

KIC 011521048

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})
011521048-01	OBS	0540.01	25.702803	143.419665	5512.6	3.149	131.0	114.7	0.83	5532	10.81	23.71
011521048-02	OBS	No	25.702935	147.009938	727.8	3.350	16.7	18.6	0.83	5532	4.48	23.71
011521048-03	OBS	No	574.636240	390.870997	807.8	11.659	9.8	6.1	0.83	5532	2.50	0.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011521048-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
011521048-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET
011521048-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—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.

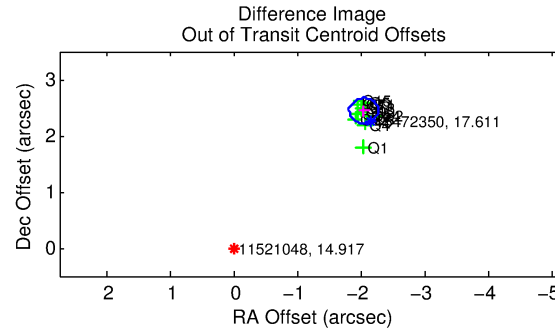
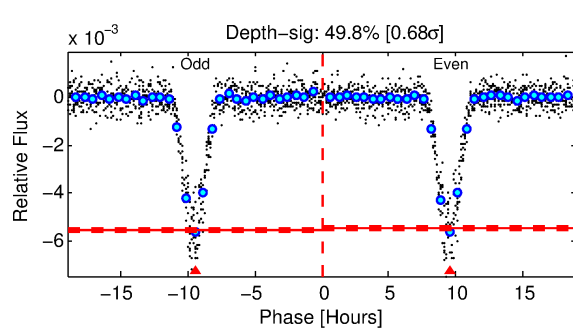
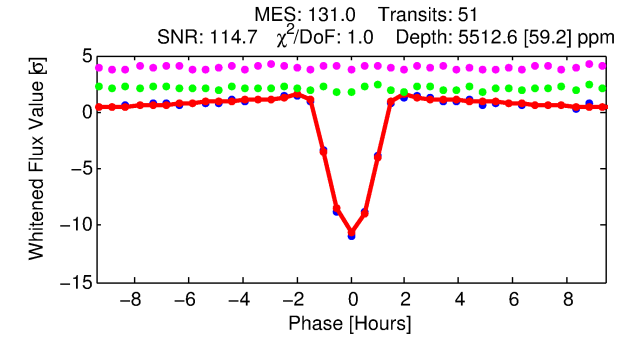
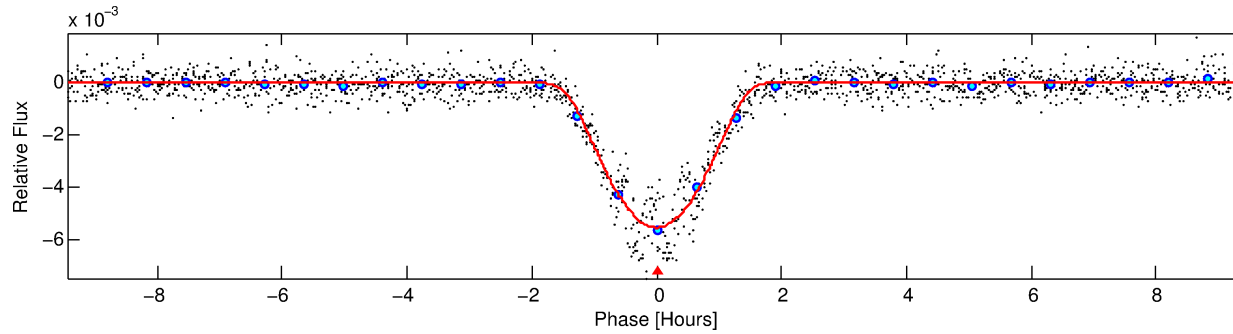
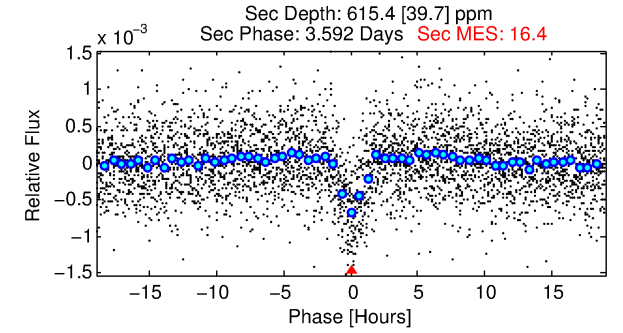
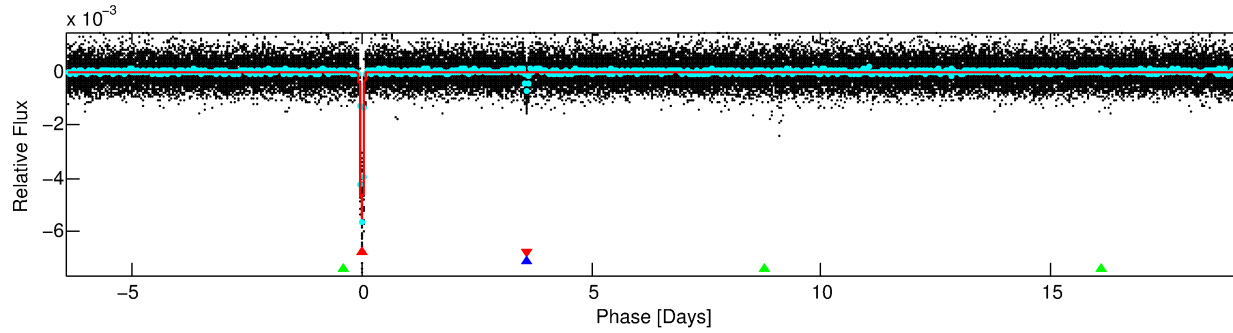
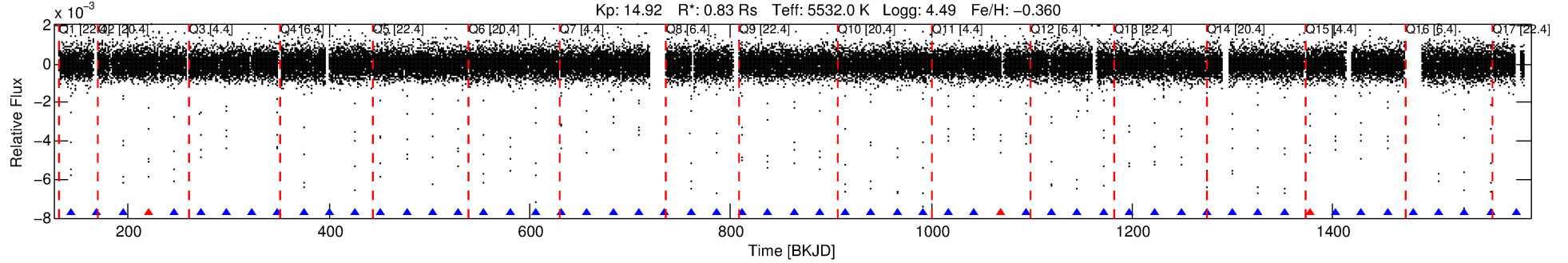
Ephemeris Match Information For 011521048-01

No Significant Match Found

DV One-Page Summary

KIC: 11521048 Candidate: 1 of 3 Period: 25.703 d
KOI: K00540.01 Corr: 0.998

Kp: 14.92 R*: 0.83 Rs Teff: 5532.0 K Logg: 4.49 Fe/H: -0.360



DV Fit Results:

Period = 25.70280 [0.00002] d
Epoch = 143.4197 [0.0006] BKJD
Rp/R* = 0.1186 [0.0359]
a/R* = 32.65 [1.97]
b = 0.99 [0.05]
Seff = 23.71 [6.43]
Teq = 563 [38] K
Rp = 10.81 [3.93] Re
a = 0.1571 [0.0265] AU
Ag = 71.52 [46.86] [1.51σ]
Teff = 2530 [392] K [4.99σ]

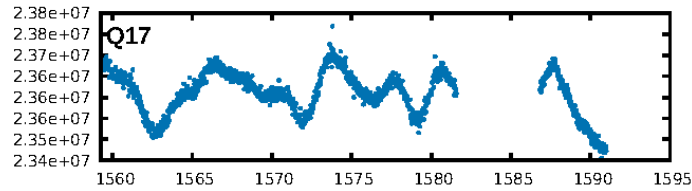
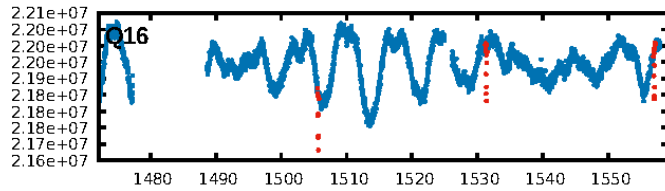
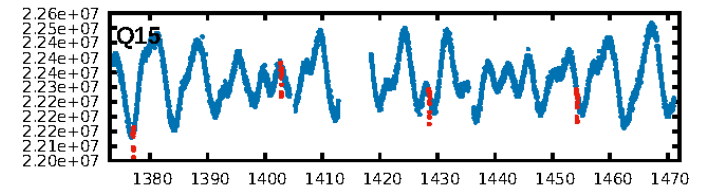
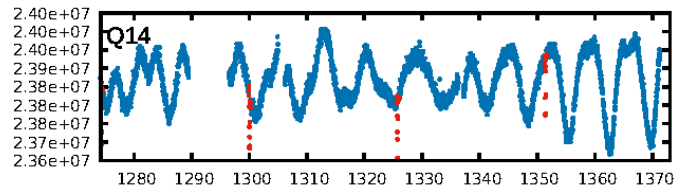
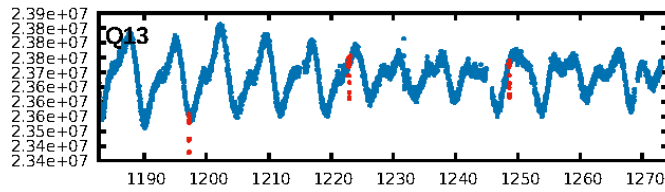
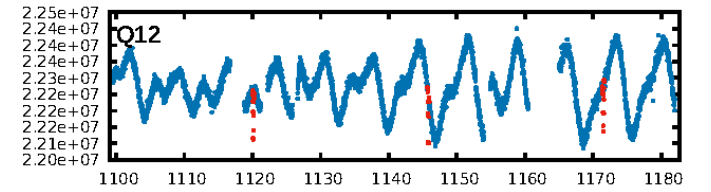
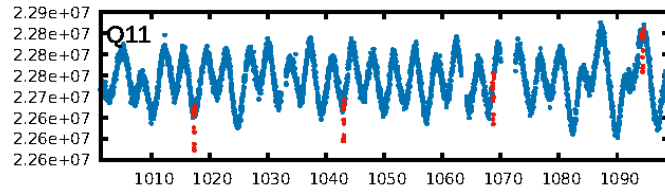
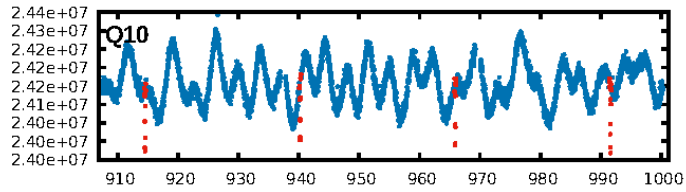
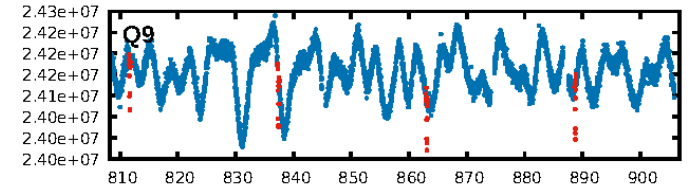
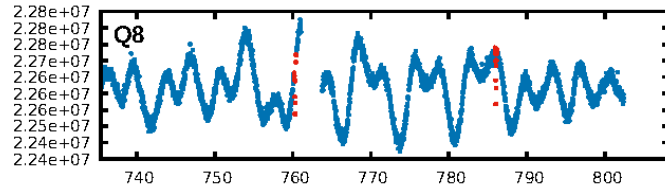
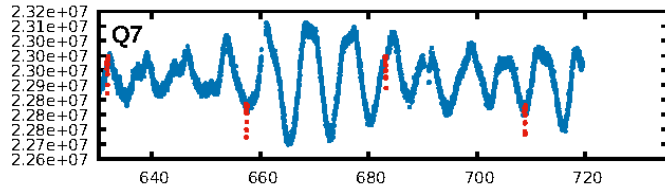
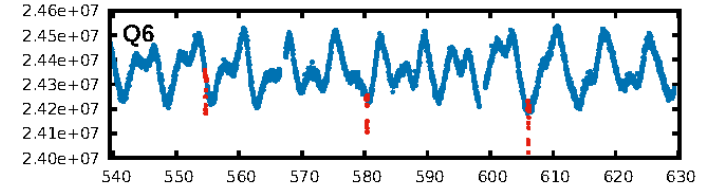
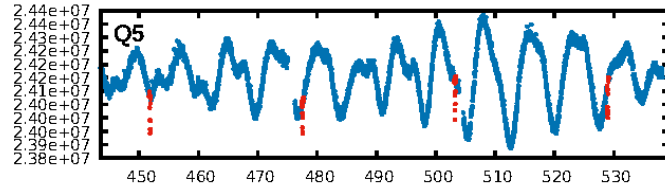
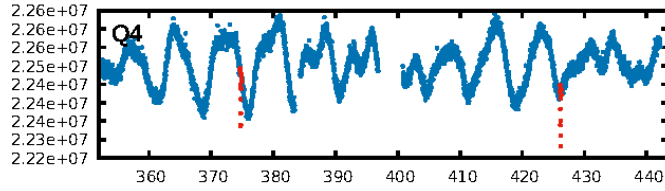
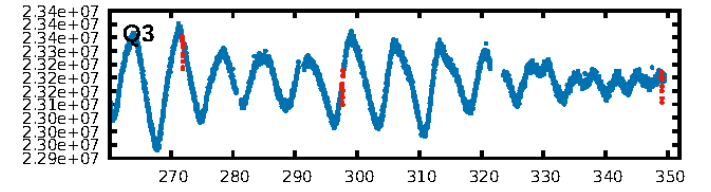
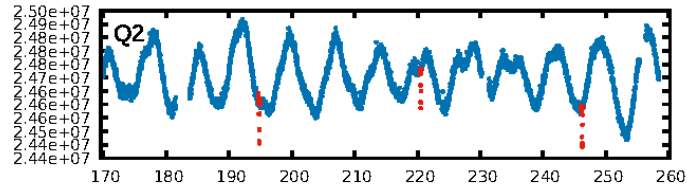
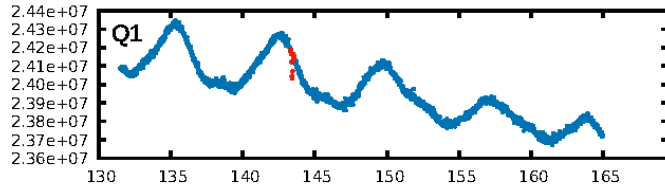
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 82.6%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.94 [47/50]
GhostDiagnostic-chr: 1.599
Centroid-sig: 0.0%
Centroid-so: 3.477 arcsec [36.88σ]
OotOffset-rm: 3.178 arcsec [42.06σ]
KicOffset-rm: 3.113 arcsec [40.22σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [16/16]

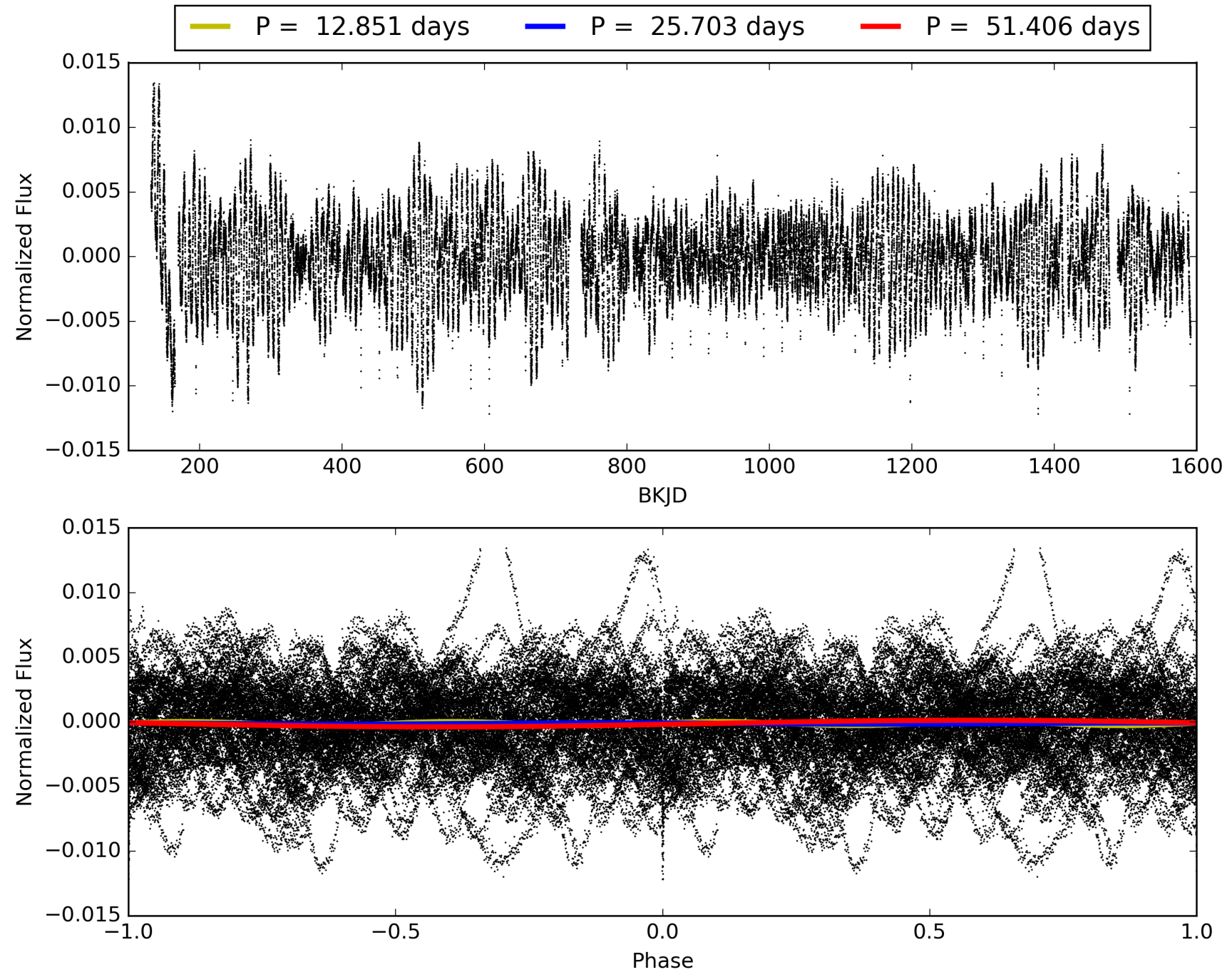
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 011521048-01, PDC Light Curves

