

KIC 005546521

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})
005546521-01	OBS	No	1.523268	132.881586	27.9	3.487	8.0	5.9	0.93	6328	0.58	1902.16
005546521-02	OBS	No	1.523389	132.161337	16.0	13.613	8.2	5.7	0.93	6328	0.37	1901.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005546521-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_KIC_POS
005546521-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

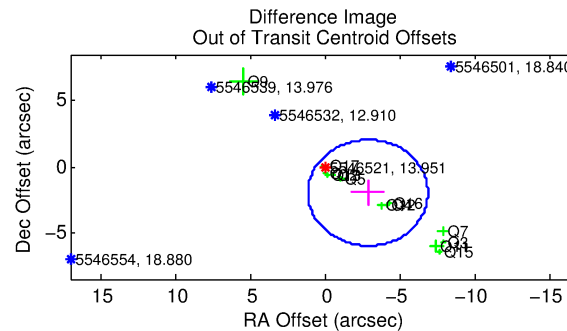
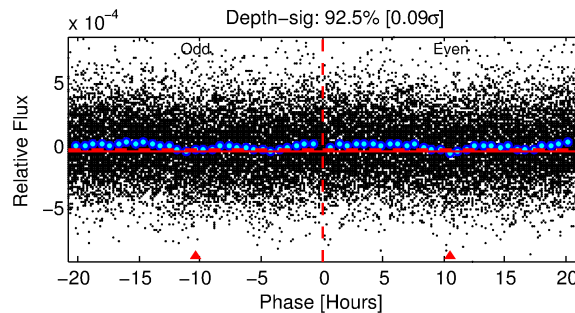
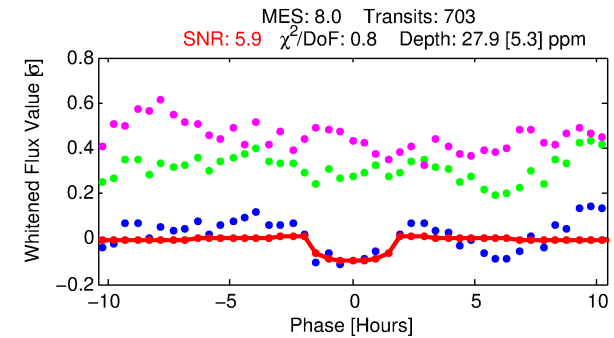
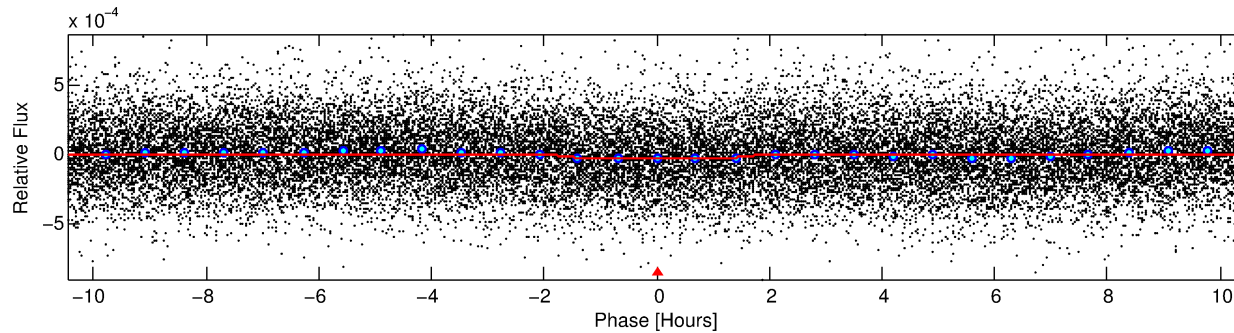
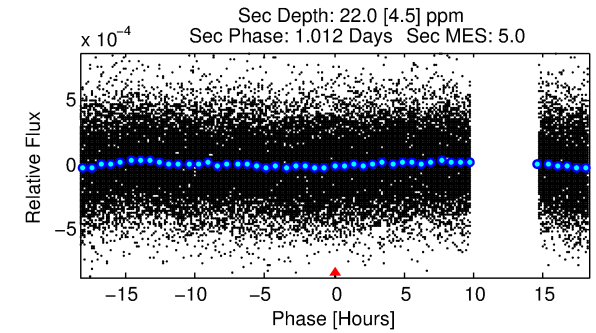
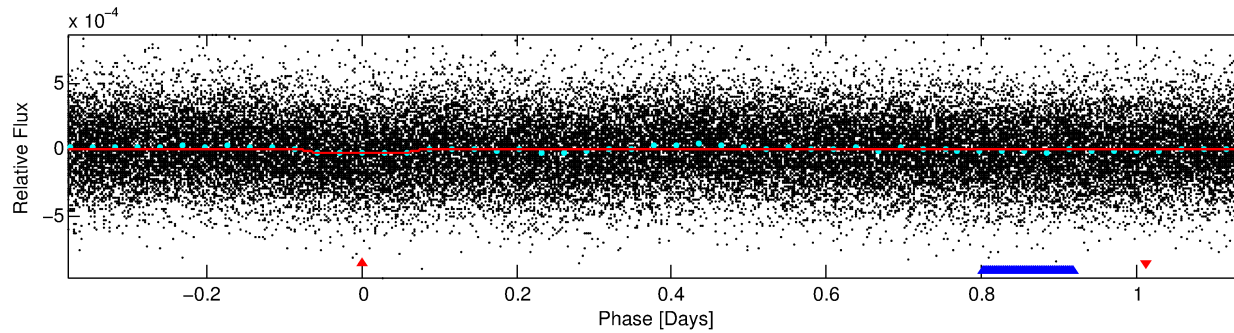
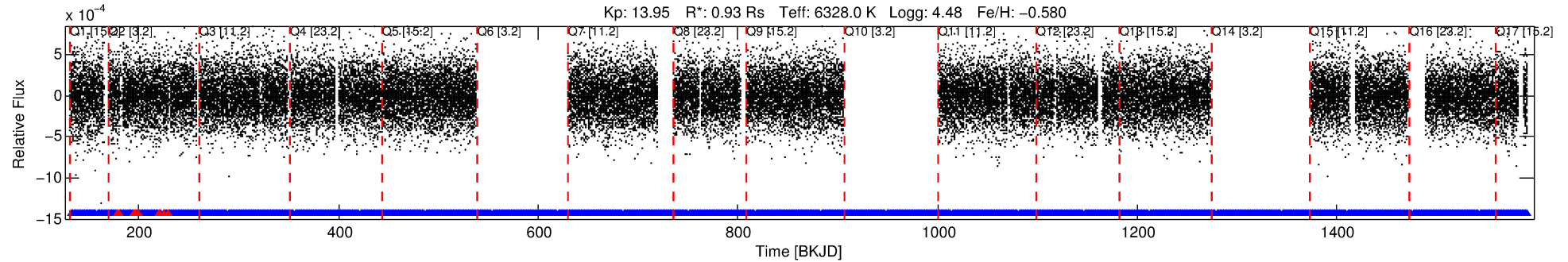
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005546521-01

No Significant Match Found

DV One-Page Summary

KIC: 5546521 Candidate: 1 of 2 Period: 1.523 d



DV Fit Results:

Period = 1.52327 [0.00002] d
Epoch = 132.8816 [0.0061] BKJD
Rp/R* = 0.0058 [0.0030]
a/R* = 1.66 [3.23]
b = 0.92 [0.52]
Seff = 1902.16 [759.44]
Teq = 1684 [168] K
Rp = 0.58 [0.35] Re
a = 0.0256 [0.0065] AU
Ag = 23.21 [26.27] [0.85σ]
Teffp = 5714 [1536] K [2.61σ]

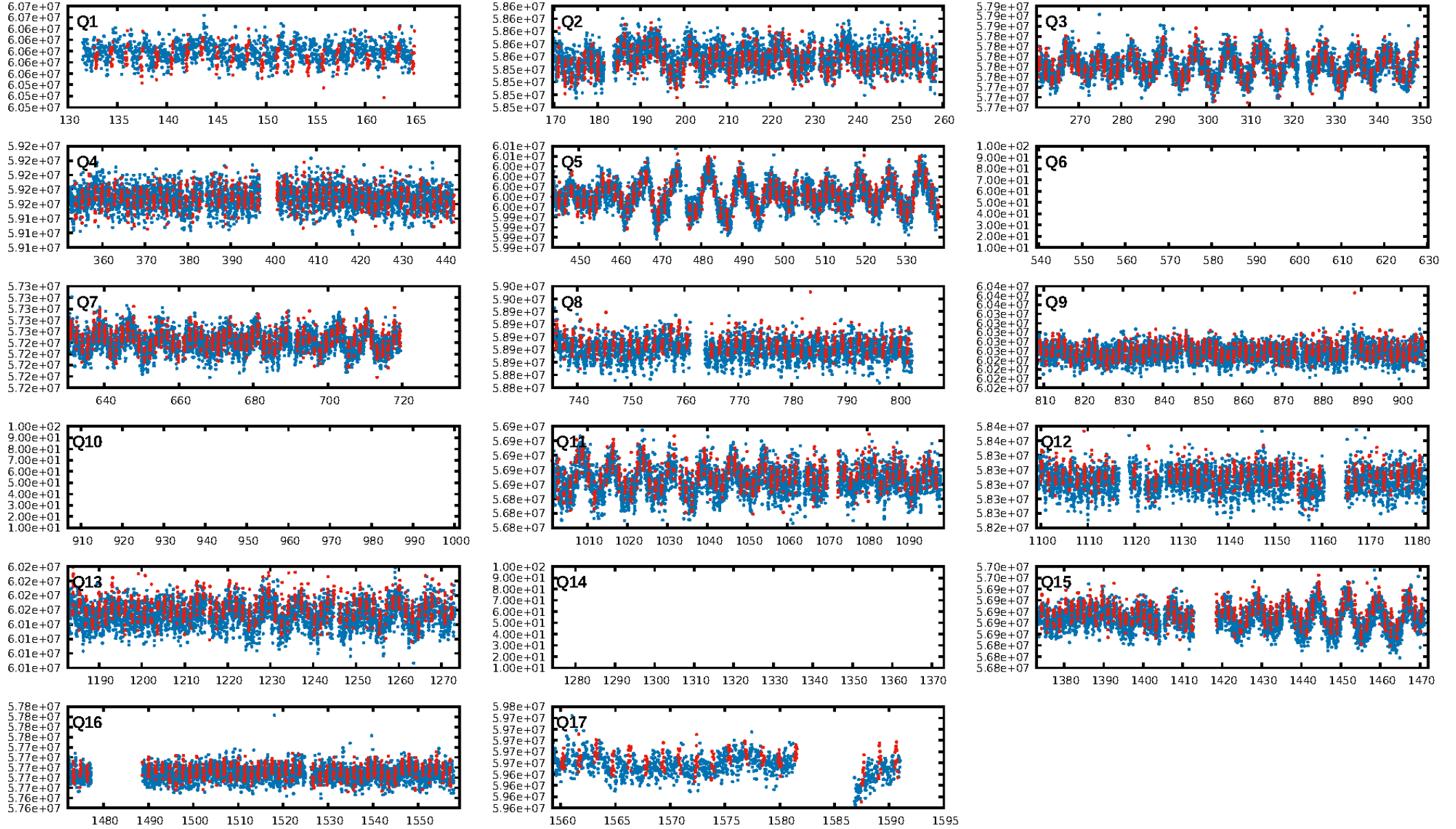
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [655/663]
GhostDiagnostic-chr: 1.277
Centroid-sig: 14.6%
Centroid-so: 0.865 arcsec [0.43σ]
OotOffset-rm: 3.501 arcsec [2.62σ]
KicOffset-rm: 0.228 arcsec [0.37σ]
OotOffset-st: 1/4/3/5 [13]
KicOffset-st: 1/4/3/5 [13]
DiffImageQuality-fgm: 0.46 [6/13]
DiffImageOverlap-fno: 0.79 [11/14]

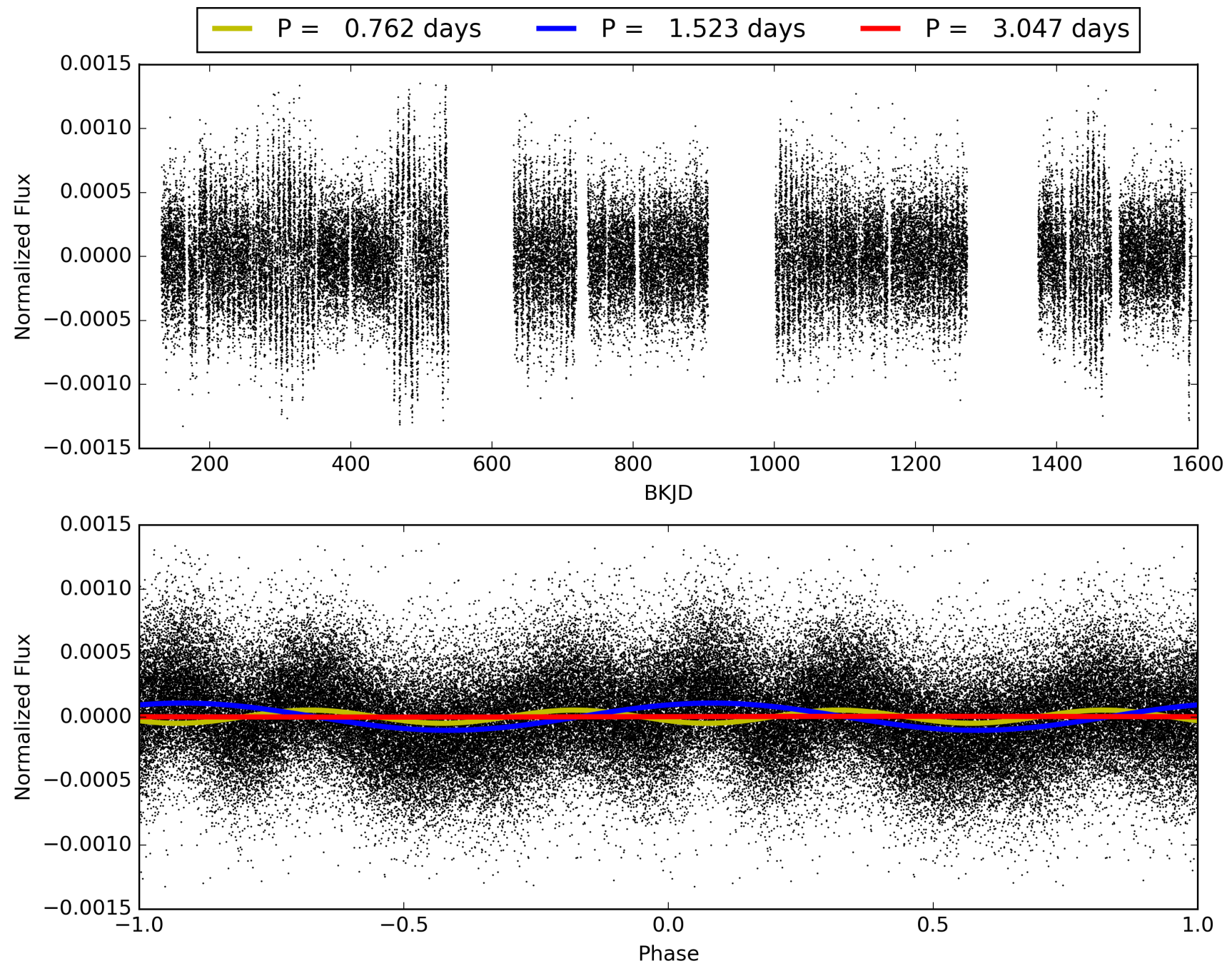
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 04:14:38 Z

