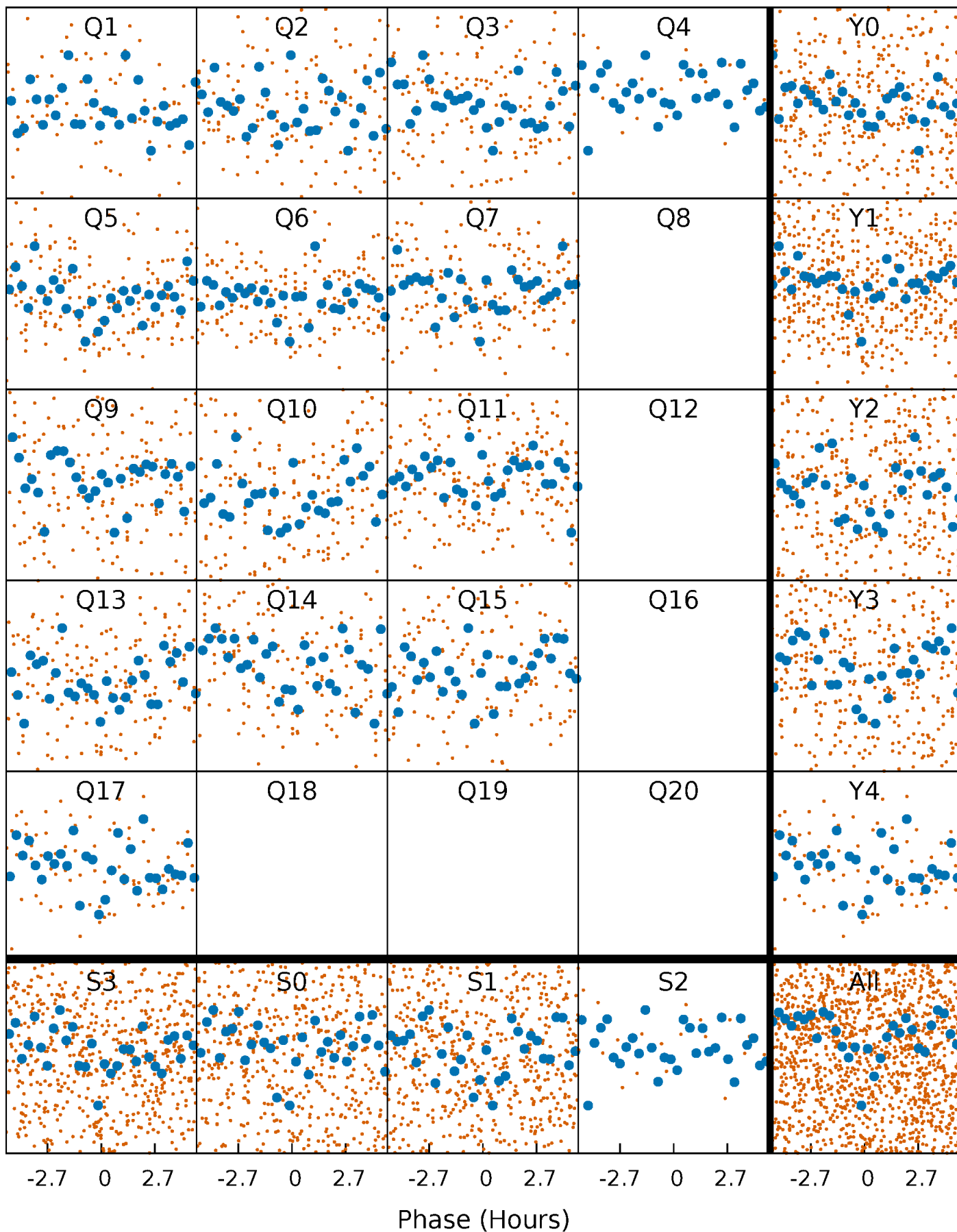


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



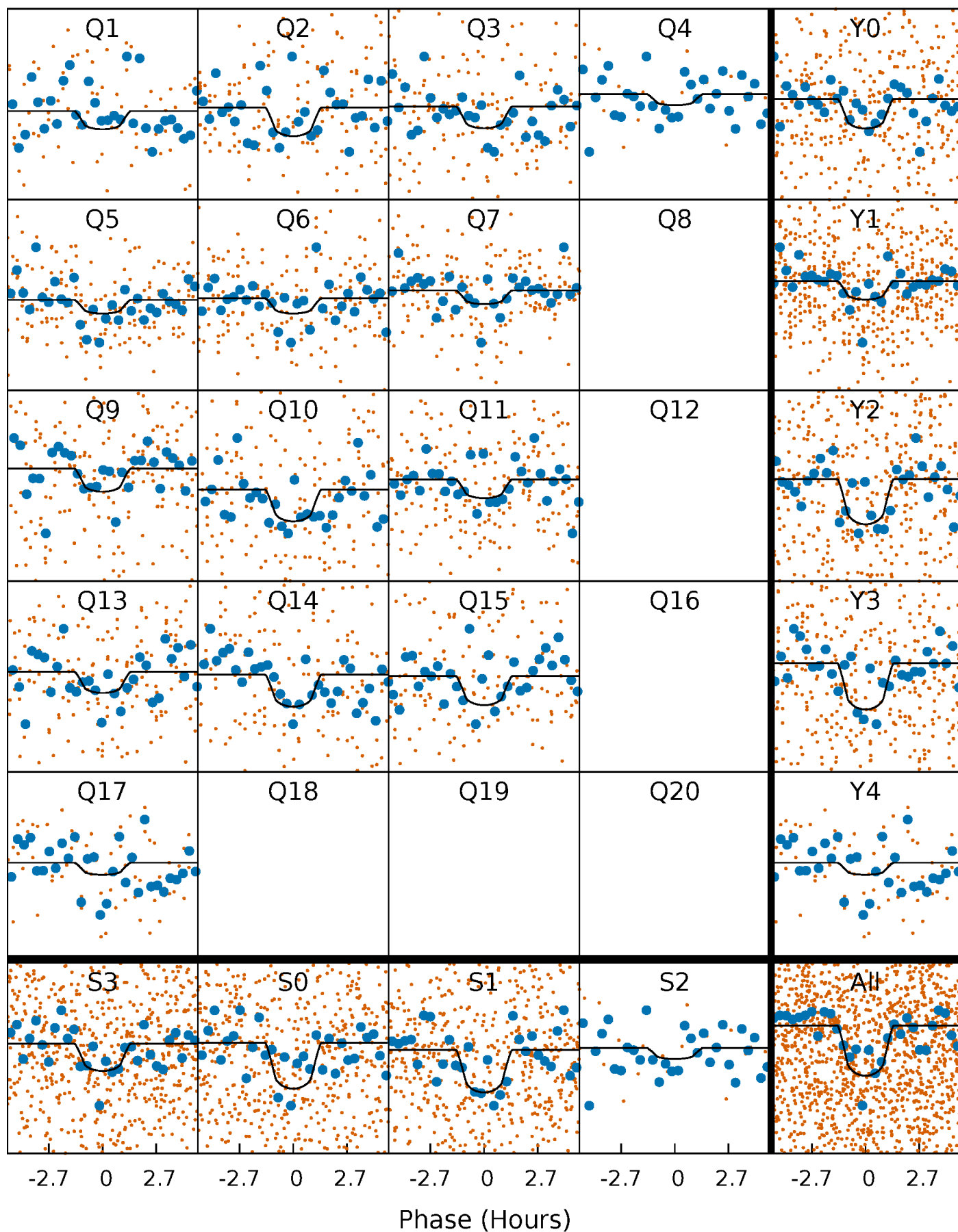
PDC Quarter-Phased Transit Curves

TCE 011955499-02 $P = 9.041936$ Days $T_0 = 133.291171$ (BKJD)