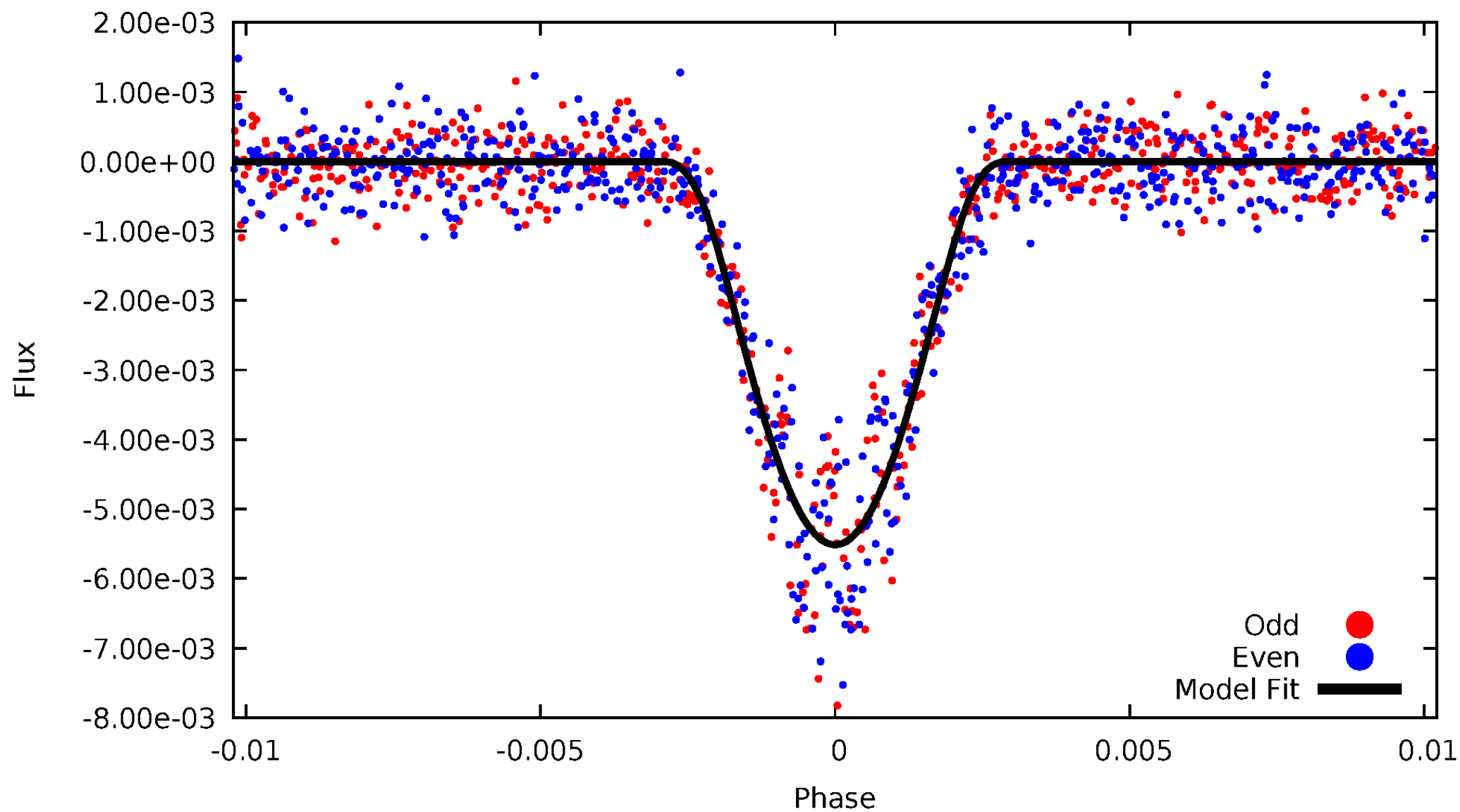


TCE 011521048-01



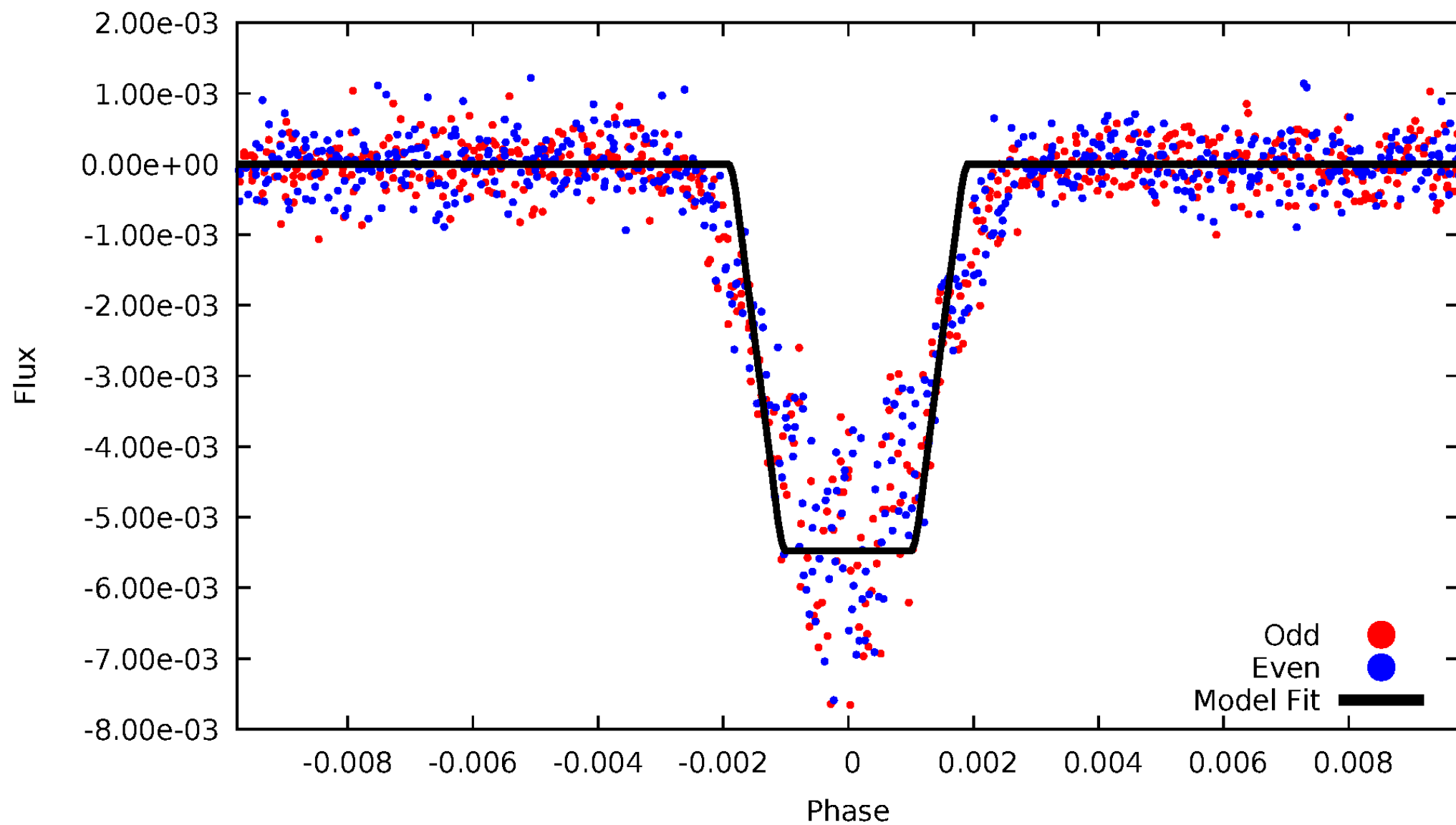
DV Odd/Even

TCE 011521048-01



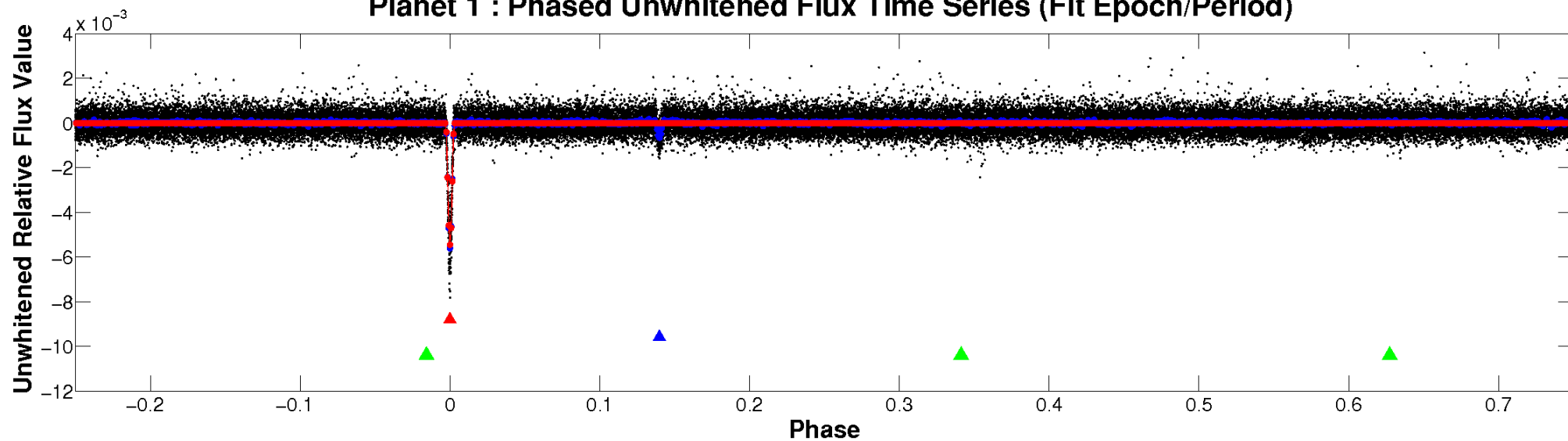
ALT Odd/Even

TCE 011521048-01

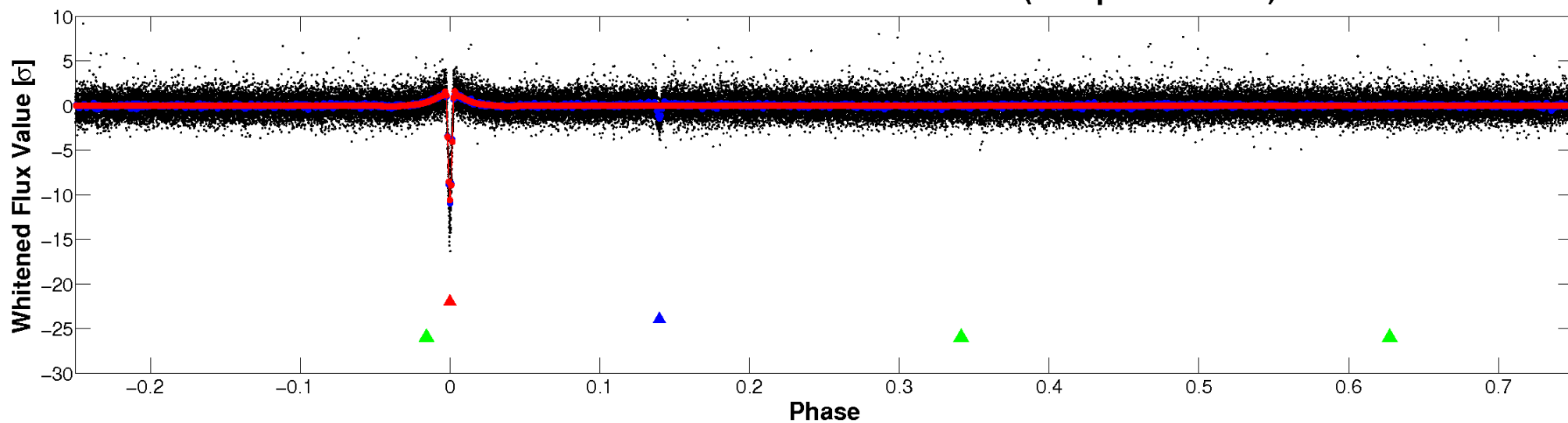


Non-Whitened Vs. Whitened Light Curve

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

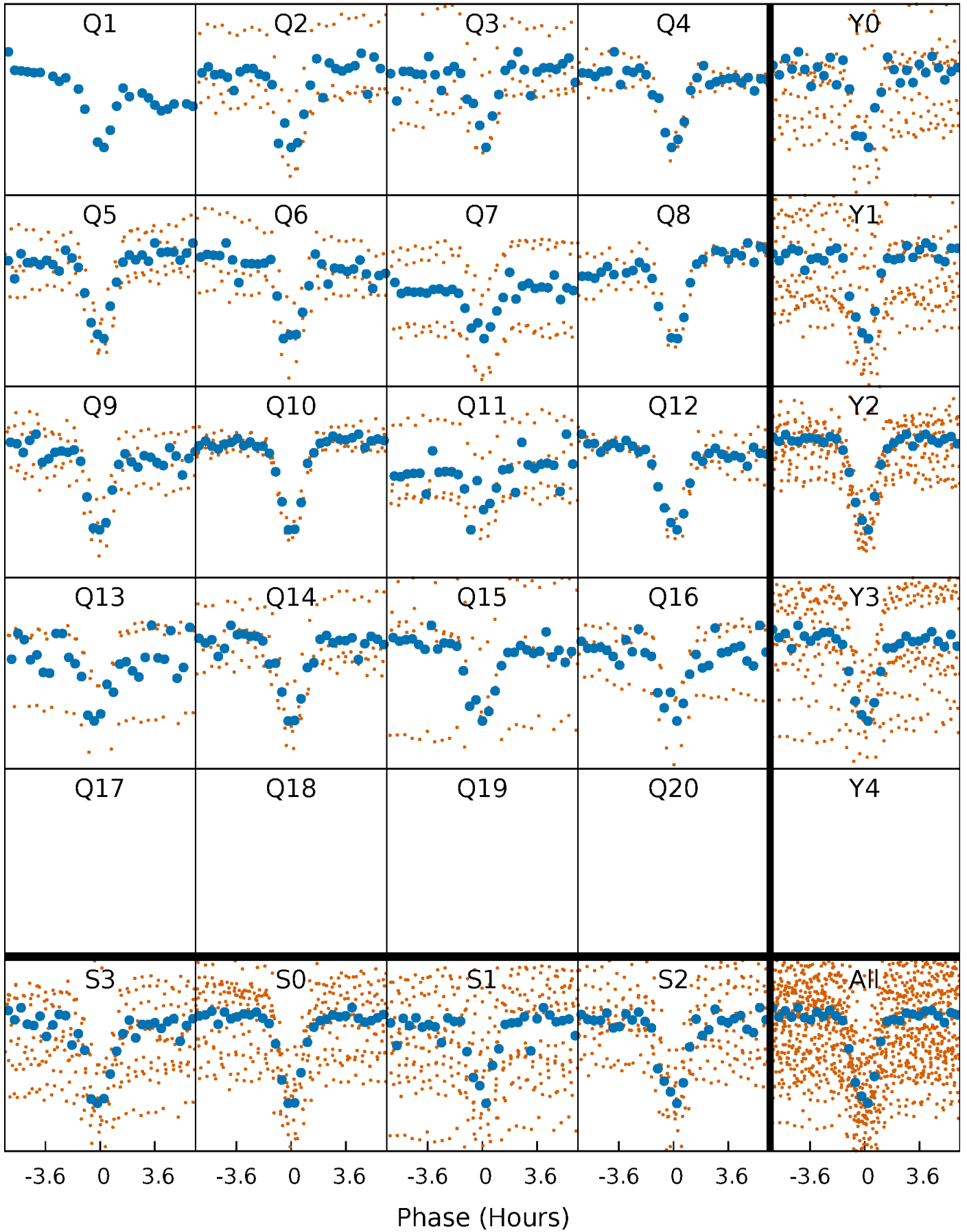


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



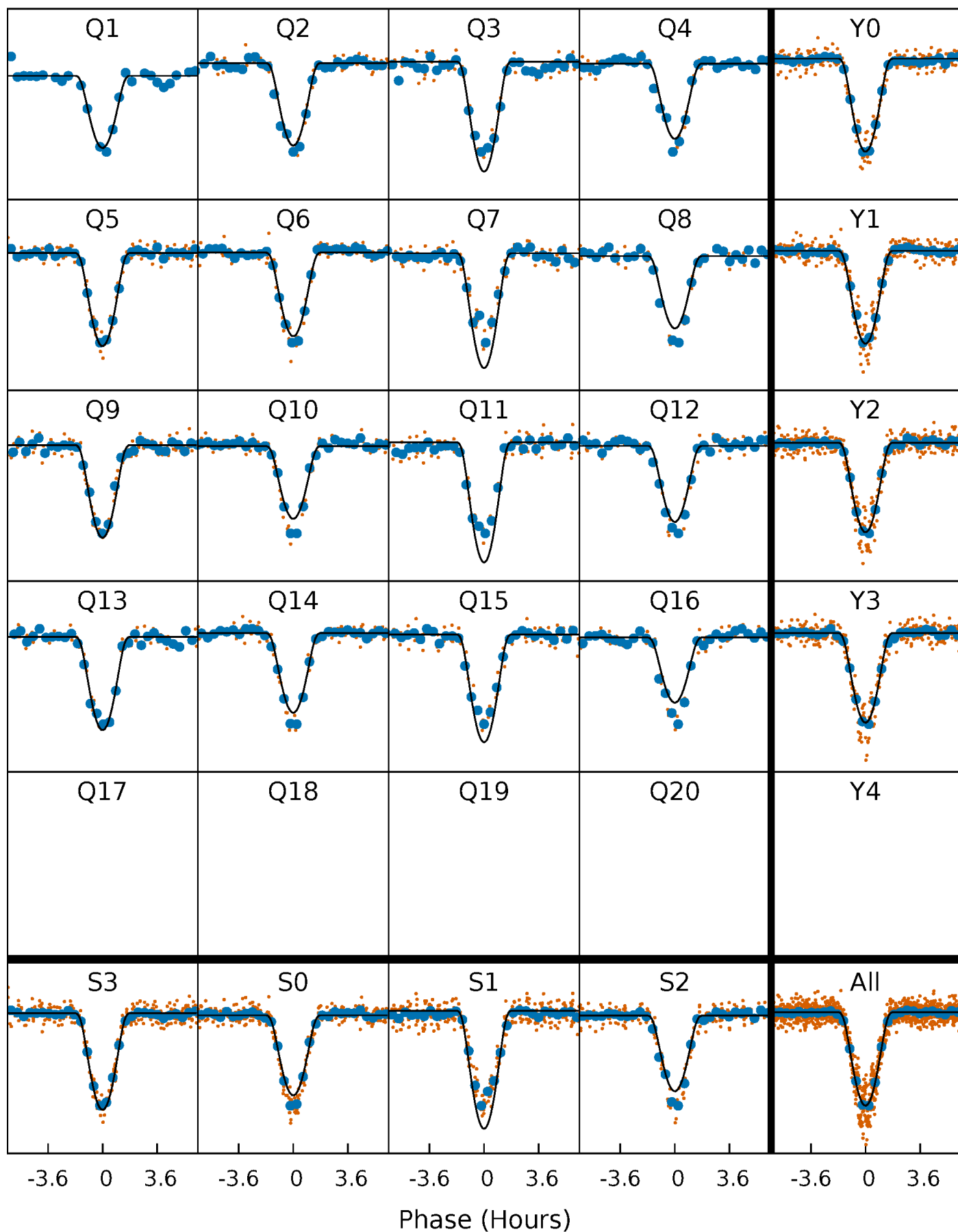
PDC Quarter-Phased Transit Curves

TCE 011521048-01 P= 25.702803 Days $T_0=143.419665$ (BKJD)



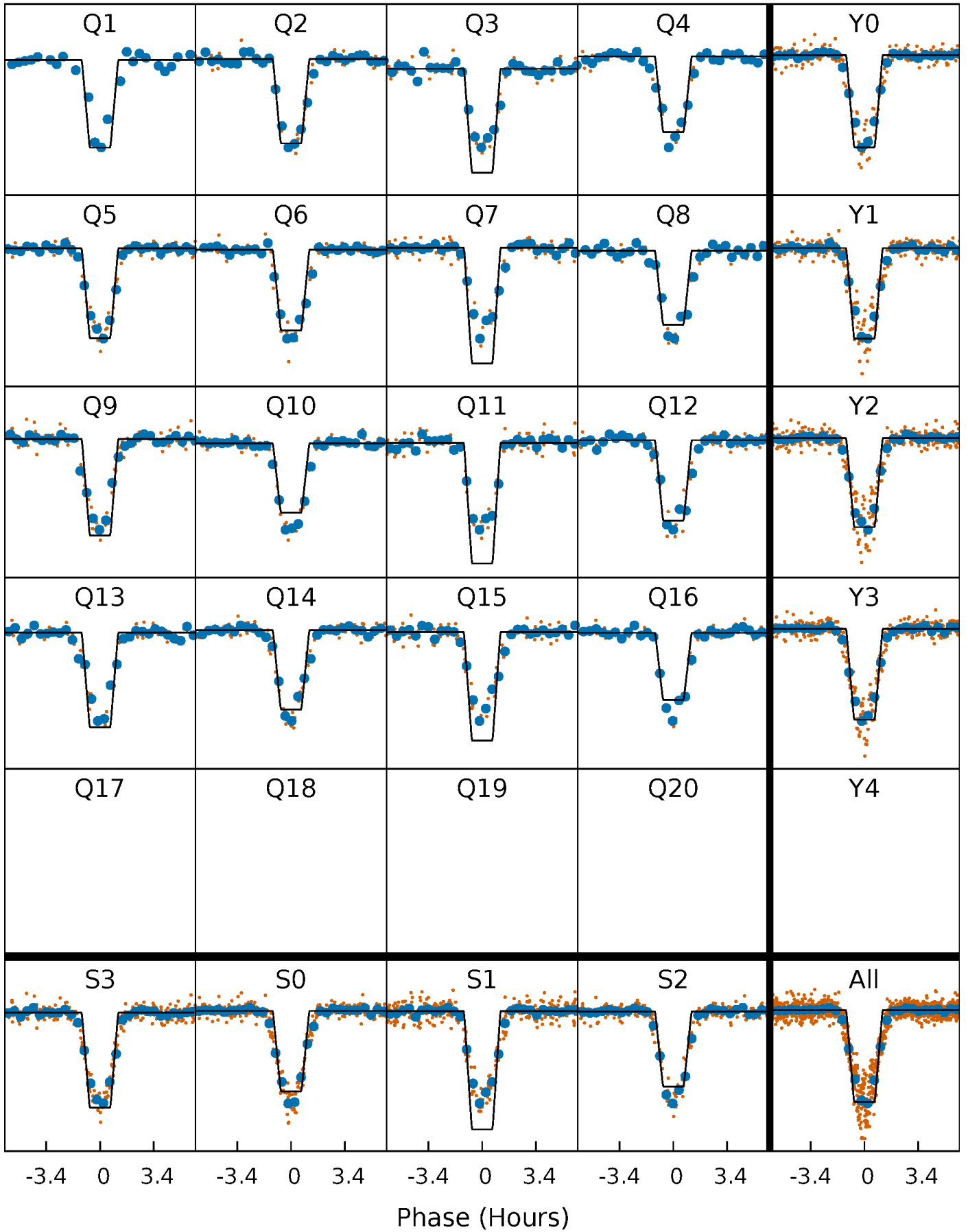
DV Quarter-Phased Transit Curves

TCE 011521048-01 P= 25.702803 Days $T_0=143.419665$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

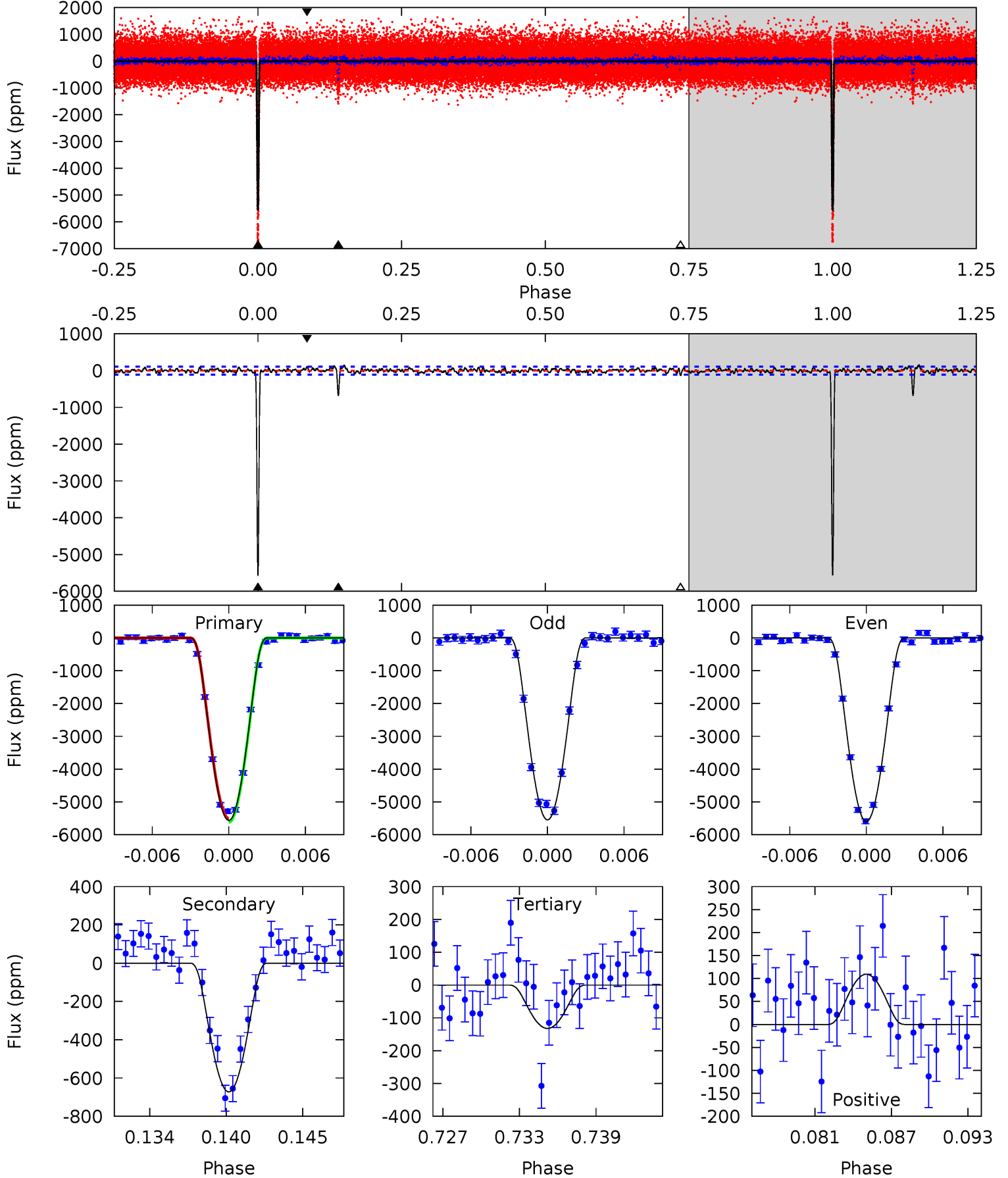
TCE 011521048-01 P= 25.702817 Days $T_0=143.419118$ (BKJD)



DV Model-Shift Uniqueness Test

011521048-01, P = 25.702803 Days, E = 117.716862 Days

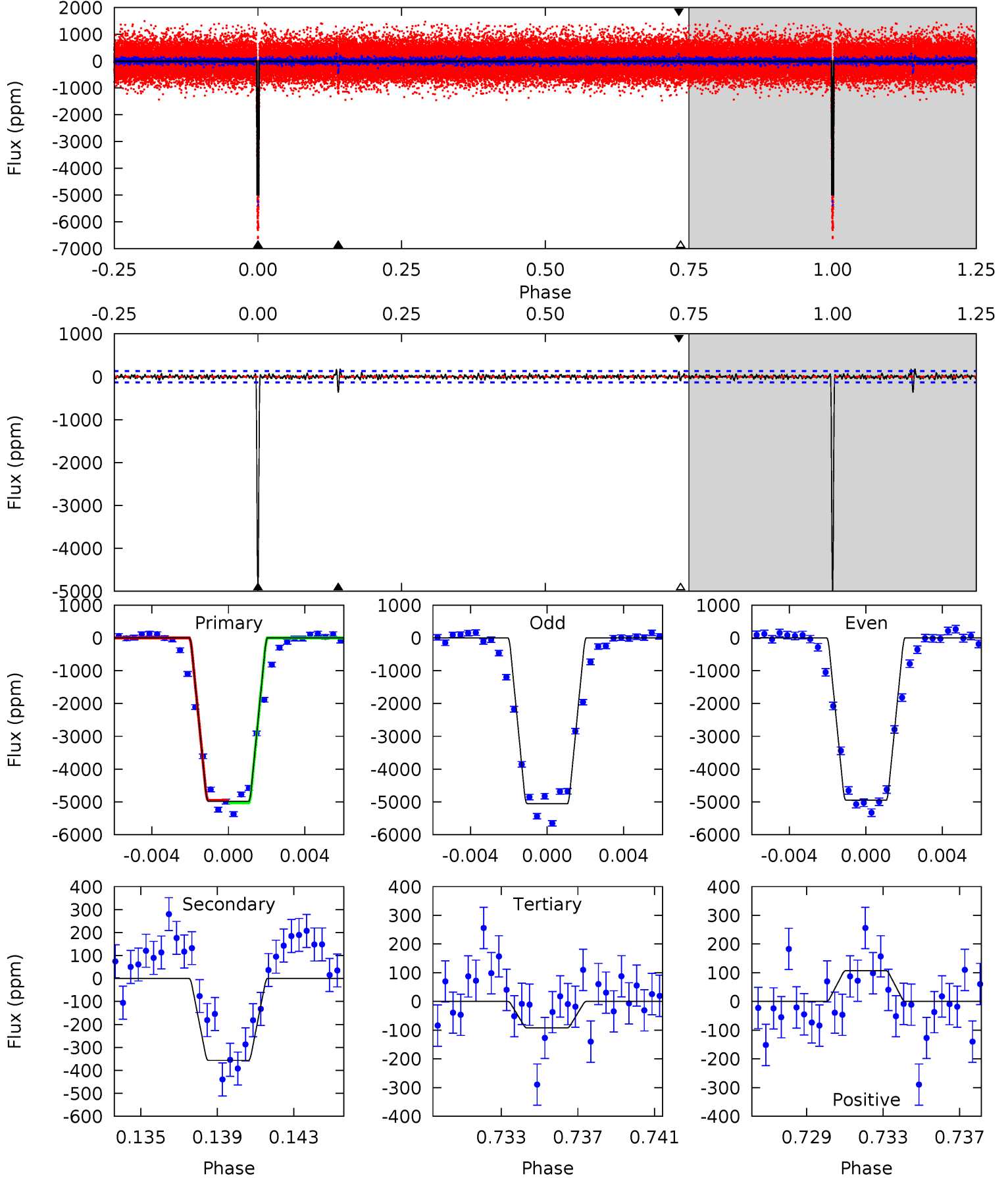
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
265.4	32.1	6.31	5.21	5.13	2.76	1.75	259.1	260.2	25.8	26.9	1.26	0.99	0.02	2.79



Alt Model-Shift Uniqueness Test

011521048-01, P = 25.702817 Days, E = 117.716301 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
198.0	14.2	3.66	4.26	5.21	2.90	1.03	194.3	193.7	10.5	9.92	2.04	1.00	0.03	1.39



Stellar Parameters For KIC 011521048

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5532^{+165}_{-149}	$4.488^{+0.108}_{-0.132}$	$-0.360^{+0.300}_{-0.300}$	$0.835^{+0.169}_{-0.099}$	$0.782^{+0.114}_{-0.057}$	$1.892^{+0.850}_{-0.736}$
	+3%/-3%	+2%/-3%	+83%/-83%	+20%/-12%	+15%/-7%	+45%/-39%
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 011521048-01 / KOI 0540.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-673 ± 21	$11.02^{+3.47}_{-3.65}$	789^{+49}_{-37}	3189^{+390}_{-234}	78^{+87}_{-34}
Alt.	-357 ± 25	$6.77^{+3.71}_{-3.22}$	789^{+41}_{-37}	3330^{+790}_{-385}	105^{+279}_{-60}

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

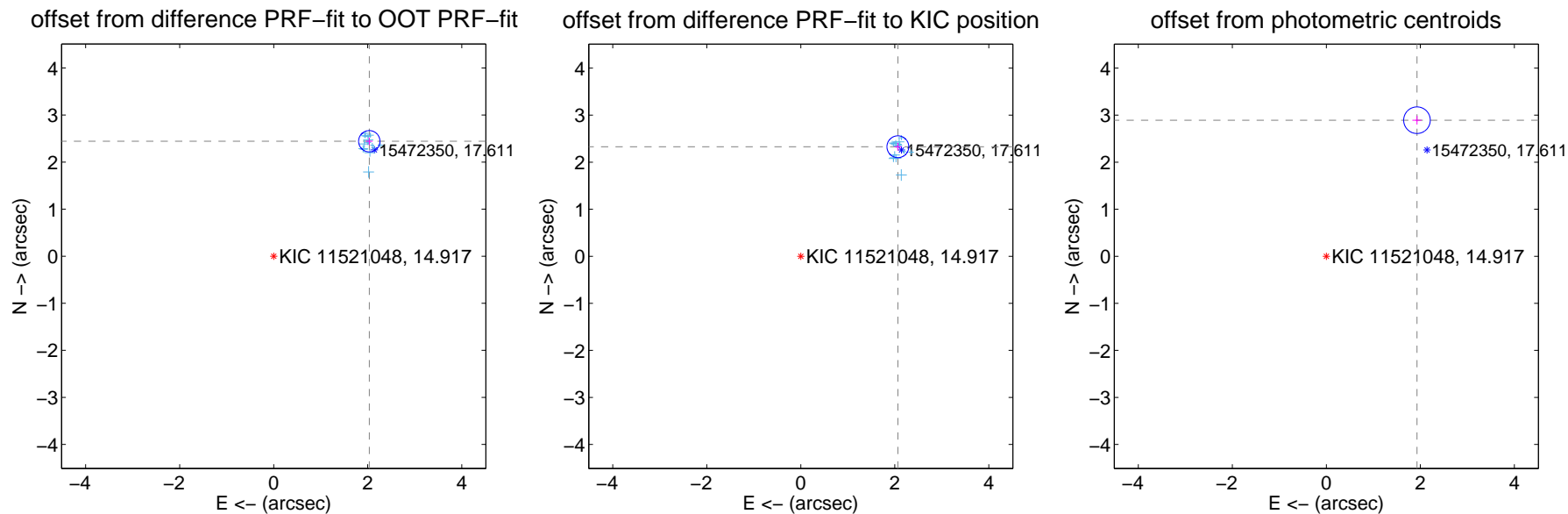
DV Centroid Data

Supplemental centroid analysis for 011521048-01. Kepler magnitude: 14.92. Transit SNR 114.74

There are 16 quarters with good PRF difference image offsets

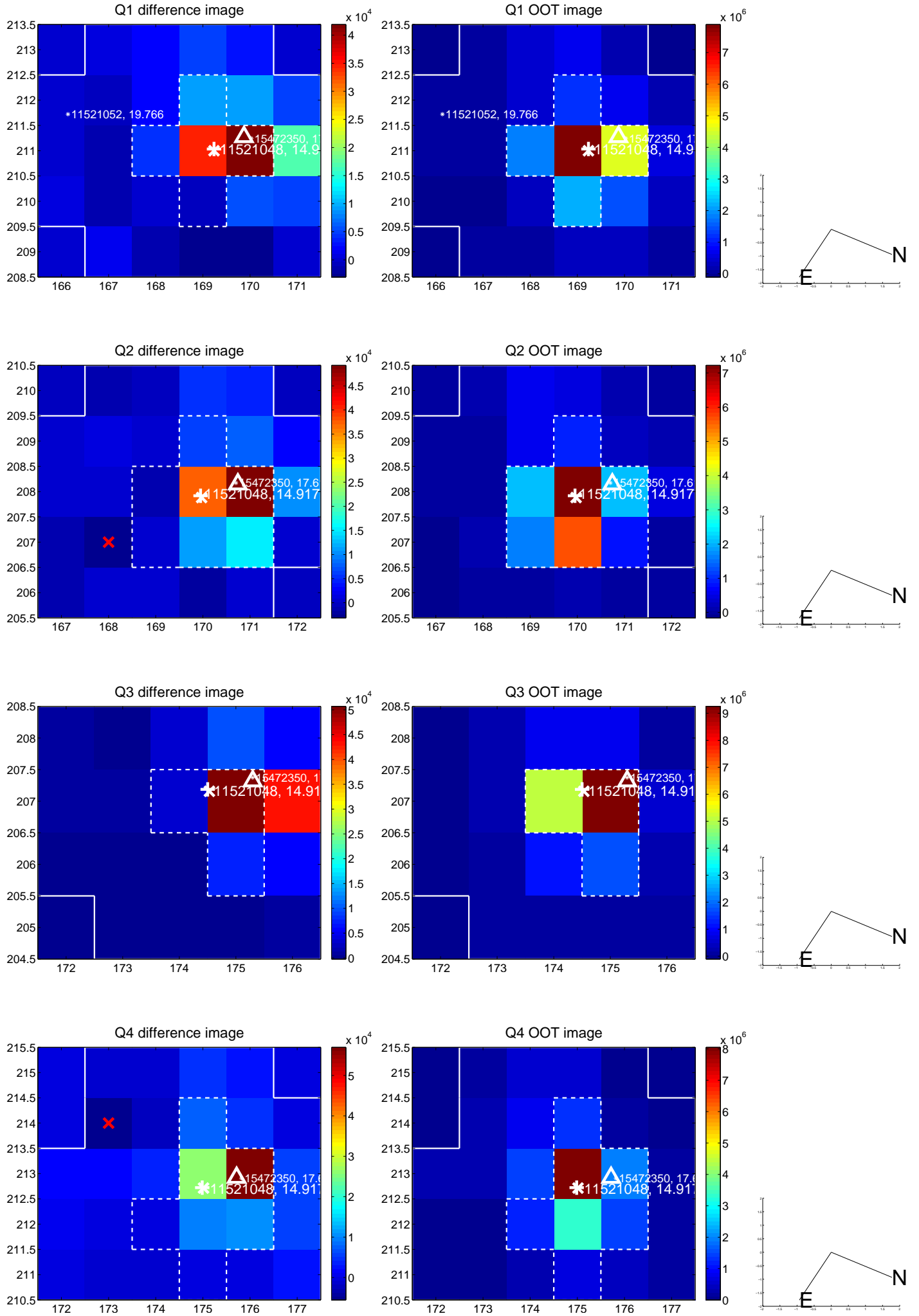
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.178 ± 0.076	42.06	-2.033 ± 0.071	2.443 ± 0.080
PRF-fit source offset from KIC position	3.113 ± 0.077	40.22	-2.065 ± 0.072	2.329 ± 0.082
photometric centroid source offset	3.48 ± 0.09	36.88	-1.93 ± 0.10	2.89 ± 0.09