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

TCE 005546521-01, PDC Light Curves

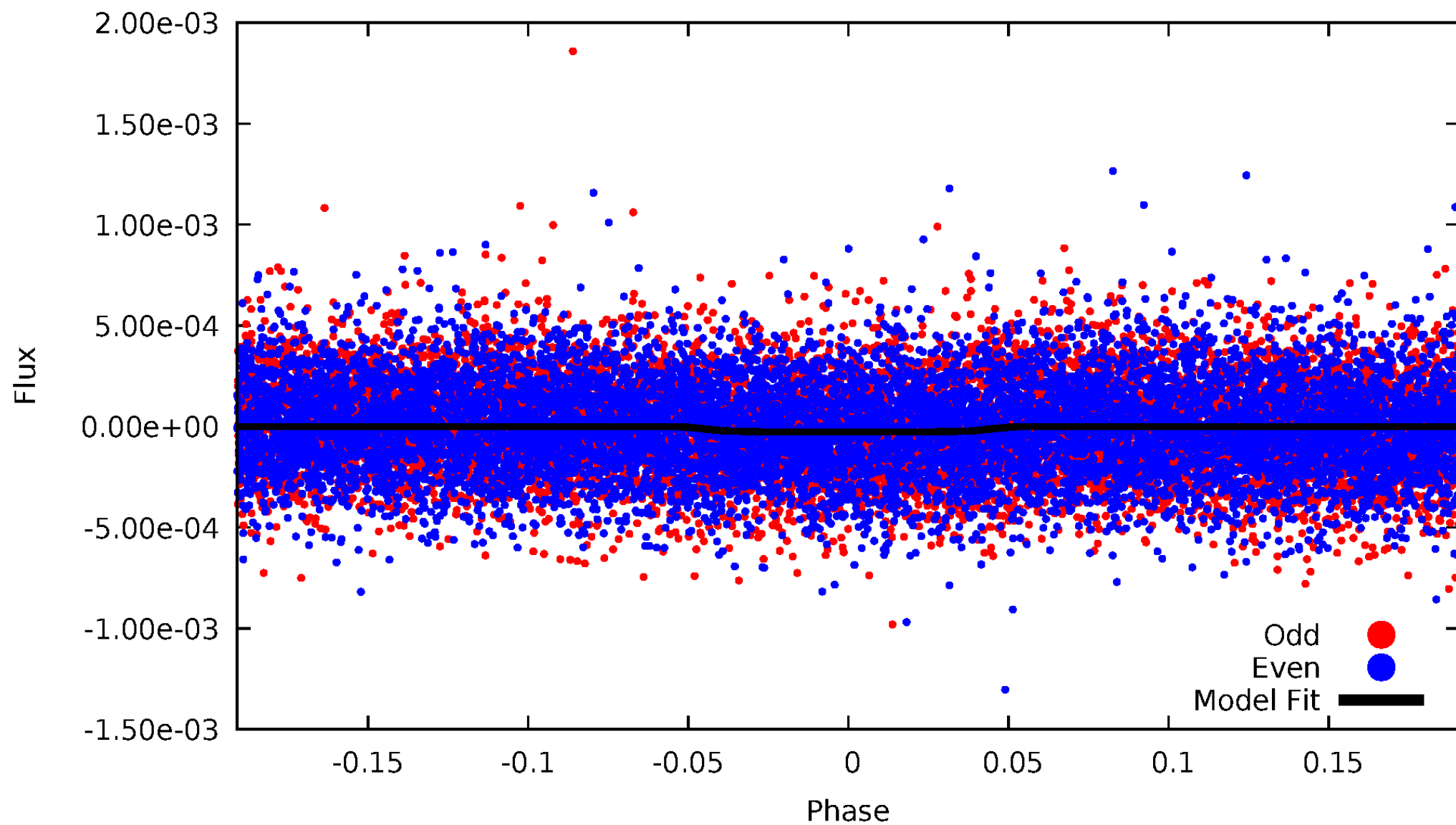


TCE 005546521-01



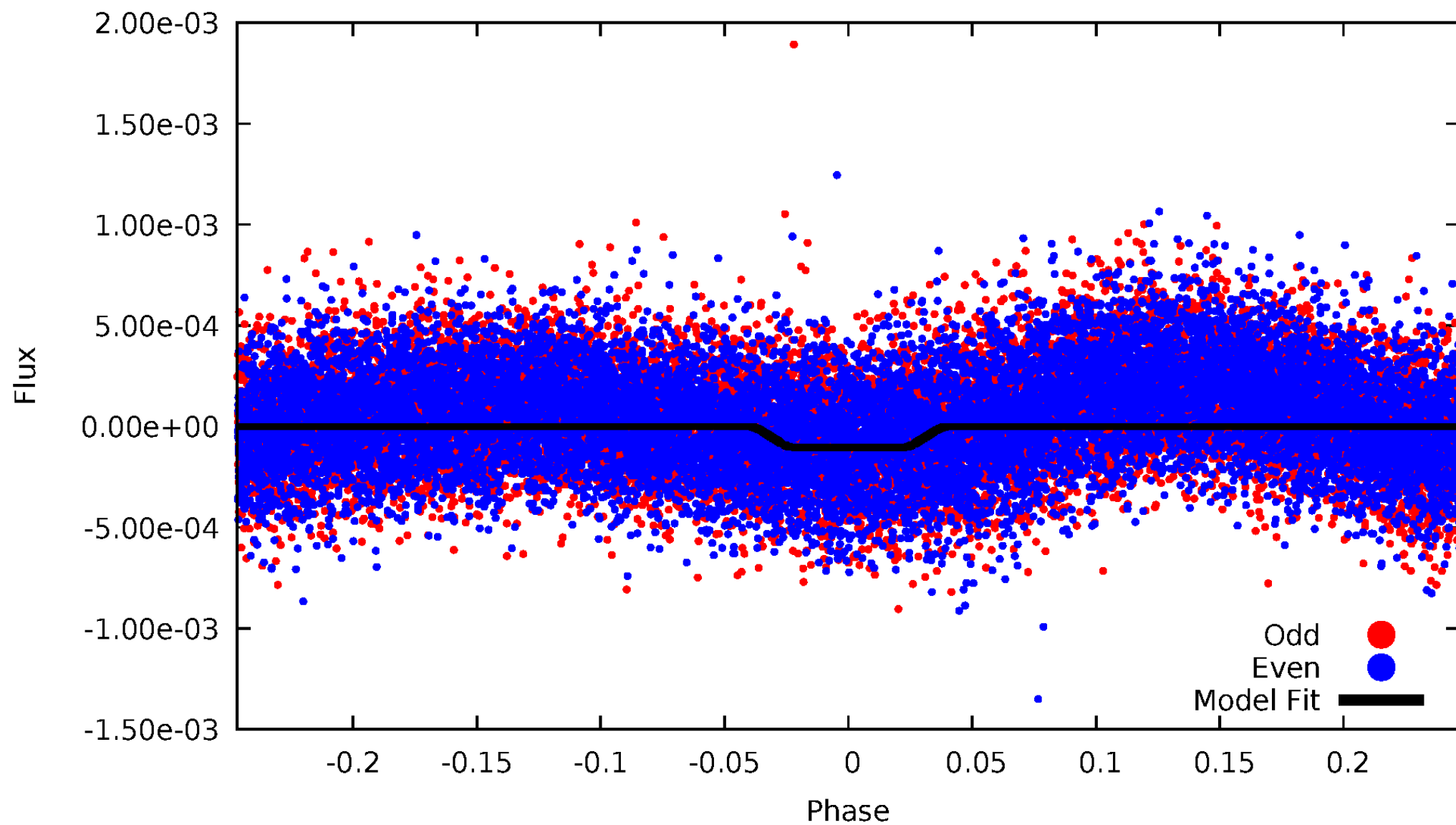
DV Odd/Even

TCE 005546521-01

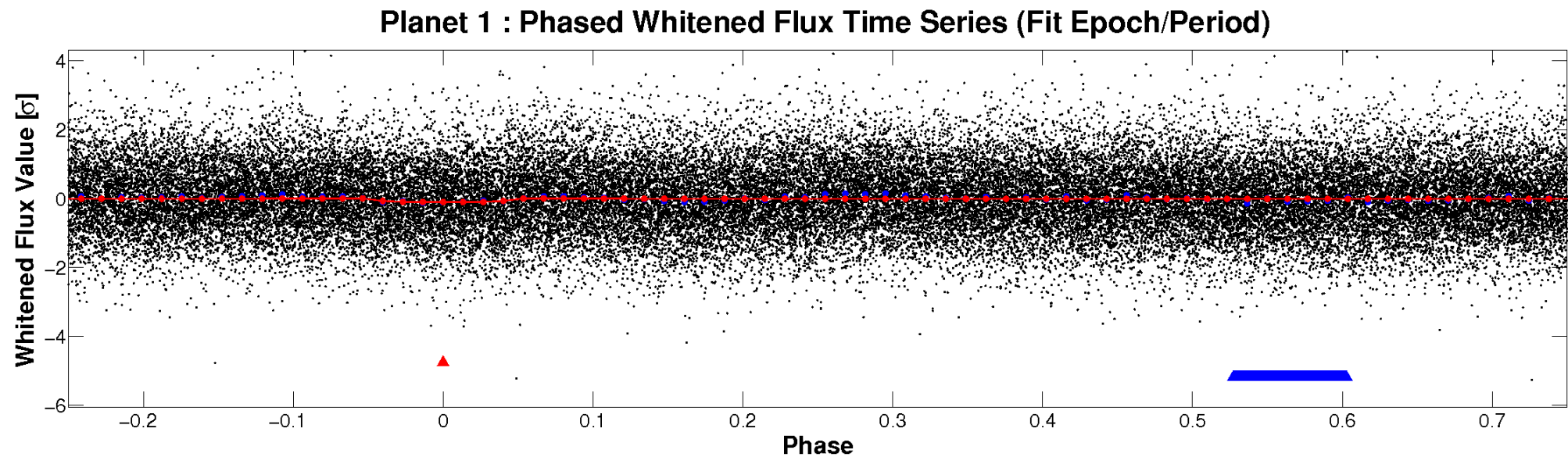
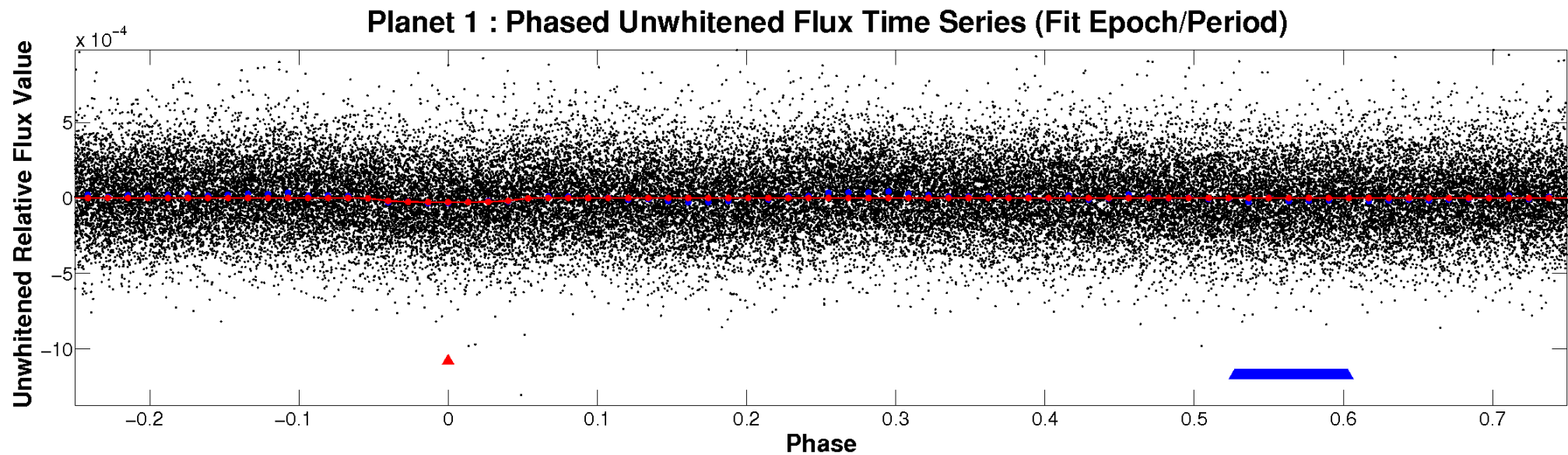


ALT Odd/Even

TCE 005546521-01

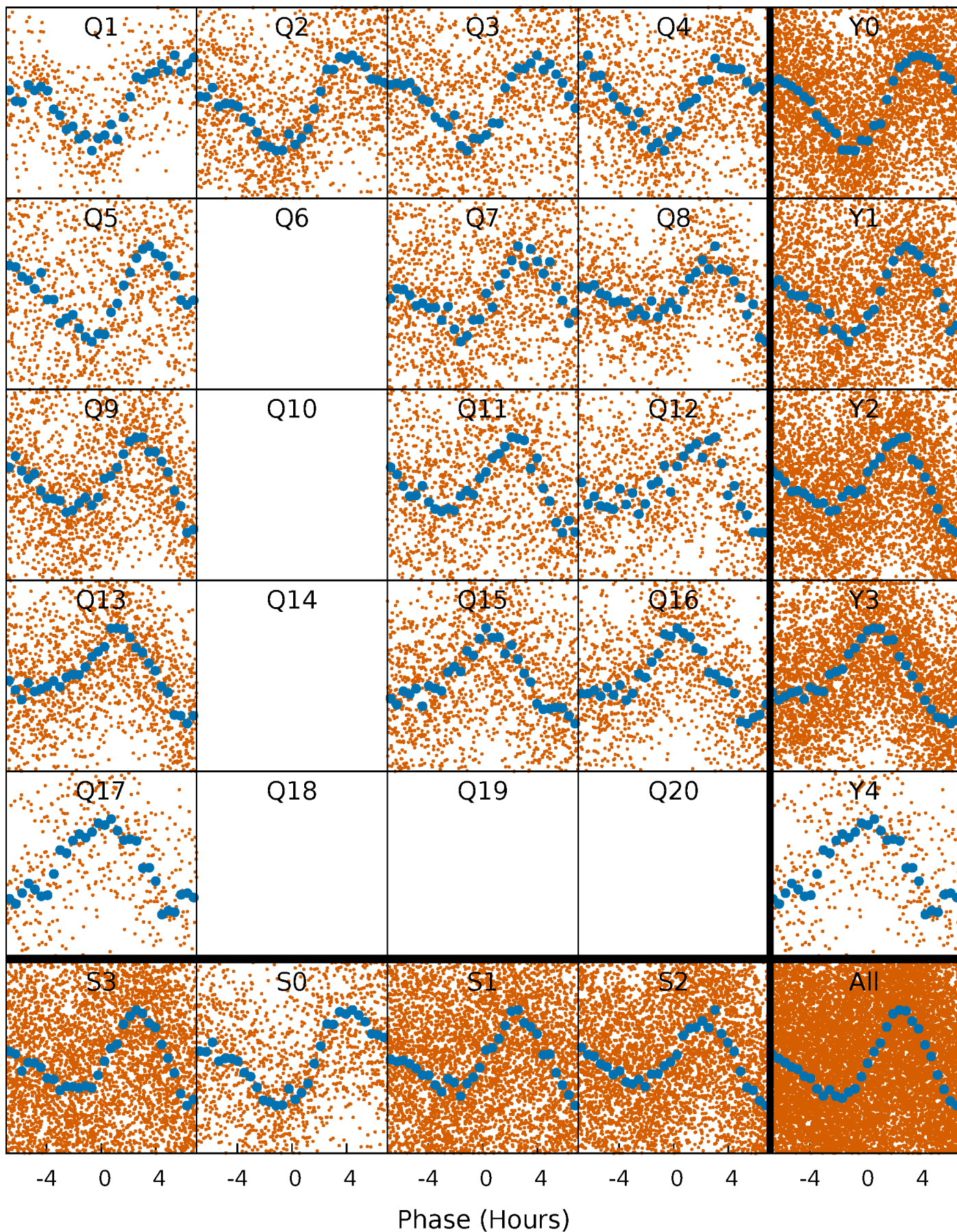


Non-Whitened Vs. Whitened Light Curve



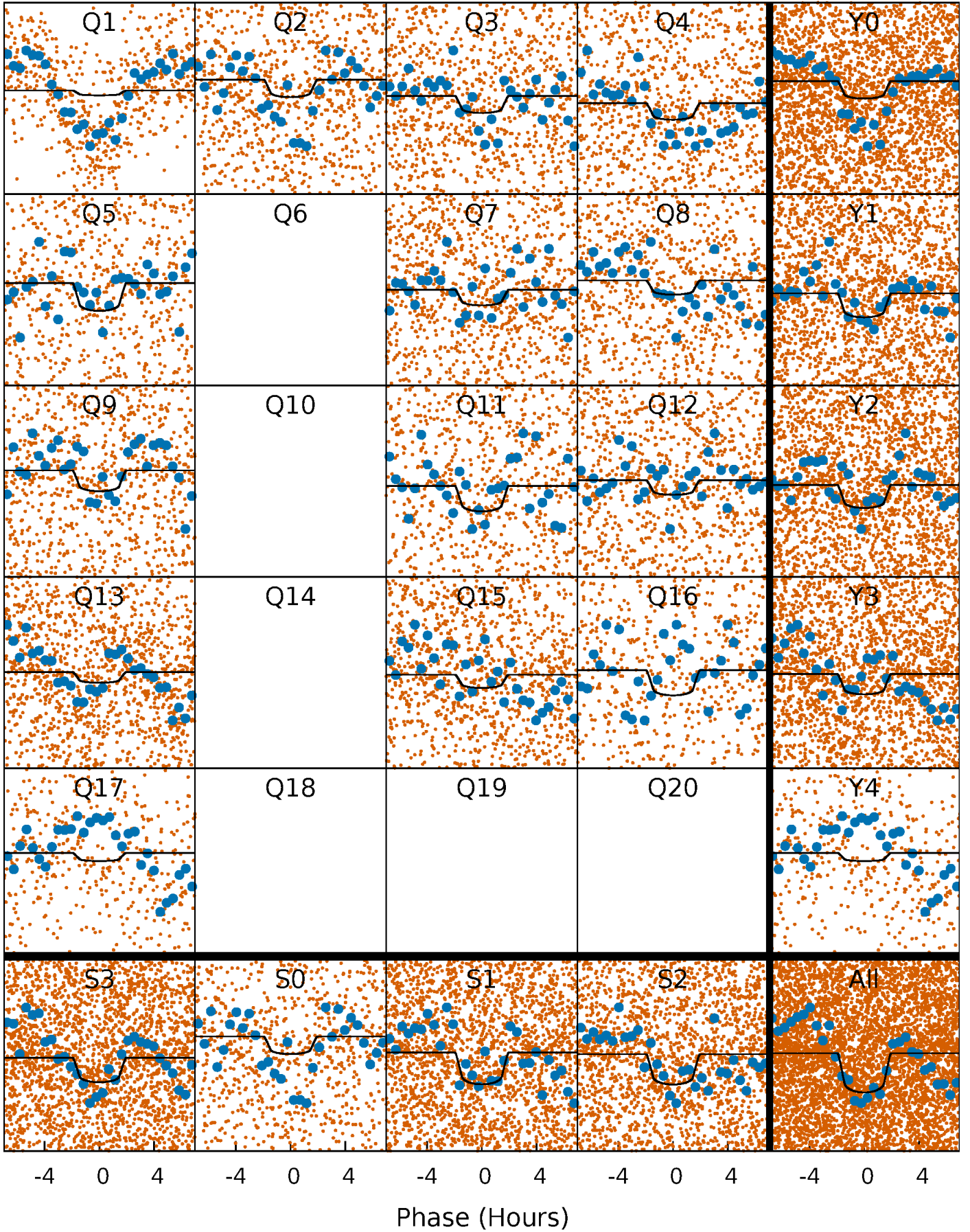
PDC Quarter-Phased Transit Curves

TCE 005546521-01 P= 1.523268 Days $T_0=132.881586$ (BKJD)



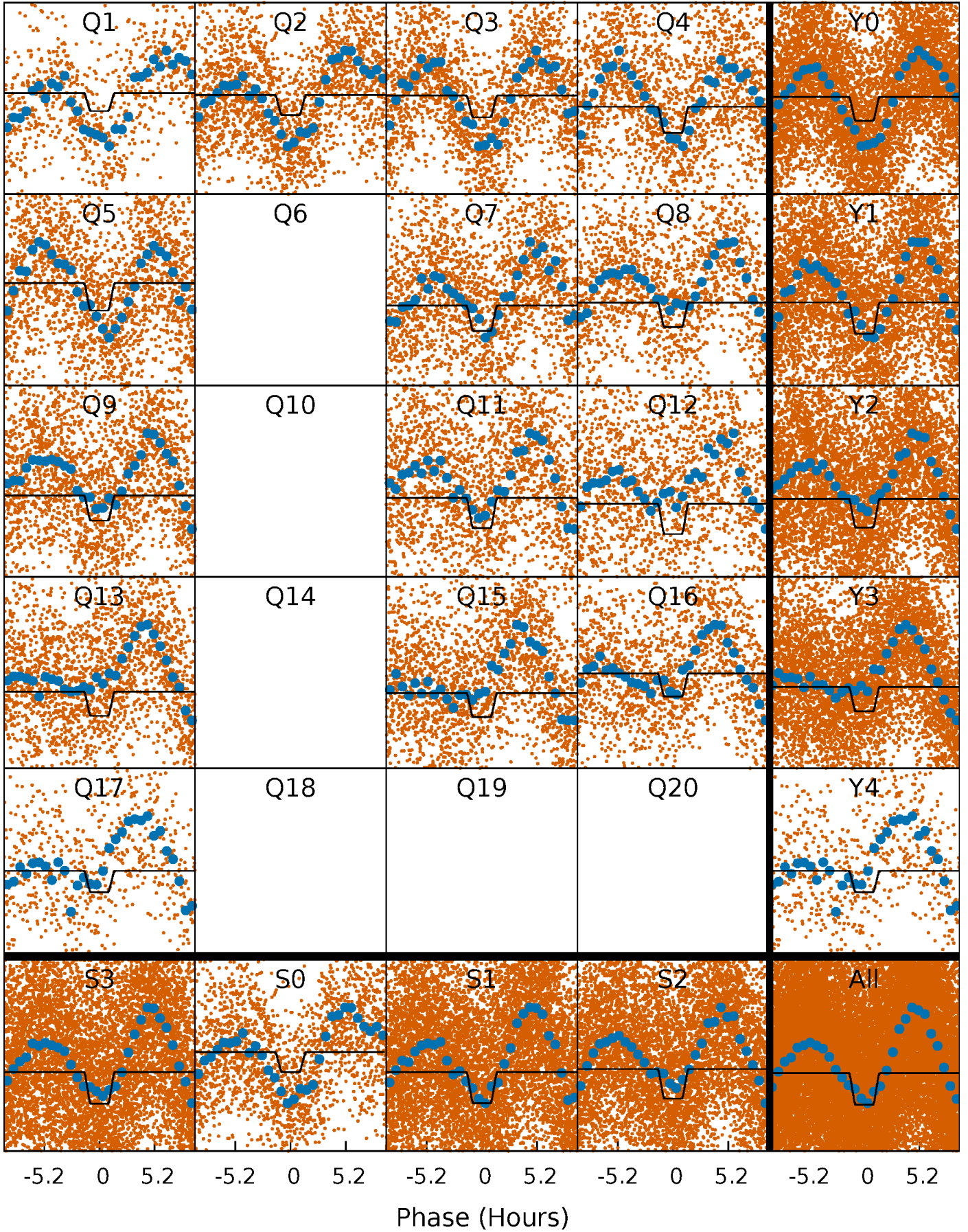
DV Quarter-Phased Transit Curves

TCE 005546521-01 P= 1.523268 Days $T_0=132.881586$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

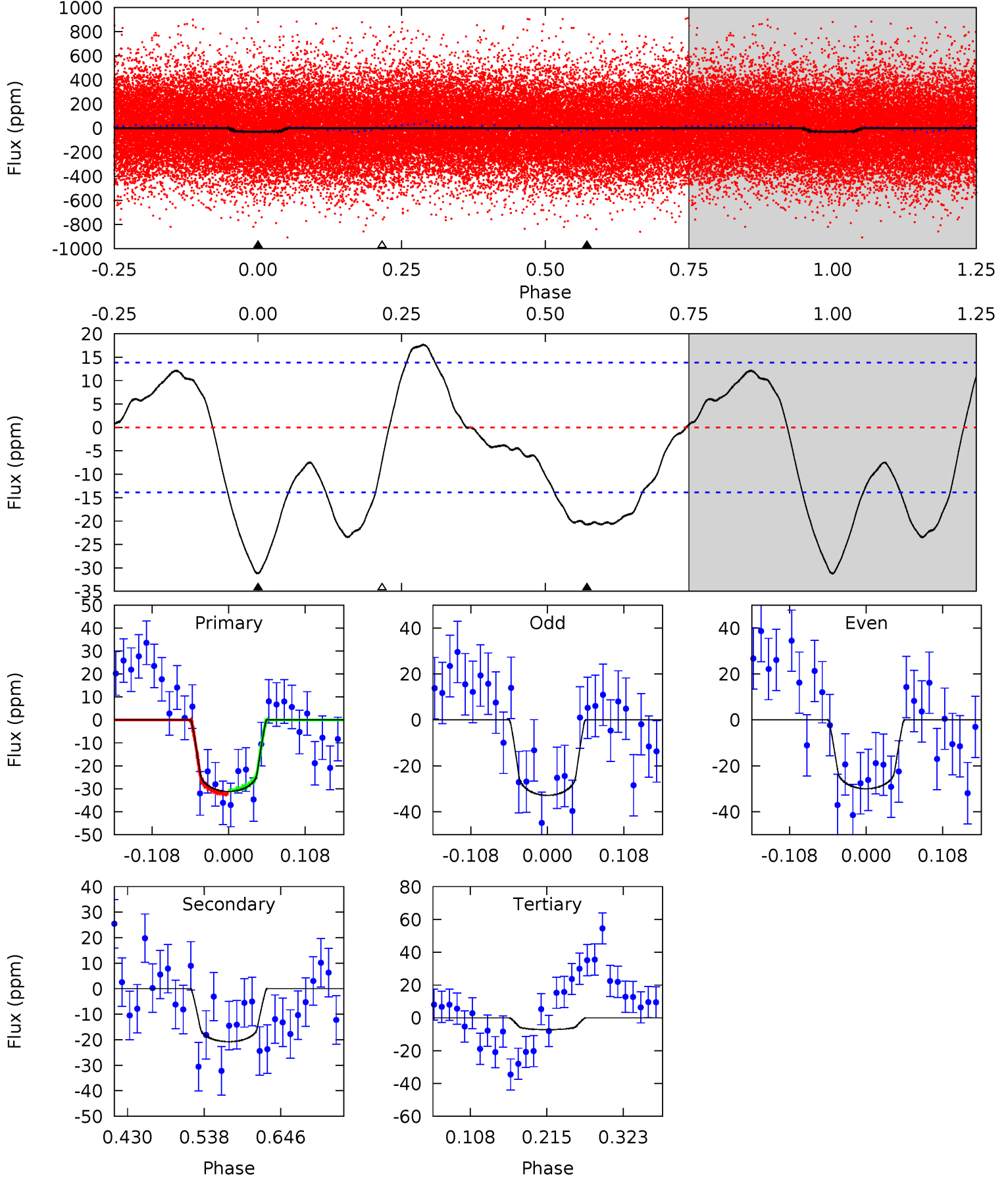
TCE 005546521-01 P= 1.523153 Days $T_0=132.841534$ (BKJD)