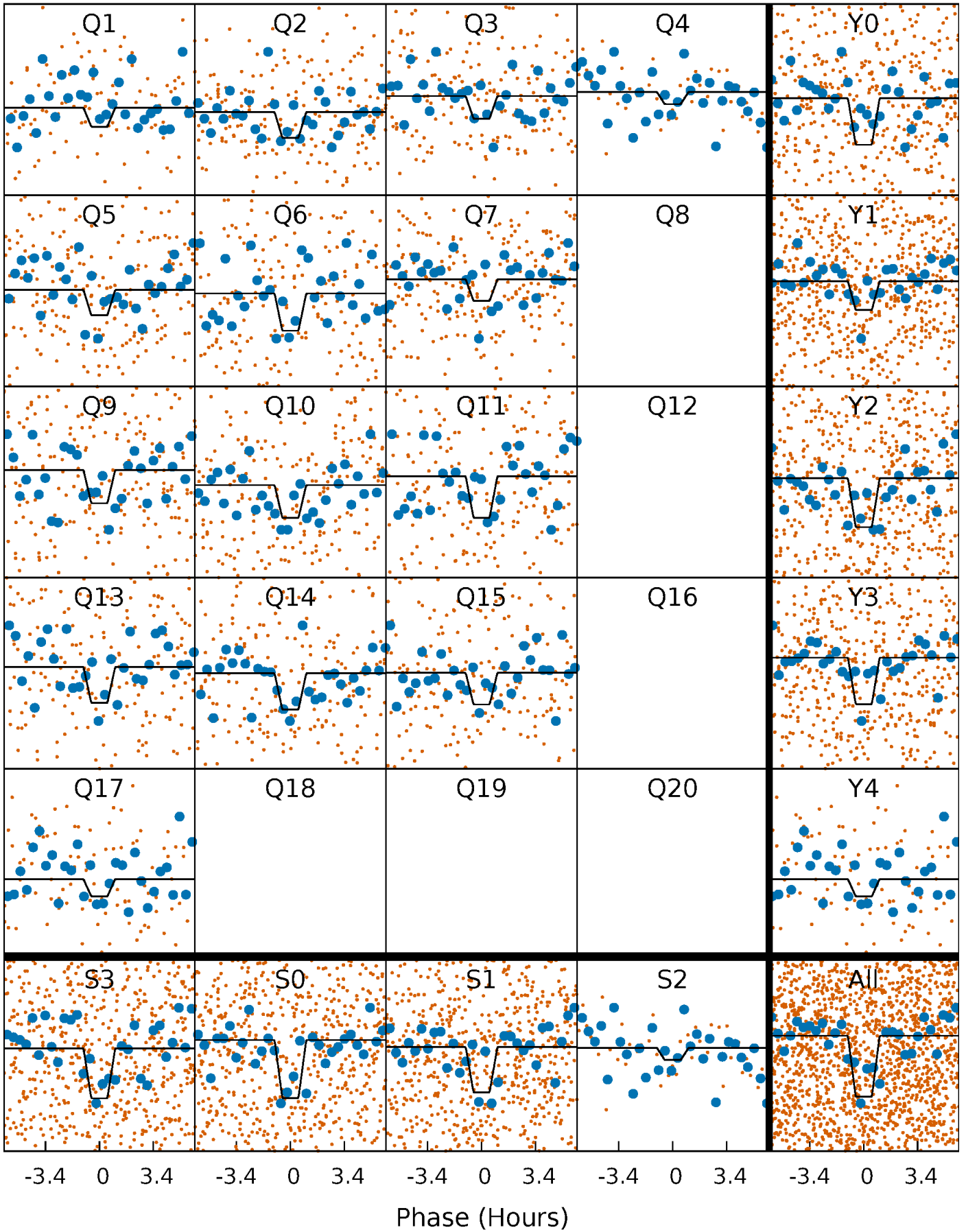
DV Quarter-Phased Transit Curves

TCE 011955499-02 $P = 9.041936$ Days $T_0 = 133.291171$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

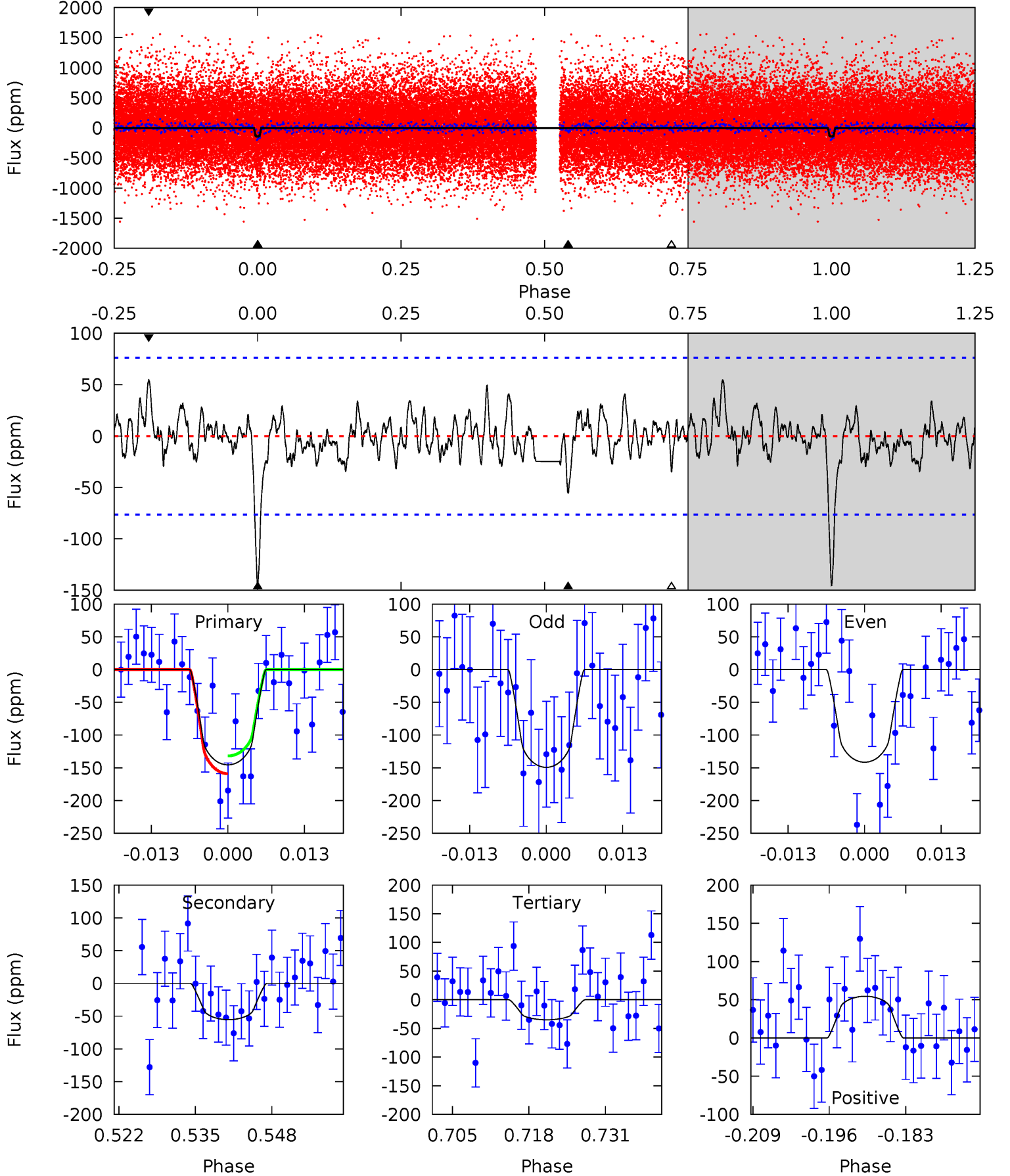
TCE 011955499-02 $P = 9.041973$ Days $T_0 = 133.285773$ (BKJD)



