

KIC 010741920

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})
010741920-01	OBS	No	0.690034	131.515703	142.6	2.810	15.1	14.0	3.25	8048	4.53	105478.30
010741920-02	OBS	No	1.015841	131.599360	177.8	3.652	10.0	11.0	3.25	8048	5.05	62982.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010741920-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010741920-02	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

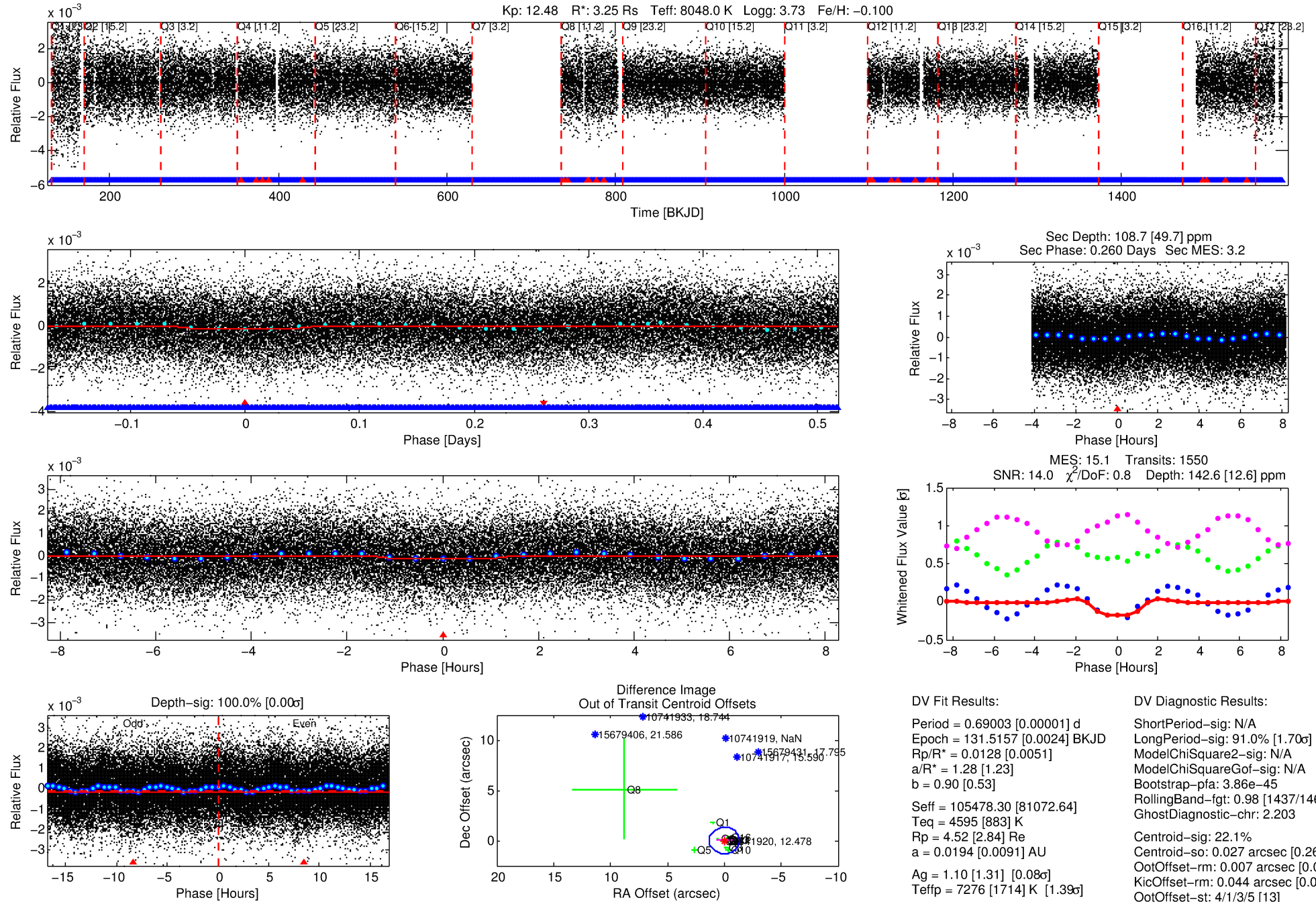
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010741920-01

No Significant Match Found

DV One-Page Summary

KIC: 10741920 Candidate: 1 of 2 Period: 0.690 d



DV Fit Results:

Period = 0.69003 [0.00001] d
Epoch = 131.5157 [0.0024] BKJD
Rp/R* = 0.0128 [0.0051]
a/R* = 1.28 [1.23]
b = 0.90 [0.53]
Seff = 105478.30 [81072.64]
Teq = 4595 [883] K
Rp = 4.52 [2.84] Re
a = 0.0194 [0.0091] AU
Ag = 1.10 [1.31] [0.08 σ]
Teffp = 7276 [1714] K [1.39 σ]

