

KIC 005724523

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})
005724523-01	OBS	No	10.637250	133.165506	77.3	4.025	7.3	7.7	3.46	7333	3.63	2289.81
005724523-02	OBS	No	0.715053	131.910537	23.4	2.332	8.0	7.8	3.46	7333	1.96	83776.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005724523-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005724523-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

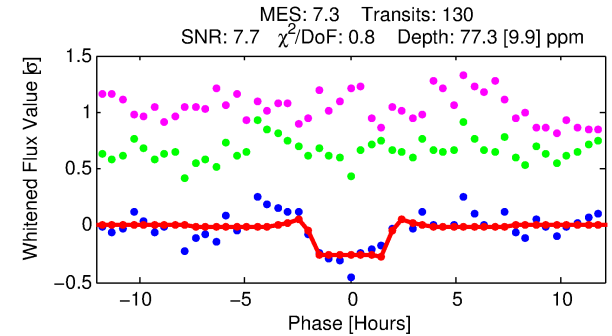
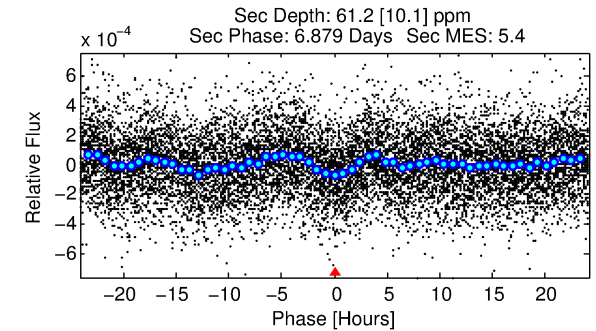
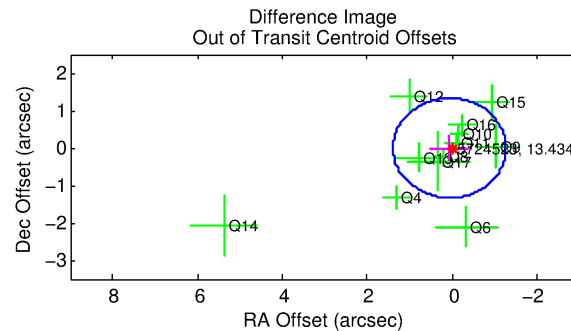
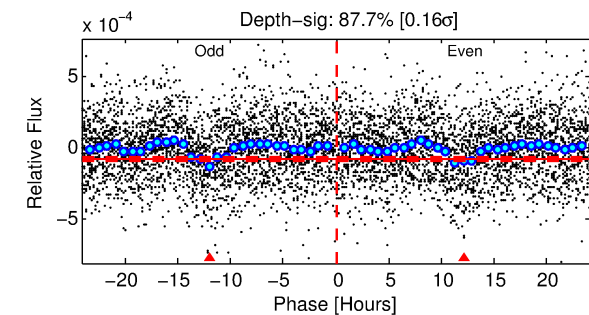
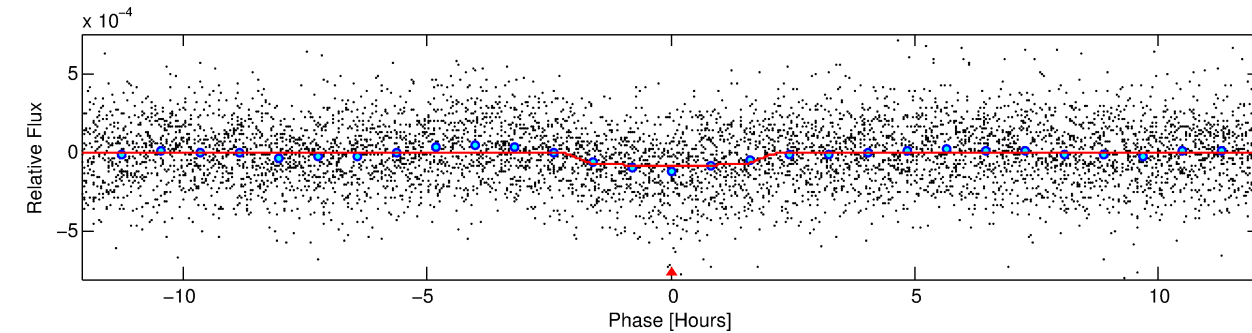
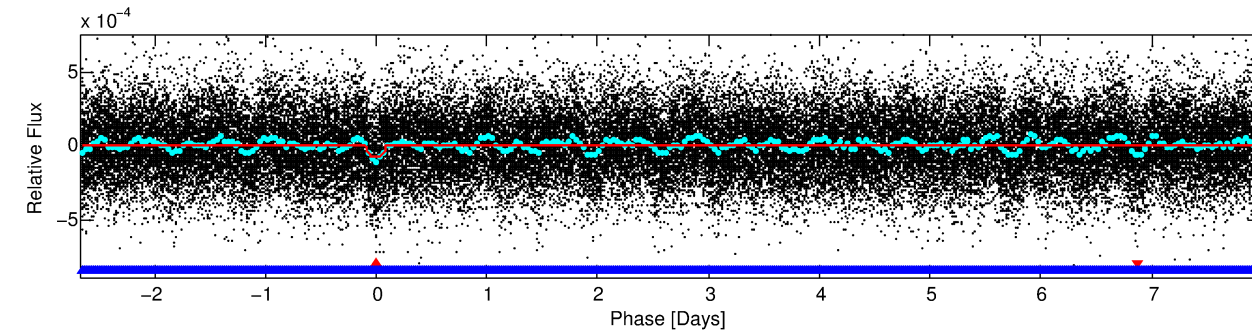
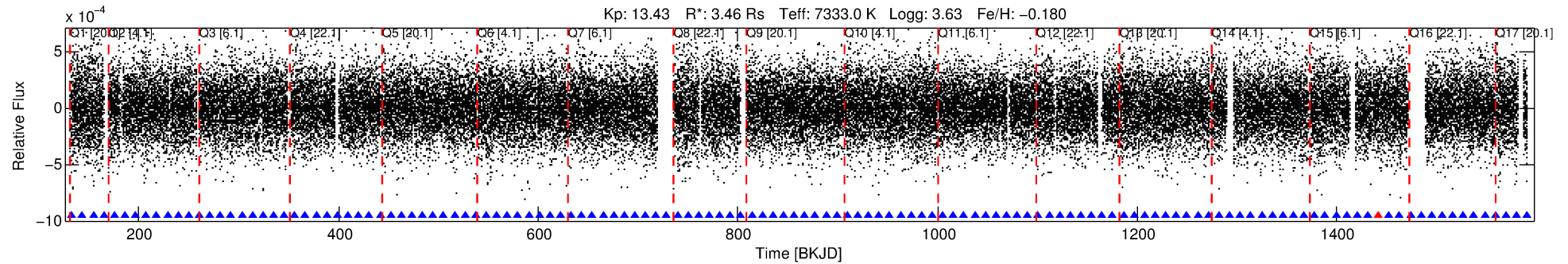
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005724523-01

No Significant Match Found

DV One-Page Summary

KIC: 5724523 Candidate: 1 of 2 Period: 10.637 d



DV Fit Results:

Period = 10.63725 [0.00010] d
Epoch = 133.1655 [0.0072] BKJD
Rp/R* = 0.0096 [0.0031]
a/R* = 8.64 [15.53]
b = 0.92 [0.33]
Seff = 2289.81 [1975.02]
Teq = 1764 [380] K
Rp = 3.63 [2.21] Re
a = 0.1164 [0.0602] AU
Ag = 34.71 [37.44] [0.90 σ]
Teffp = 6620 [1140] K [4.04 σ]

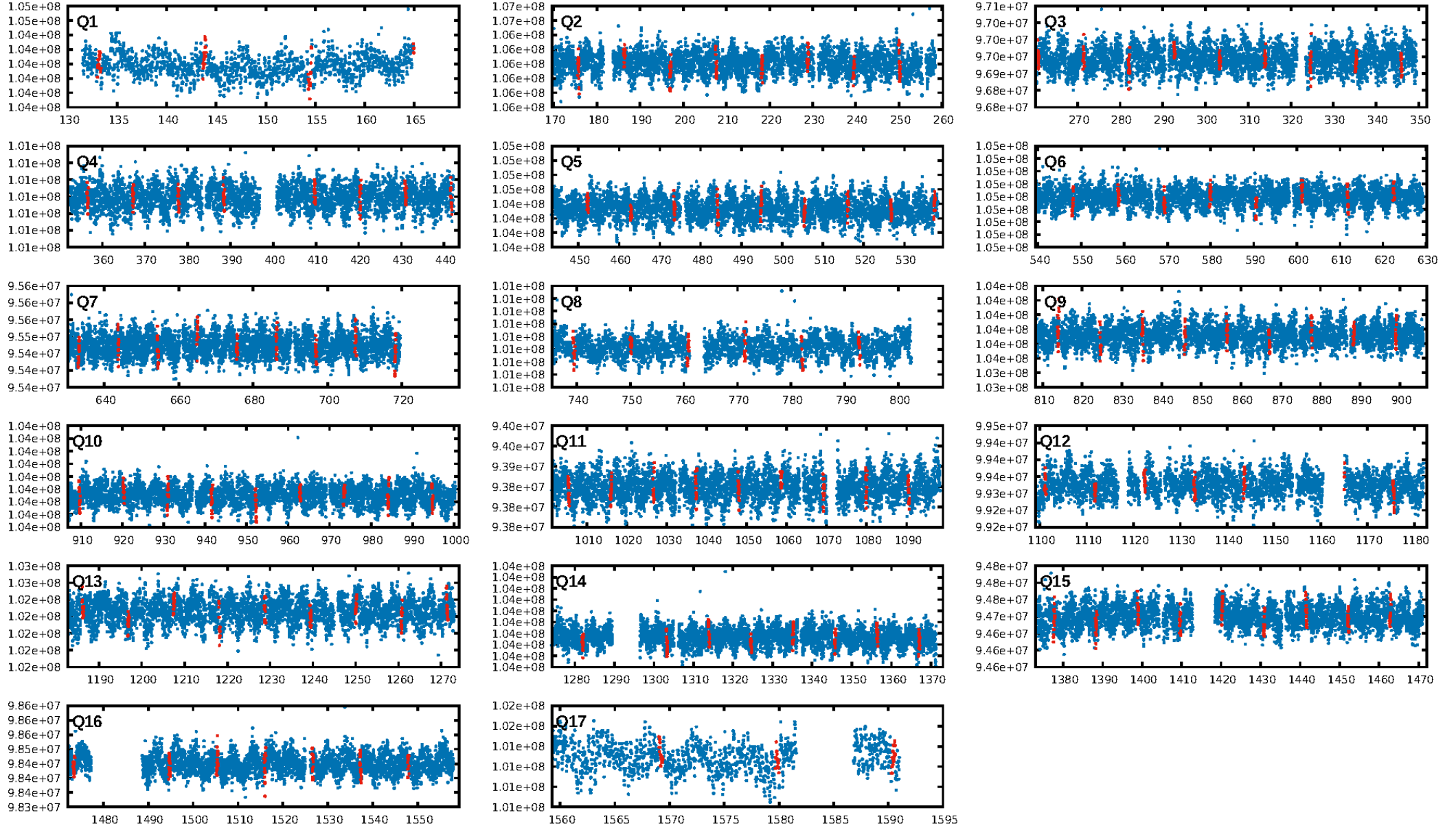
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [51.19 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.61e-10
RollingBand-fgt: 0.99 [122/123]
GhostDiagnostic-chr: 0.3896
Centroid-sig: 35.6%
Centroid-so: 1.022 arcsec [1.03 σ]
OotOffset-rm: 0.057 arcsec [0.13 σ]
KicOffset-rm: 0.138 arcsec [0.32 σ]
OotOffset-st: 3/2/4/3 [12]
KicOffset-st: 3/2/4/3 [12]
DiffImageQuality-fgm: 0.67 [8/12]
DiffImageOverlap-fno: 0.00 [0/17]

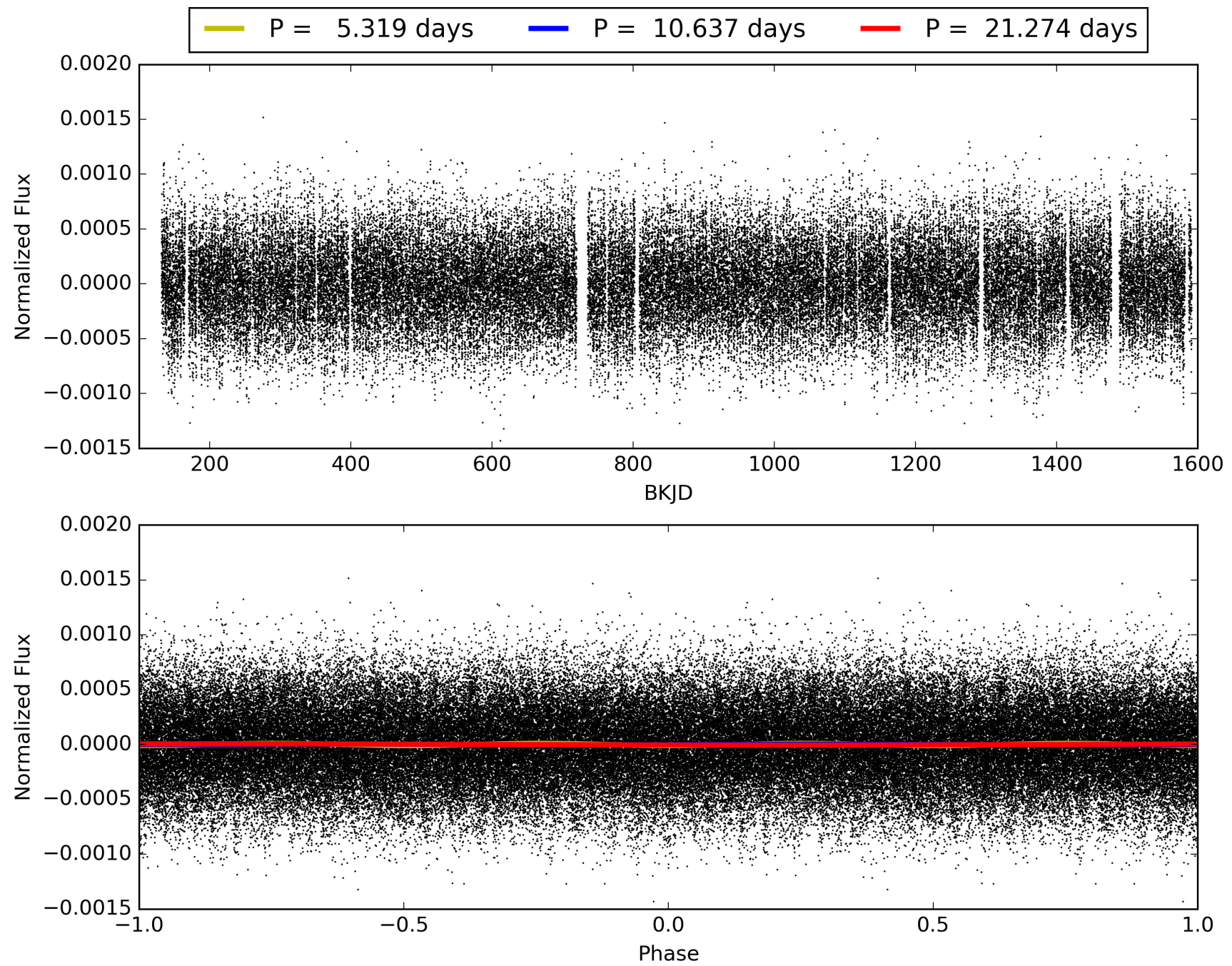
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:21:56 Z