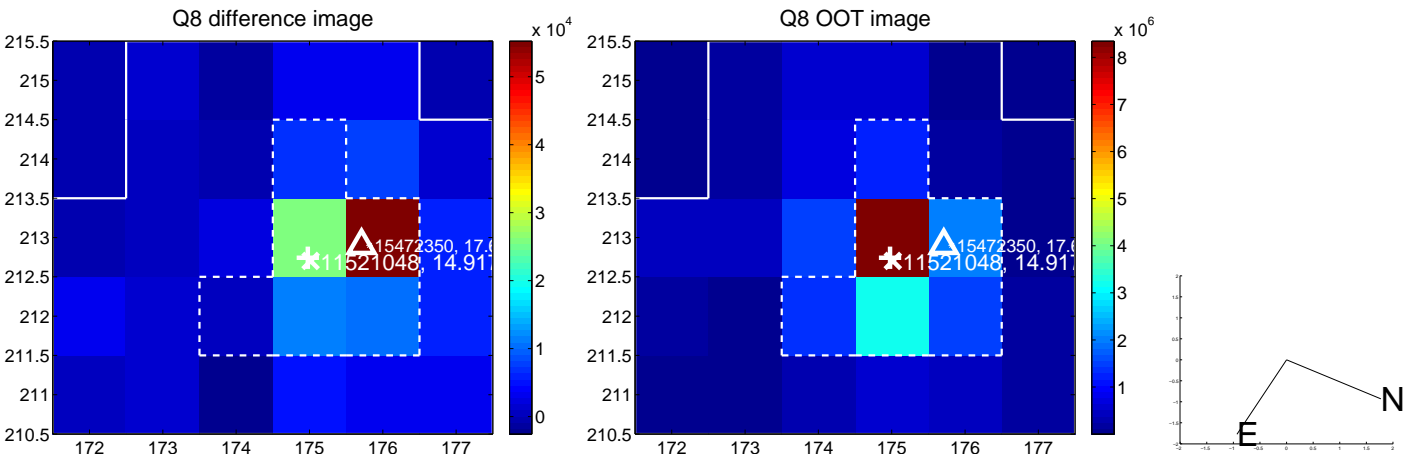
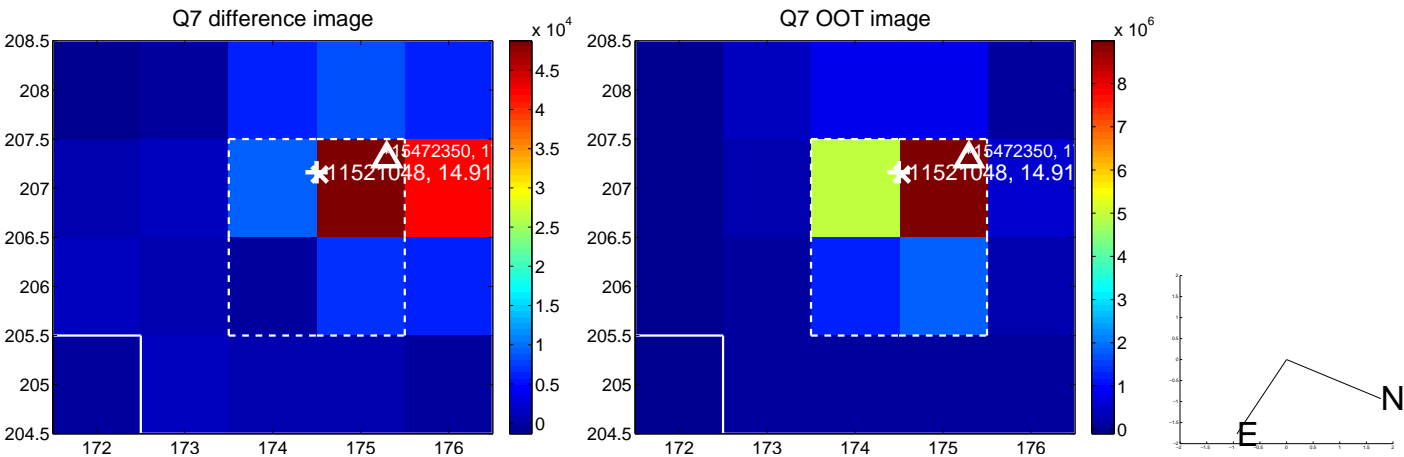
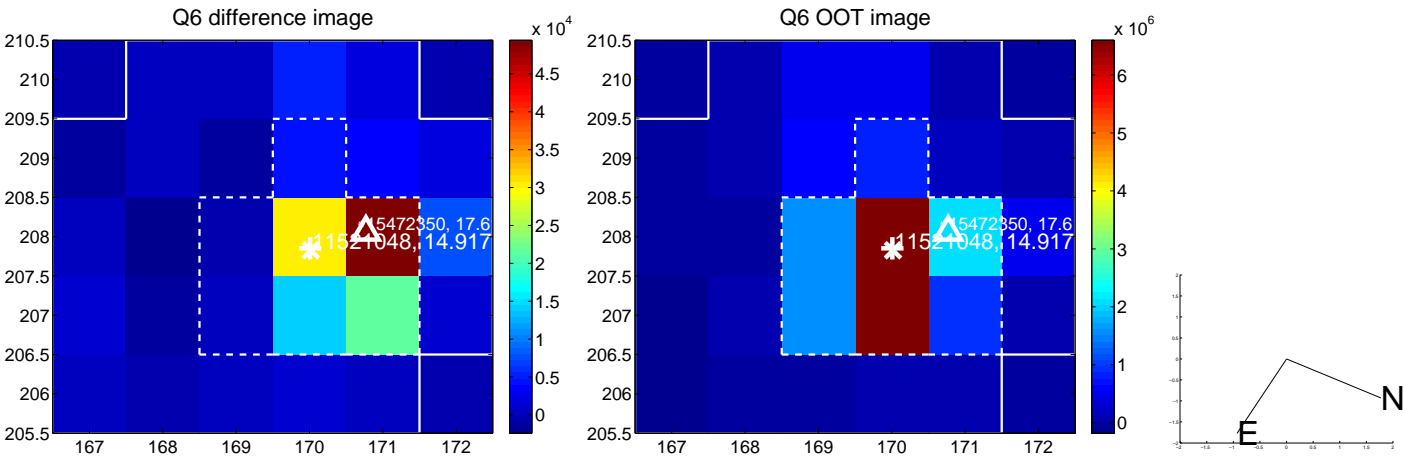
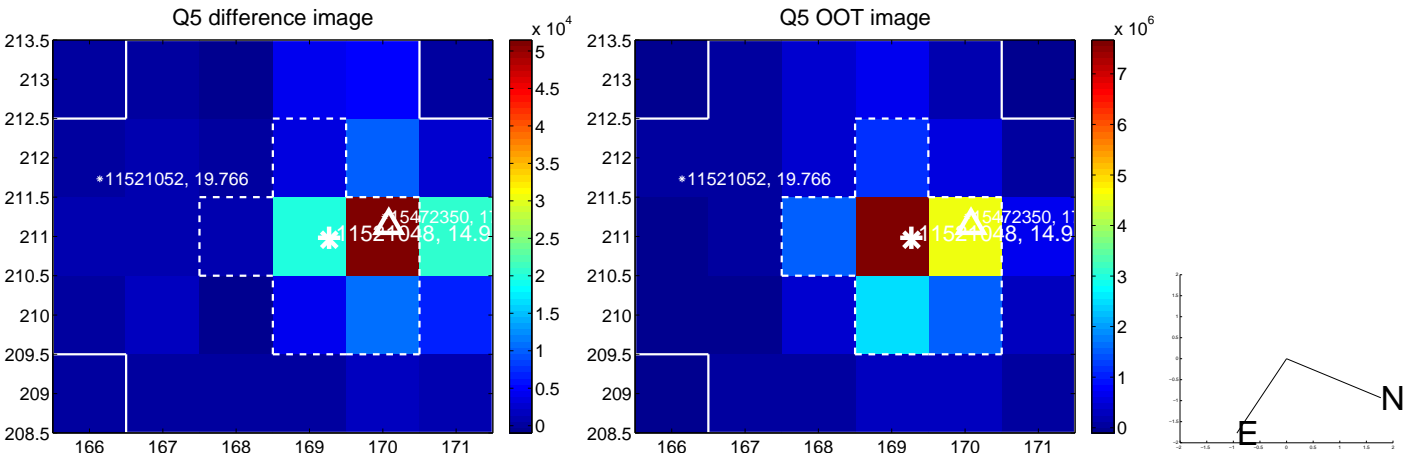


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

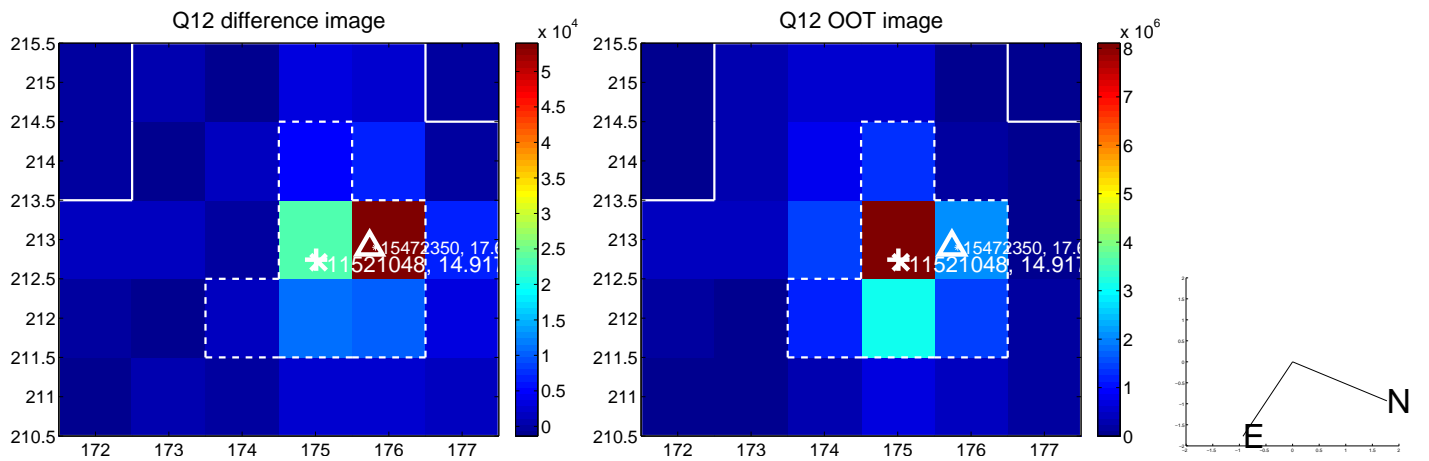
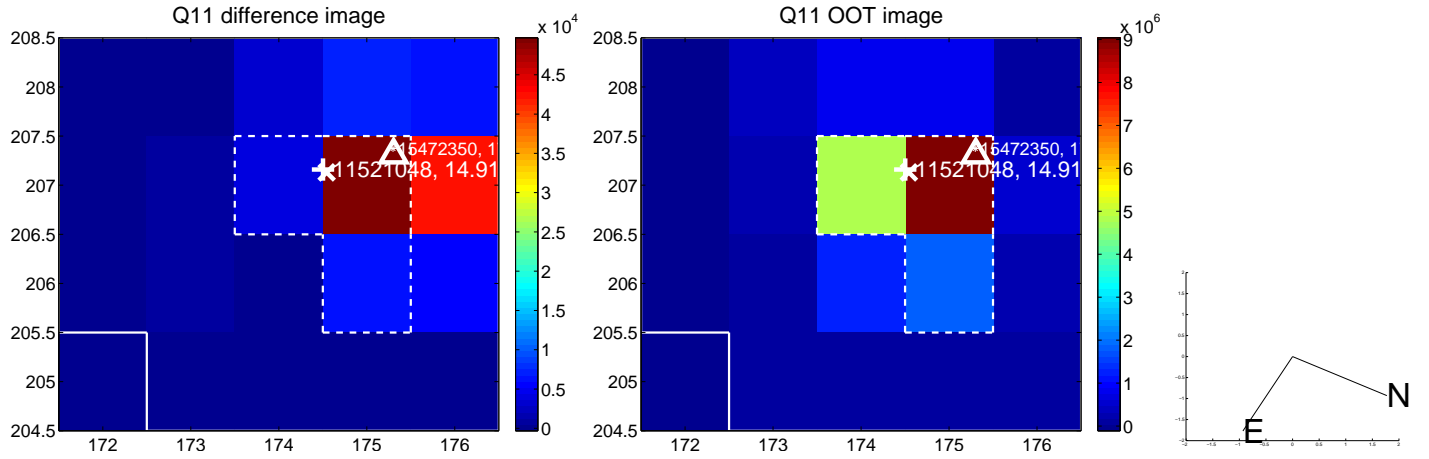
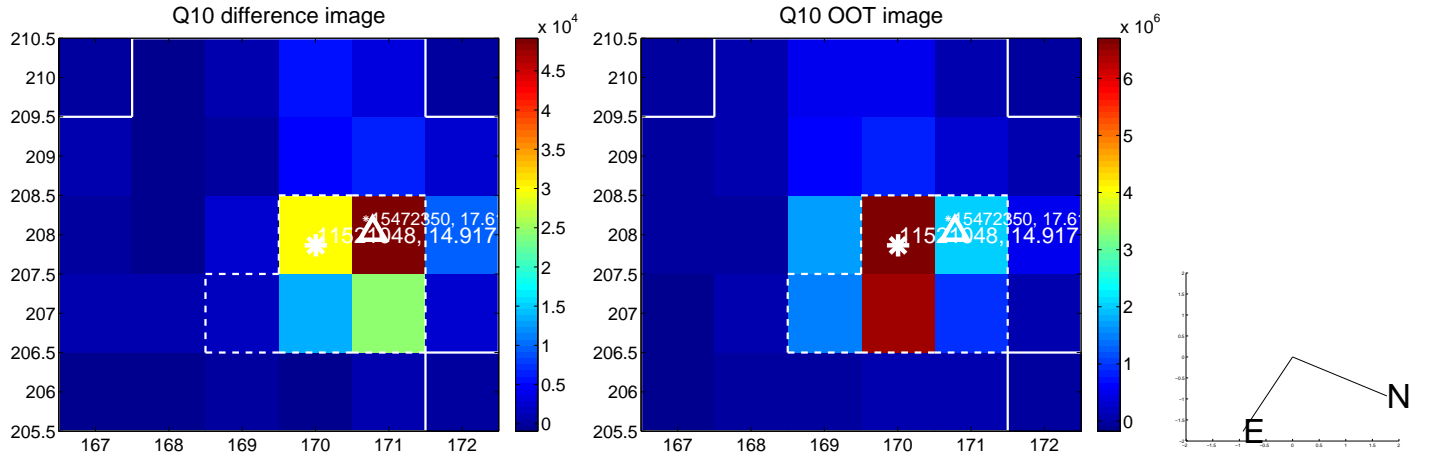
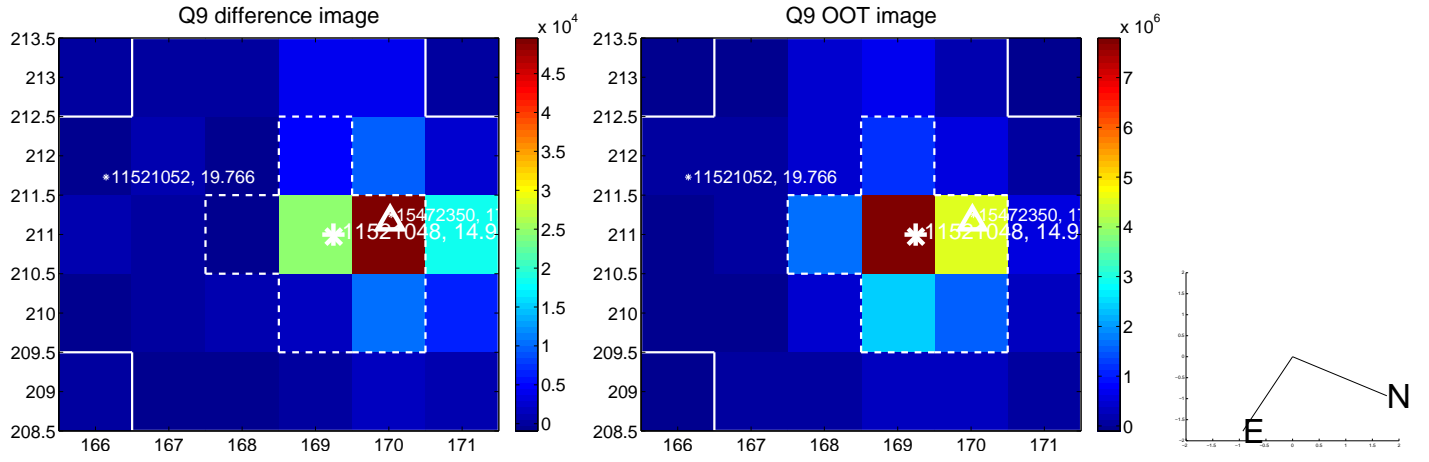
white \times : KIC target position; +: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



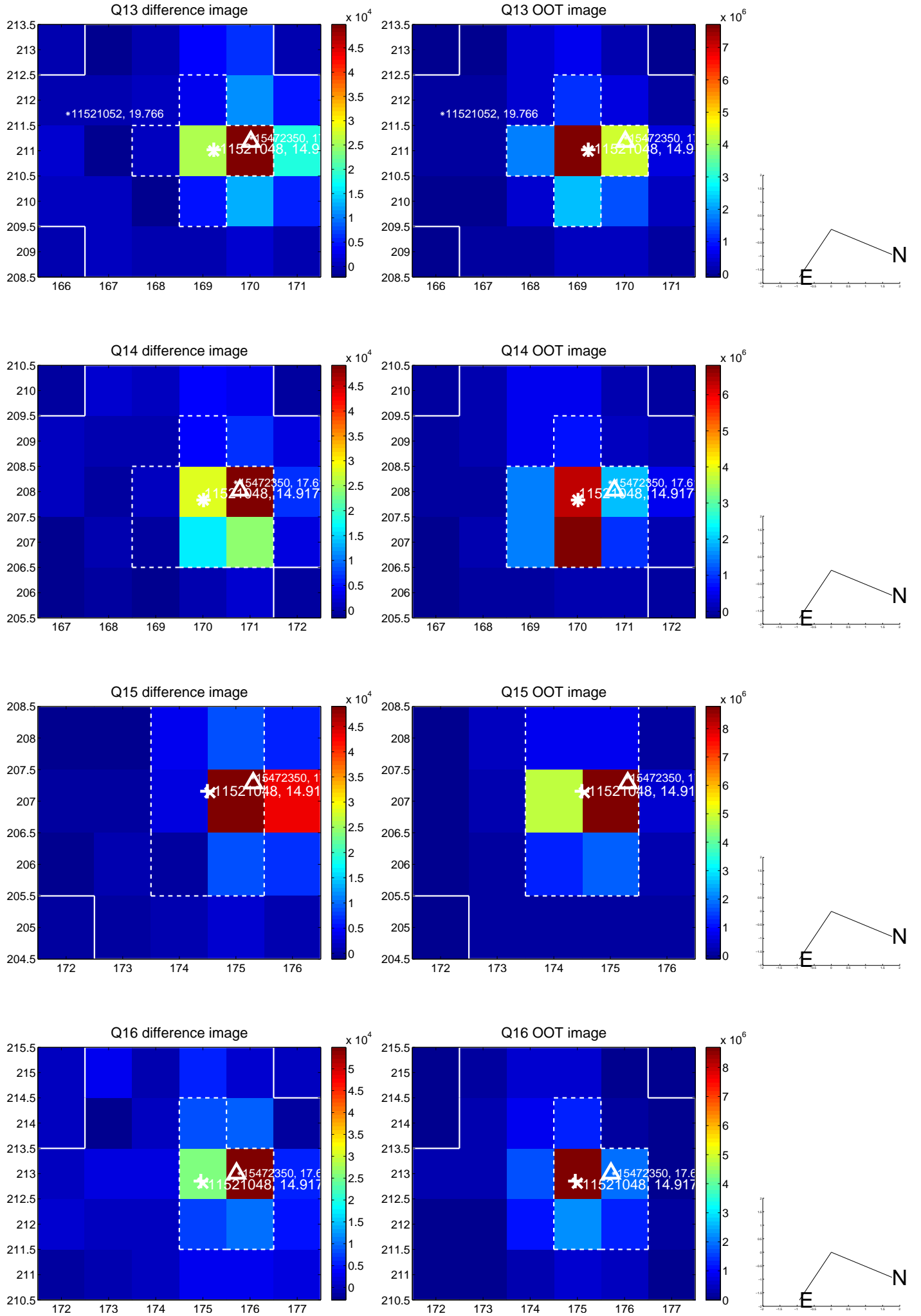
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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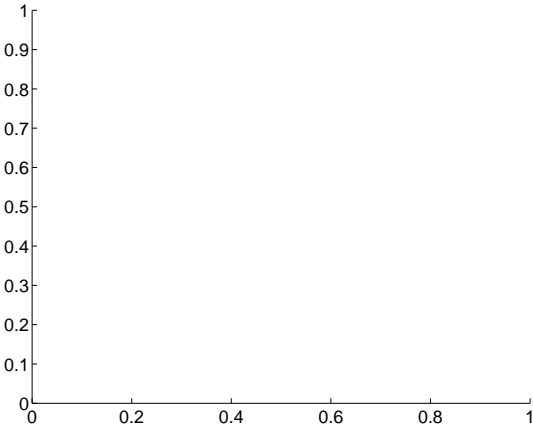


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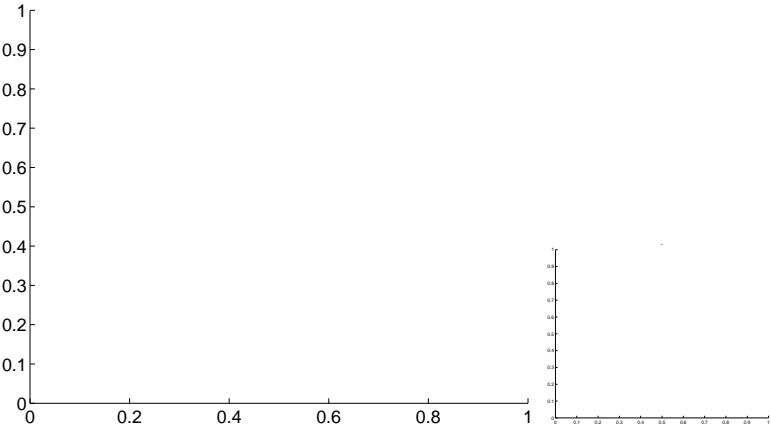


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

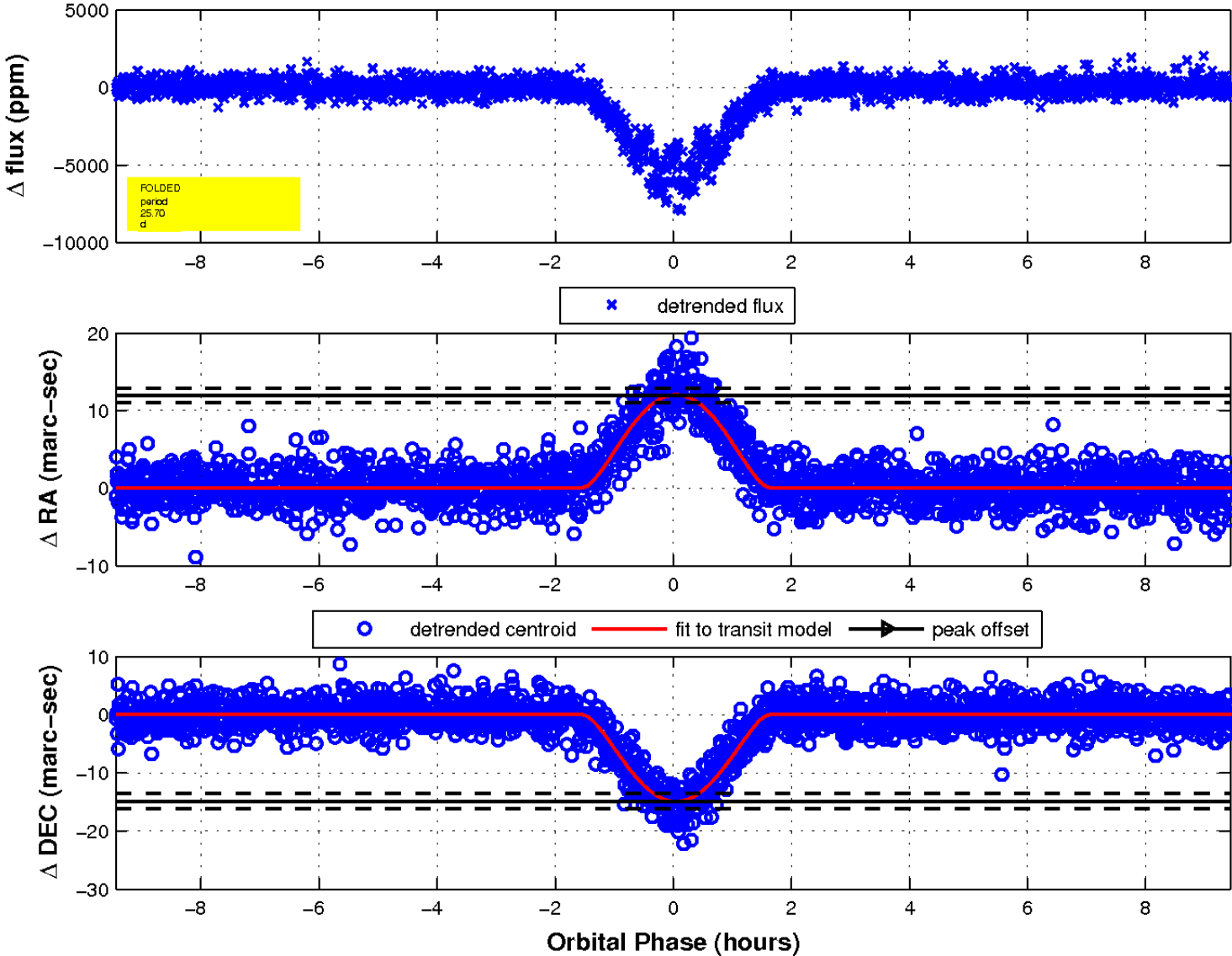
Q17 no difference image



Q17 no OOT image

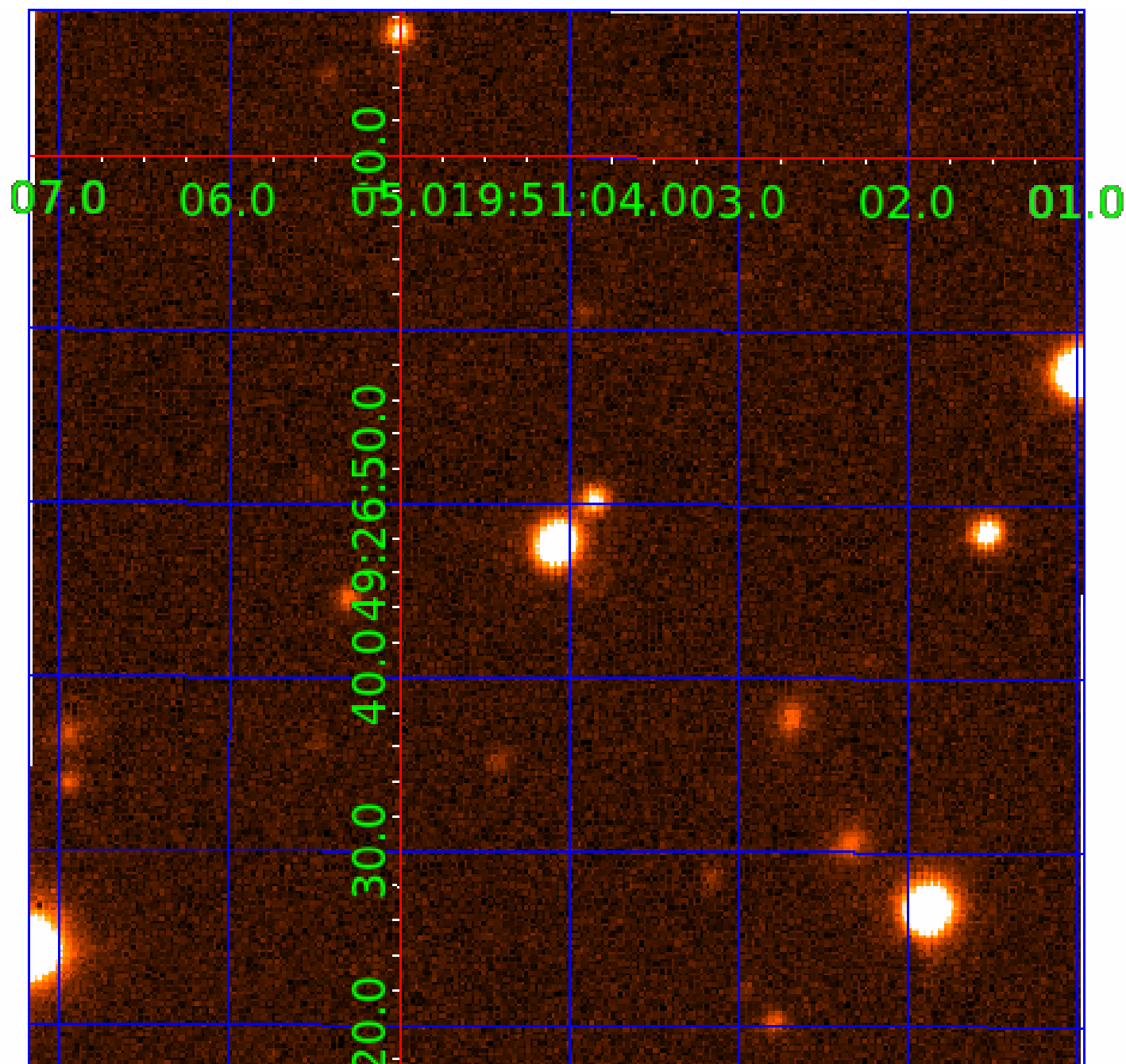


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 011521048

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})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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011521048-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET
011521048-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—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.

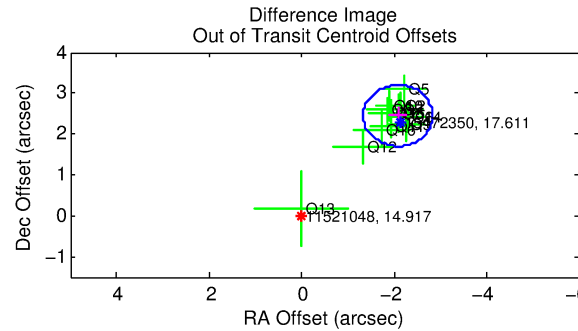
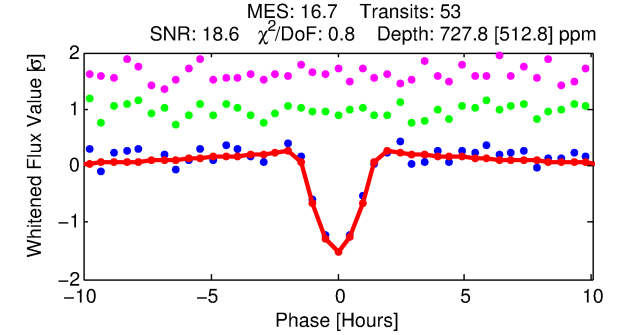
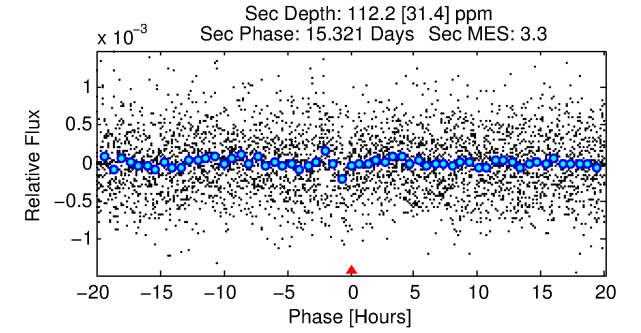
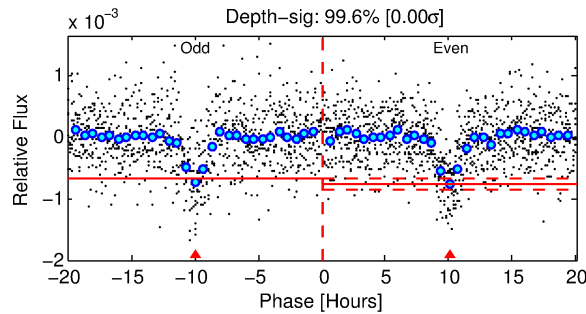
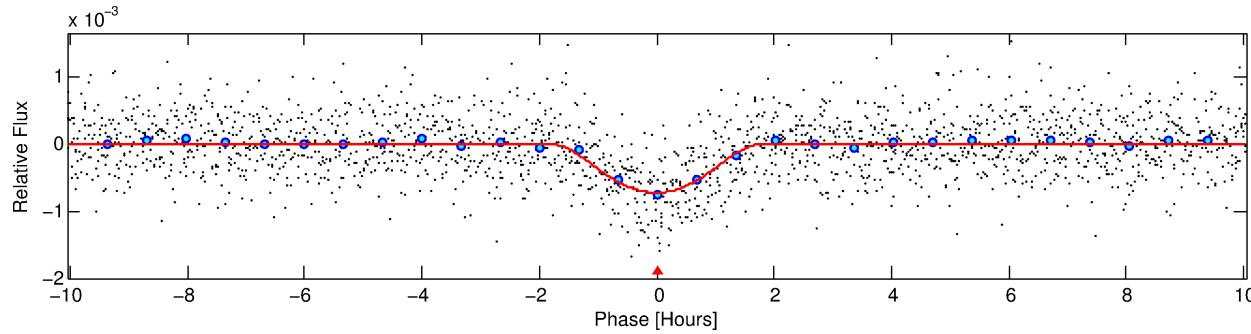
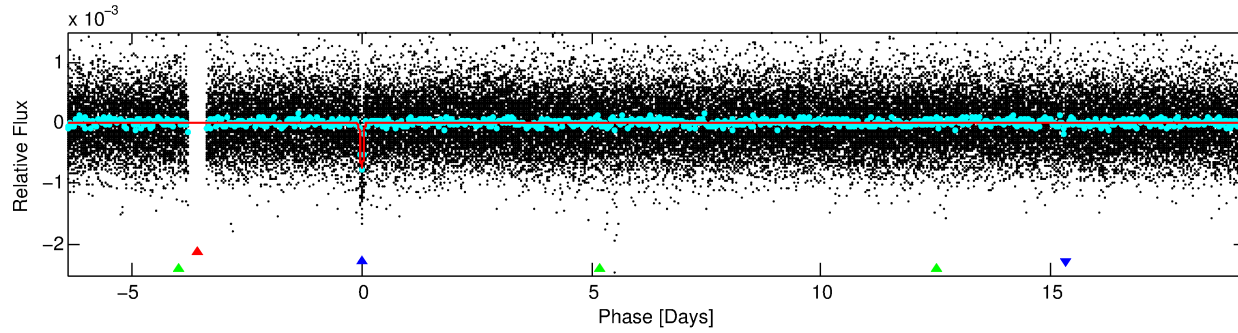
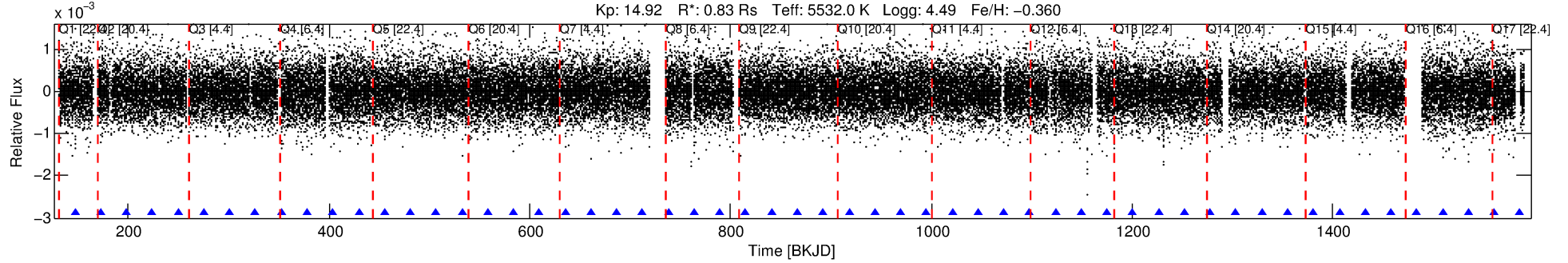
Ephemeris Match Information For 011521048-02