DV Model-Shift Uniqueness Test

005546521-01, P = 1.523268 Days, E = 131.358318 Days

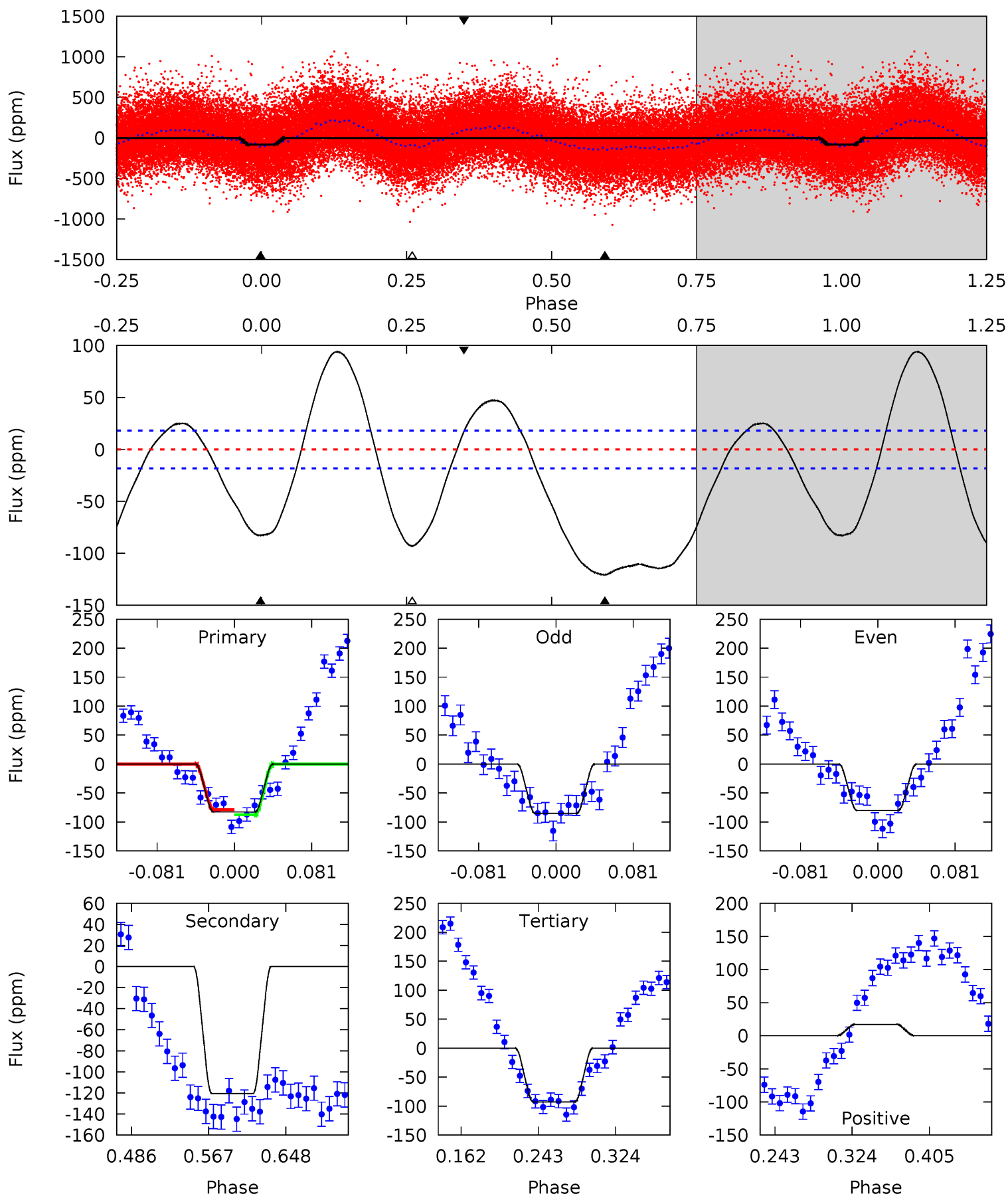
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	6.81	2.36	0	4.55	1.61	3.68	7.88	10.2	4.45	6.81	0.48	0.96	0.36	0.26



Alt Model-Shift Uniqueness Test

005546521-01, P = 1.523153 Days, E = 131.318381 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.0	30.6	23.6	4.37	4.61	1.75	14.7	-2.59	16.6	7.04	26.3	0.66	1.12	0.44	1.07



Stellar Parameters For KIC 005546521

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6328^{+171}_{-209}	$4.483^{+0.065}_{-0.208}$	$-0.580^{+0.300}_{-0.300}$	$0.930^{+0.279}_{-0.093}$	$0.959^{+0.118}_{-0.107}$	$1.679^{+0.450}_{-0.808}$
	+3%/-3%	+1%/-5%	+52%/-52%	+30%/-10%	+12%/-11%	+27%/-48%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005546521-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-21 ± 3	$0.62^{+0.33}_{-0.31}$	2387^{+149}_{-111}	5511^{+2375}_{-904}	18^{+56}_{-11}
Alt.	-121 ± 4	$1.08^{+0.36}_{-0.33}$	2386^{+183}_{-120}	6538^{+1457}_{-802}	37^{+39}_{-16}

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

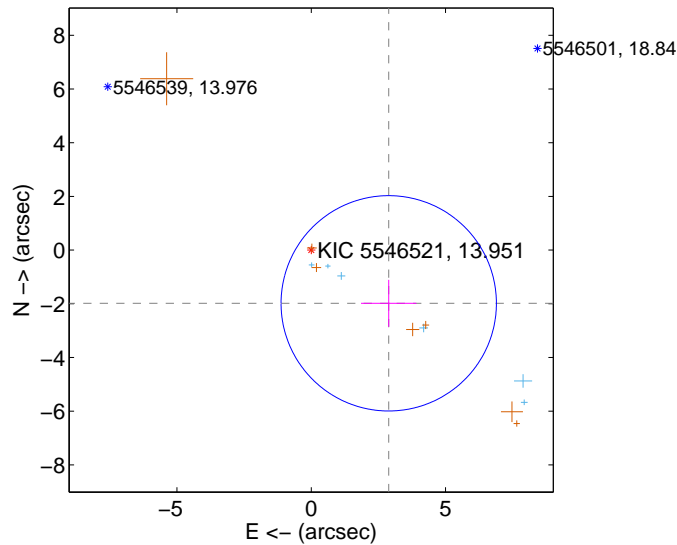
Supplemental centroid analysis for 005546521-01. Kepler magnitude: 13.95. Transit SNR 5.92

There are 6 quarters with good PRF difference image offsets

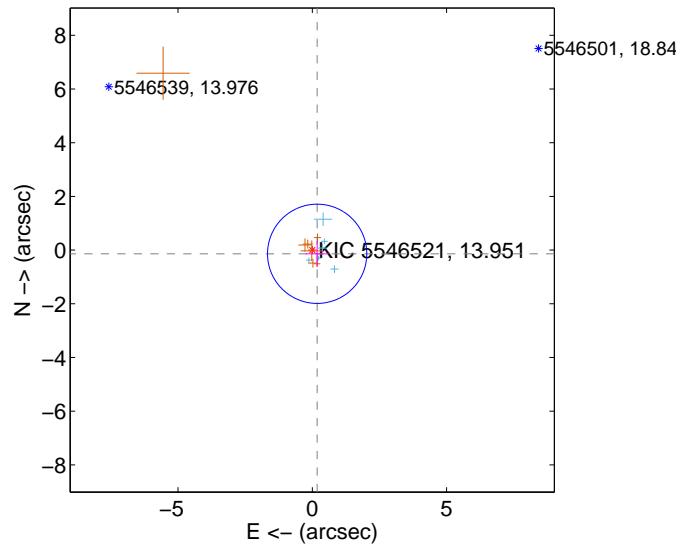
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.501 ± 1.337	2.62	-2.886 ± 1.031	-1.982 ± 0.875
PRF-fit source offset from KIC position	0.228 ± 0.616	0.37	-0.181 ± 0.427	-0.138 ± 0.477
photometric centroid source offset	0.87 ± 2.03	0.43	-0.80 ± 2.05	-0.32 ± 1.86

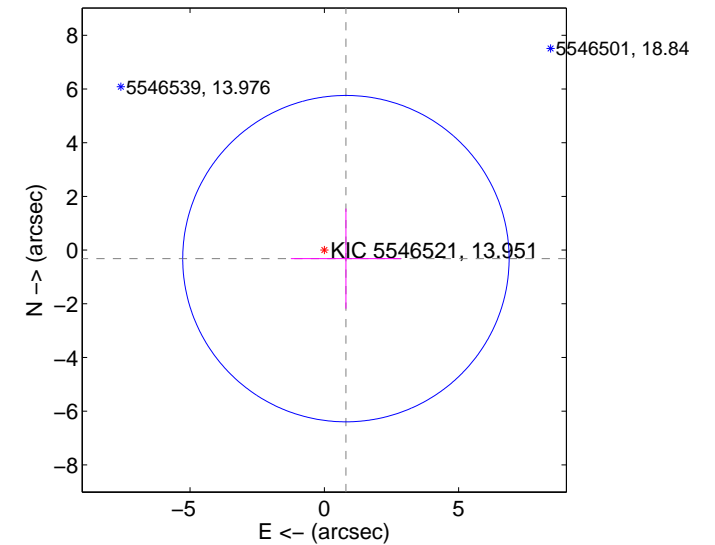
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

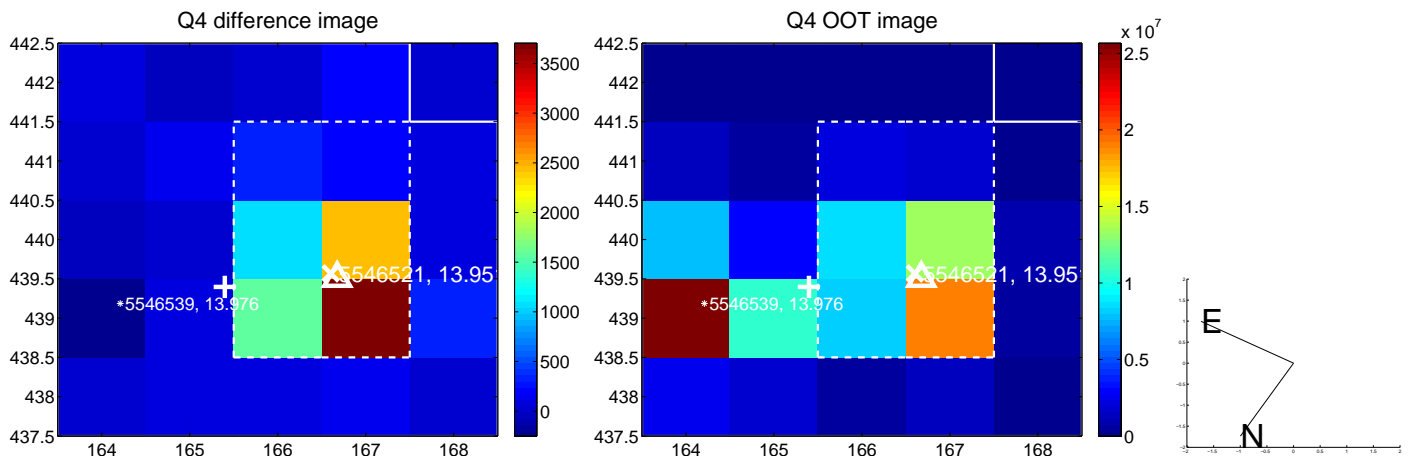
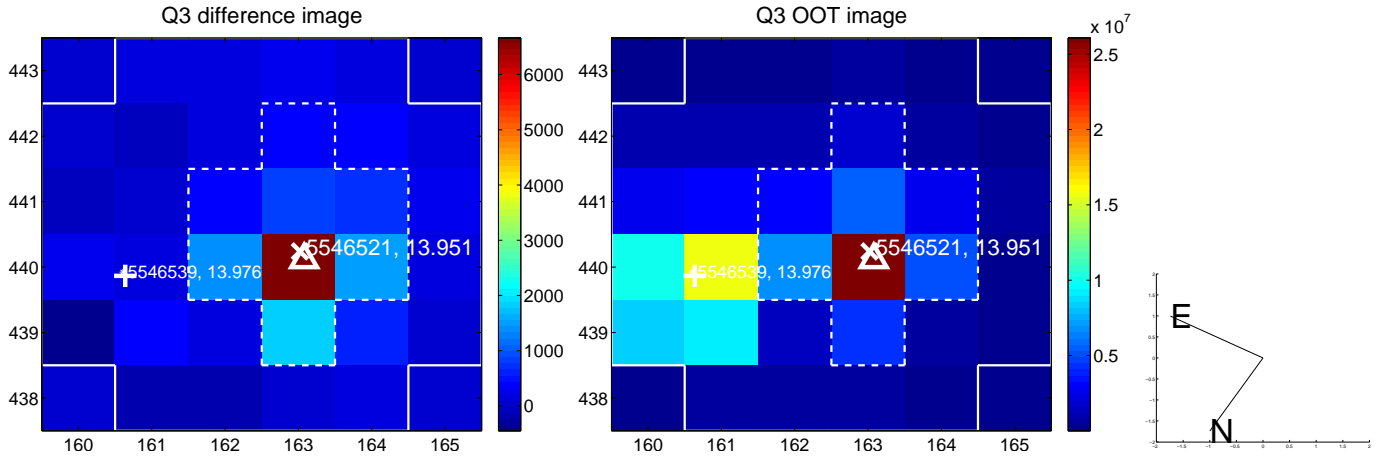
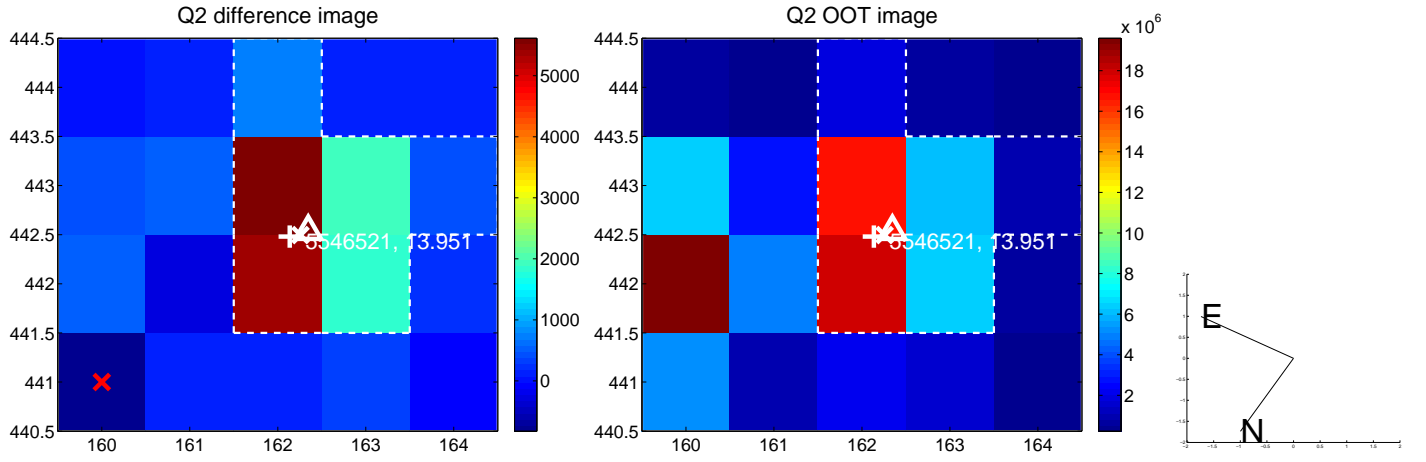
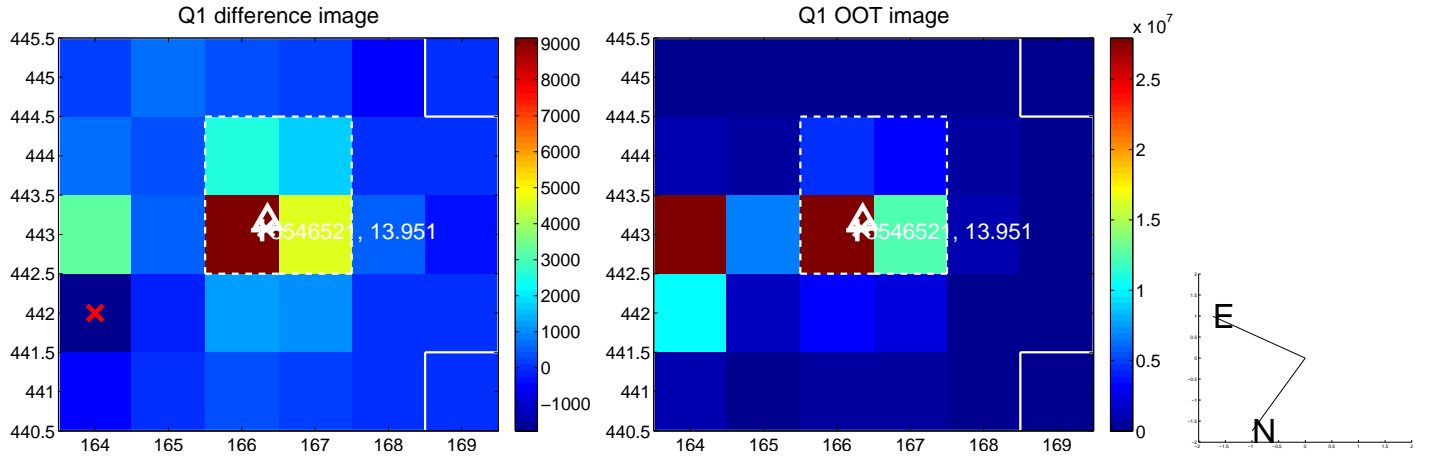


offset from photometric centroids

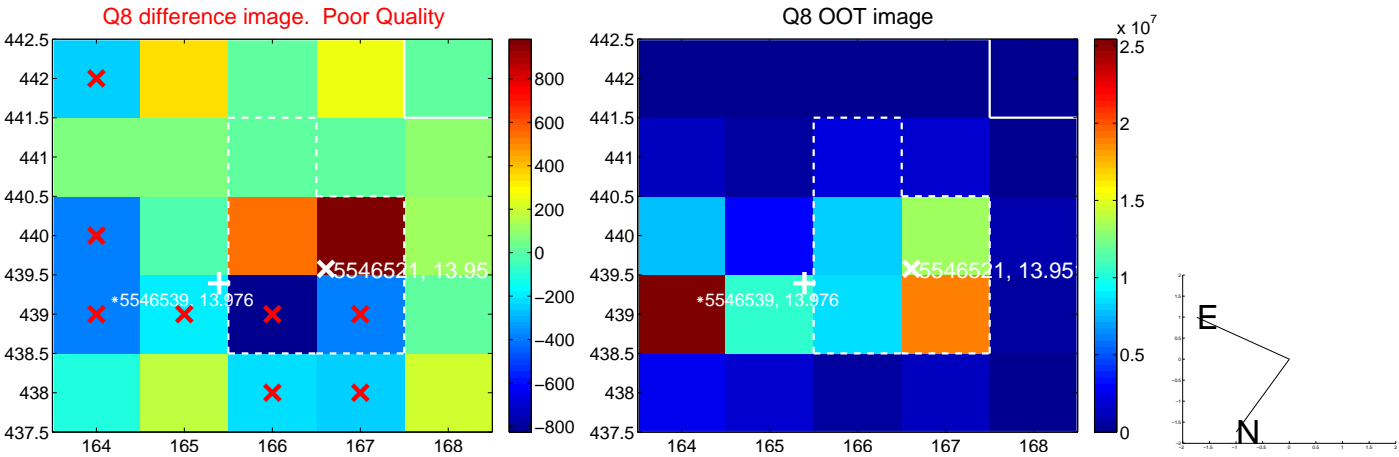
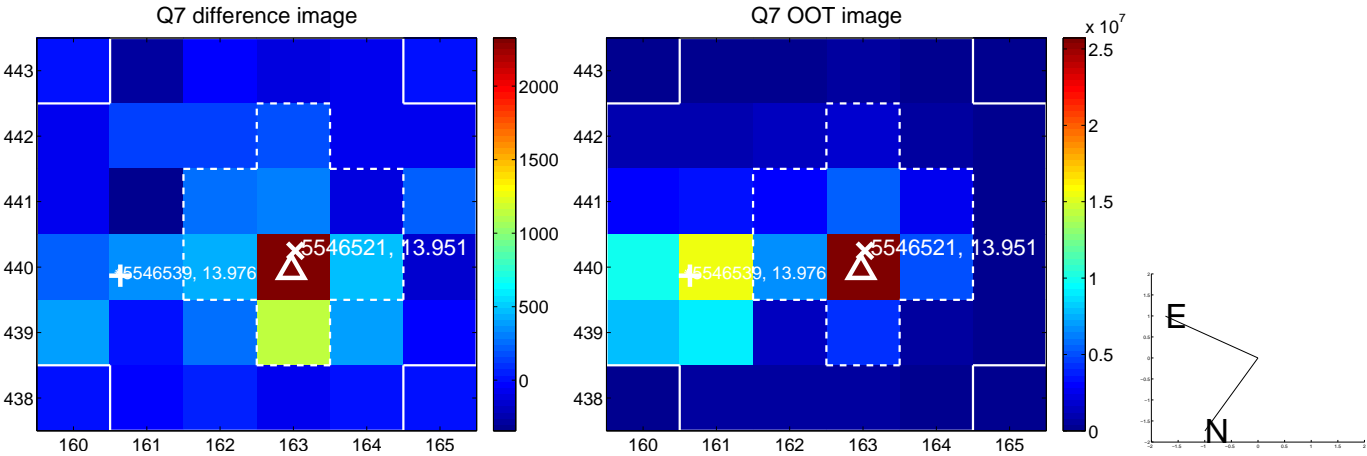
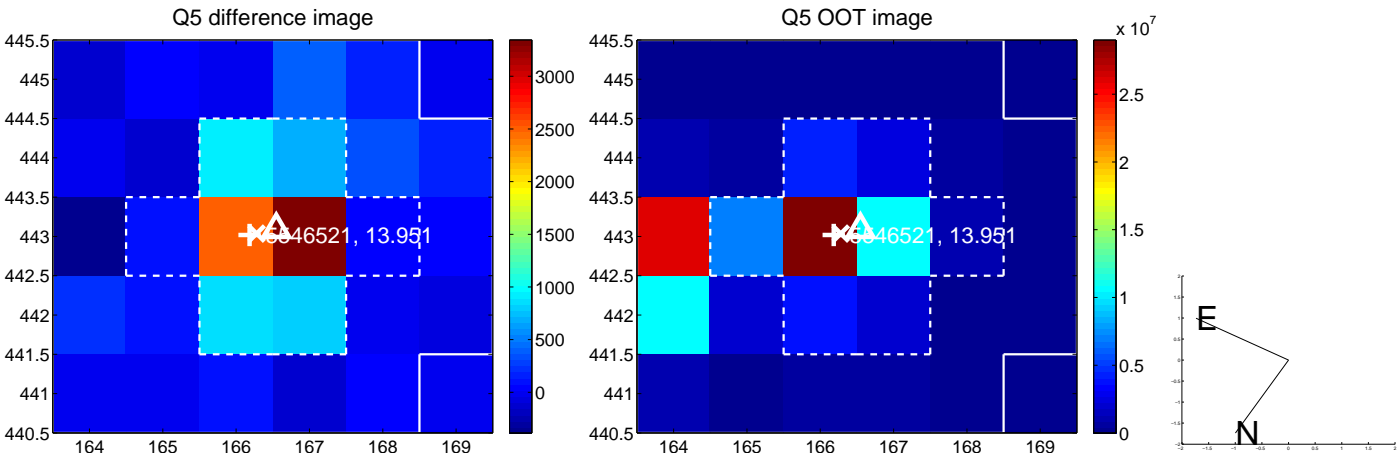