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

TCE 005724523-01, PDC Light Curves

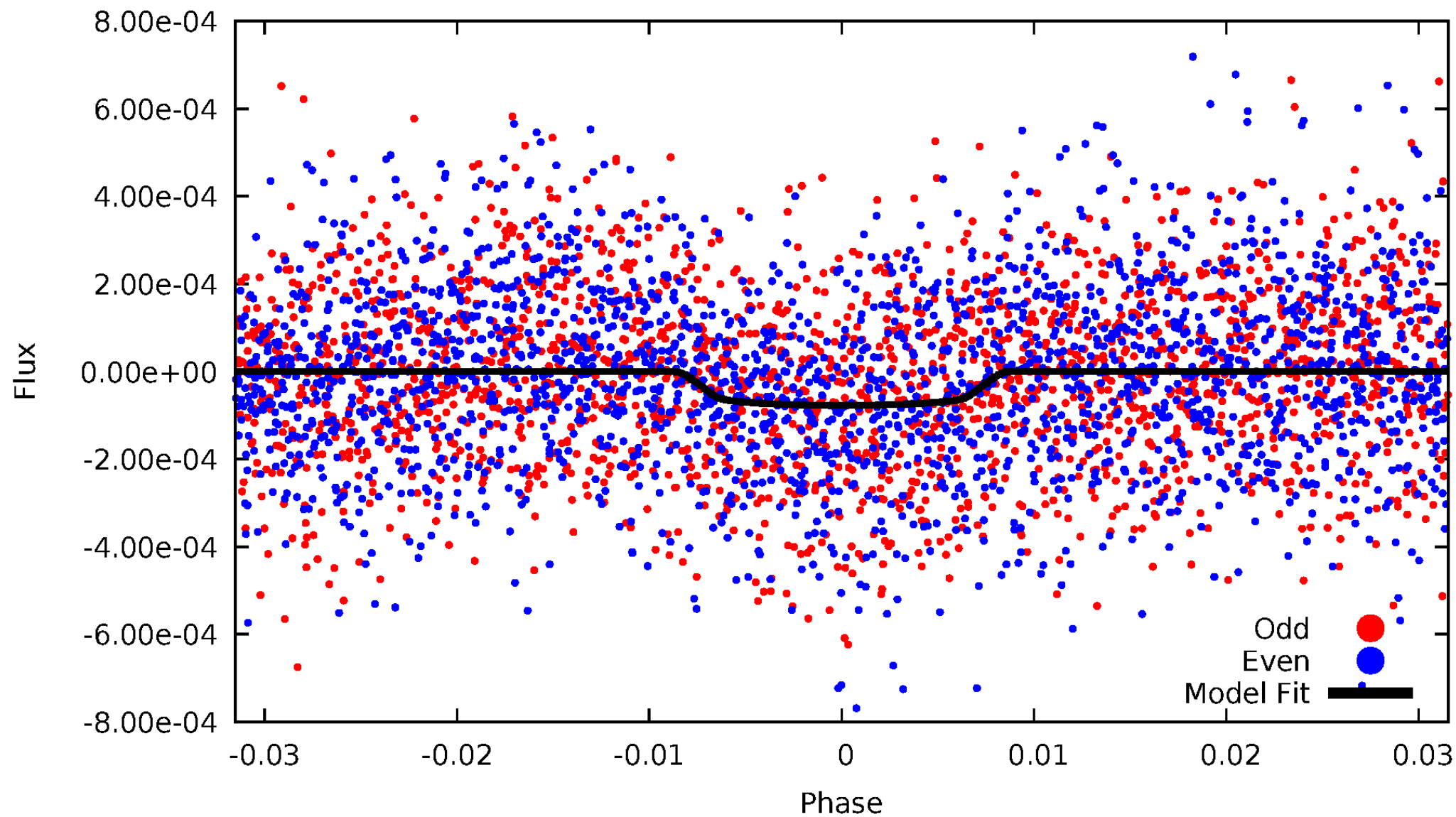


TCE 005724523-01



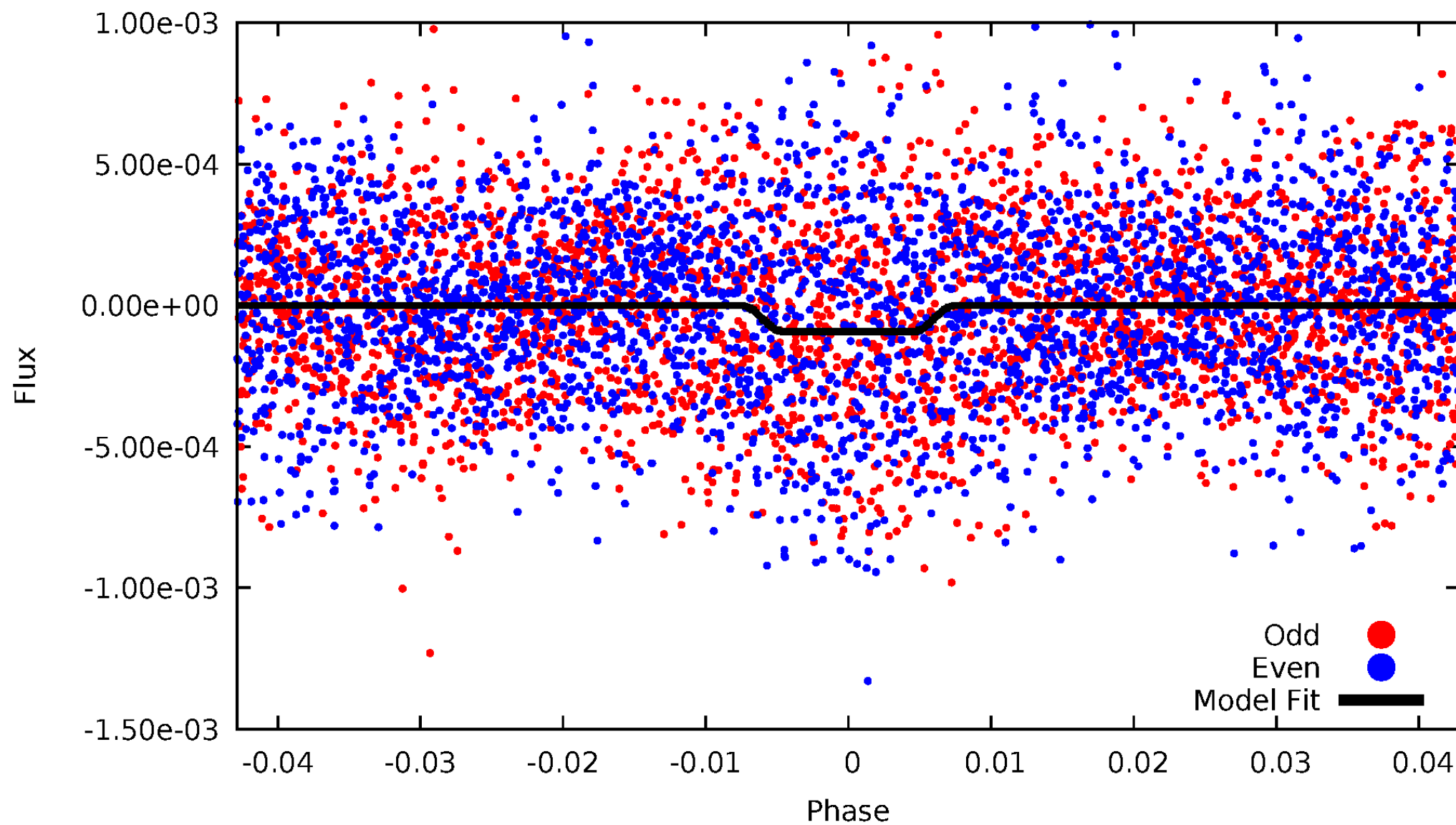
DV Odd/Even

TCE 005724523-01

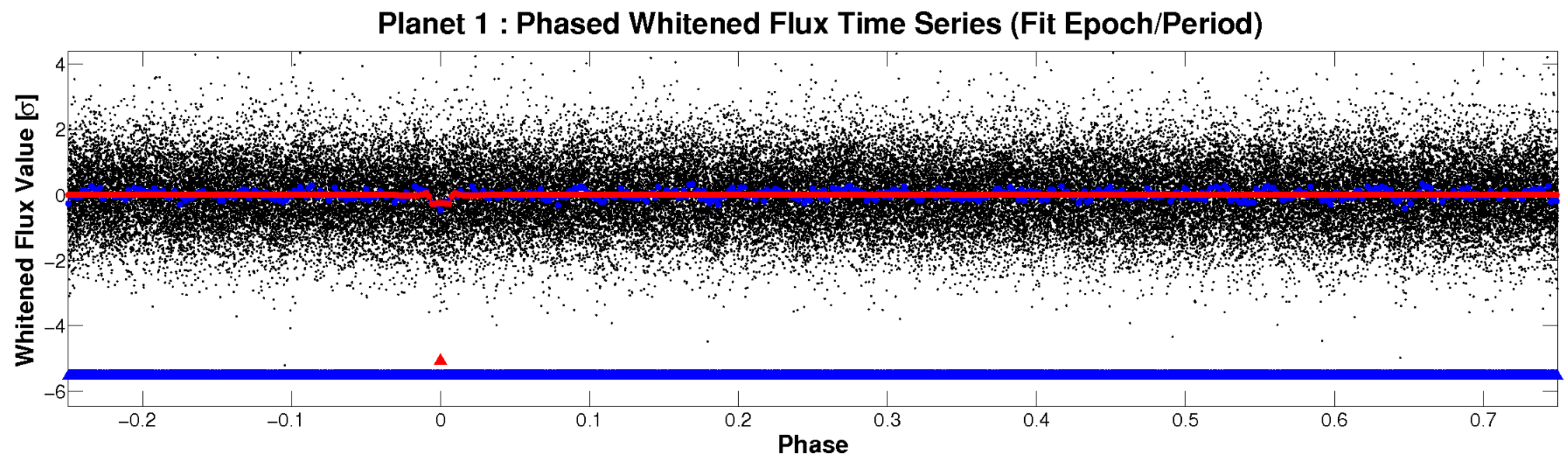
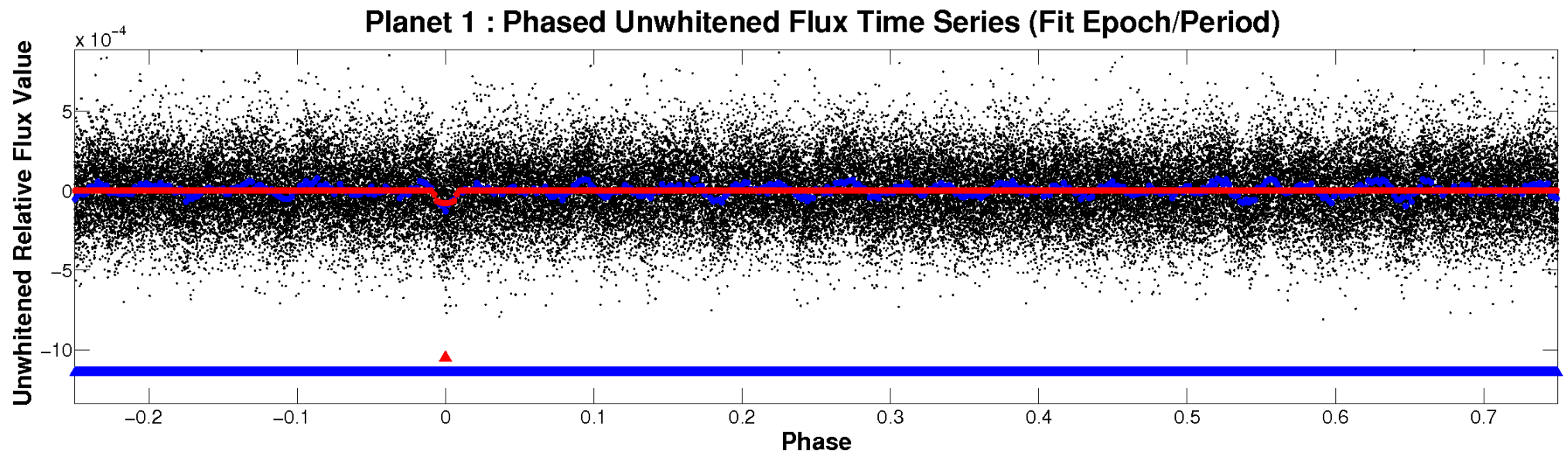


ALT Odd/Even

TCE 005724523-01

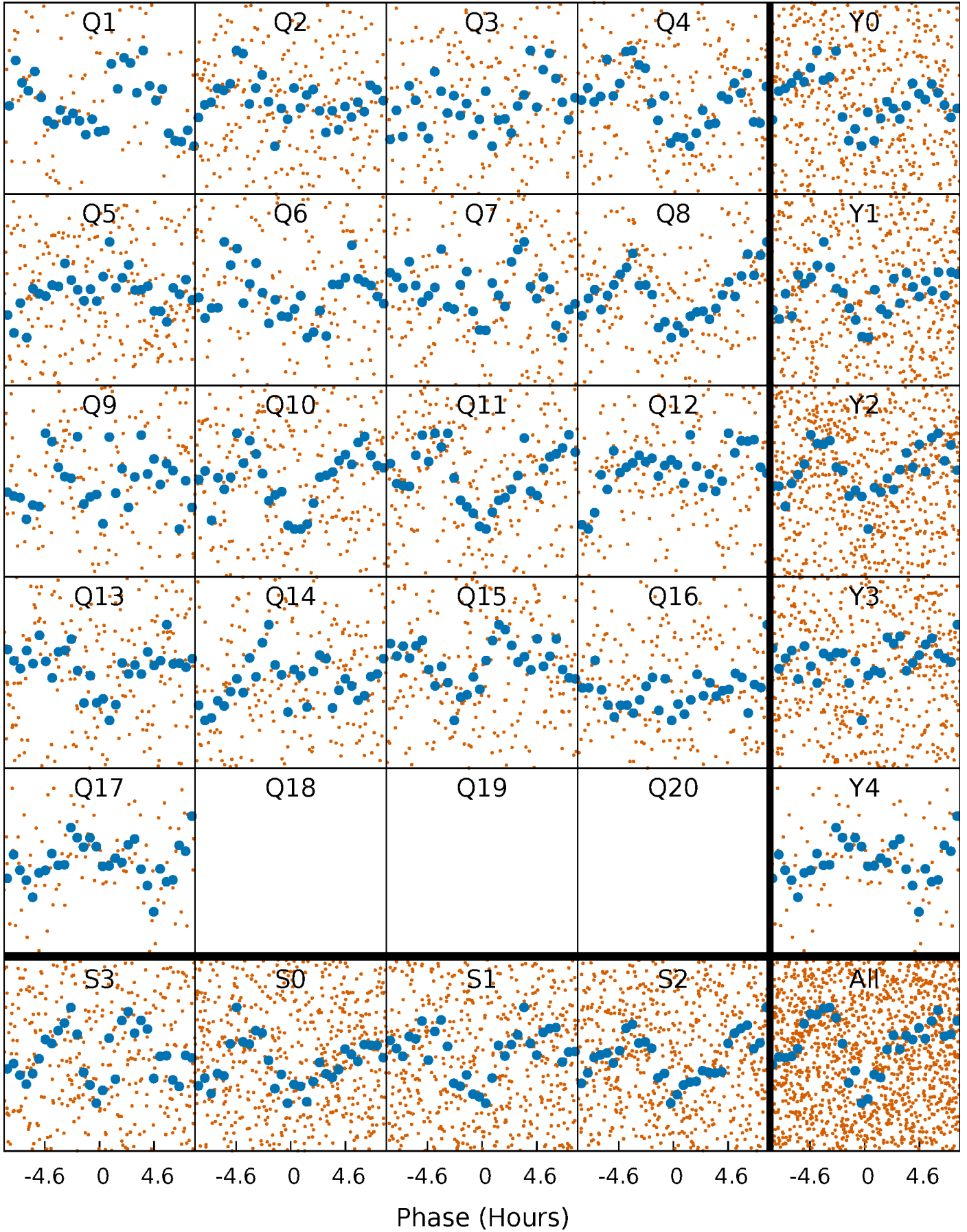


Non-Whitened Vs. Whitened Light Curve



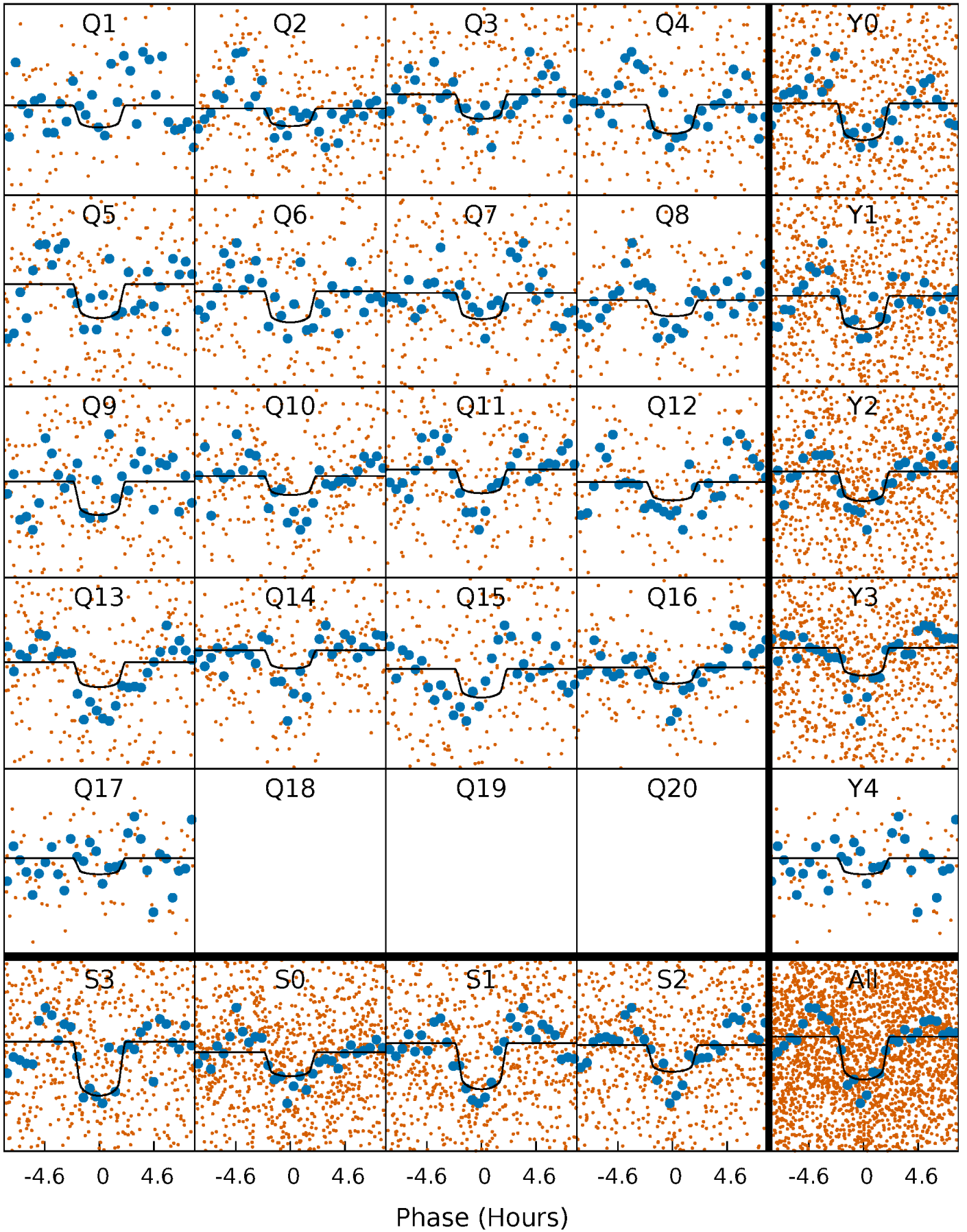
PDC Quarter-Phased Transit Curves

TCE 005724523-01 P= 10.637250 Days $T_0=133.165506$ (BKJD)



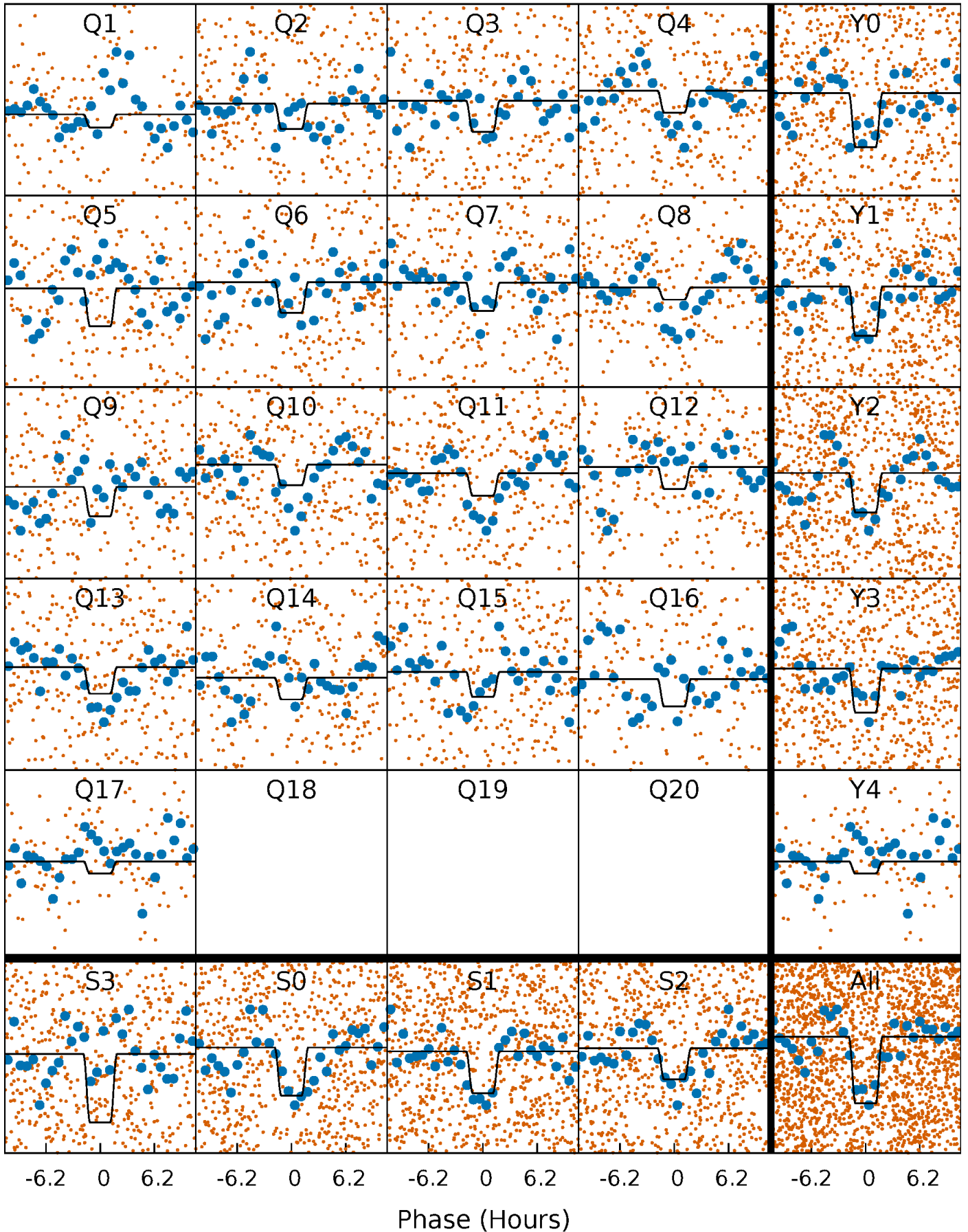
DV Quarter-Phased Transit Curves

TCE 005724523-01 P= 10.637250 Days $T_0=133.165506$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

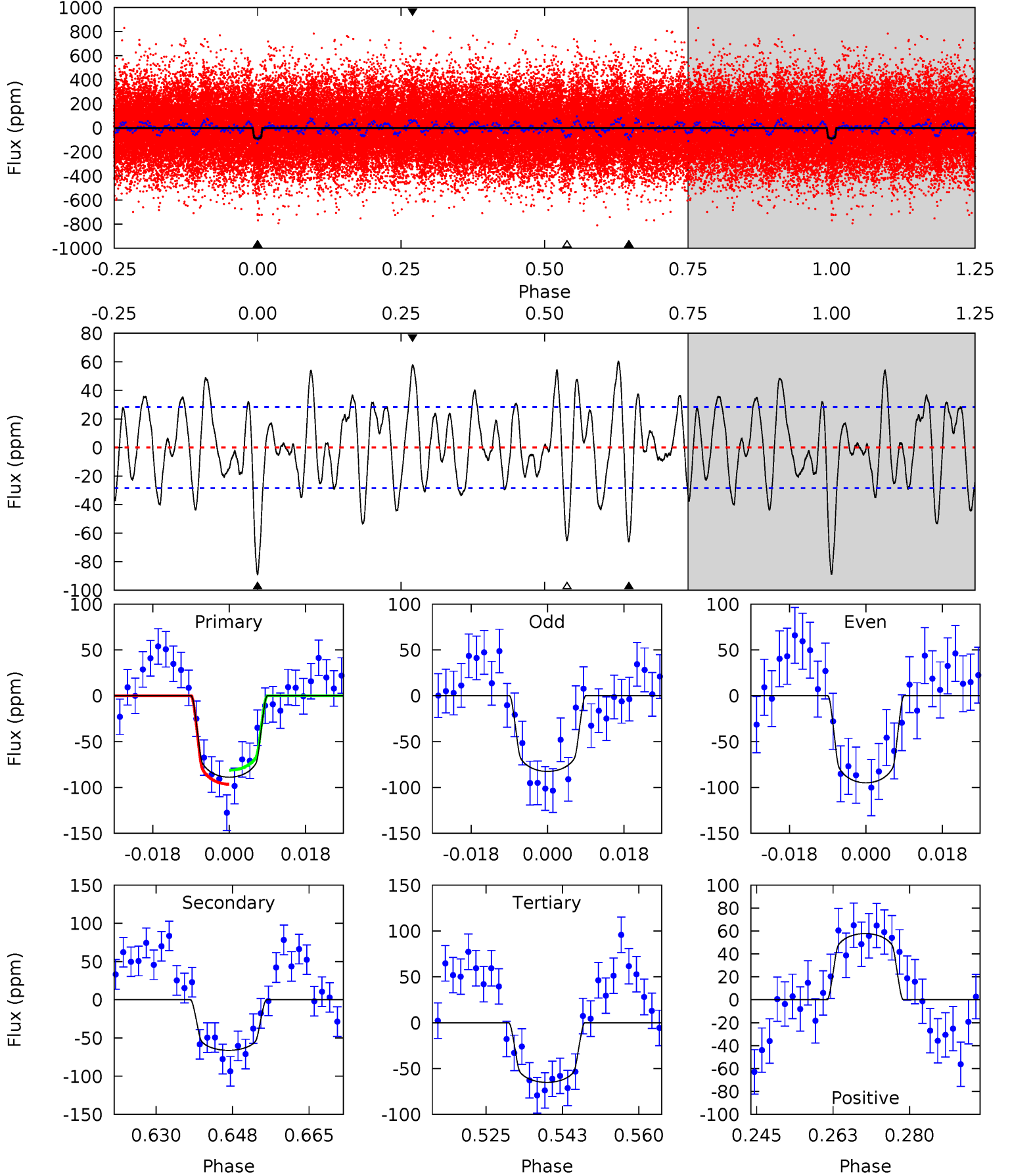
TCE 005724523-01 P= 10.636949 Days $T_0=133.189829$ (BKJD)



DV Model-Shift Uniqueness Test

005724523-01, P = 10.637250 Days, E = 122.528256 Days

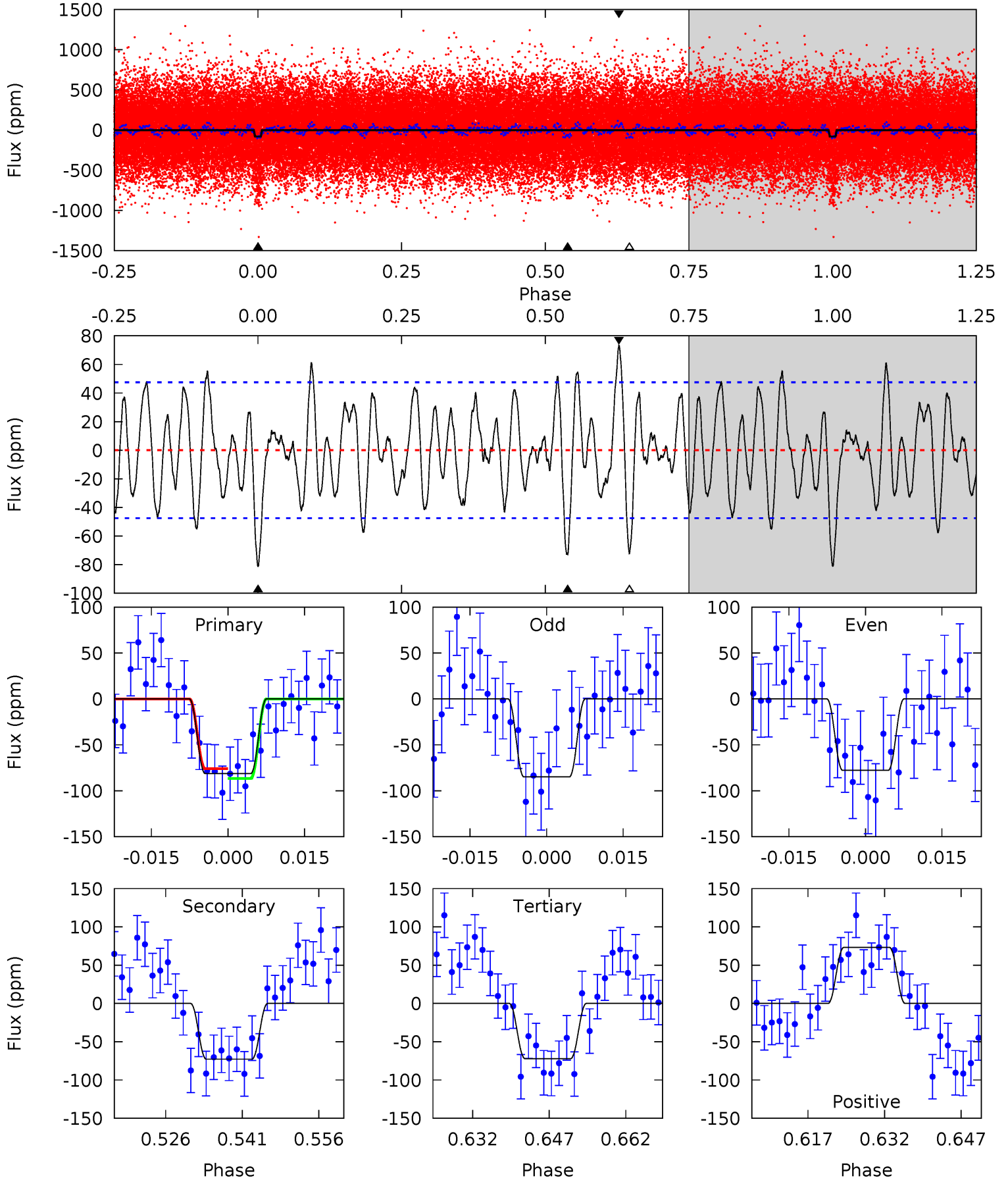
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.4	11.5	11.3	10.00	4.92	2.38	4.09	4.11	5.38	0.19	1.46	1.08	1.00	0.40	1.32