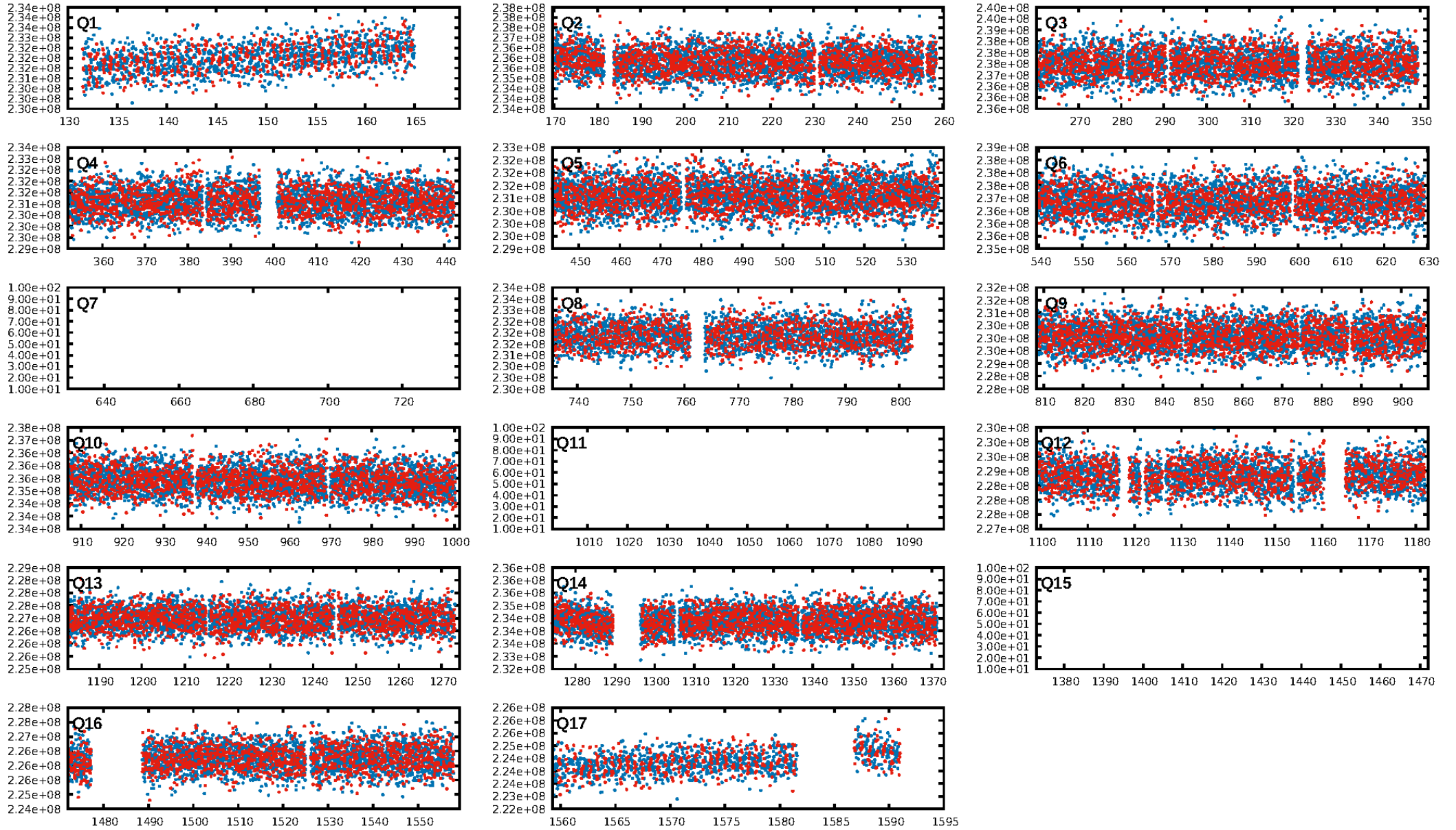
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 91.0% [1.70 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.86e-45
RollingBand-fgt: 0.98 [1437/1461]
GhostDiagnostic-chr: 2.203
Centroid-sig: 22.1%
Centroid-so: 0.027 arcsec [0.26 σ]
OotOffset-rm: 0.007 arcsec [0.02 σ]
OotOffset-st: 4/1/3/5 [13]
KicOffset-rm: 0.044 arcsec [0.07 σ]
KicOffset-st: 4/1/3/5 [13]
DiffImageQuality-fgm: 0.77 [10/13]
DiffImageOverlap-fno: 1.00 [14/14]

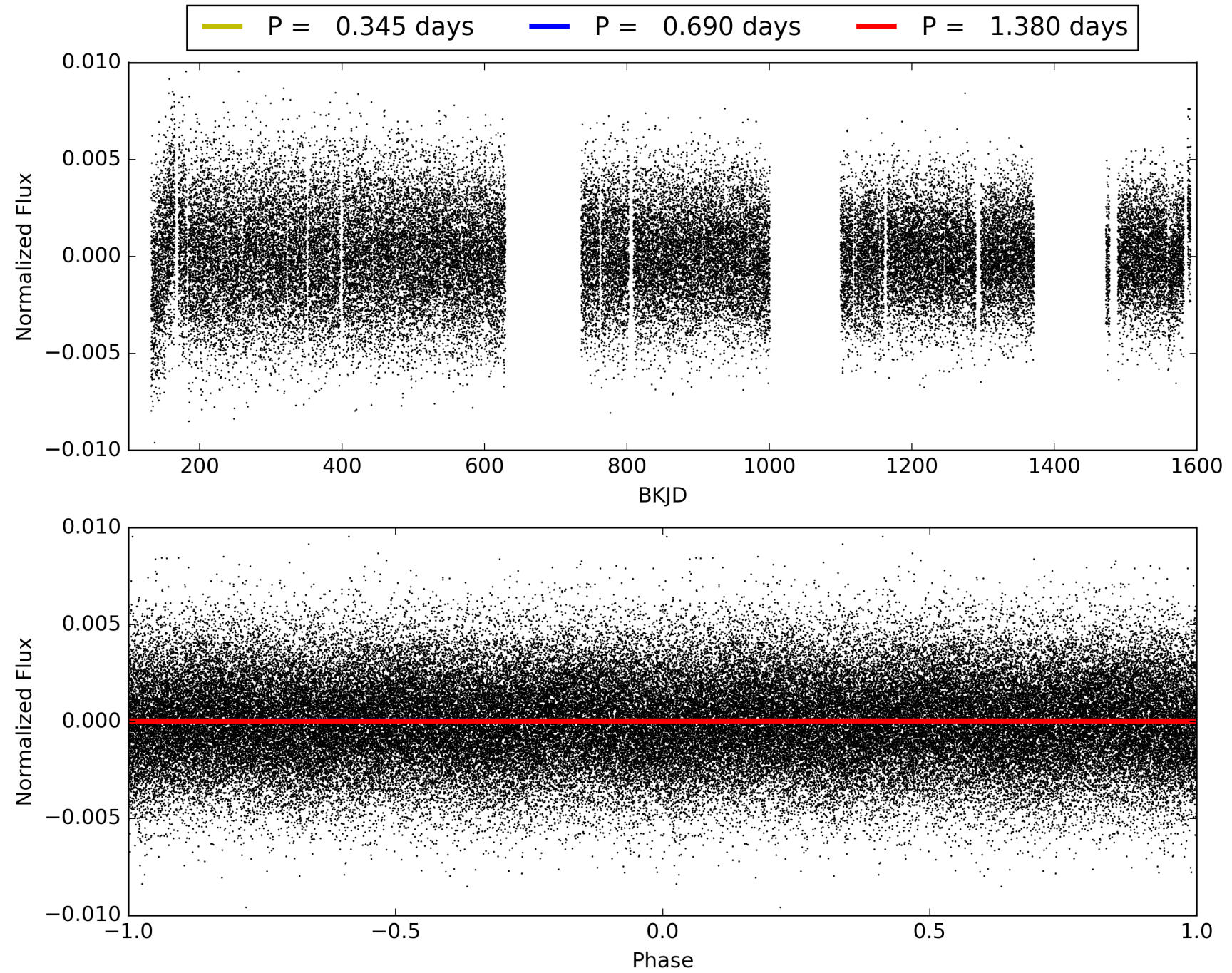
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 17:23:38 Z