DV Model-Shift Uniqueness Test

011955499-02, P = 9.041936 Days, E = 124.249235 Days

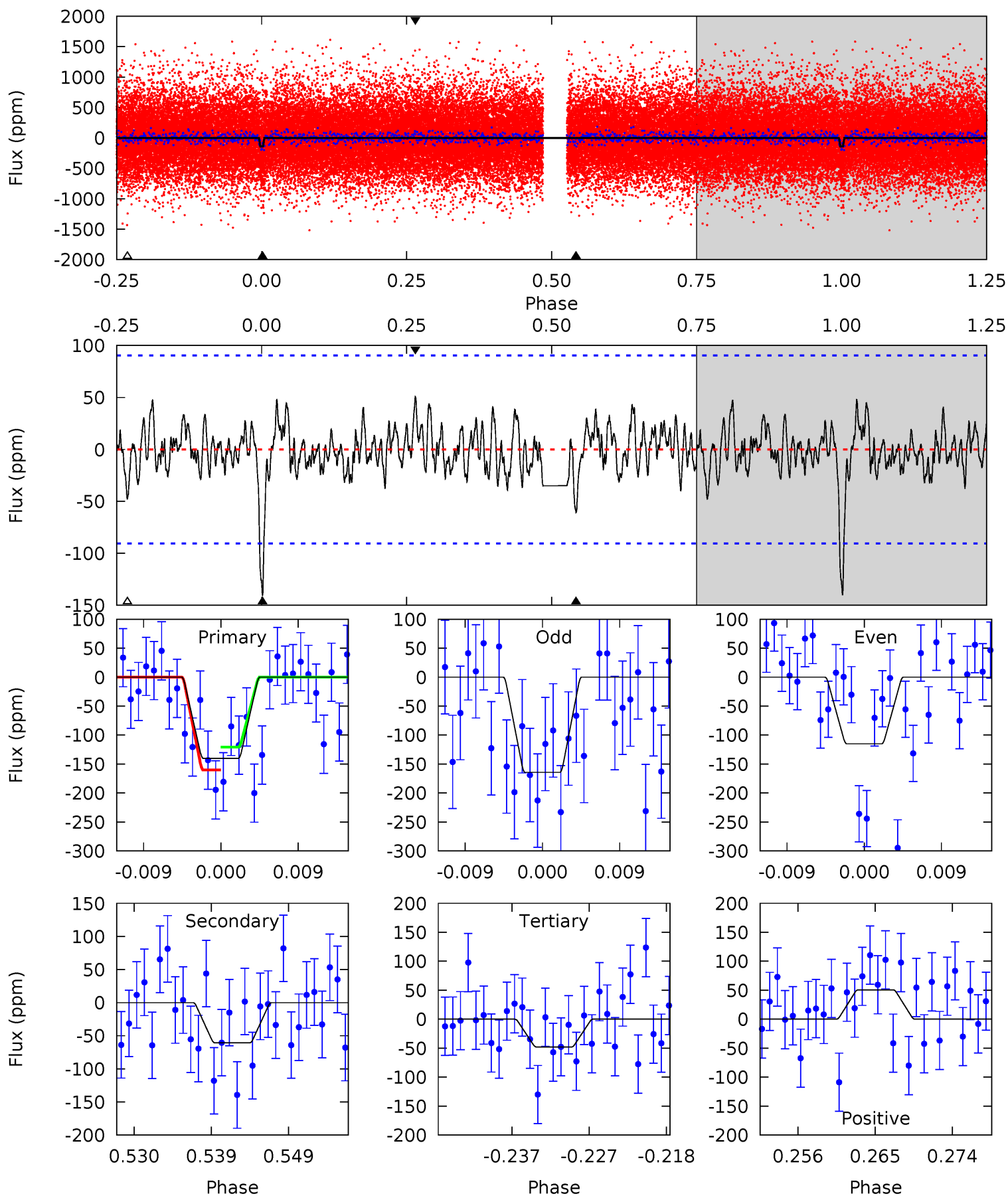
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.49	3.62	2.28	3.56	4.97	2.48	1.03	7.22	5.94	1.34	0.06	0.25	1.01	0.27	0.89



Alt Model-Shift Uniqueness Test

011955499-02, P = 9.041973 Days, E = 124.243800 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.81	3.38	2.67	2.82	5.04	2.59	1.00	5.14	4.99	0.70	0.56	1.37	0.85	0.27	1.11



Stellar Parameters For KIC 011955499

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5237^{+157}_{-157}	$4.572^{+0.028}_{-0.112}$	$0.240^{+0.200}_{-0.300}$	$0.826^{+0.124}_{-0.057}$	$0.927^{+0.046}_{-0.093}$	$2.315^{+0.376}_{-0.723}$
	+3%/-3%	+1%/-2%	+83%/-125%	+15%/-7%	+5%/-10%	+16%/-31%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011955499-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-55 ± 15	$1.78^{+1.40}_{-1.12}$	1035^{+48}_{-39}	3662^{+1655}_{-642}	64^{+404}_{-44}
Alt.	-61 ± 18	$1.75^{+1.54}_{-1.13}$	1035^{+43}_{-40}	3716^{+1911}_{-693}	75^{+507}_{-56}

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

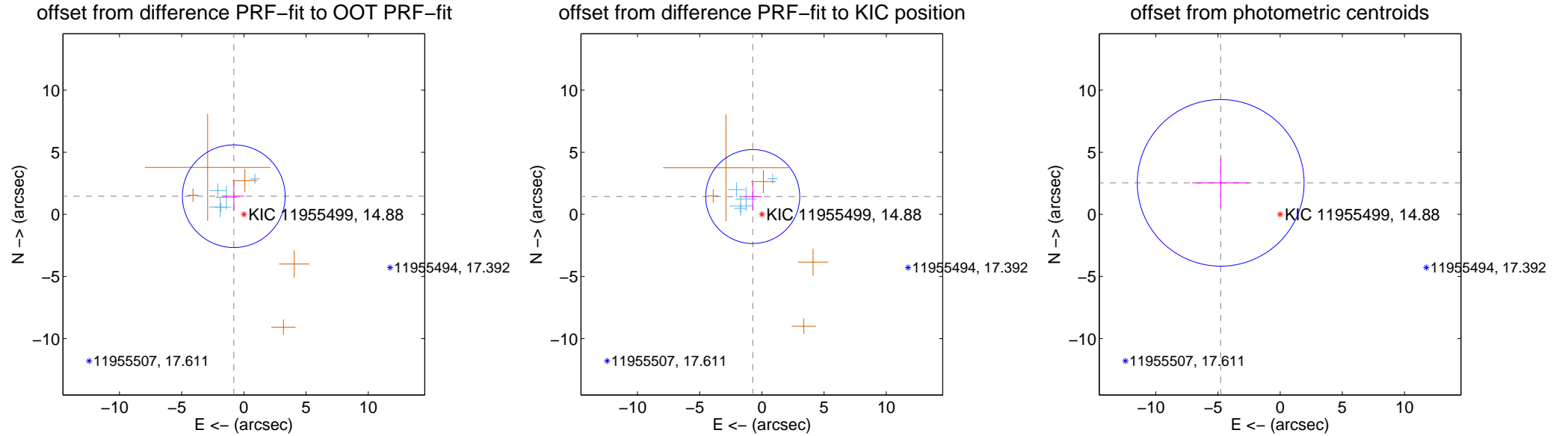
DV Centroid Data

Supplemental centroid analysis for 011955499-02. Kepler magnitude: 14.88. Transit SNR 8.03