Alt Model-Shift Uniqueness Test

005724523-01, P = 10.636949 Days, E = 122.552880 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.47	7.59	7.52	7.63	4.95	2.43	2.69	0.95	0.84	0.07	-0.04	0.36	0.93	0.47	0.56



Stellar Parameters For KIC 005724523

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7333^{+228}_{-304}	$3.629^{+0.504}_{-0.056}$	$-0.180^{+0.250}_{-0.350}$	$3.462^{+0.315}_{-1.783}$	$1.863^{+0.154}_{-0.461}$	$0.063^{+0.336}_{-0.013}$
	+3%/-4%	+14%/-2%	+139%/-194%	+9%/-52%	+8%/-25%	+531%/-20%
Source	KIC0	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 005724523-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-66 ± 6	$3.14^{+1.42}_{-1.20}$	2373^{+142}_{-321}	6700^{+1591}_{-960}	50^{+77}_{-26}
Alt.	-73 ± 10	$3.30^{+1.26}_{-1.31}$	2367^{+163}_{-300}	6808^{+1772}_{-975}	51^{+79}_{-26}

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 $A_{obs} \gg 1.0$

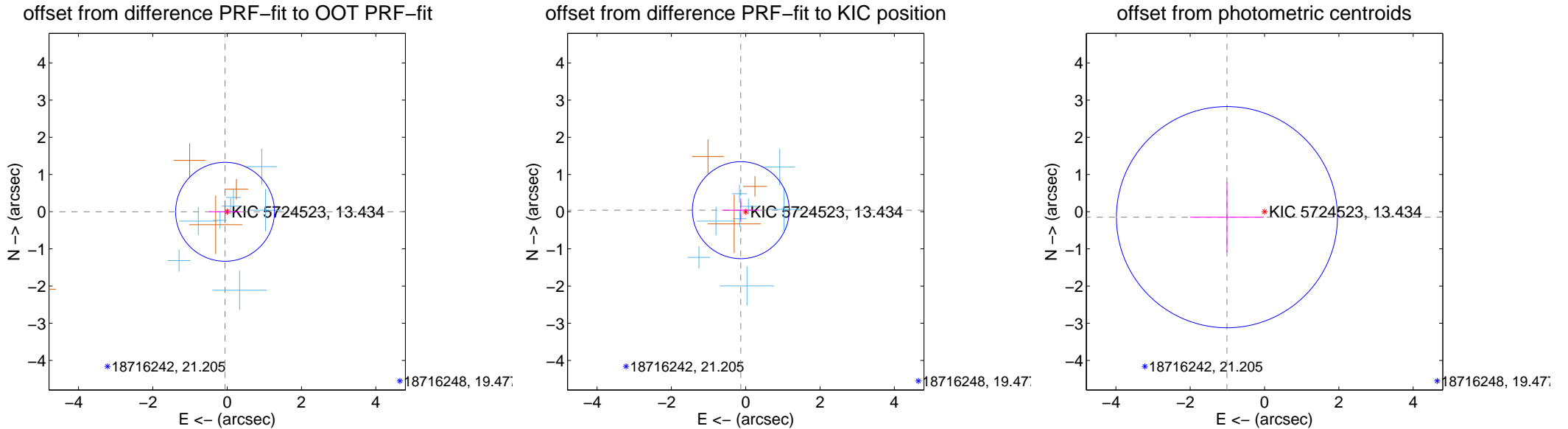
DV Centroid Data

Supplemental centroid analysis for 005724523-01. Kepler magnitude: 13.43. Transit SNR 7.74

There are 8 quarters with good PRF difference image offsets

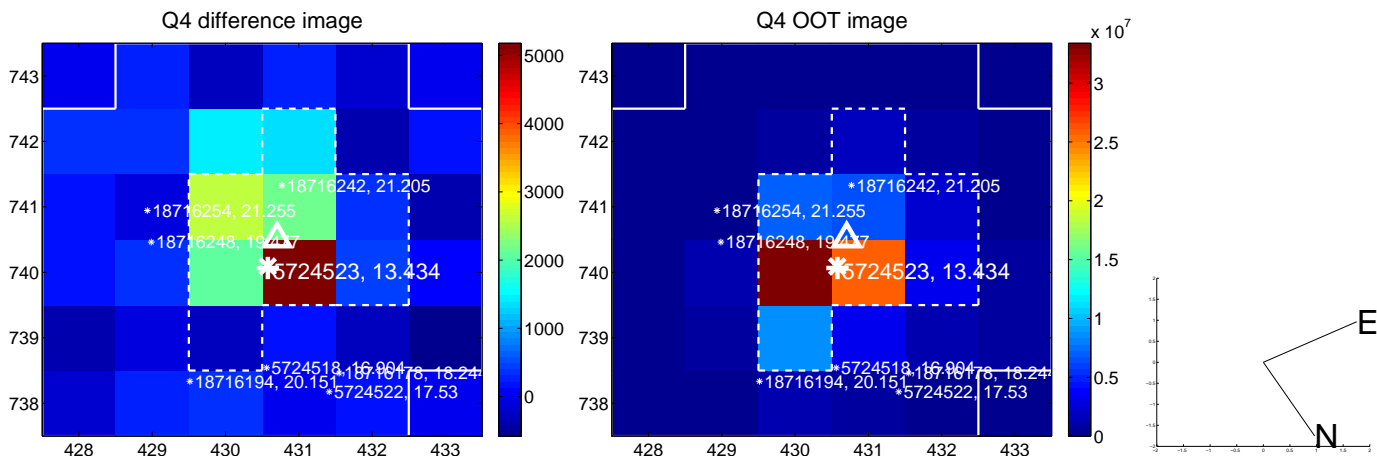
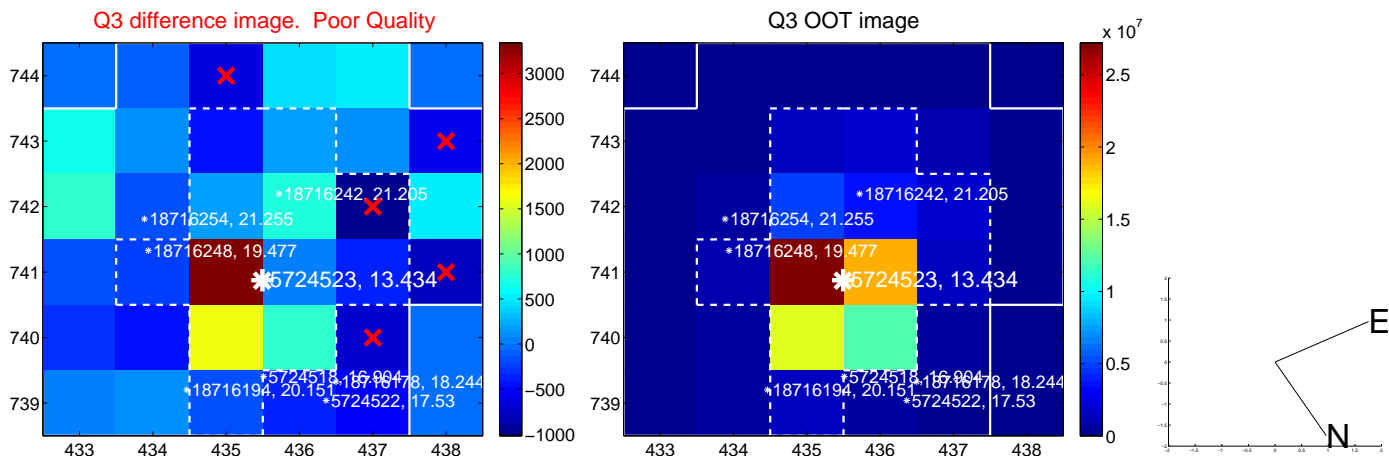
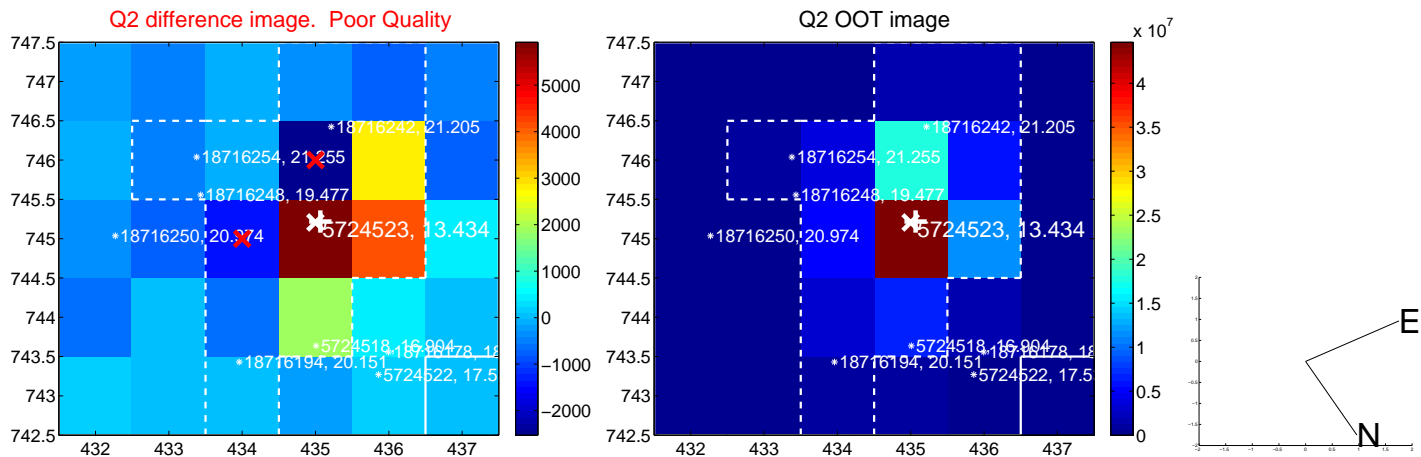
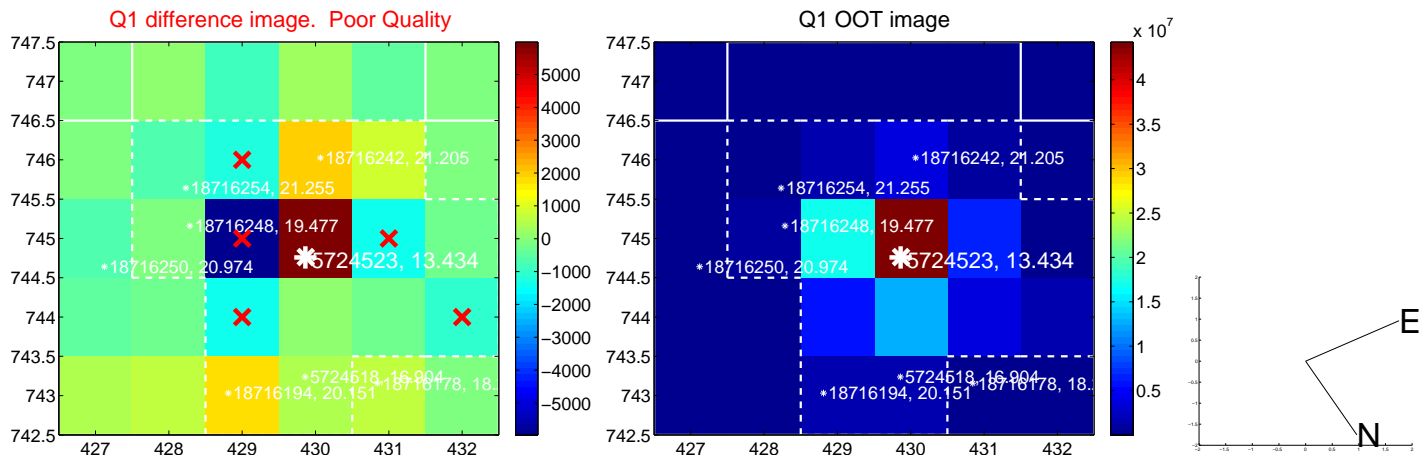
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.057 ± 0.443	0.13	0.057 ± 0.435	-0.003 ± 0.304
PRF-fit source offset from KIC position	0.138 ± 0.434	0.32	0.132 ± 0.504	0.040 ± 0.316
photometric centroid source offset	1.02 ± 0.99	1.03	1.01 ± 0.99	-0.15 ± 0.94

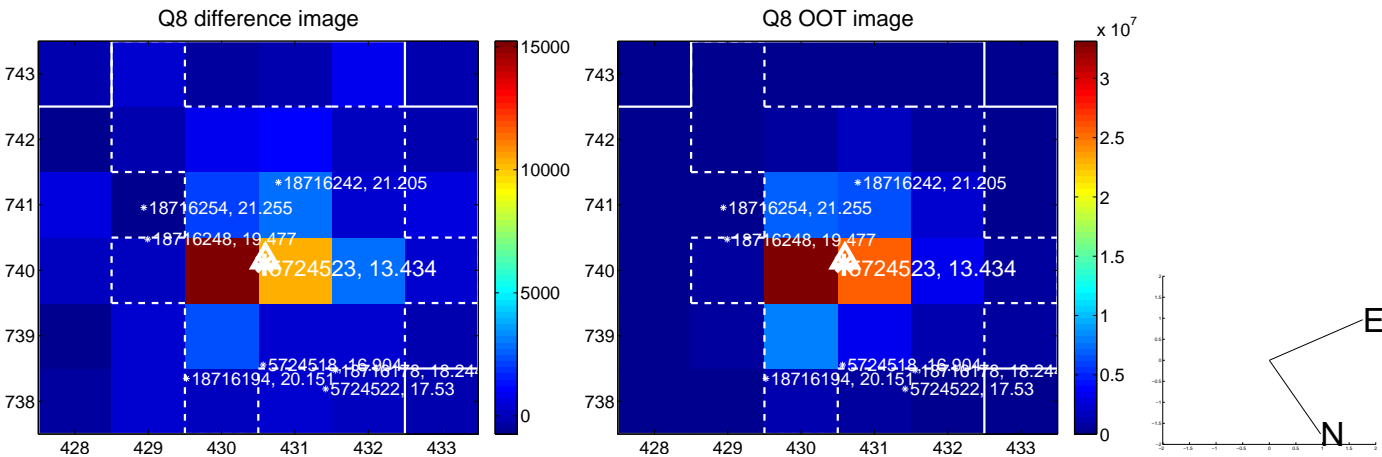
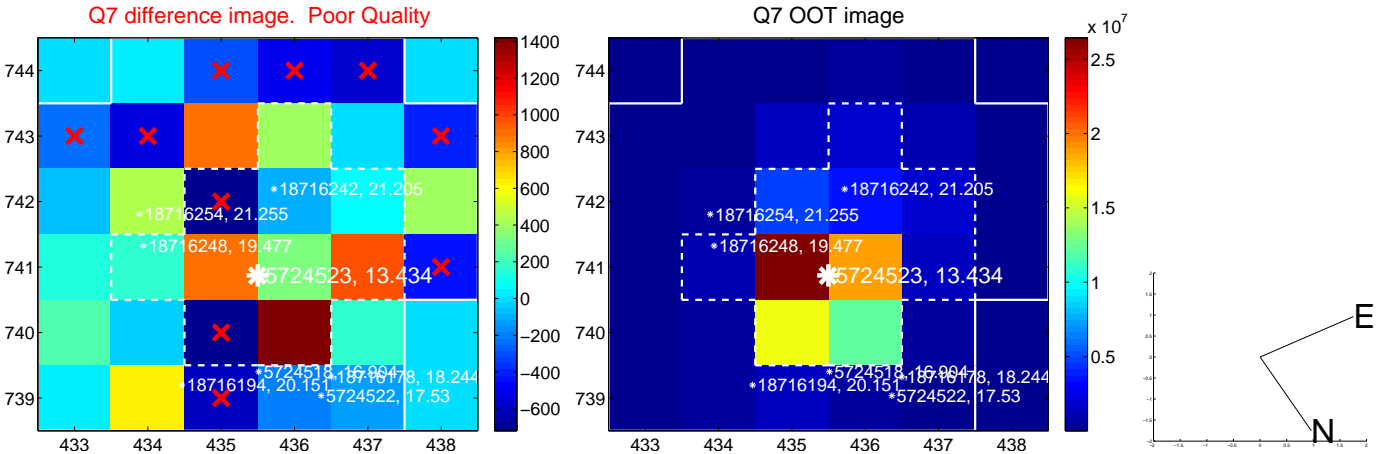
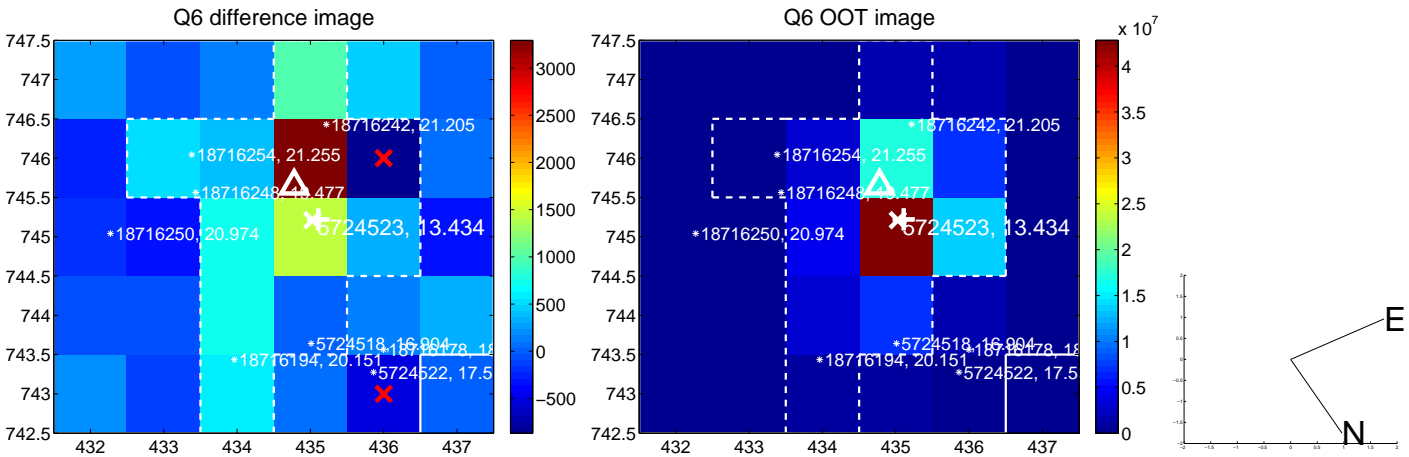
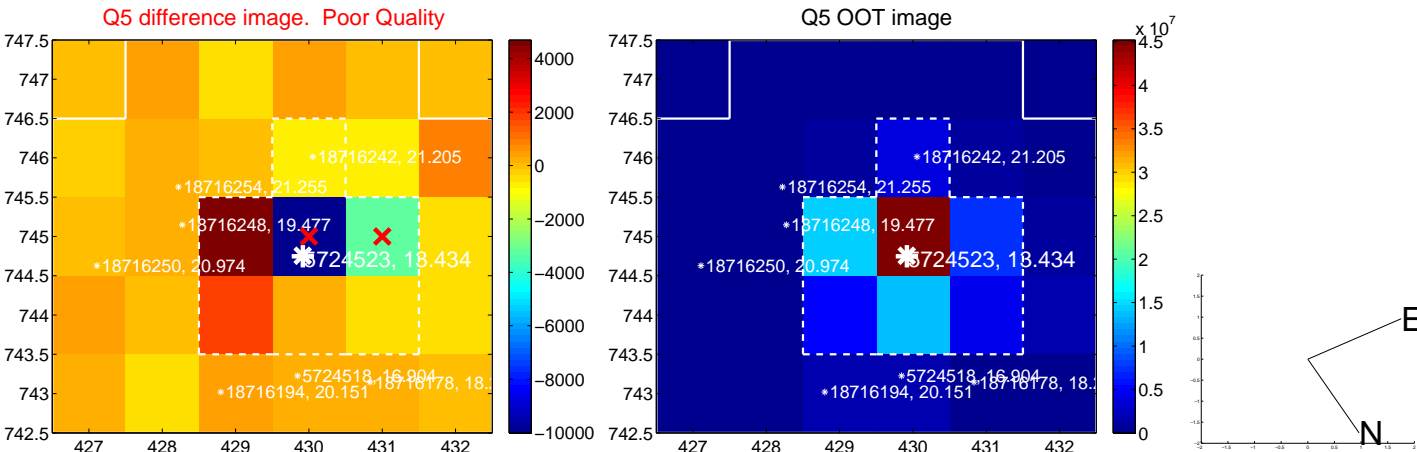