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

TCE 010741920-01, PDC Light Curves

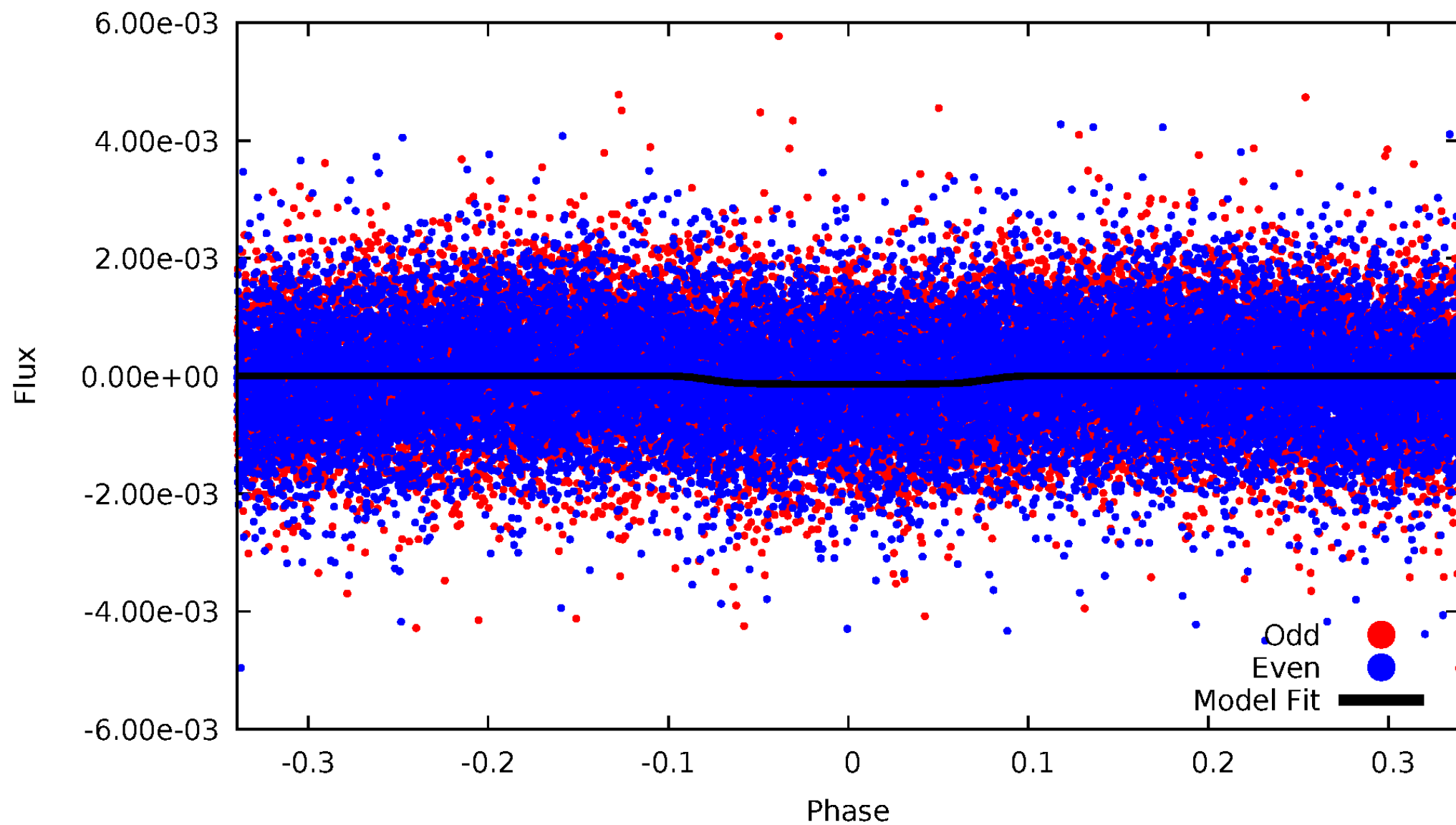


TCE 010741920-01



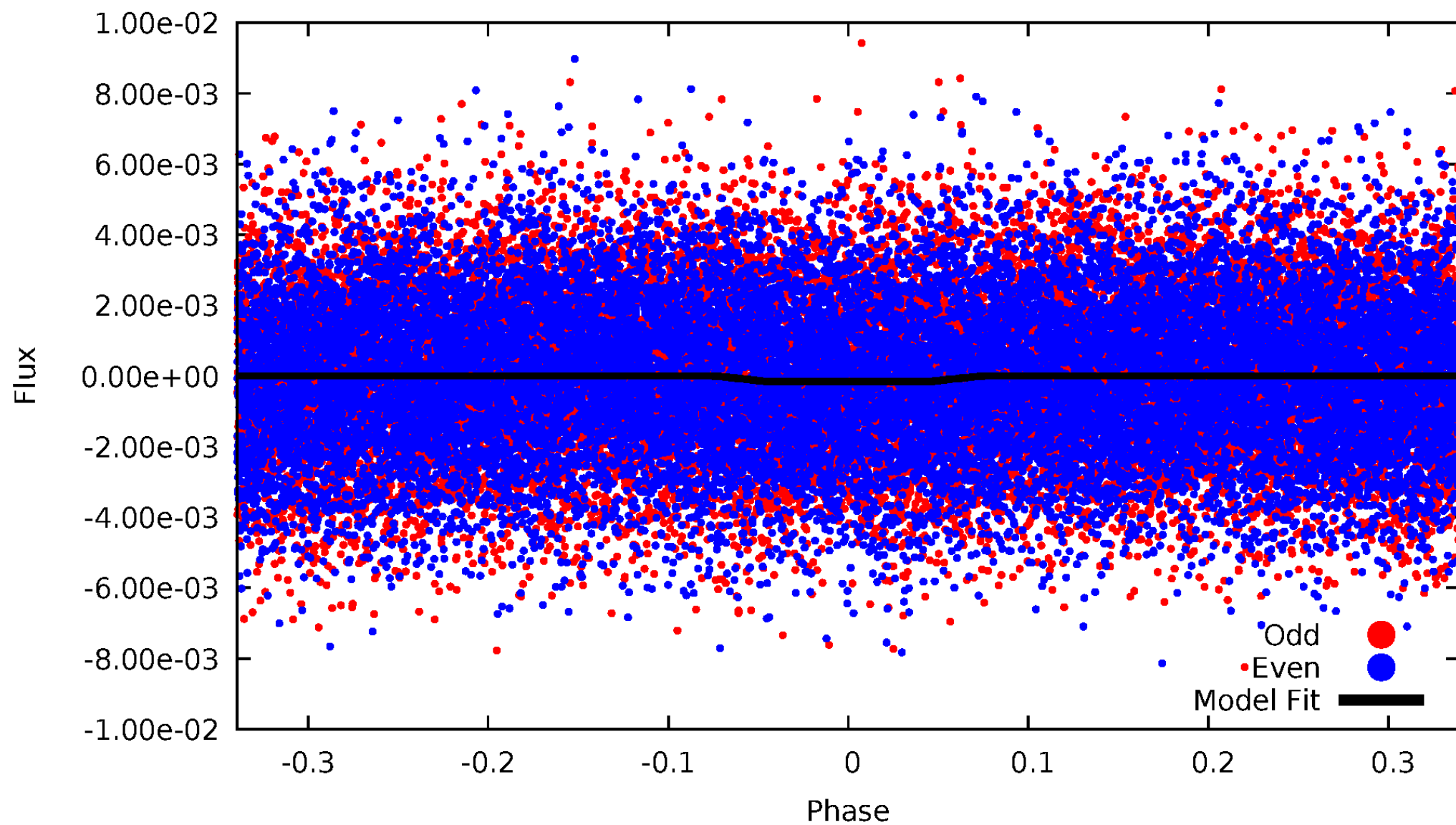
DV Odd/Even

TCE 010741920-01



