

KIC 011674709

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})
011674709-01	OBS	No	399.929949	513.829526	1054.1	5.777	20.6	8.6	3.90	4848	12.23	7.17
011674709-02	OBS	5928.01	20.699532	132.712315	160.8	2.304	9.5	9.6	3.90	4848	5.24	371.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011674709-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011674709-02	OBS	PC	0.47	0	0	0	0	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 011674709-01

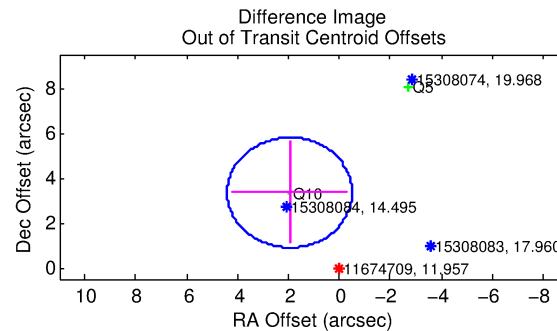
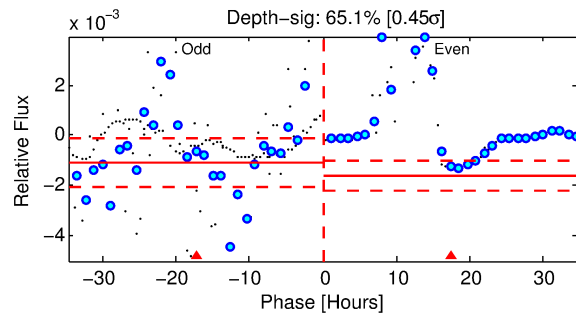
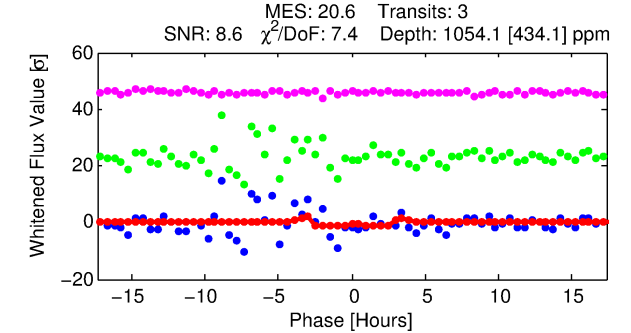
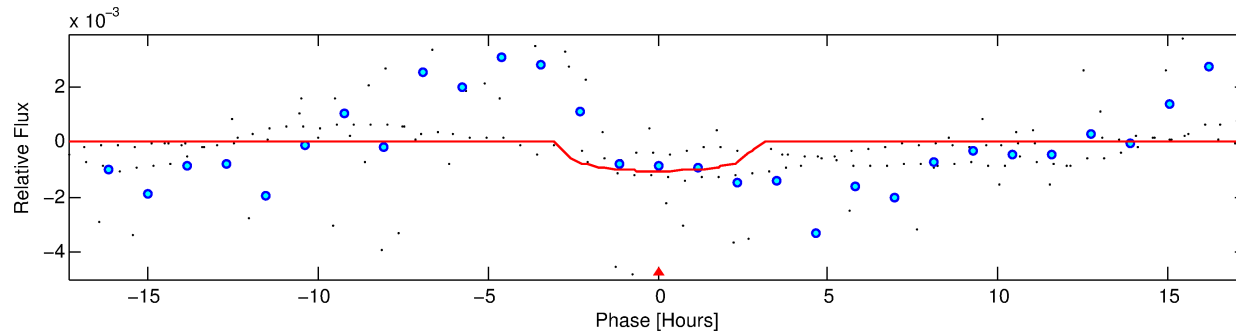
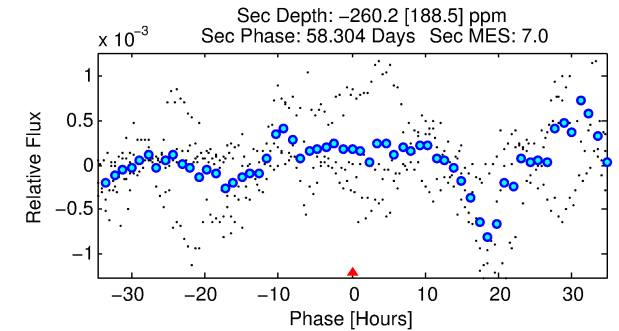
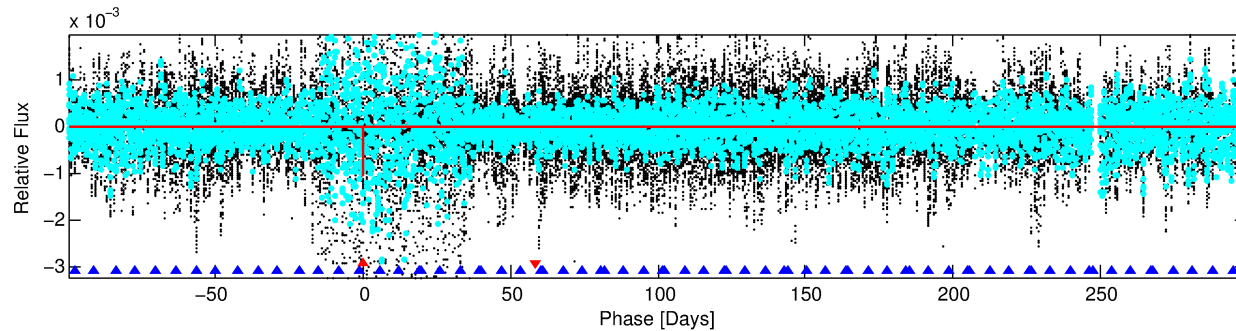
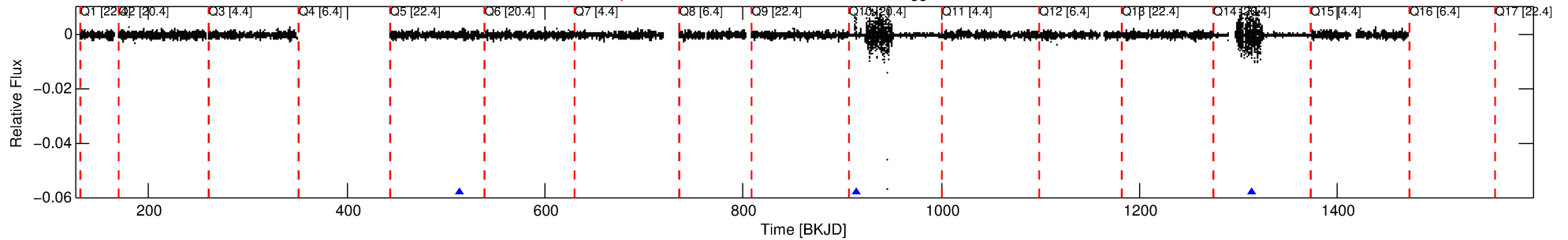
No Significant Match Found

DV One-Page Summary

KIC: 11674709 Candidate: 1 of 2 Period: 399.930 d

KOI: K05928 Corr: No Ephemeris Match

Kp: 11.96 R*: 3.90 Rs Teff: 4848.0 K Logg: 3.21 Fe/H: -0.160



DV Fit Results:

Period = 399.92995 [0.01243] d
Epoch = 513.8295 [0.0090] BKJD
Rp/R* = 0.0287 [0.0598]
a/R* = 543.66 [3728.17]
b = 0.04 [179.18]
Seff = 7.17 [3.01]
Teq = 417 [44] K
Rp = 12.24 [25.83] Re
a = 1.0257 [0.2906] AU
Ag = N/A
Teffp = N/A

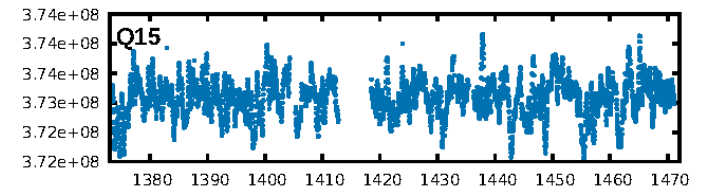
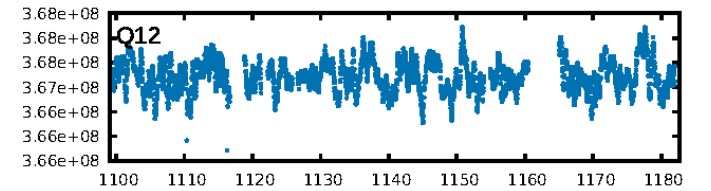
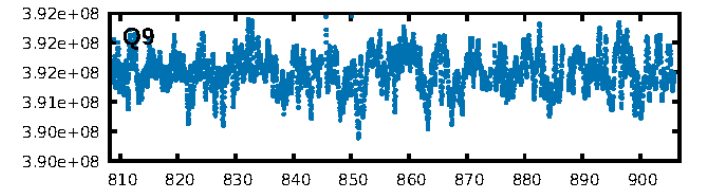
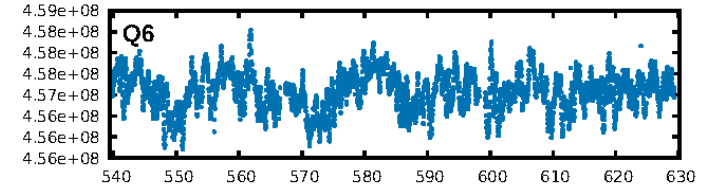
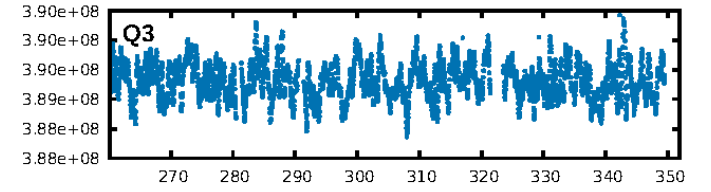
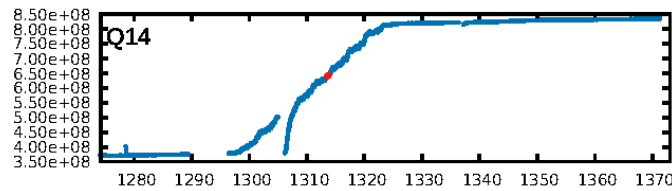
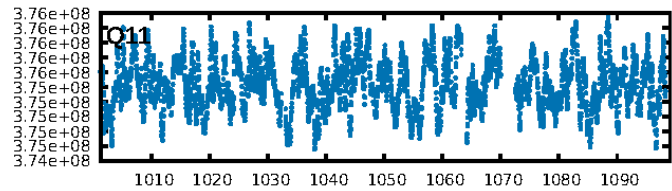
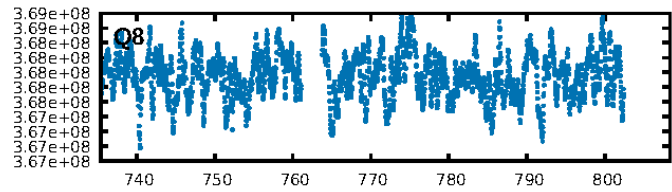
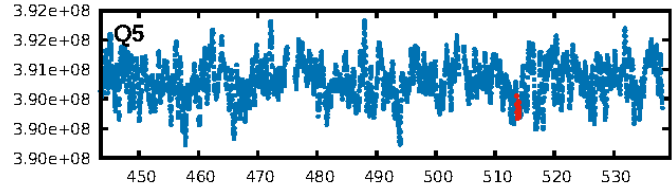
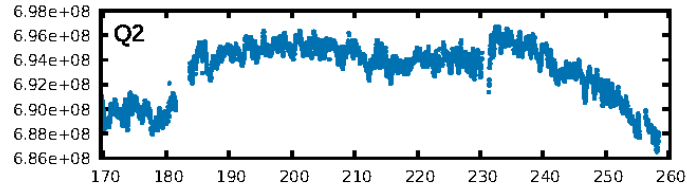
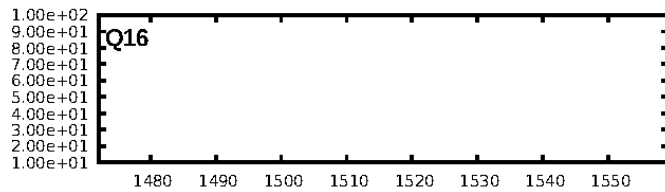
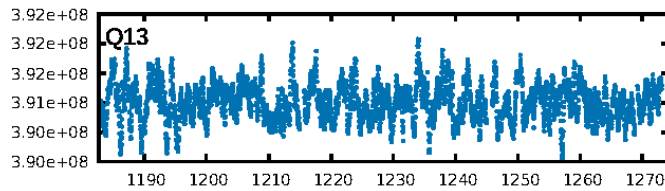
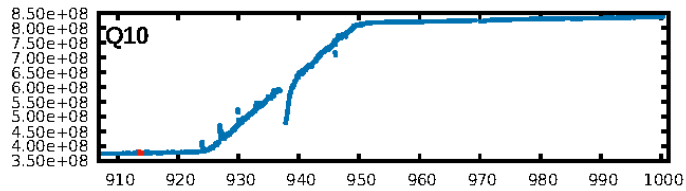
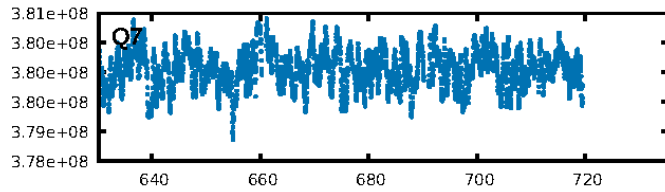
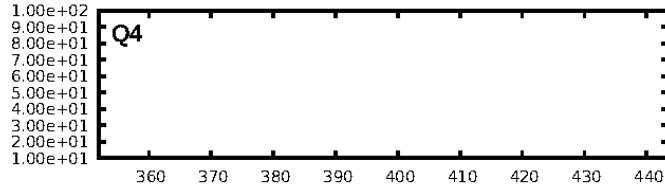
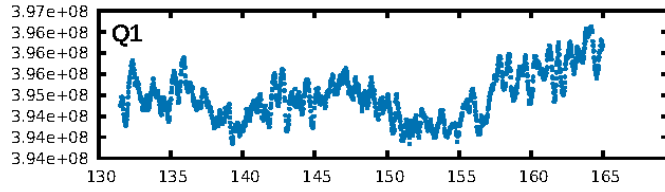
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1463.40σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 30.8%
ModelChiSquareGoF-sig: 0.0%
Bootstrap-pfa: 1.42e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -2.902
Centroid-sig: N/A
Centroid-so: 4.437 arcsec [9.28σ]
OotOffset-rm: 3.874 arcsec [4.74σ]
KicOffset-rm: 3.989 arcsec [1.67σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

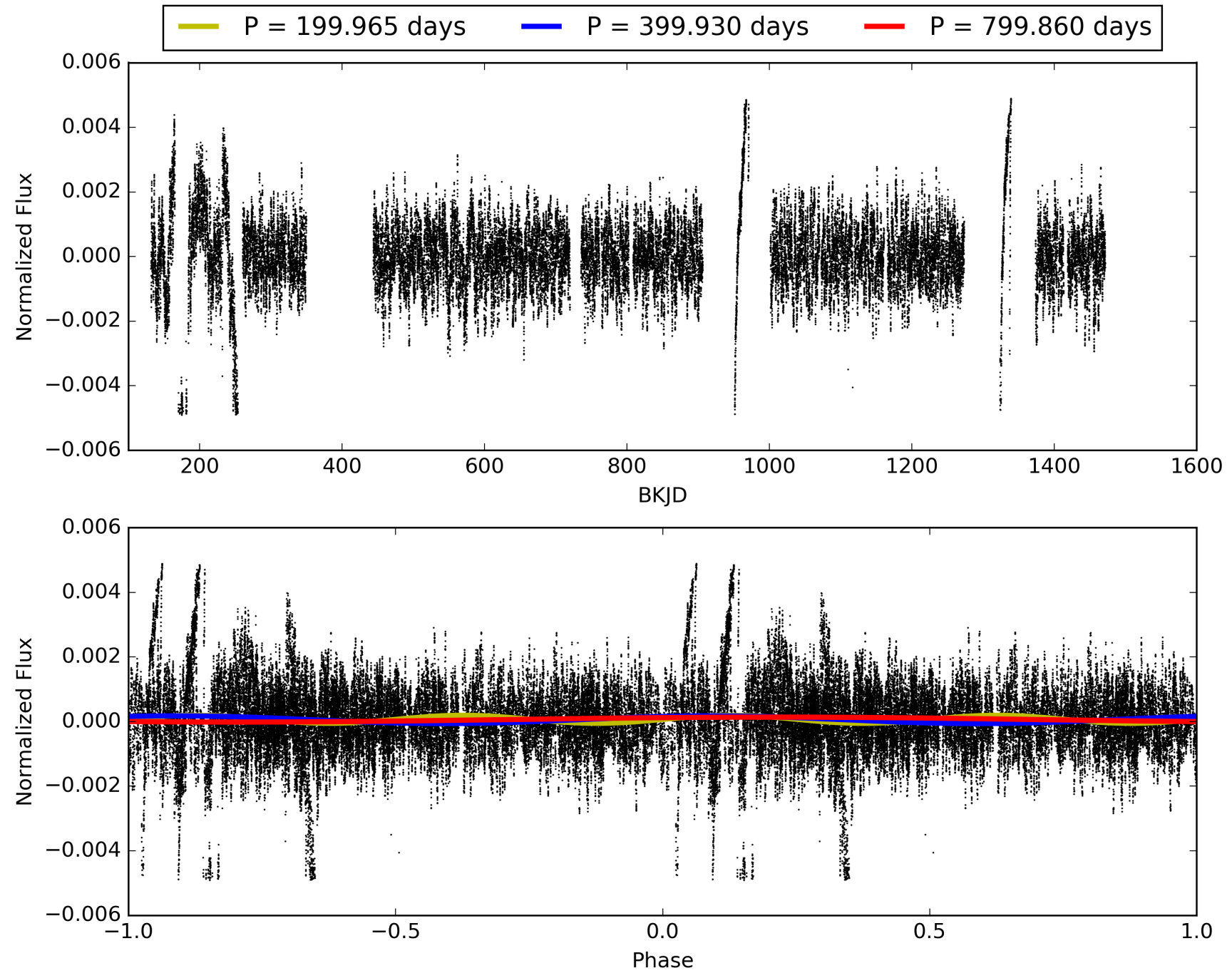
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 011674709-01, PDC Light Curves