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

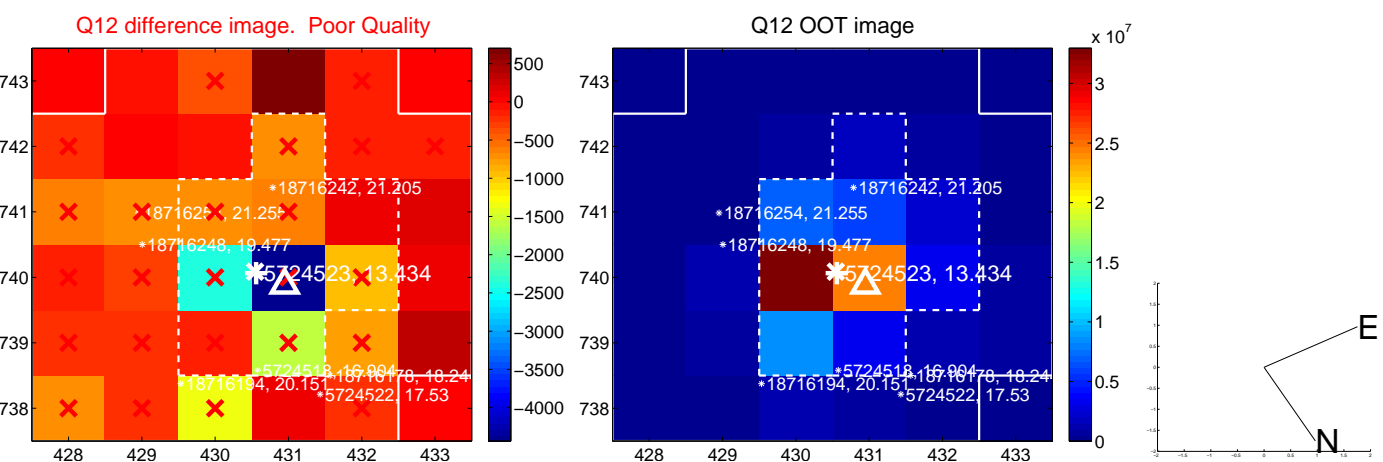
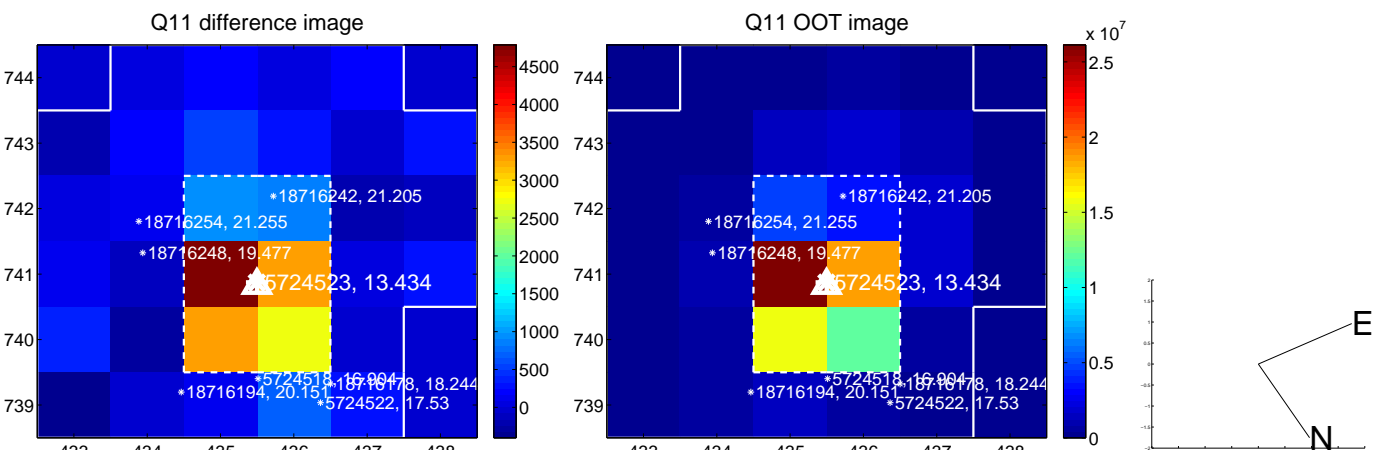
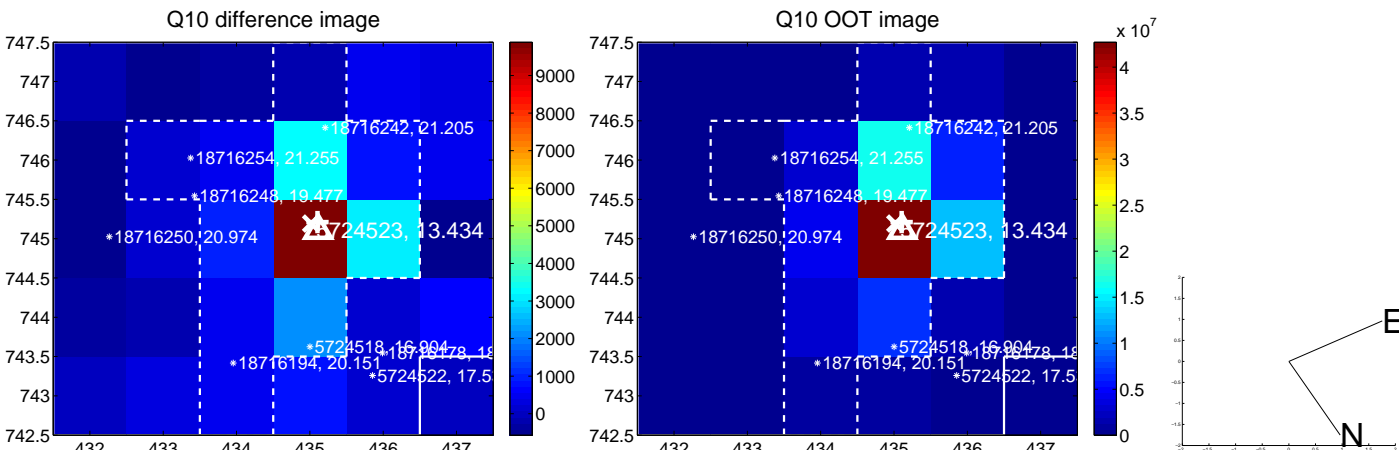
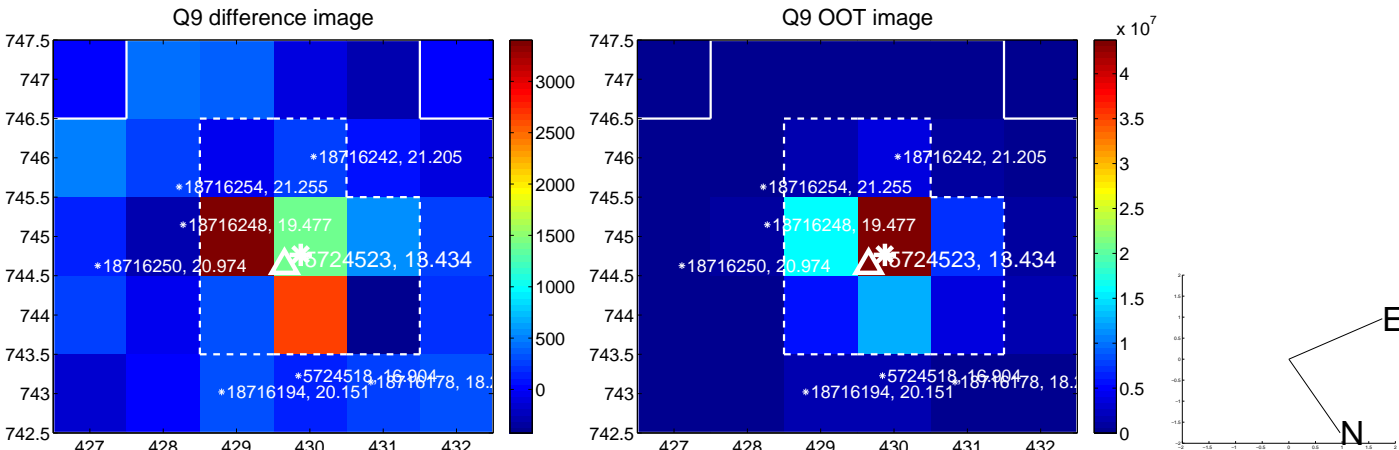
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



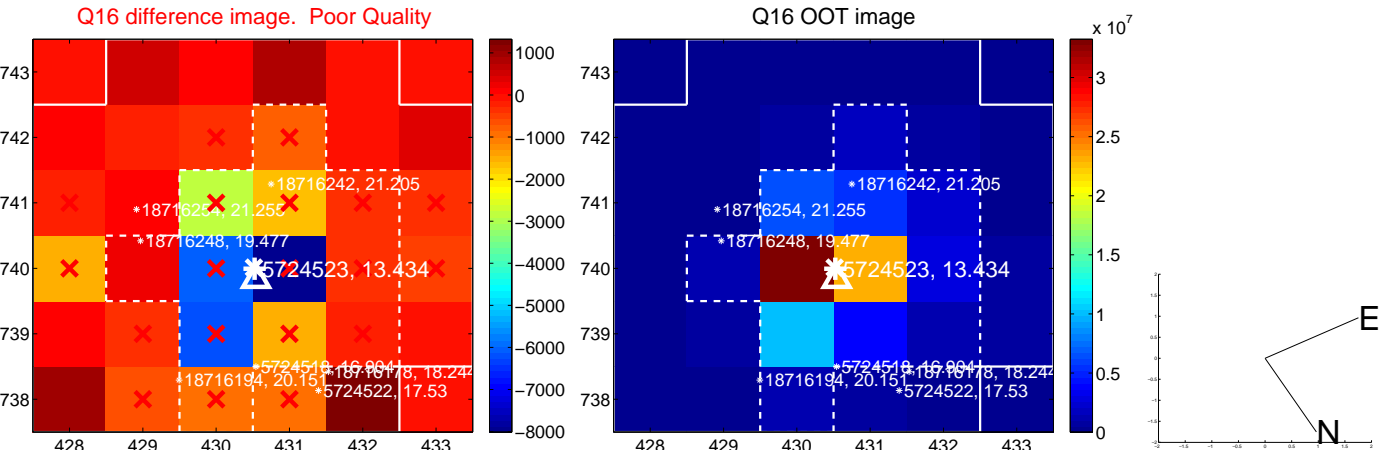
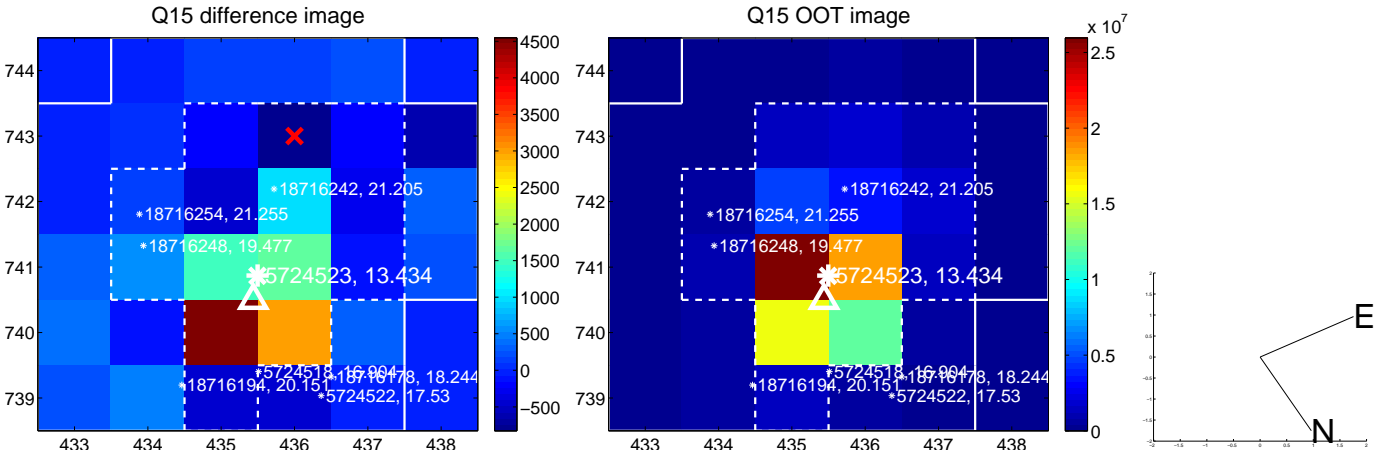
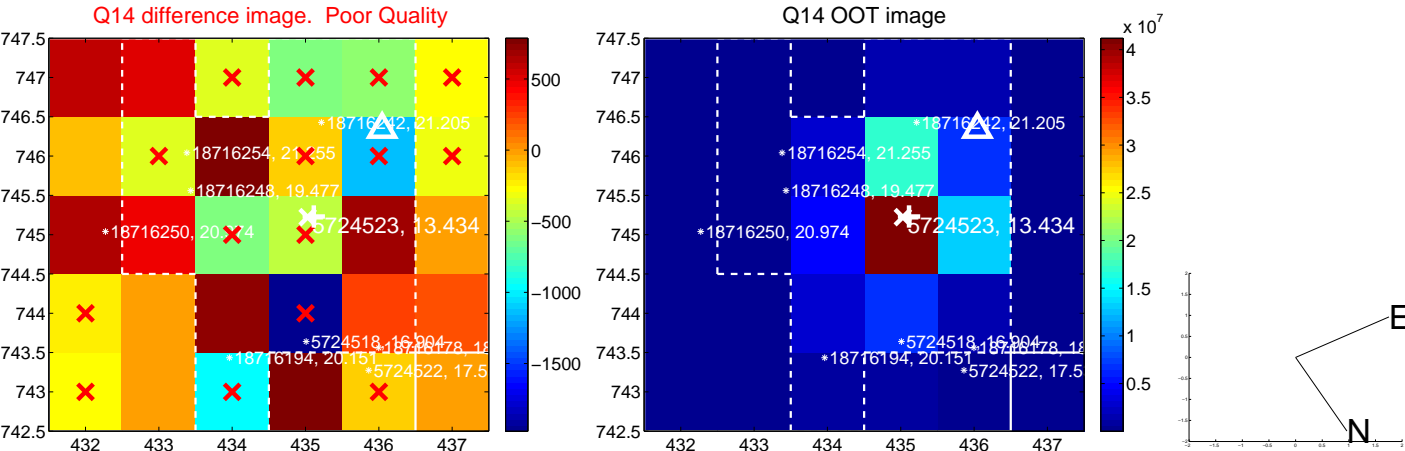
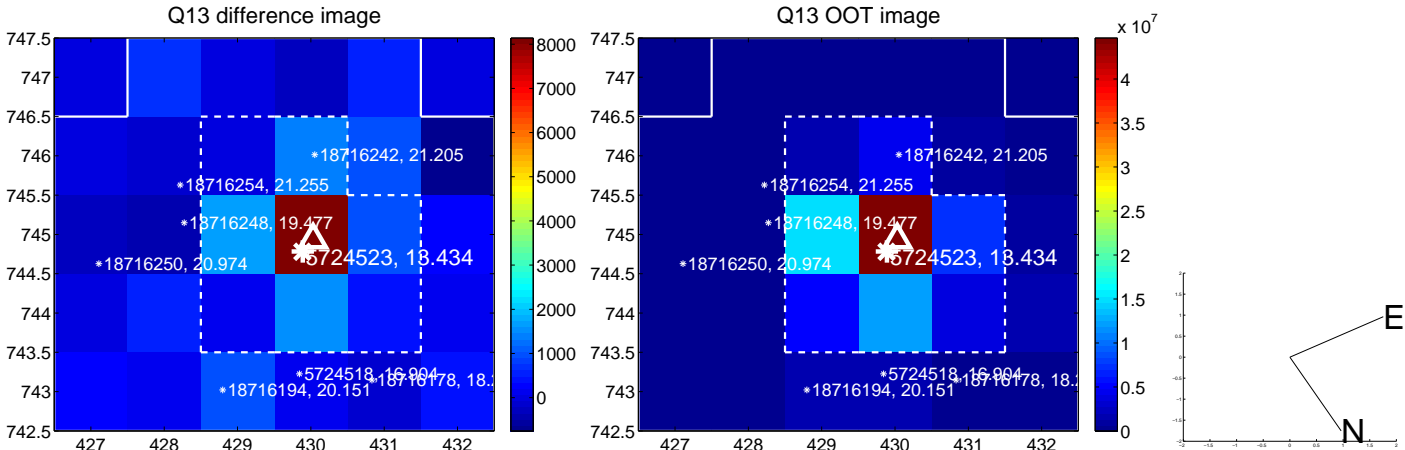
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



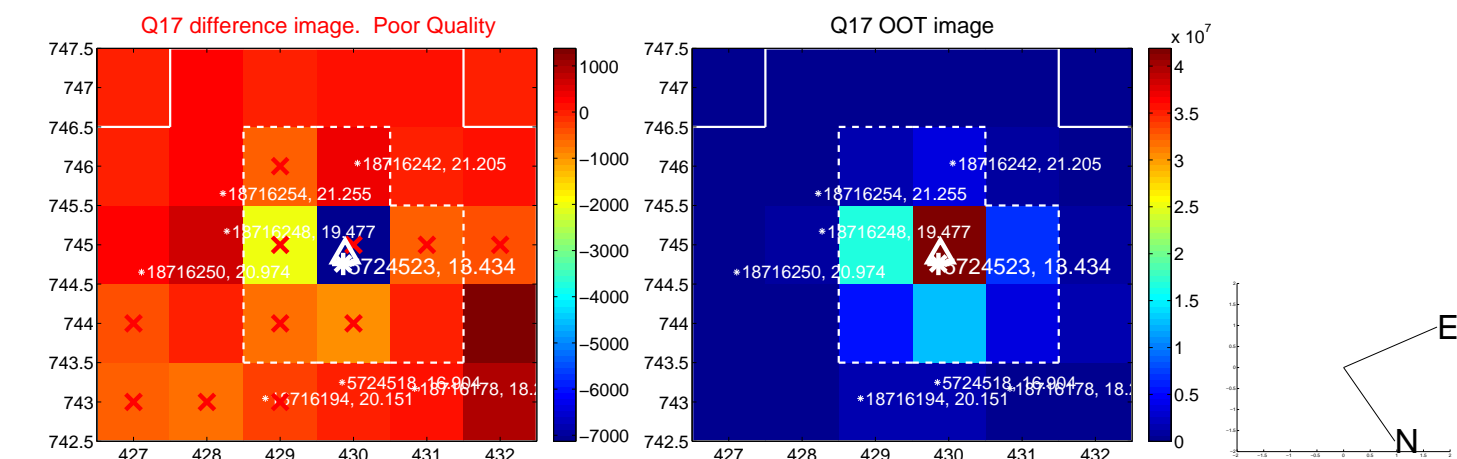
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



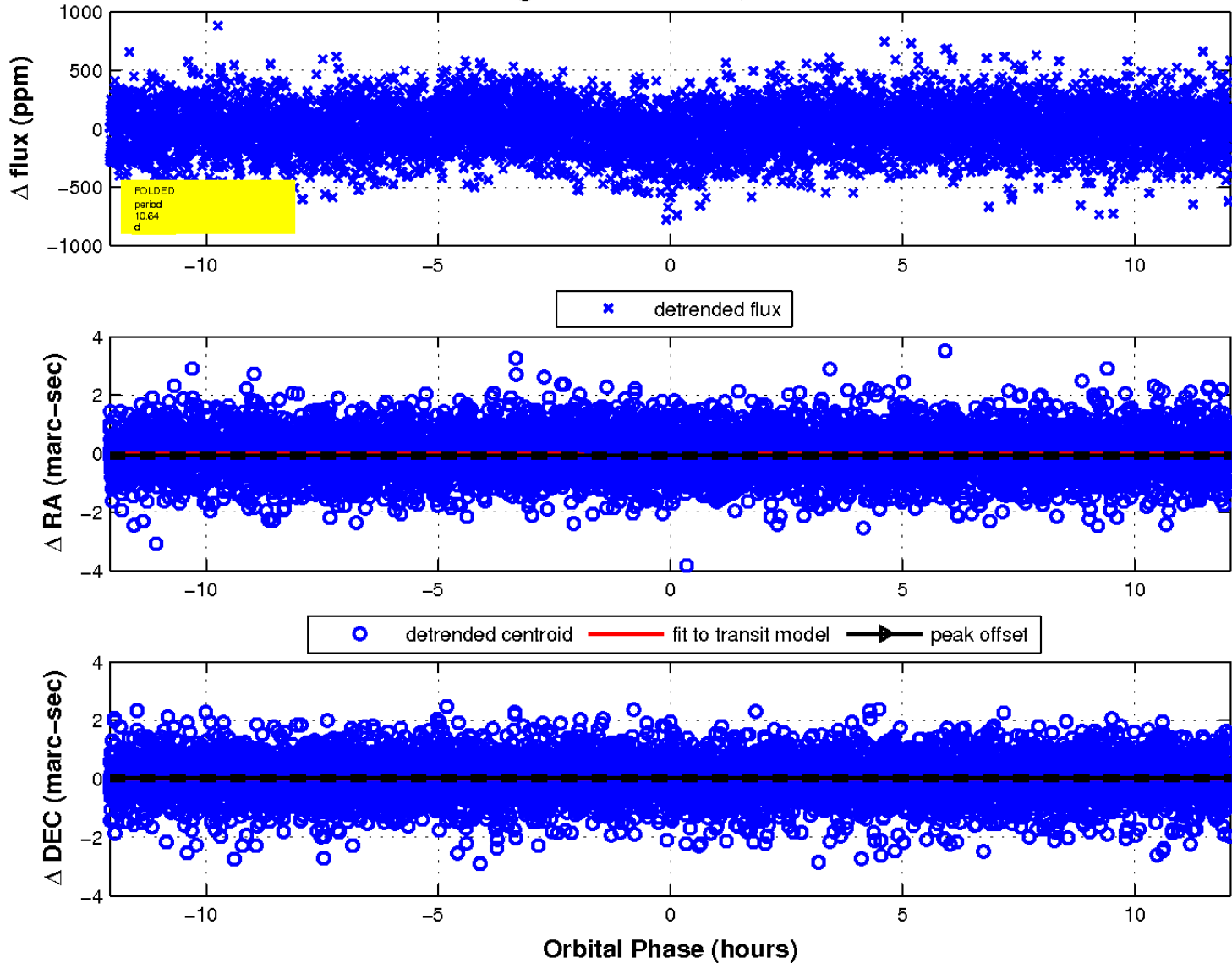
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