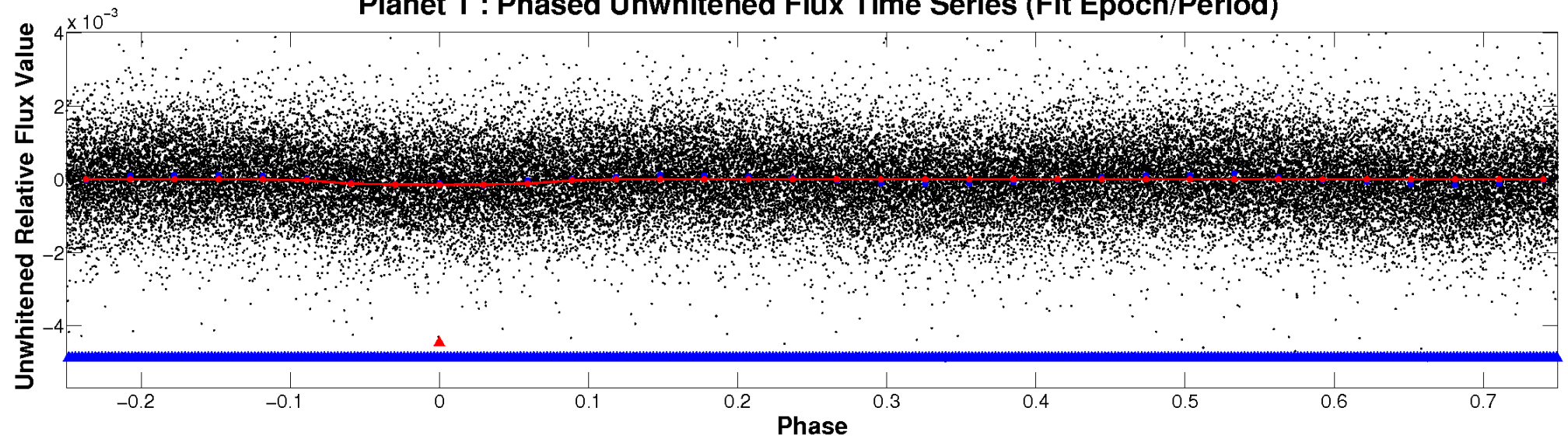
ALT Odd/Even

TCE 010741920-01

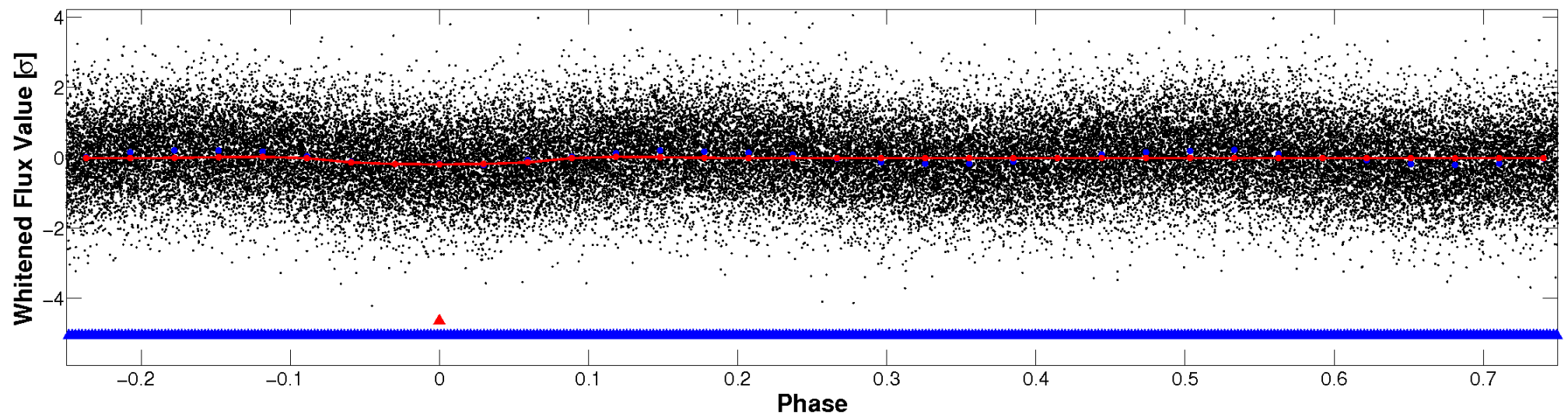


Non-Whitened Vs. Whitened Light Curve

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