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

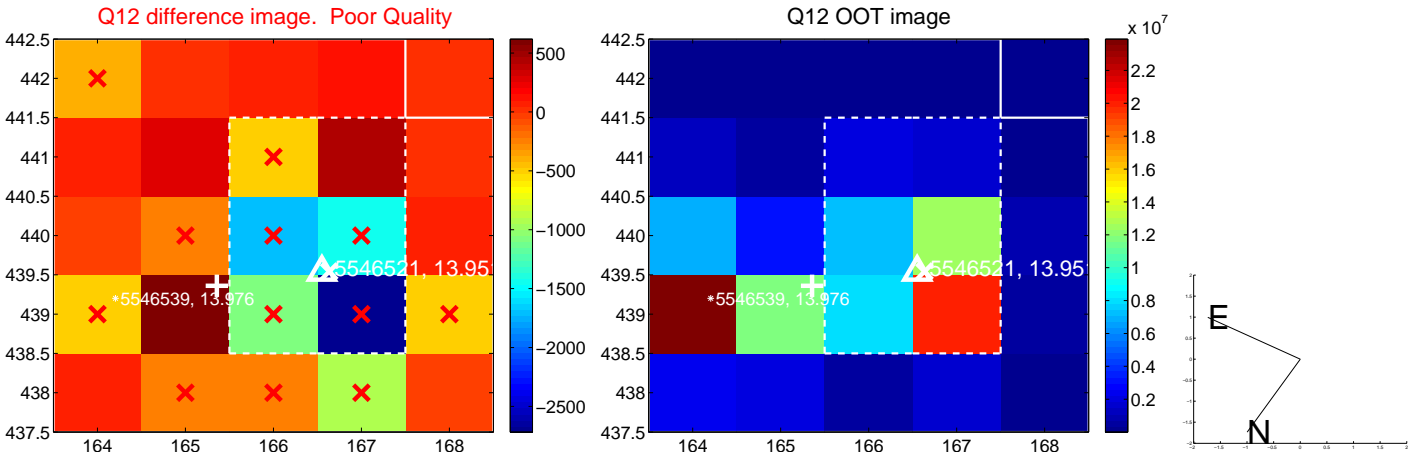
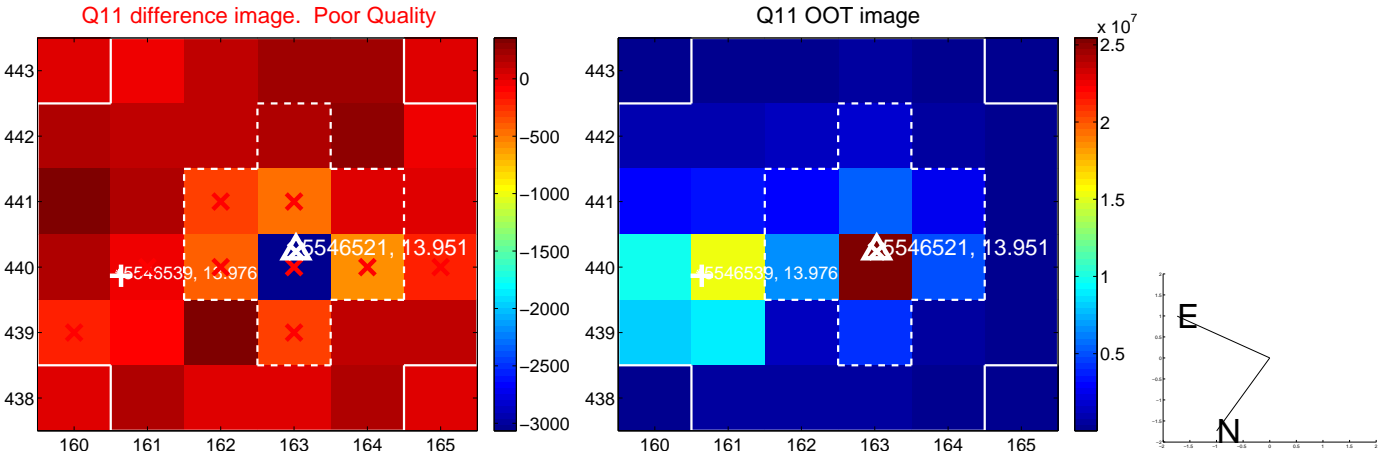
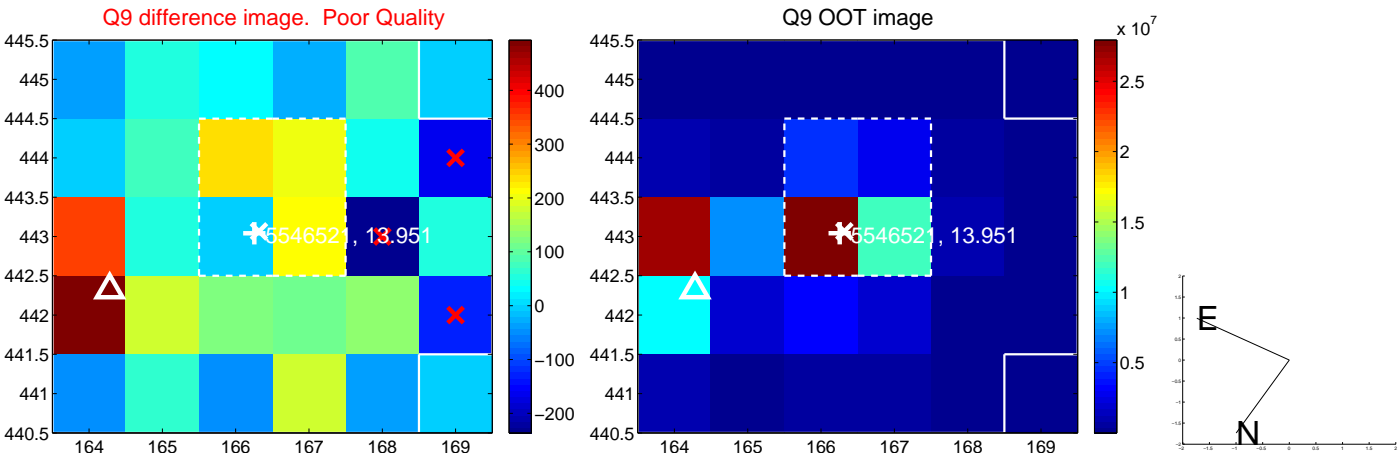
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



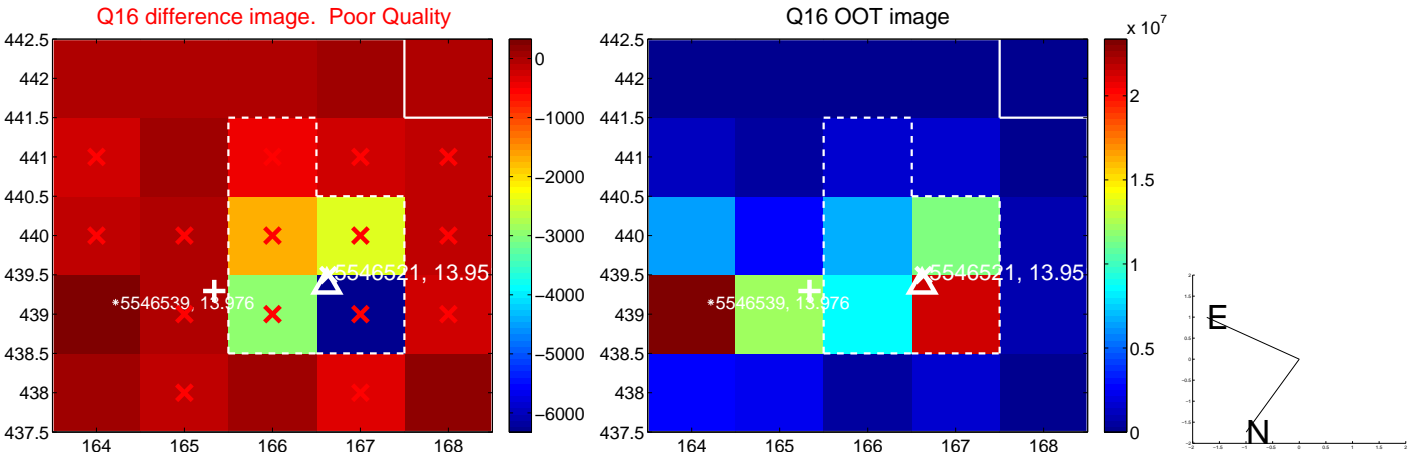
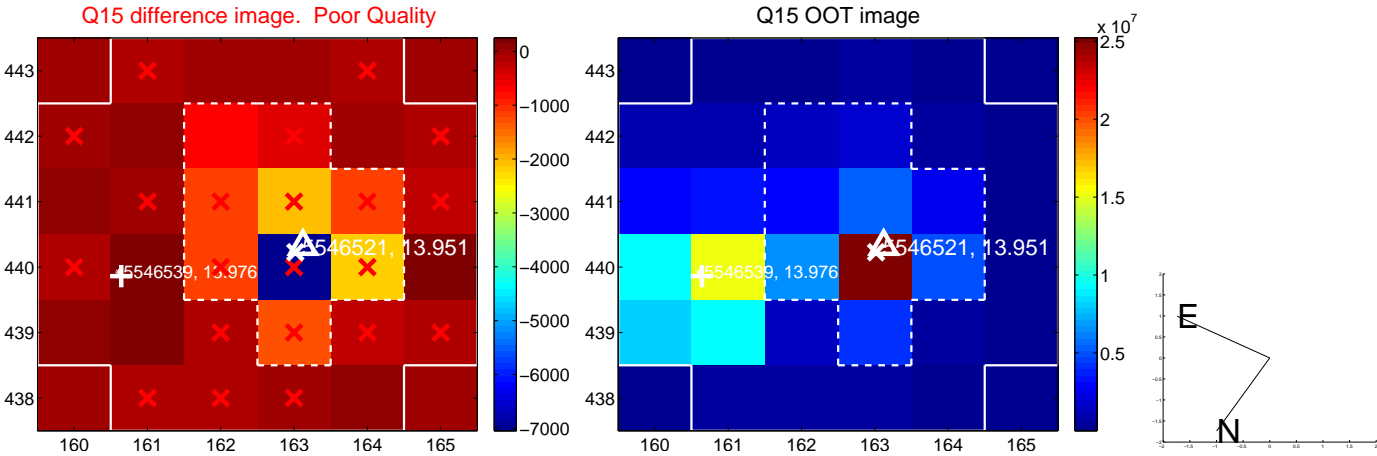
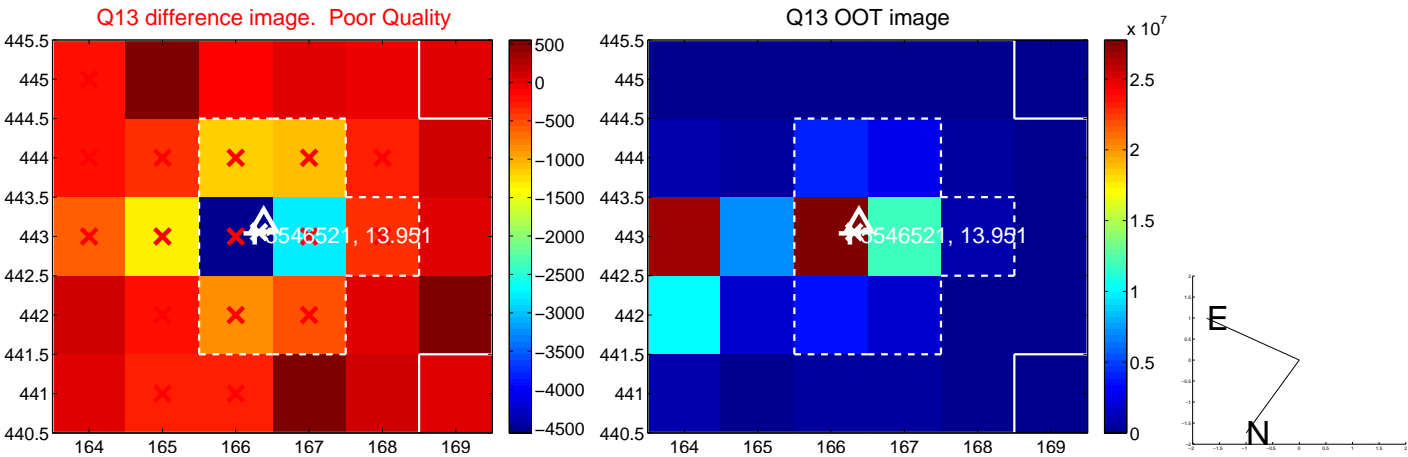
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



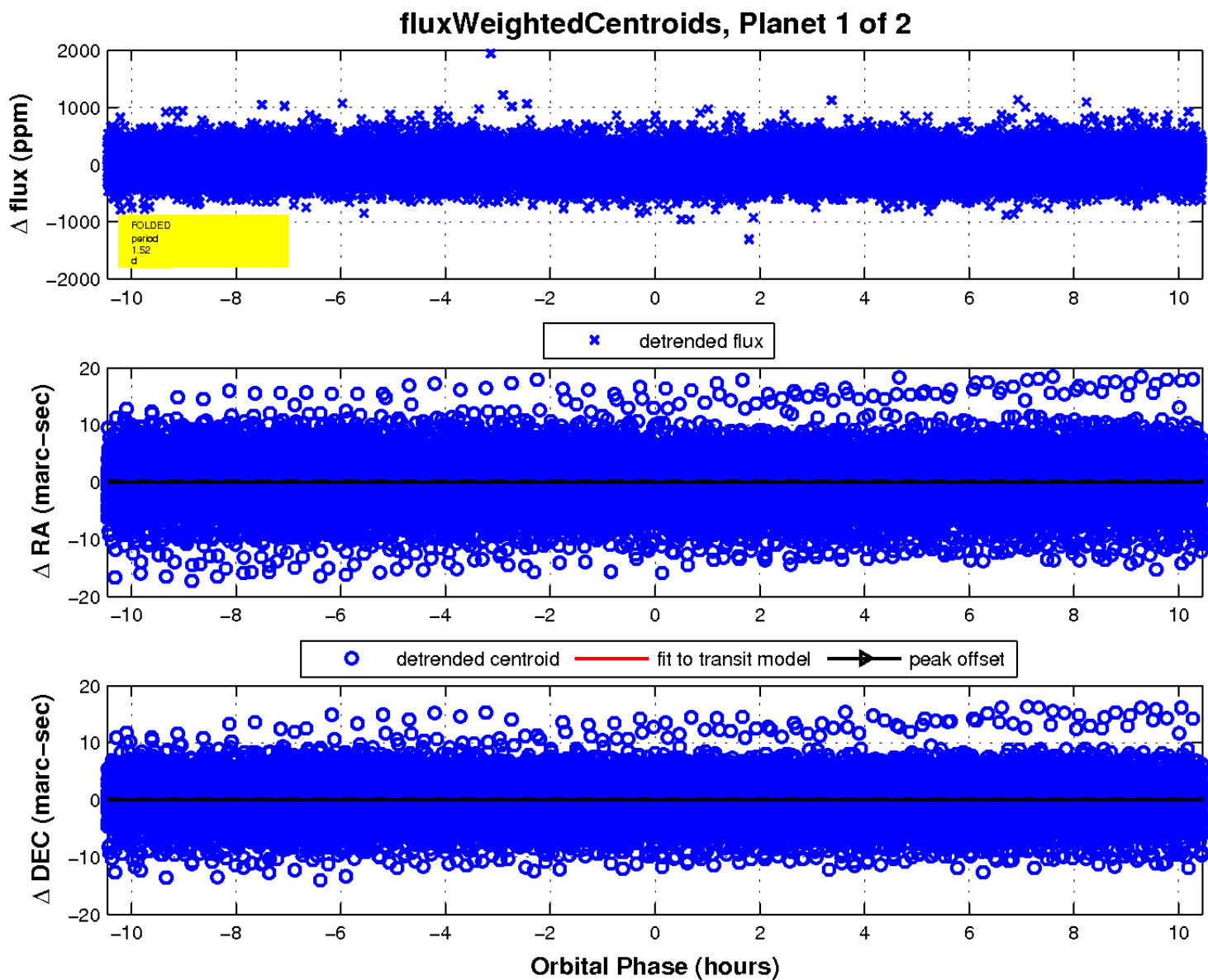
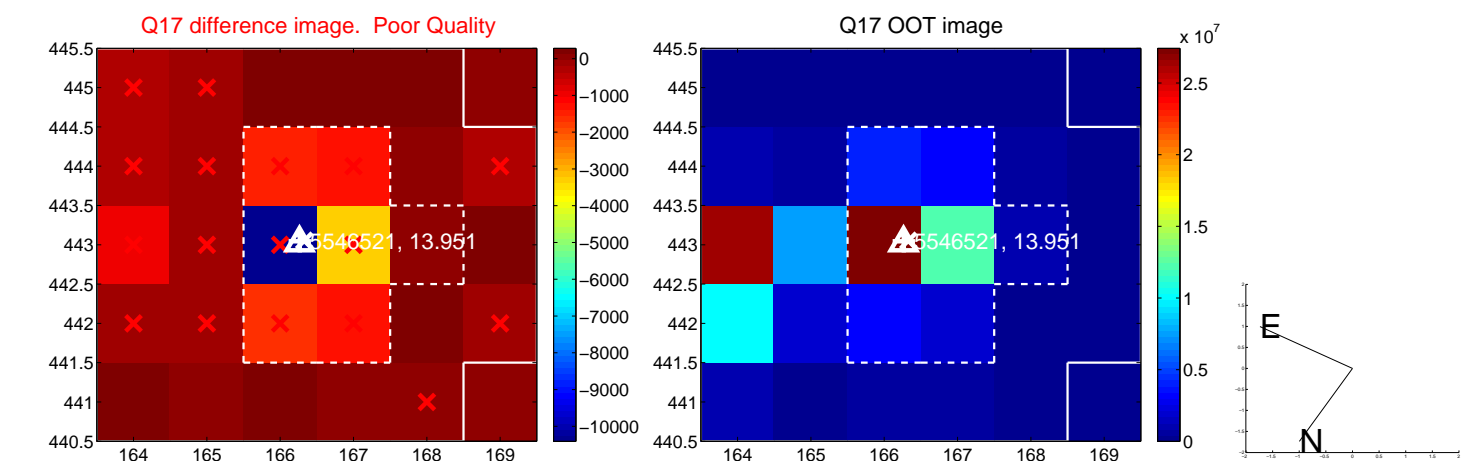
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

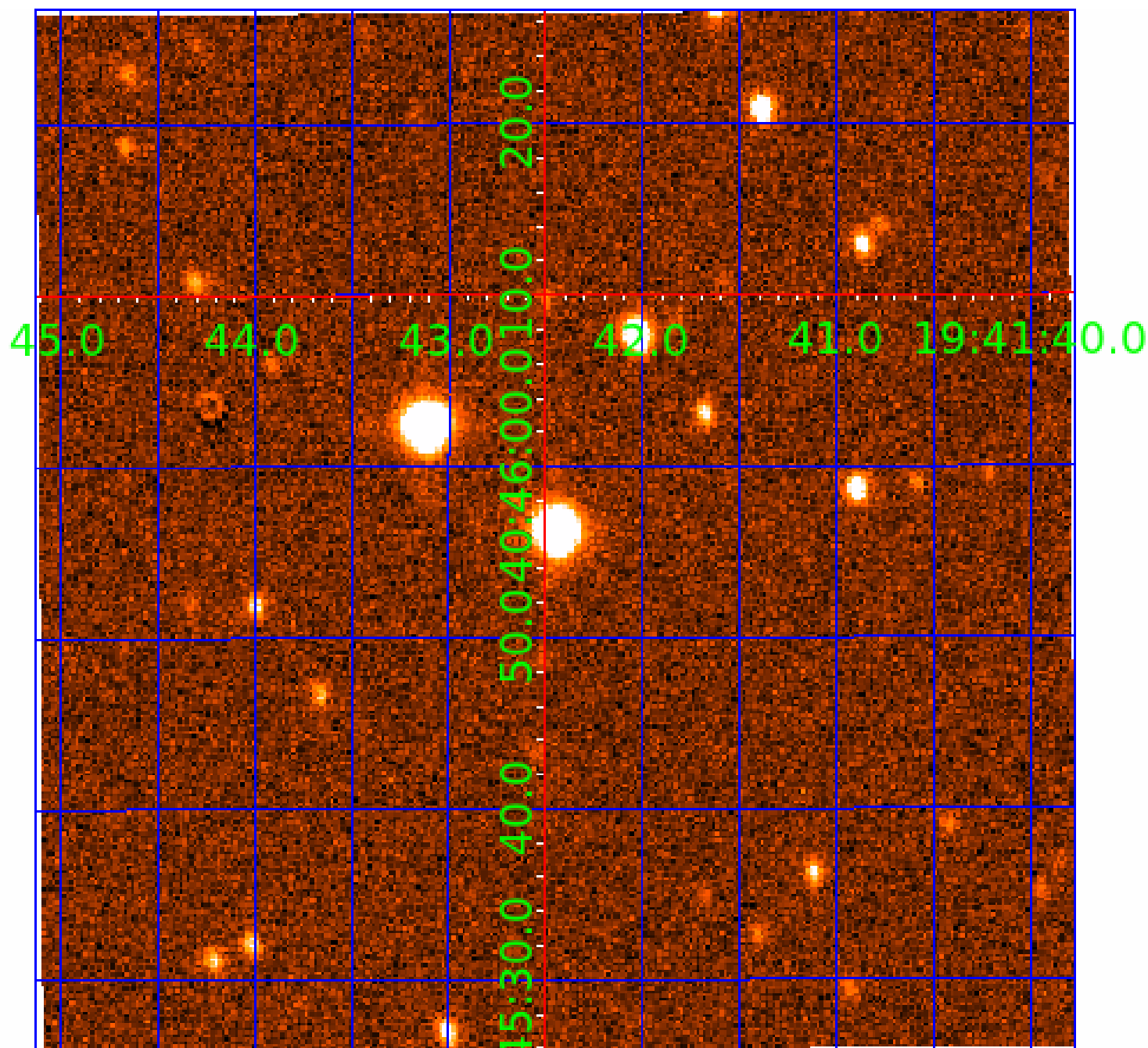


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005546521

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})
005546521-01	OBS	No	1.523268	132.881586	27.9	3.487	8.0	5.9	0.93	6328	0.58	1902.16
005546521-02	OBS	No	1.523389	132.161337	16.0	13.613	8.2	5.7	0.93	6328	0.37	1901.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005546521-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_KIC_POS
005546521-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFS