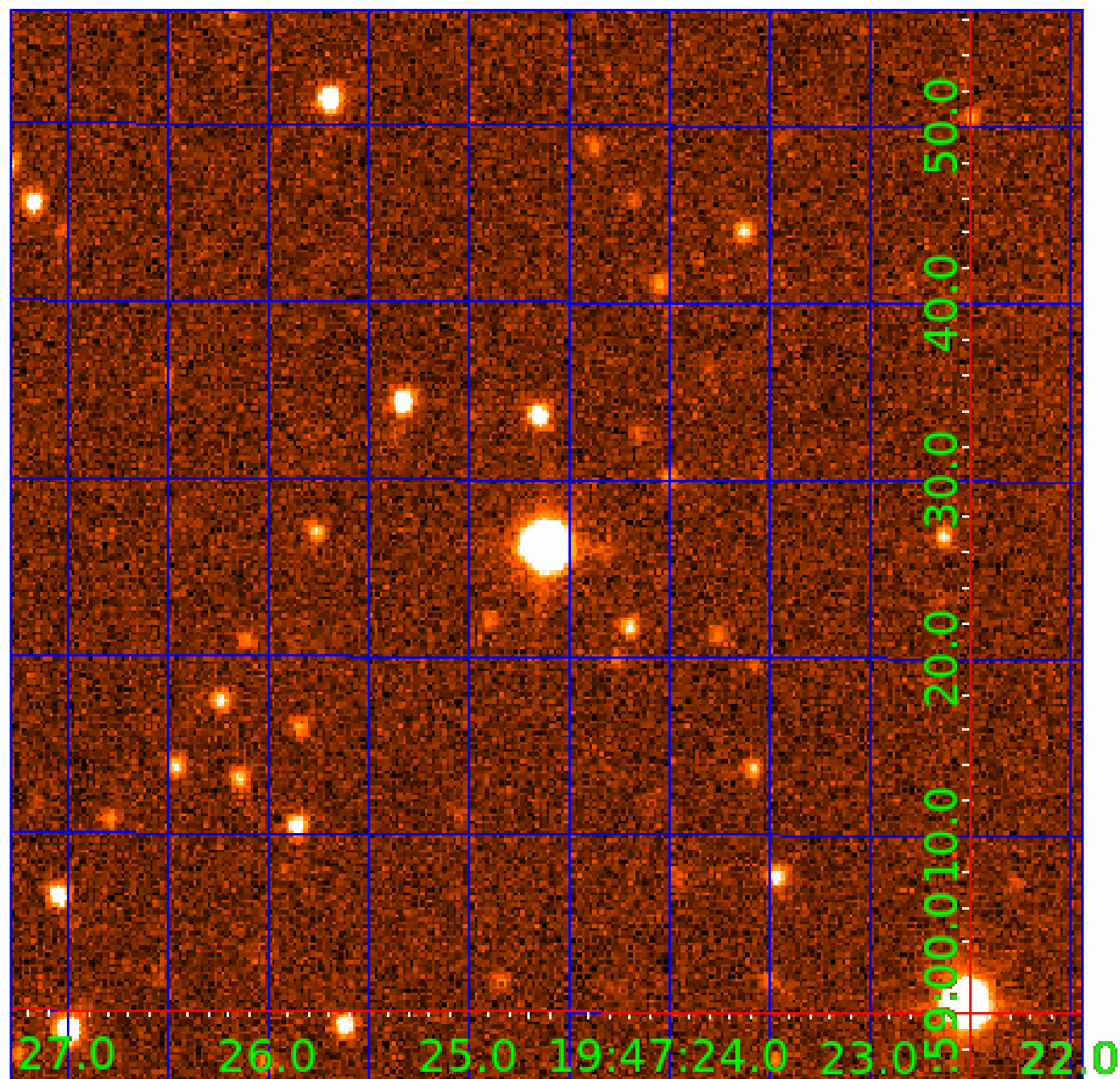


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005724523

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})
005724523-01	OBS	No	10.637250	133.165506	77.3	4.025	7.3	7.7	3.46	7333	3.63	2289.81
005724523-02	OBS	No	0.715053	131.910537	23.4	2.332	8.0	7.8	3.46	7333	1.96	83776.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005724523-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005724523-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

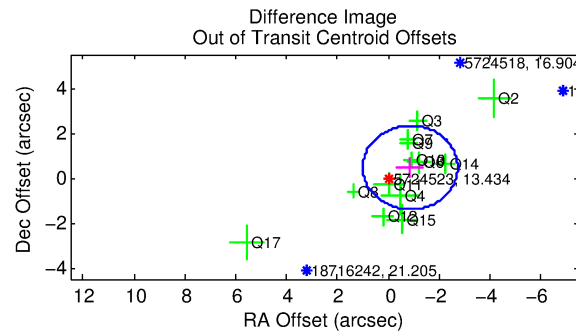
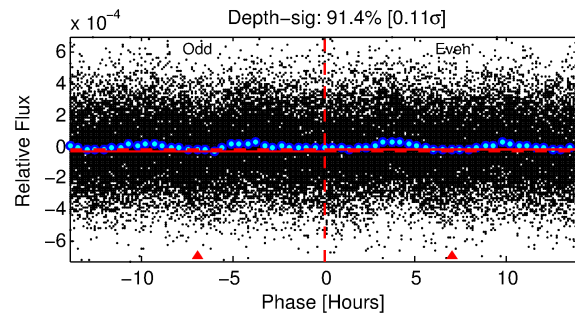
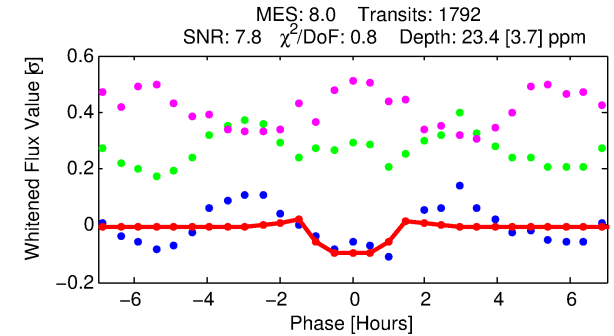
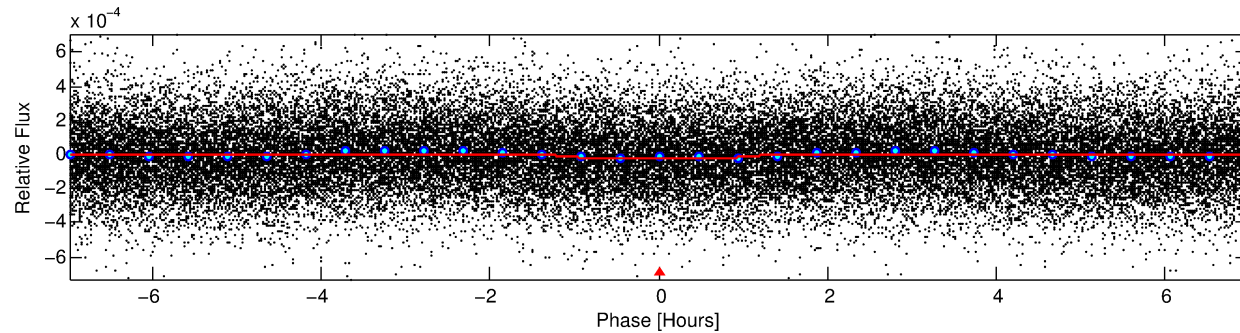
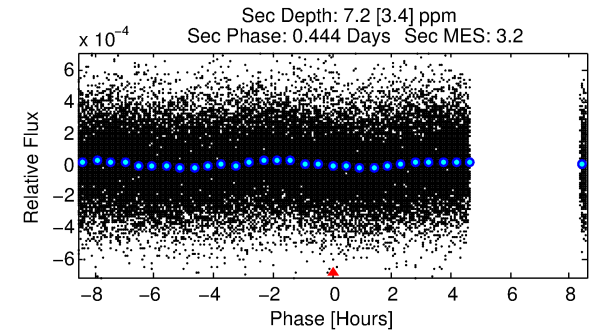
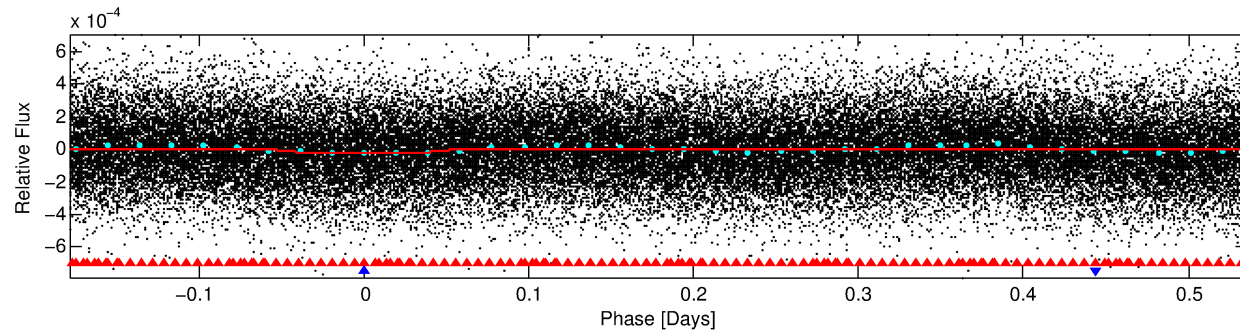
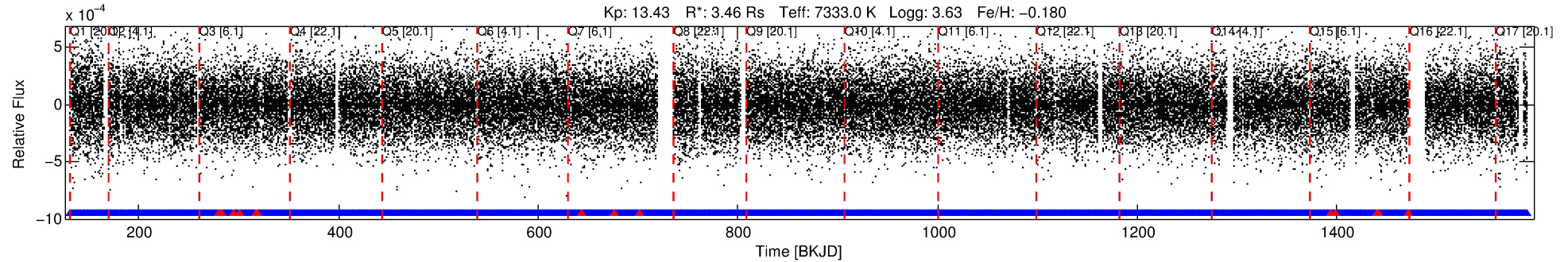
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005724523-02

No Significant Match Found

DV One-Page Summary

KIC: 5724523 Candidate: 2 of 2 Period: 0.715 d



DV Fit Results:

Period = 0.71505 [0.00001] d
Epoch = 131.9105 [0.0030] BKJD
Rp/R* = 0.0052 [0.0021]
a/R* = 1.42 [1.60]
b = 0.89 [0.51]
Seff = 83776.37 [72259.17]
Teq = 4338 [935] K
Rp = 1.96 [1.28] Re
a = 0.0193 [0.0100] AU
Ag = 0.38 [0.48] [-1.28σ]
Teffp = 5277 [1247] K [0.60σ]

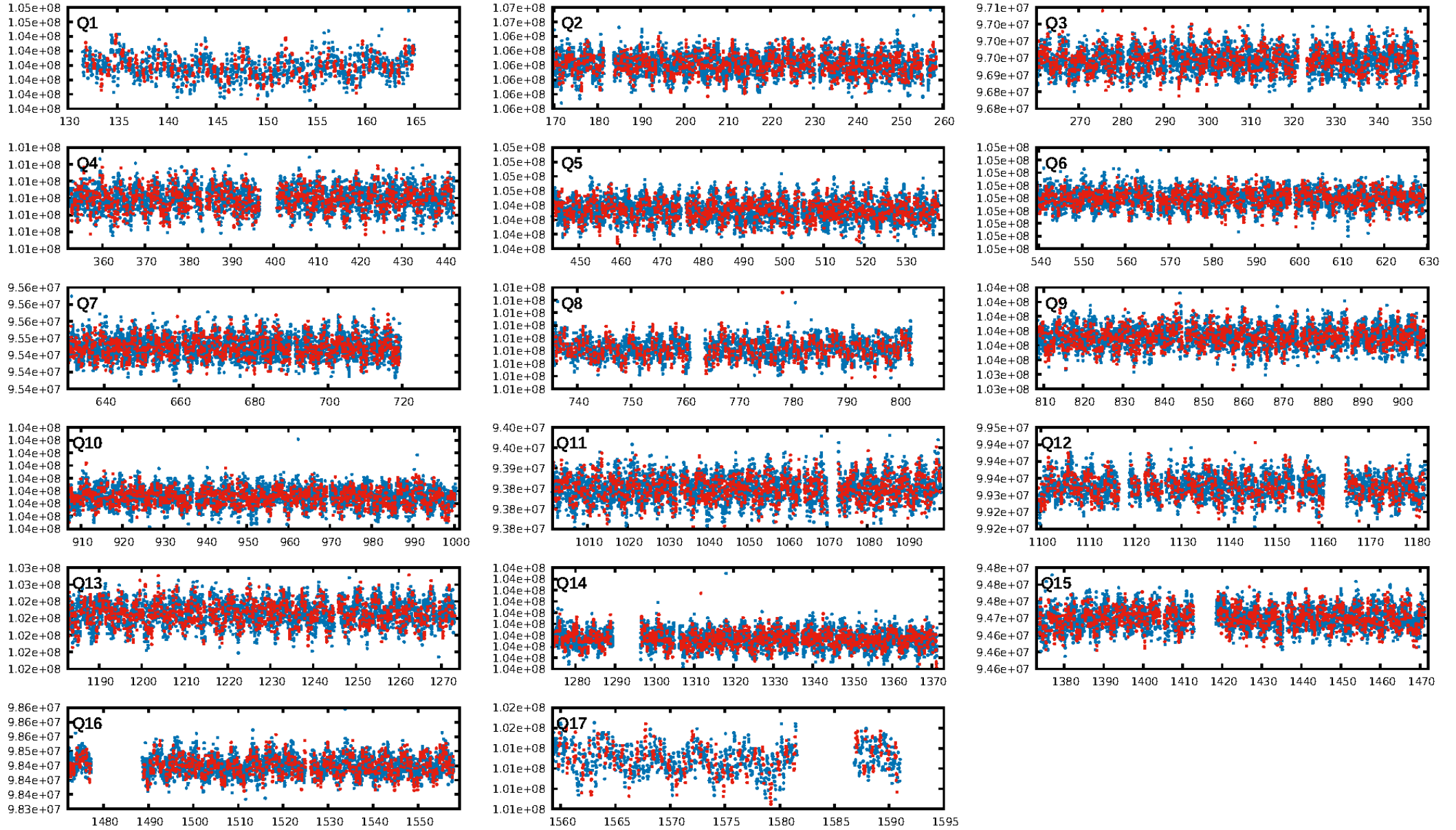
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [51.19σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.75e-12
RollingBand-fgt: 0.99 [1698/1712]
GhostDiagnostic-chr: 2.532
Centroid-sig: 14.1%
Centroid-so: 1.209 arcsec [1.17σ]
OotOffset-rm: 0.979 arcsec [1.58σ]
KicOffset-rm: 0.929 arcsec [1.38σ]
OotOffset-st: 4/4/3/3 [14]
KicOffset-st: 4/4/3/3 [14]
DiffImageQuality-fgm: 0.79 [11/14]
DiffImageOverlap-fno: 1.00 [17/17]

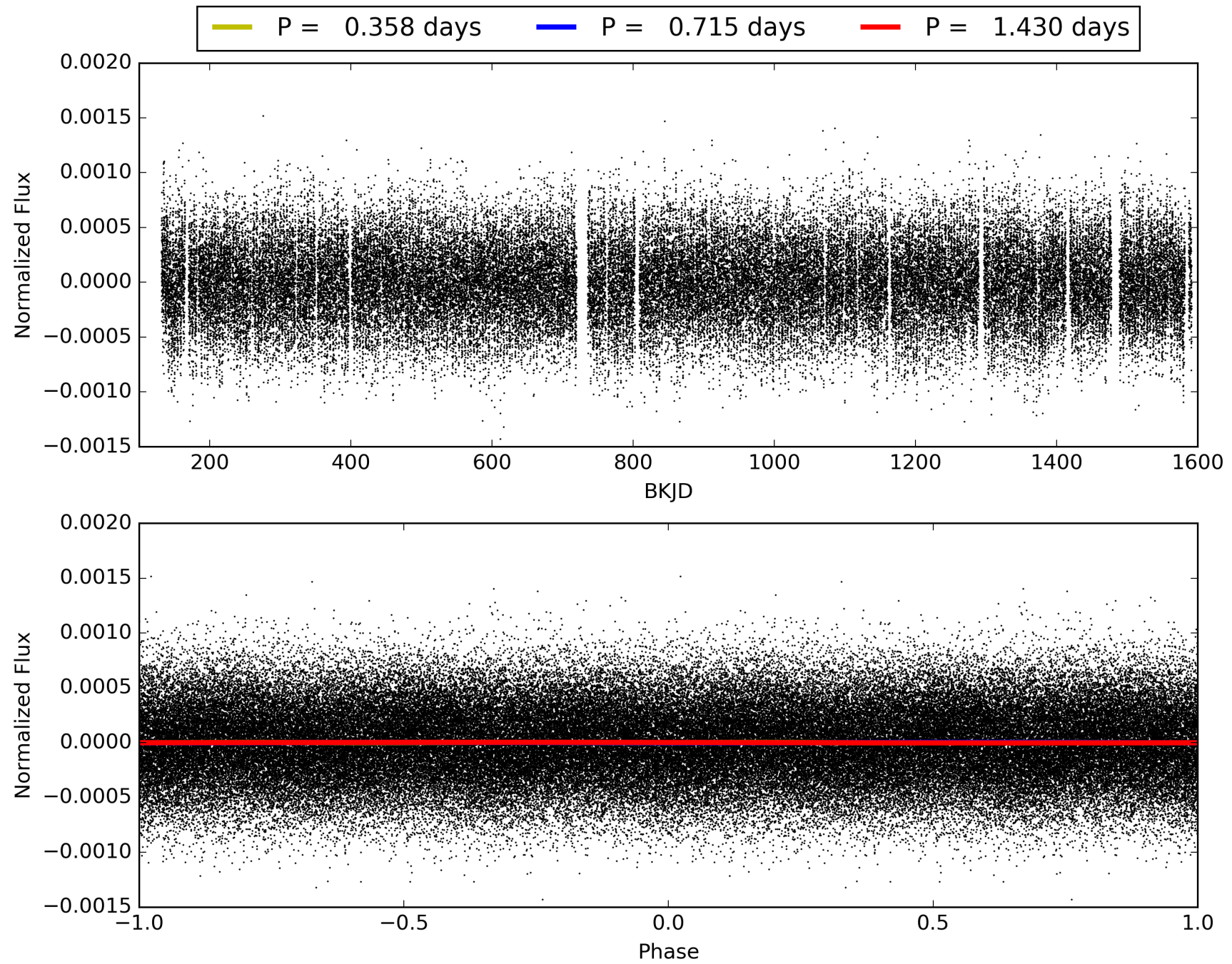
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:22:05 Z