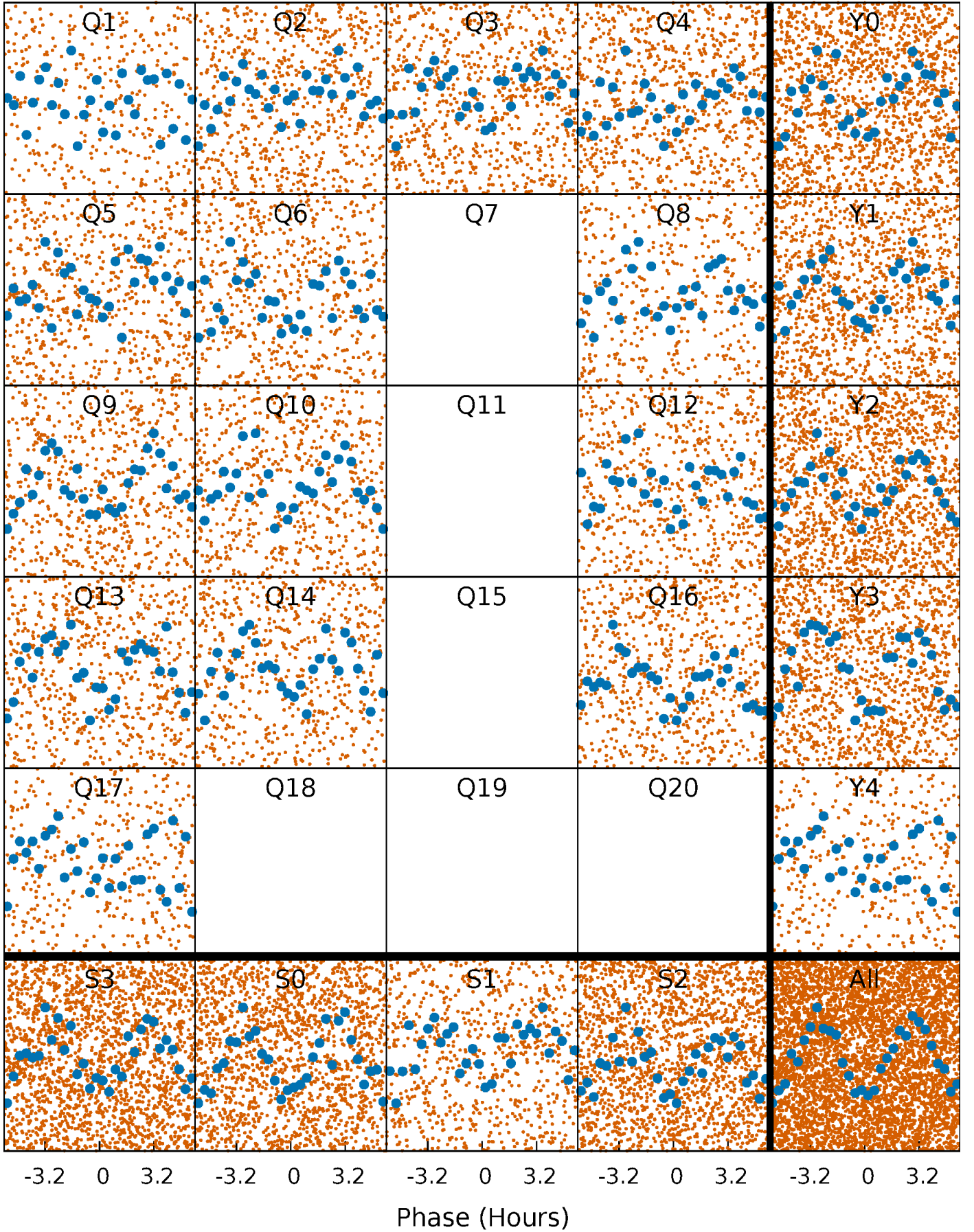


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



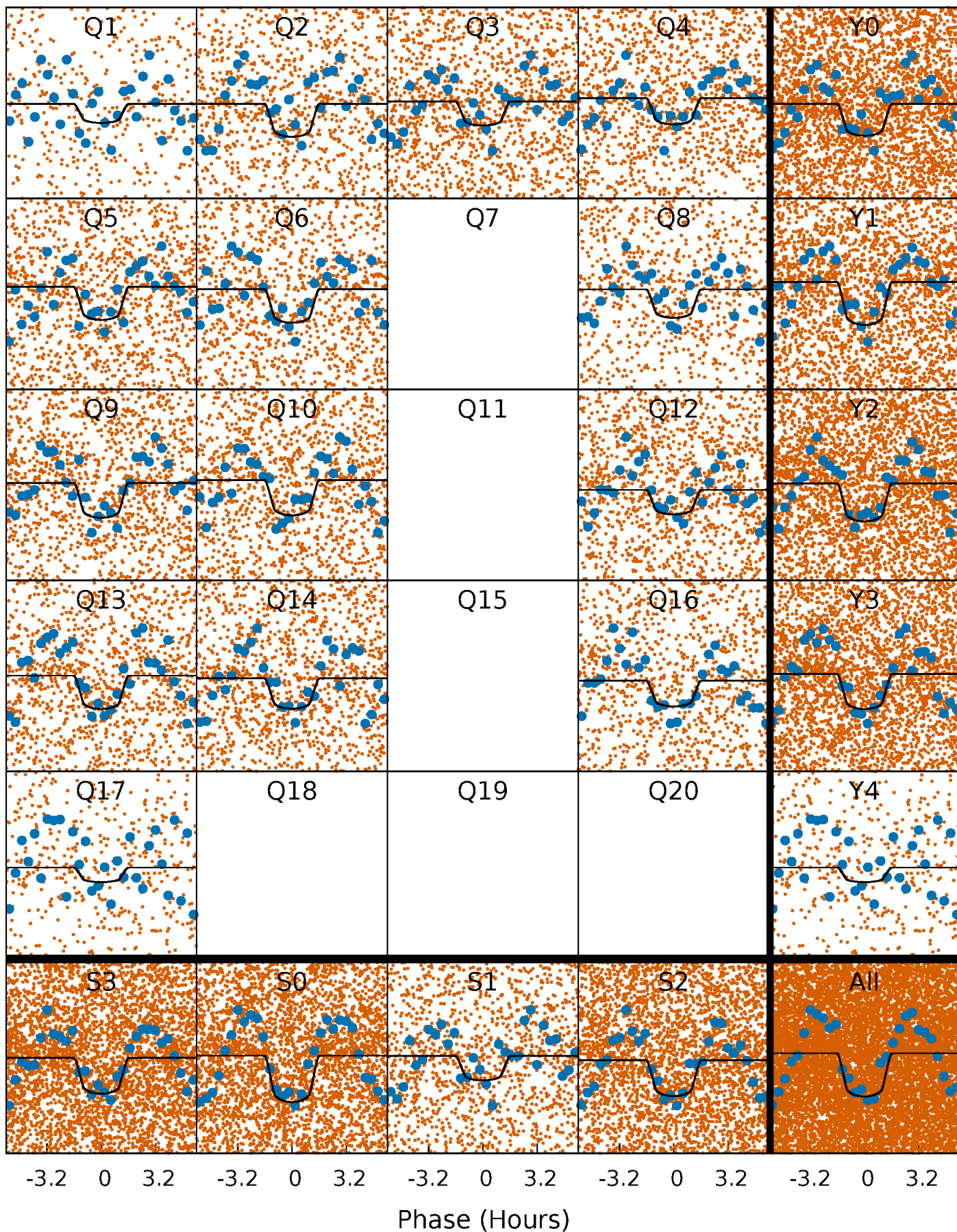
PDC Quarter-Phased Transit Curves

TCE 010741920-01 P= 0.690034 Days $T_0=131.515703$ (BKJD)