No Significant Match Found

DV One-Page Summary

KIC: 11521048 Candidate: 2 of 3 Period: 25.703 d
KOI: K00540 Corr: No Ephemeris Match

Kp: 14.92 R*: 0.83 Rs Teff: 5532.0 K Logg: 4.49 Fe/H: -0.360



DV Fit Results:

Period = 25.70294 [0.00012] d
Epoch = 147.0099 [0.0037] BKJD
Rp/R* = 0.0492 [0.1051]
a/R* = 18.64 [9.68]
b = 1.00 [0.17]
Seff = 23.71 [6.43]
Teq = 563 [38] K
Rp = 4.48 [9.62] Re
a = 0.1571 [0.0265] AU
Ag = 75.92 [325.75] [0.23σ]
Teff = 2568 [2751] K [0.73σ]

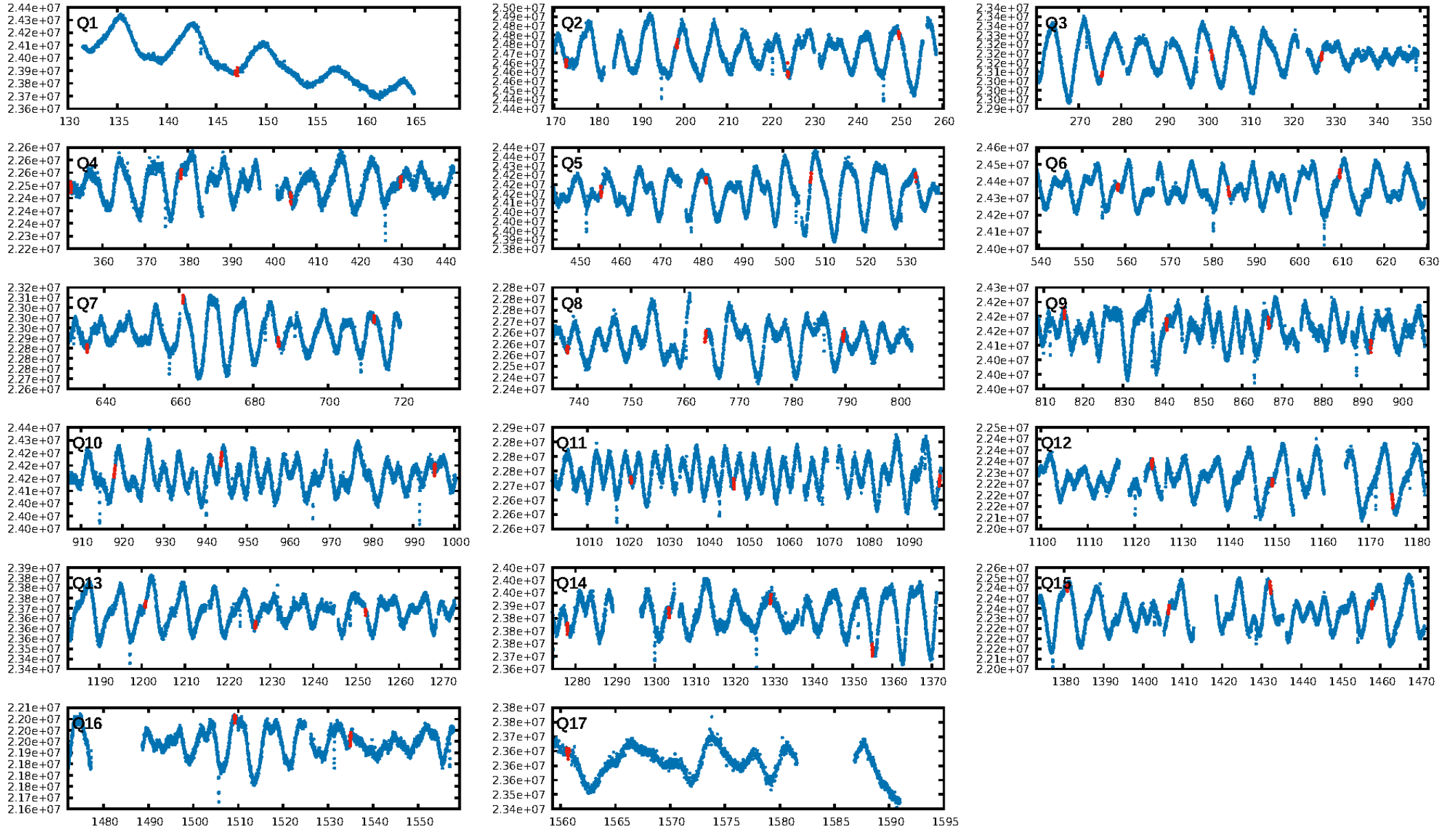
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: 100.0% [1086.03σ]
ModelChiSquare2-sig: 94.5%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 4.32e-60
RollingBand-fgt: 1.00 [51/51]
GhostDiagnostic-chr: 7.625
Centroid-sig: 0.0%
Centroid-so: 5.138 arcsec [7.43σ]
OotOffset-rm: 3.214 arcsec [12.84σ]
KicOffset-rm: 3.155 arcsec [13.77σ]
OotOffset-st: 4/4/3/3 [14]
KicOffset-st: 4/4/3/3 [14]
DiffImageQuality-fgm: 0.93 [13/14]
DiffImageOverlap-fno: 1.00 [16/16]

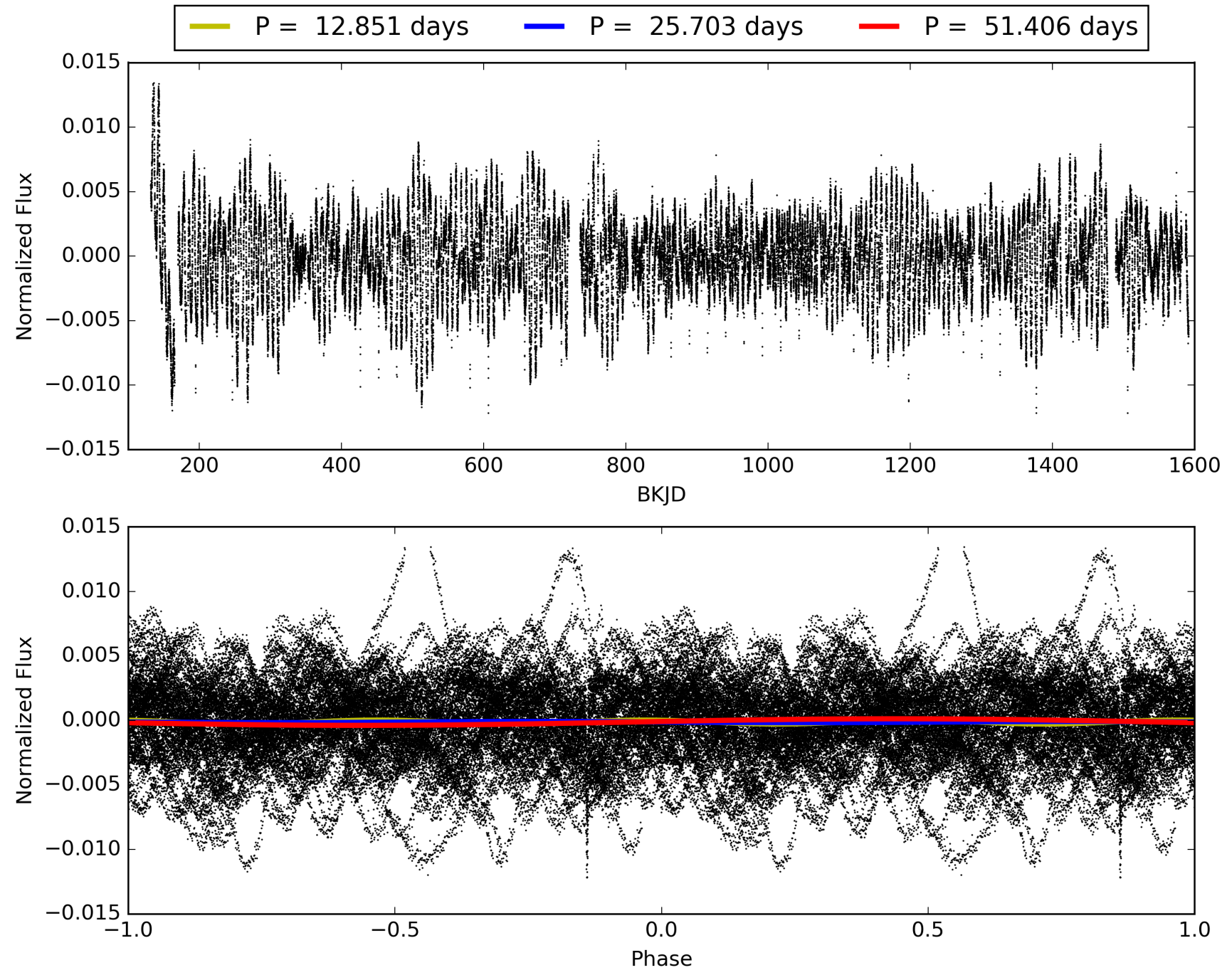
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 07:17:18 Z

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

TCE 011521048-02, PDC Light Curves

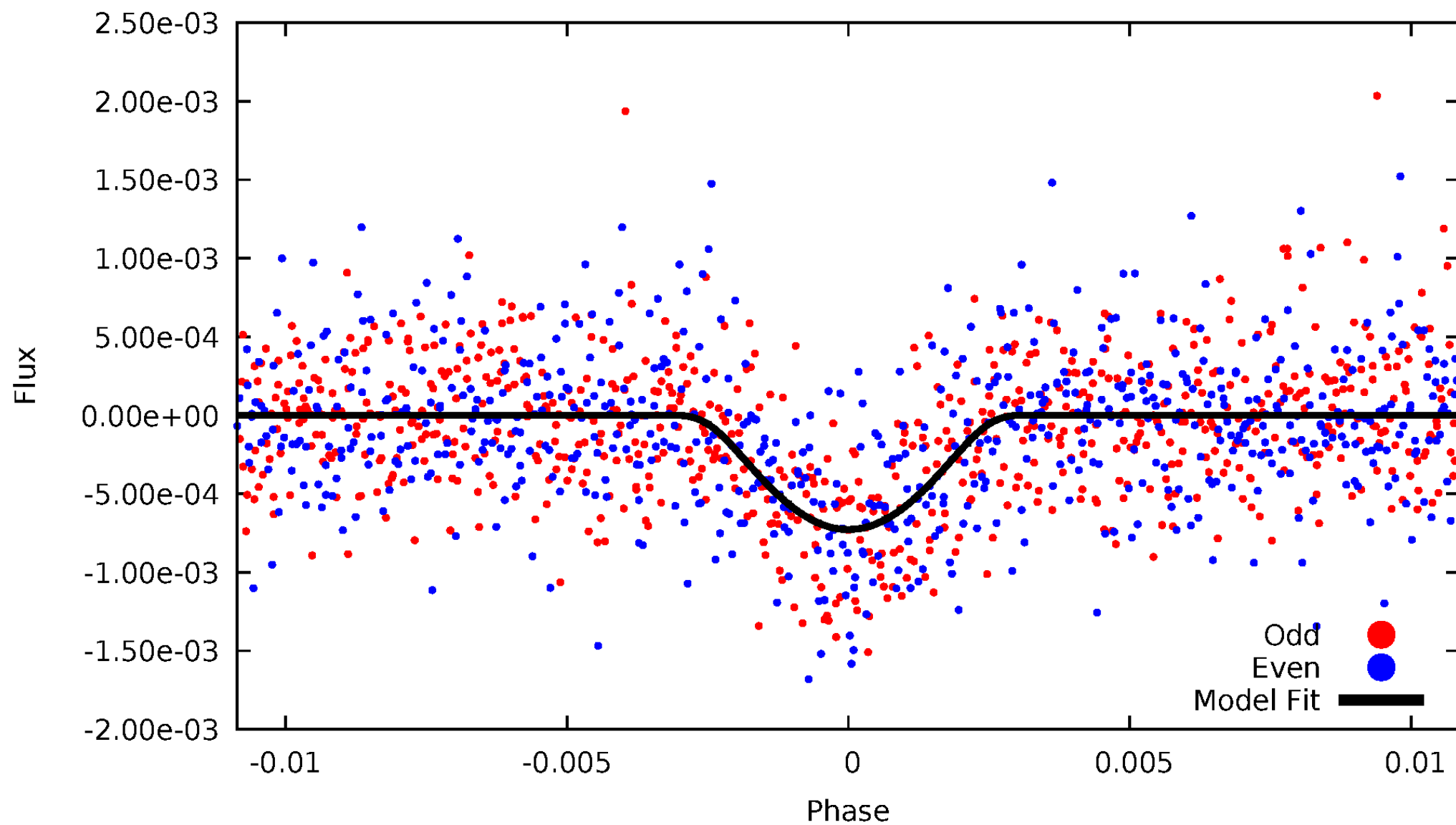


TCE 011521048-02



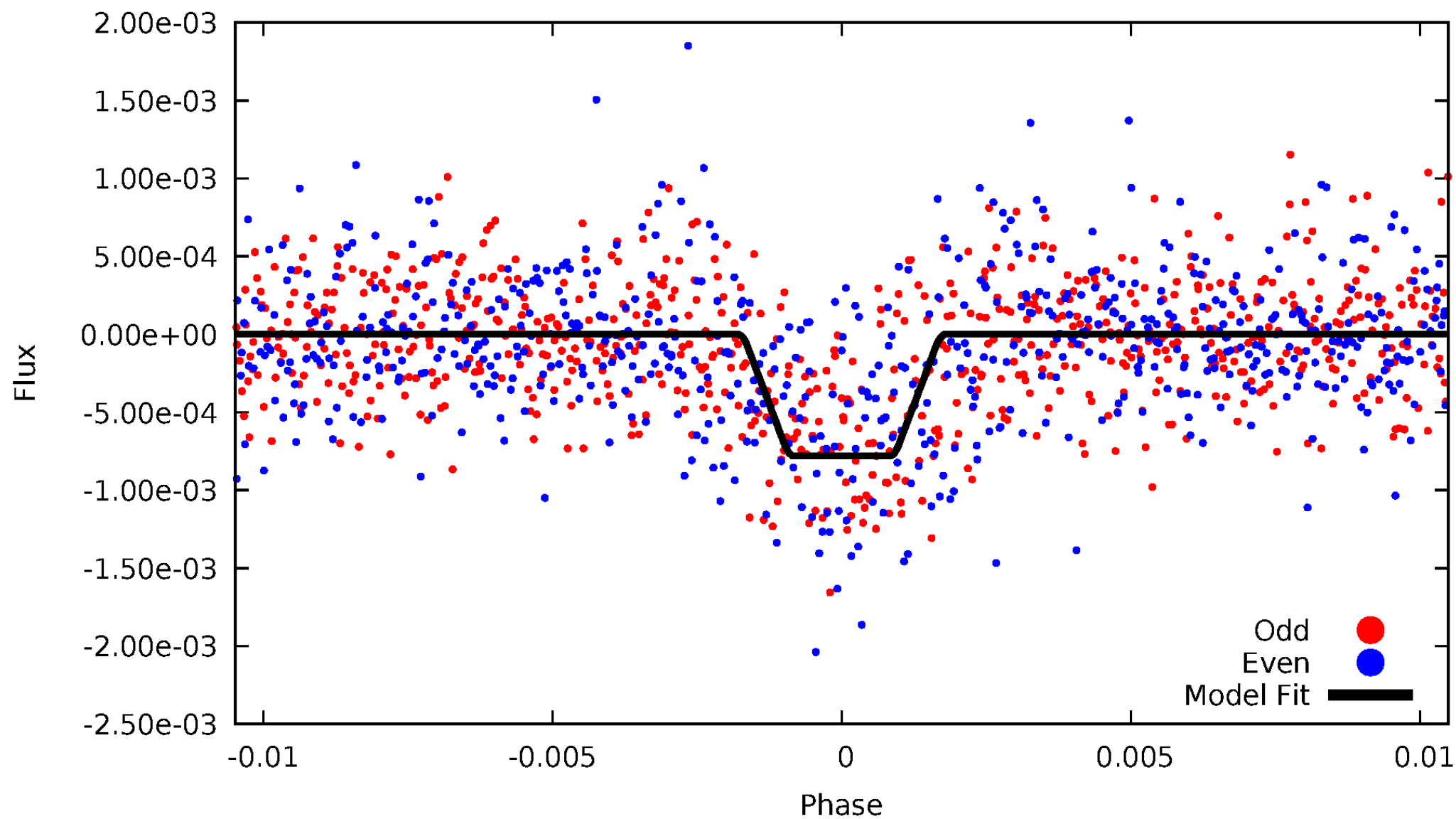
DV Odd/Even

TCE 011521048-02



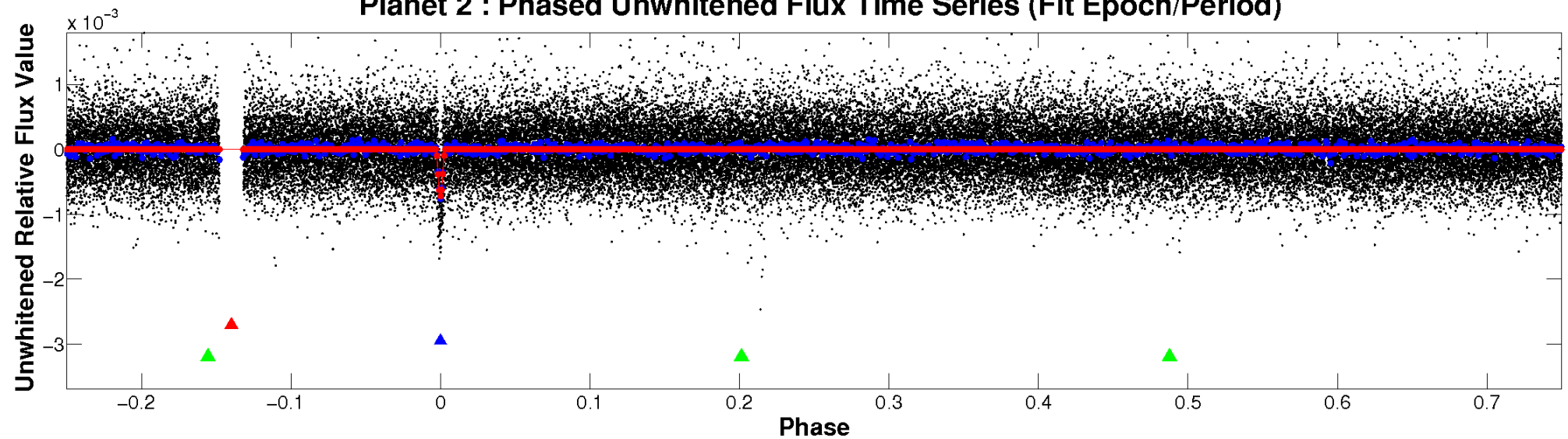
ALT Odd/Even

TCE 011521048-02

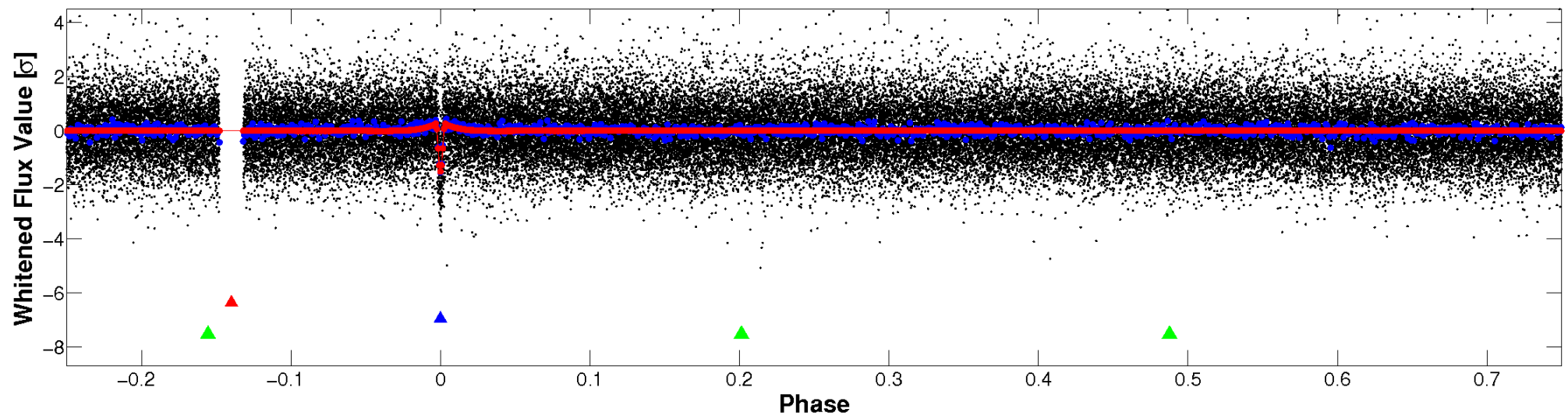


Non-Whitened Vs. Whitened Light Curve

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

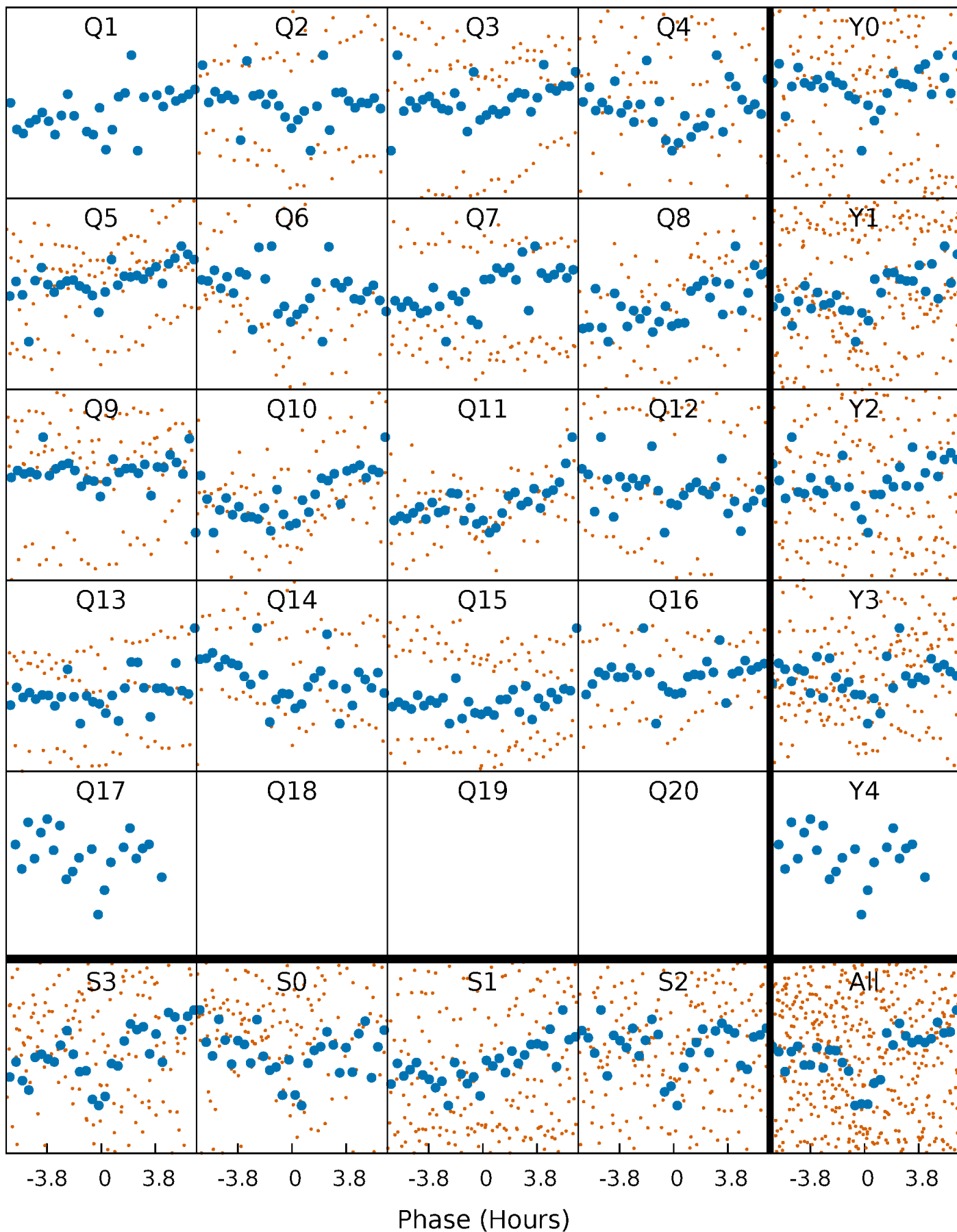


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



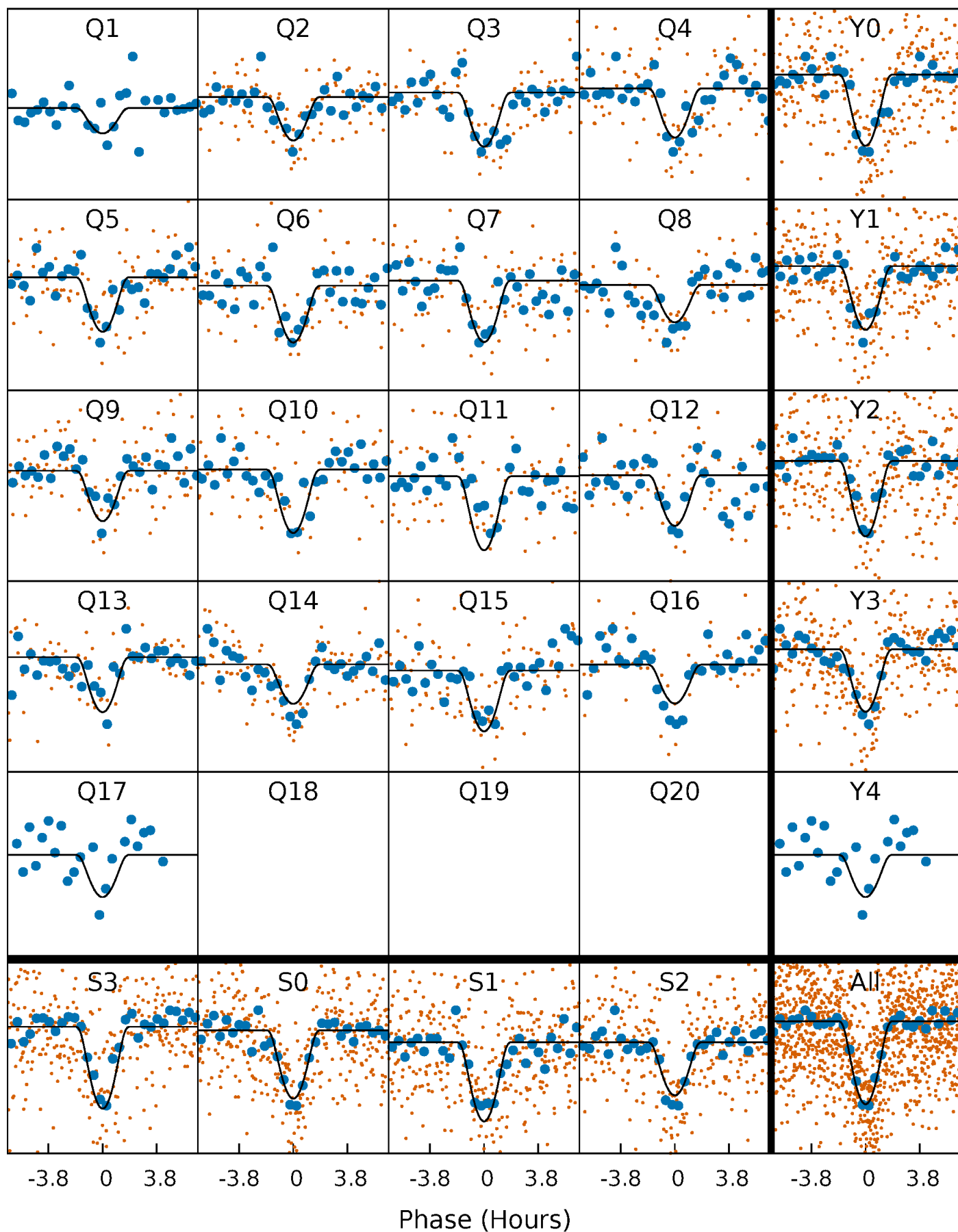
PDC Quarter-Phased Transit Curves

TCE 011521048-02 P= 25.702935 Days $T_0=147.009938$ (BKJD)