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

TCE 005724523-02, PDC Light Curves

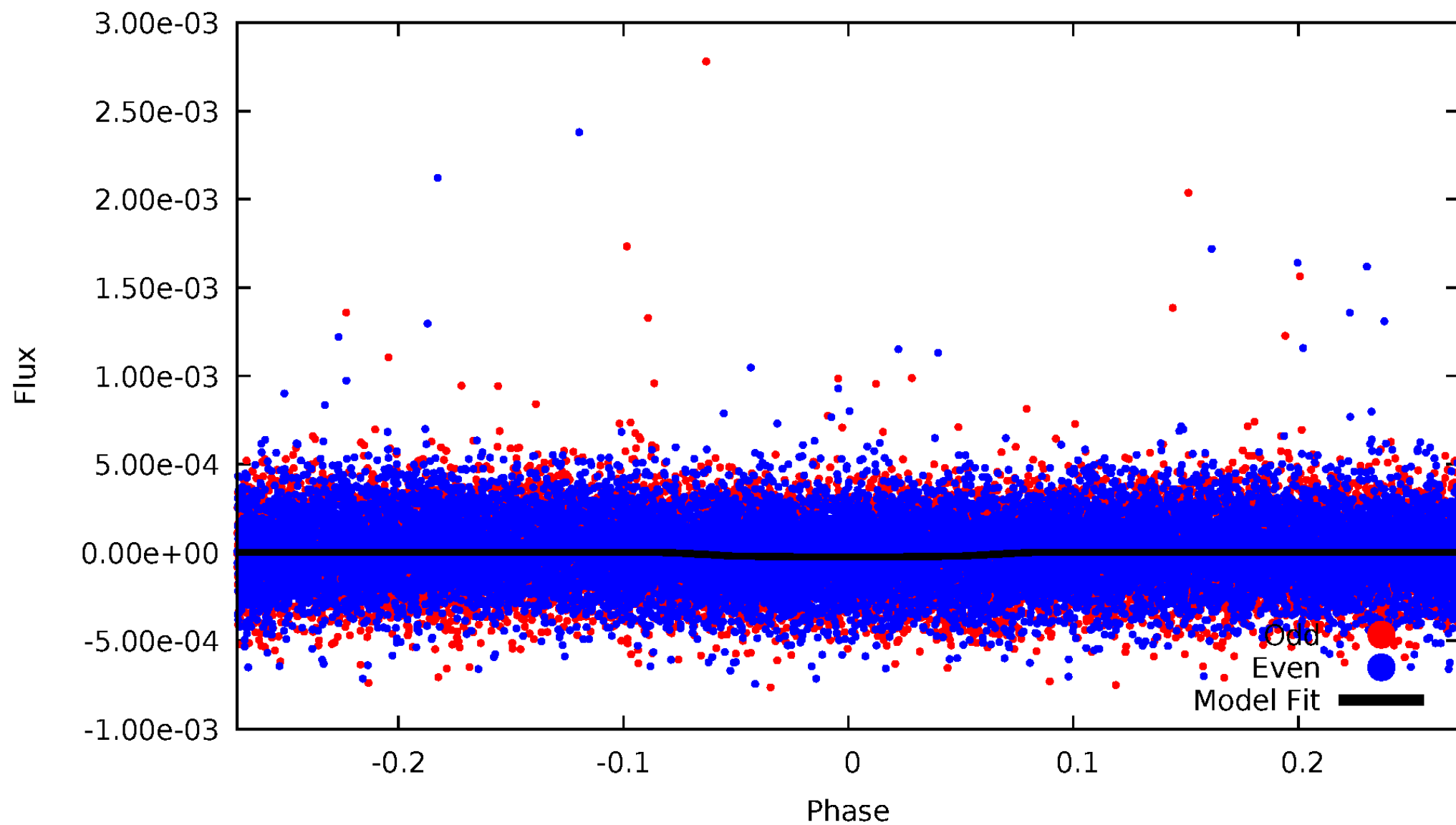


TCE 005724523-02



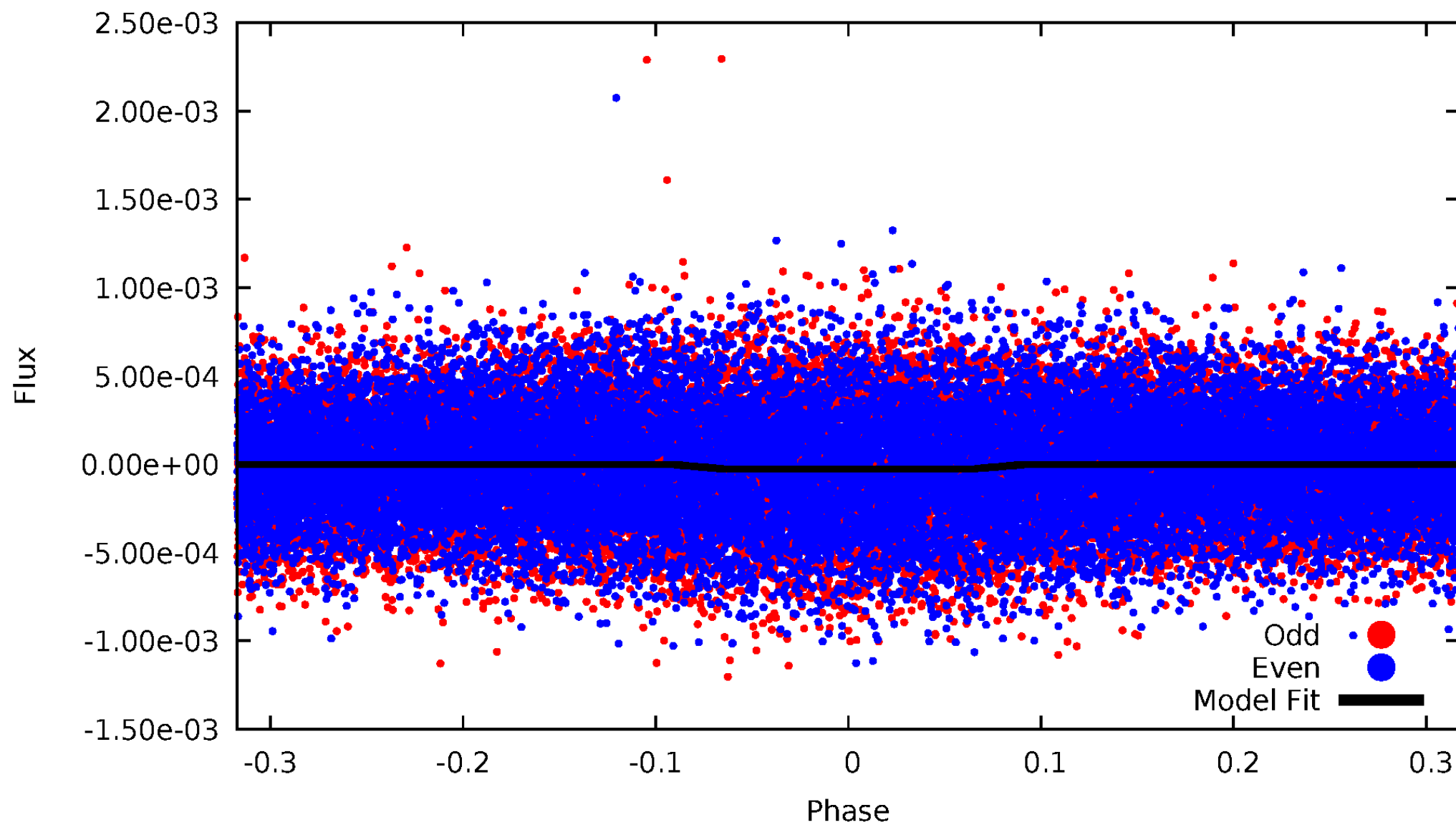
DV Odd/Even

TCE 005724523-02



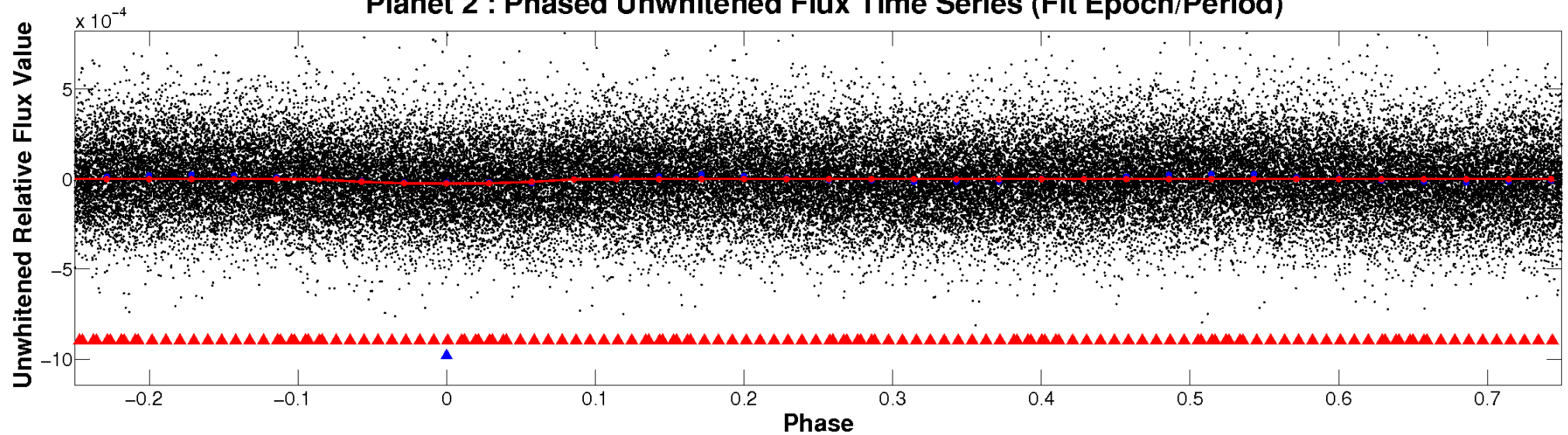
ALT Odd/Even

TCE 005724523-02

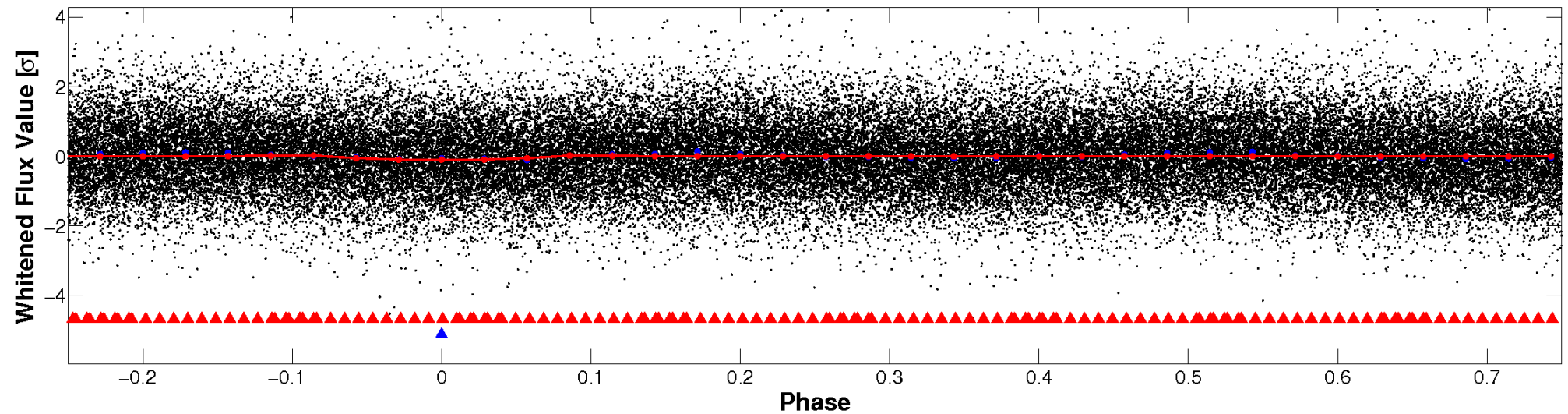


Non-Whitened Vs. Whitened Light Curve

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

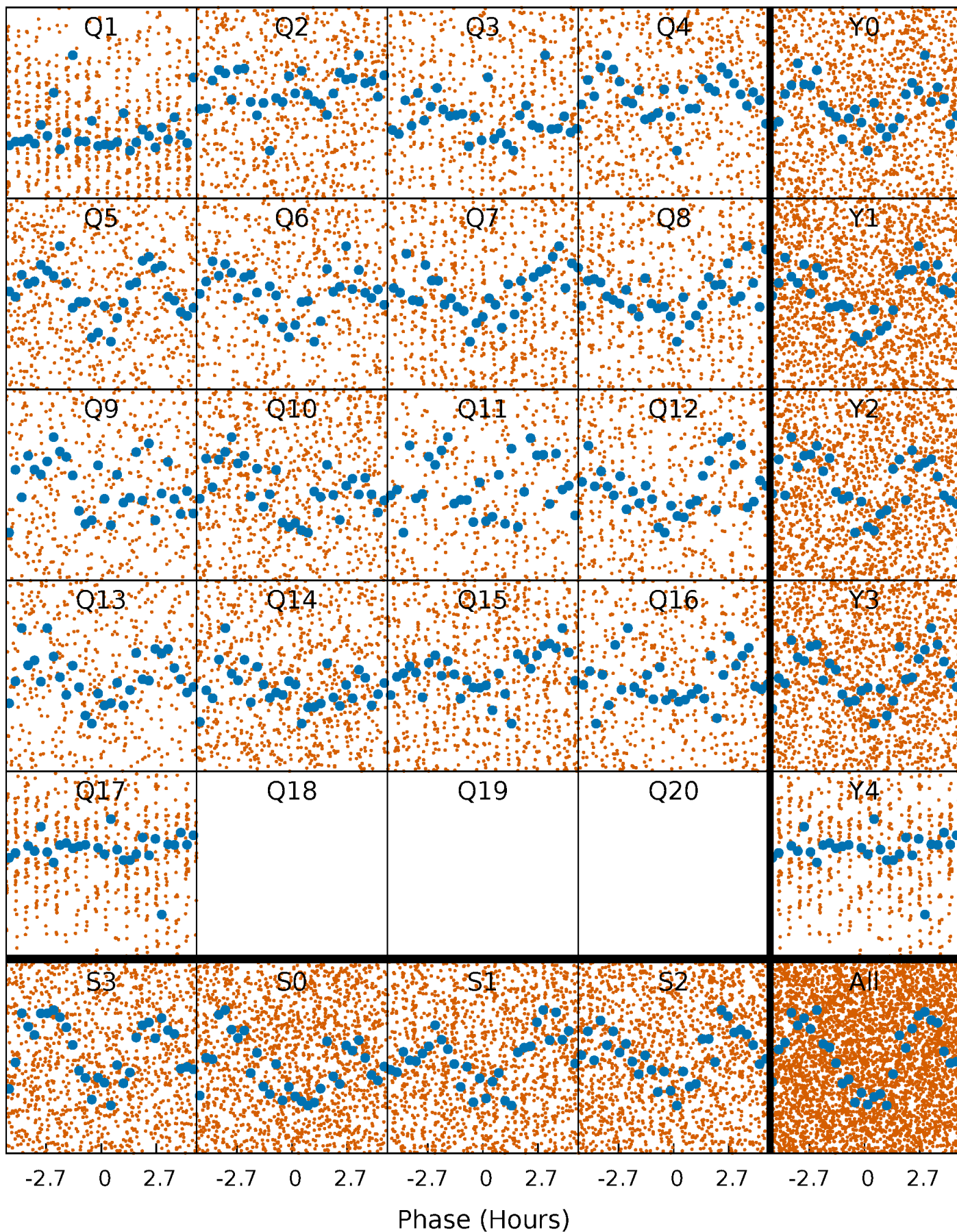


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



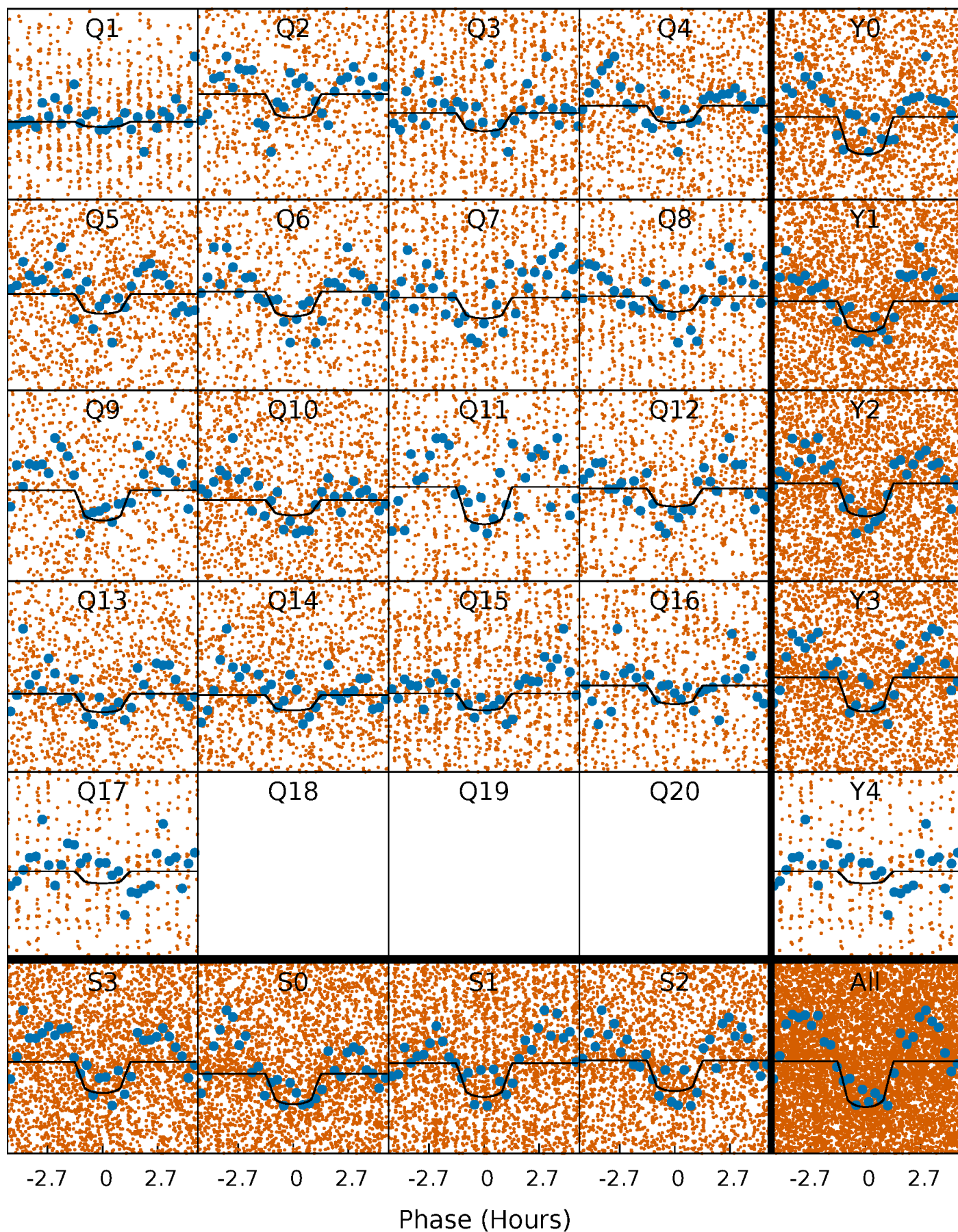
PDC Quarter-Phased Transit Curves

TCE 005724523-02 P= 0.715053 Days $T_0=131.910537$ (BKJD)



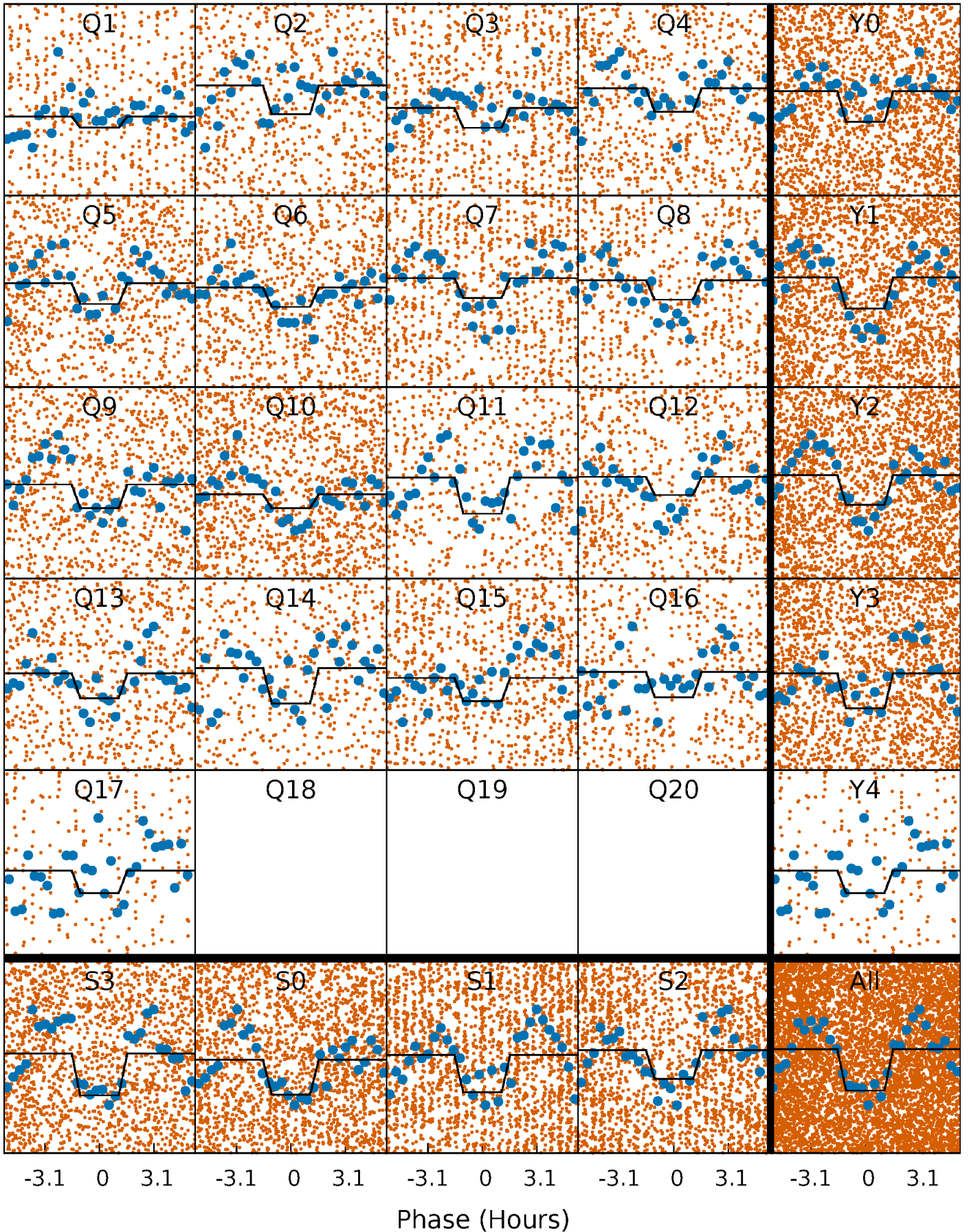
DV Quarter-Phased Transit Curves

TCE 005724523-02 P= 0.715053 Days $T_0=131.910537$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

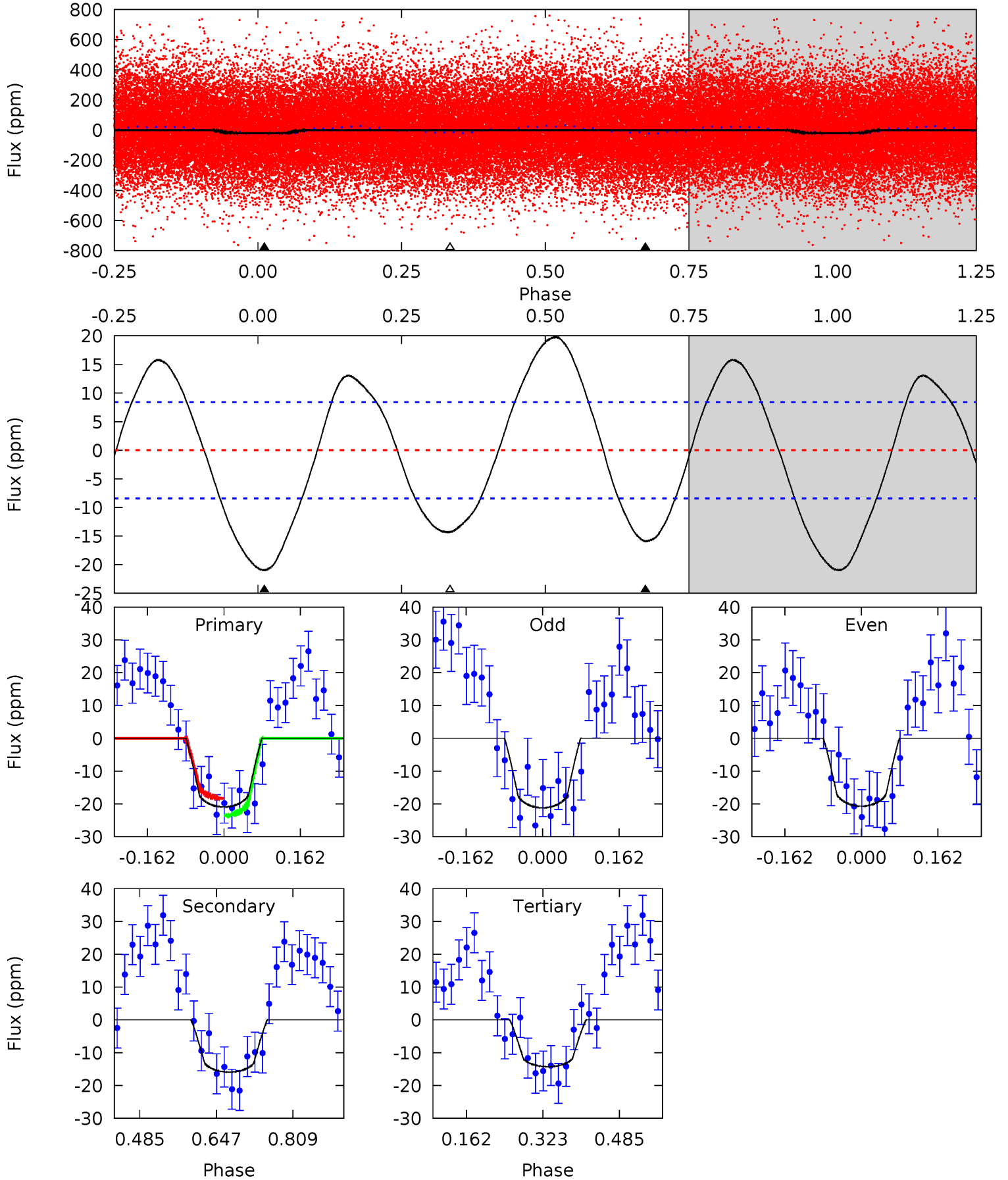
TCE 005724523-02 P= 0.715056 Days $T_0=131.909309$ (BKJD)