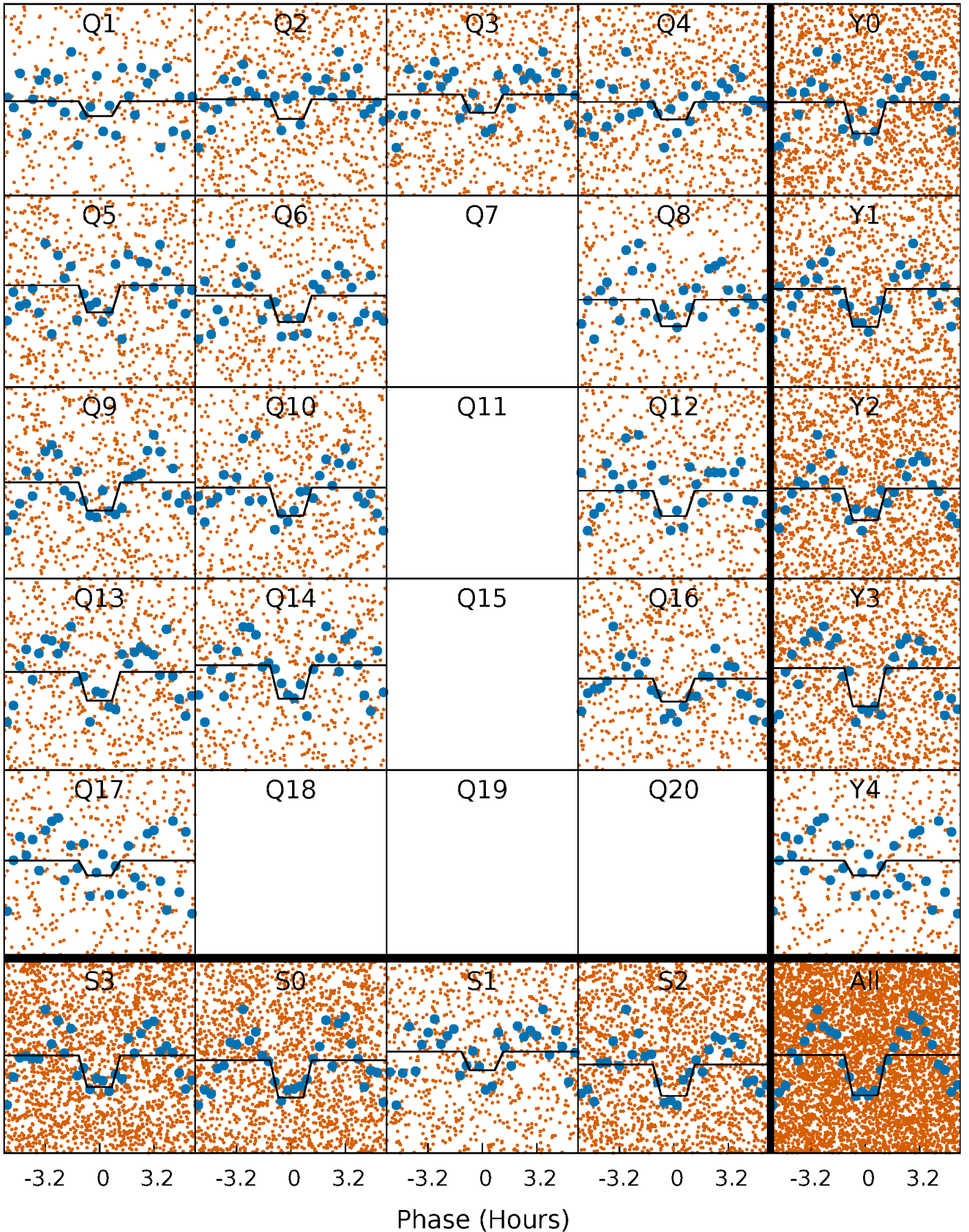
DV Quarter-Phased Transit Curves

TCE 010741920-01 P= 0.690034 Days $T_0=131.515703$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

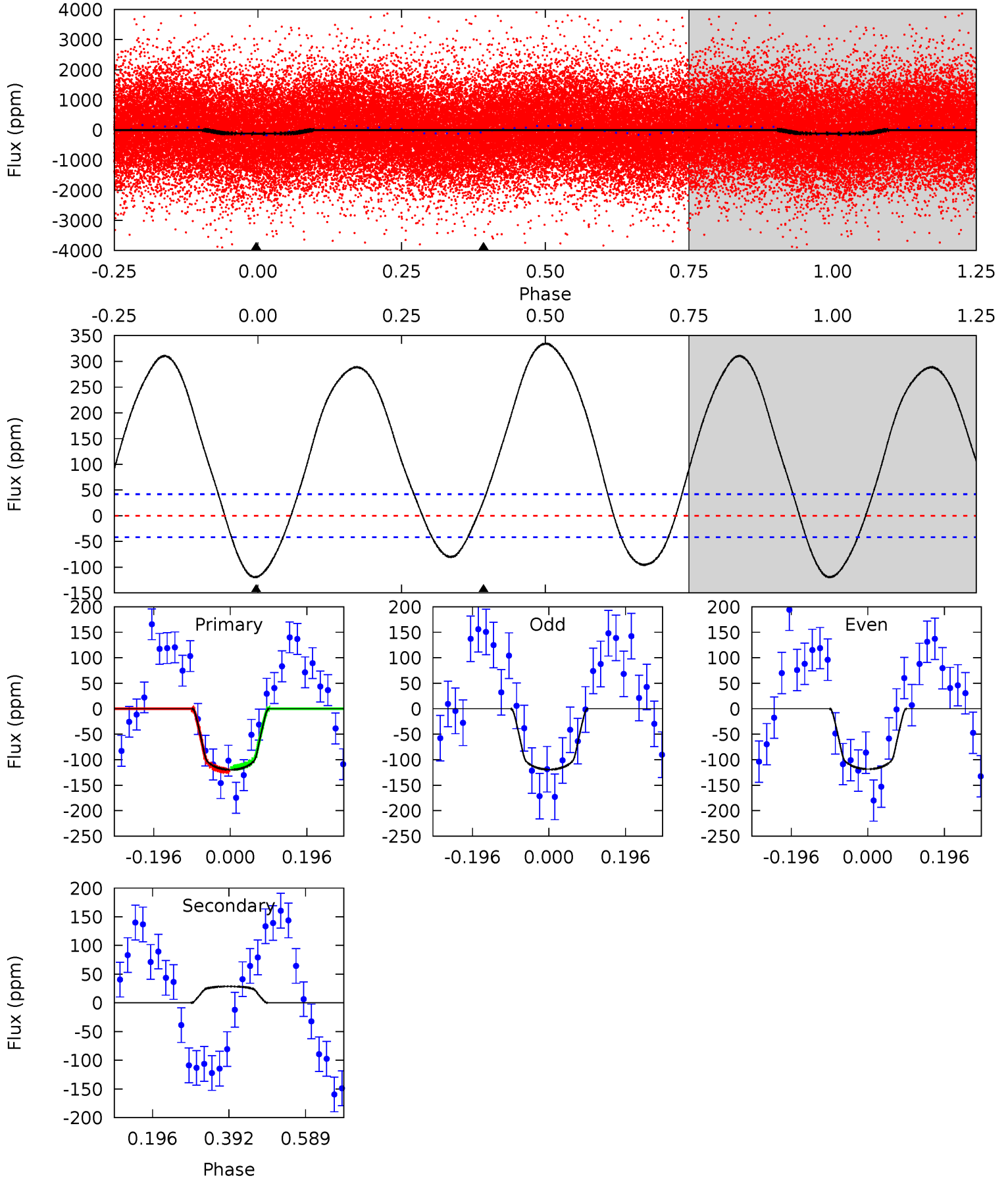
TCE 010741920-01 P= 0.690035 Days $T_0=131.515704$ (BKJD)