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

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

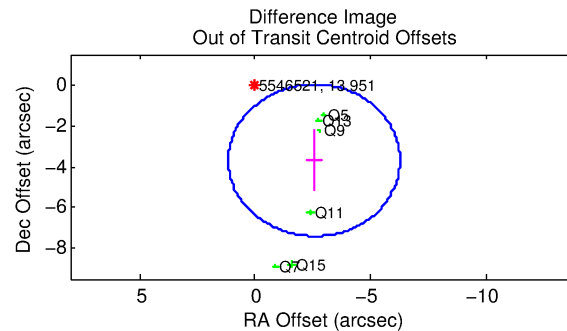
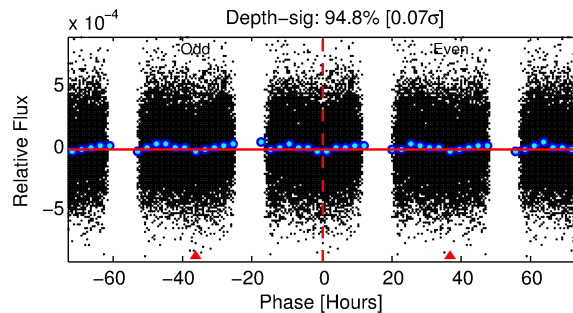
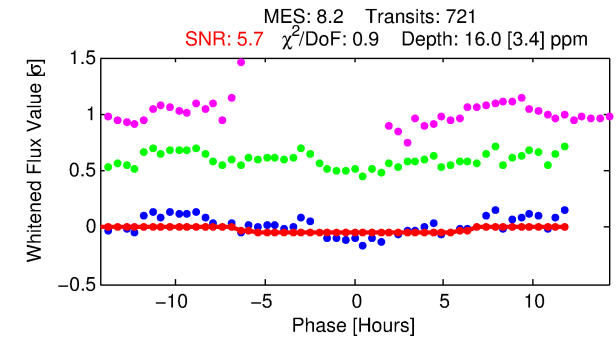
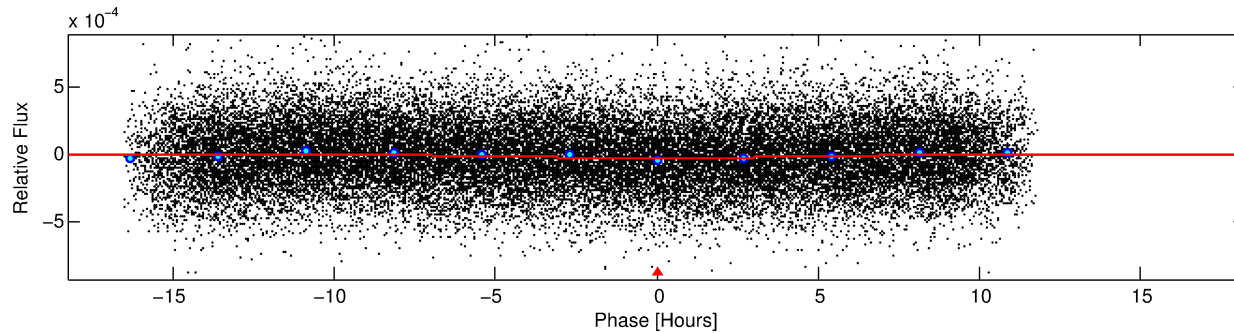
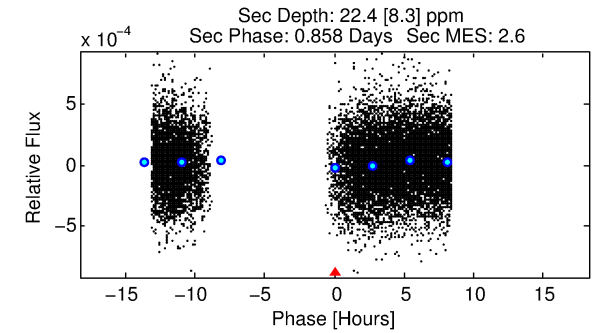
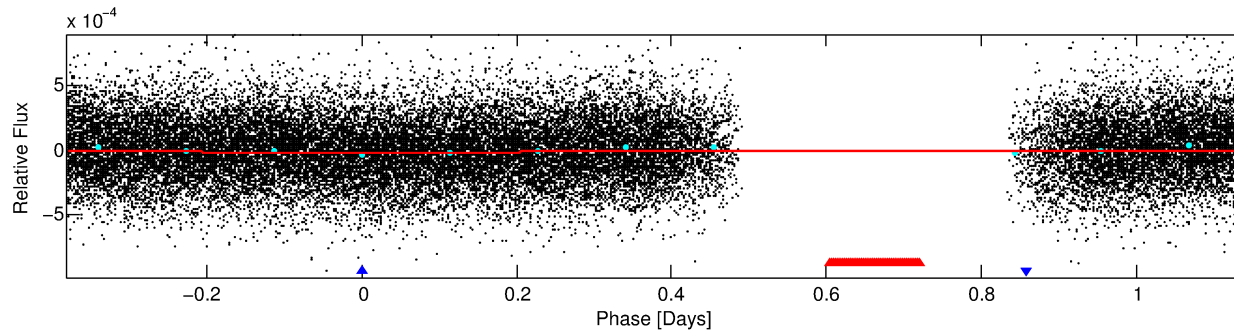
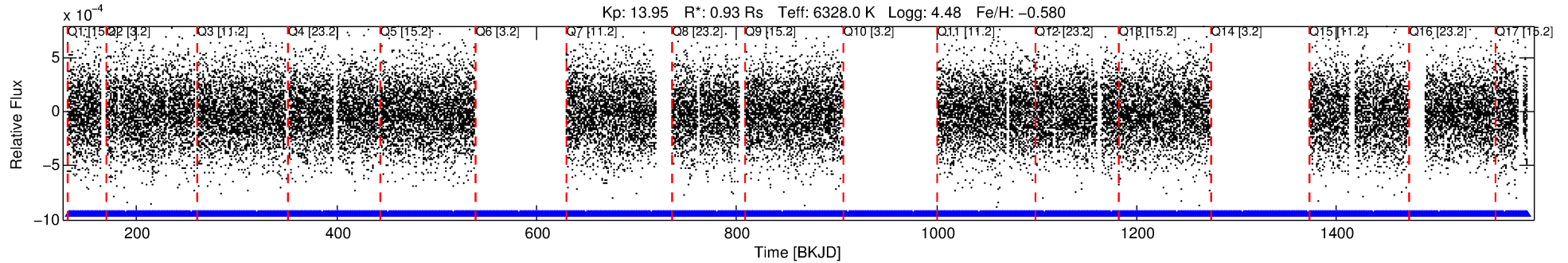
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005546521-02

No Significant Match Found

DV One-Page Summary

KIC: 5546521 Candidate: 2 of 2 Period: 1.523 d



DV Fit Results:

Period = 1.52339 [0.00005] d
Epoch = 132.1613 [0.0154] BKJD
Rp/R* = 0.0037 [0.0056]
a/R* = 1.09 [1.39]
b = 0.01 [1416.27]
Seff = 1901.96 [759.36]
Teq = 1684 [168] K
Rp = 0.37 [0.58] Re
a = 0.0256 [0.0065] AU
Ag = 57.66 [177.56] [0.32σ]
Teffp = 7174 [5487] K [1.00σ]

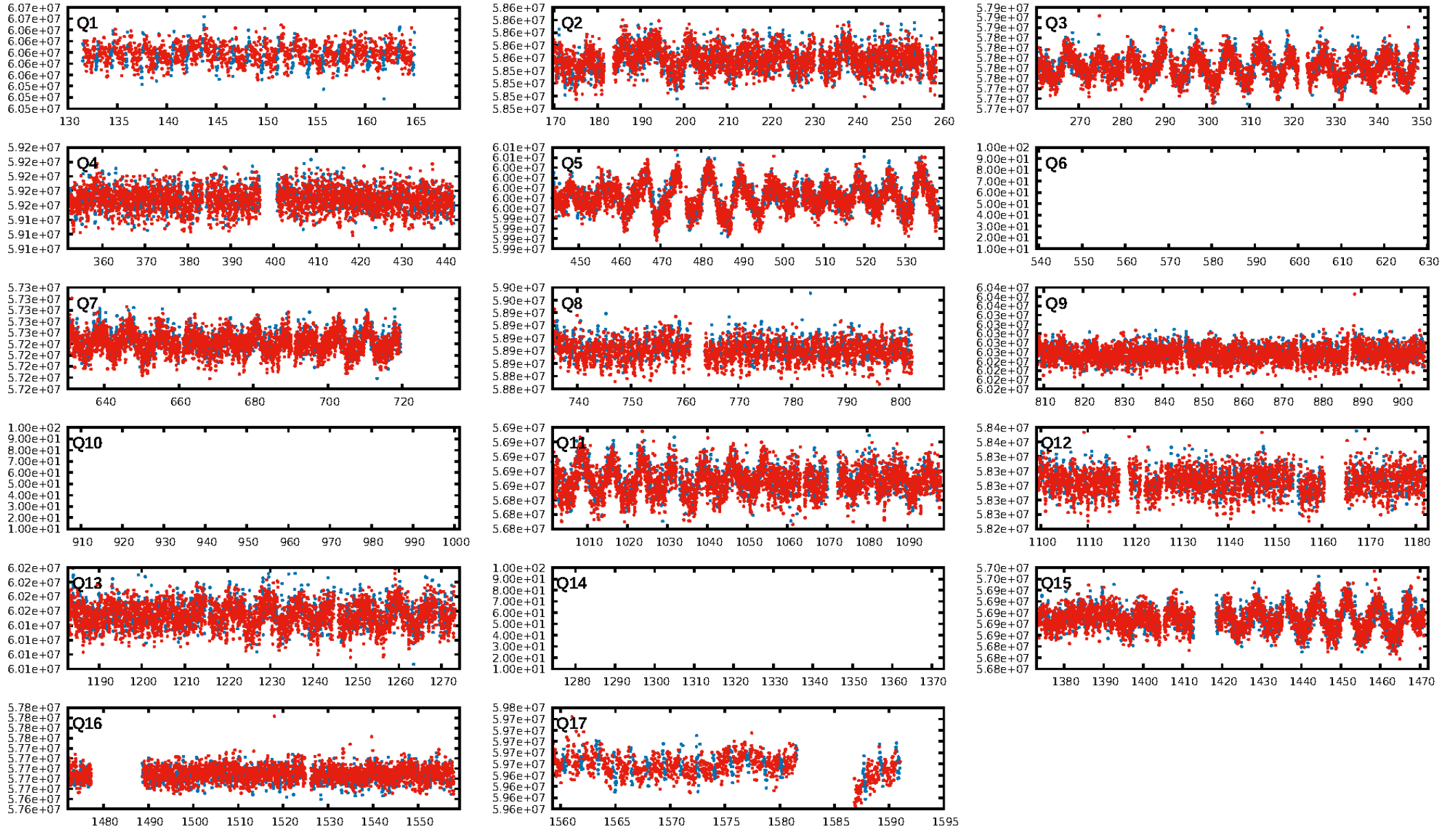
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [681/681]
GhostDiagnostic-chr: 2.042
Centroid-sig: 0.1%
Centroid-so: 4.500 arcsec [1.60σ]
OotOffset-rm: 4.487 arcsec [3.63σ]
KicOffset-rm: 1.989 arcsec [3.17σ]
OotOffset-st: 0/3/0/3 [6]
KicOffset-st: 0/3/0/3 [6]
DiffImageQuality-fgm: 0.00 [0/6]
DiffImageOverlap-fno: 0.00 [0/14]

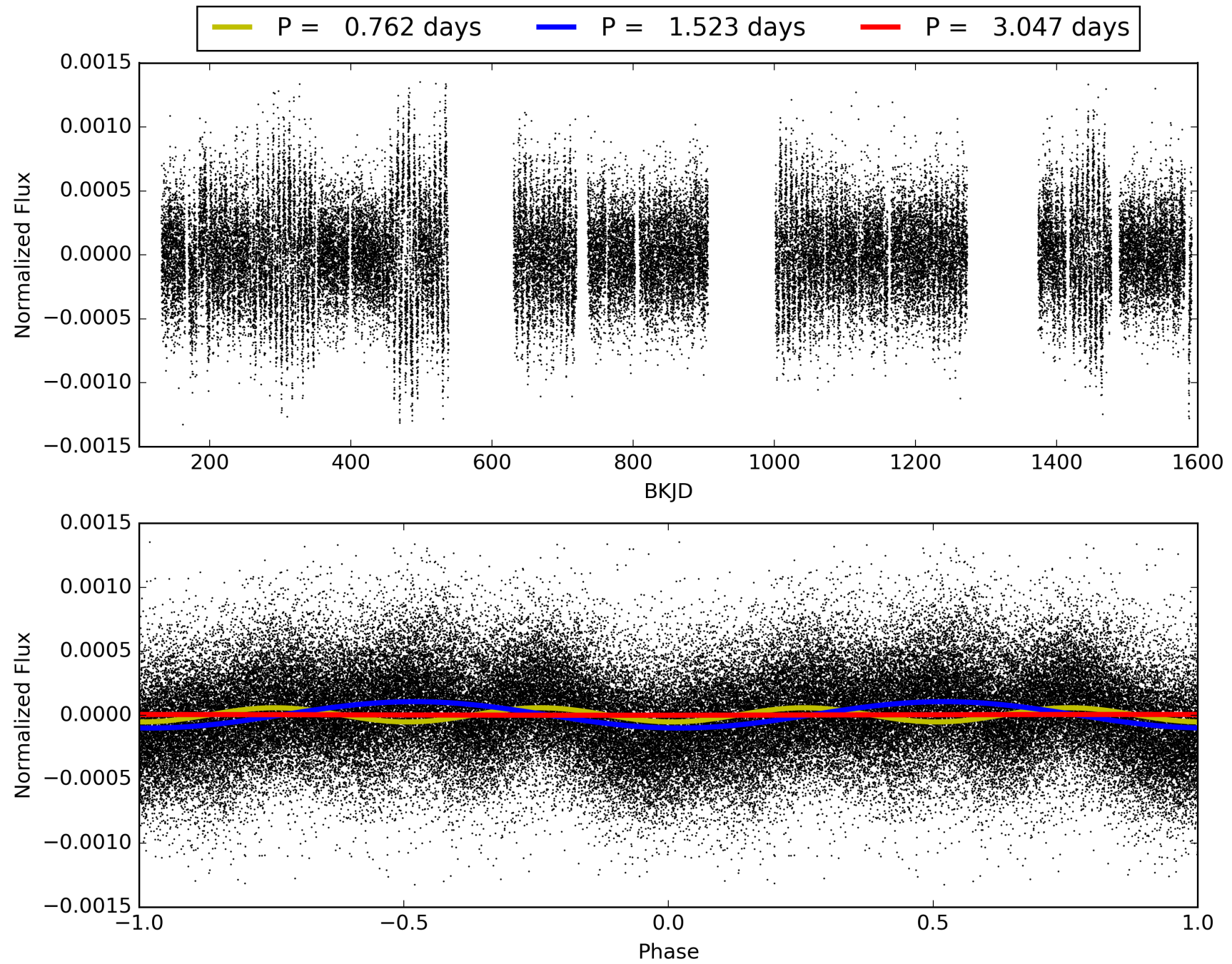
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 04:14:51 Z