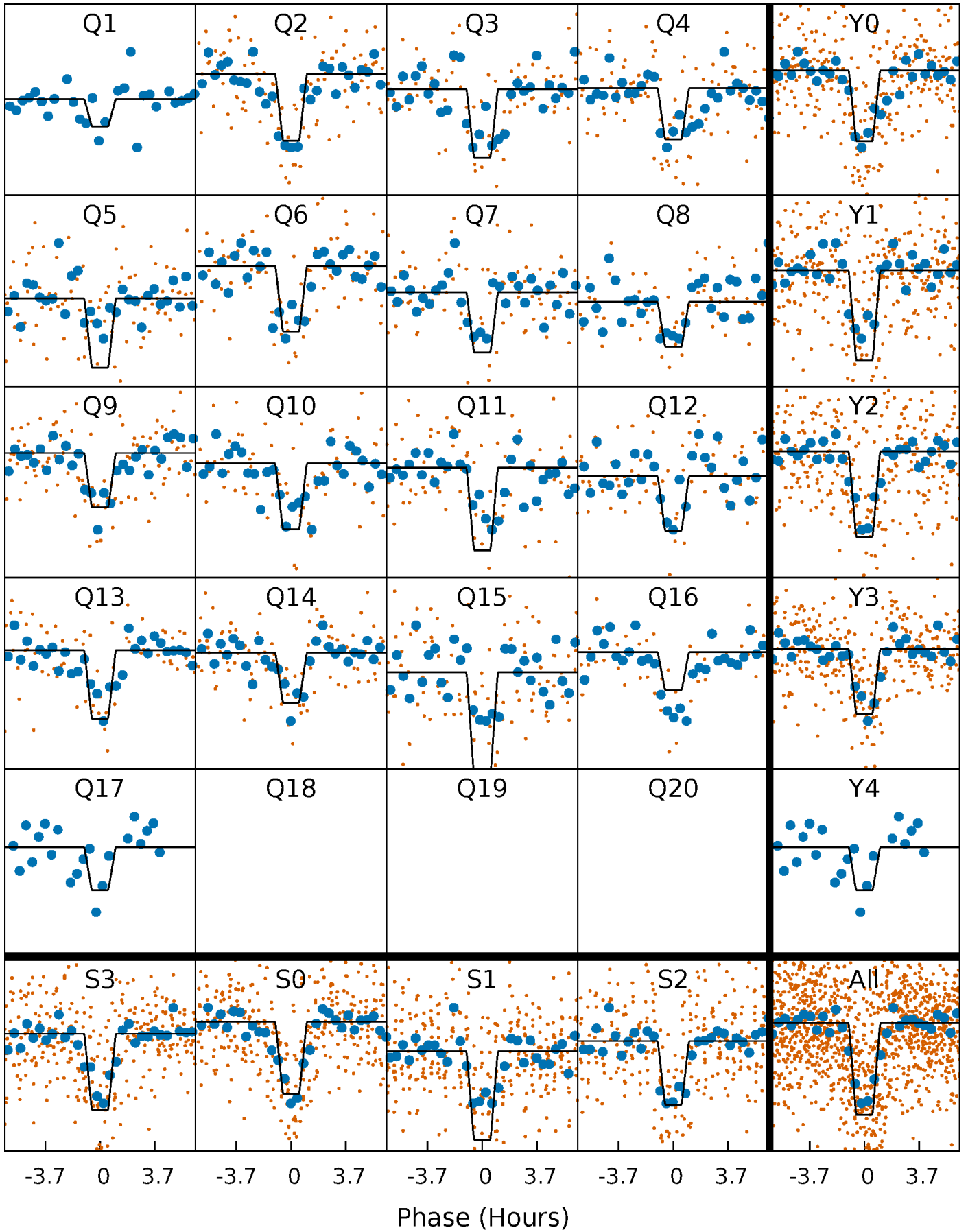
DV Quarter-Phased Transit Curves

TCE 011521048-02 P= 25.702935 Days $T_0=147.009938$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

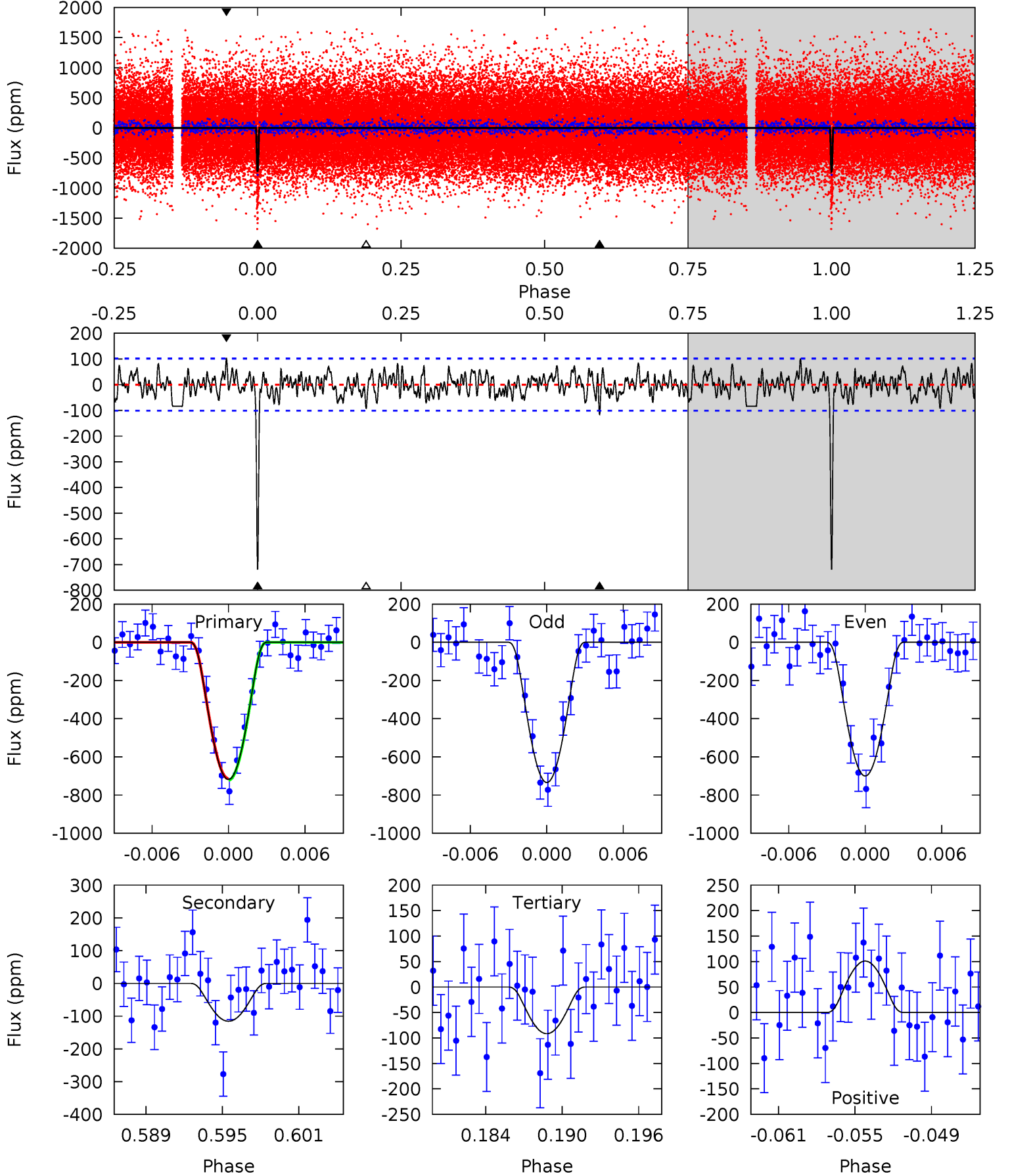
TCE 011521048-02 P= 25.702644 Days $T_0=147.019141$ (BKJD)



DV Model-Shift Uniqueness Test

011521048-02, P = 25.702935 Days, E = 121.307003 Days

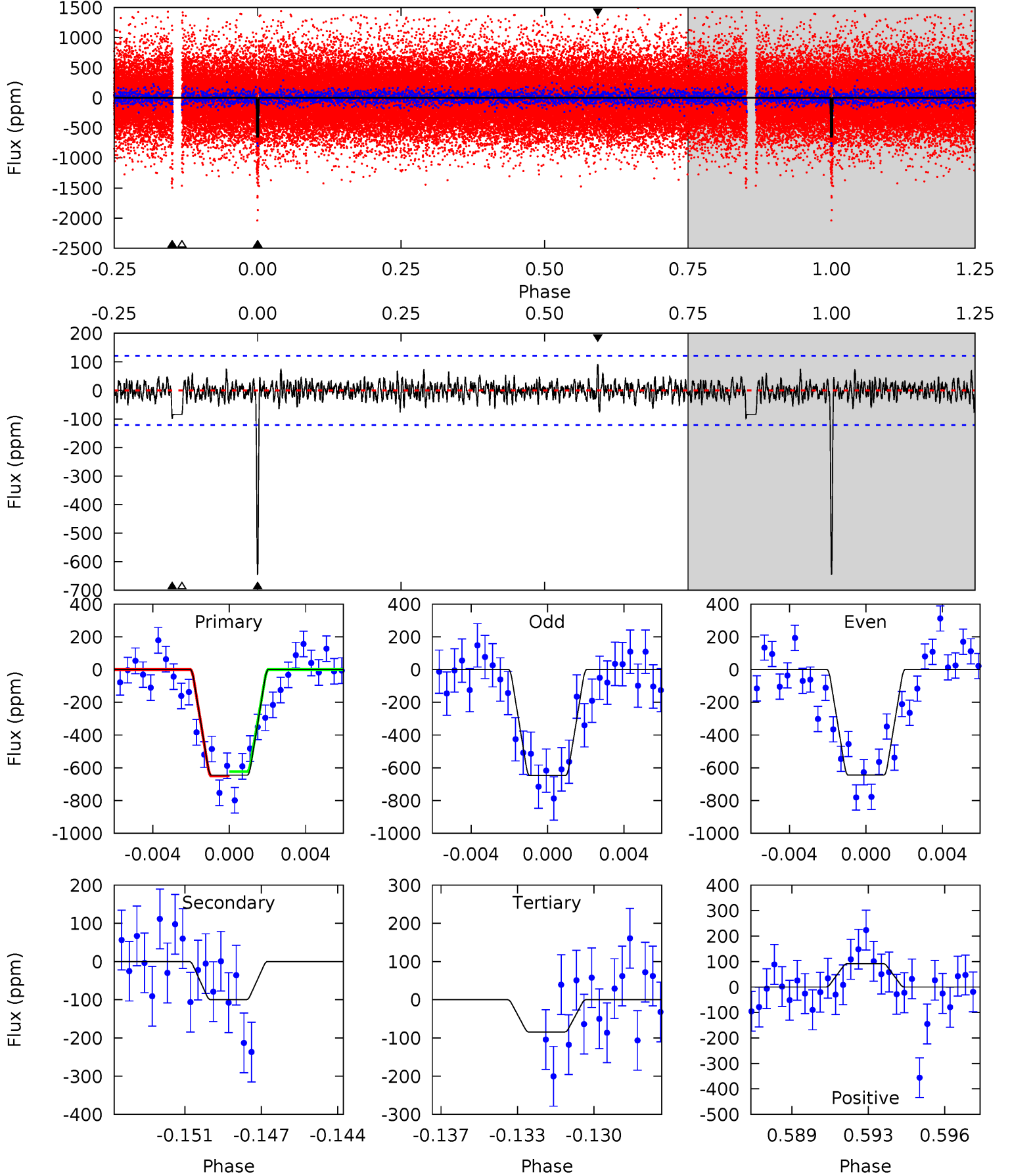
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.2	5.83	4.62	5.09	5.12	2.74	1.64	31.6	31.1	1.21	0.74	0.86	1.02	0.12	0.19



Alt Model-Shift Uniqueness Test

011521048-02, $P = 25.702644$ Days, $E = 121.316497$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.9	4.30	3.64	3.96	5.22	2.92	0.97	24.2	23.9	0.66	0.34	0.07	0.94	0.12	0.59



Stellar Parameters For KIC 011521048

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5532^{+165}_{-149}	$4.488^{+0.108}_{-0.132}$	$-0.360^{+0.300}_{-0.300}$	$0.835^{+0.169}_{-0.099}$	$0.782^{+0.114}_{-0.057}$	$1.892^{+0.850}_{-0.736}$
	+3%/-3%	+2%/-3%	+83%/-83%	+20%/-12%	+15%/-7%	+45%/-39%
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 011521048-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-116 ± 20	$8.70^{+8.22}_{-5.84}$	788^{+47}_{-39}	2657^{+1011}_{-392}	20^{+161}_{-15}
Alt.	-100 ± 23	$7.59^{+7.42}_{-5.31}$	790^{+45}_{-38}	2696^{+1121}_{-424}	23^{+235}_{-17}

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

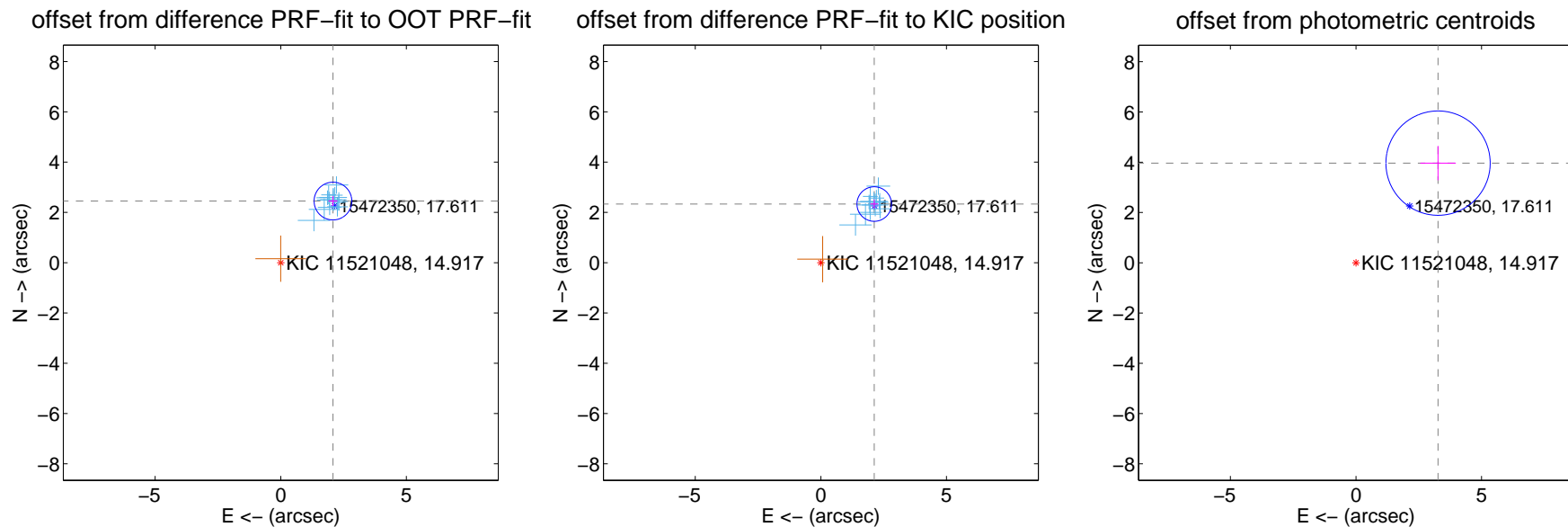
DV Centroid Data

Supplemental centroid analysis for 011521048-02. Kepler magnitude: 14.92. Transit SNR 18.59

There are 13 quarters with good PRF difference image offsets

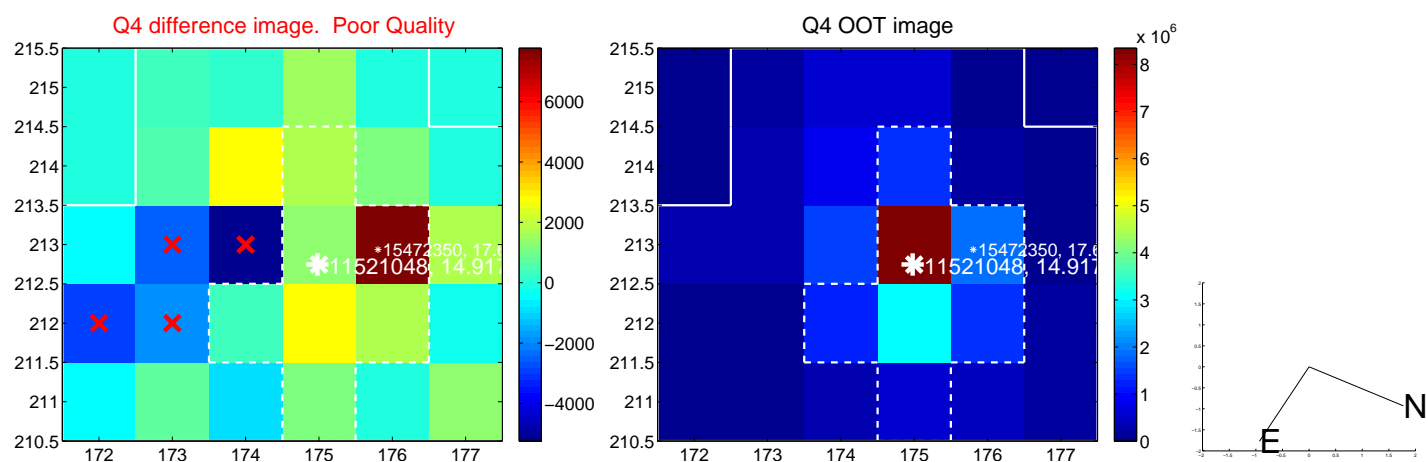
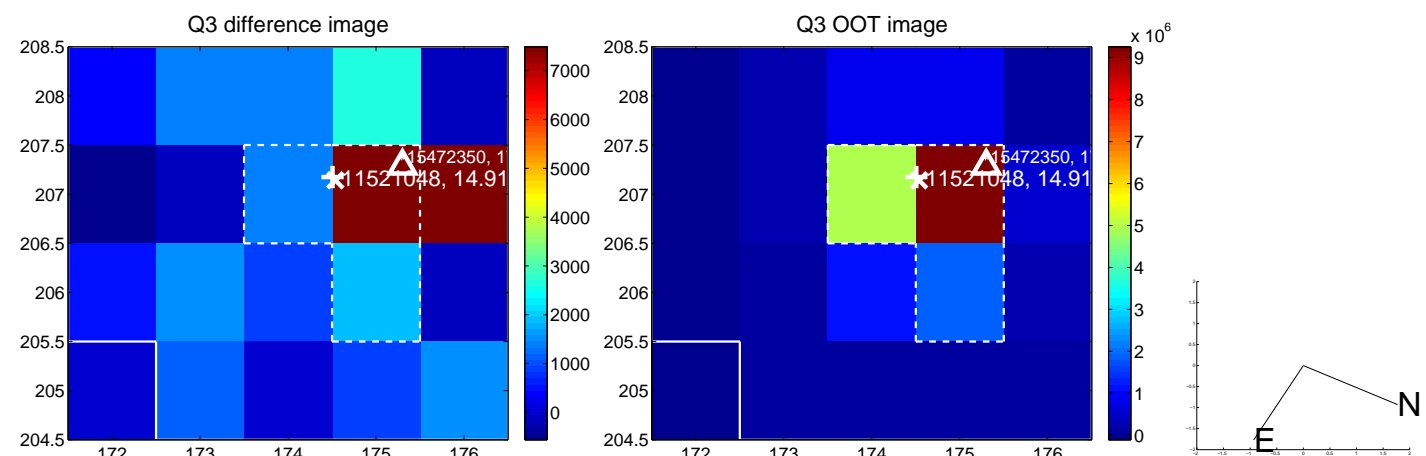
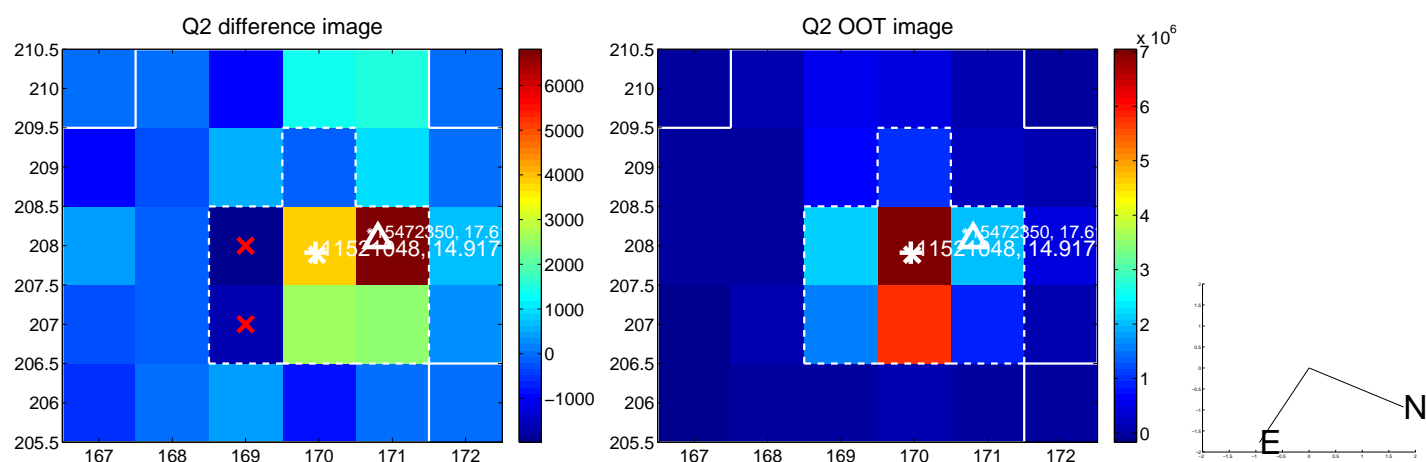
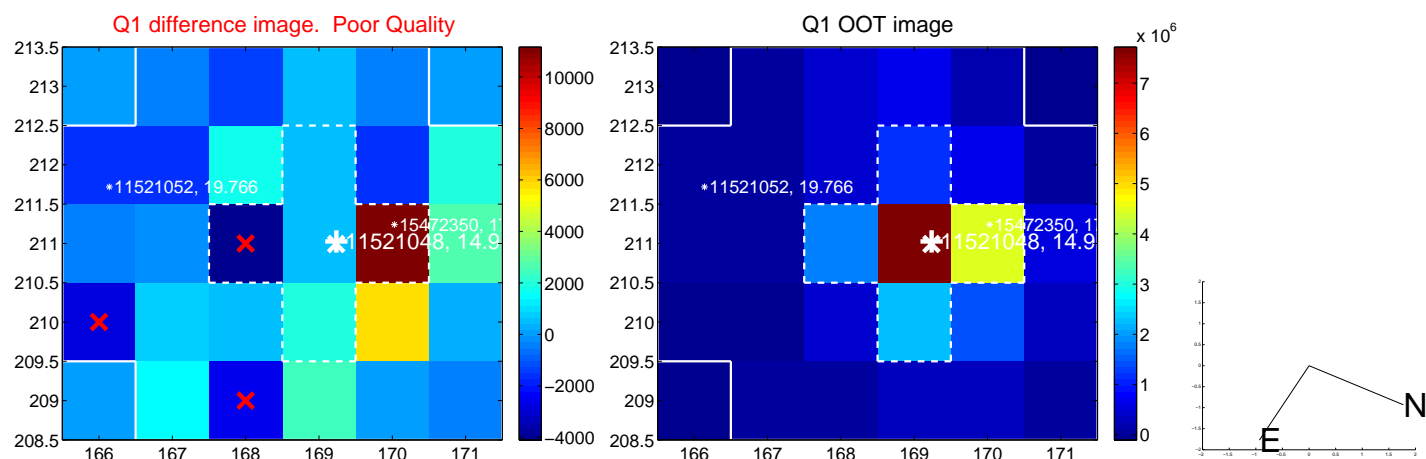
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.214 ± 0.250	12.84	-2.078 ± 0.176	2.451 ± 0.195
PRF-fit source offset from KIC position	3.155 ± 0.229	13.77	-2.125 ± 0.160	2.333 ± 0.183
photometric centroid source offset	5.14 ± 0.69	7.43	-3.27 ± 0.71	3.96 ± 0.68

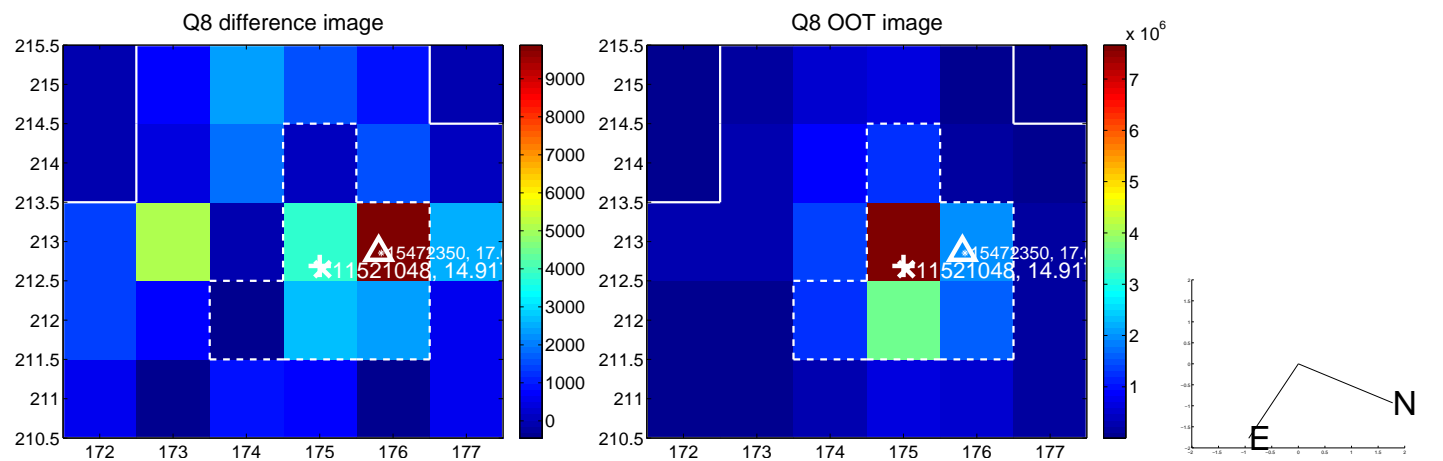
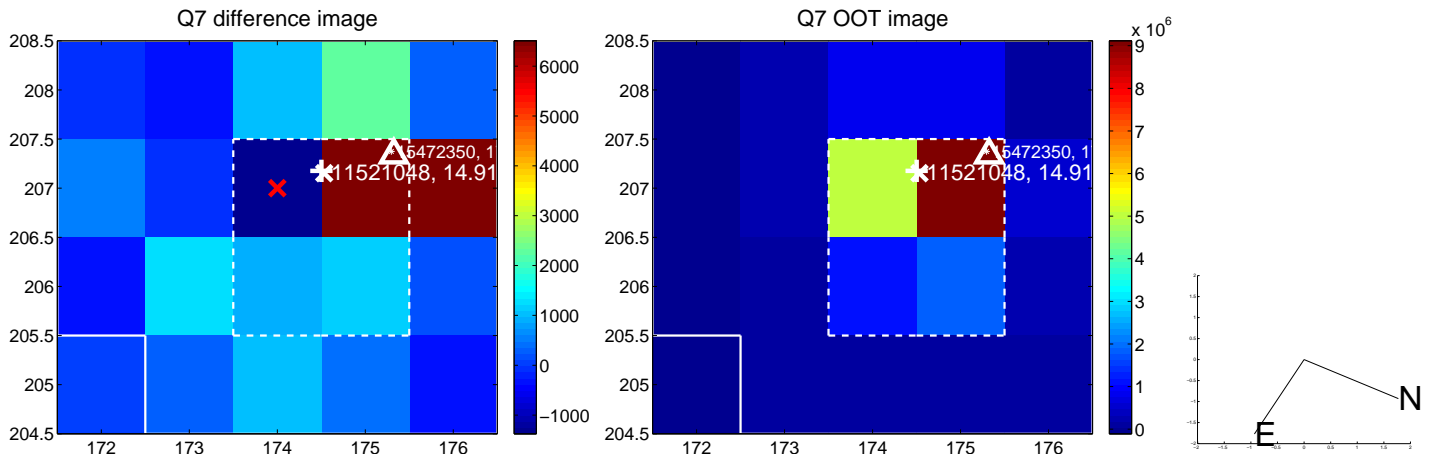
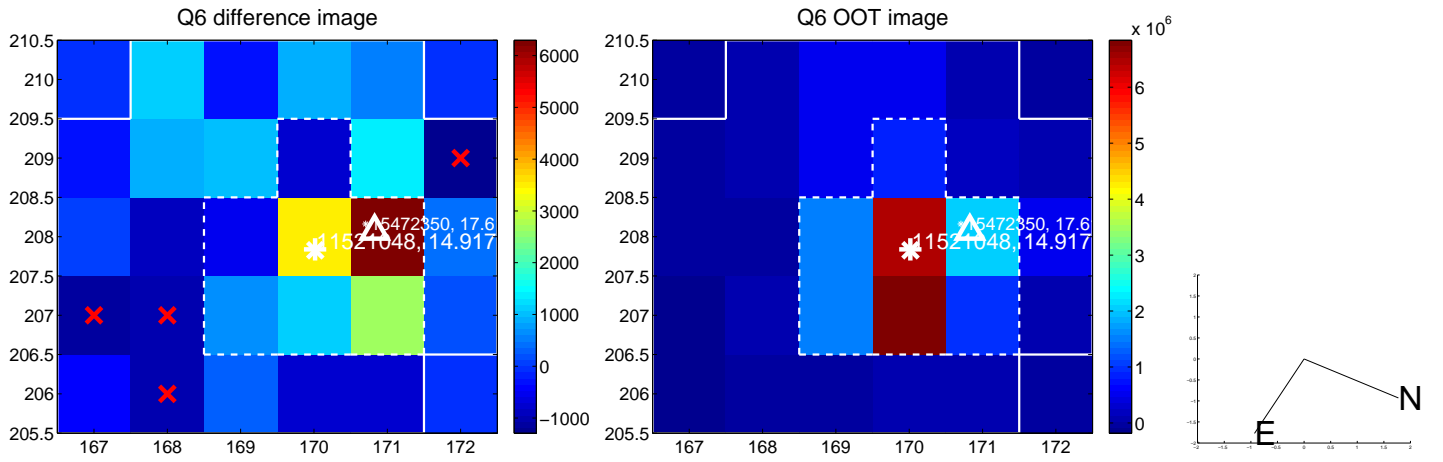
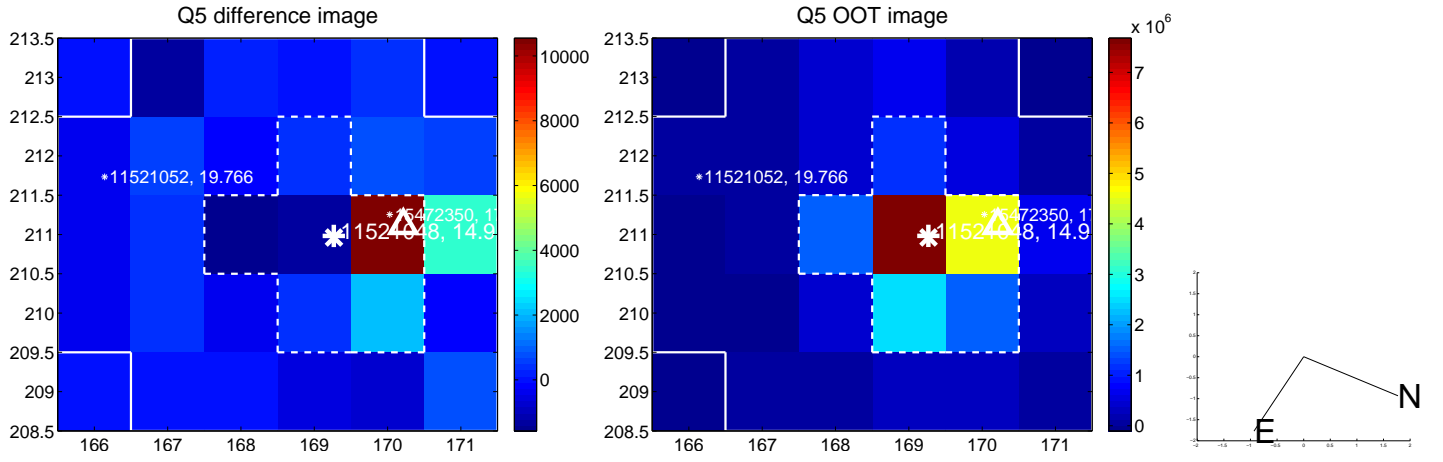