DV Model-Shift Uniqueness Test

010741920-01, P = 0.690034 Days, E = 130.825669 Days

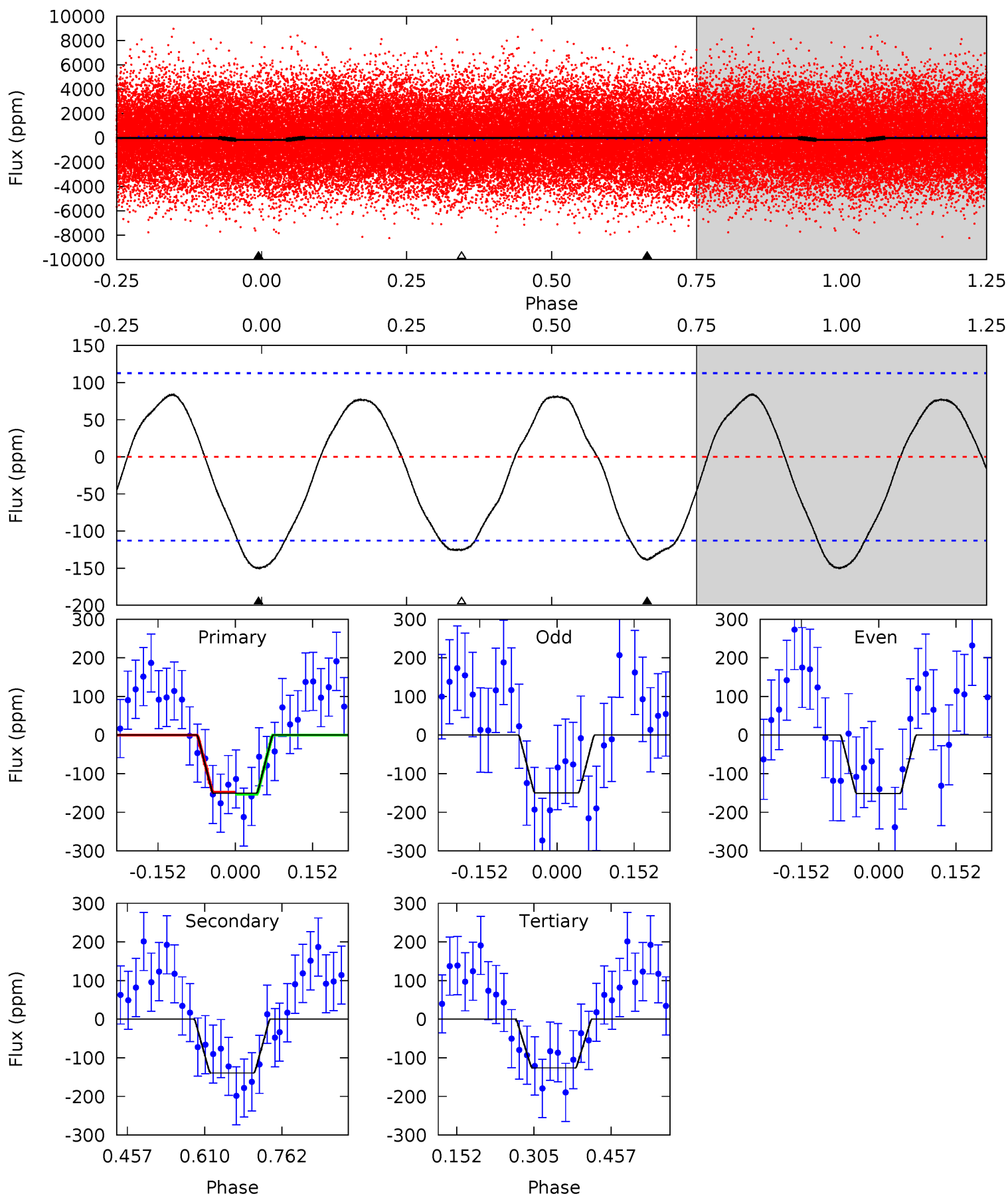
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.7	-3.05	0	0	4.42	1.29	11.8	12.7	12.7	-3.05	-3.05	0.04	1.15	0.74	0.32



Alt Model-Shift Uniqueness Test

010741920-01, P = 0.690035 Days, E = 130.825669 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.97	5.52	5.00	0	4.48	1.43	3.02	0.97	5.97	0.52	5.52	0.04	0.99	0.36	0.09



Stellar Parameters For KIC 010741920

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8048^{+222}_{-334}	$3.725^{+0.442}_{-0.104}$	$-0.100^{+0.200}_{-0.350}$	$3.251^{+0.670}_{-1.564}$	$2.046^{+0.337}_{-0.547}$	$0.084^{+0.364}_{-0.029}$
	+3%/-4%	+12%/-3%	+200%/-350%	+21%/-48%	+16%/-27%	+434%/-35%
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 010741920-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	29 ± 9	$4.16^{+1.88}_{-1.81}$	6218^{+484}_{-705}	-5978^{+590}_{-1109}	$-0.354^{+0.210}_{-0.728}$
Alt.	-139 ± 25	$4.17^{+2.13}_{-1.91}$	6199^{+481}_{-790}	7065^{+3160}_{-1569}	$1.634^{+4.169}_{-0.896}$

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

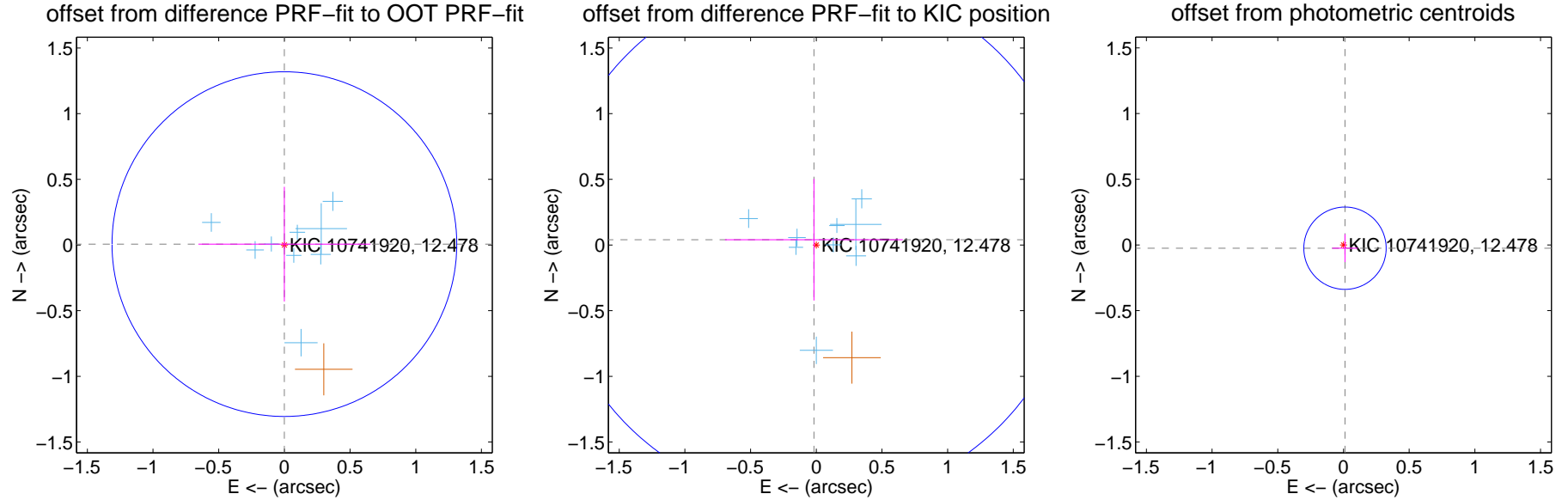
DV Centroid Data

Supplemental centroid analysis for 010741920-01. Kepler magnitude: 12.48. Transit SNR 14.00