There are 5 quarters with good PRF difference image offsets

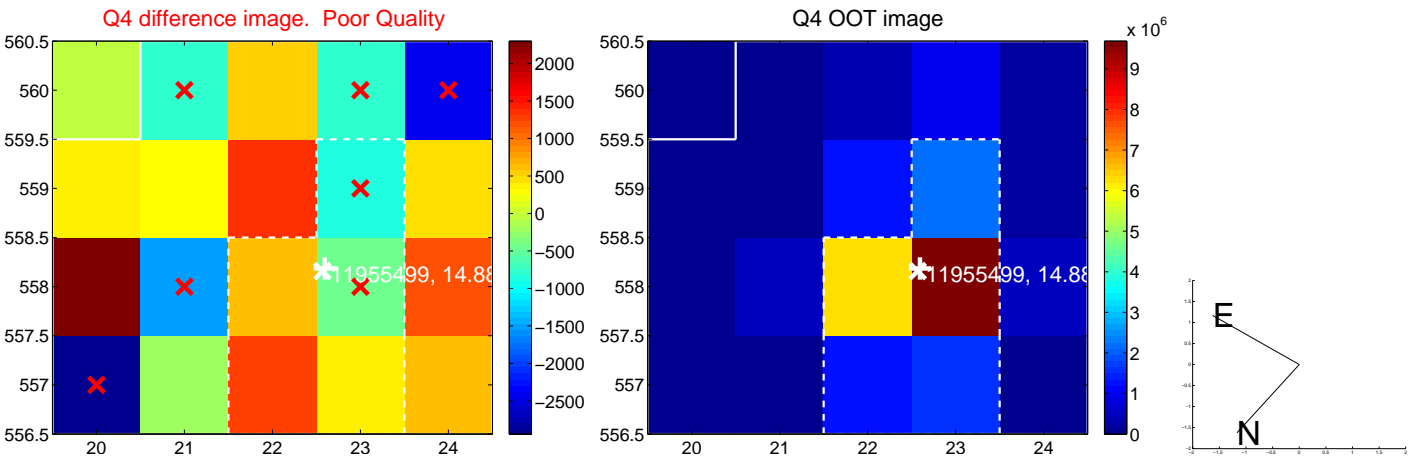
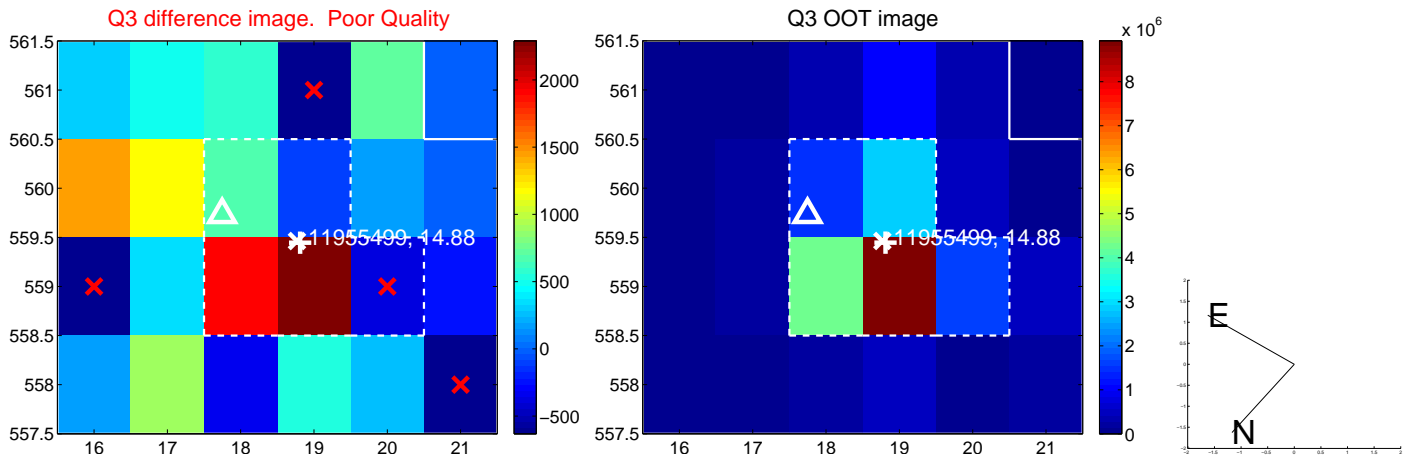
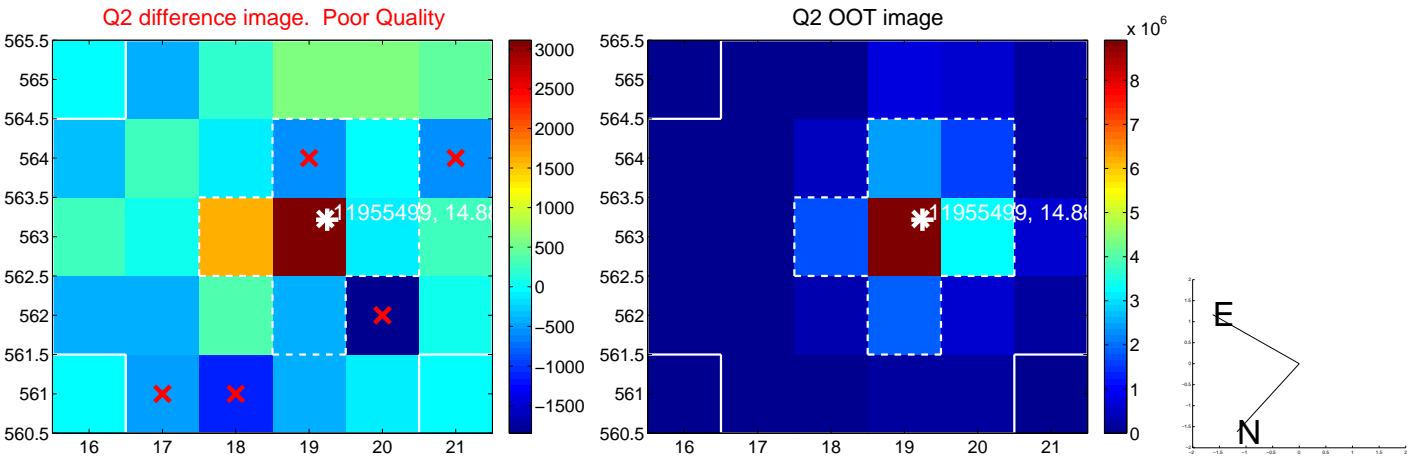
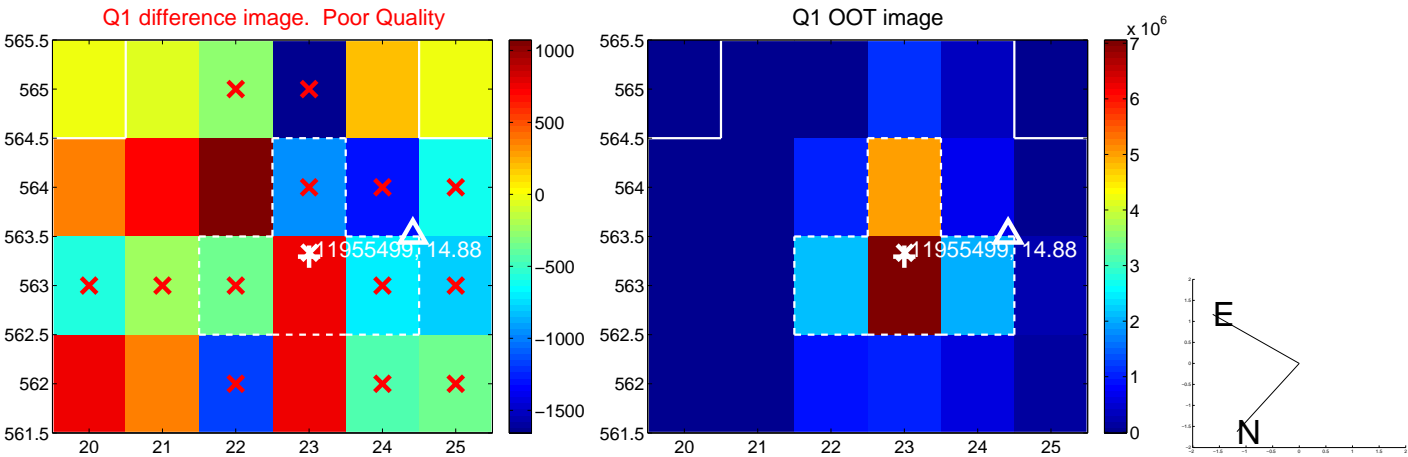
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.674 ± 1.377	1.22	0.812 ± 0.843	1.464 ± 1.197
PRF-fit source offset from KIC position	1.613 ± 1.260	1.28	0.735 ± 0.716	1.436 ± 1.112
photometric centroid source offset	5.41 ± 2.23	2.42	4.78 ± 2.30	2.54 ± 1.99