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

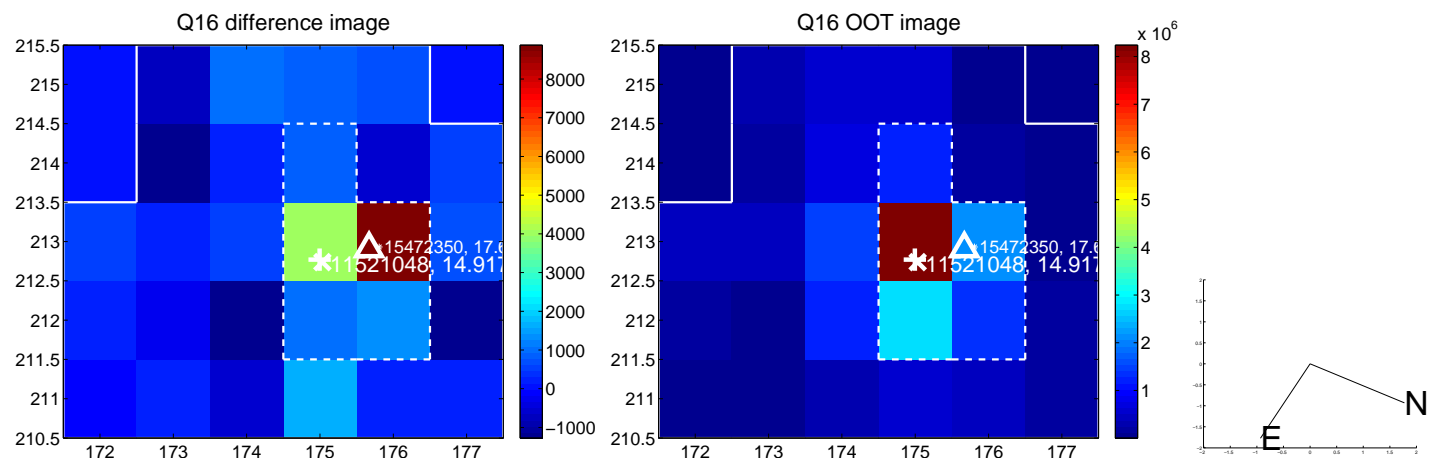
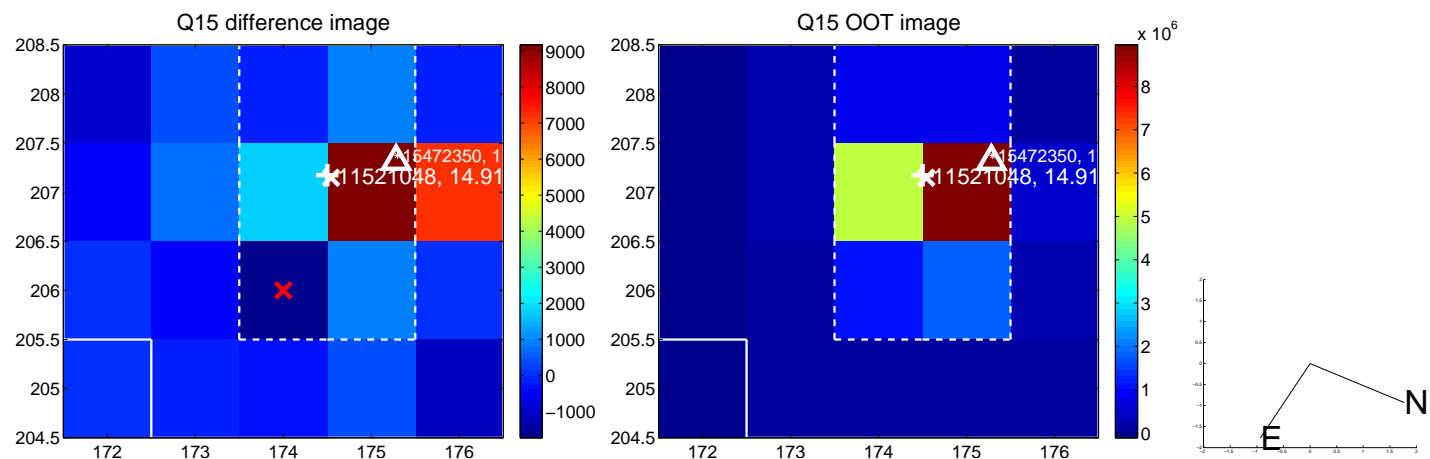
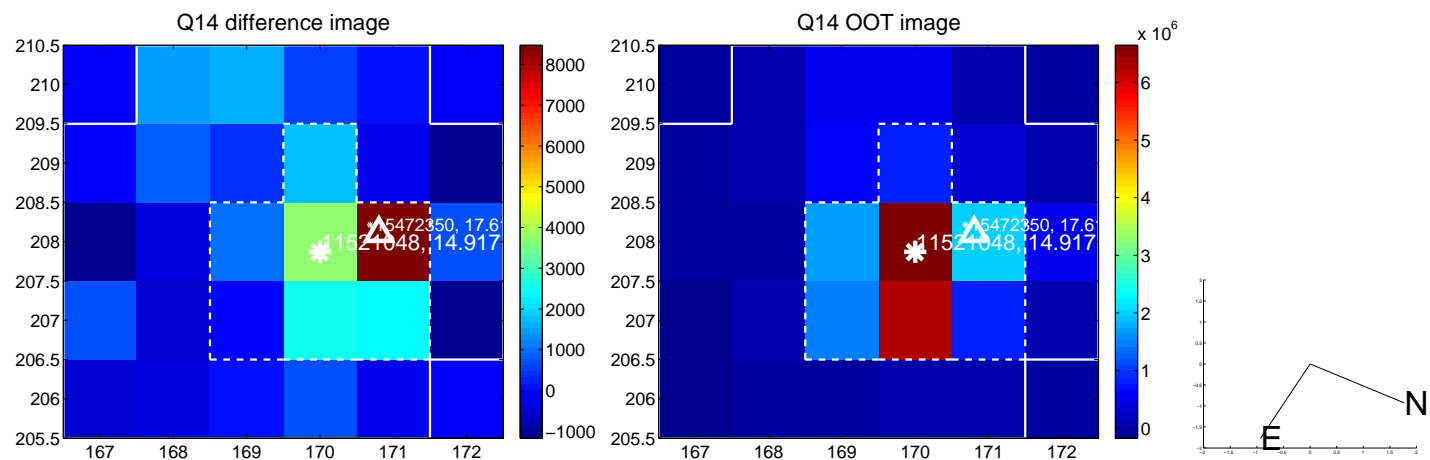
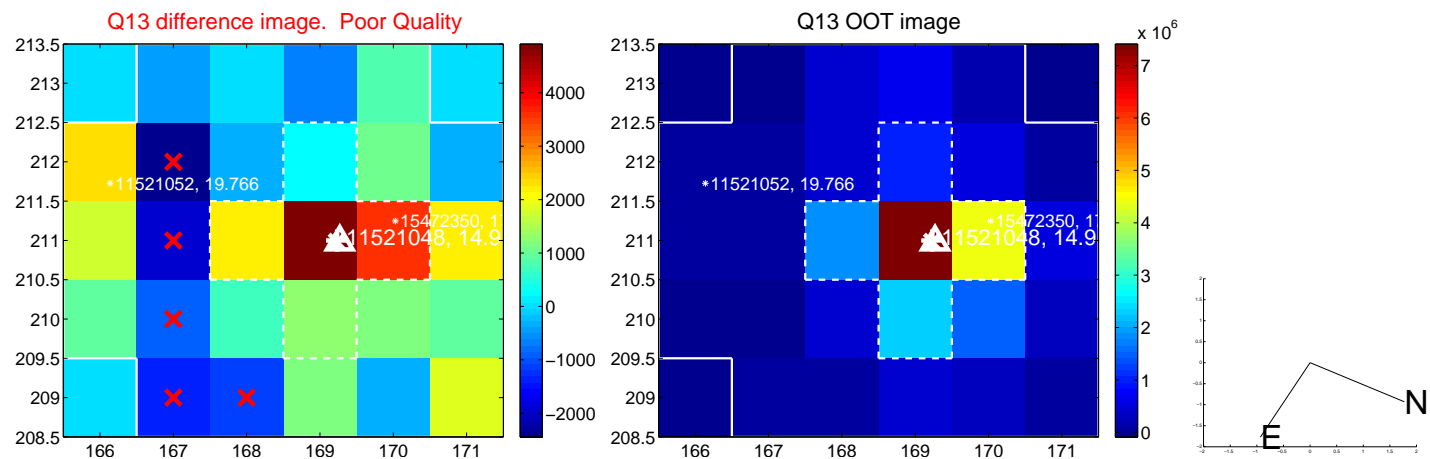
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



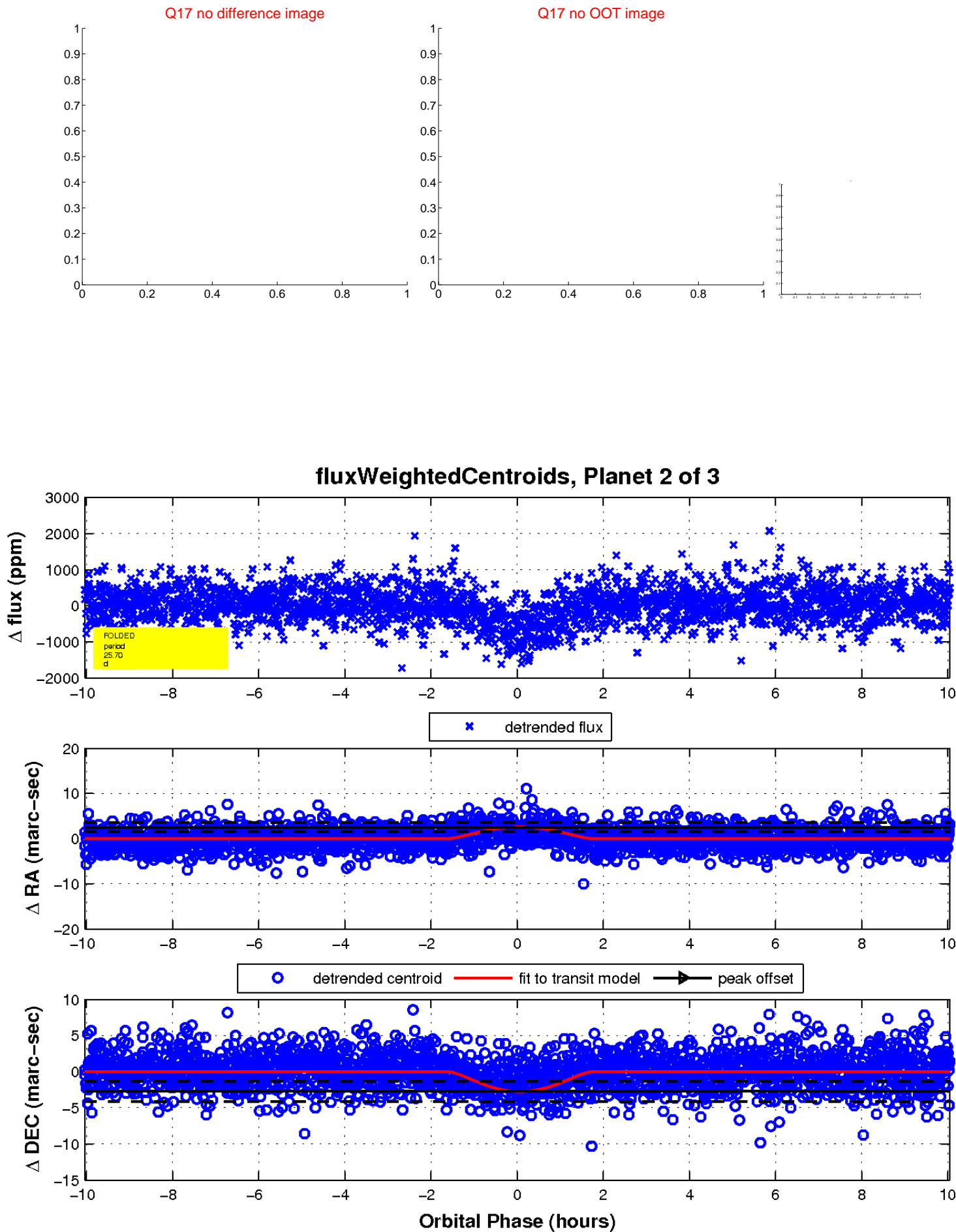
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

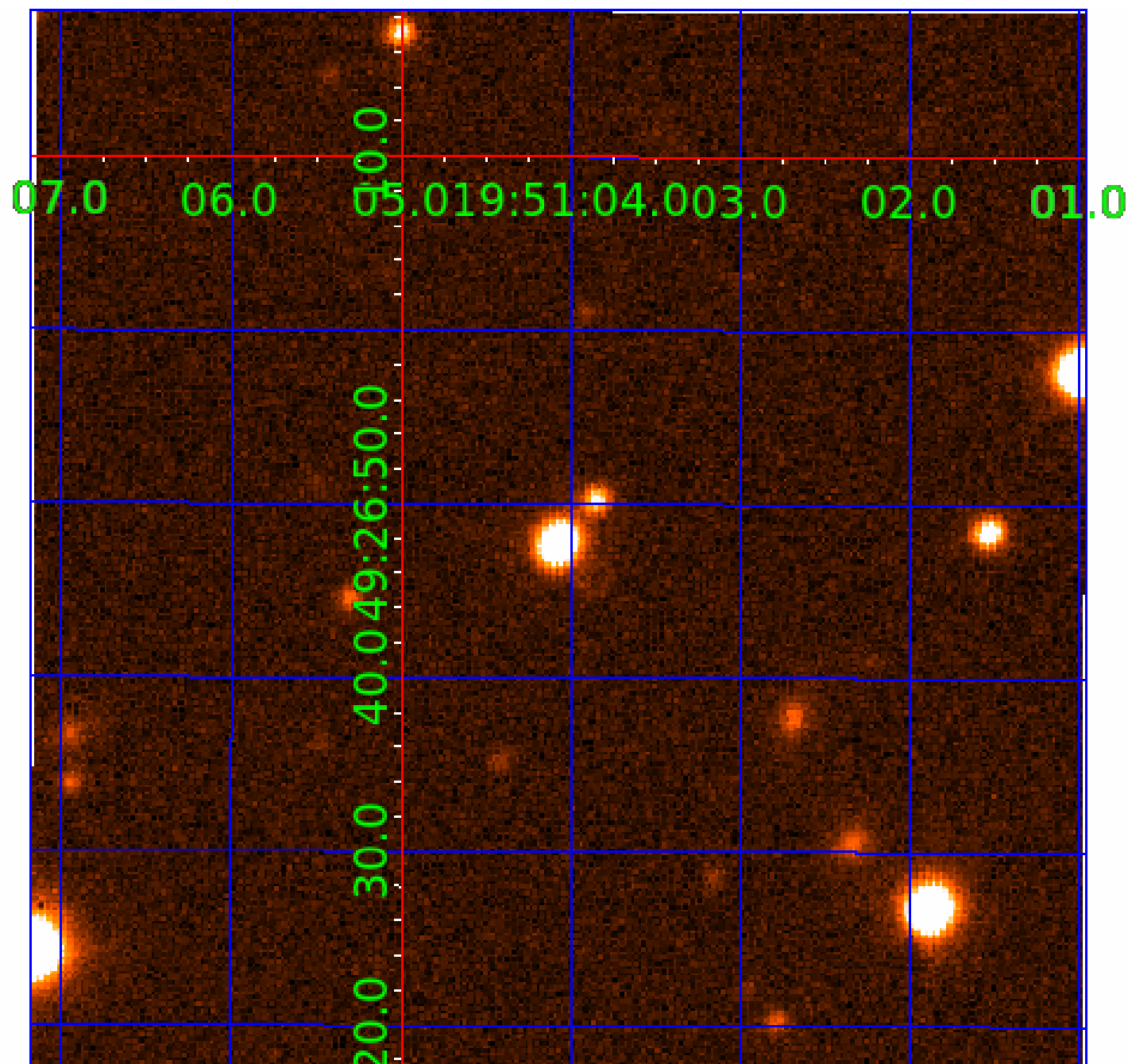


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011521048

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})
011521048-01	OBS	0540.01	25.702803	143.419665	5512.6	3.149	131.0	114.7	0.83	5532	10.81	23.71
011521048-02	OBS	No	25.702935	147.009938	727.8	3.350	16.7	18.6	0.83	5532	4.48	23.71
011521048-03	OBS	No	574.636240	390.870997	807.8	11.659	9.8	6.1	0.83	5532	2.50	0.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011521048-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
011521048-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET
011521048-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—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.

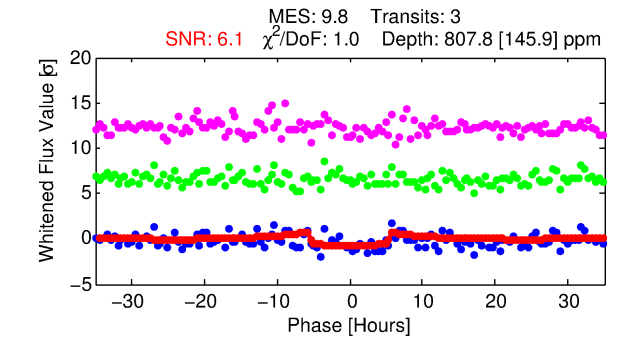
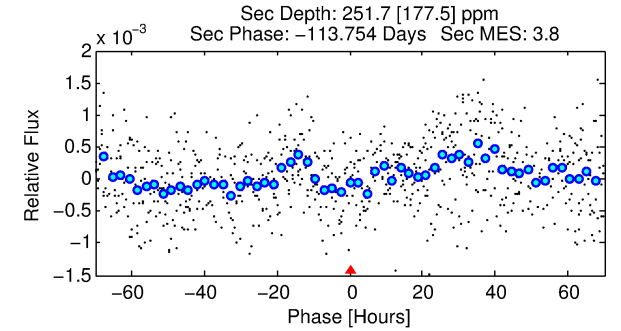
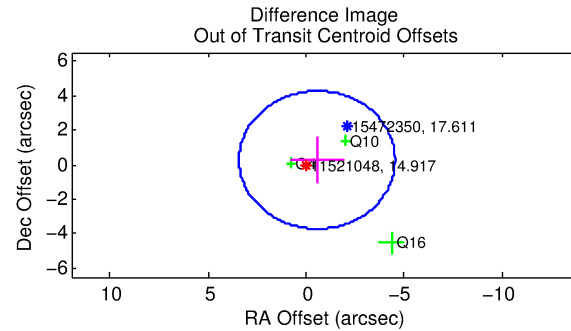
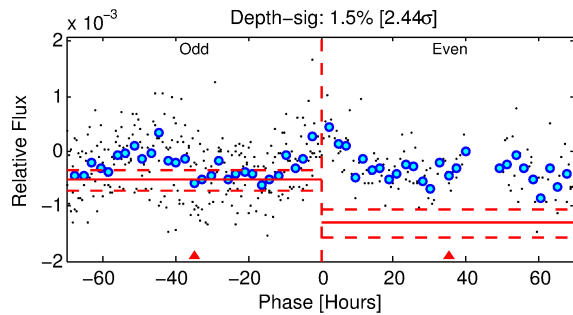
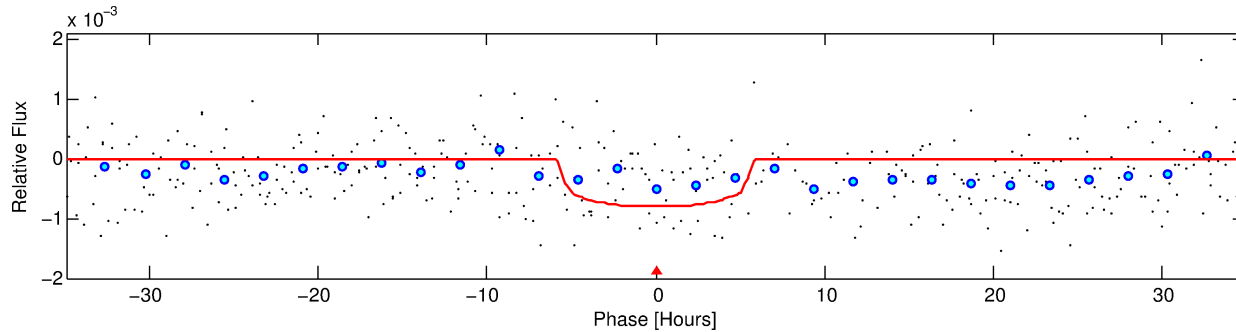
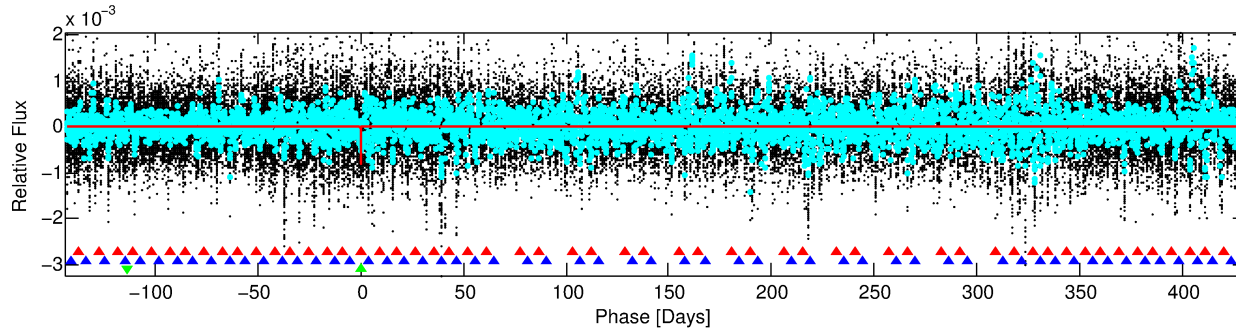
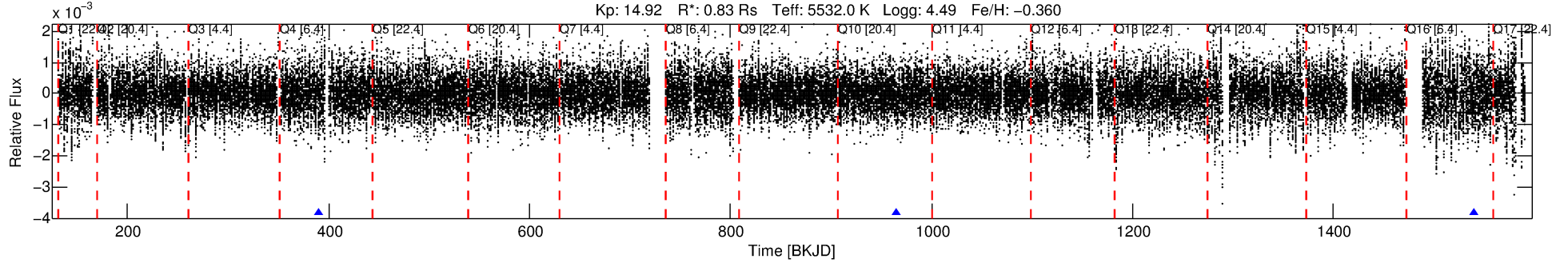
Ephemeris Match Information For 011521048-03

No Significant Match Found

DV One-Page Summary

KIC: 11521048 Candidate: 3 of 3 Period: 574.636 d
KOI: K00540 Corr: No Ephemeris Match

Kp: 14.92 R*: 0.83 Rs Teff: 5532.0 K Logg: 4.49 Fe/H: -0.360



DV Fit Results:

Period = 574.63624 [0.01240] d
Epoch = 390.8710 [0.0165] BKJD
Rp/R* = 0.0274 [0.0101]
a/R* = 298.91 [446.19]
b = 0.65 [1.32]
Seff = 0.38 [0.10]
Teq = 200 [14] K
Rp = 2.50 [1.05] Re
a = 1.2467 [0.2104] AU
Ag = 34489.68 [36136.58] [0.95σ]
Teff = 4208 [1079] K [3.71σ]

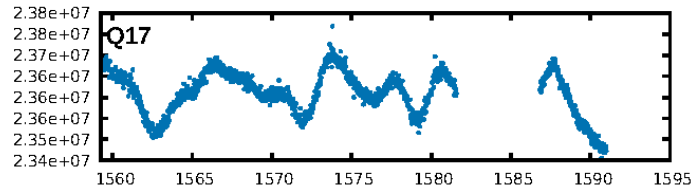
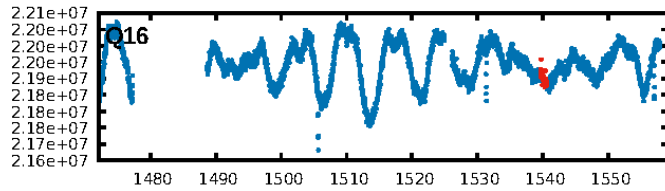
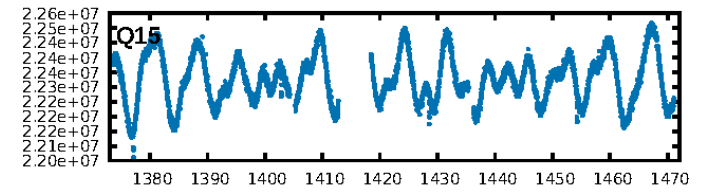
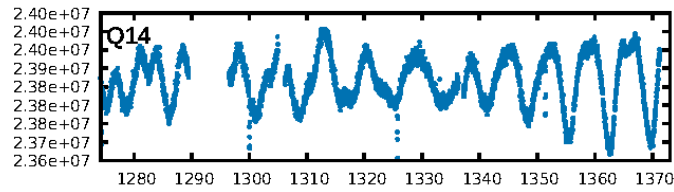
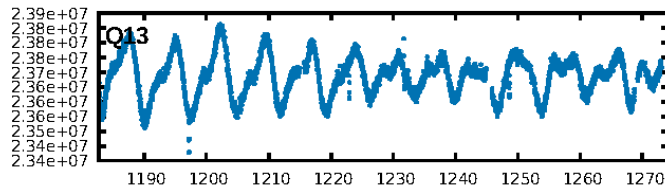
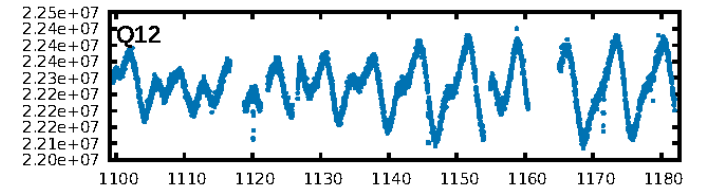
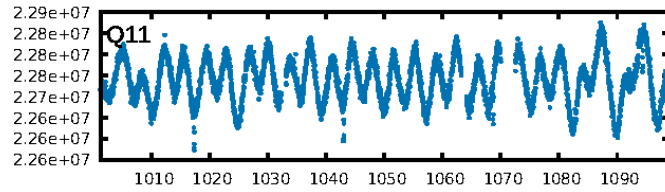
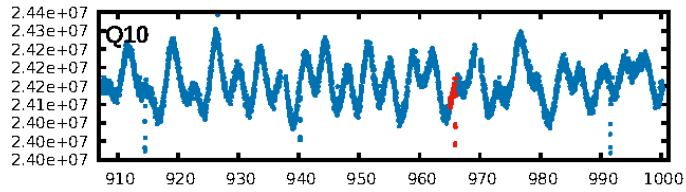
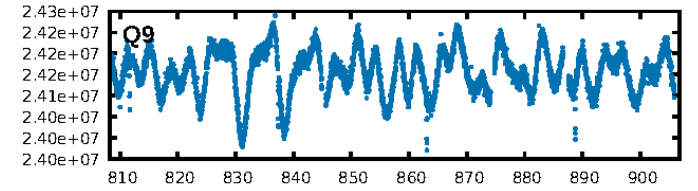
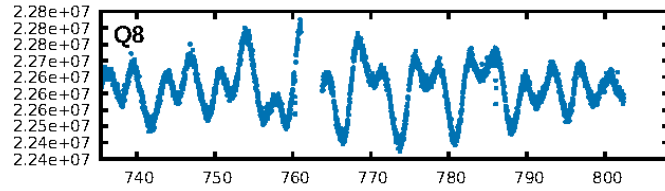
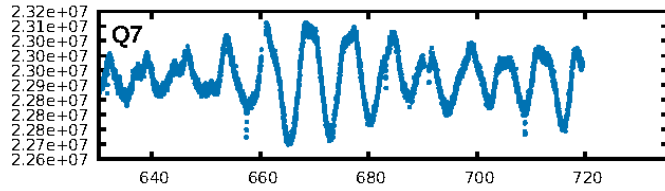
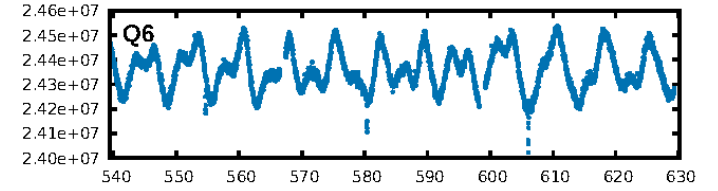
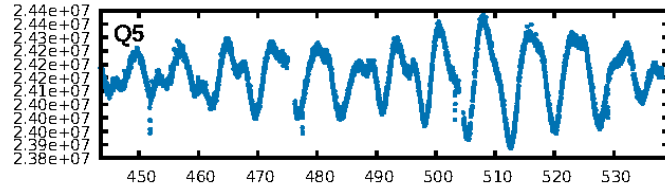
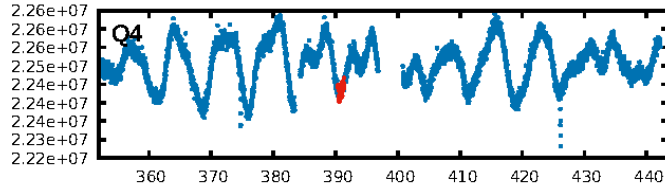
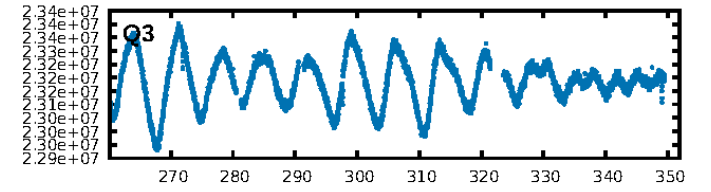
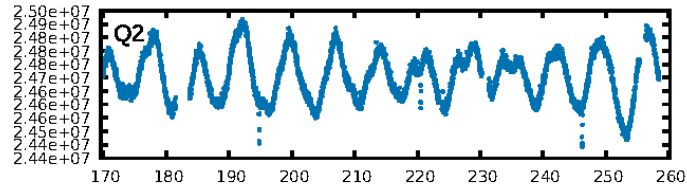
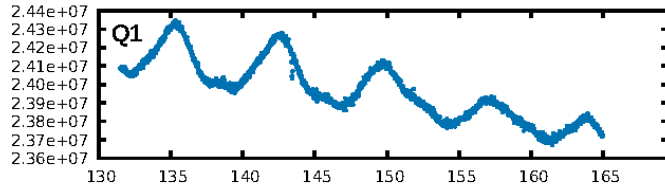
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1086.03σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 10.7%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 8.03e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.284
Centroid-sig: 52.6%
Centroid-so: 1.046 arcsec [0.71σ]
OotOffset-rm: 0.613 arcsec [0.46σ]
KicOffset-rm: 0.591 arcsec [0.44σ]
OotOffset-st: 1/0/2/0 [3]
KicOffset-st: 1/0/2/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.67 [2/3]