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

TCE 005546521-02, PDC Light Curves

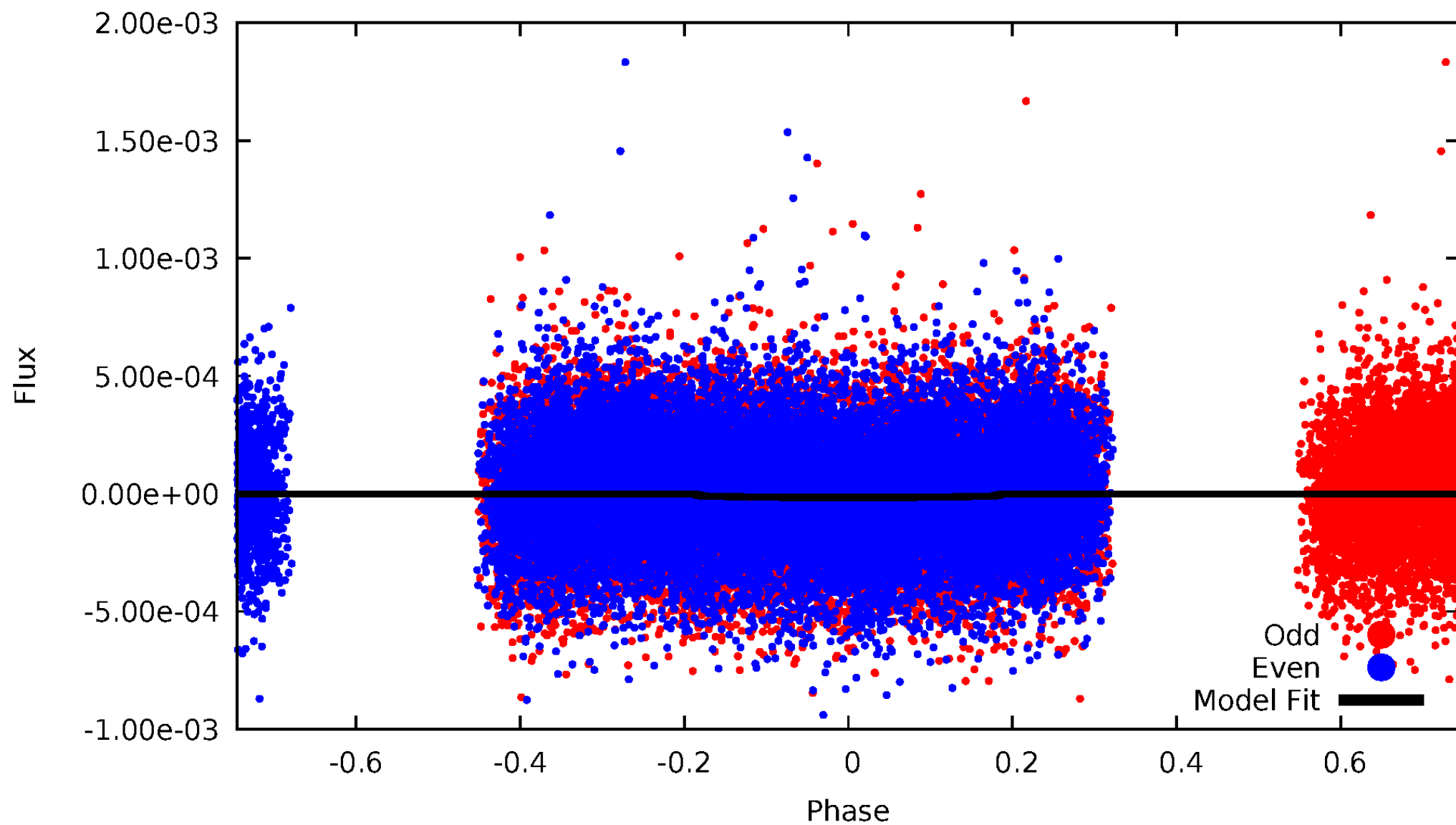


TCE 005546521-02



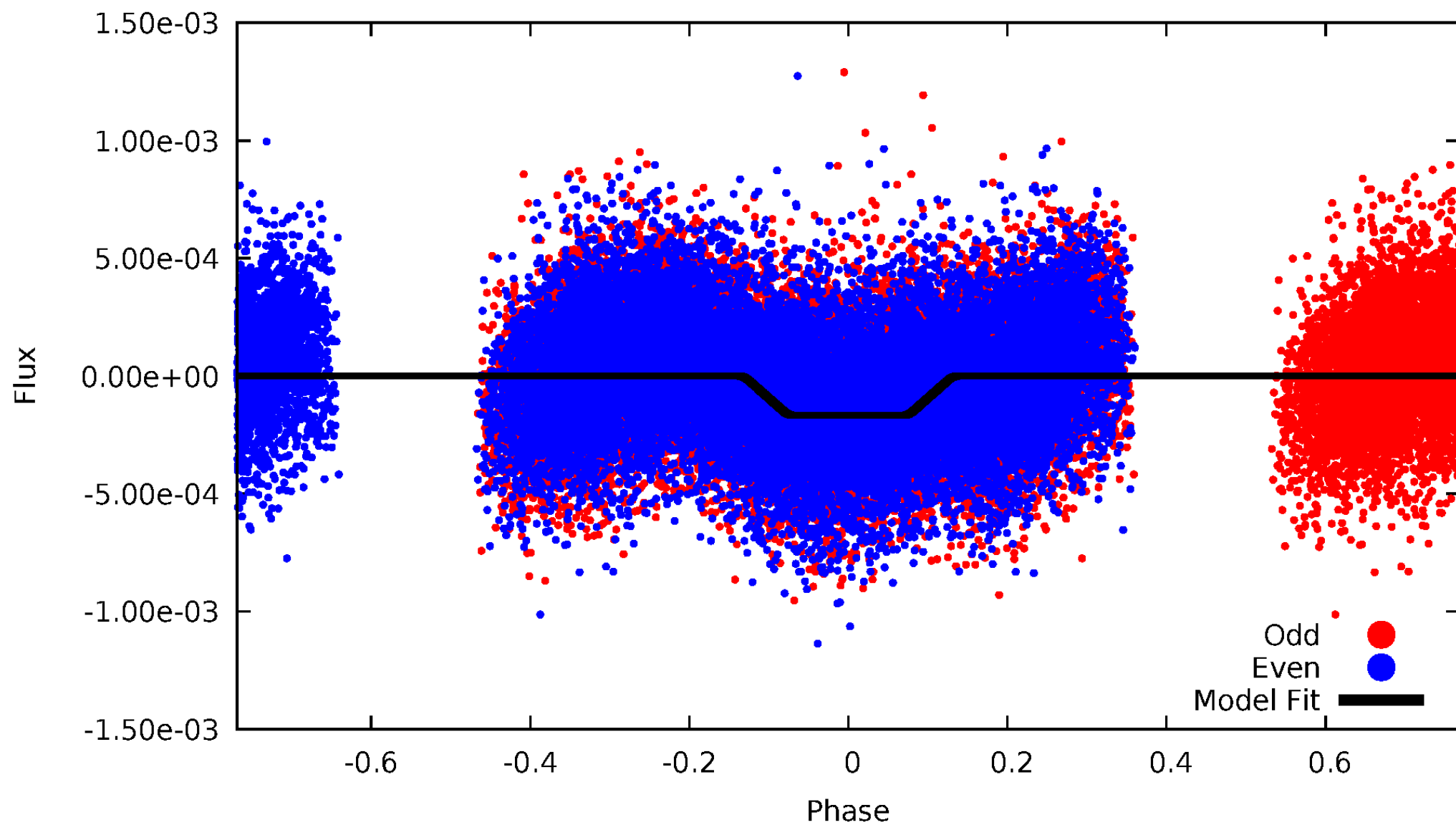
DV Odd/Even

TCE 005546521-02



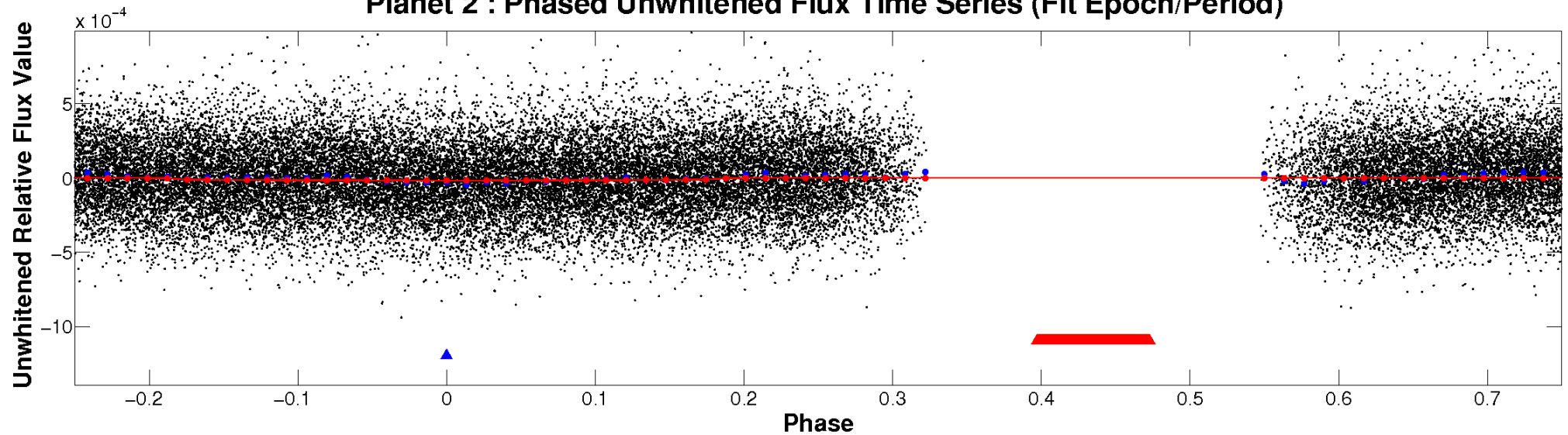
ALT Odd/Even

TCE 005546521-02

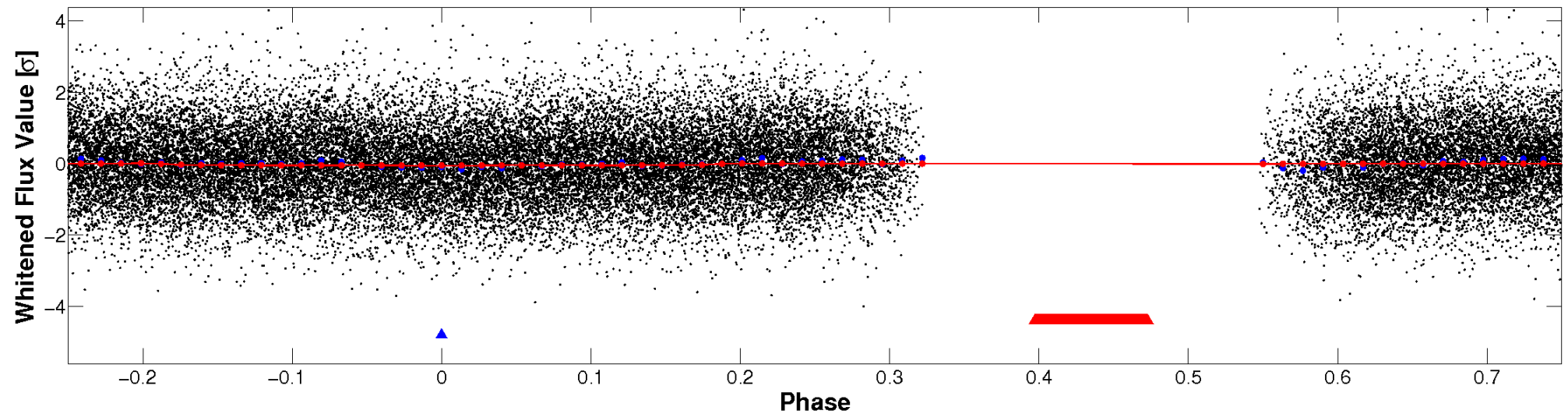


Non-Whitened Vs. Whitened Light Curve

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

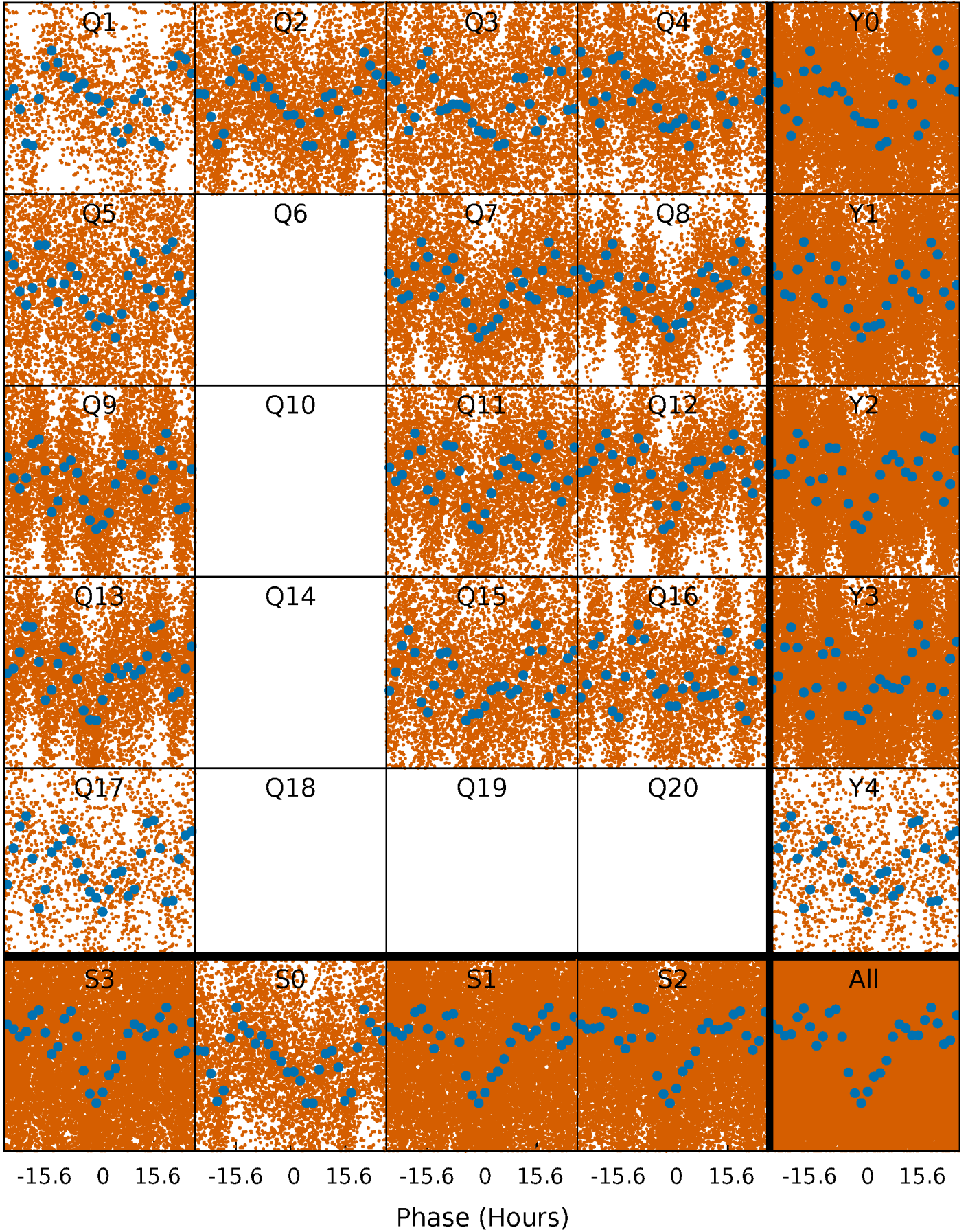


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



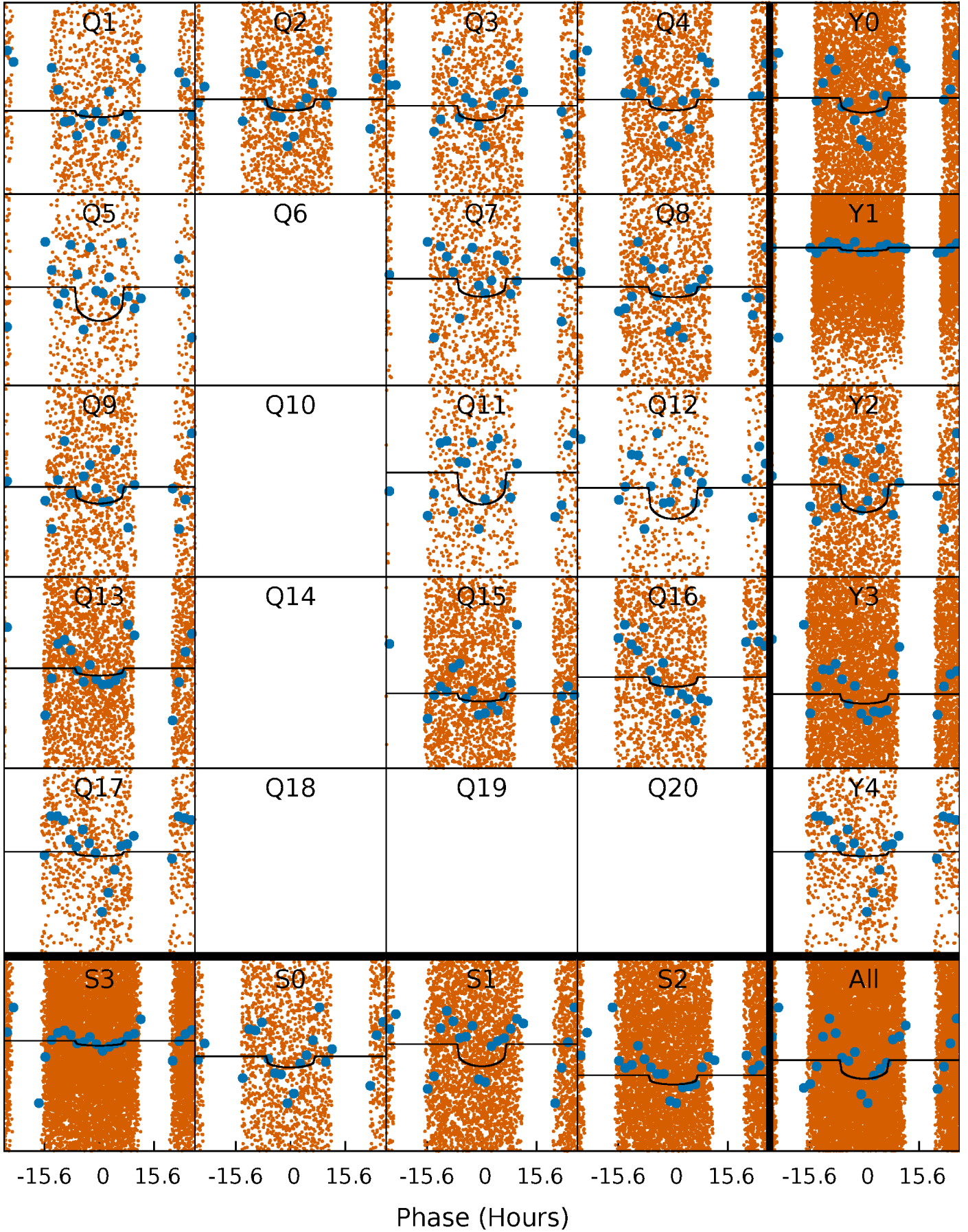
PDC Quarter-Phased Transit Curves

TCE 005546521-02 P= 1.523389 Days $T_0=132.161337$ (BKJD)



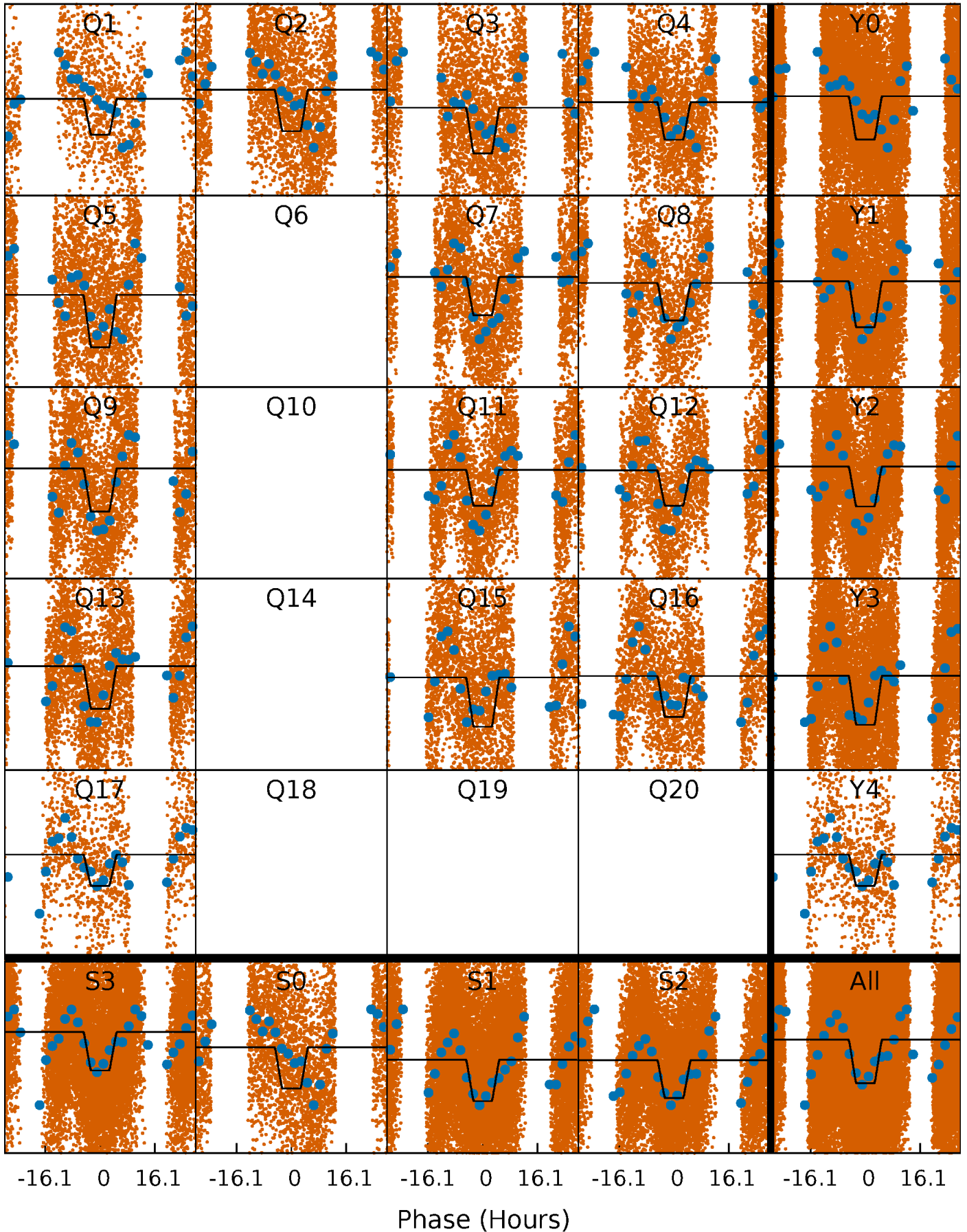
DV Quarter-Phased Transit Curves

TCE 005546521-02 P= 1.523389 Days $T_0=132.161337$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

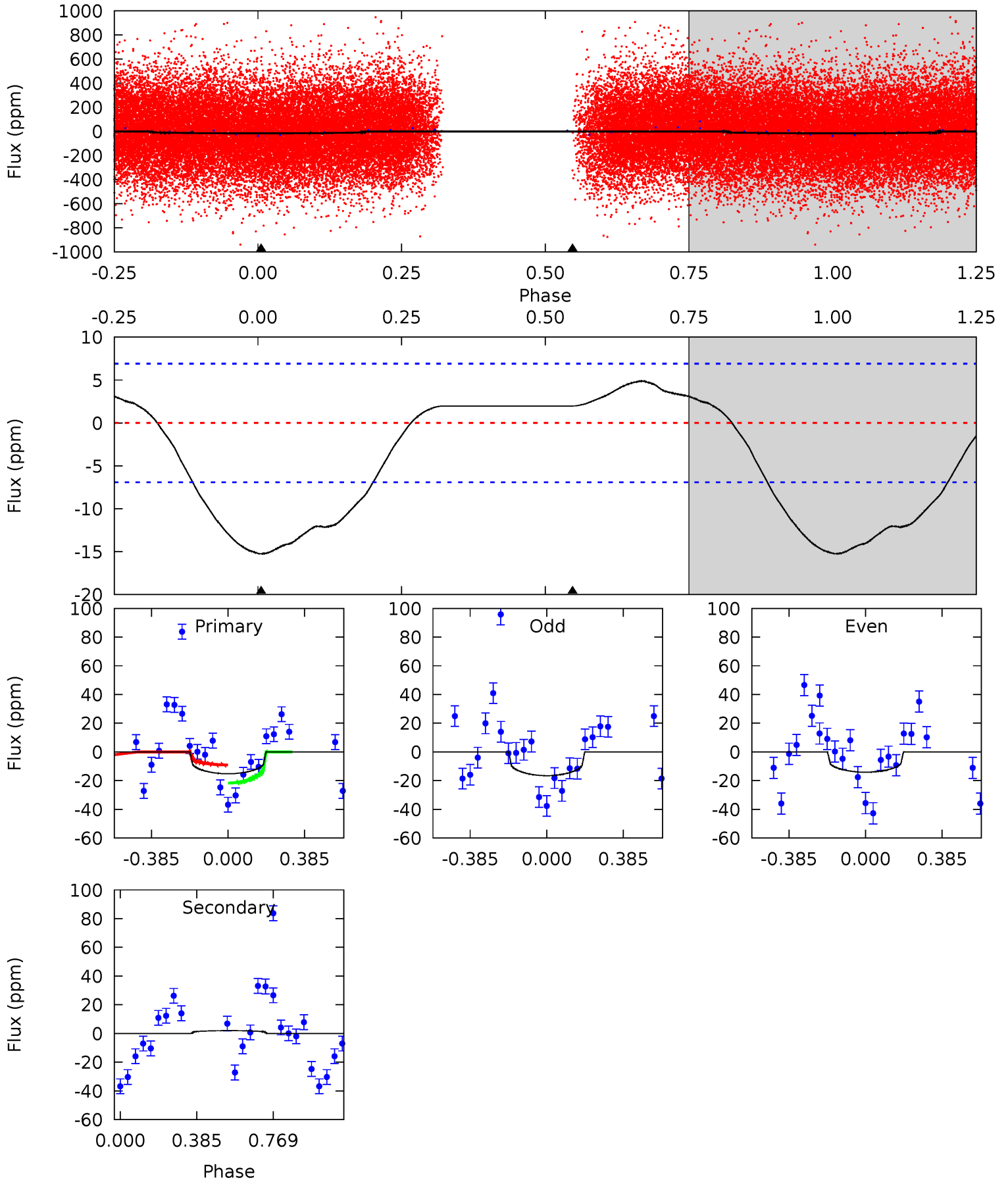
TCE 005546521-02 P= 1.523473 Days $T_0=132.103001$ (BKJD)