DV Model-Shift Uniqueness Test

005724523-02, P = 0.715053 Days, E = 131.195484 Days

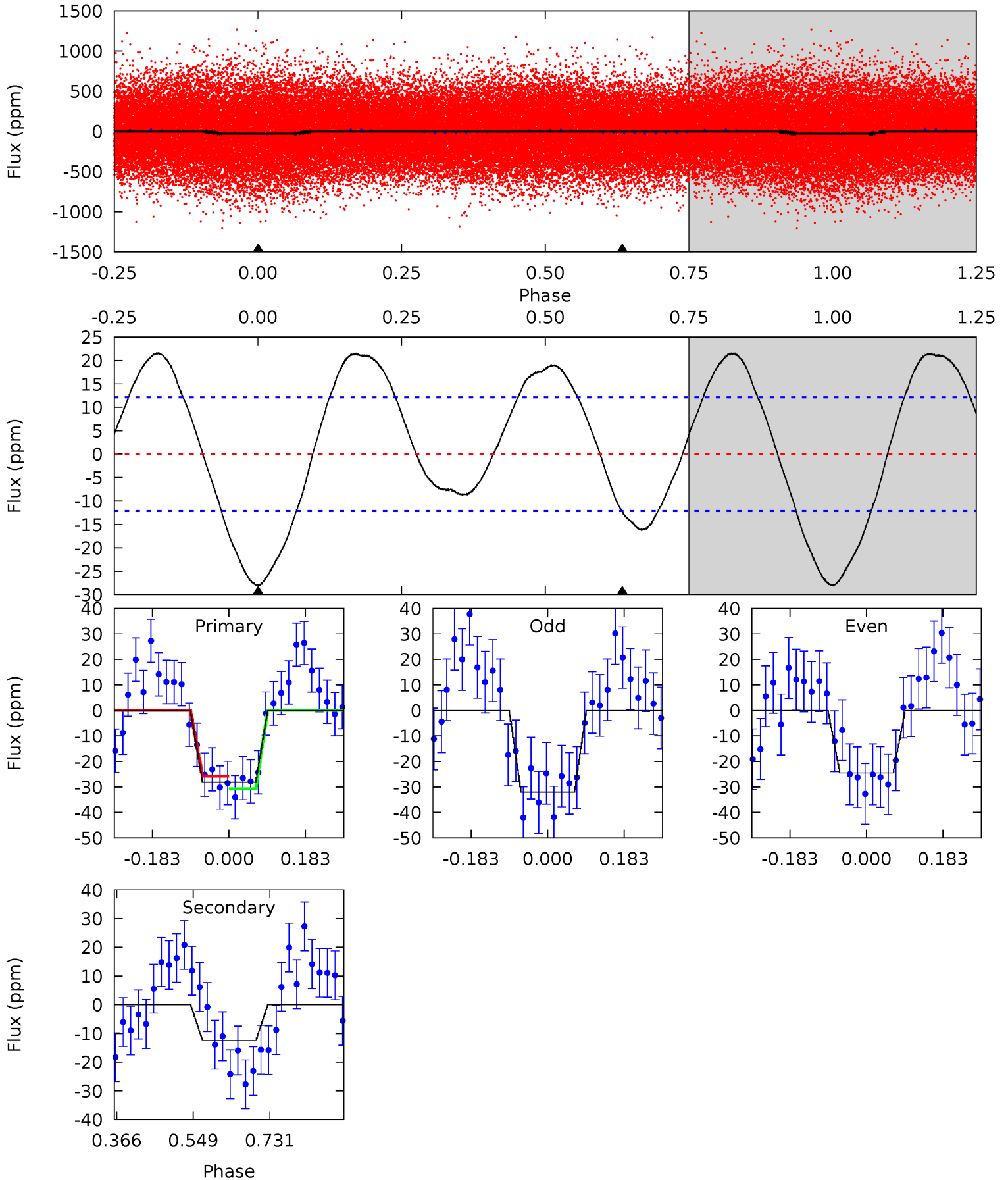
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	8.43	7.56	0	4.46	1.40	5.87	3.53	11.1	0.87	8.43	0.13	0.95	0.49	1.40



Alt Model-Shift Uniqueness Test

005724523-02, P = 0.715056 Days, E = 131.194253 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	4.54	0	0	4.44	1.33	3.64	10.3	10.3	4.54	4.54	1.36	1.41	0.43	0.93



Stellar Parameters For KIC 005724523

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7333^{+228}_{-304}	$3.629^{+0.504}_{-0.056}$	$-0.180^{+0.250}_{-0.350}$	$3.462^{+0.315}_{-1.783}$	$1.863^{+0.154}_{-0.461}$	$0.063^{+0.336}_{-0.013}$
	+3%/-4%	+14%/-2%	+139%/-194%	+9%/-52%	+8%/-25%	+531%/-20%
Source	KIC0	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 005724523-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-16 ± 2	$1.70^{+0.95}_{-0.73}$	5821^{+392}_{-790}	5765^{+2477}_{-1470}	$1.091^{+2.401}_{-0.632}$
Alt.	-12 ± 3	$1.77^{+0.80}_{-0.74}$	5848^{+395}_{-755}	5258^{+1988}_{-1734}	$0.808^{+1.526}_{-0.454}$

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

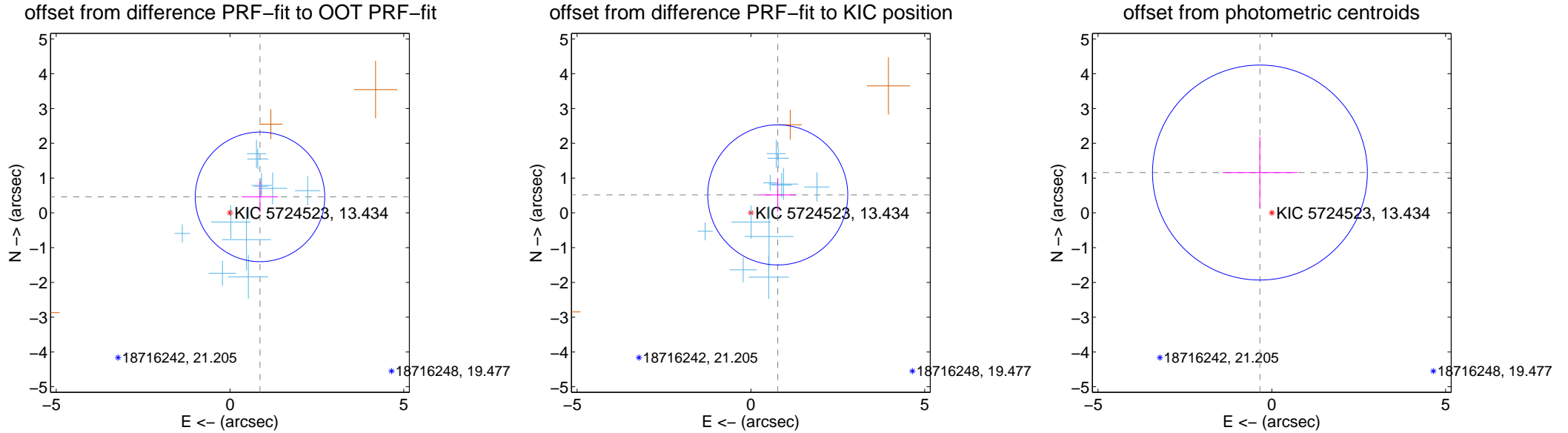
DV Centroid Data

Supplemental centroid analysis for 005724523-02. Kepler magnitude: 13.43. Transit SNR 7.85

There are 11 quarters with good PRF difference image offsets

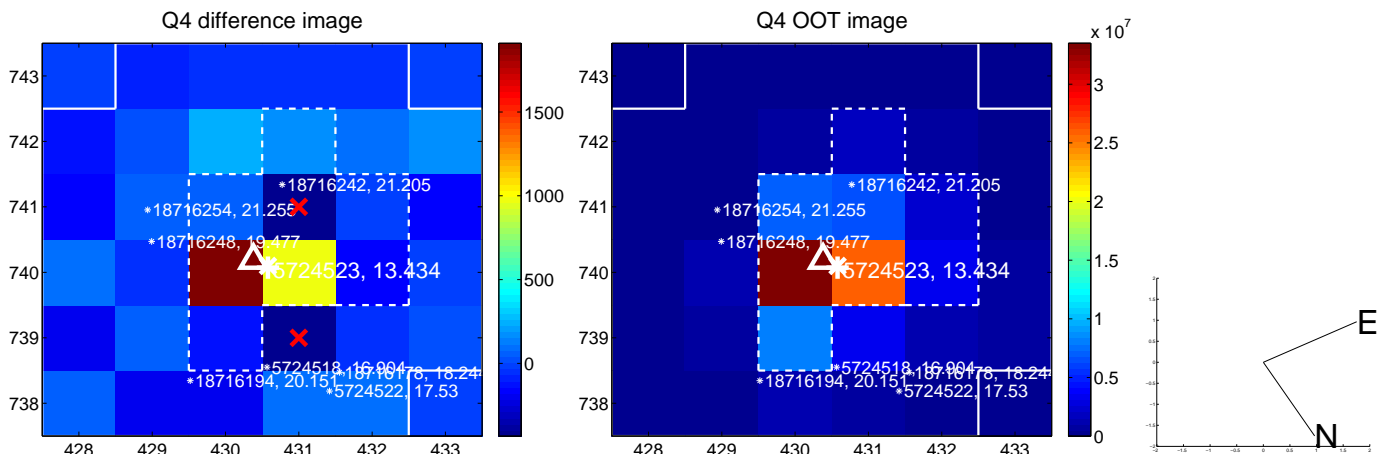
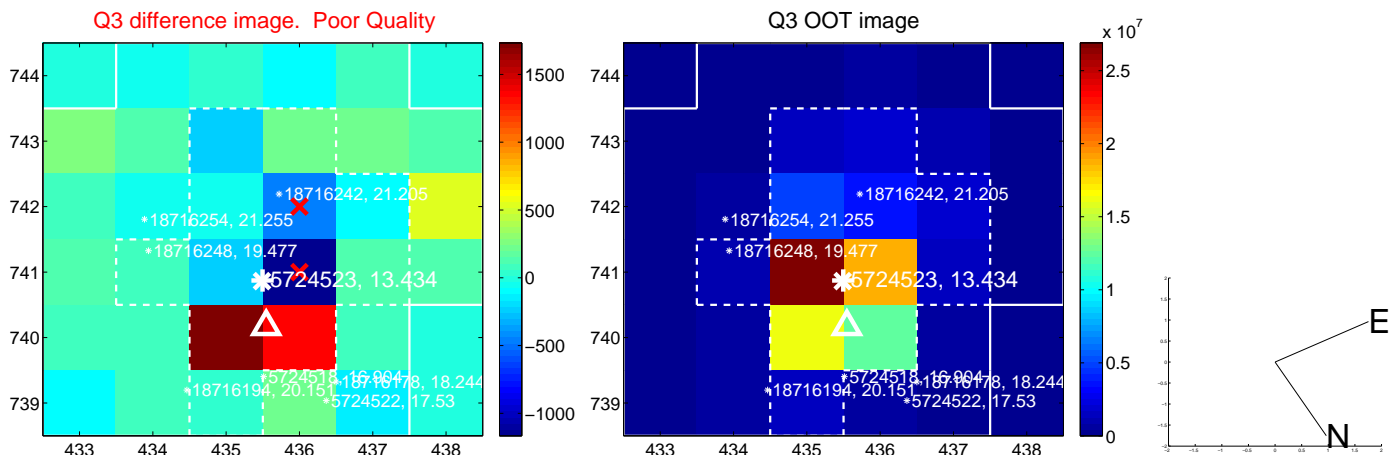
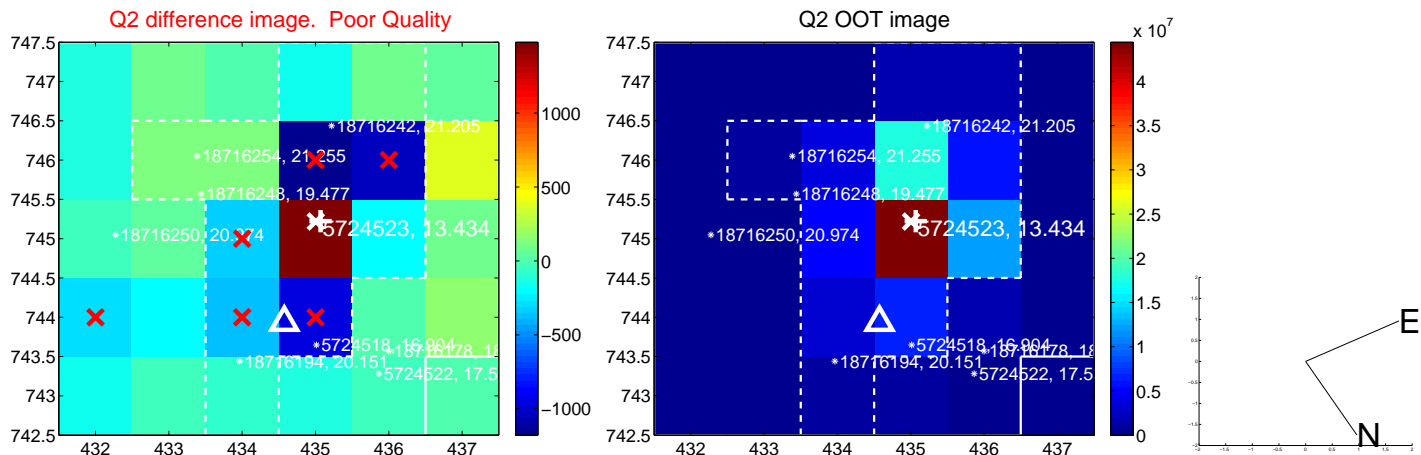
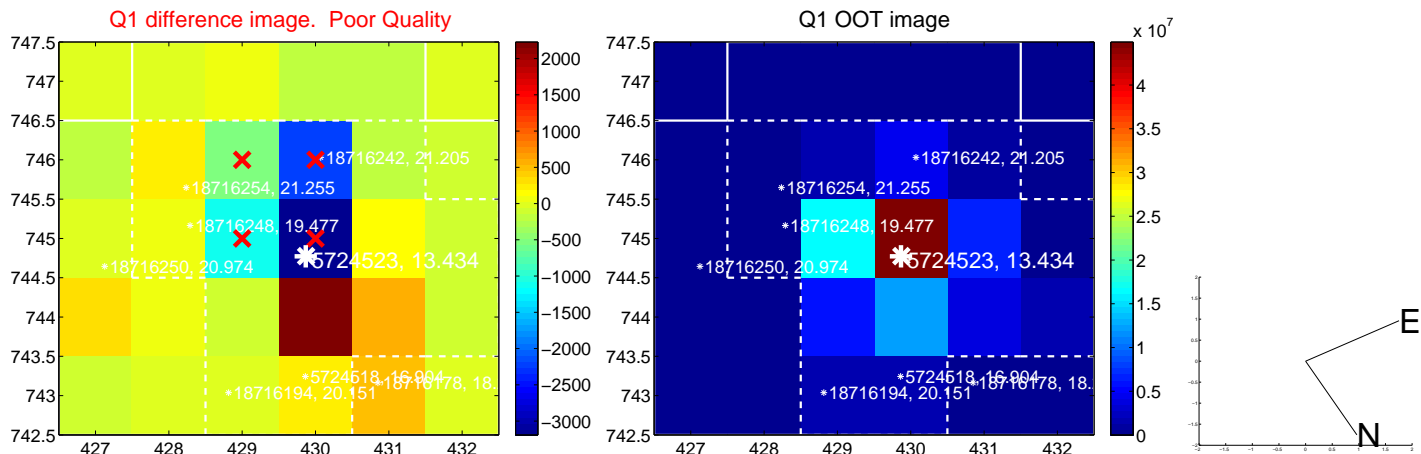
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.979 ± 0.621	1.58	-0.864 ± 0.517	0.460 ± 0.442
PRF-fit source offset from KIC position	0.929 ± 0.671	1.38	-0.772 ± 0.538	0.516 ± 0.480
photometric centroid source offset	1.21 ± 1.03	1.17	0.34 ± 1.08	1.16 ± 1.03

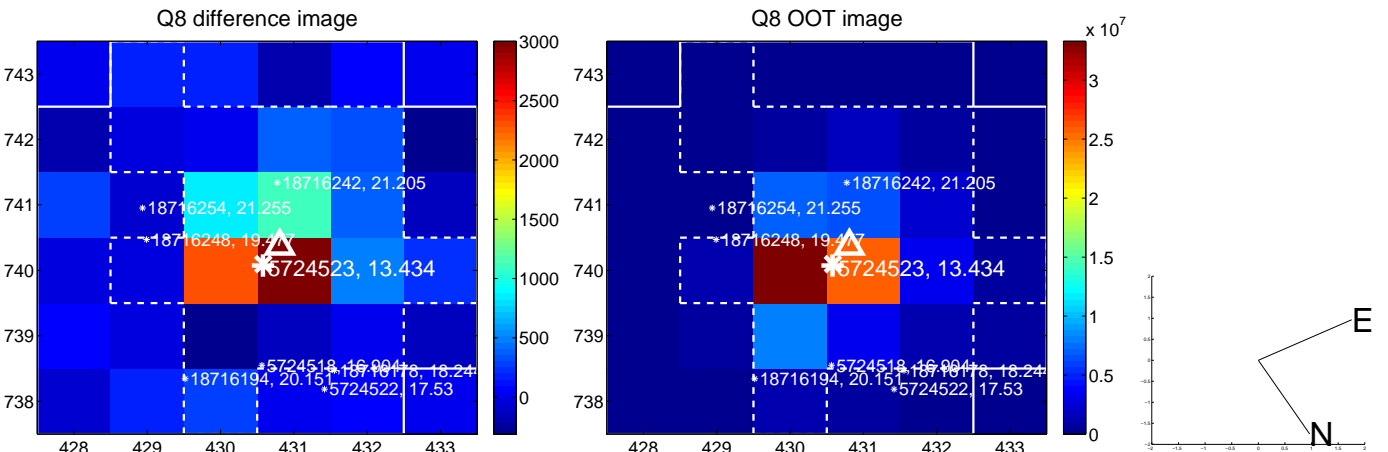
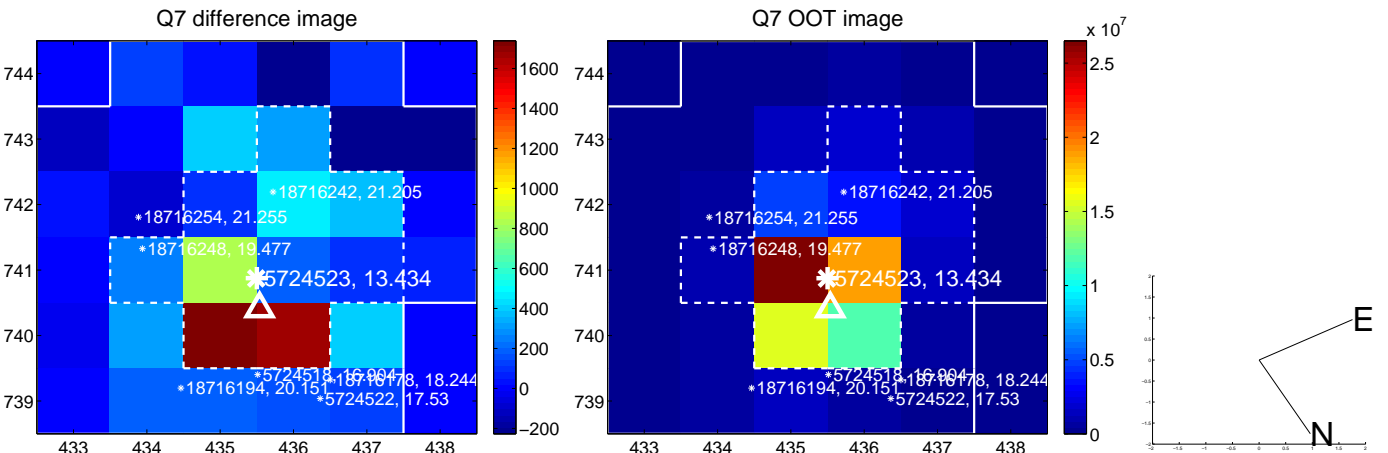
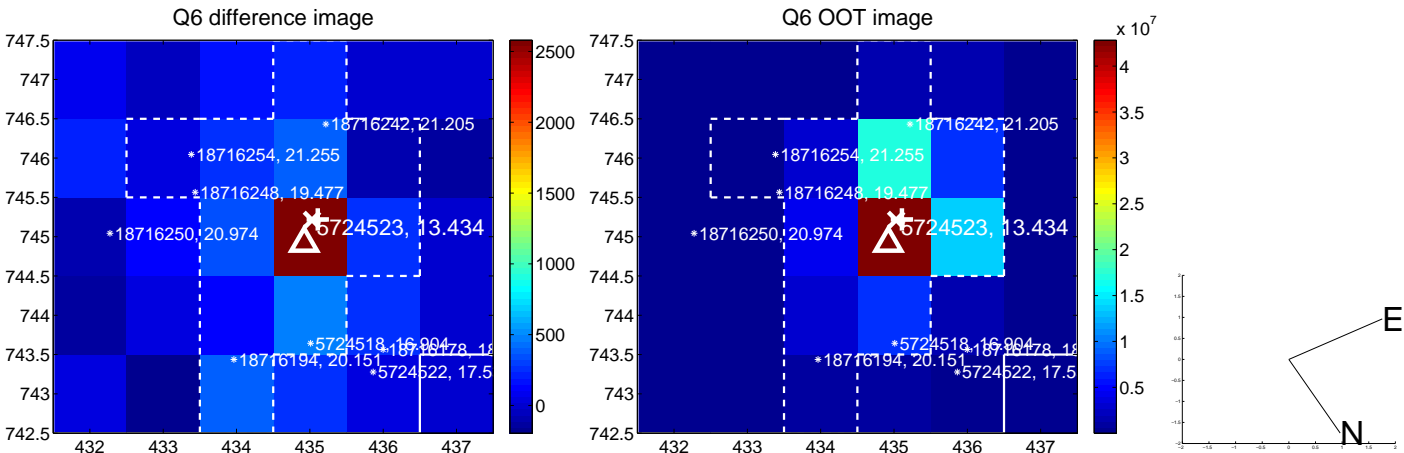
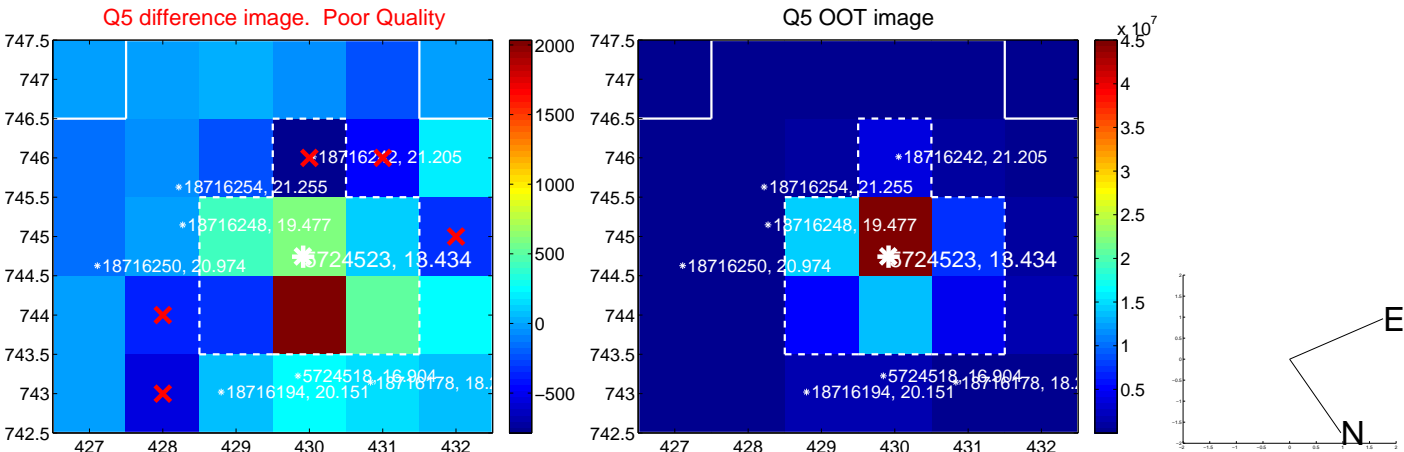