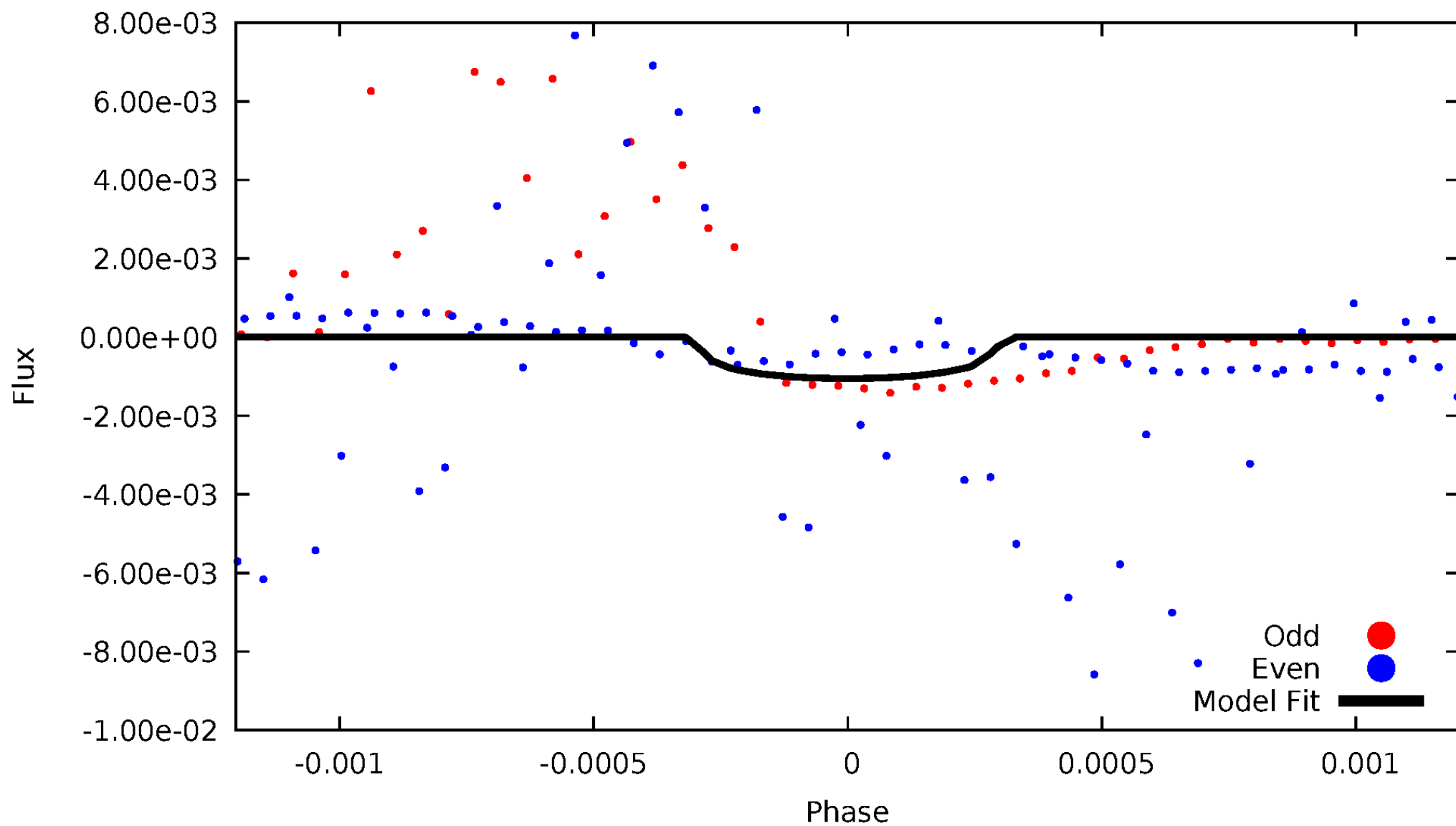


TCE 011674709-01



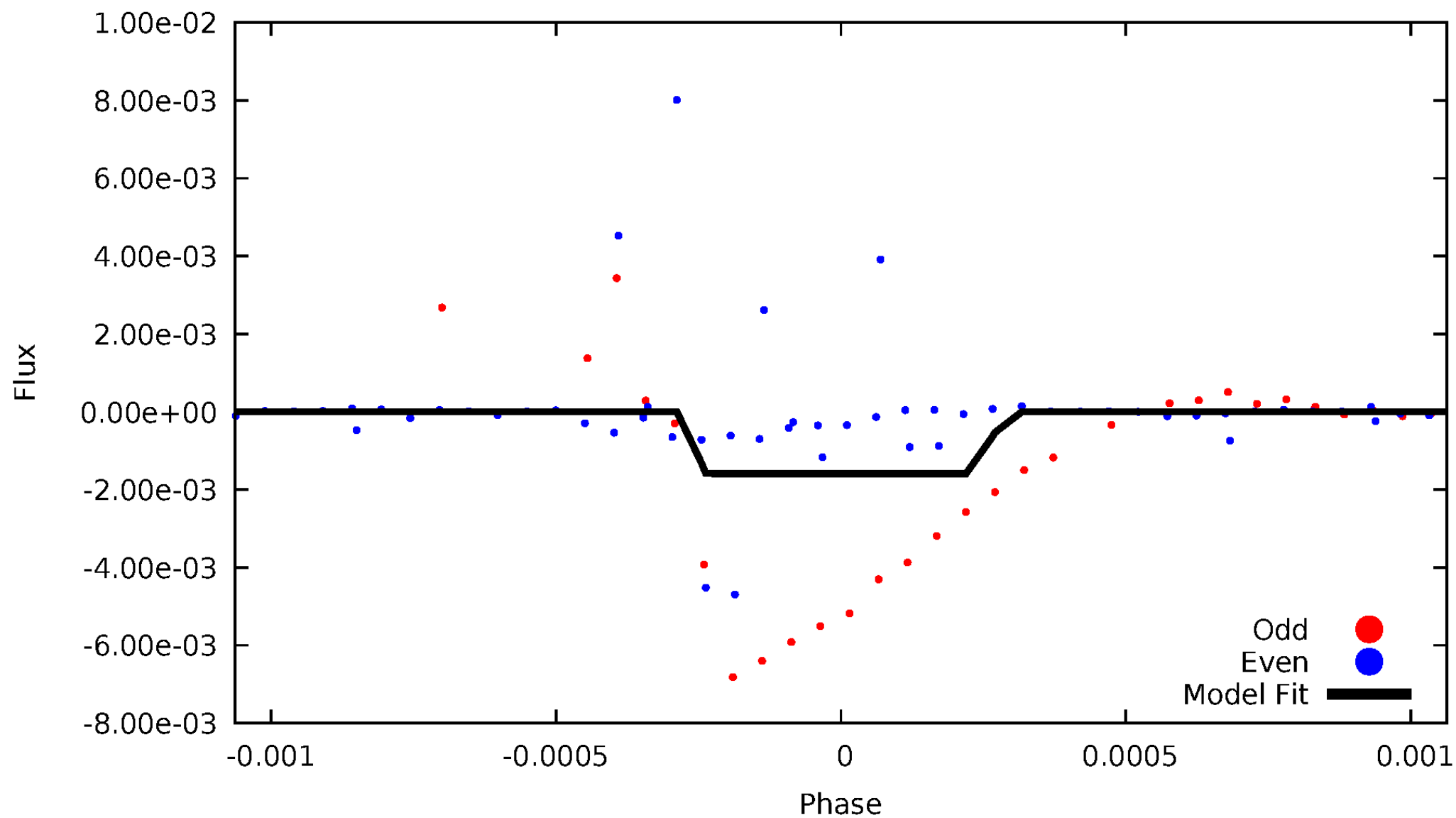
DV Odd/Even

TCE 011674709-01



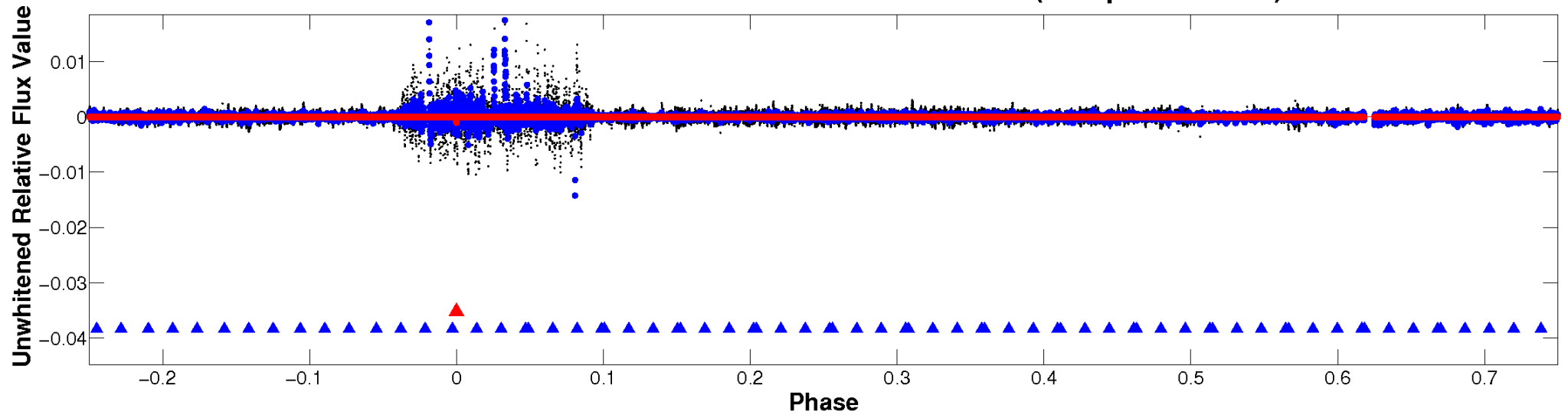
ALT Odd/Even

TCE 011674709-01

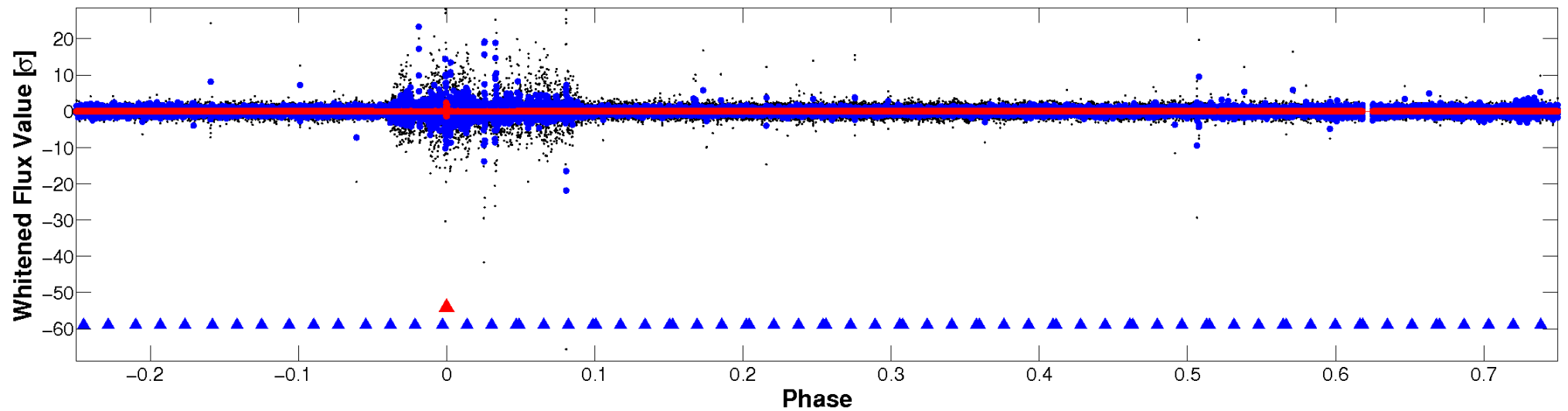


Non-Whitened Vs. Whitened Light Curve

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

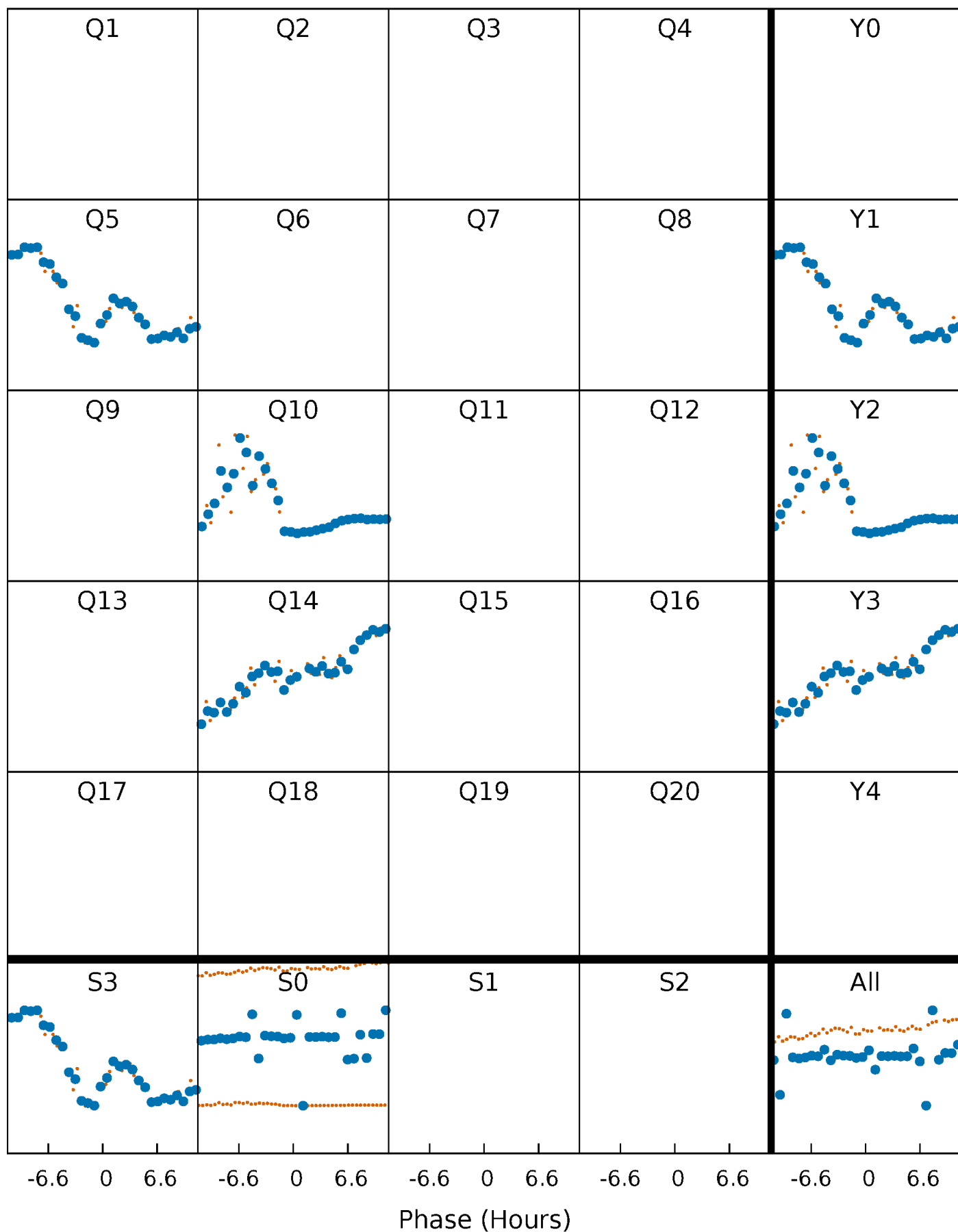


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



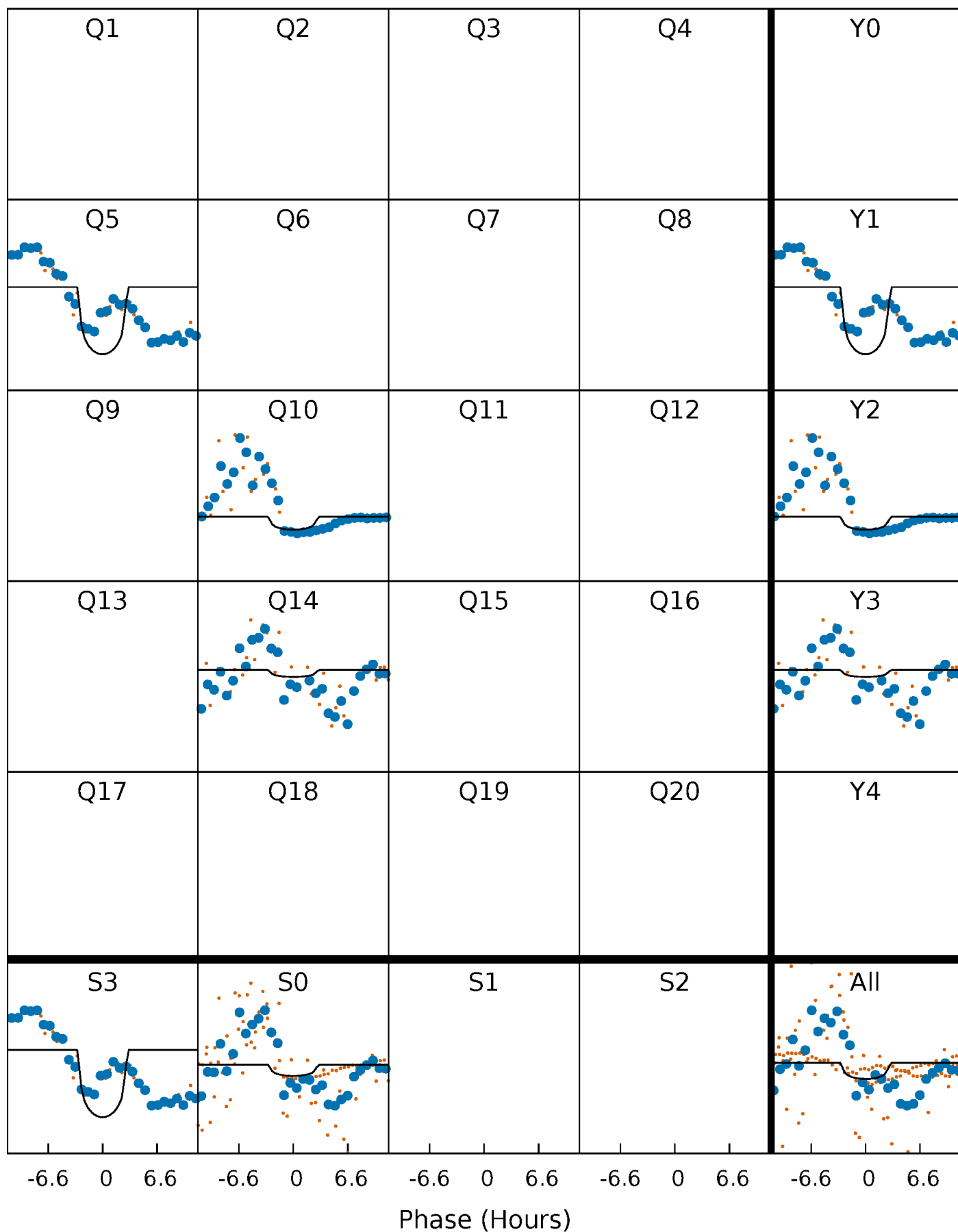
PDC Quarter-Phased Transit Curves

TCE 011674709-01 P=399.929950 Days $T_0=513.829526$ (BKJD)



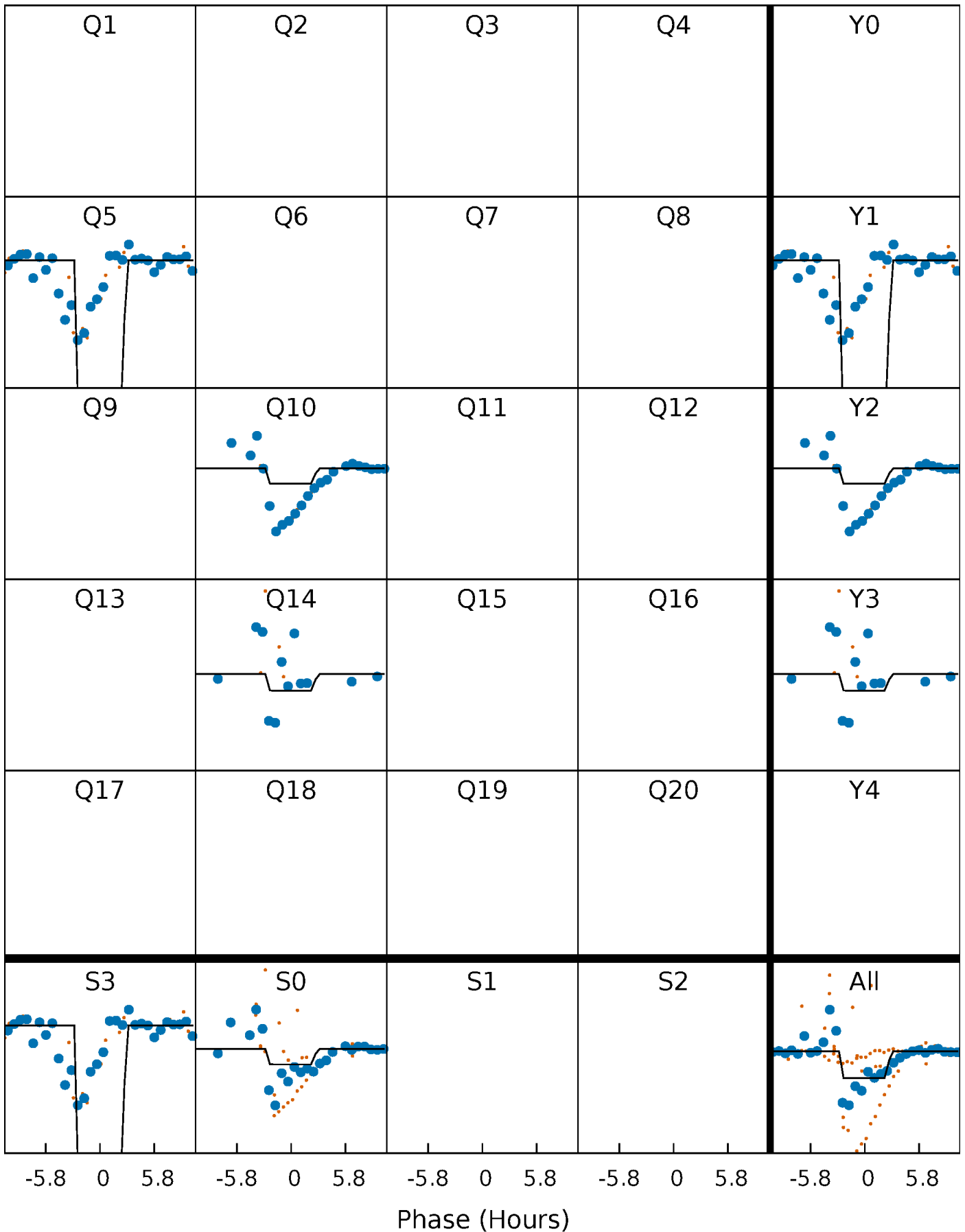
DV Quarter-Phased Transit Curves

TCE 011674709-01 $P=399.929950$ Days $T_0=513.829526$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