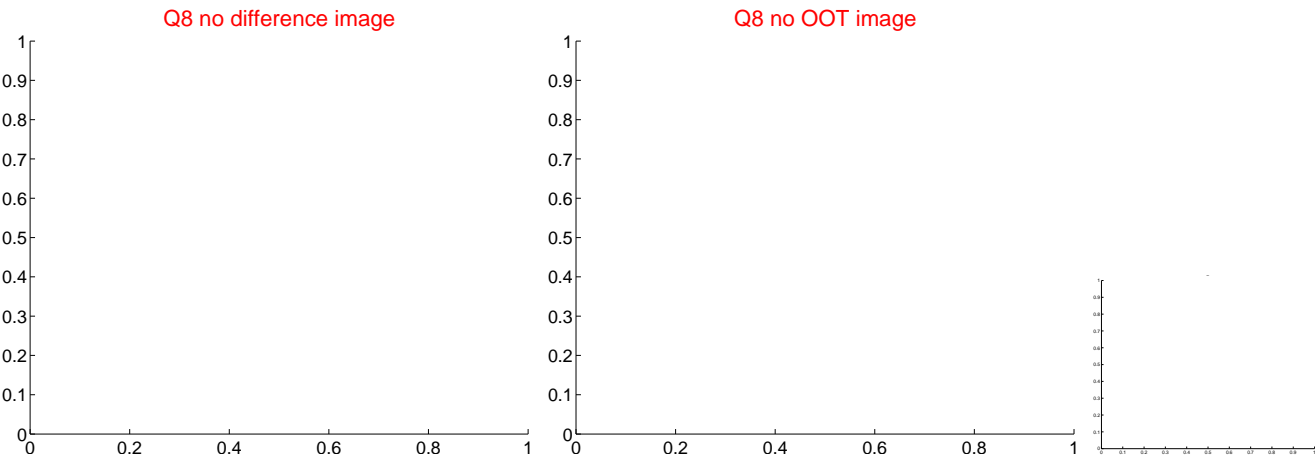
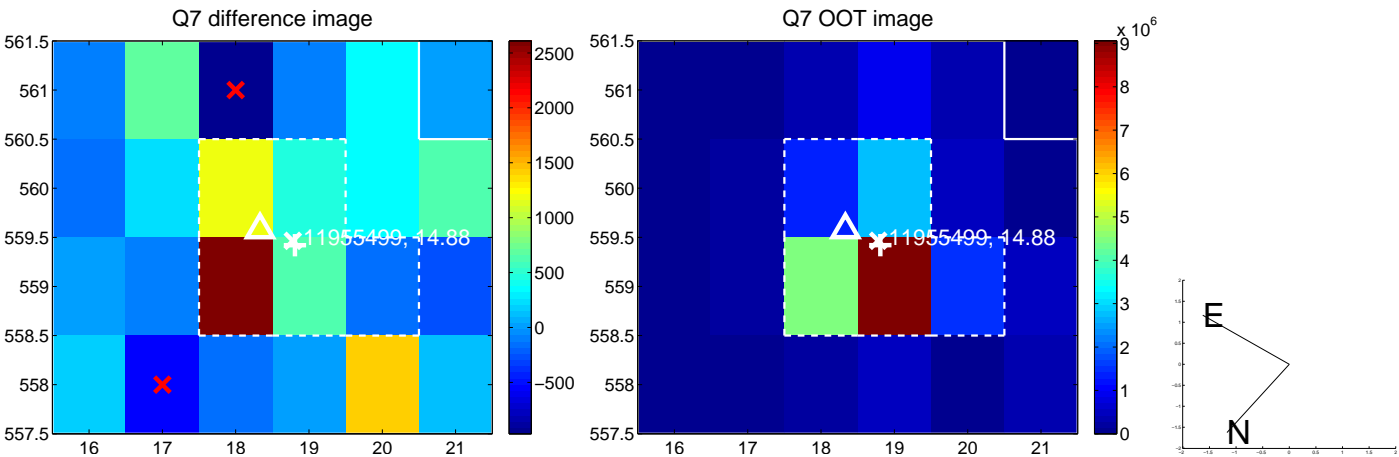
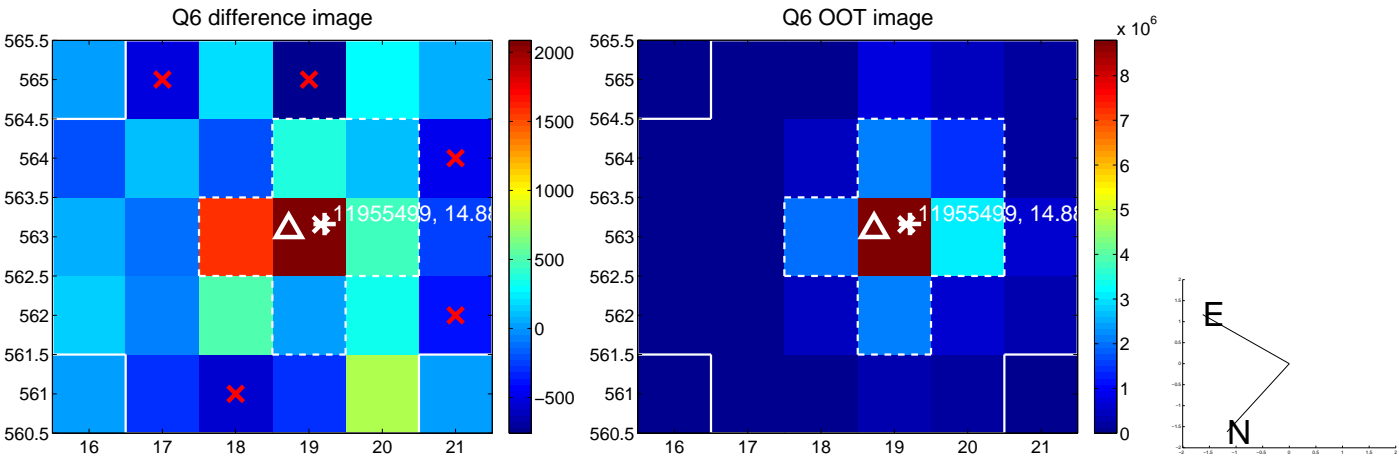
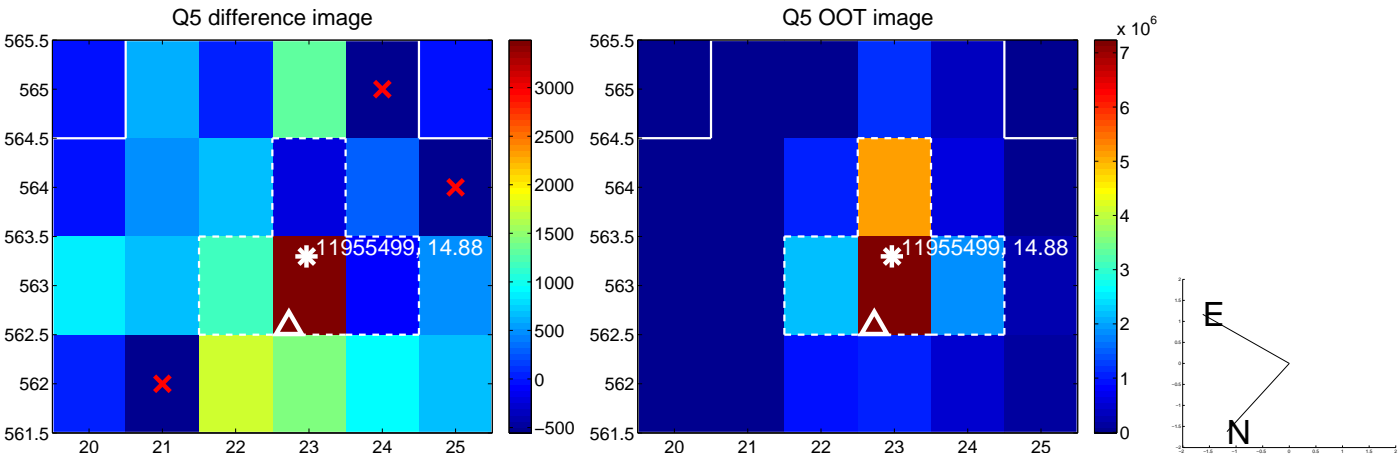