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

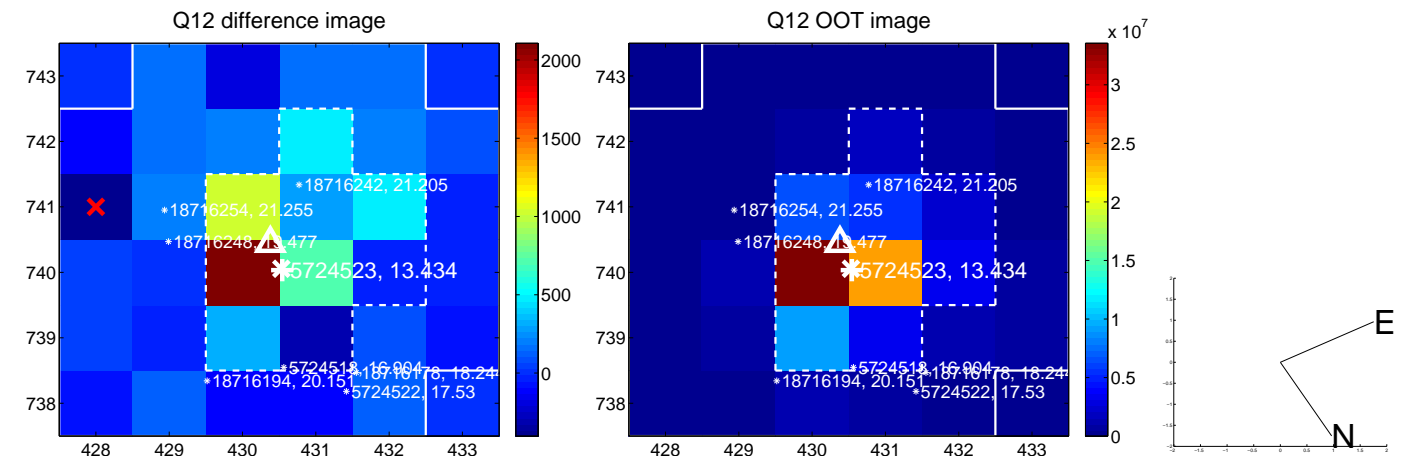
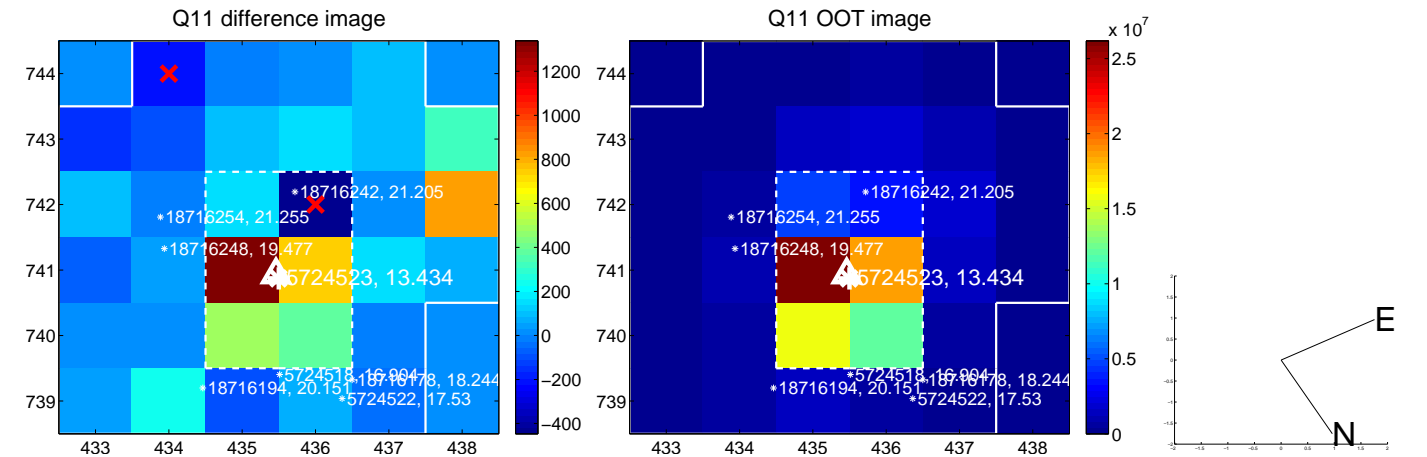
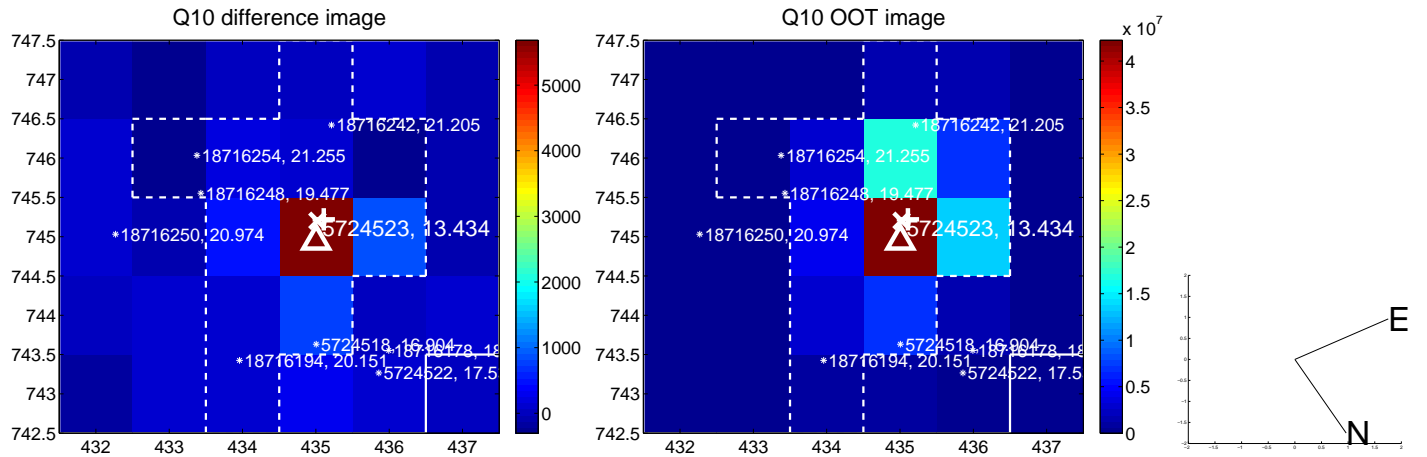
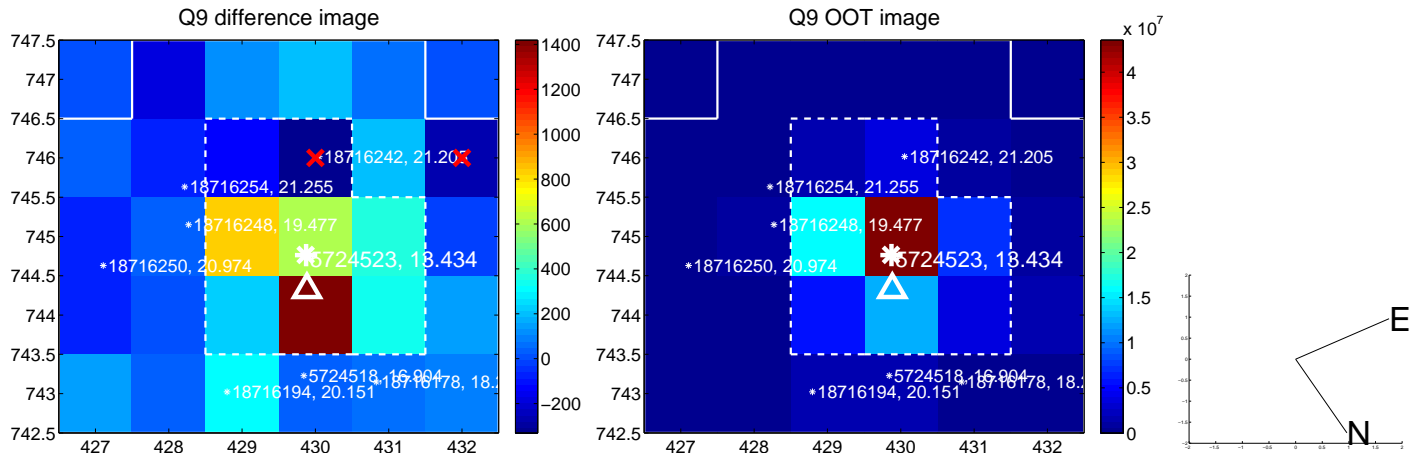
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



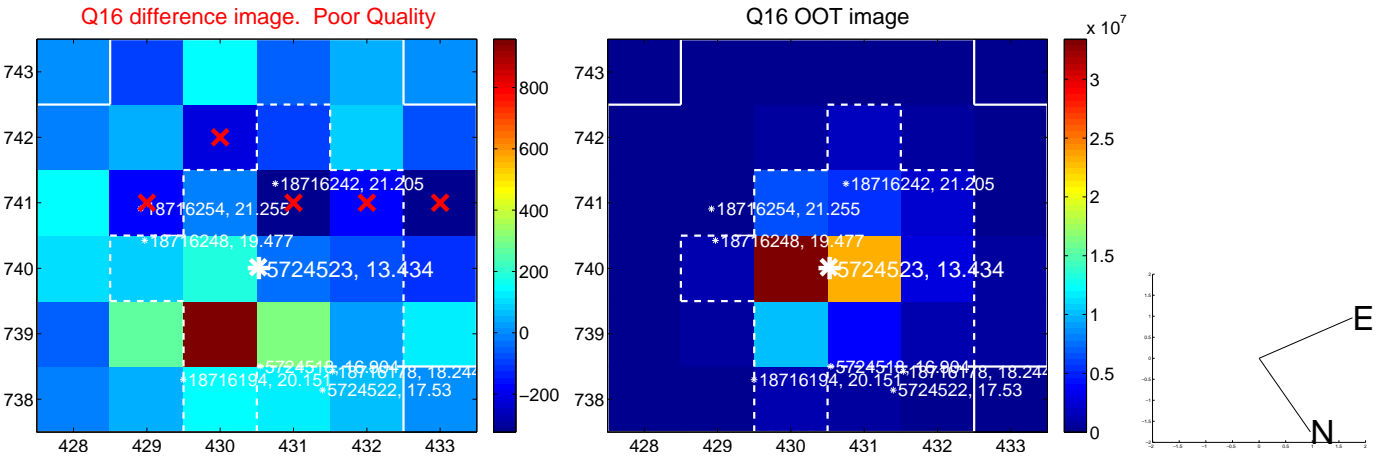
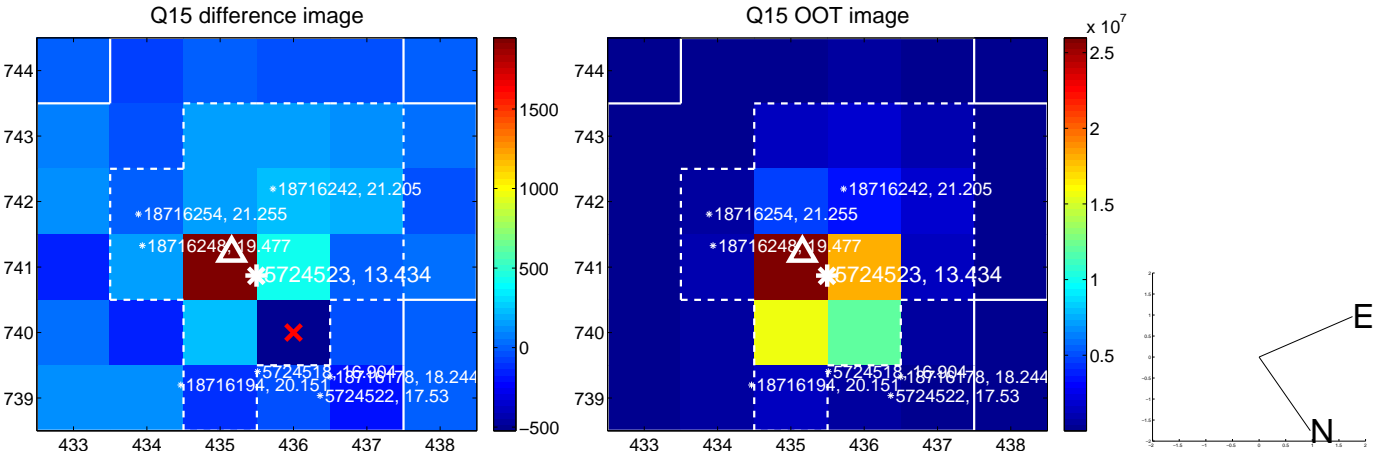
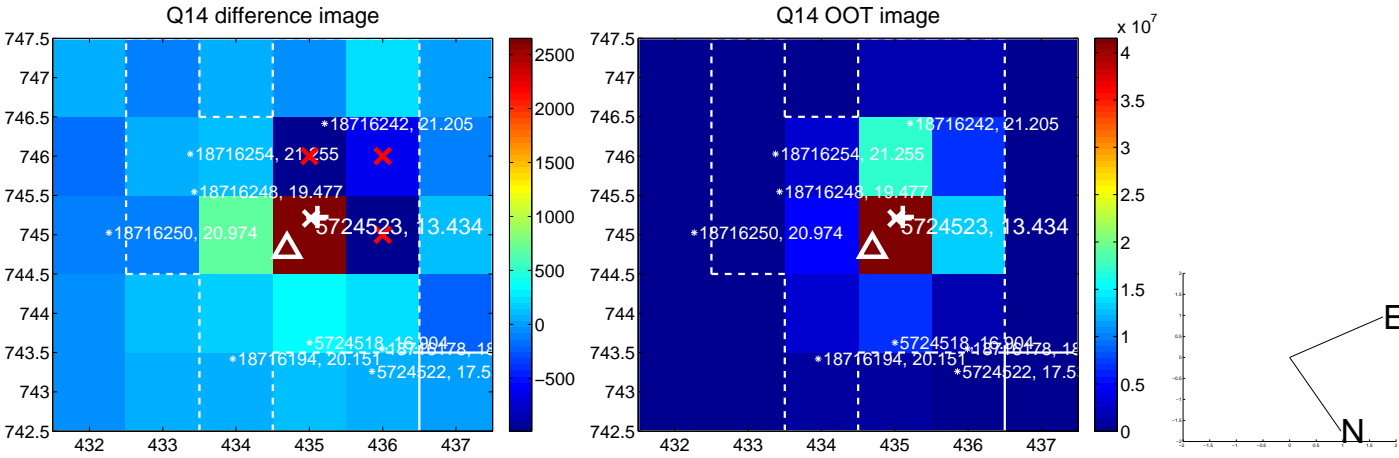
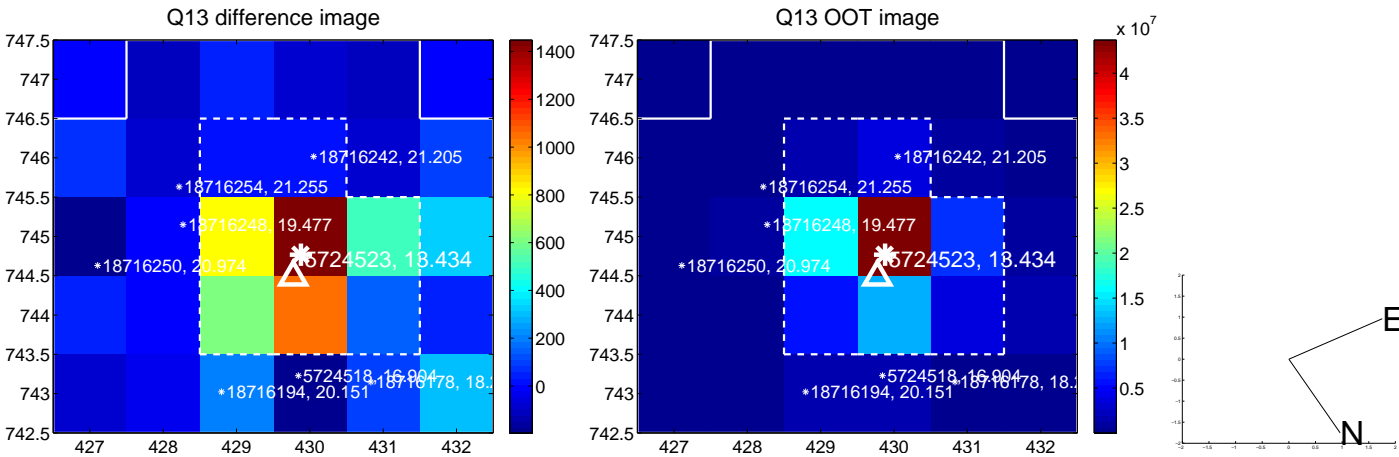
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



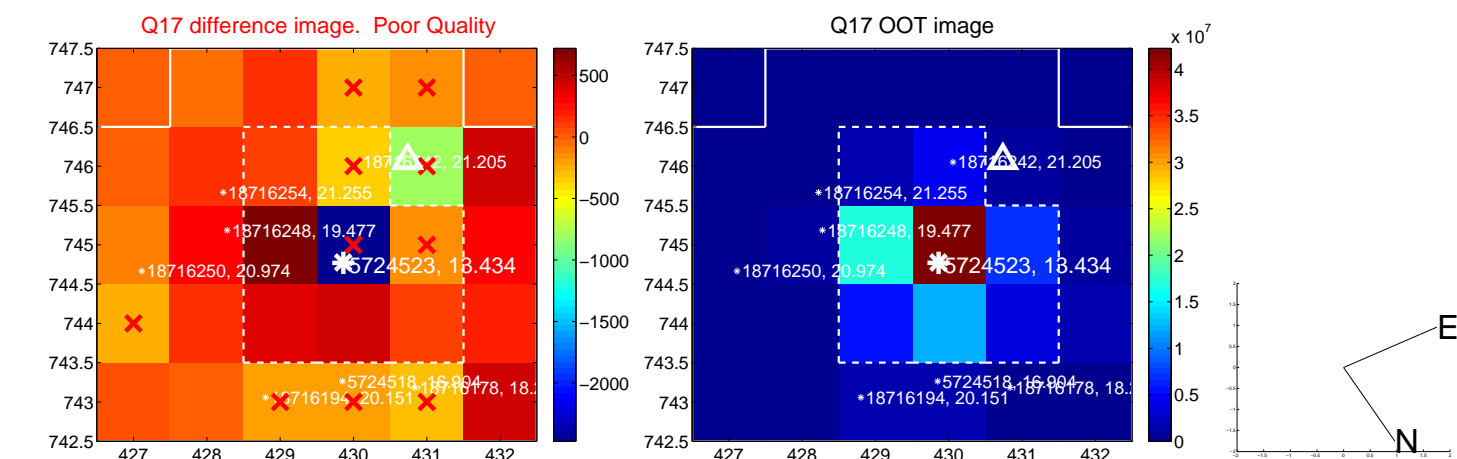
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



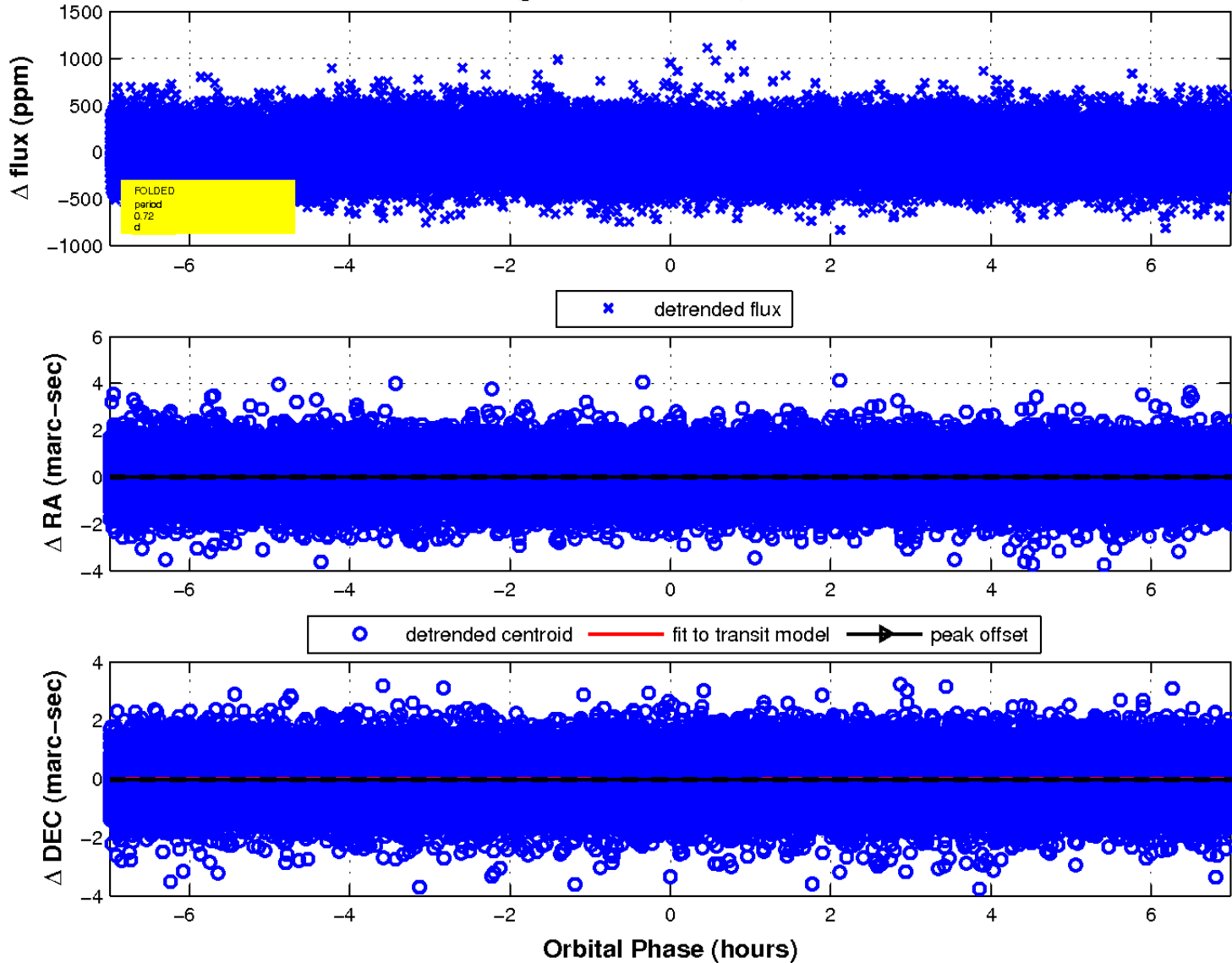
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