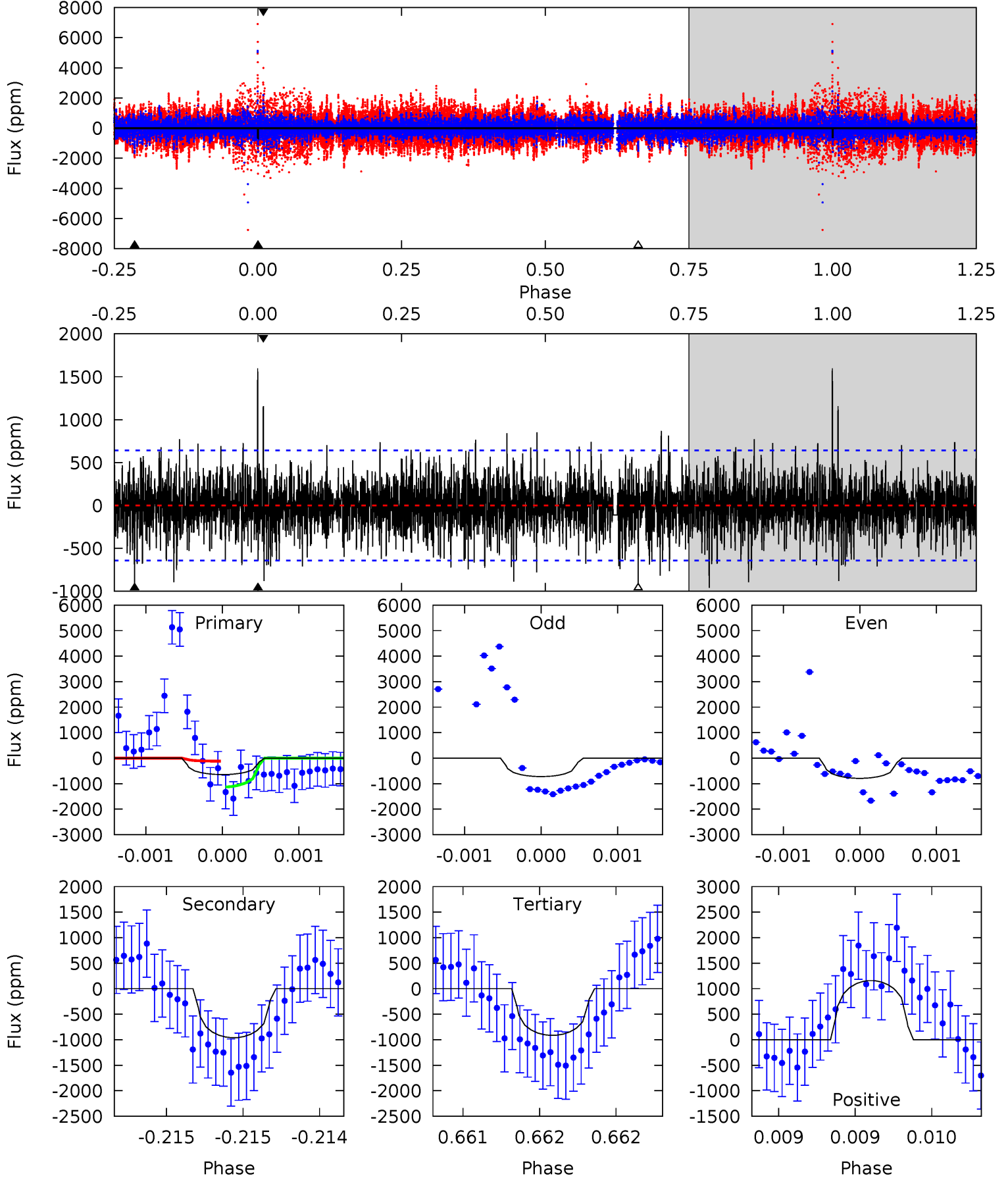
TCE 011674709-01 P=399.946070 Days $T_0=513.840810$ (BKJD)



DV Model-Shift Uniqueness Test

011674709-01, P = 399.929950 Days, E = 113.899576 Days

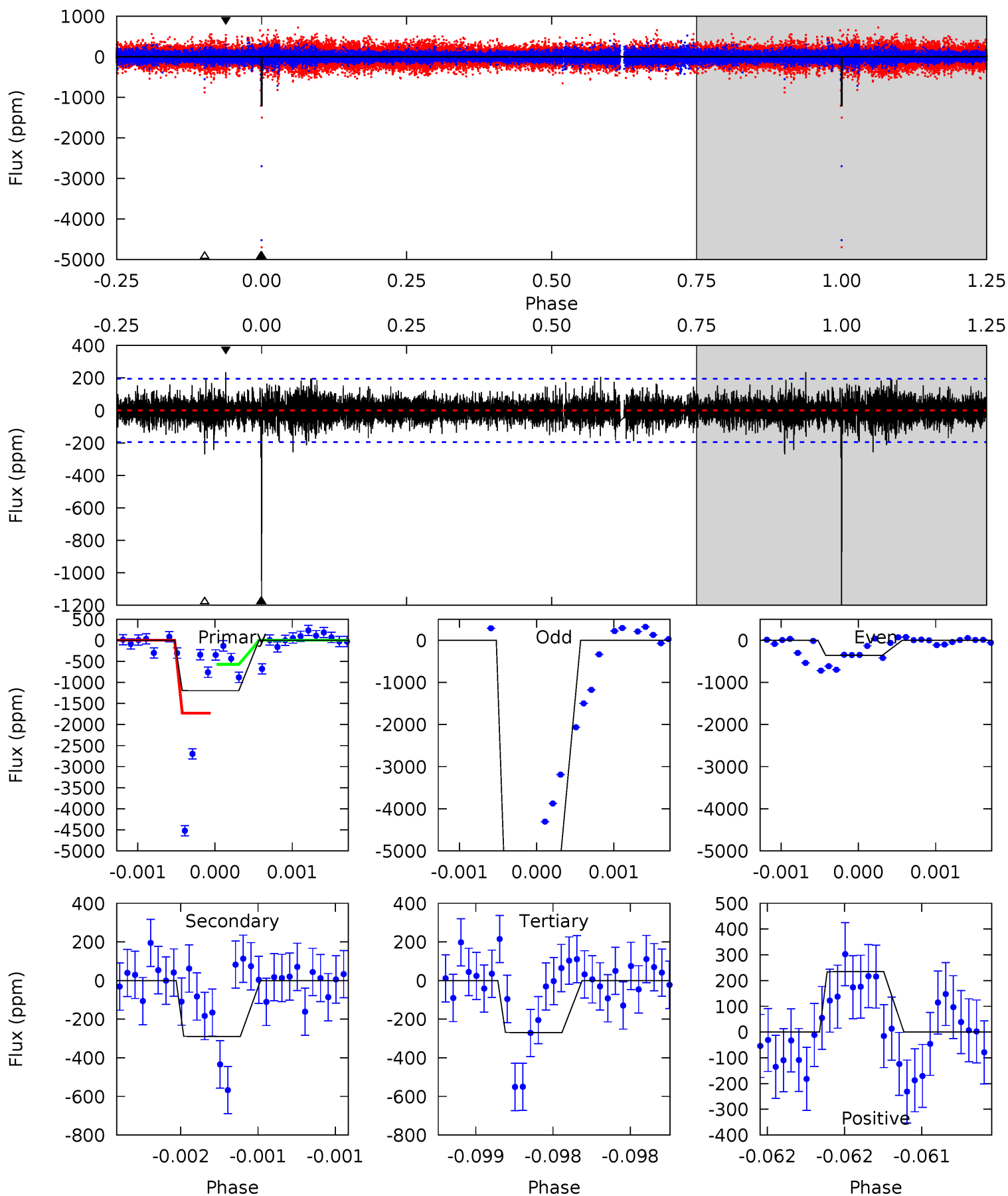
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.55	8.29	7.89	10.00	5.54	3.43	2.07	-2.34	-4.44	0.40	-1.71	0.20	1.25	0.62	4.40



Alt Model-Shift Uniqueness Test

011674709-01, P = 399.946070 Days, E = 113.894740 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.0	8.24	7.66	6.67	5.55	3.45	1.30	26.4	27.4	0.58	1.57	82.4	2.65	0.16	17.2



Stellar Parameters For KIC 011674709

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4848^{+122}_{-85}	$3.209^{+0.220}_{-0.180}$	$-0.160^{+0.250}_{-0.200}$	$3.904^{+1.332}_{-0.717}$	$0.899^{+0.284}_{-0.032}$	$0.021^{+0.024}_{-0.010}$
	+3%/-2%	+7%/-6%	+156%/-125%	+34%/-18%	+32%/-4%	+113%/-49%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011674709-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-960 ± 116	$23.46^{+21.50}_{-15.21}$	581^{+45}_{-41}	3899^{+2097}_{-684}	1057^{+7224}_{-764}
Alt.	-290 ± 35	$25.09^{+24.02}_{-16.17}$	578^{+53}_{-34}	3187^{+1256}_{-531}	277^{+1935}_{-205}

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
 A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

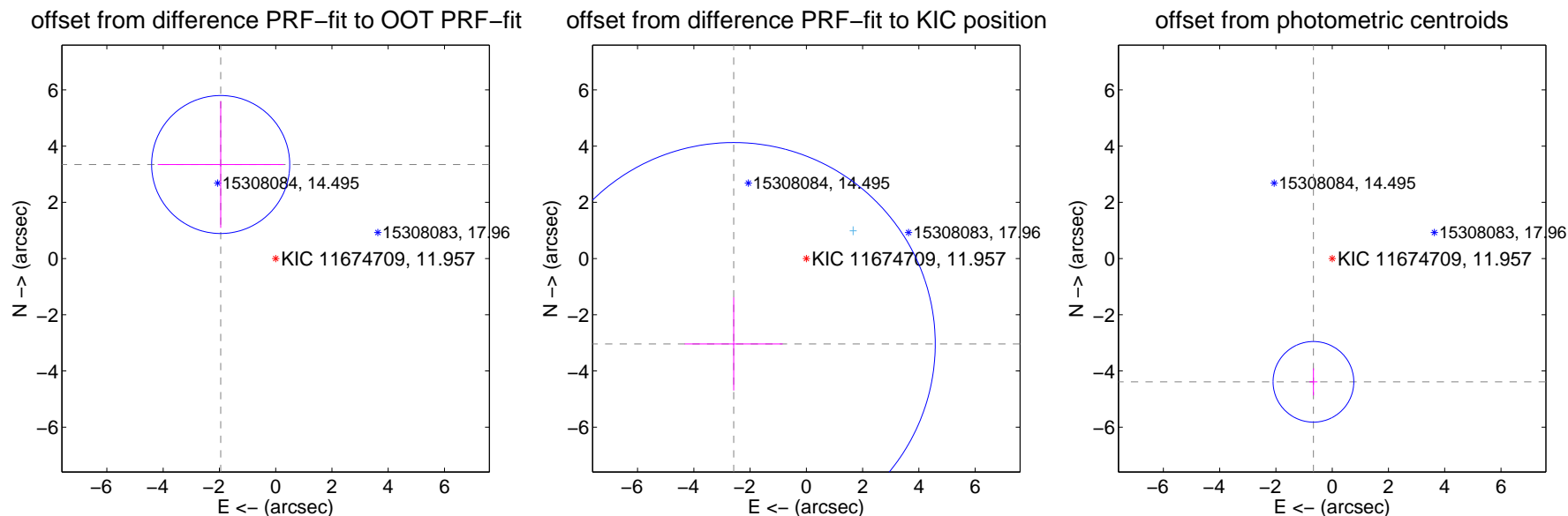
DV Centroid Data

Supplemental centroid analysis for 011674709-01. **Kepler magnitude: 11.96.** Transit SNR 8.59

There are 2 quarters with good PRF difference image offsets

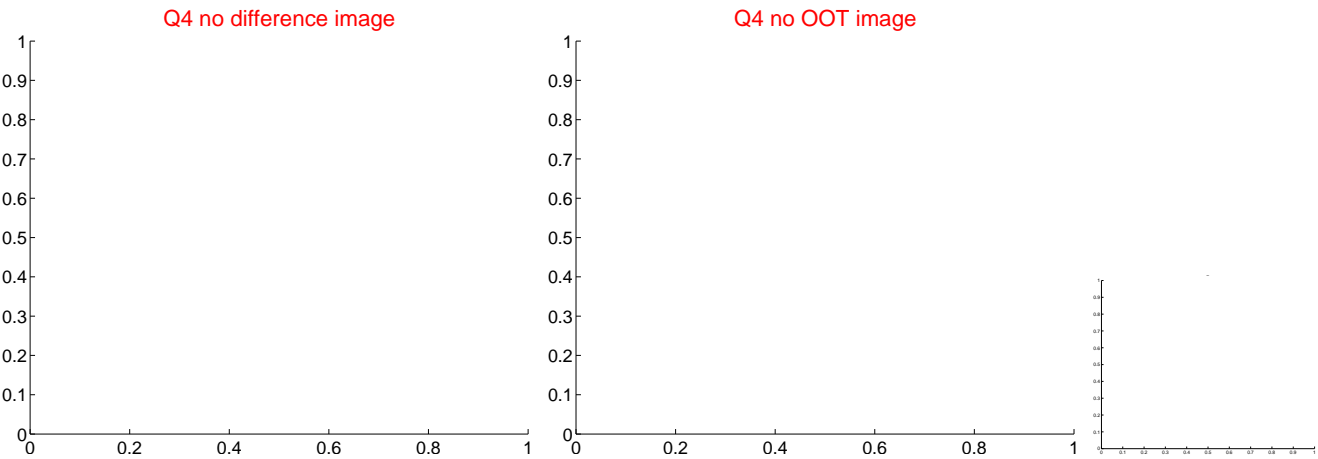
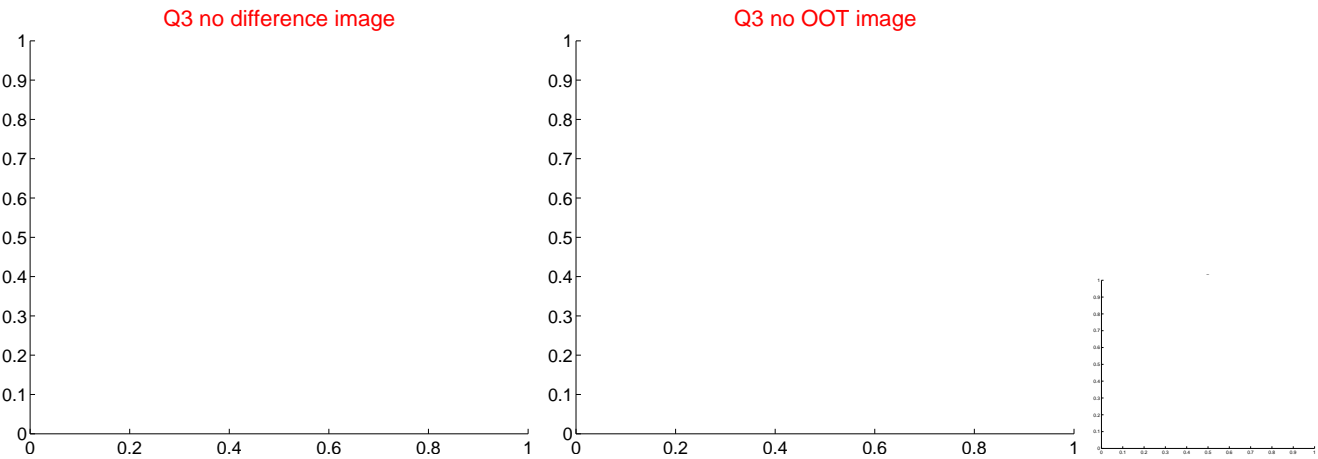
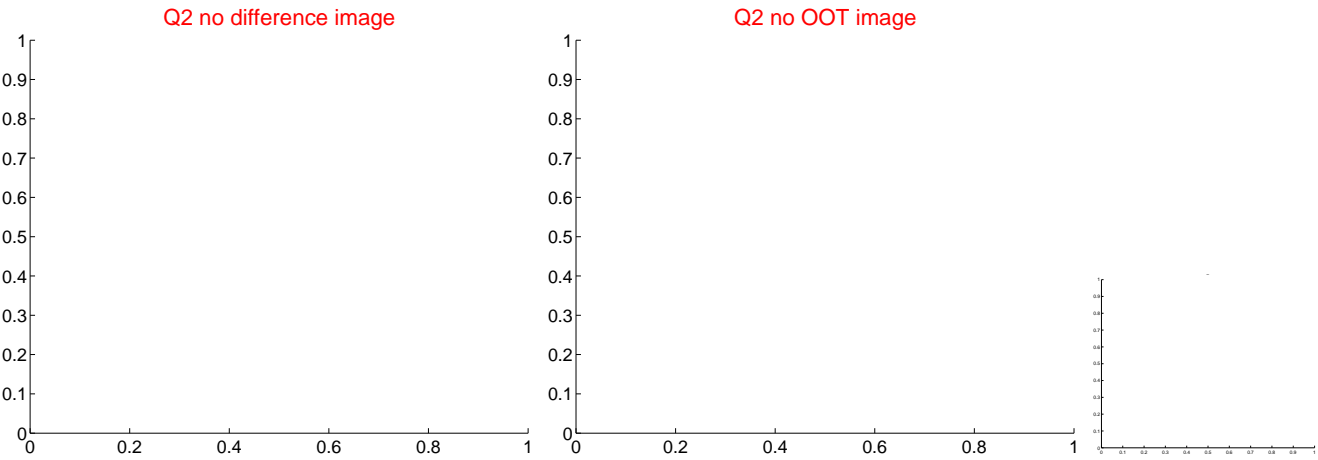
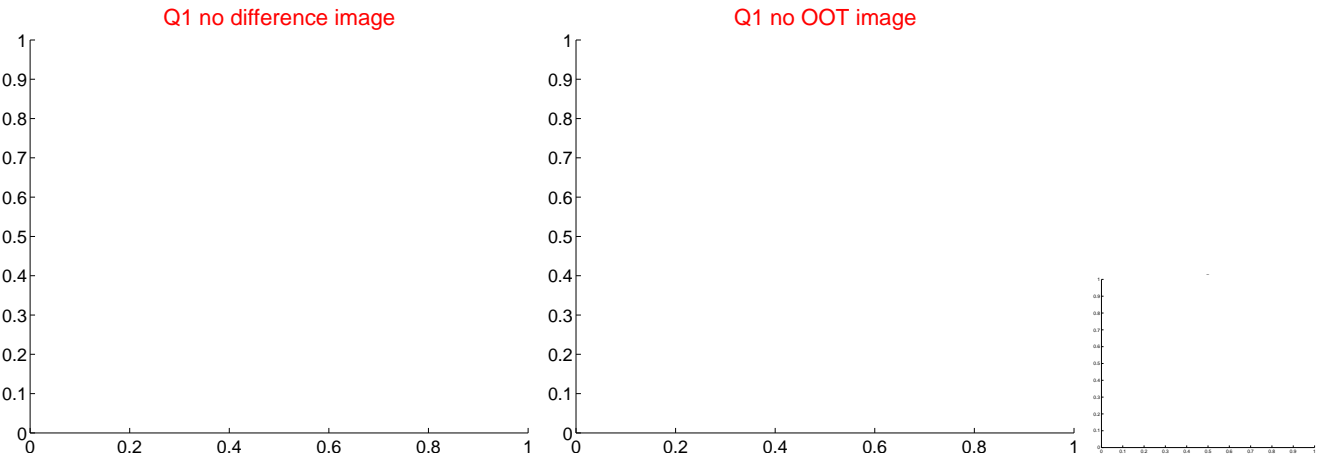
The OOT PRF centroid is offset from the target star catalog position by about 6.41 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.874 ± 0.818	4.74	1.955 ± 2.239	3.345 ± 2.254
PRF-fit source offset from KIC position	3.989 ± 2.388	1.67	2.584 ± 1.742	-3.039 ± 1.655
photometric centroid source offset	4.44 ± 0.48	9.28	0.67 ± 0.14	-4.39 ± 0.48