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

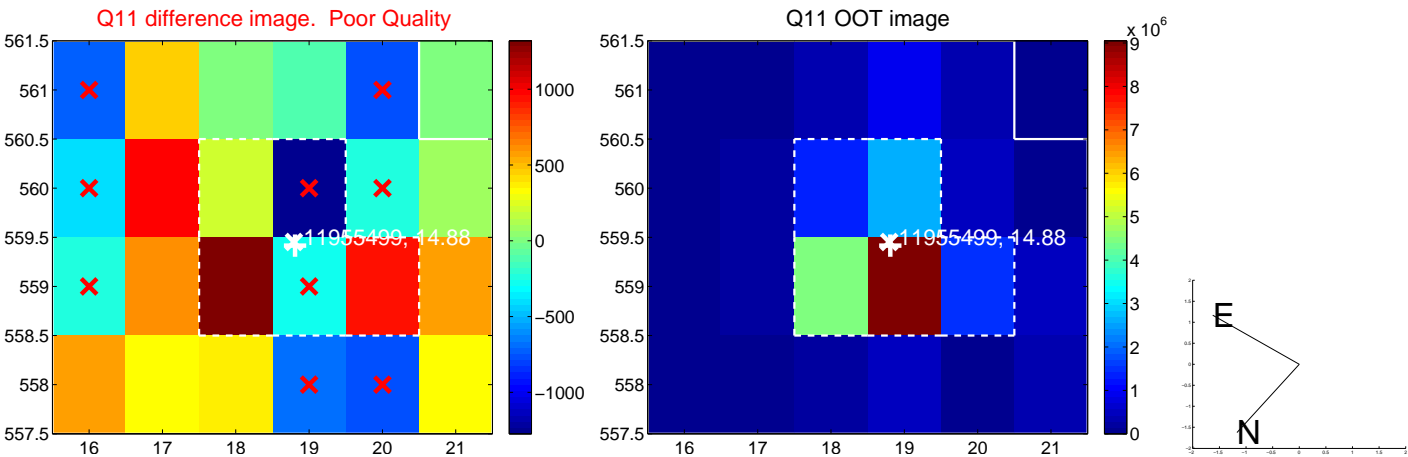
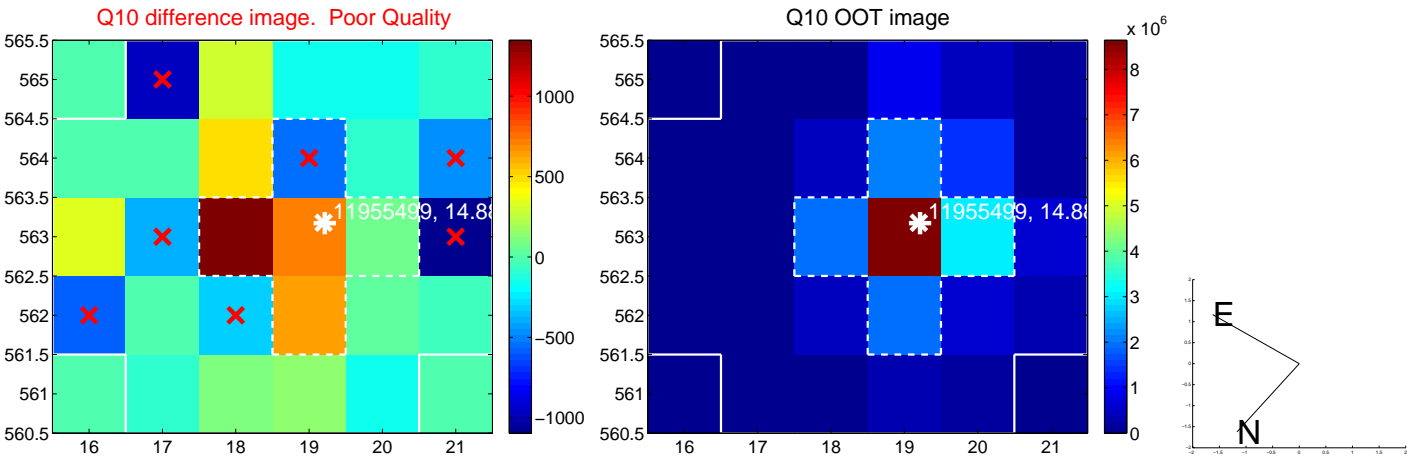
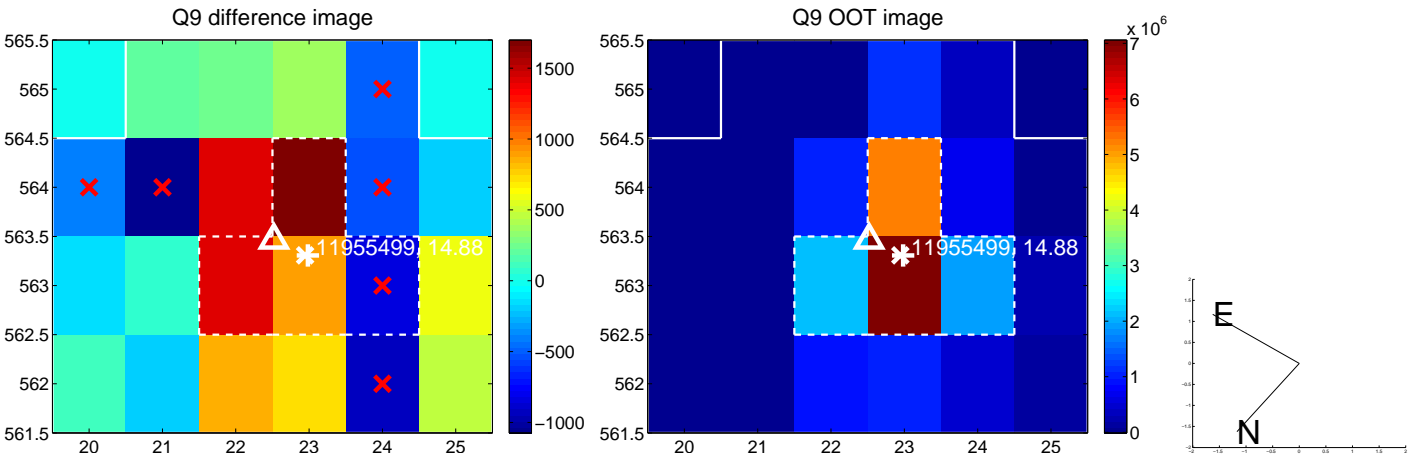
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