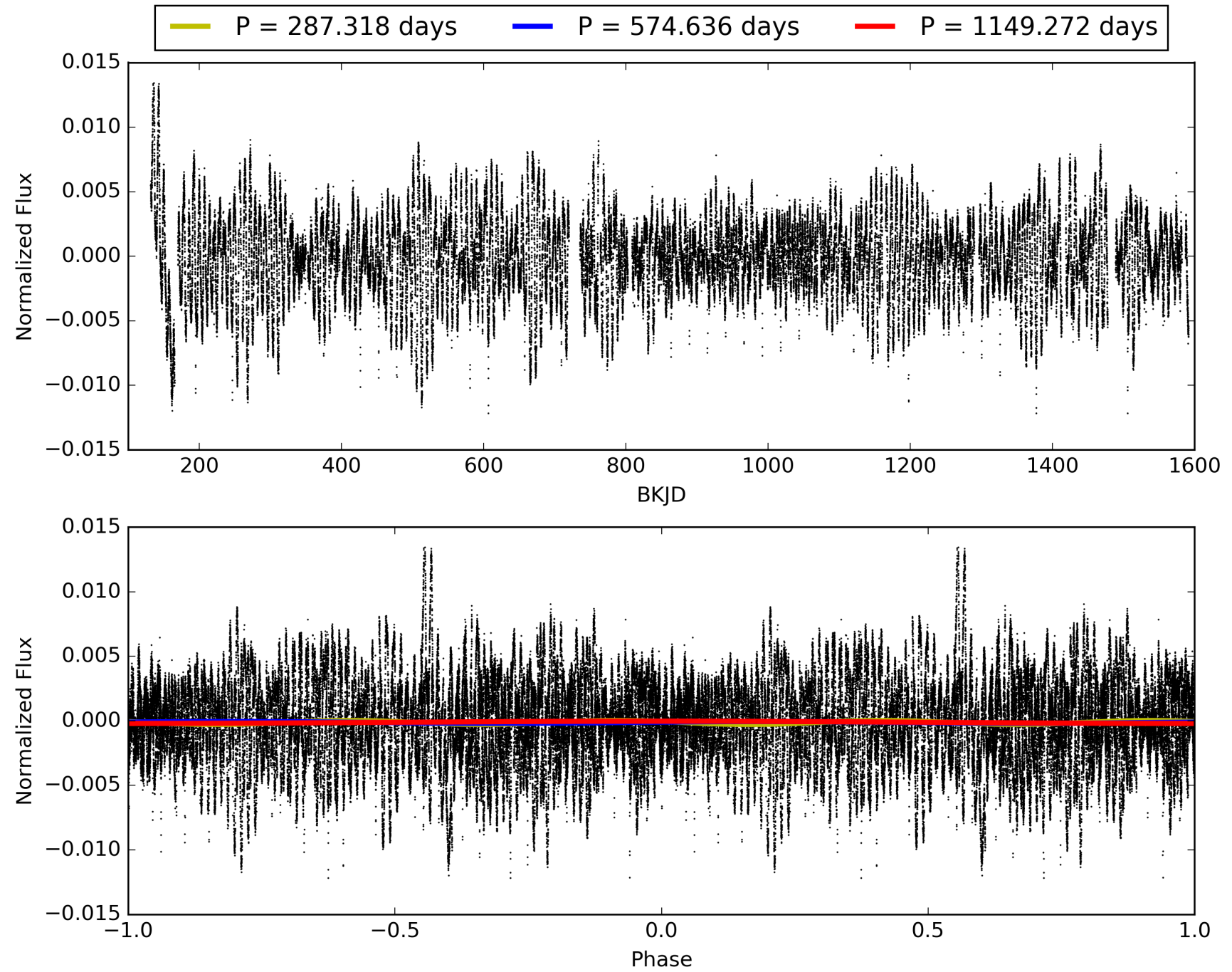
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 07:17:29 Z

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

TCE 011521048-03, PDC Light Curves

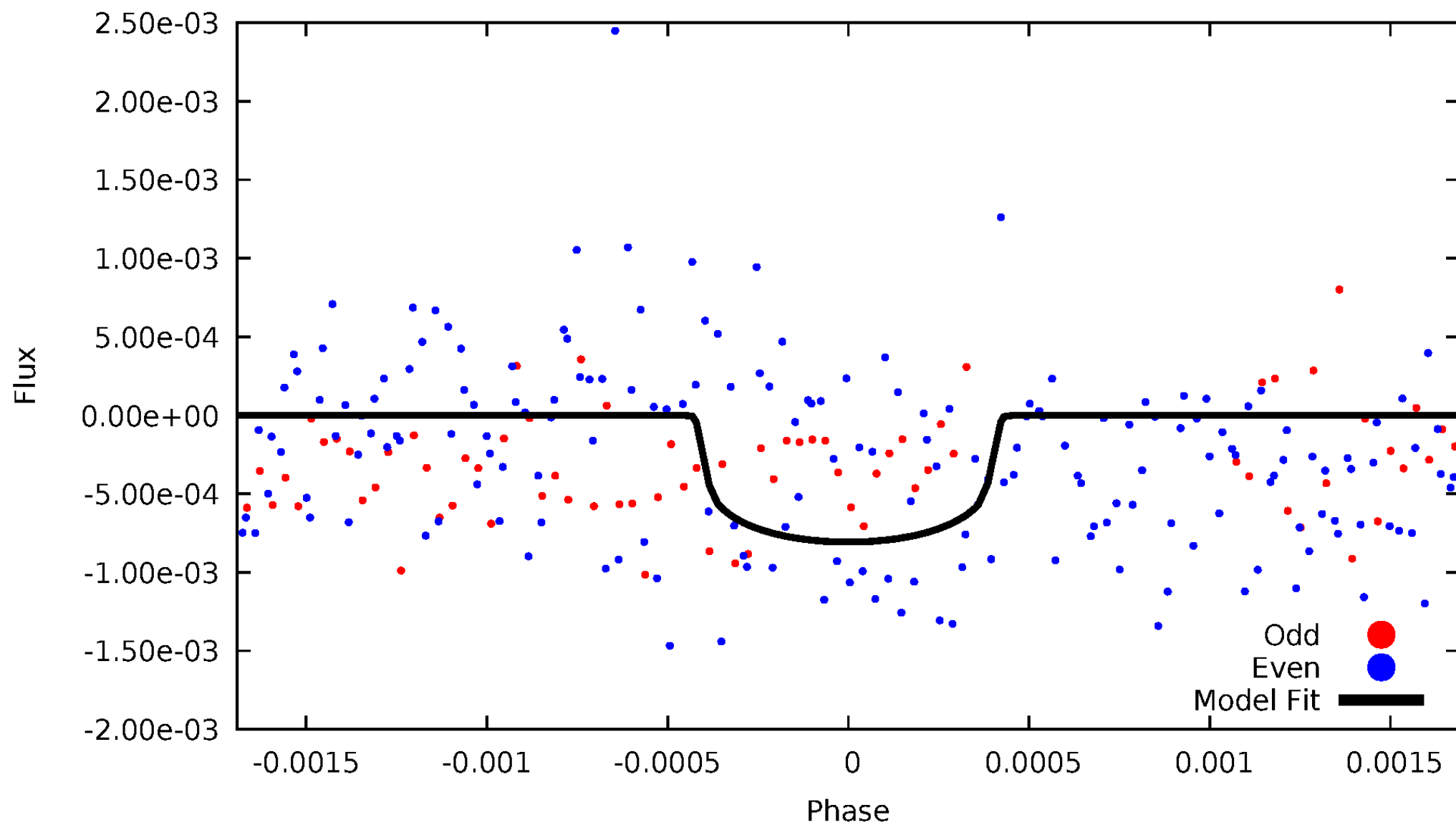


TCE 011521048-03



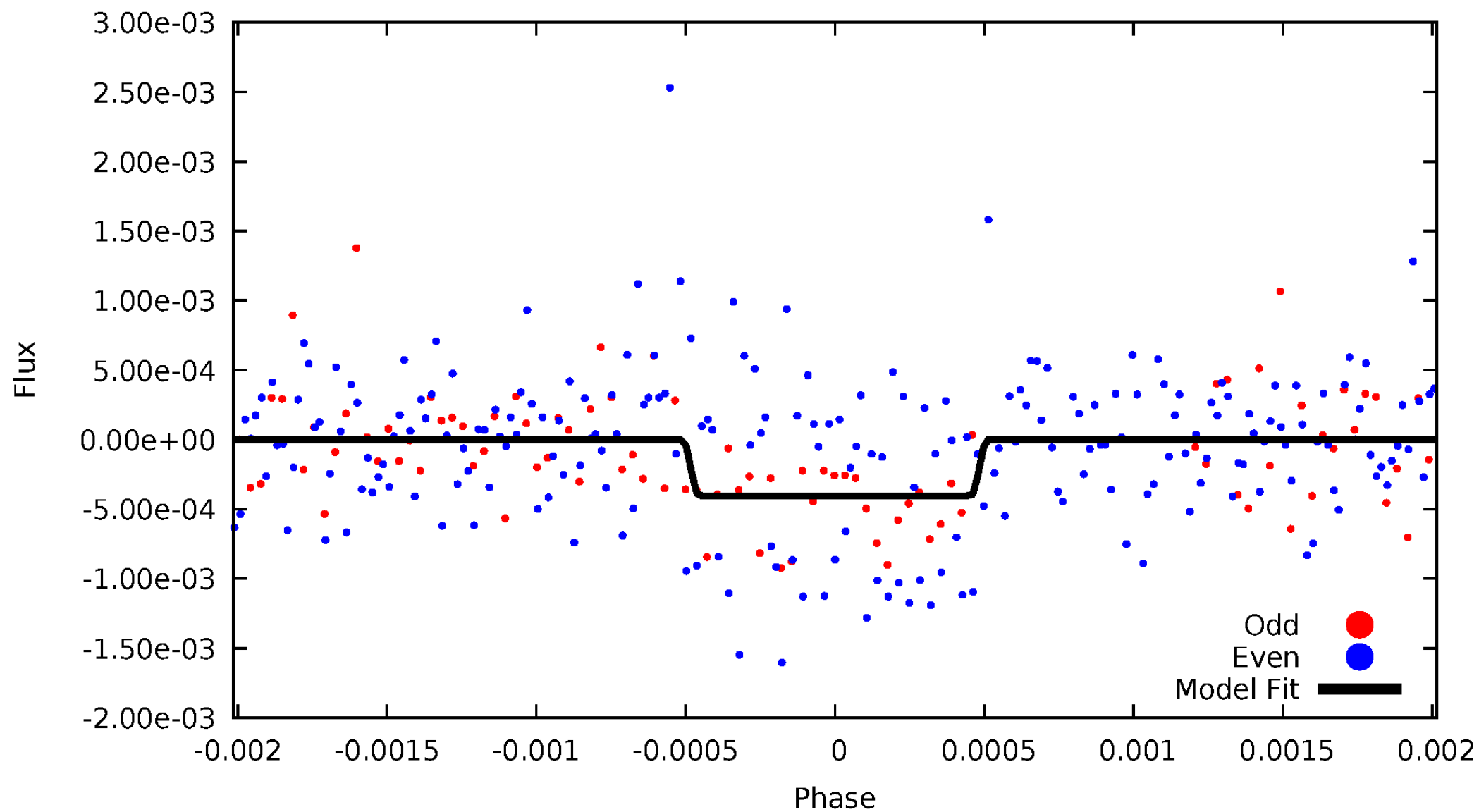
DV Odd/Even

TCE 011521048-03

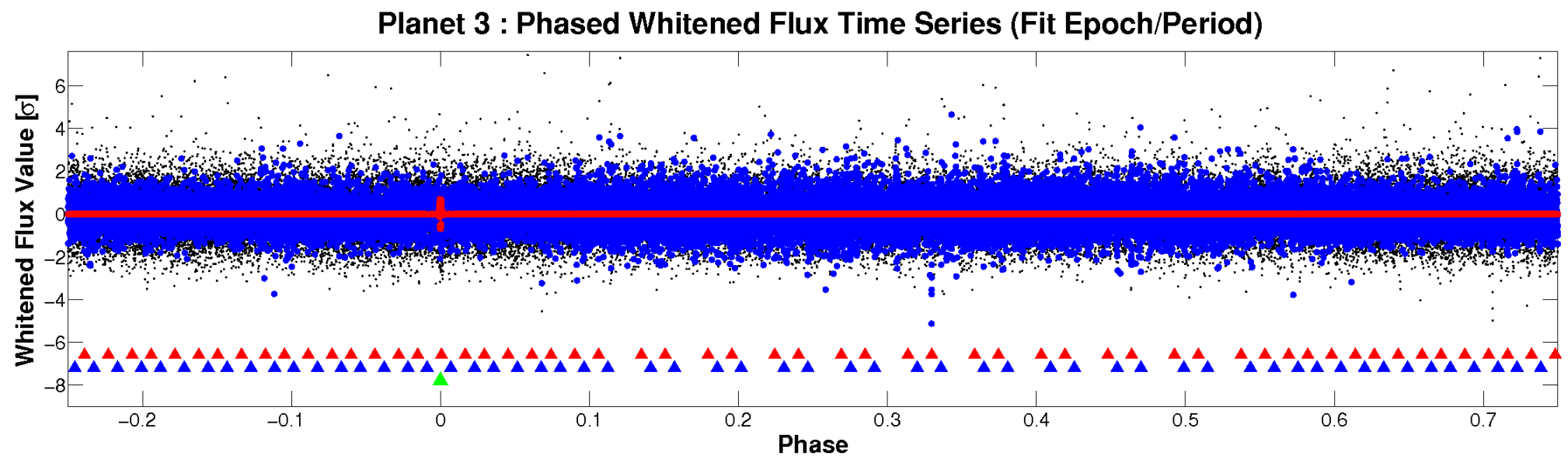
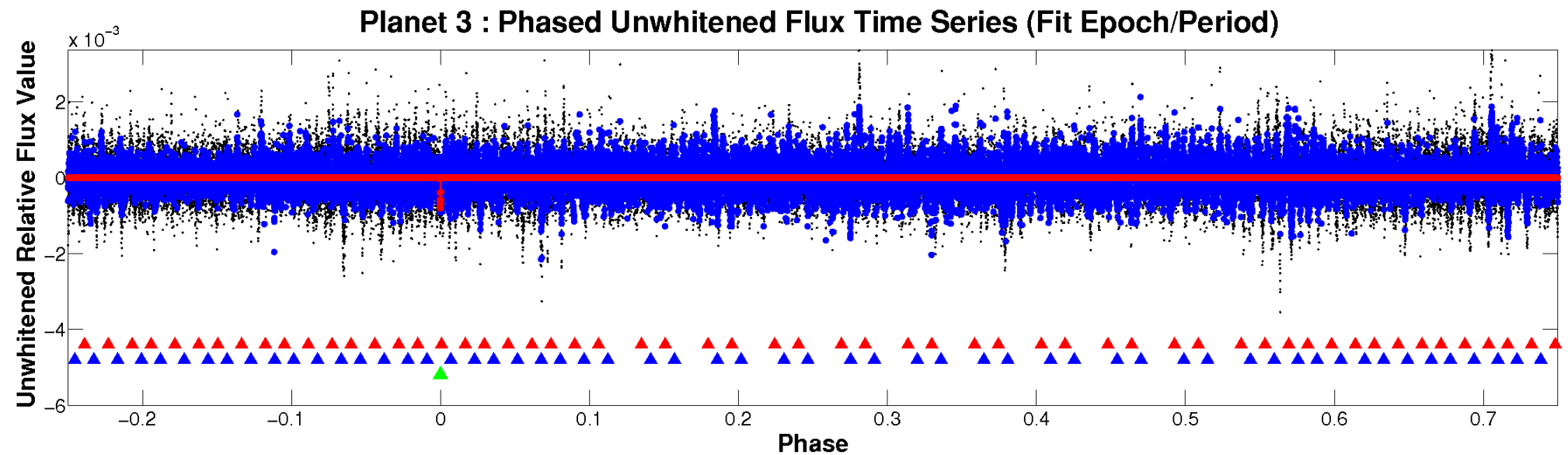


ALT Odd/Even

TCE 011521048-03

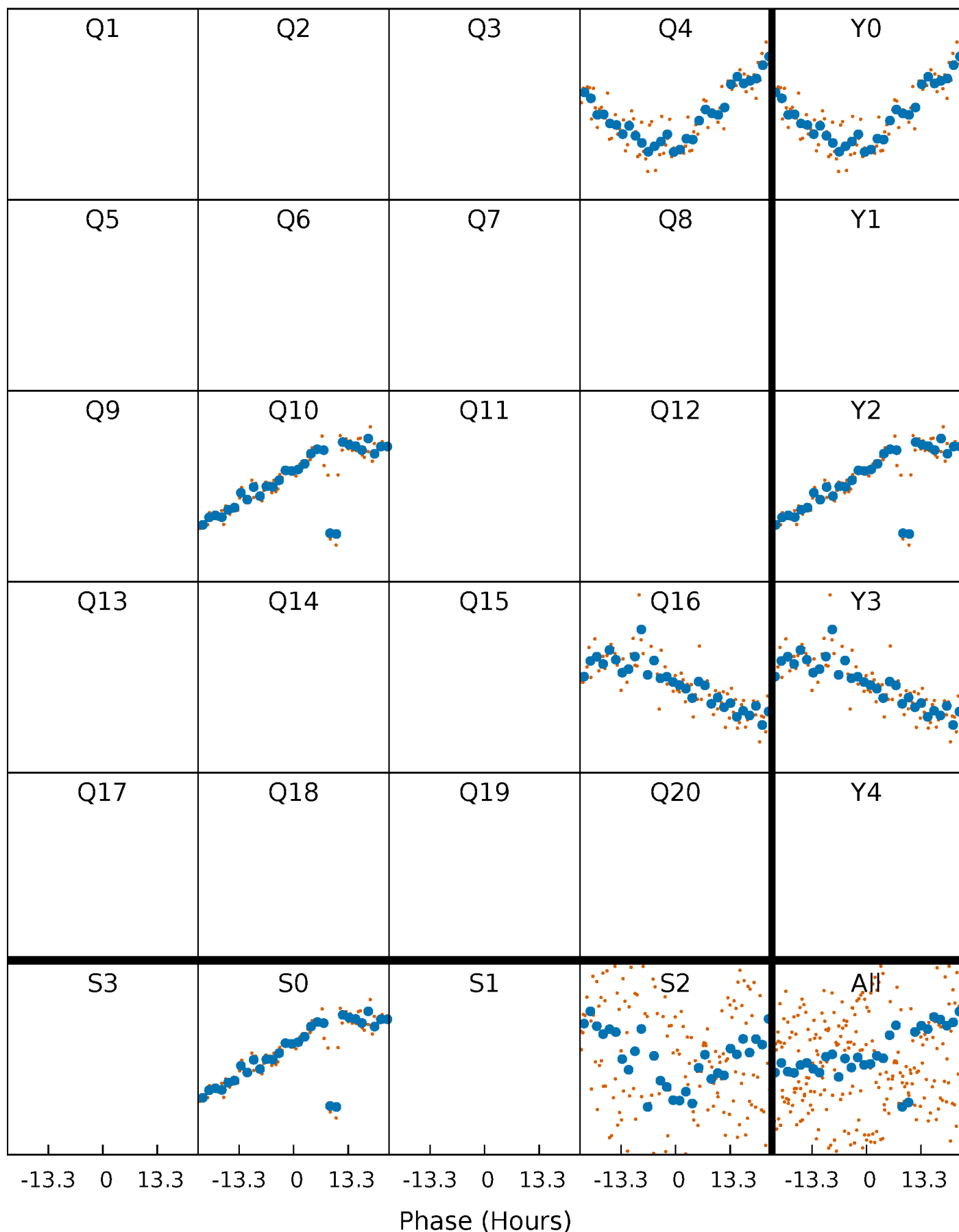


Non-Whitened Vs. Whitened Light Curve



PDC Quarter-Phased Transit Curves

TCE 011521048-03 P=574.636240 Days $T_0=390.870997$ (BKJD)



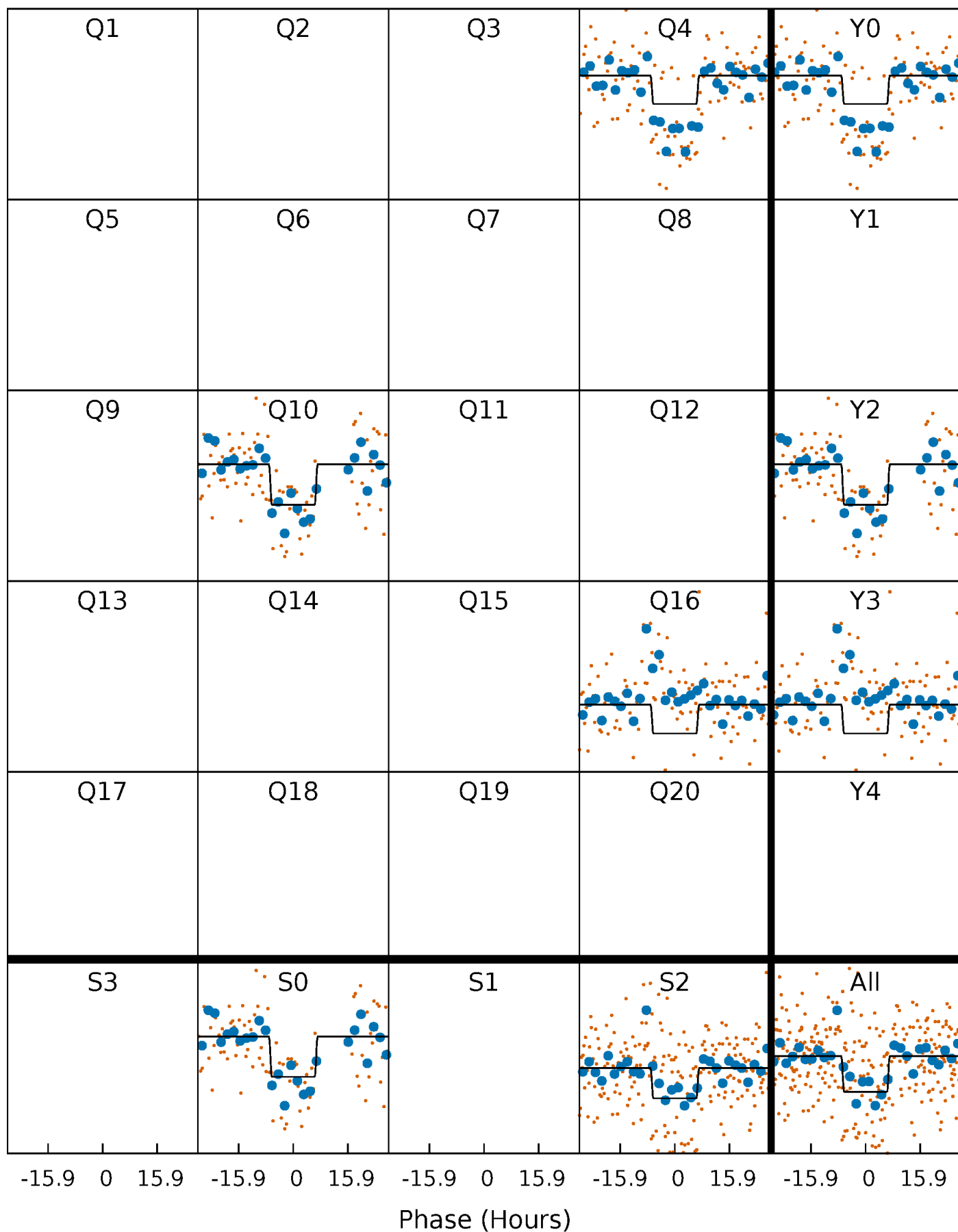
DV Quarter-Phased Transit Curves

TCE 011521048-03 P=574.636240 Days $T_0=390.870997$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

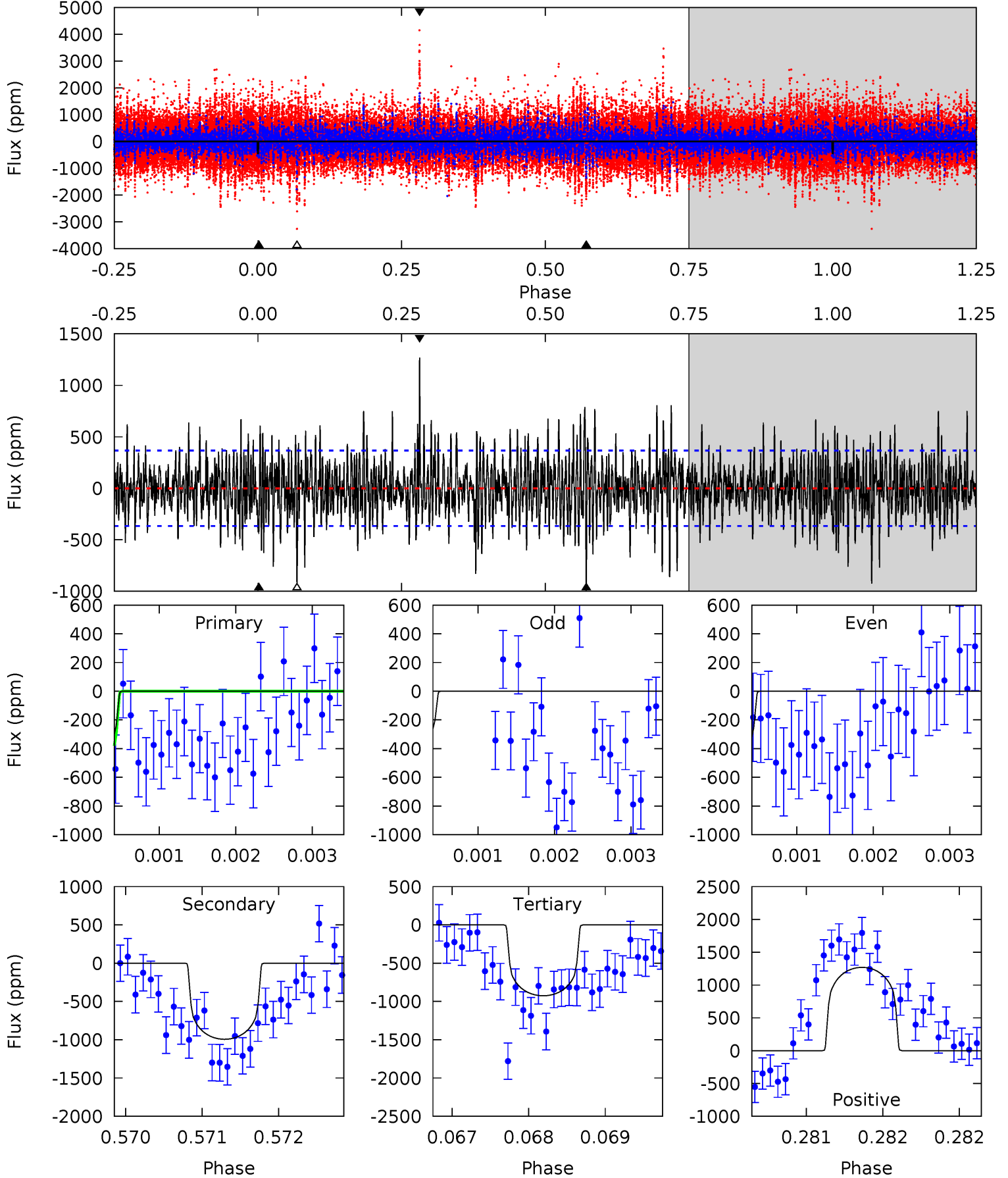
TCE 011521048-03 P=574.659819 Days $T_0=390.771125$ (BKJD)



DV Model-Shift Uniqueness Test

011521048-03, P = 574.636240 Days, E = 390.870997 Days

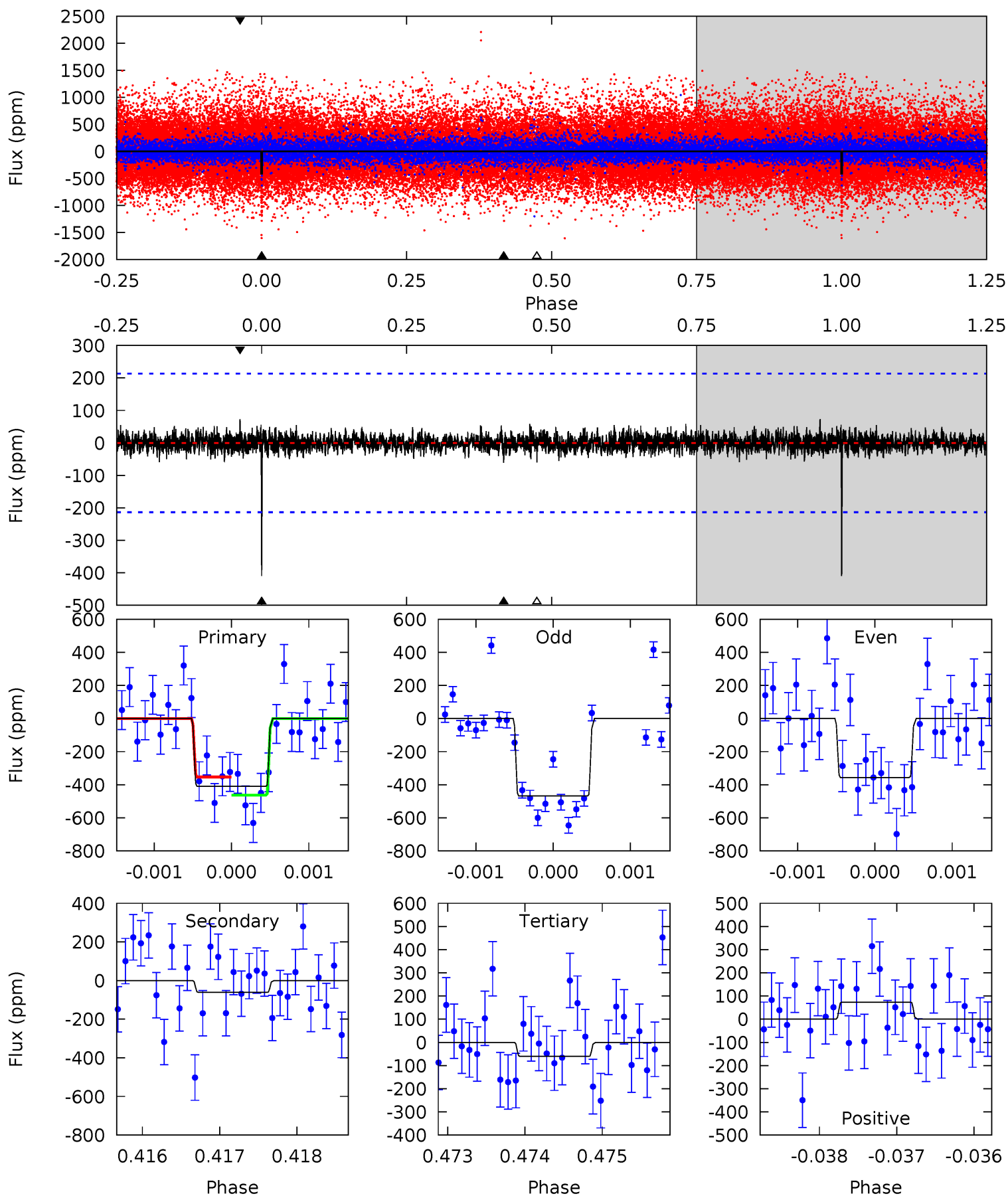
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.63	14.9	13.8	19.0	5.47	3.33	3.63	-7.20	-12.4	1.03	-4.12	0.68	1.17	0.56	1.68