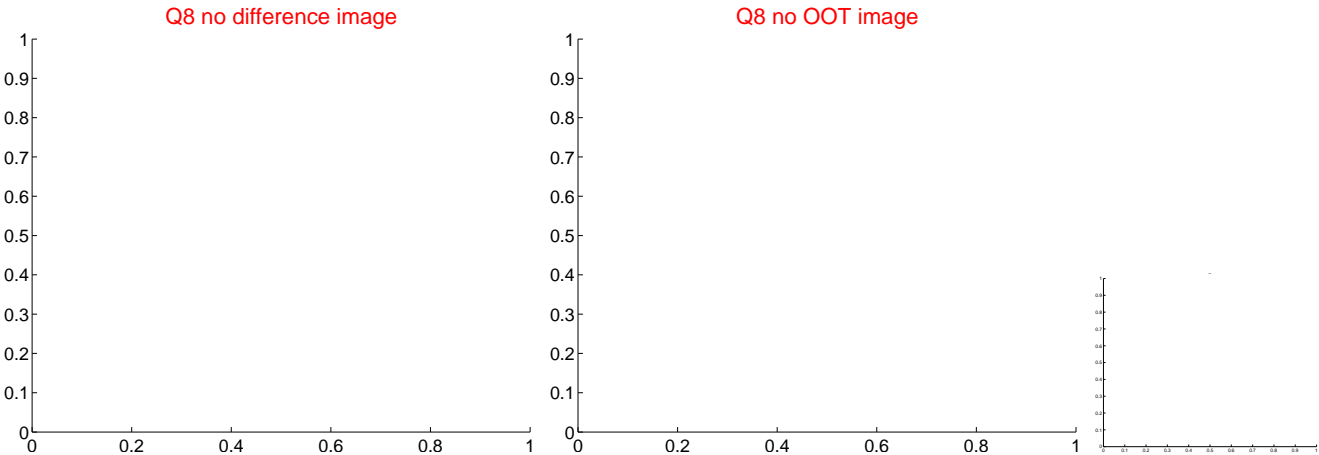
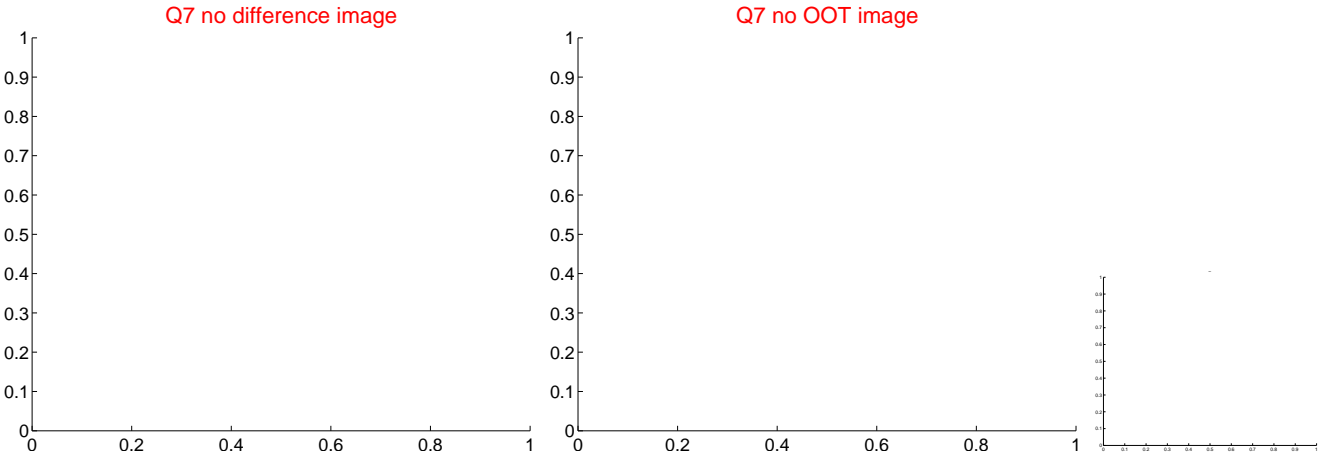
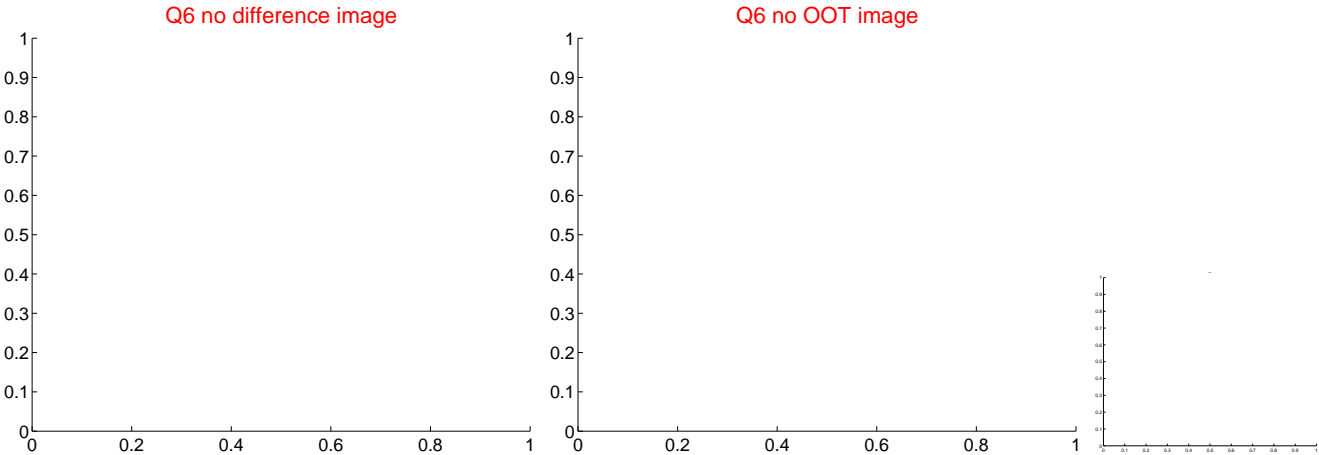
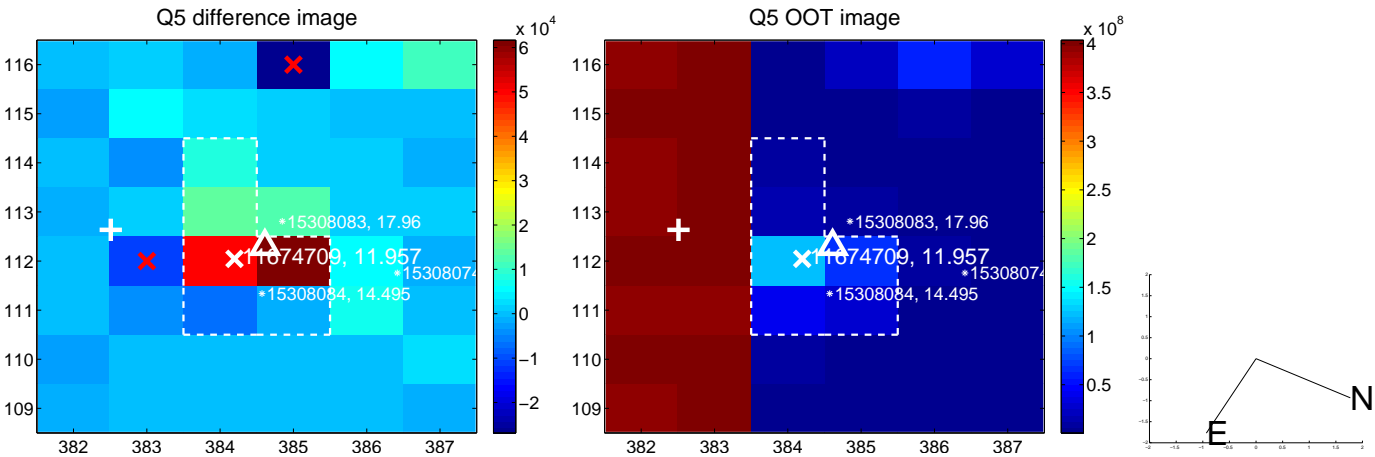


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

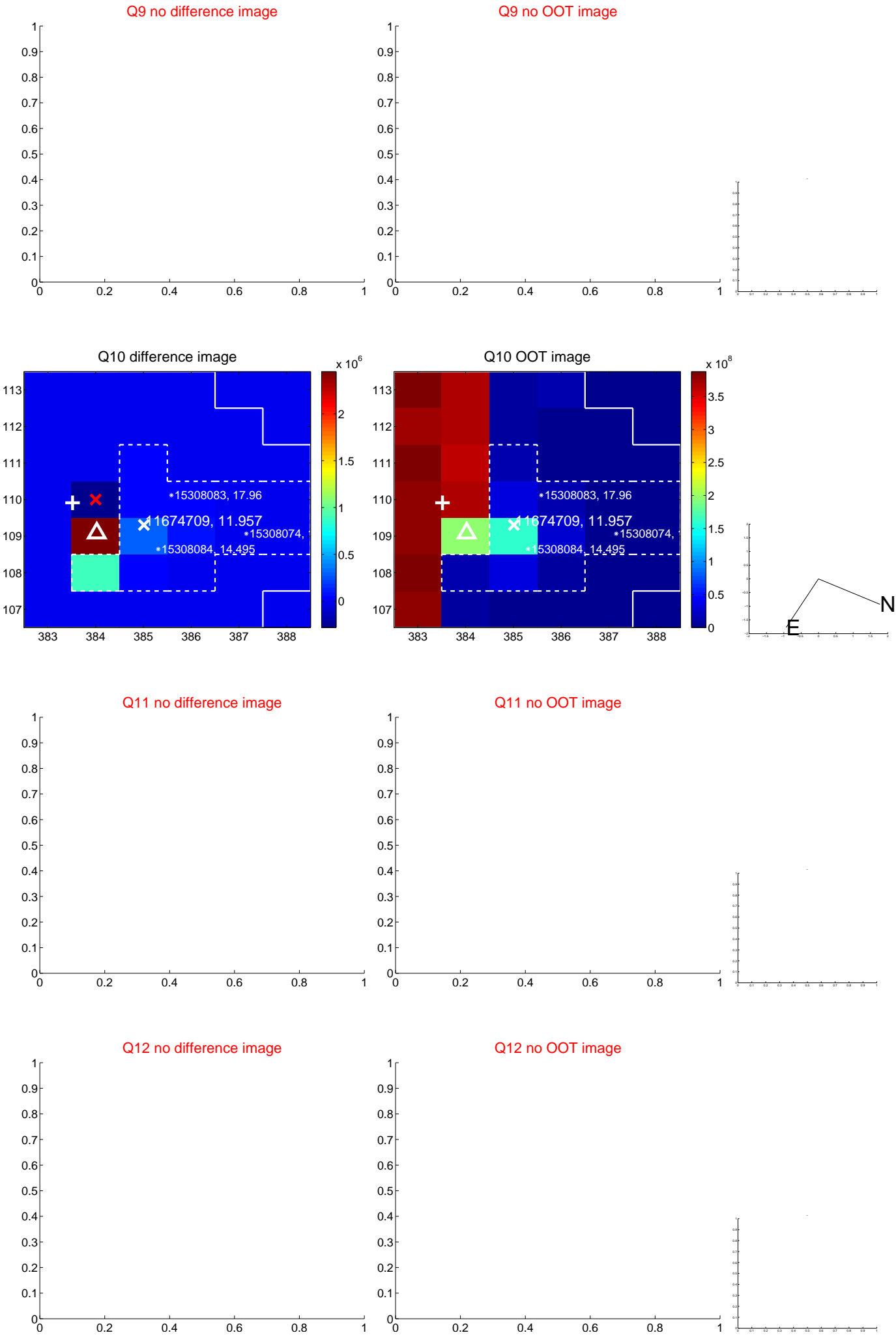
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



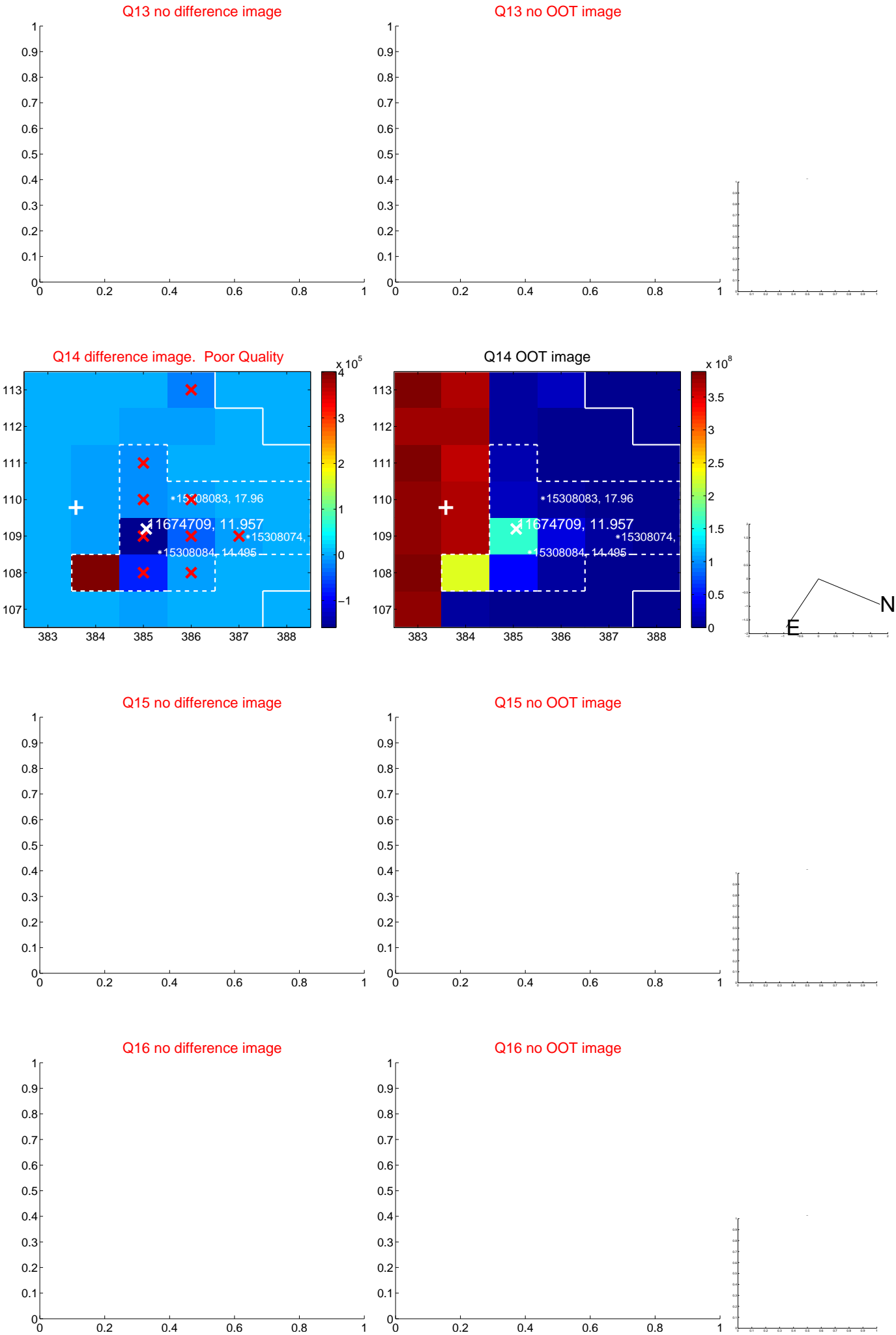
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



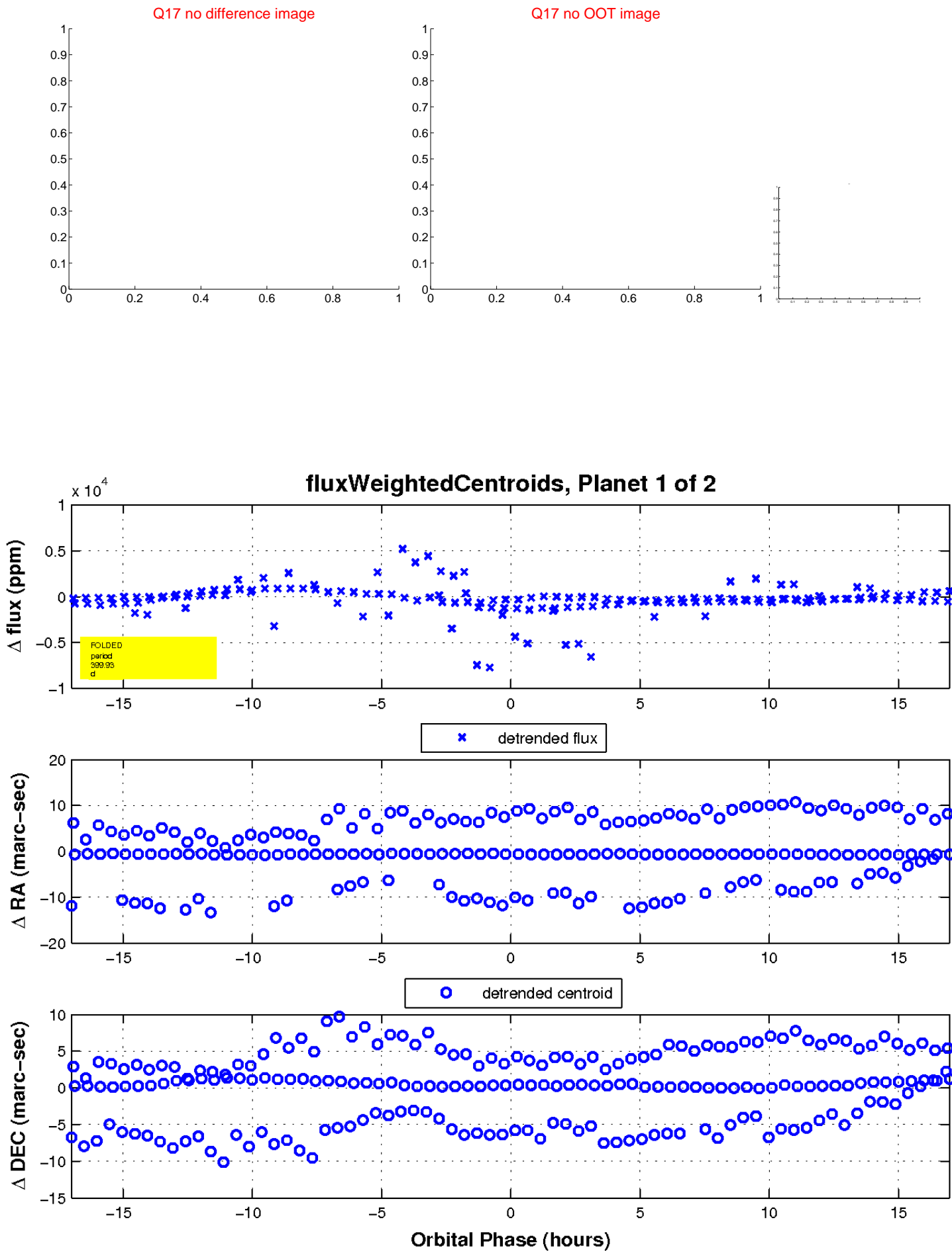
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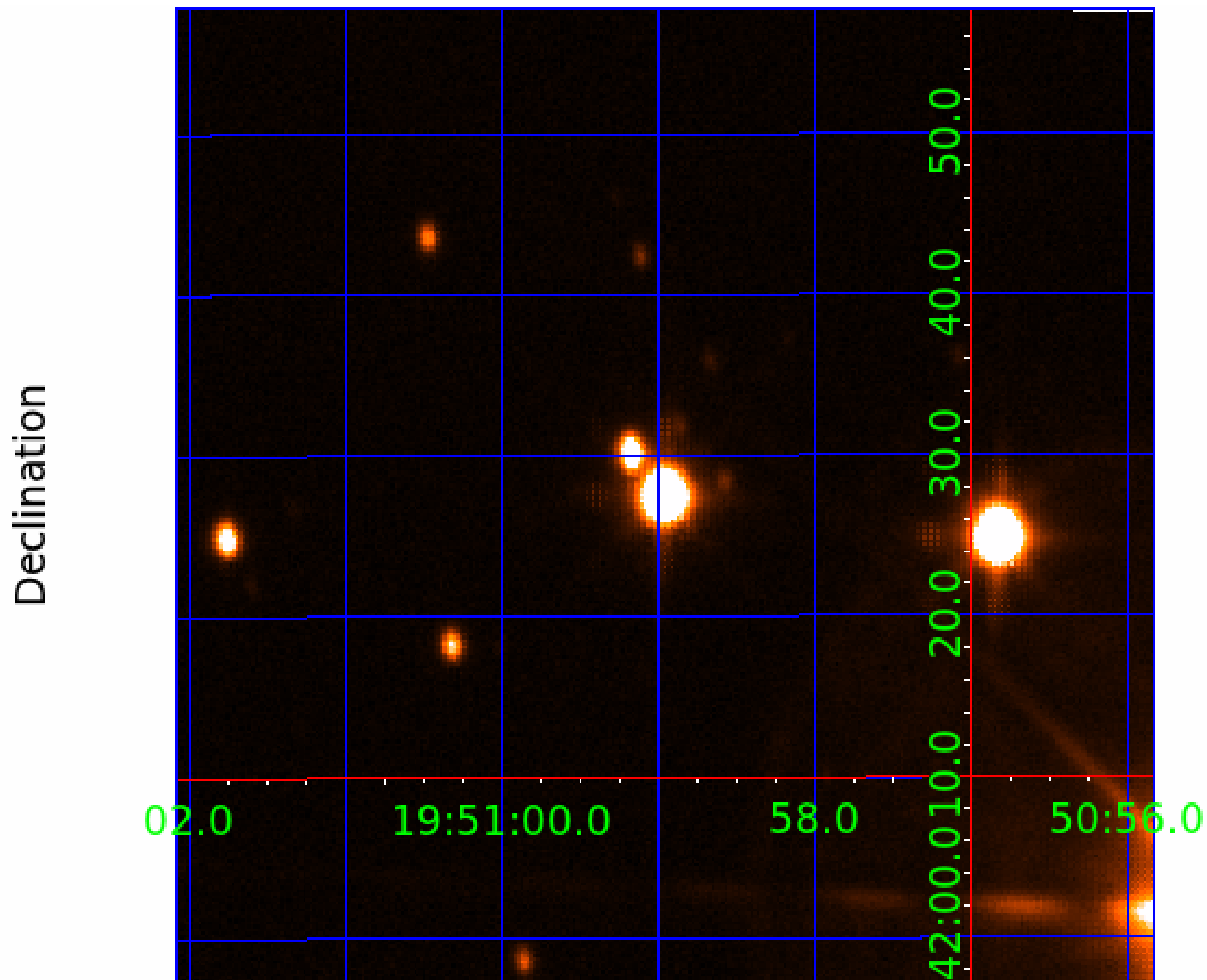
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UKIRT Image



KIC 011674709

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

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011674709-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011674709-02	OBS	PC	0.47	0	0	0	0	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 011674709-02