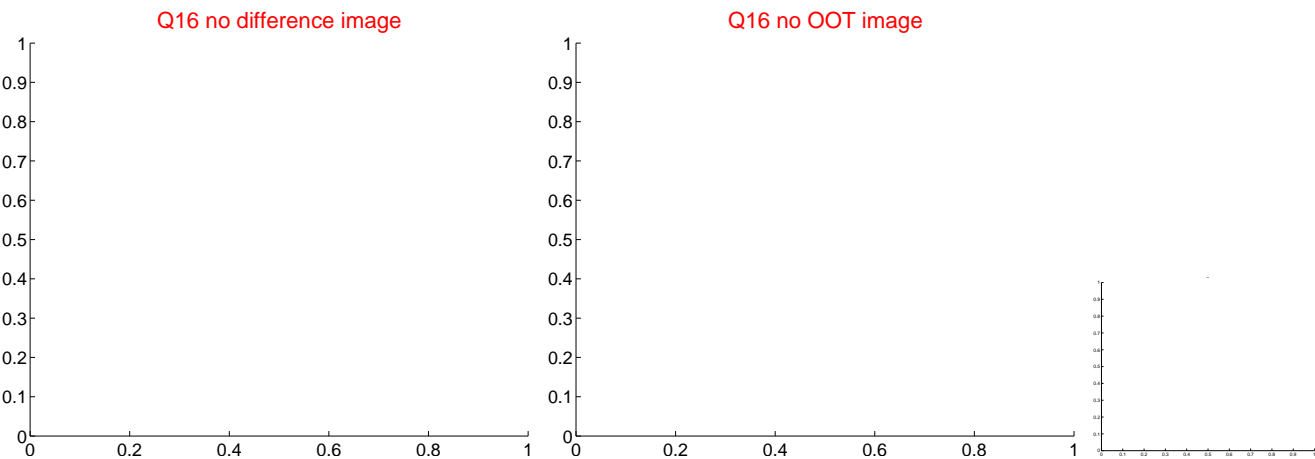
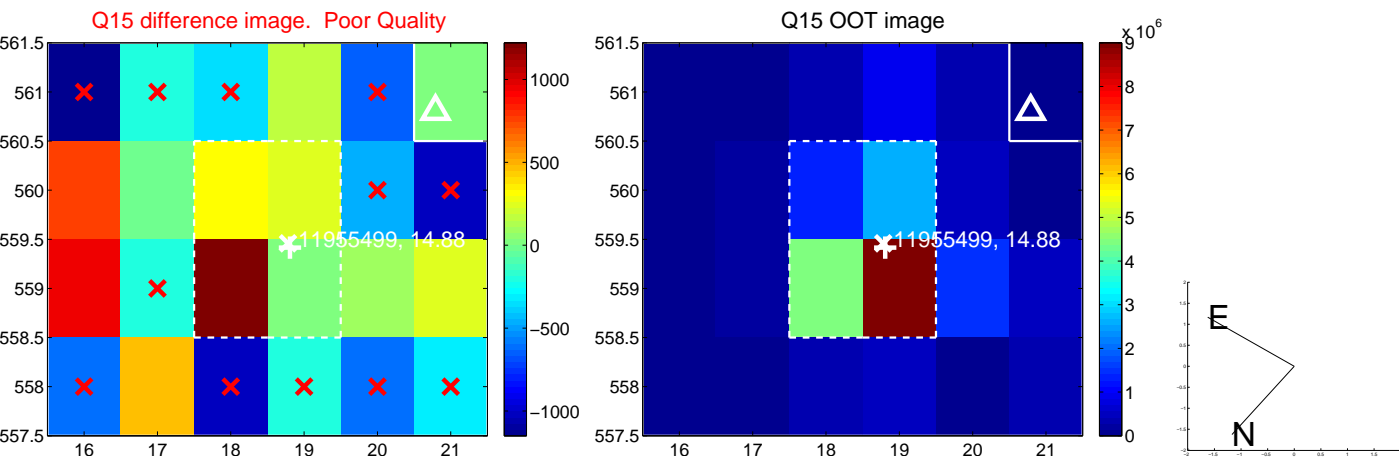
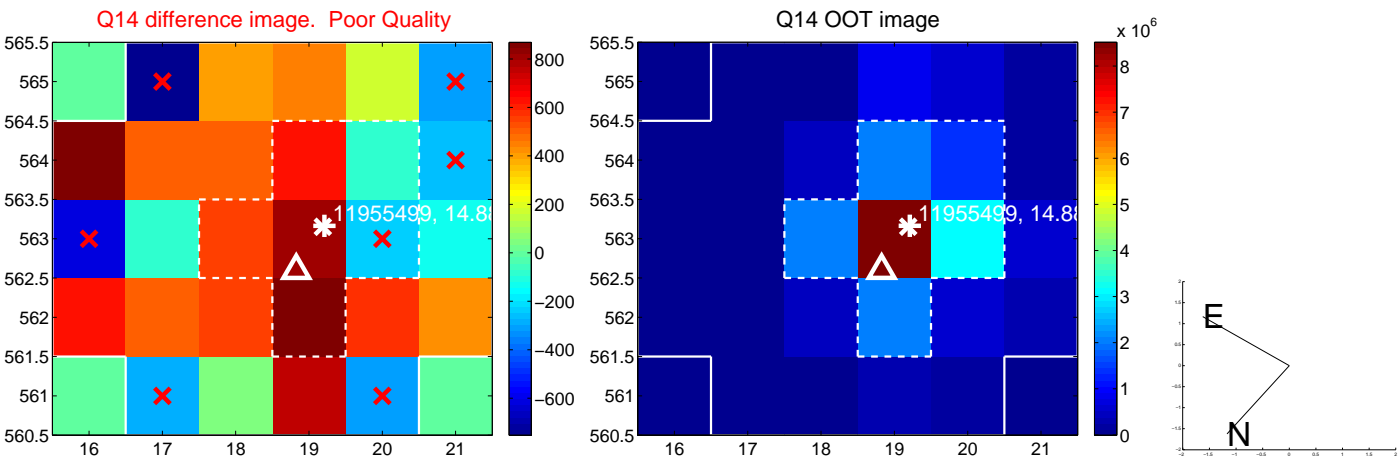
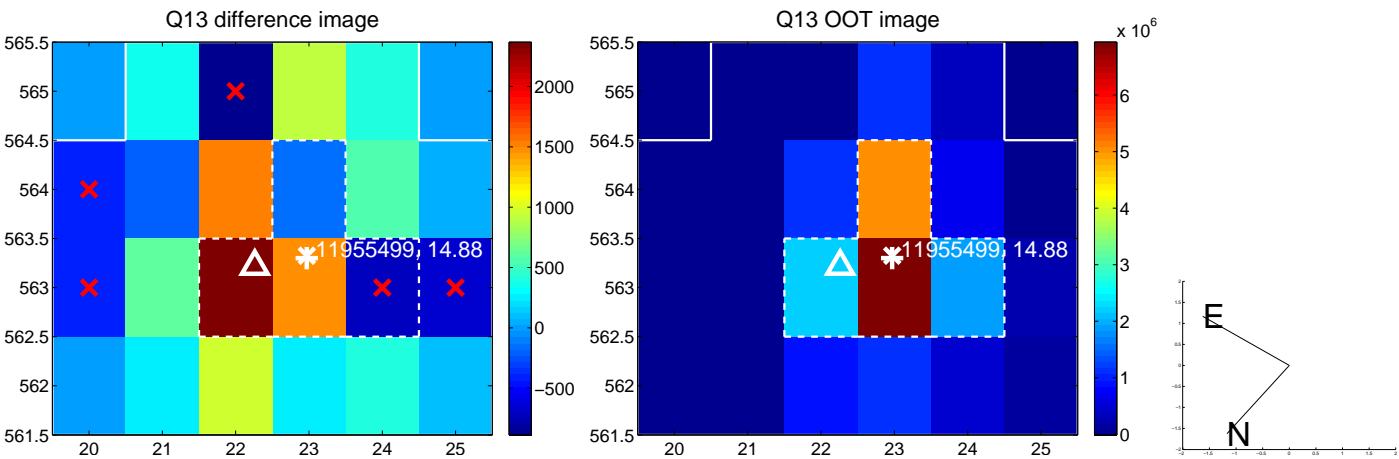
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