DV Model-Shift Uniqueness Test

005546521-02, P = 1.523389 Days, E = 130.637948 Days

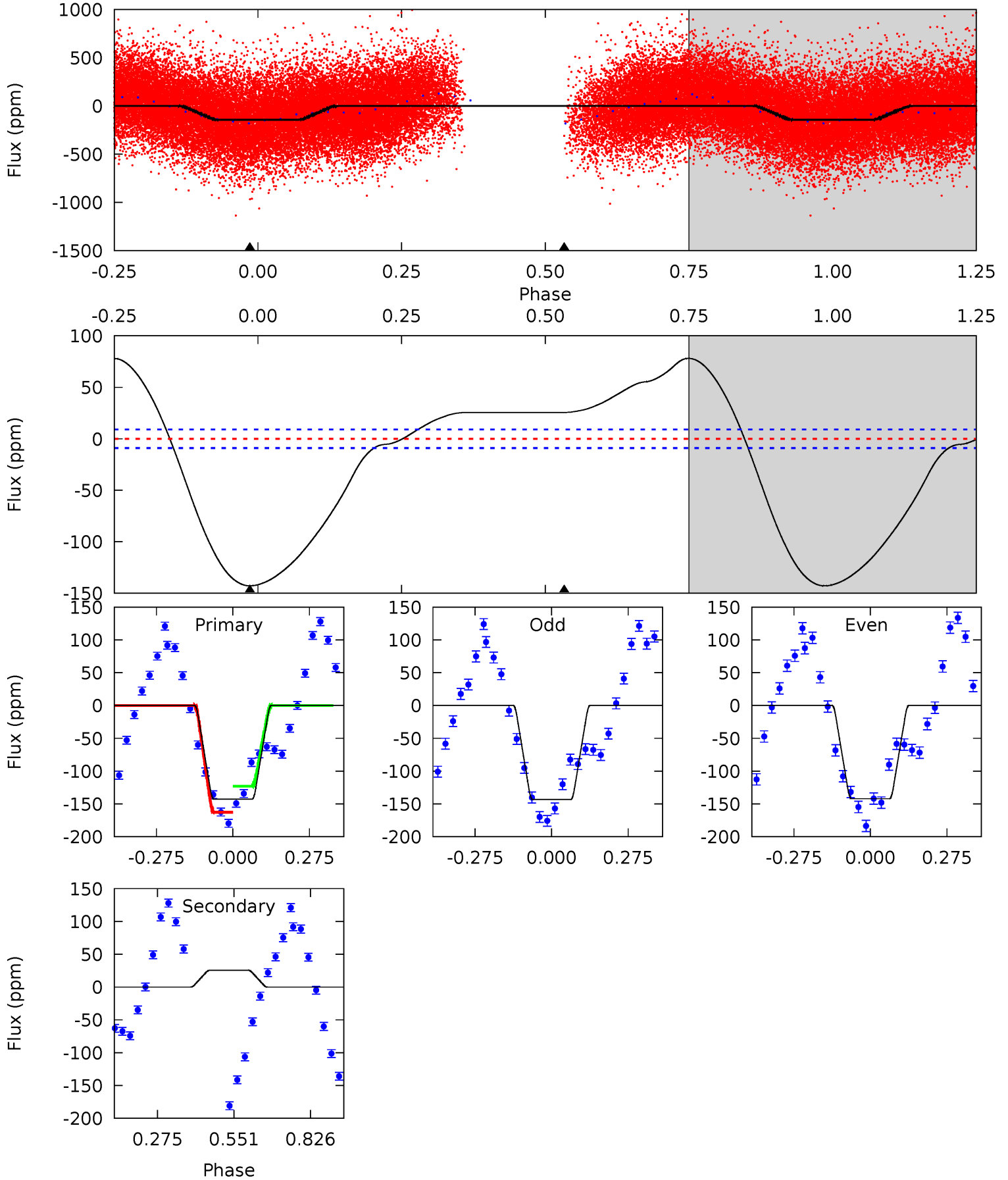
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.43	-1.22	0	0	4.27	0.87	1.18	9.43	9.43	-1.22	-1.22	0.74	0.84	0.24	3.97



Alt Model-Shift Uniqueness Test

005546521-02, P = 1.523473 Days, E = 130.579528 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
68.8	-12.3	0	0	4.35	1.09	3.38	68.8	68.8	-12.3	-12.3	0.31	0.98	0.35	9.22



Stellar Parameters For KIC 005546521

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6328^{+171}_{-209}	$4.483^{+0.065}_{-0.208}$	$-0.580^{+0.300}_{-0.300}$	$0.930^{+0.279}_{-0.093}$	$0.959^{+0.118}_{-0.107}$	$1.679^{+0.450}_{-0.808}$
	+3%/-3%	+1%/-5%	+52%/-52%	+30%/-10%	+12%/-11%	+27%/-48%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005546521-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	2 ± 2	$0.57^{+0.54}_{-0.37}$	2392^{+179}_{-120}	-3611^{+736}_{-1793}	$-1.639^{+1.501}_{-14.746}$
Alt.	26 ± 2	$1.36^{+0.65}_{-0.56}$	2388^{+155}_{-112}	-4257^{+483}_{-991}	$-4.791^{+2.519}_{-9.529}$

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

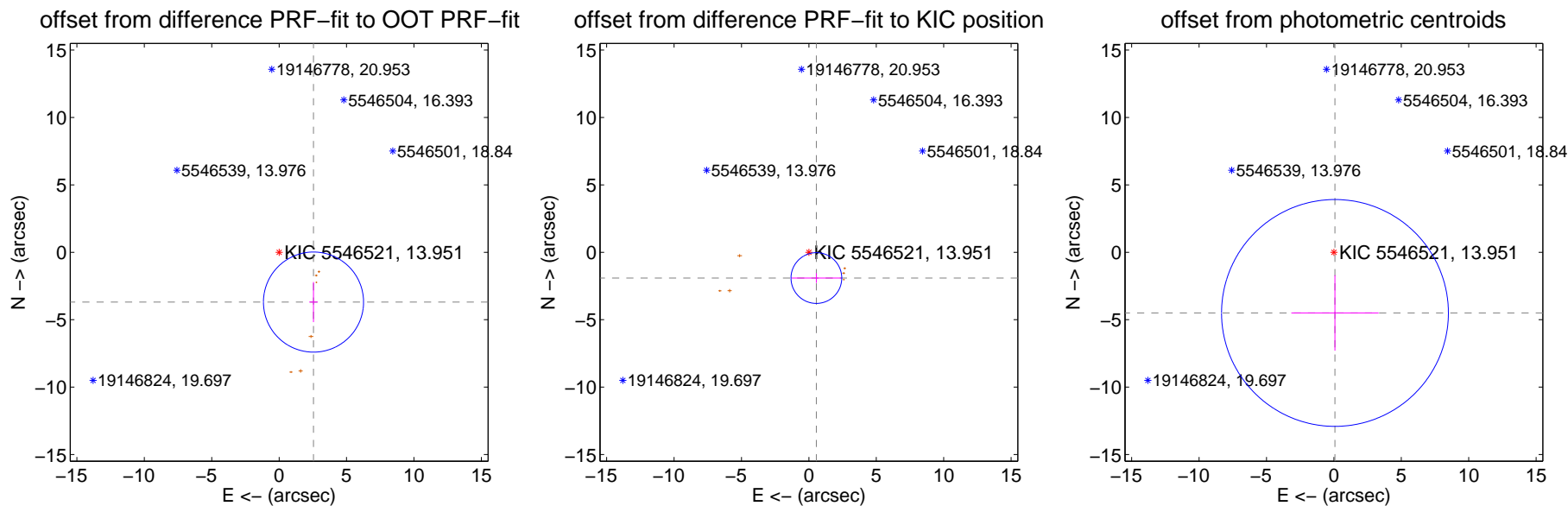
DV Centroid Data

Supplemental centroid analysis for 005546521-02. Kepler magnitude: 13.95. Transit SNR 5.72

There are 0 quarters with good PRF difference image offsets

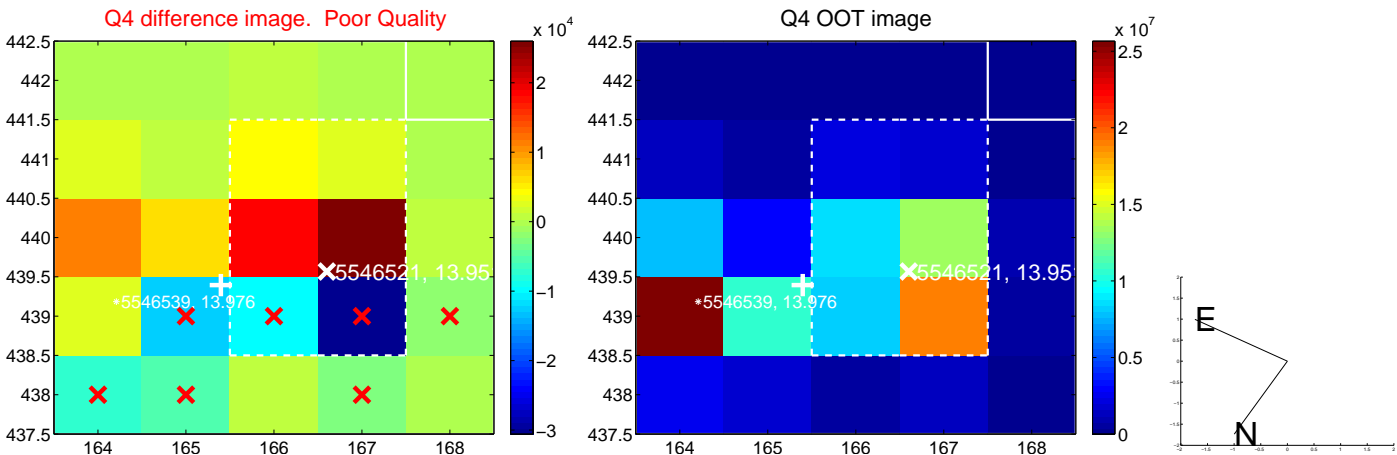
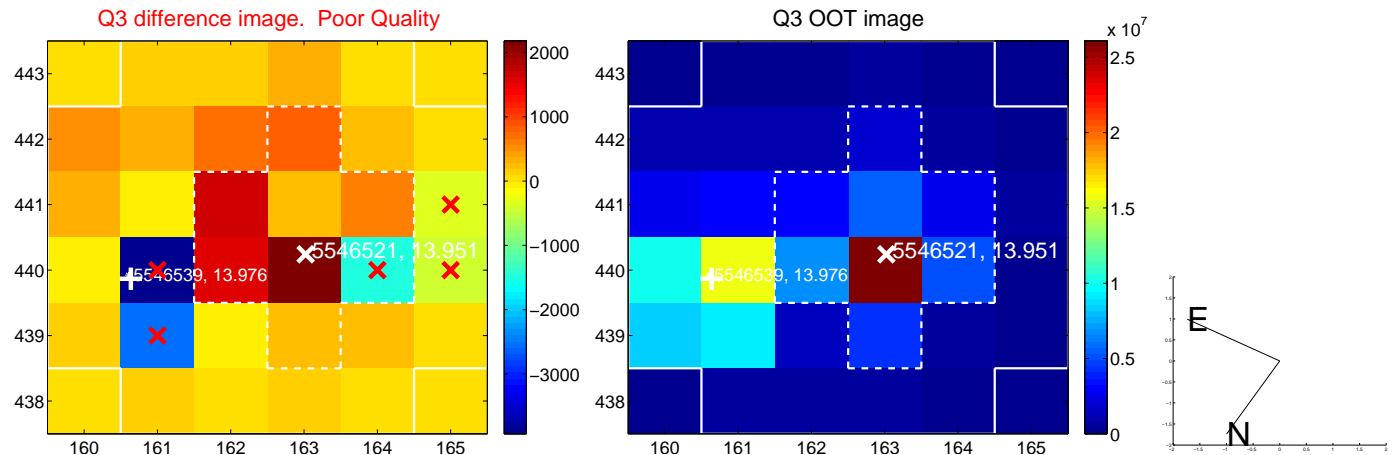
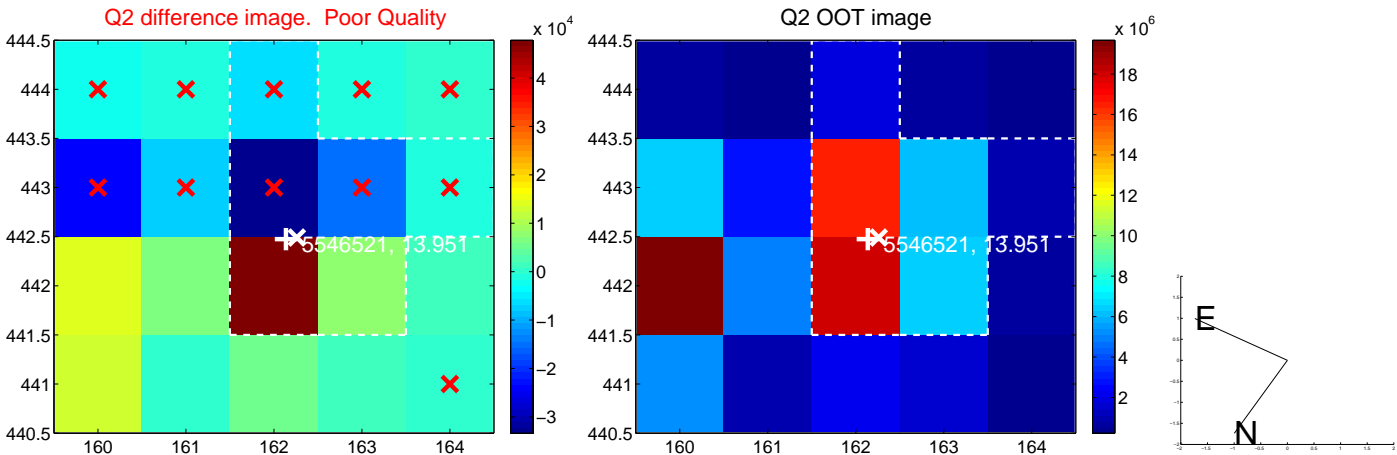
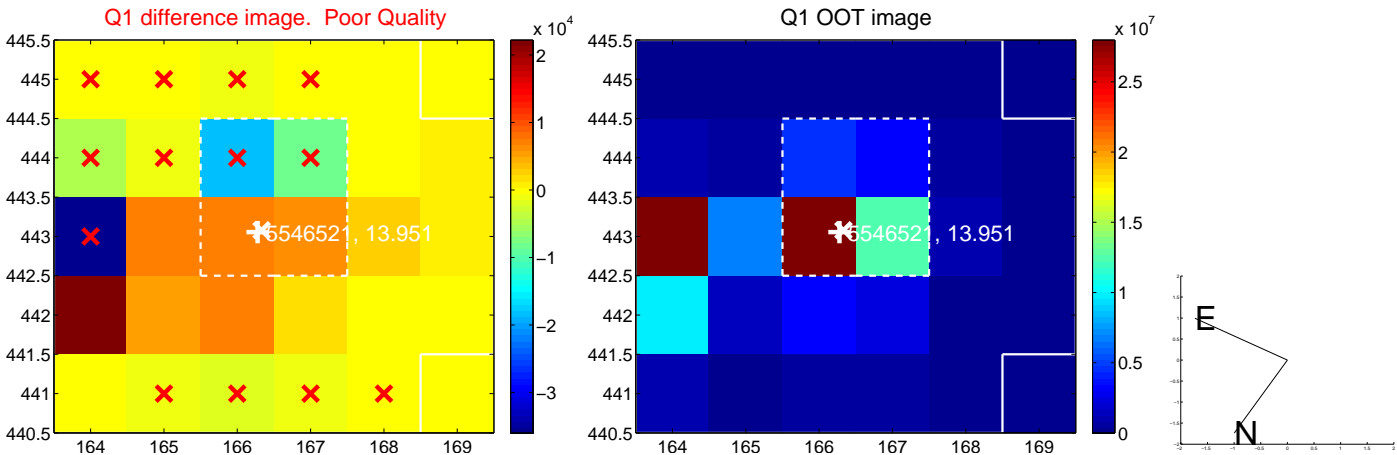
The OOT PRF centroid is offset from the target star catalog position by about 9.55 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.487 ± 1.237	3.63	-2.549 ± 0.318	-3.693 ± 1.488
PRF-fit source offset from KIC position	1.989 ± 0.627	3.17	-0.556 ± 1.874	-1.910 ± 0.360
photometric centroid source offset	4.50 ± 2.80	1.60	-0.08 ± 3.24	-4.50 ± 2.80

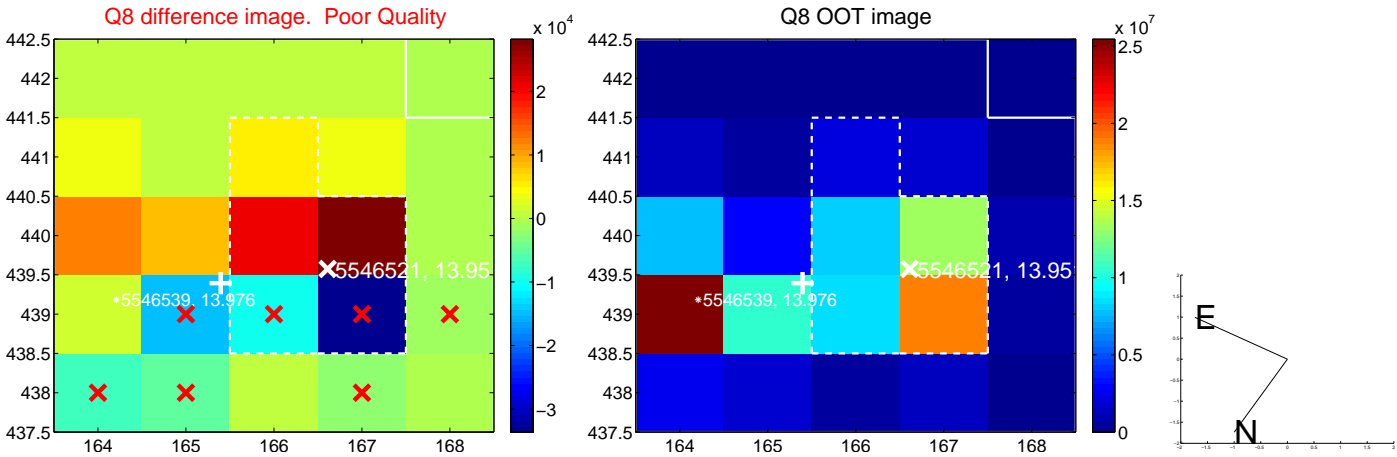
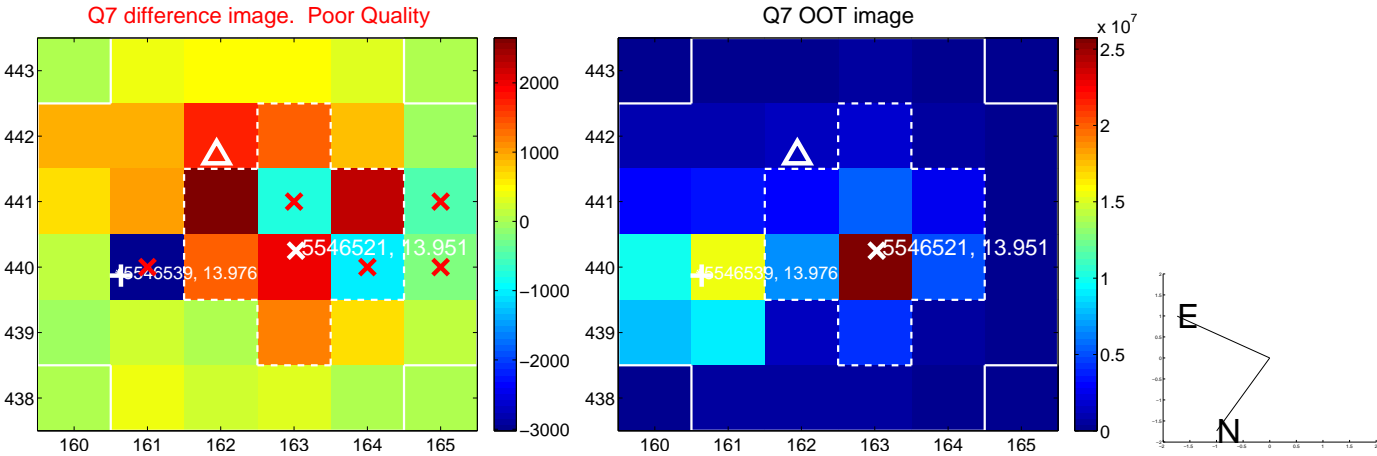
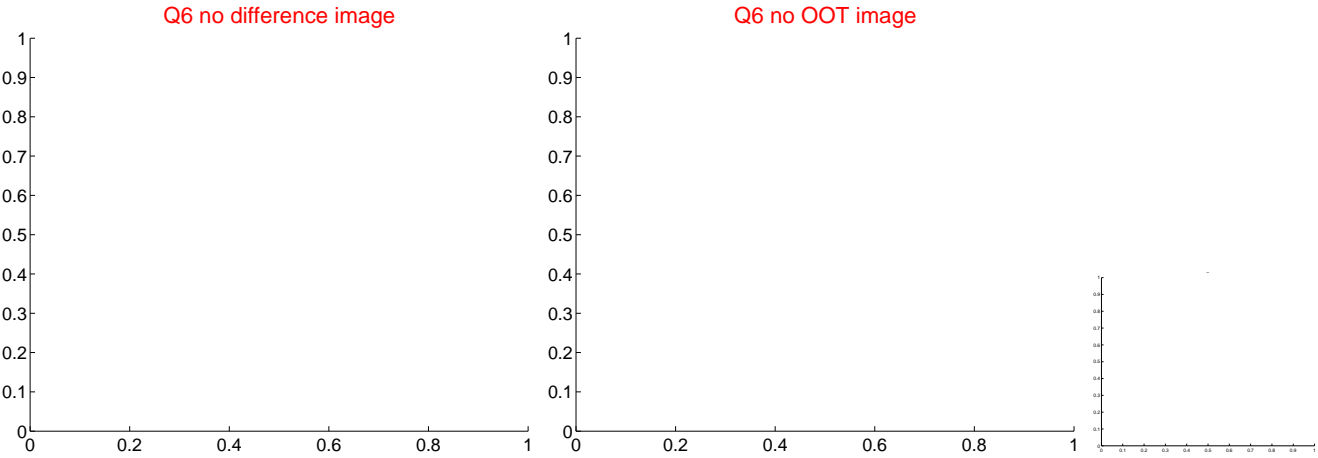
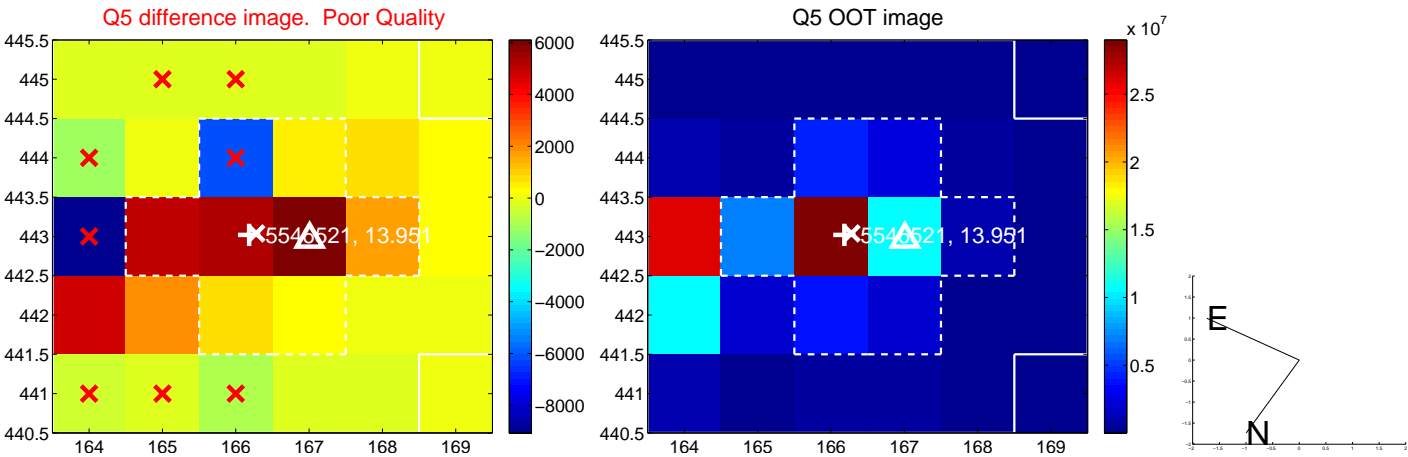