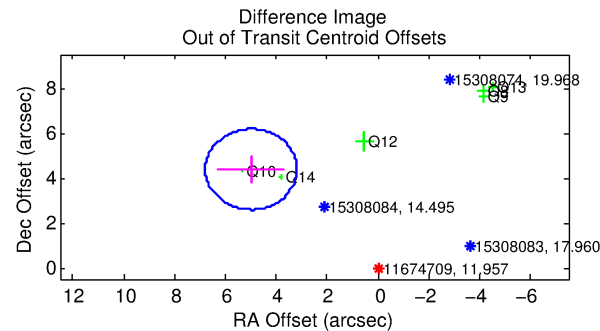
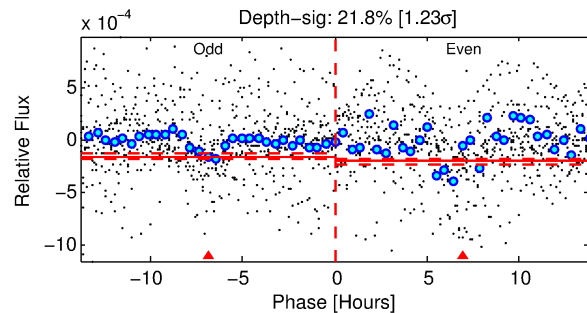
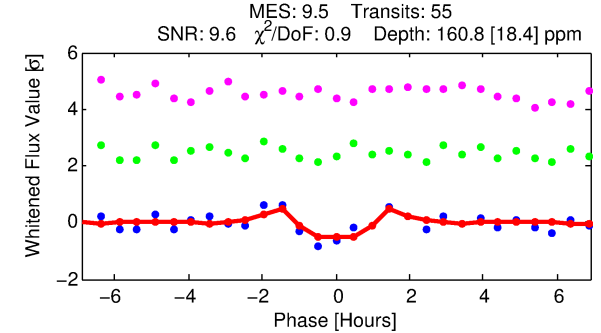
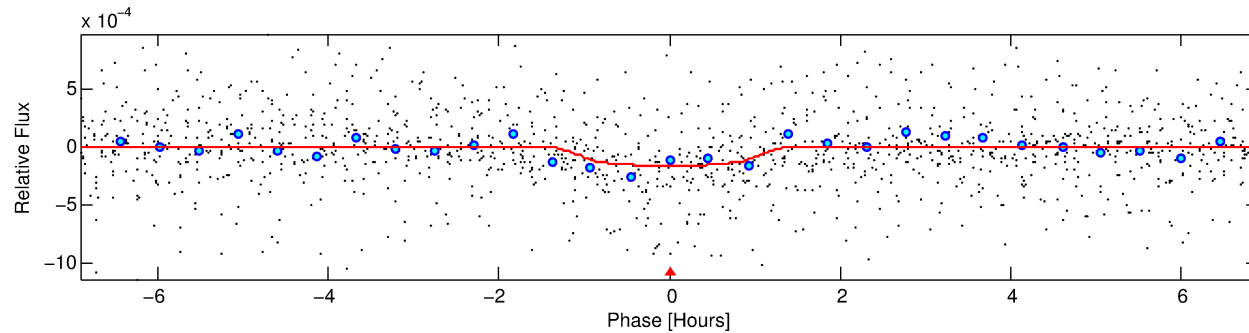
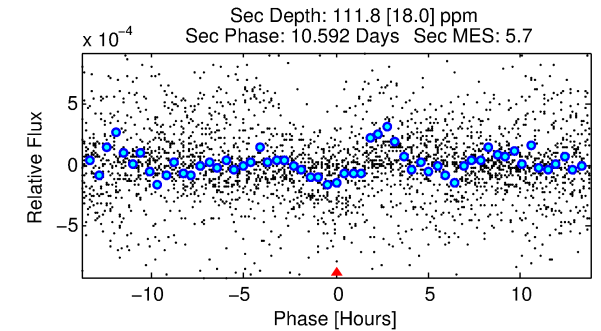
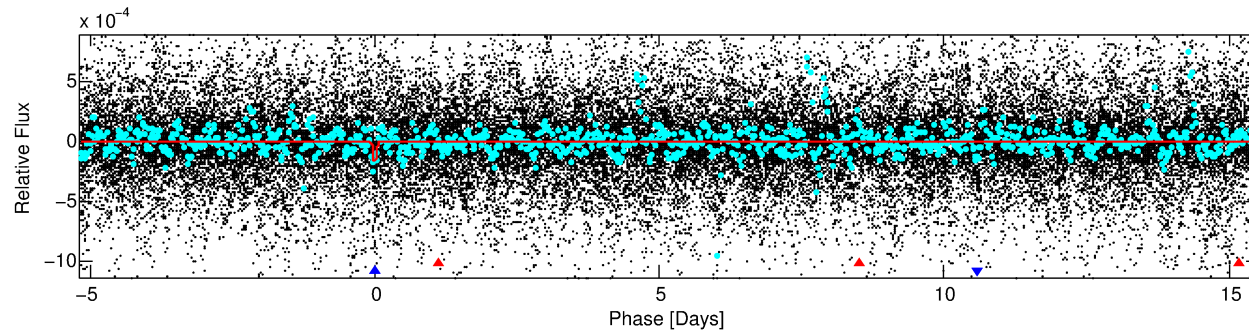
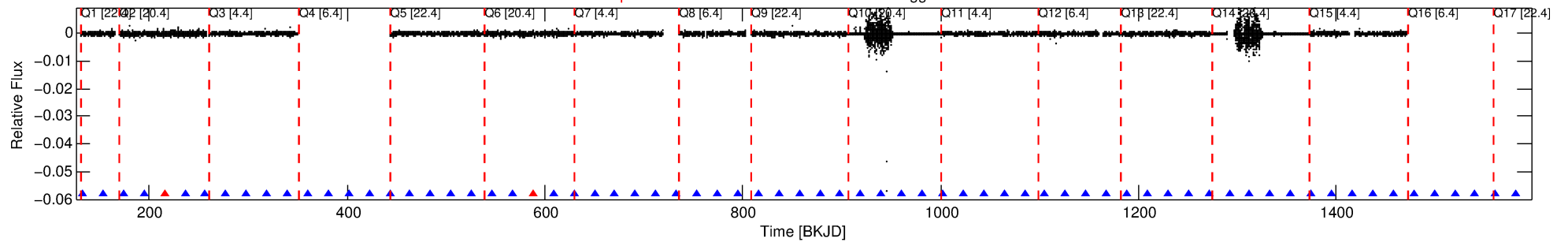
No Significant Match Found

DV One-Page Summary

KIC: 11674709 Candidate: 2 of 2 Period: 20.700 d

KOI: K05928.01 Corr: 0.930

Kp: 11.96 R*: 3.90 Rs Teff: 4848.0 K Logg: 3.21 Fe/H: -0.160



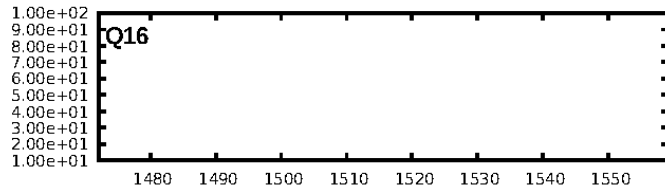
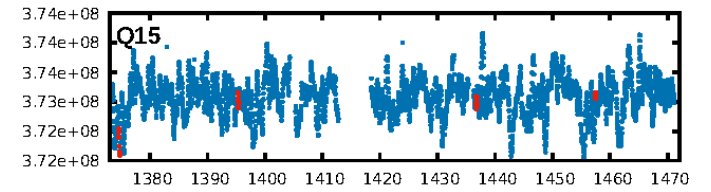
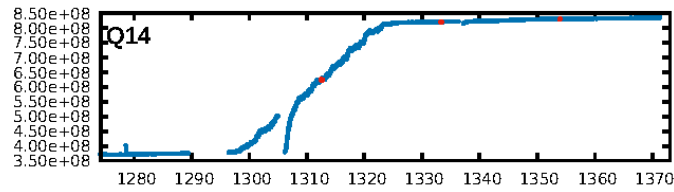
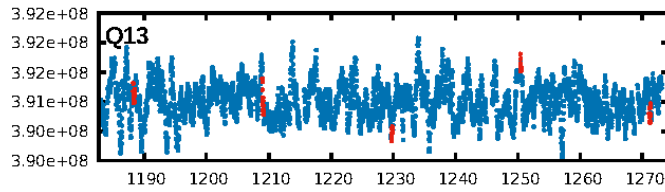
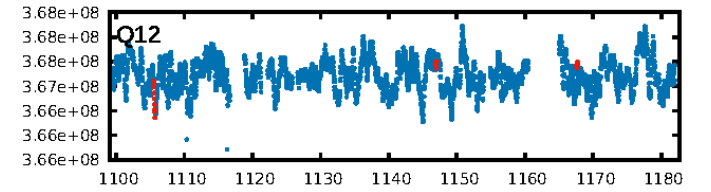
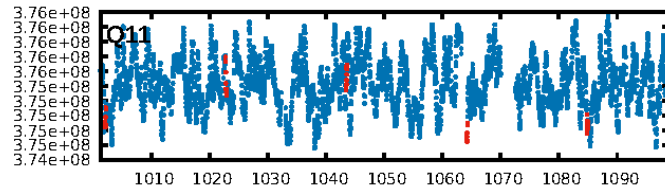
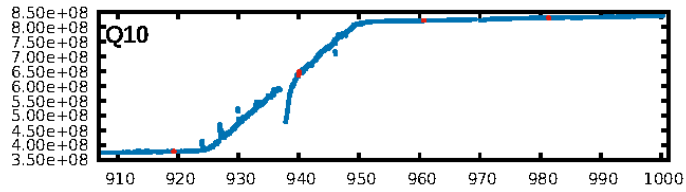
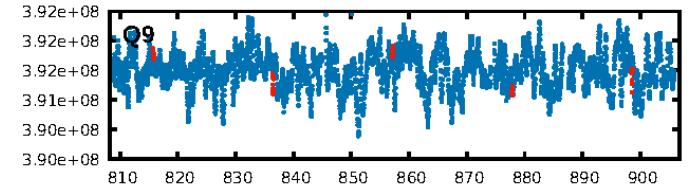
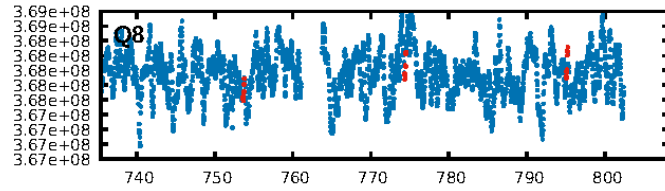
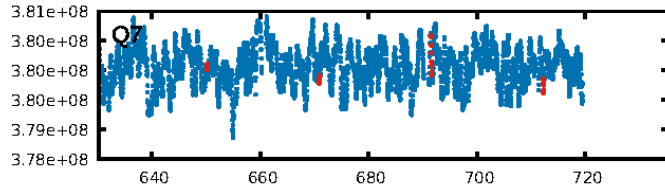
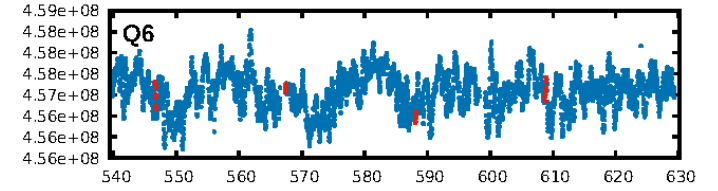
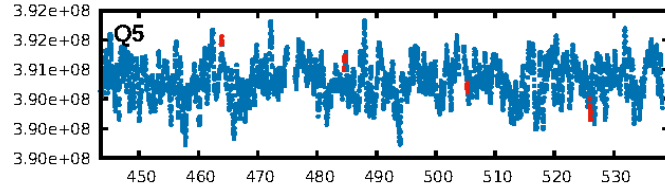
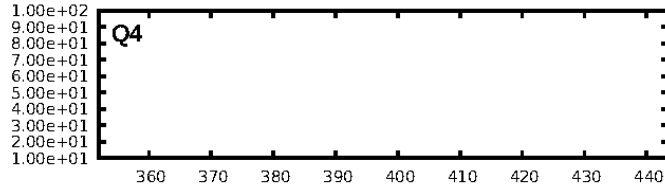
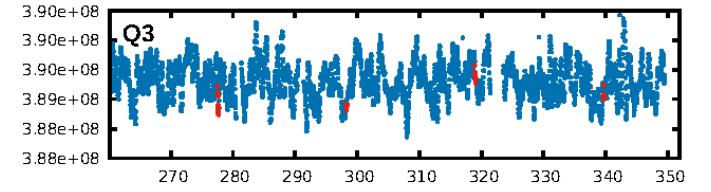
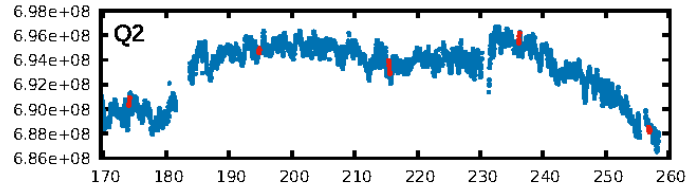
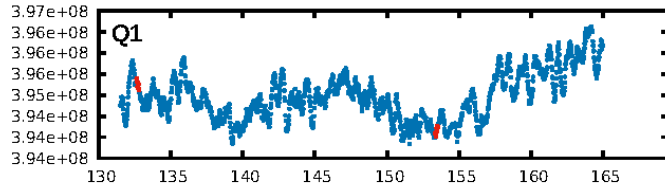
DV Fit Results:

Period = 20.69953 [0.00010] d
Epoch = 132.7123 [0.0036] BKJD
Rp/R* = 0.0123 [0.0069]
a/R* = 51.89 [98.63]
b = 0.67 [1.59]
Seff = 371.71 [155.91]
Teq = 1120 [117] K
Rp = 5.24 [3.42] Re
a = 0.1425 [0.0404] AU
Ag = 45.55 [54.55] [0.82σ]
Teffp = 4497 [1271] K [2.65σ]

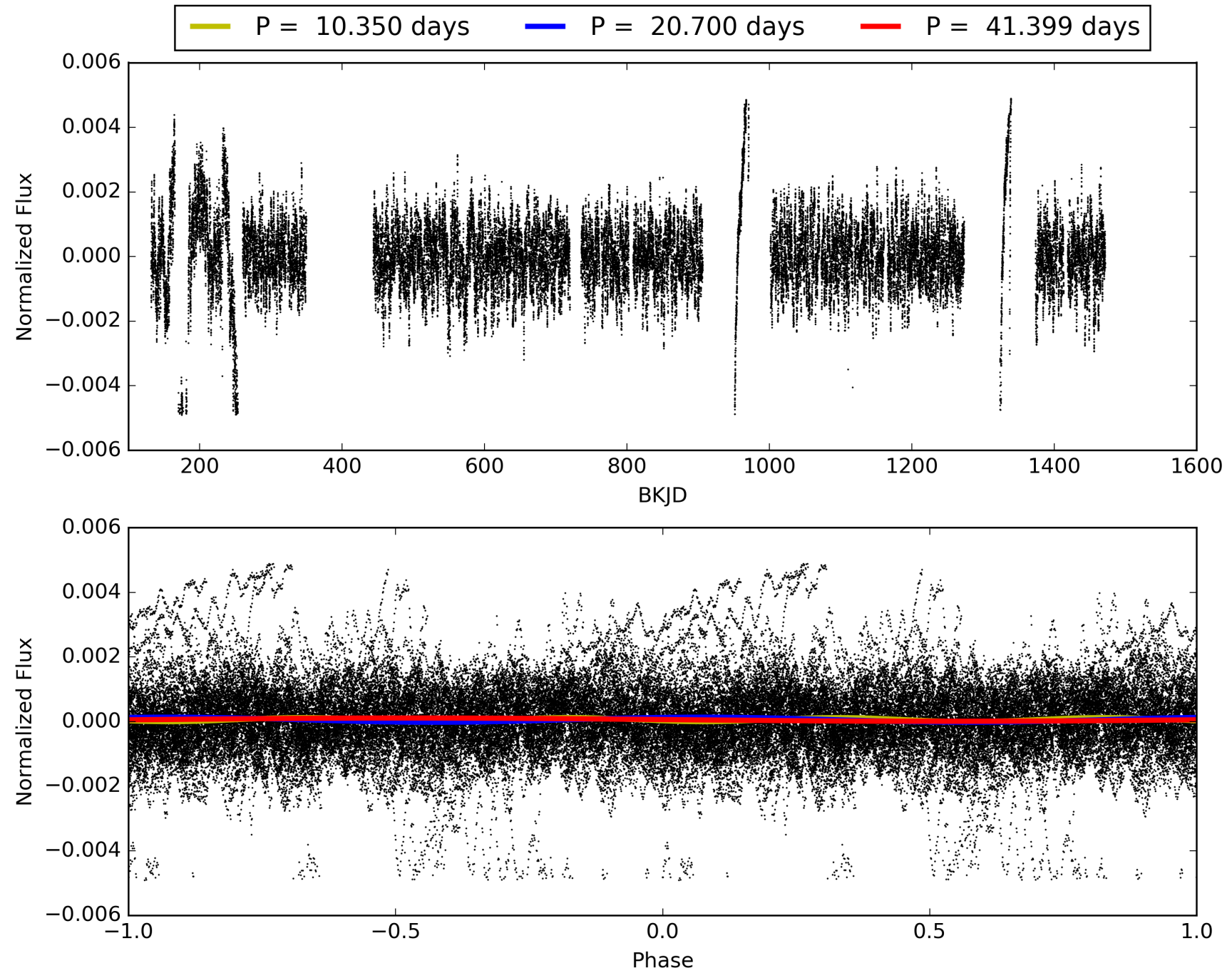
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1463.40σ]
ModelChiSquare2-sig: 40.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.63e-13
RollingBand-fgt: 0.96 [51/53]
GhostDiagnostic-chr: 2.617
Centroid-sig: N/A
Centroid-so: 4.039 arcsec [11.28σ]
OotOffset-rm: 6.640 arcsec [11.08σ]
KicOffset-rm: 5.941 arcsec [3.09σ]
OotOffset-st: 2/0/2/2 [6]
KicOffset-st: 2/0/2/2 [6]
DiffImageQuality-fgm: 0.50 [3/6]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 011674709-02, PDC Light Curves