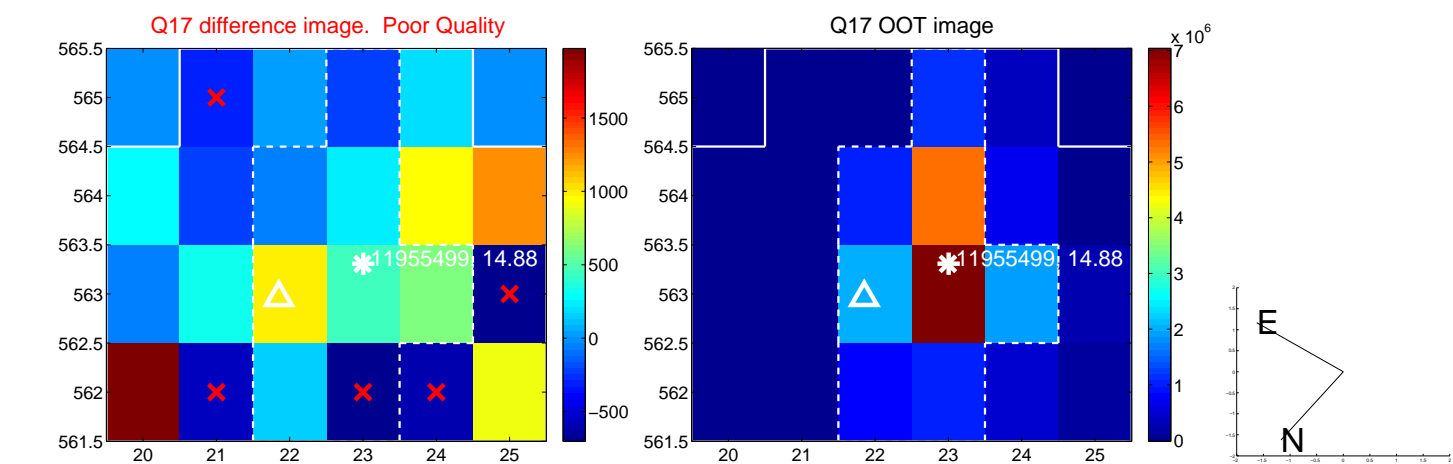
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



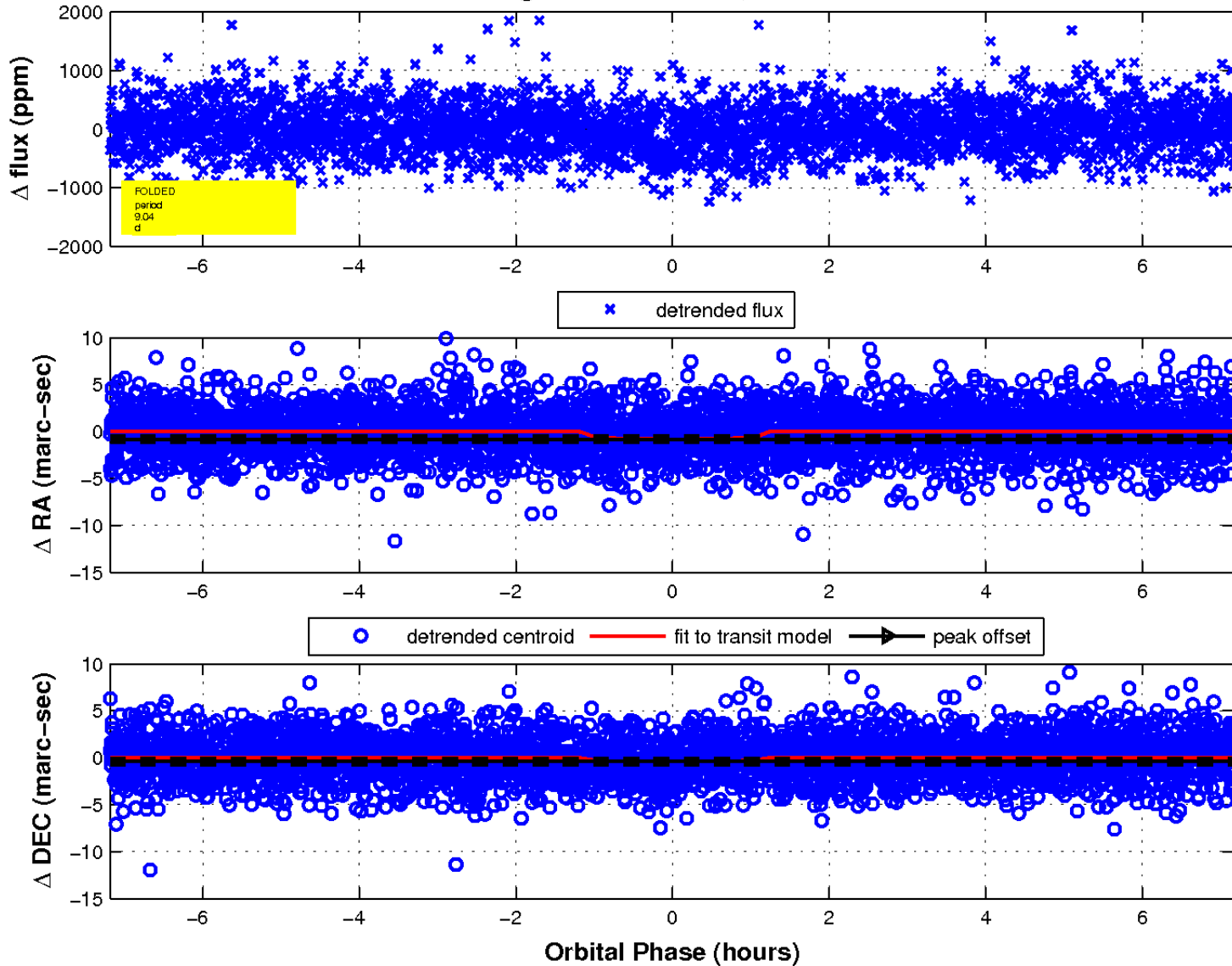
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