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

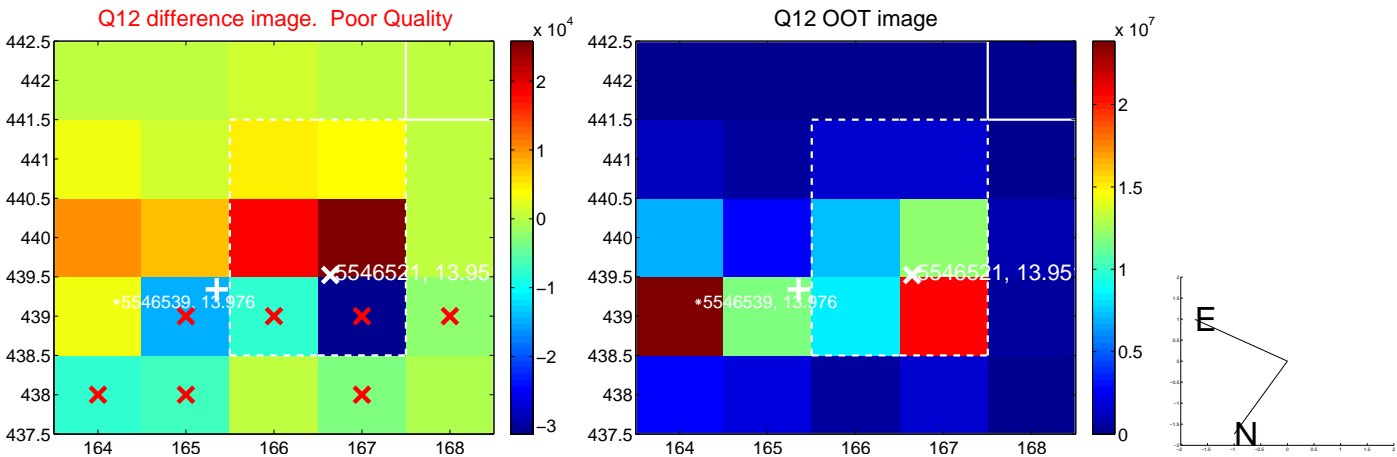
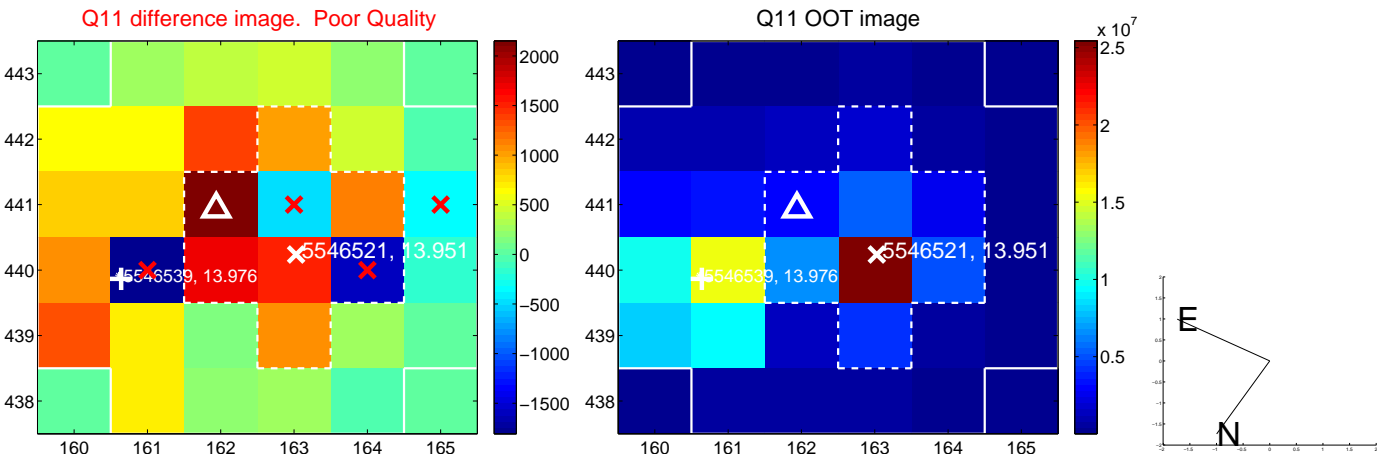
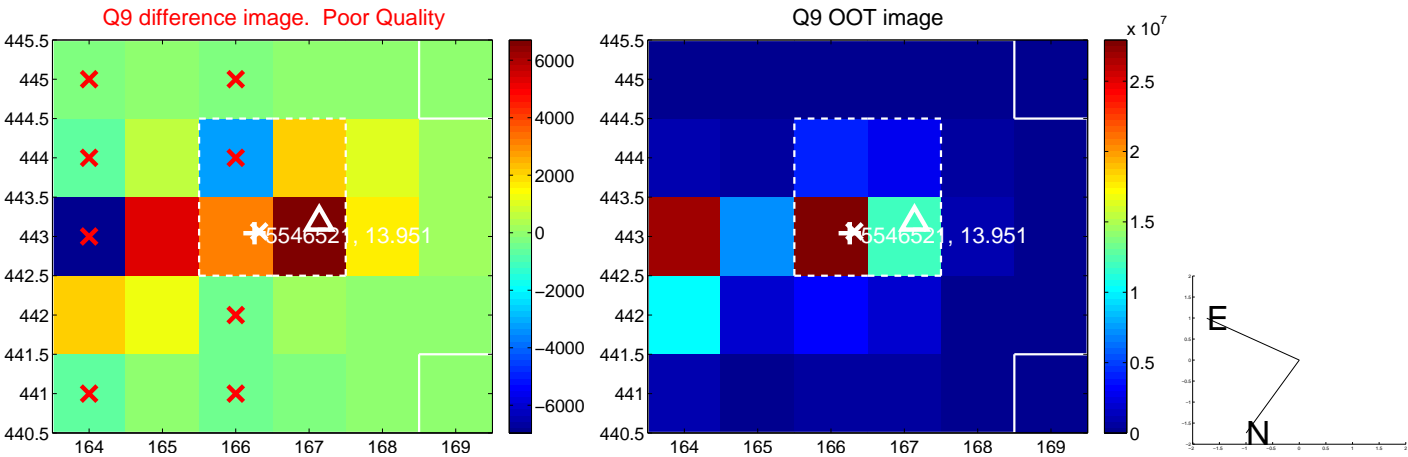
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



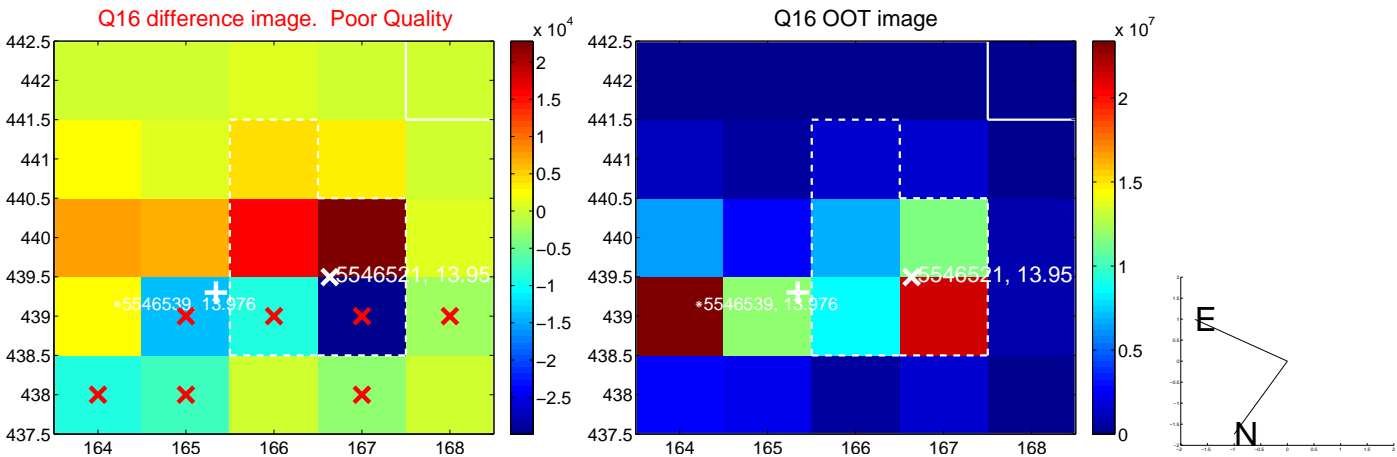
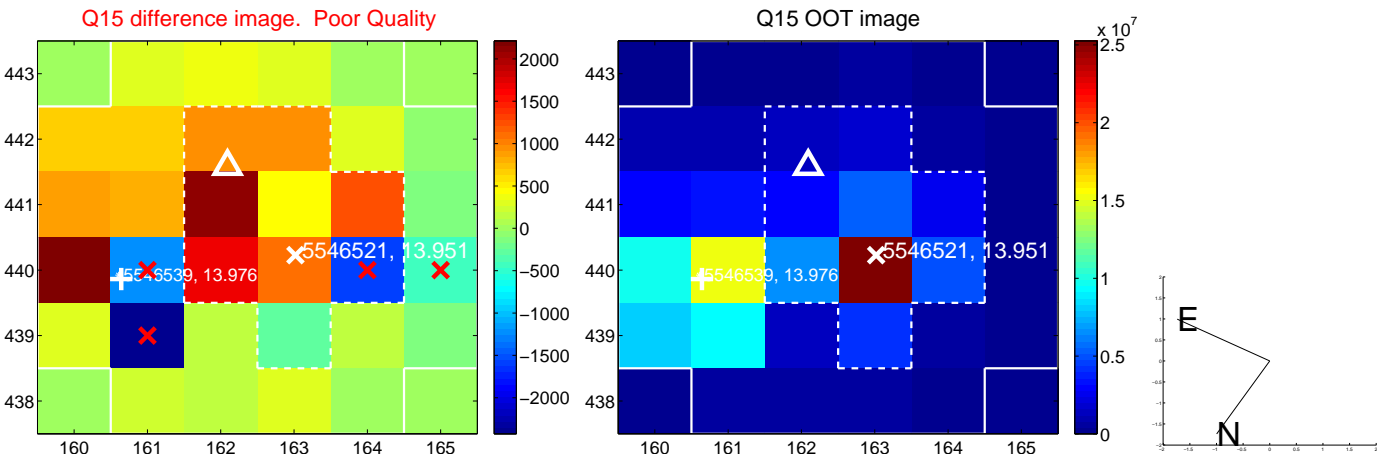
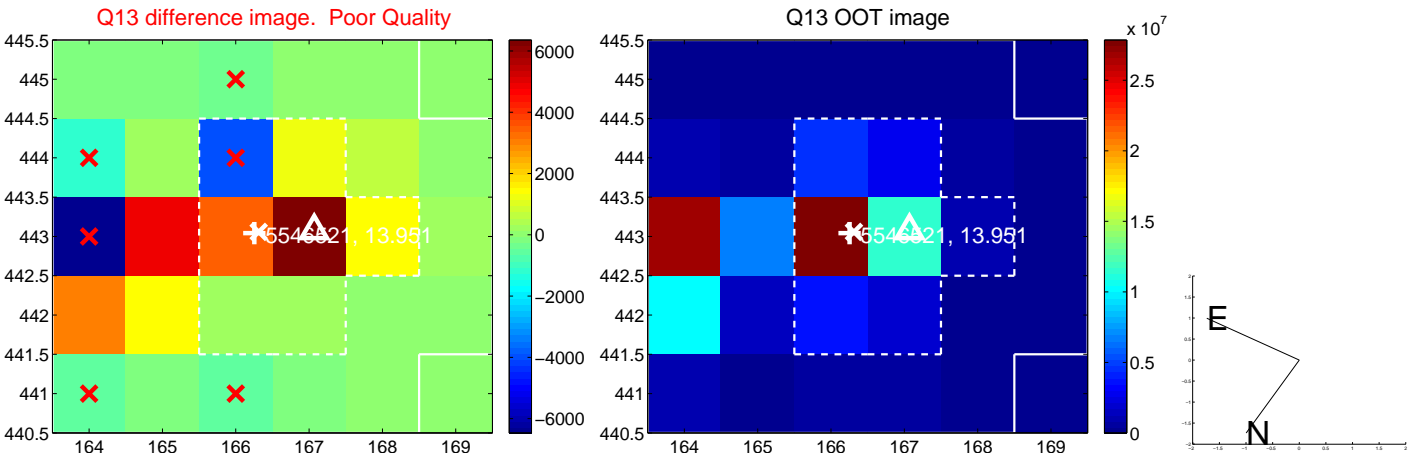
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



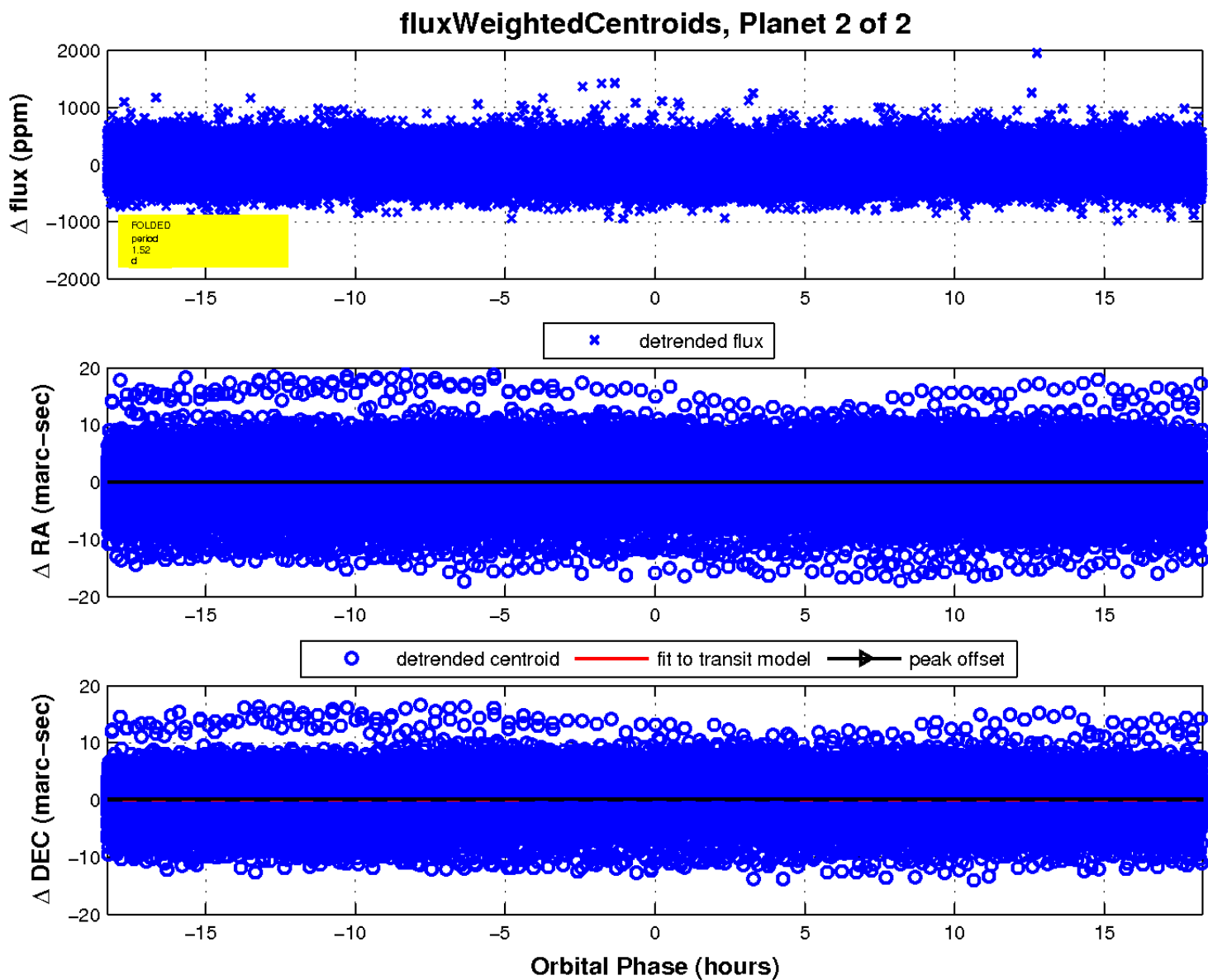
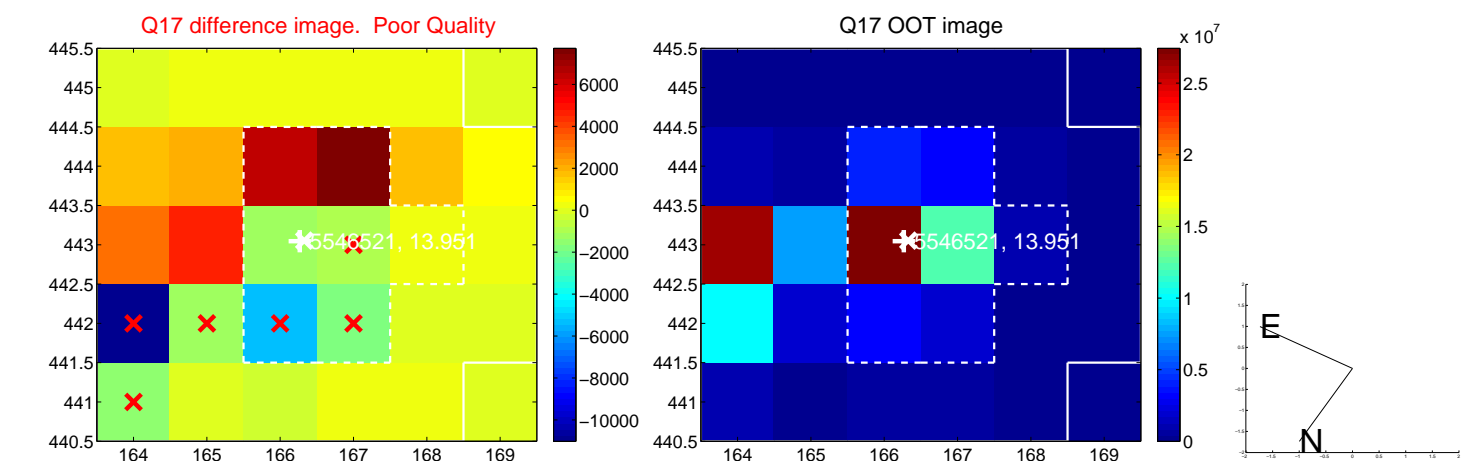
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