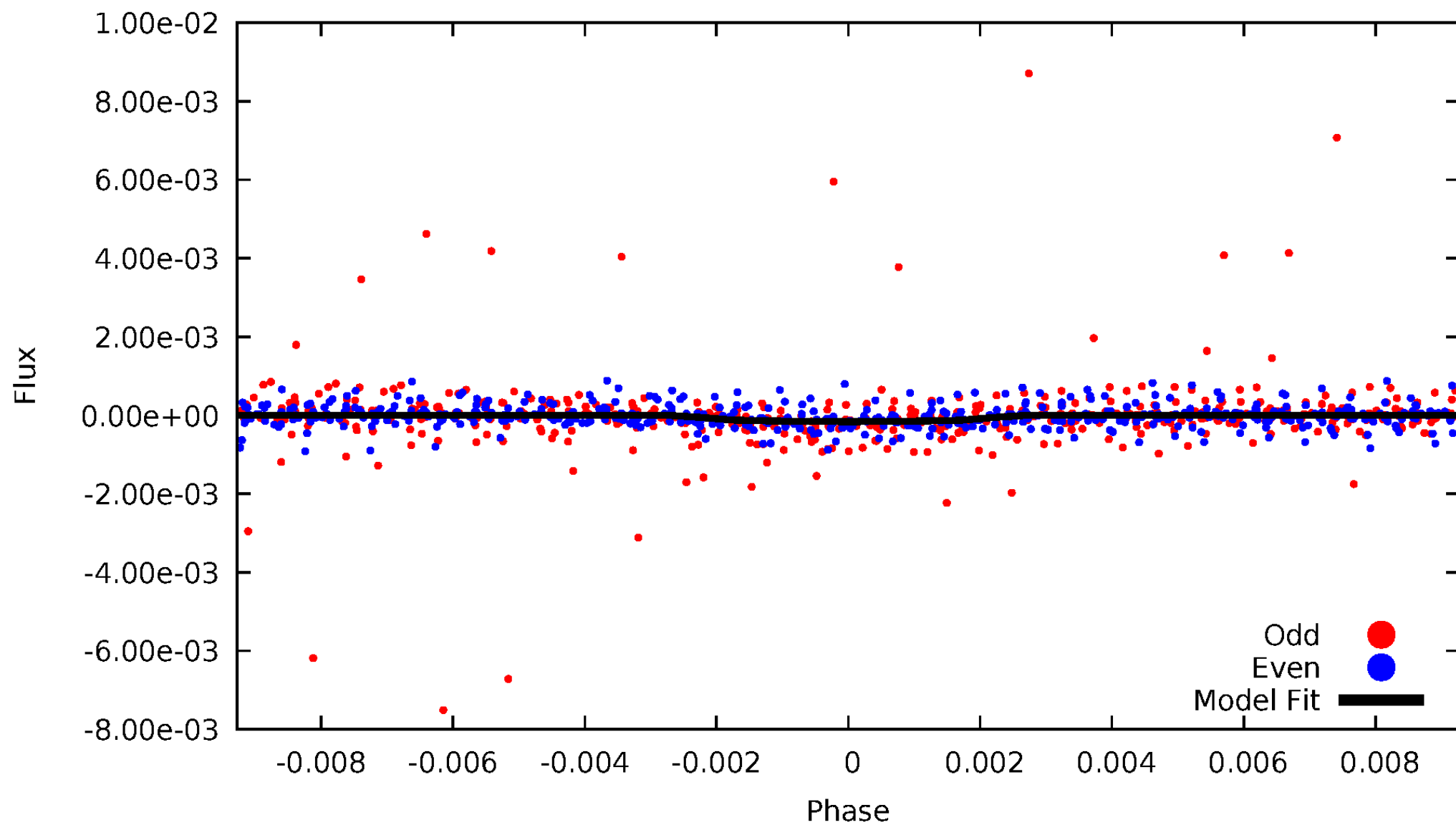


TCE 011674709-02



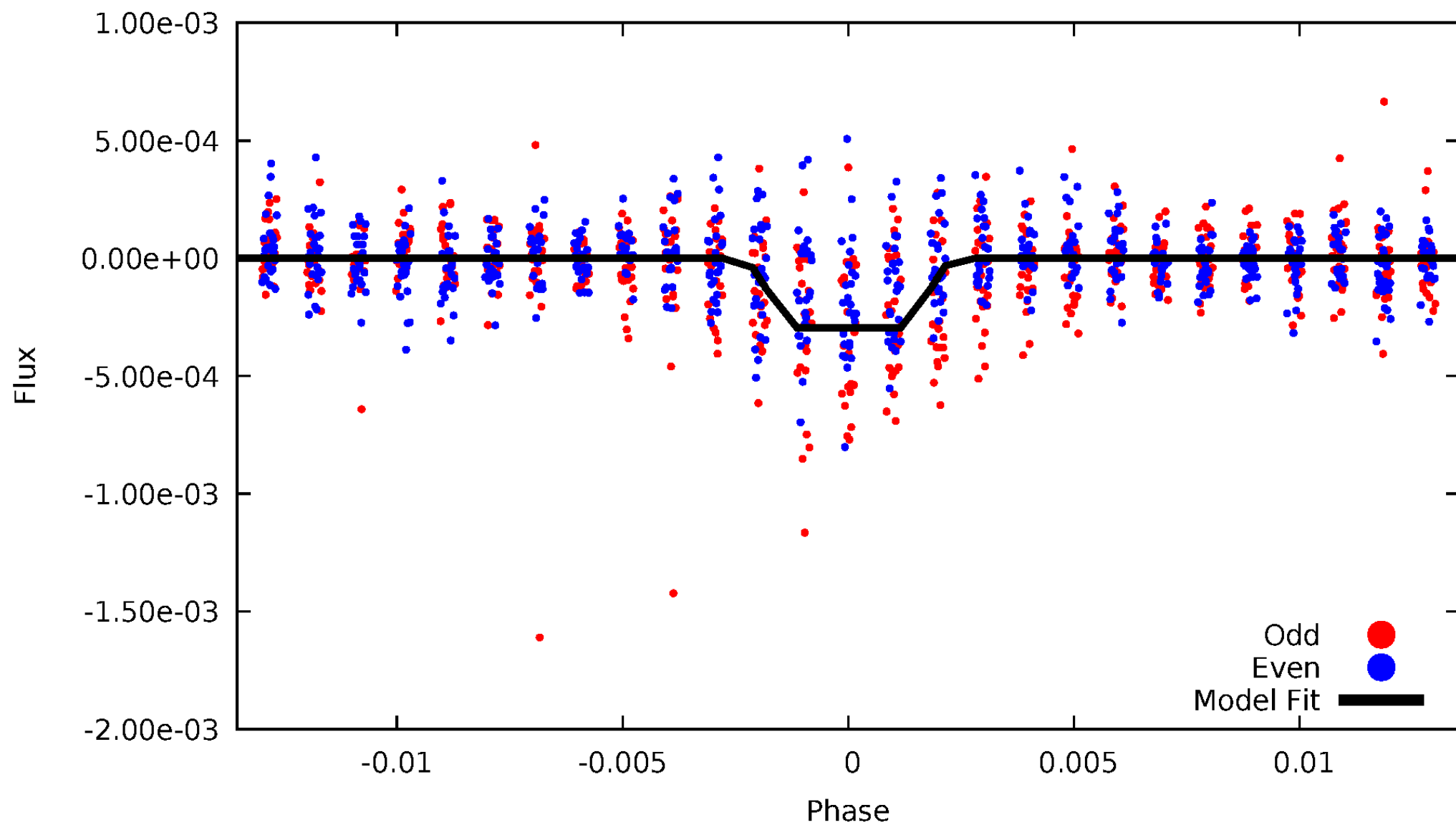
DV Odd/Even

TCE 011674709-02



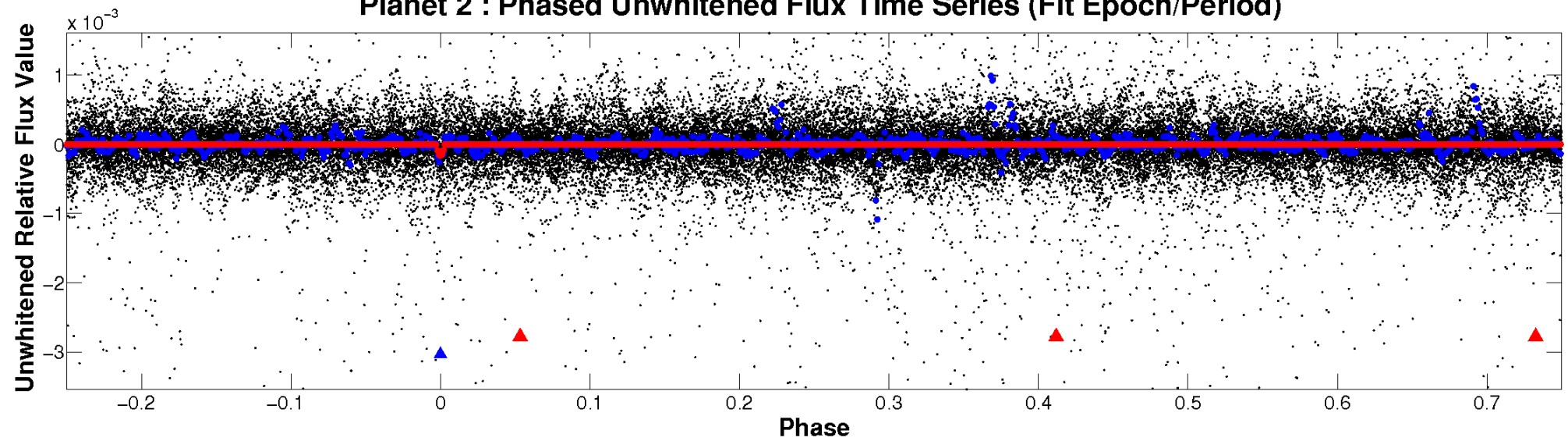
ALT Odd/Even

TCE 011674709-02

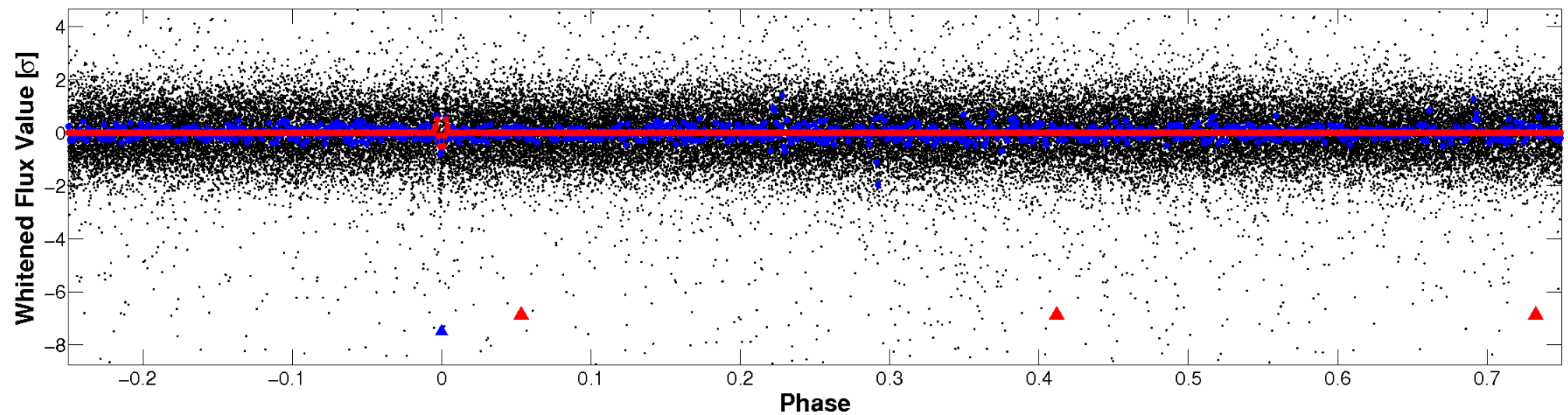


Non-Whitened Vs. Whitened Light Curve

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

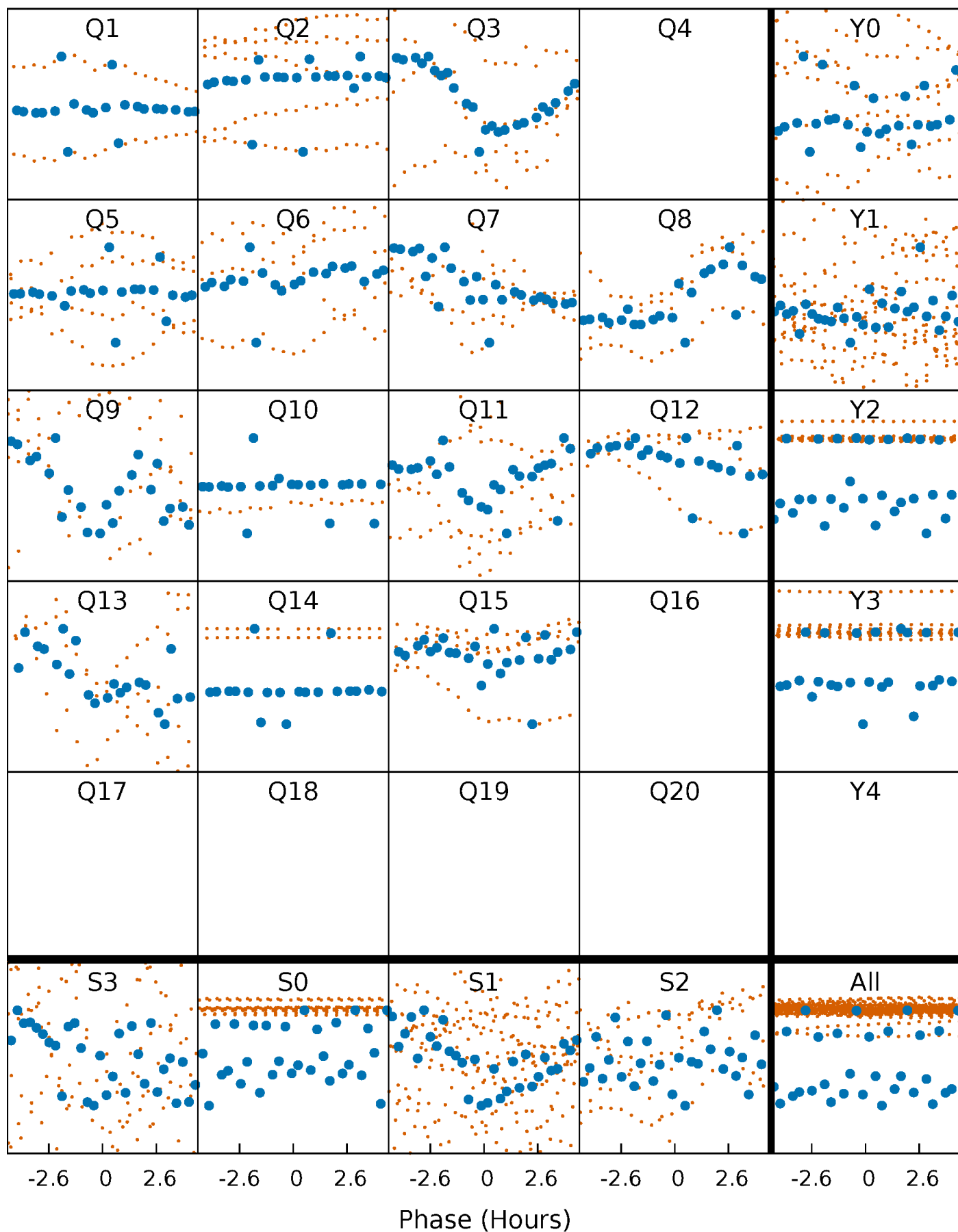


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



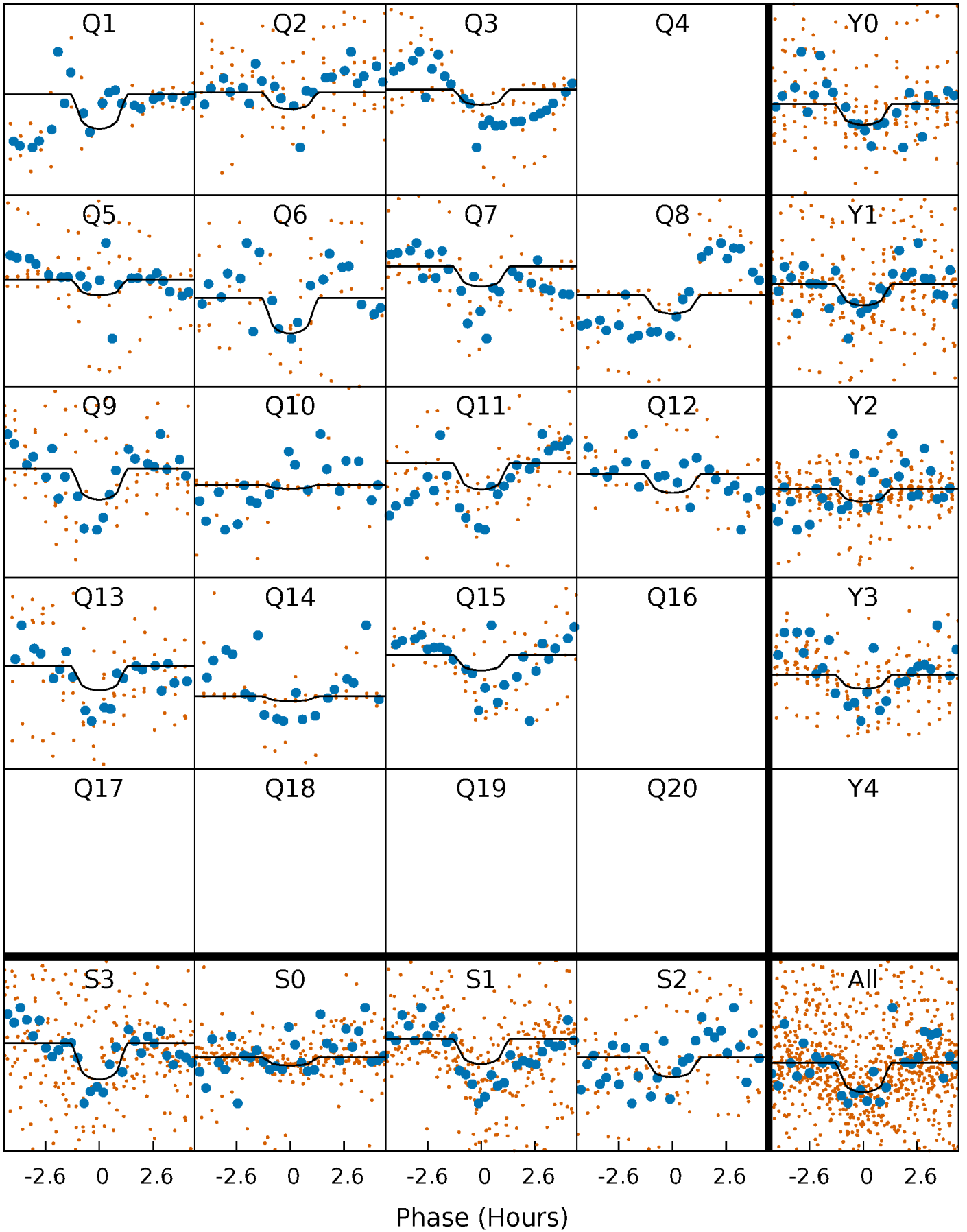
PDC Quarter-Phased Transit Curves

TCE 011674709-02 P= 20.699532 Days $T_0=132.712315$ (BKJD)



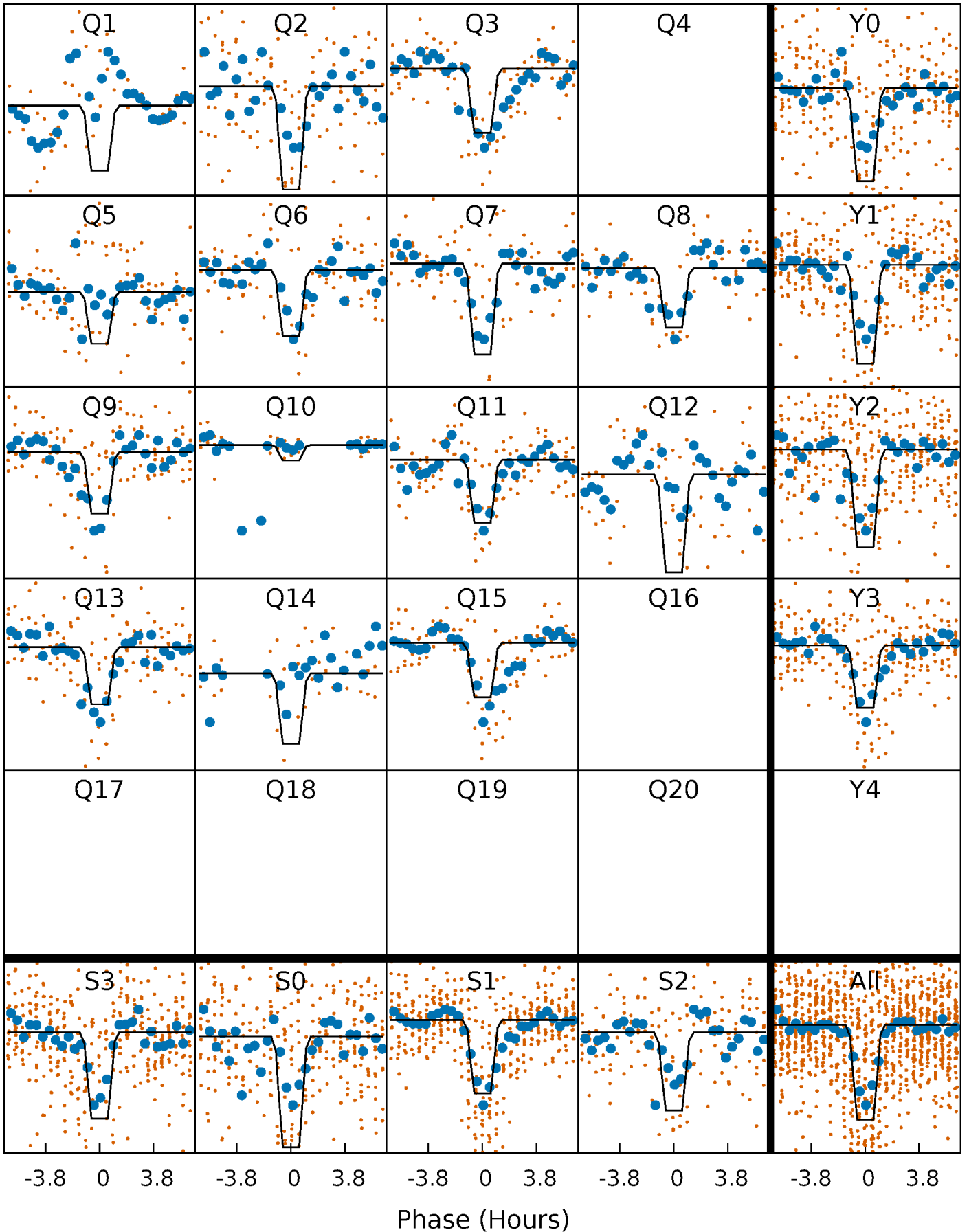
DV Quarter-Phased Transit Curves

TCE 011674709-02 P= 20.699532 Days $T_0=132.712315$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