Alt Model-Shift Uniqueness Test

011521048-03, P = 574.659819 Days, E = 390.771125 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	1.55	1.54	1.87	5.45	3.29	0.39	8.93	8.60	0.02	-0.32	1.34	0.82	0.15	1.40



Stellar Parameters For KIC 011521048

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5532^{+165}_{-149}	$4.488^{+0.108}_{-0.132}$	$-0.360^{+0.300}_{-0.300}$	$0.835^{+0.169}_{-0.099}$	$0.782^{+0.114}_{-0.057}$	$1.892^{+0.850}_{-0.736}$
	+3%/-3%	+2%/-3%	+83%/-83%	+20%/-12%	+15%/-7%	+45%/-39%
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 011521048-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-994 ± 67	$2.57^{+0.96}_{-1.03}$	280^{+15}_{-13}	5930^{+1862}_{-845}	$133573^{+233714}_{-65648}$
Alt.	-61 ± 39	$1.94^{+0.93}_{-0.96}$	279^{+15}_{-12}	3711^{+1106}_{-677}	13417^{+41659}_{-9982}

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

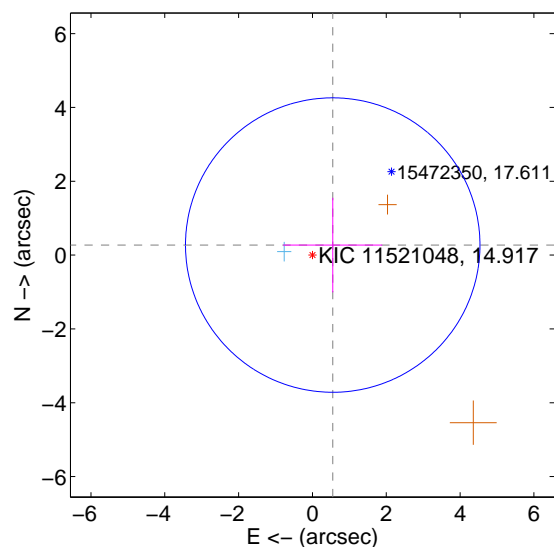
Supplemental centroid analysis for 011521048-03. Kepler magnitude: 14.92. Transit SNR 6.06

There are 1 quarters with good PRF difference image offsets

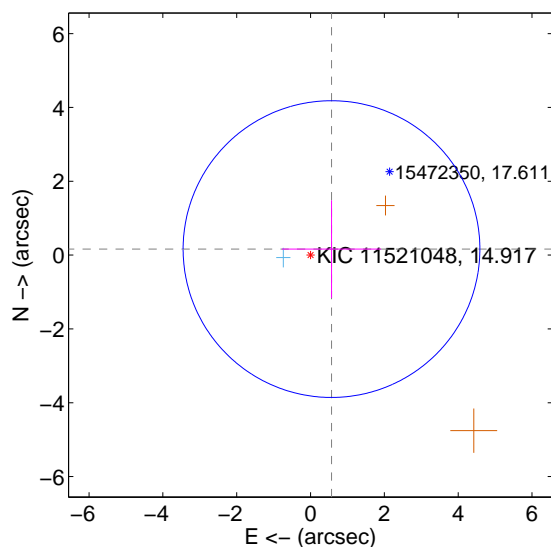
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.613 ± 1.329	0.46	-0.550 ± 1.341	0.272 ± 1.281
PRF-fit source offset from KIC position	0.591 ± 1.340	0.44	-0.568 ± 1.341	0.163 ± 1.321
photometric centroid source offset	1.05 ± 1.47	0.71	0.89 ± 1.50	-0.54 ± 1.38

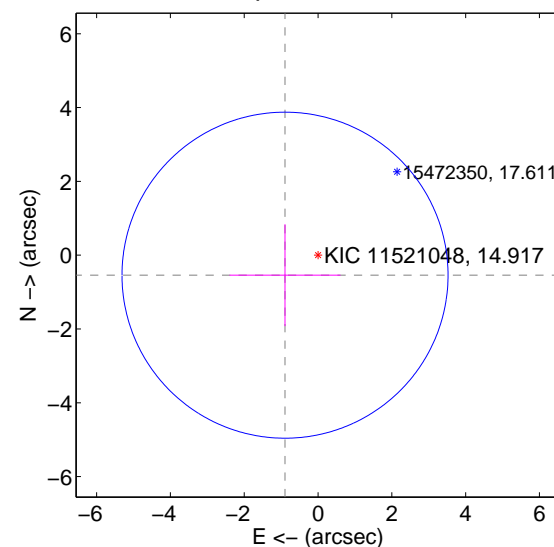
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

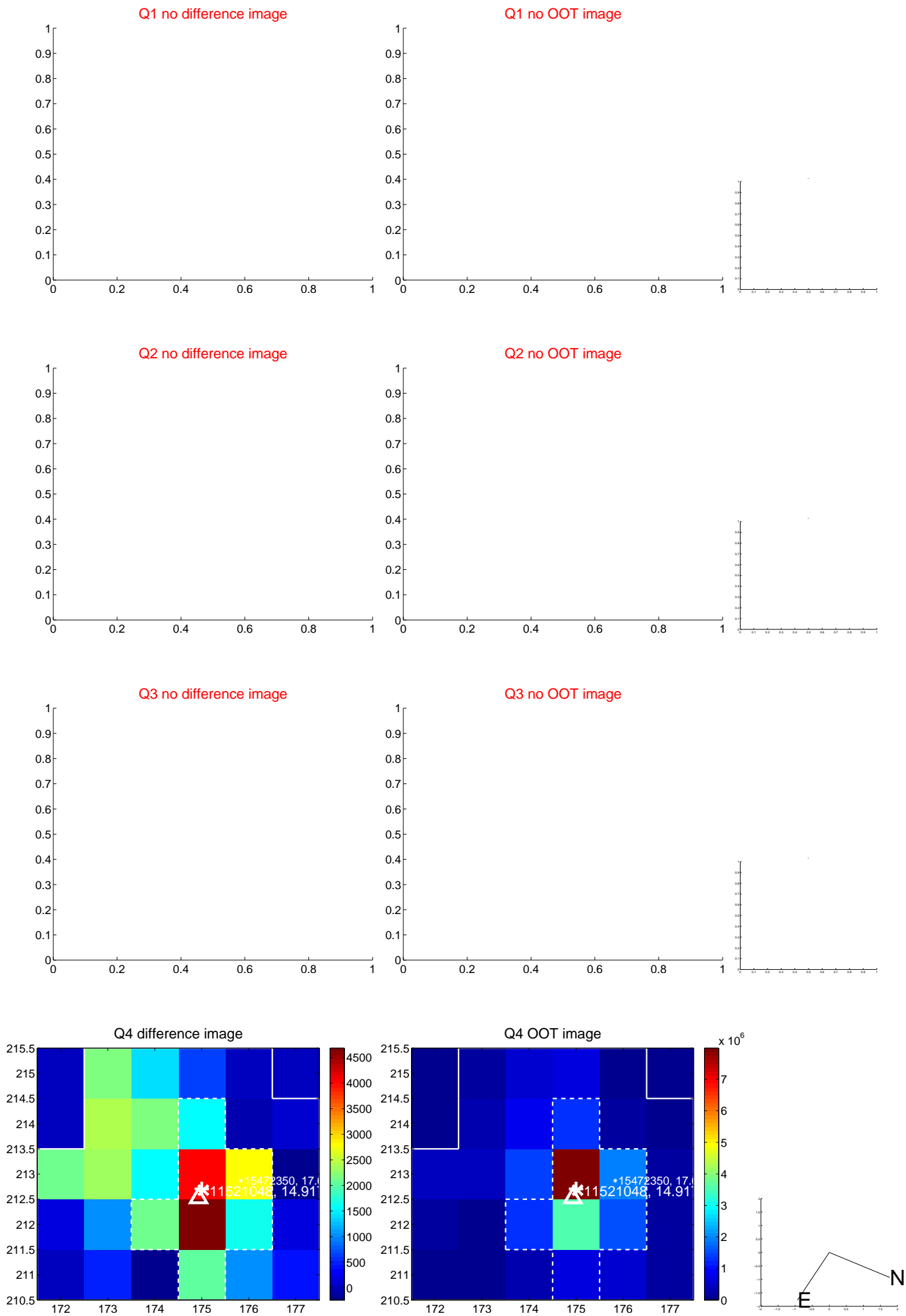


offset from photometric centroids

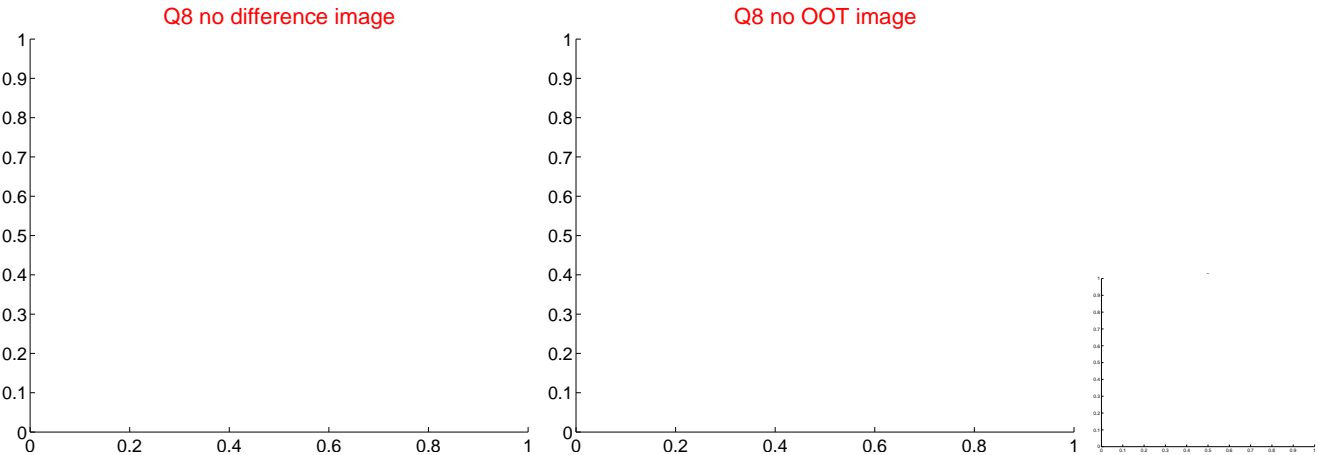
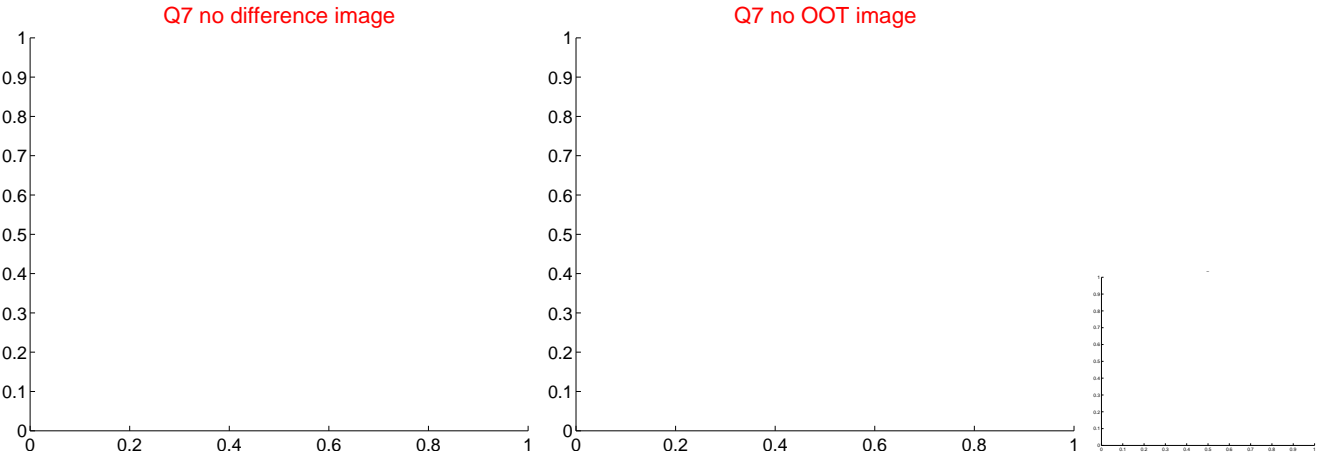
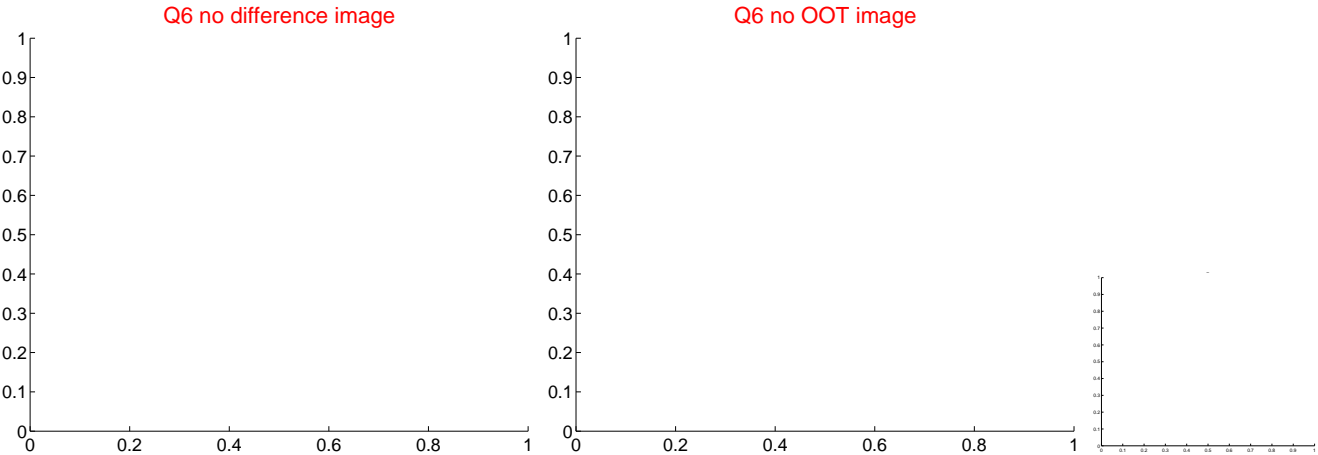
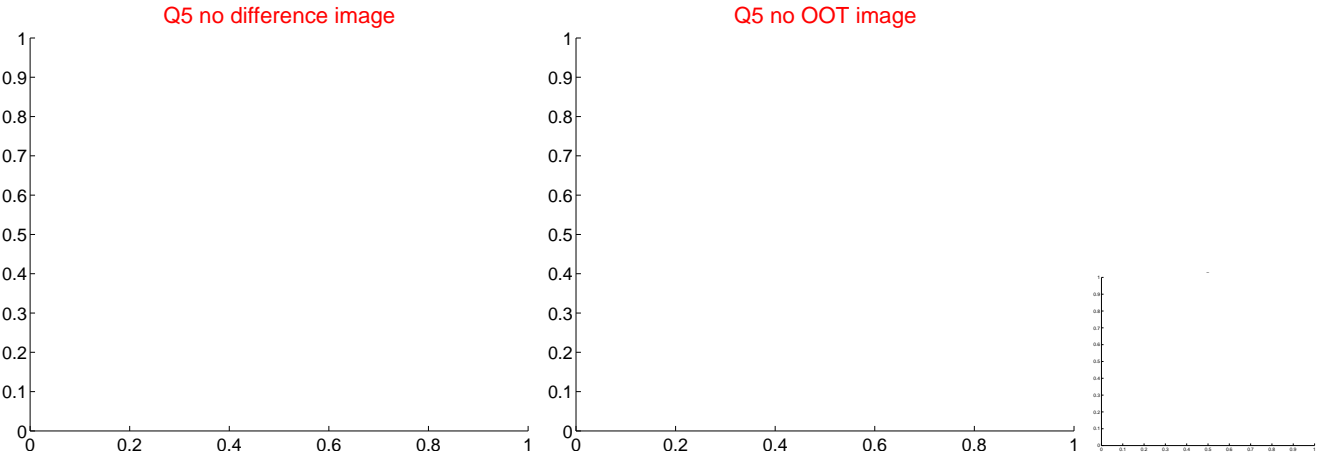


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

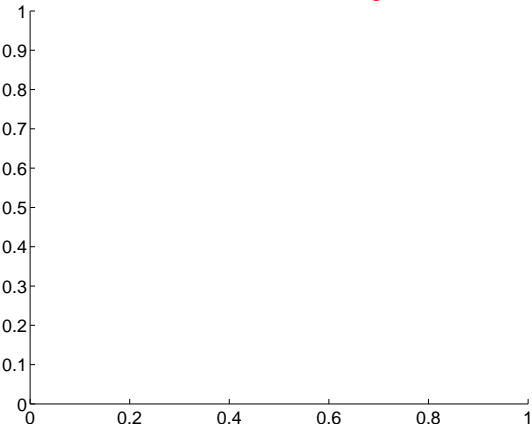


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

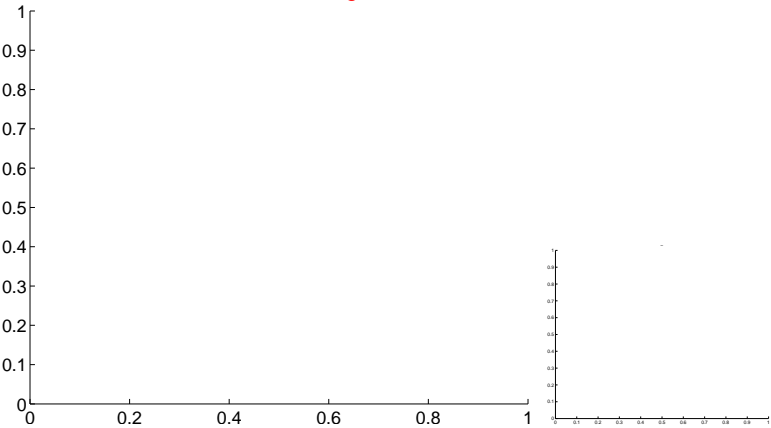


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

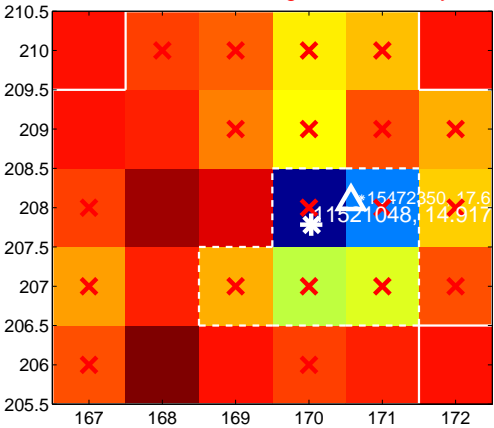
Q9 no difference image



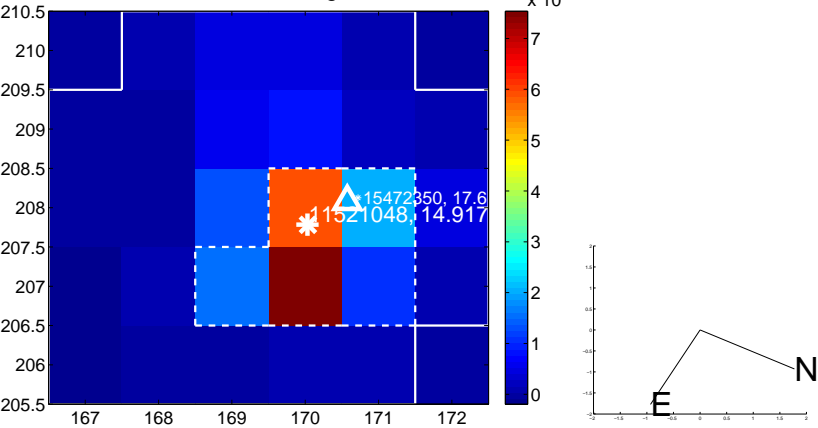
Q9 no OOT image



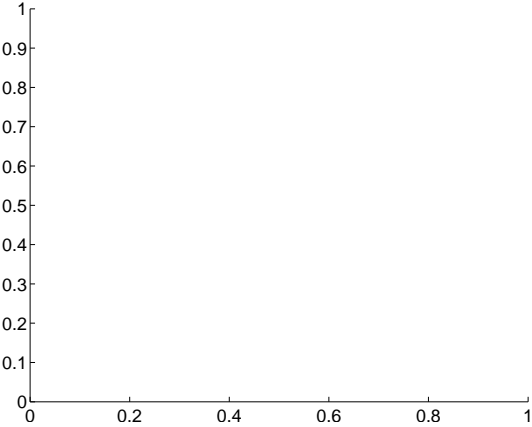
Q10 difference image. Poor Quality



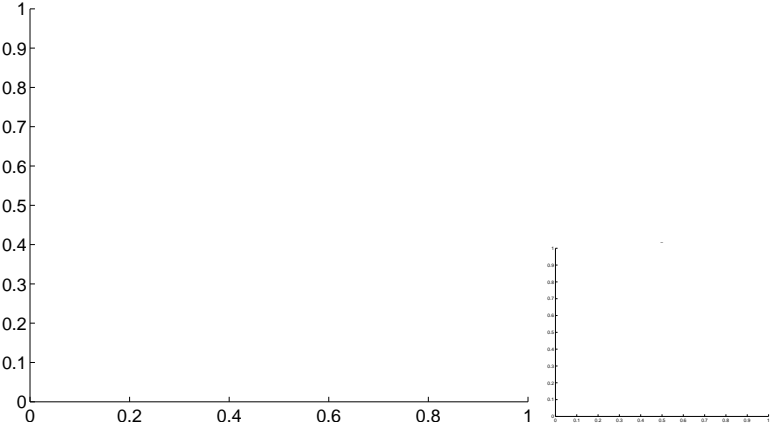
Q10 OOT image



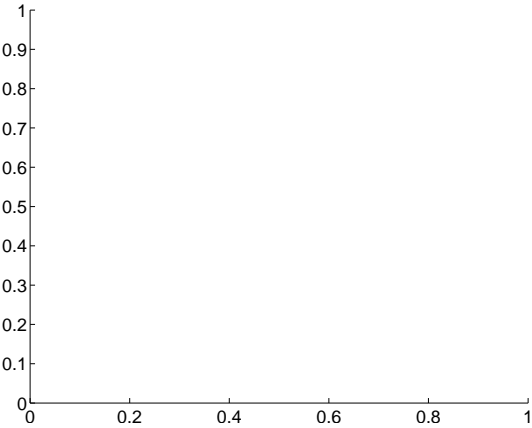
Q11 no difference image



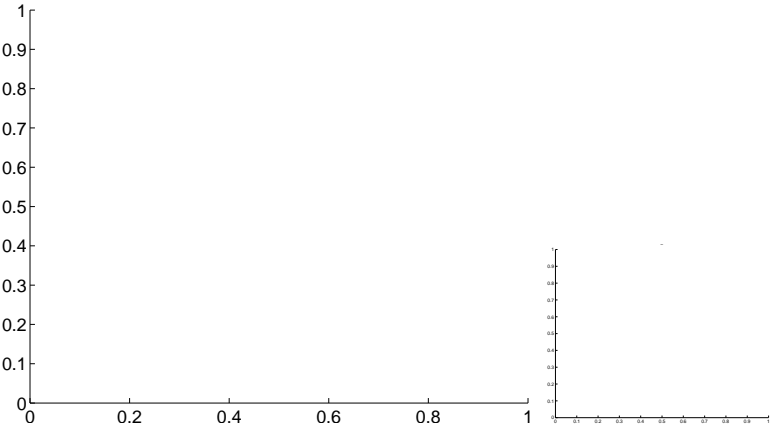
Q11 no OOT image



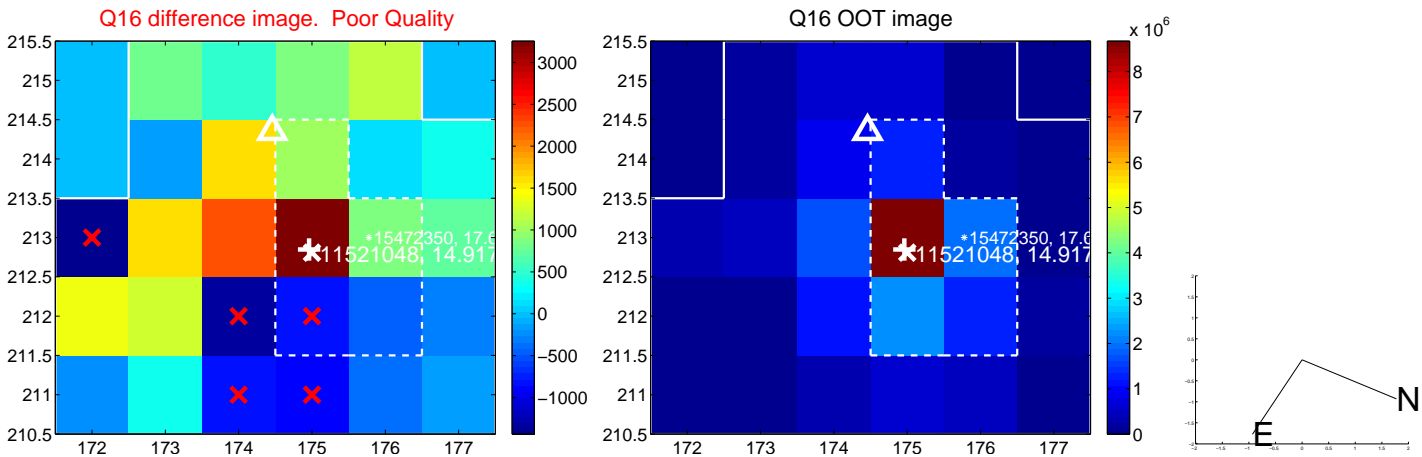
Q12 no difference image



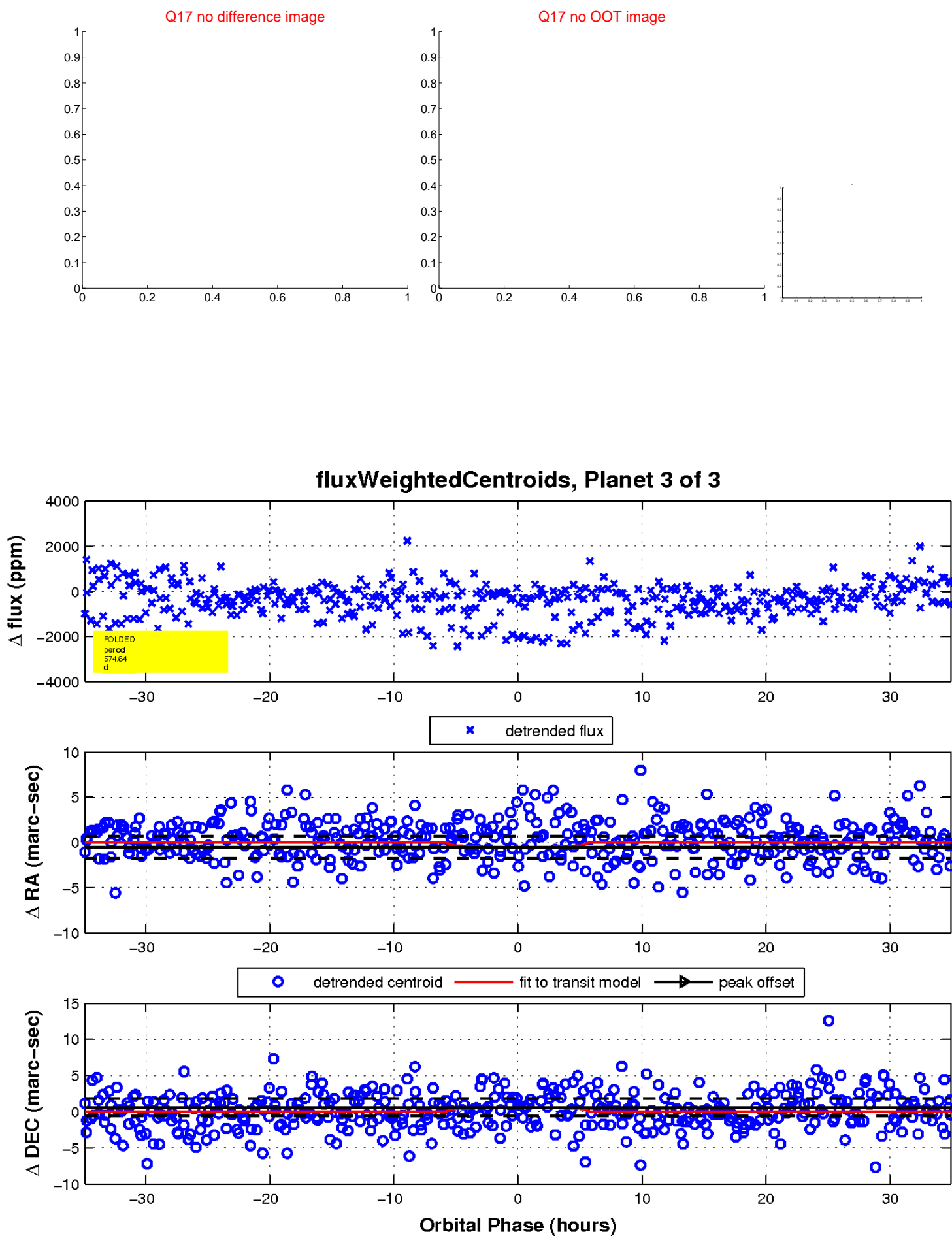
Q12 no OOT image



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.



UKIRT Image

Declination