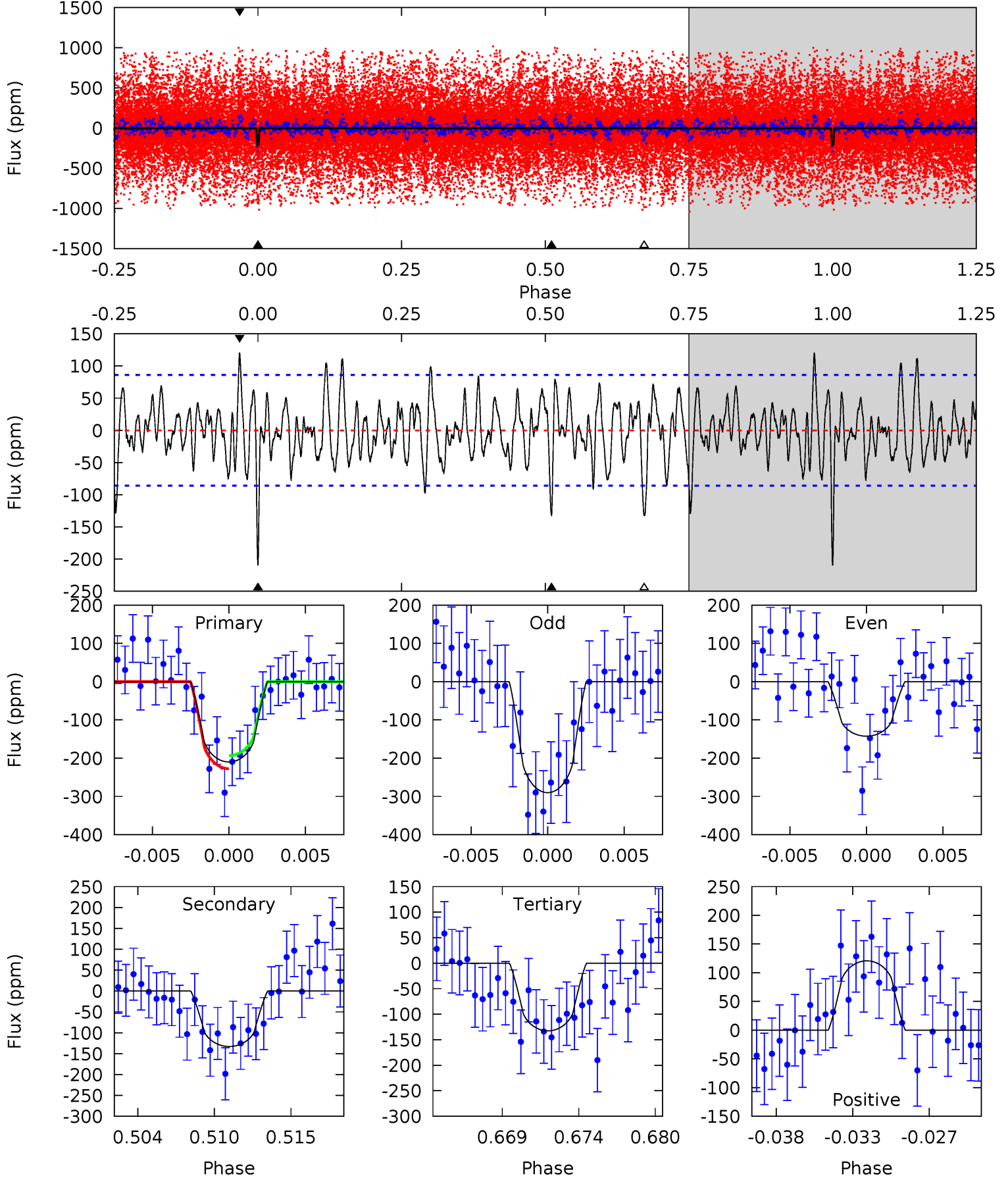
TCE 011674709-02 P= 20.699287 Days $T_0=132.715700$ (BKJD)



DV Model-Shift Uniqueness Test

011674709-02, P = 20.699532 Days, E = 112.012783 Days

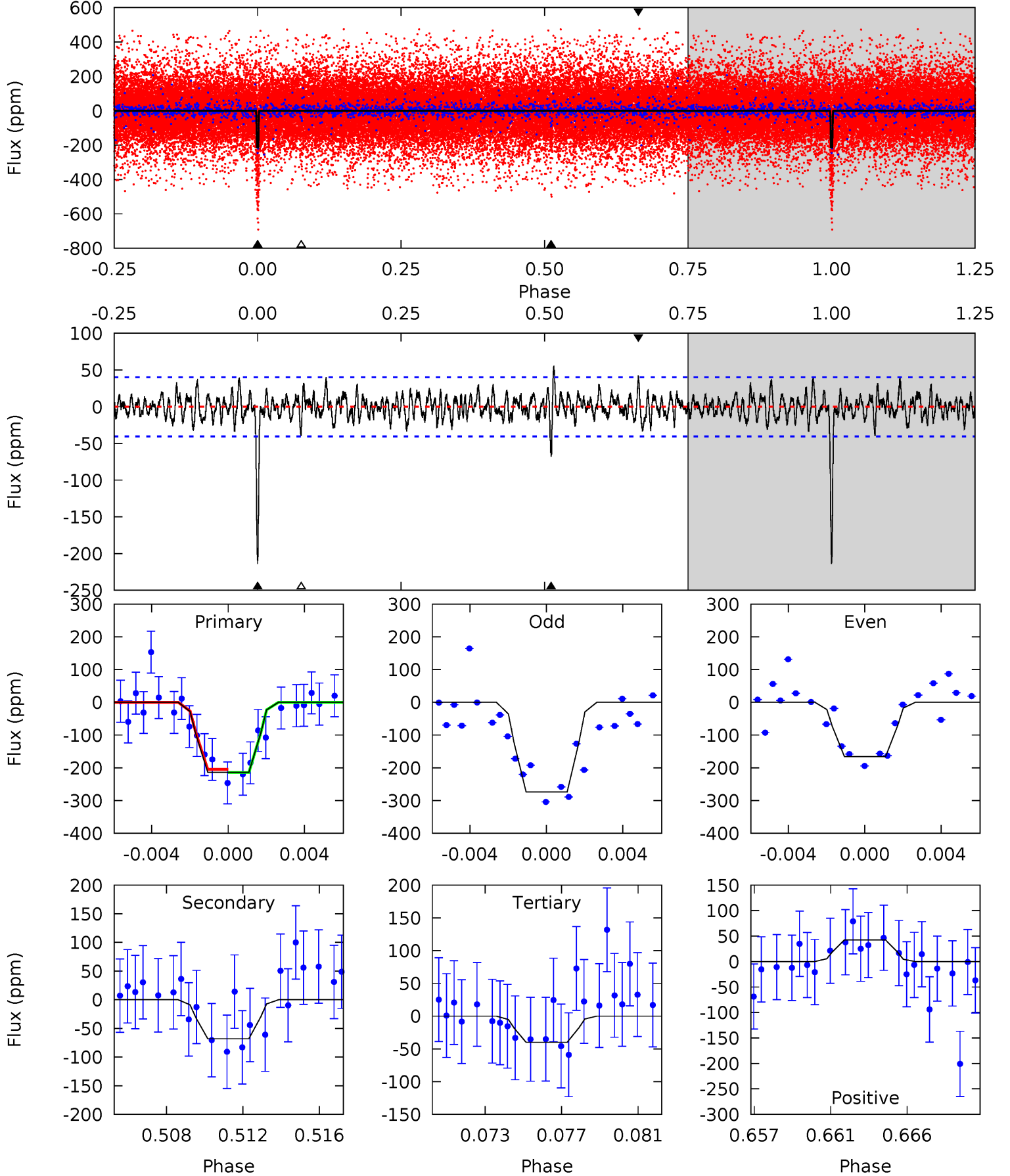
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	7.94	7.93	7.22	5.14	2.78	2.33	4.63	5.34	0.02	0.73	4.45	0.83	0.37	1.03



Alt Model-Shift Uniqueness Test

011674709-02, P = 20.699287 Days, E = 112.016413 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.5	8.74	5.12	5.45	5.19	2.86	1.64	22.4	22.1	3.62	3.28	6.92	1.15	0.21	0.62



Stellar Parameters For KIC 011674709

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4848^{+122}_{-85}	$3.209^{+0.220}_{-0.180}$	$-0.160^{+0.250}_{-0.200}$	$3.904^{+1.332}_{-0.717}$	$0.899^{+0.284}_{-0.032}$	$0.021^{+0.024}_{-0.010}$
	+3%/-2%	+7%/-6%	+156%/-125%	+34%/-18%	+32%/-4%	+113%/-49%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011674709-02 / KOI 5928.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-133 ± 17	$5.35^{+3.17}_{-2.90}$	1550^{+121}_{-100}	4680^{+1982}_{-685}	53^{+193}_{-32}
Alt.	-68 ± 8	$7.24^{+3.18}_{-2.63}$	1549^{+124}_{-107}	3711^{+621}_{-404}	15^{+24}_{-8}

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

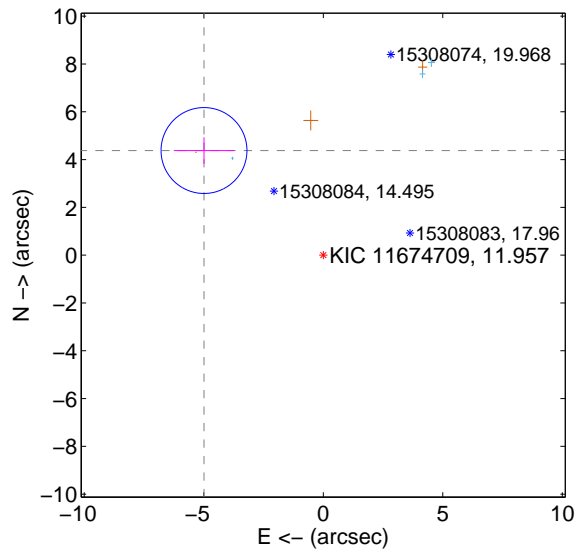
Supplemental centroid analysis for 011674709-02. **Kepler magnitude: 11.96.** Transit SNR 9.55

There are 3 quarters with good PRF difference image offsets

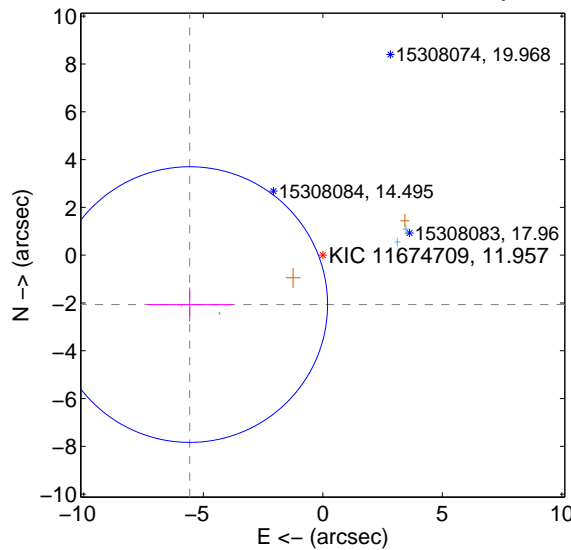
The OOT PRF centroid is offset from the target star catalog position by about 6.51 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.640 ± 0.599	11.08	4.991 ± 1.265	4.379 ± 0.555
PRF-fit source offset from KIC position	5.941 ± 1.922	3.09	5.570 ± 1.792	-2.067 ± 0.710
photometric centroid source offset	4.04 ± 0.36	11.28	0.02 ± 0.21	-4.04 ± 0.36

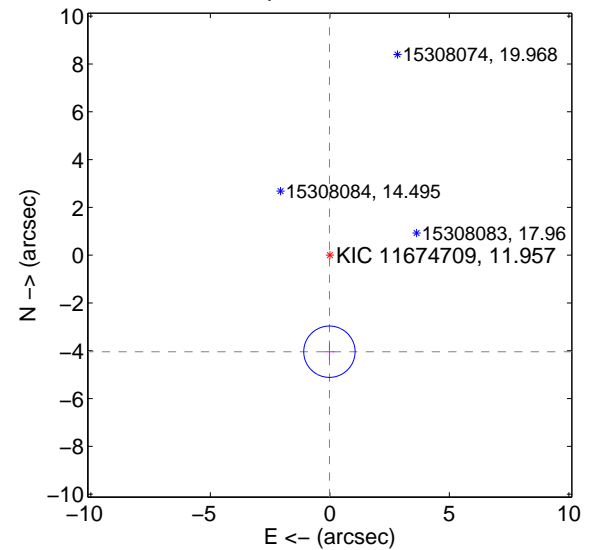
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

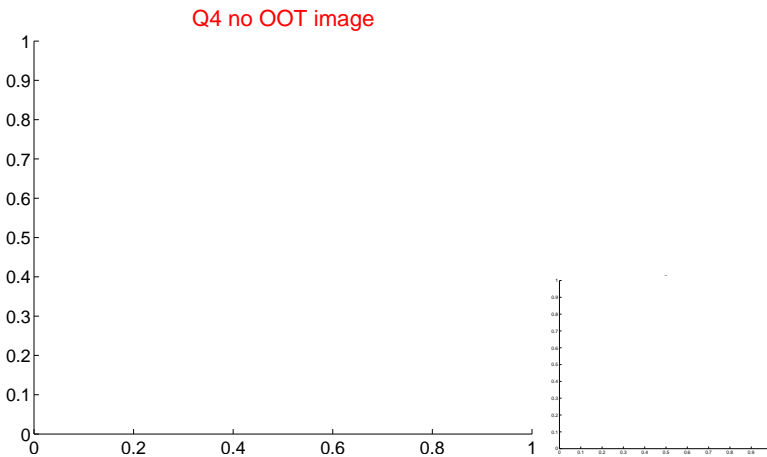
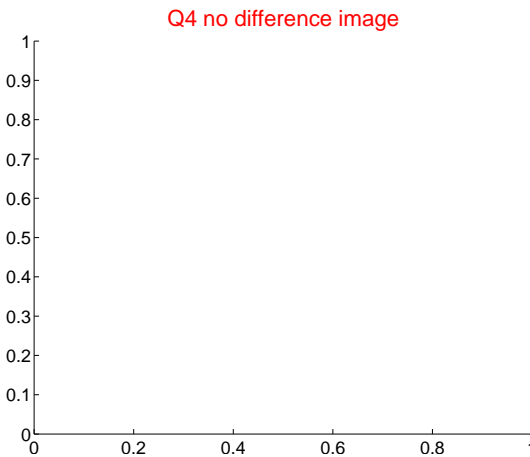
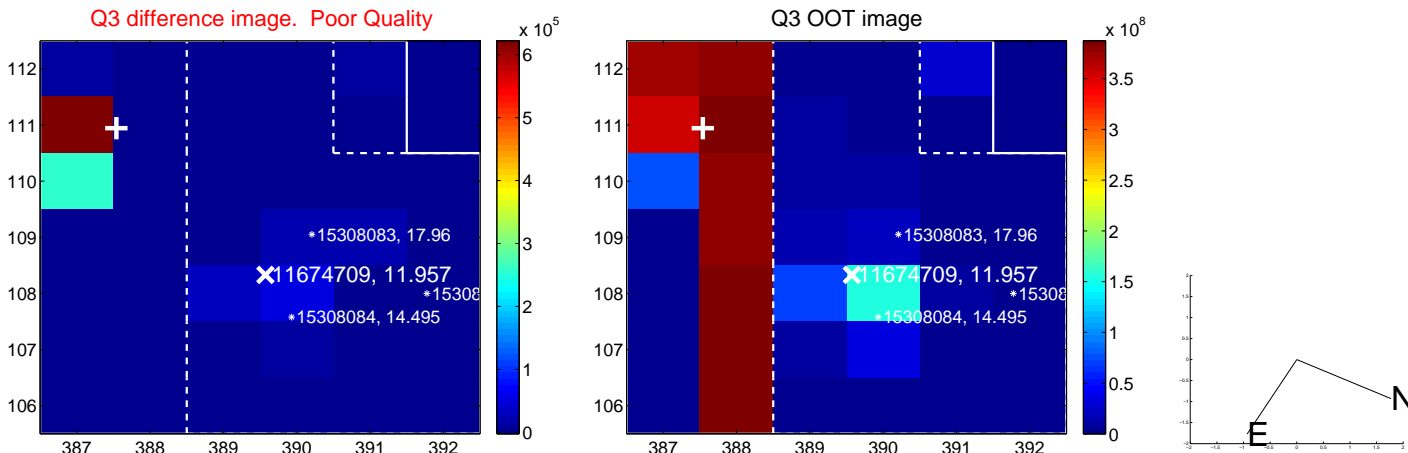
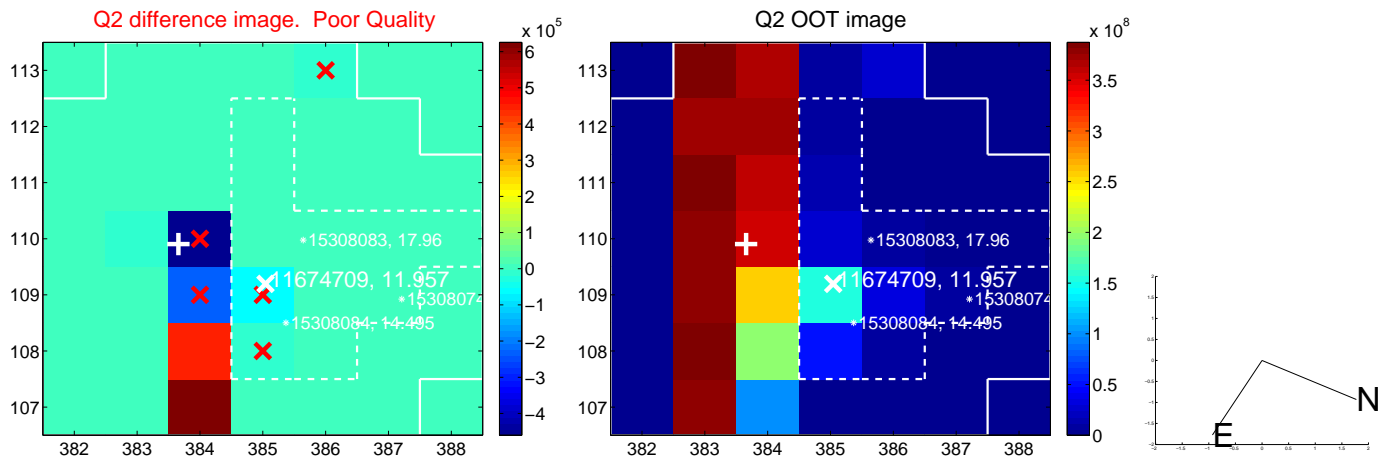
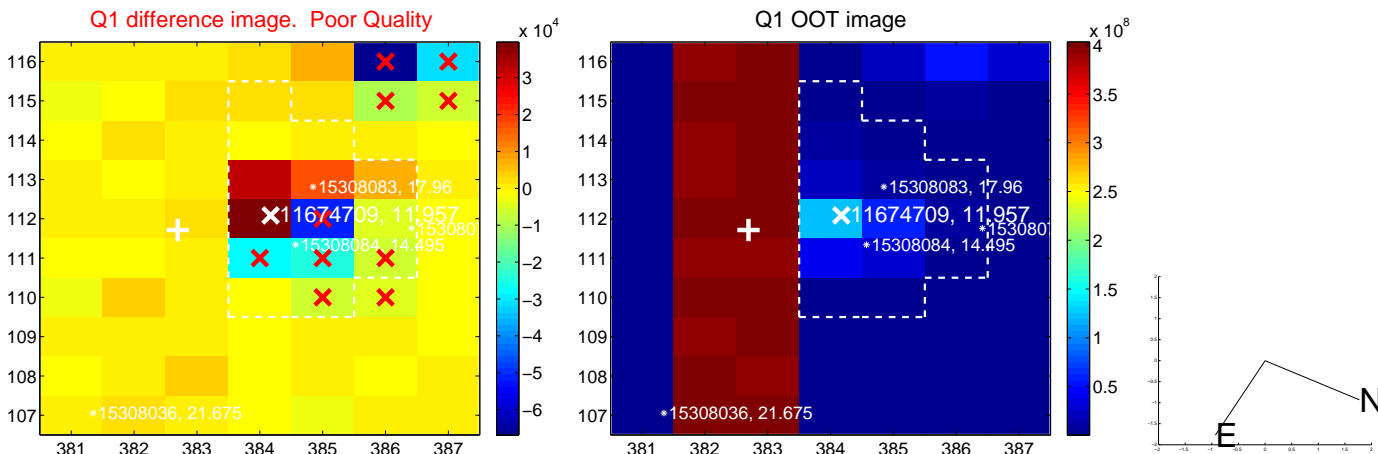


offset from photometric centroids

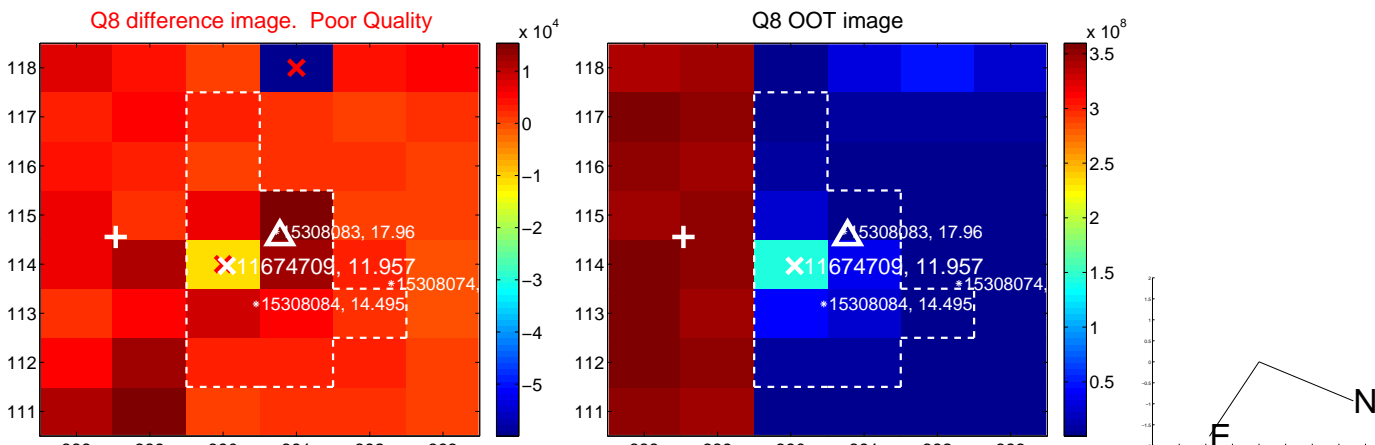
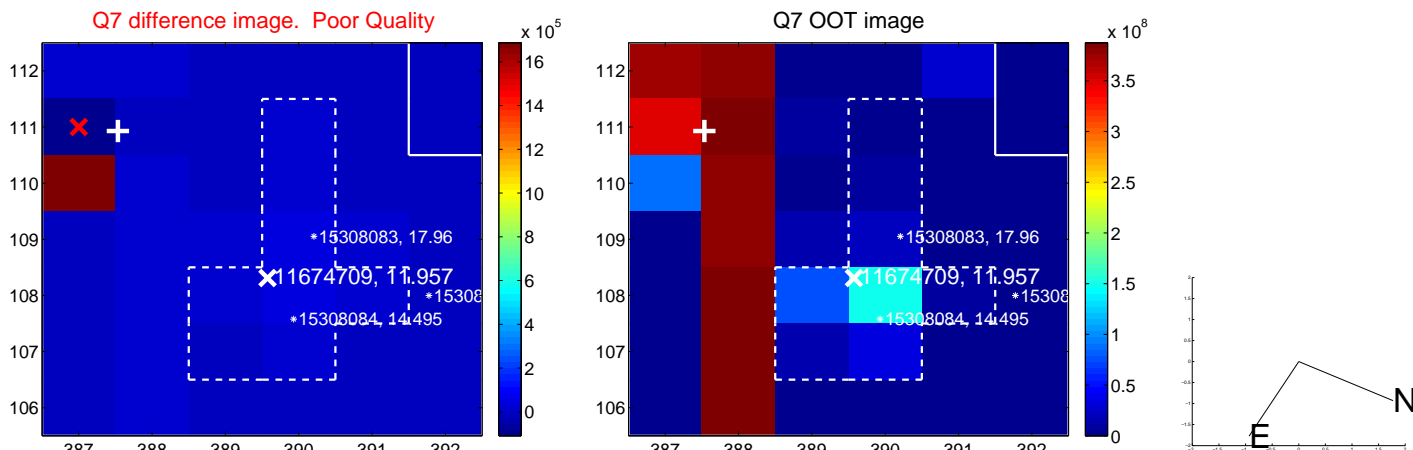
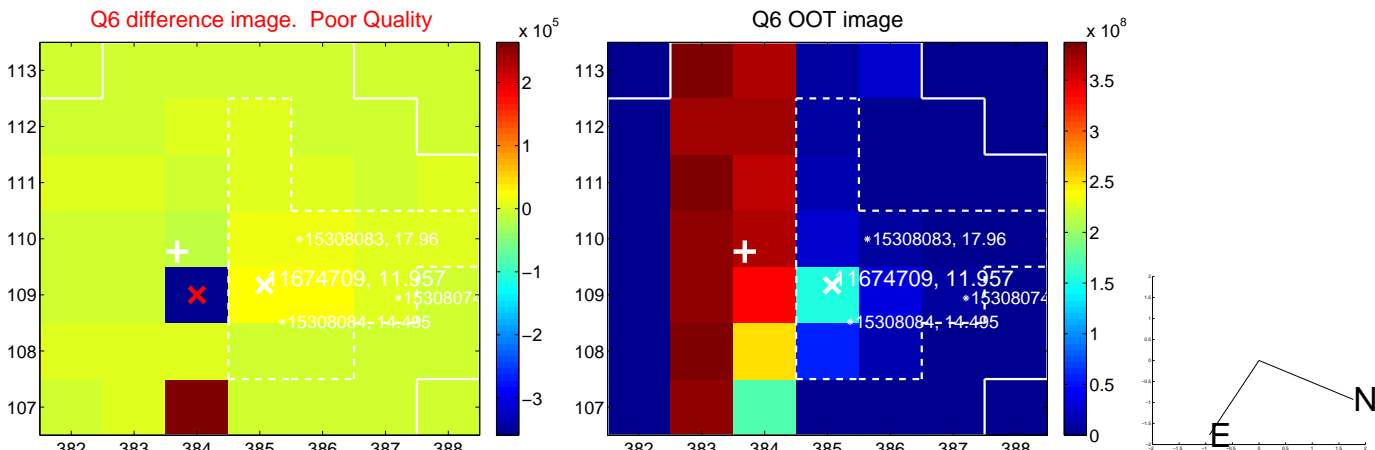
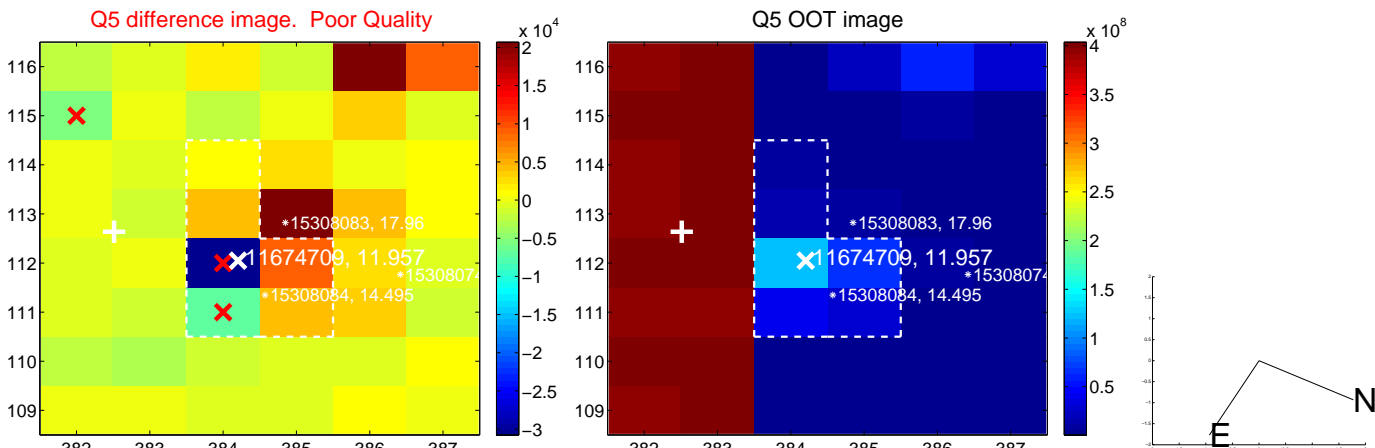


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

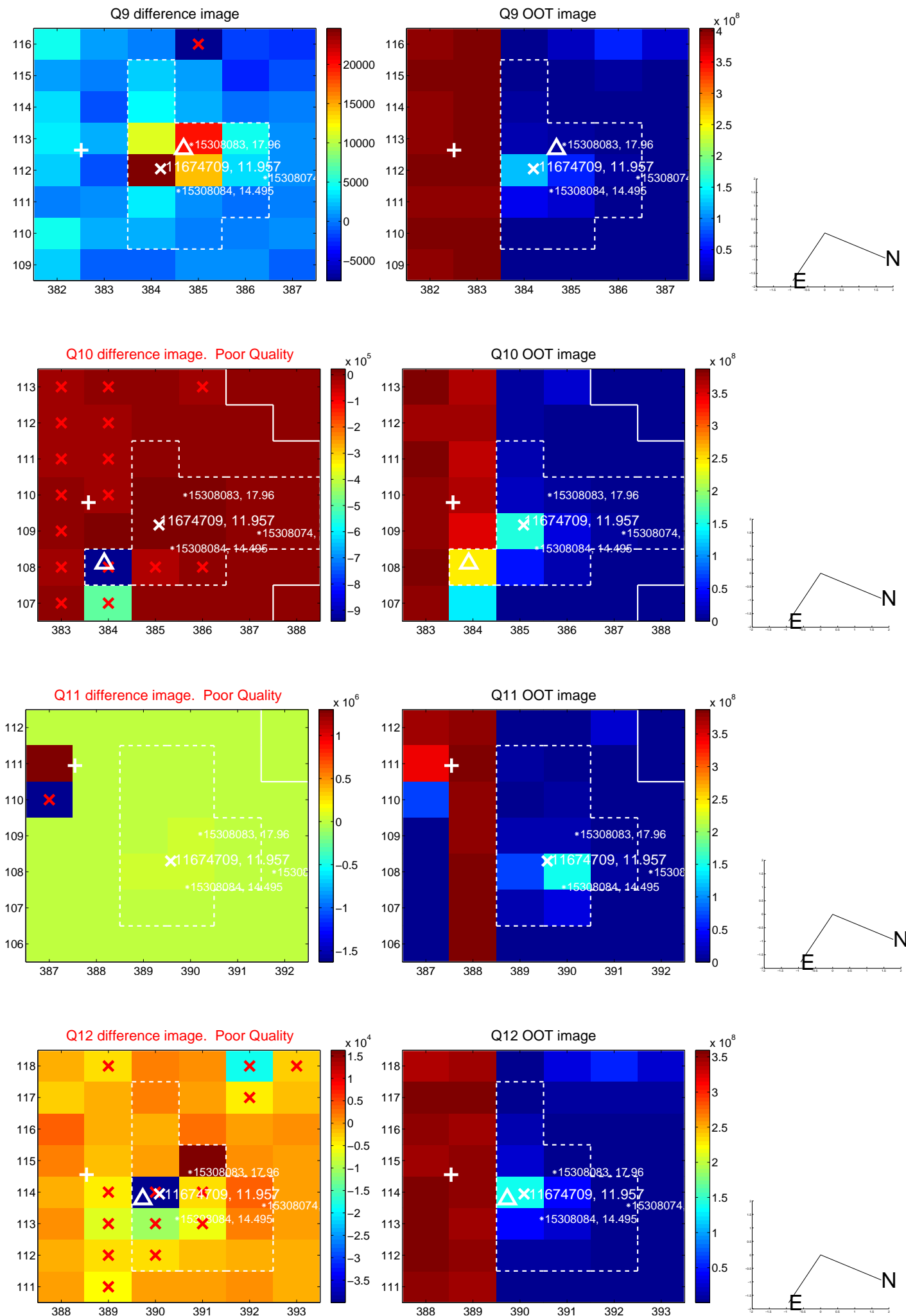
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



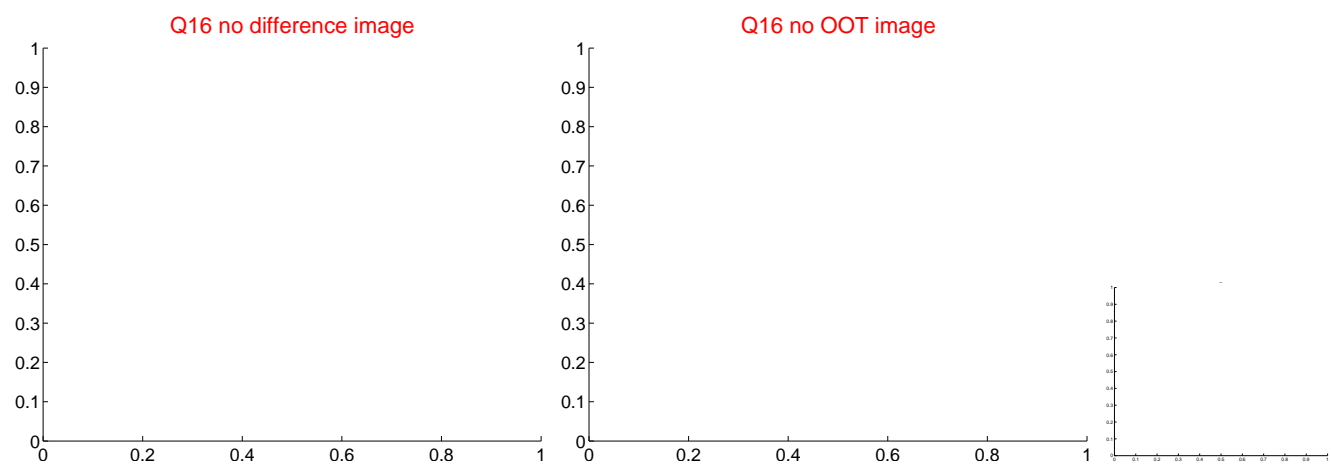
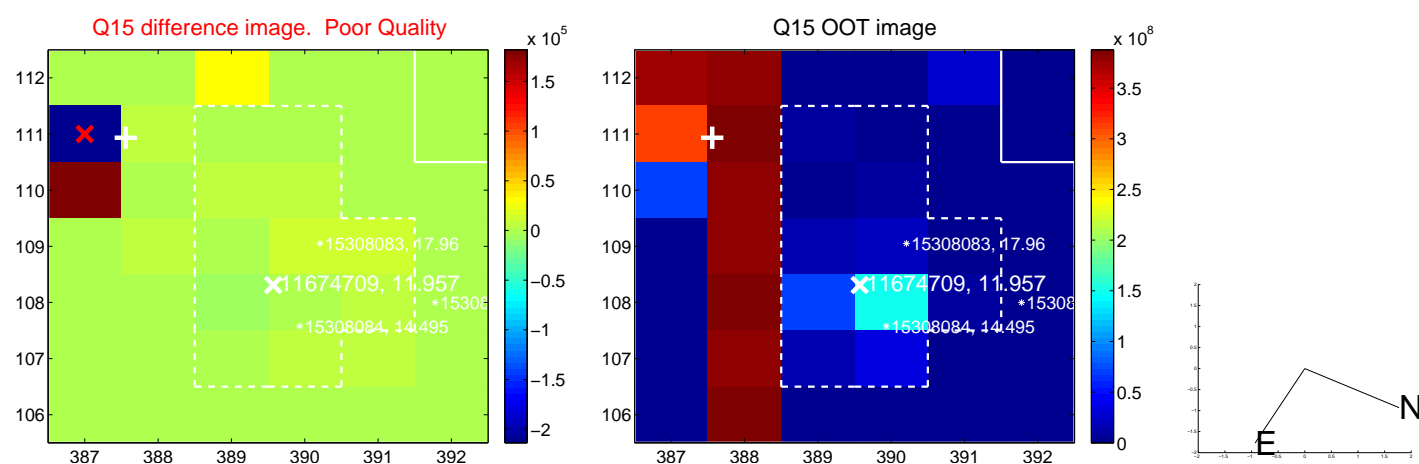
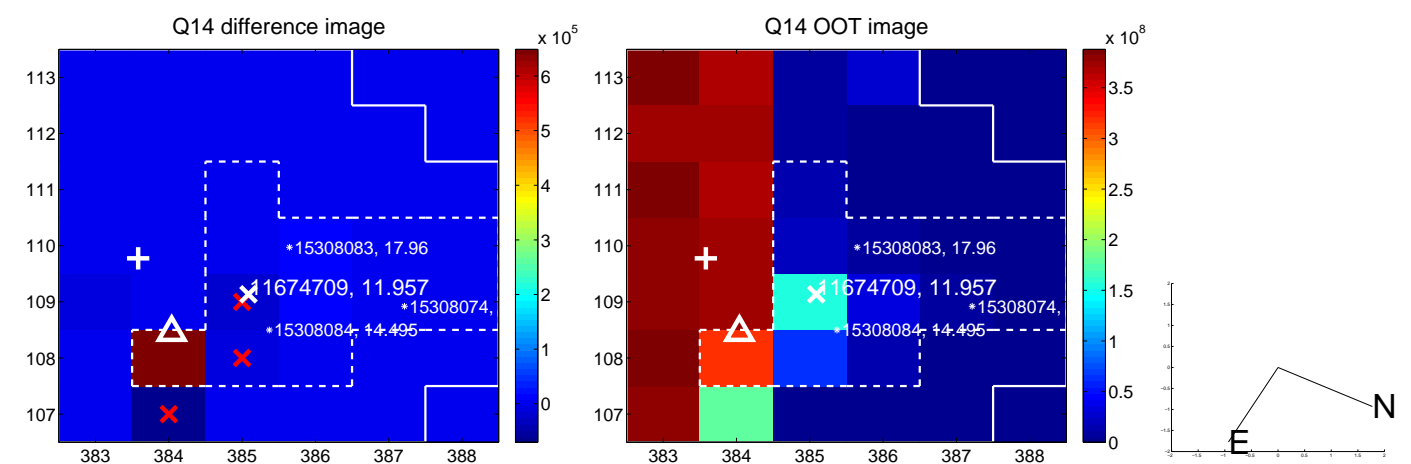
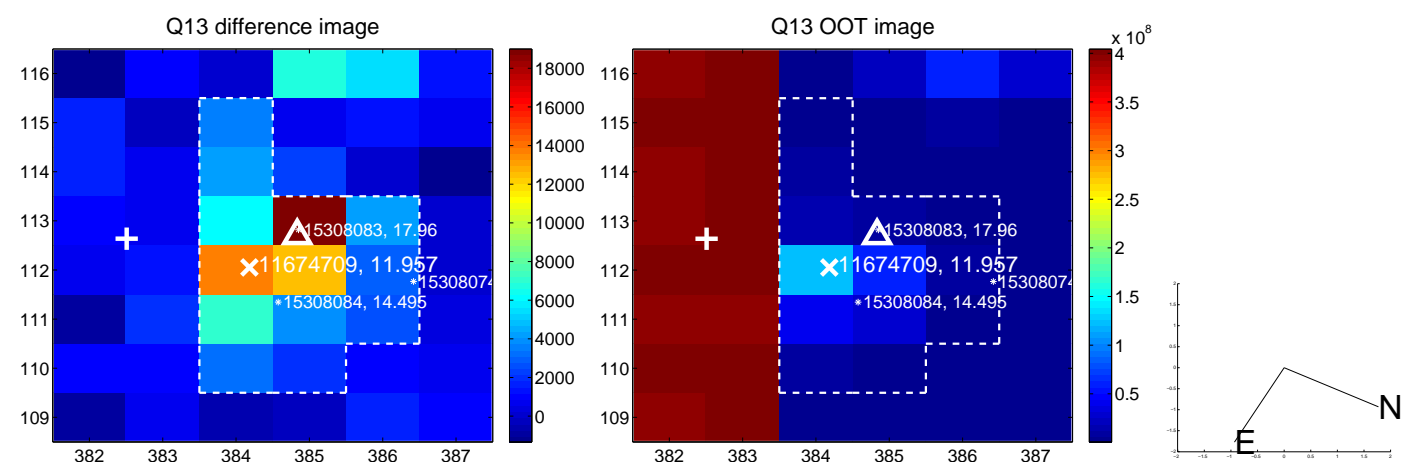
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



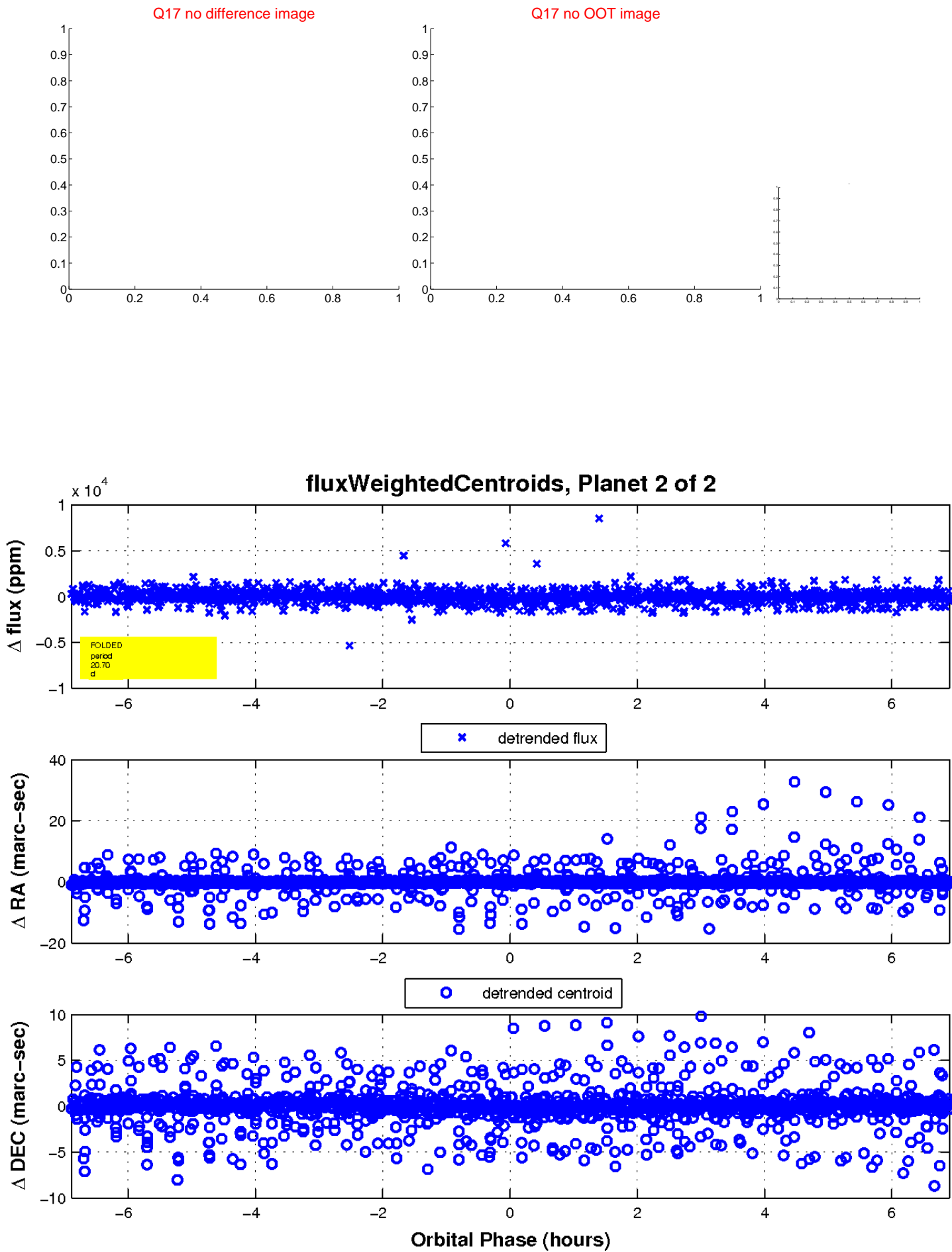
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