There are 10 quarters with good PRF difference image offsets

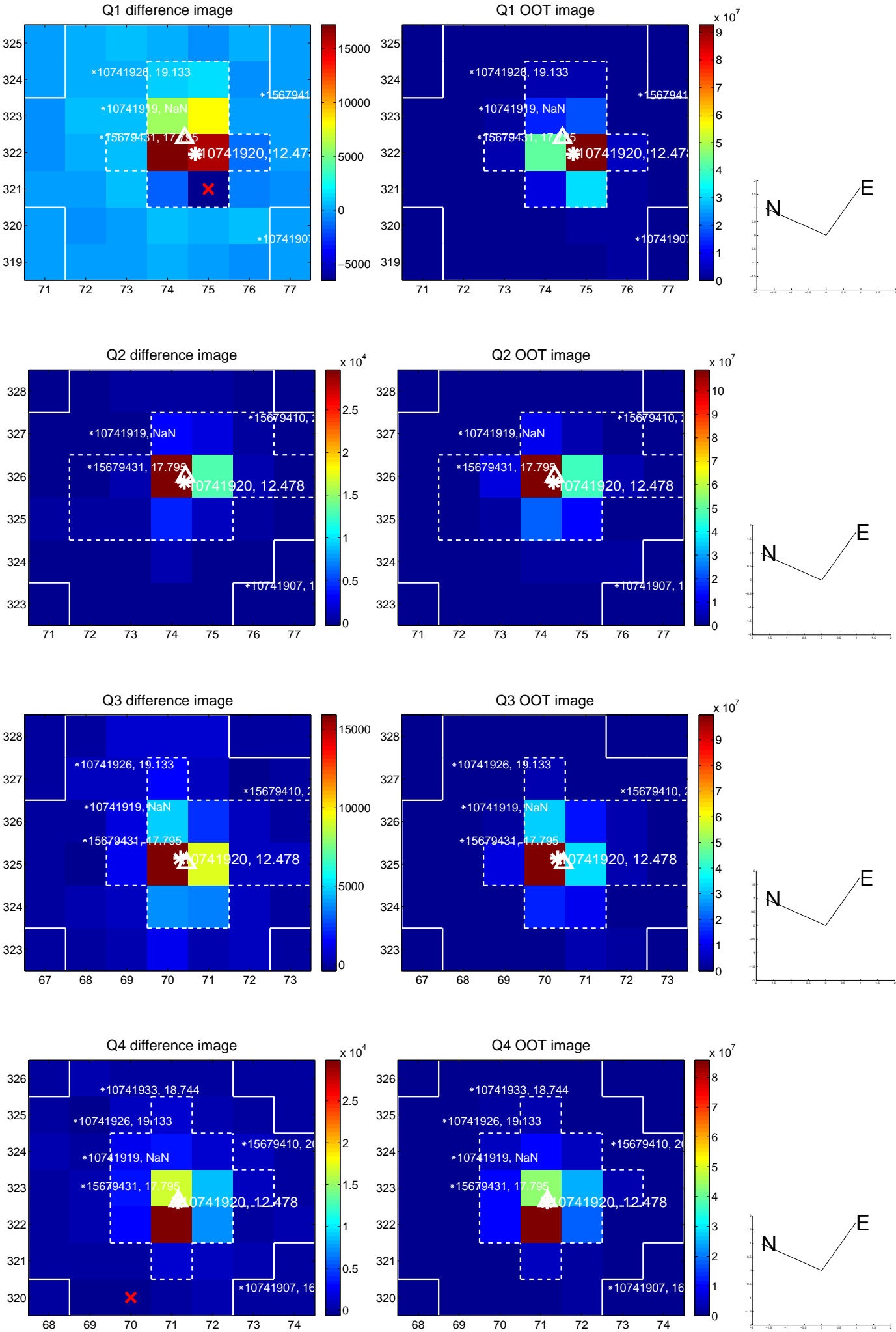
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.007 ± 0.437	0.02	0.000 ± 0.655	0.007 ± 0.437
PRF-fit source offset from KIC position	0.044 ± 0.667	0.07	0.018 ± 0.677	0.040 ± 0.463
photometric centroid source offset	0.03 ± 0.10	0.26	-0.01 ± 0.10	-0.02 ± 0.11

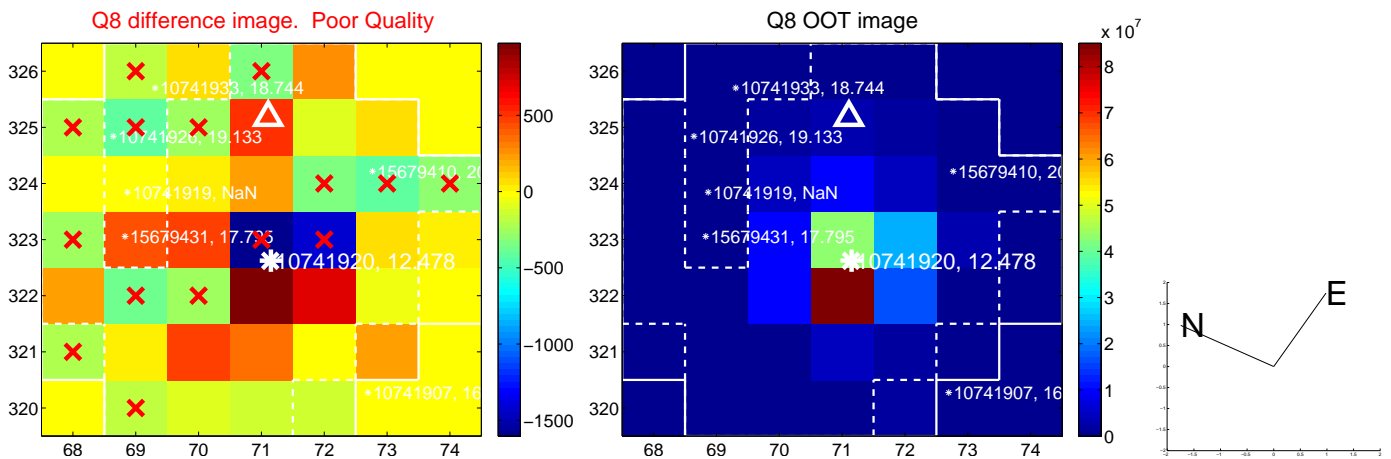
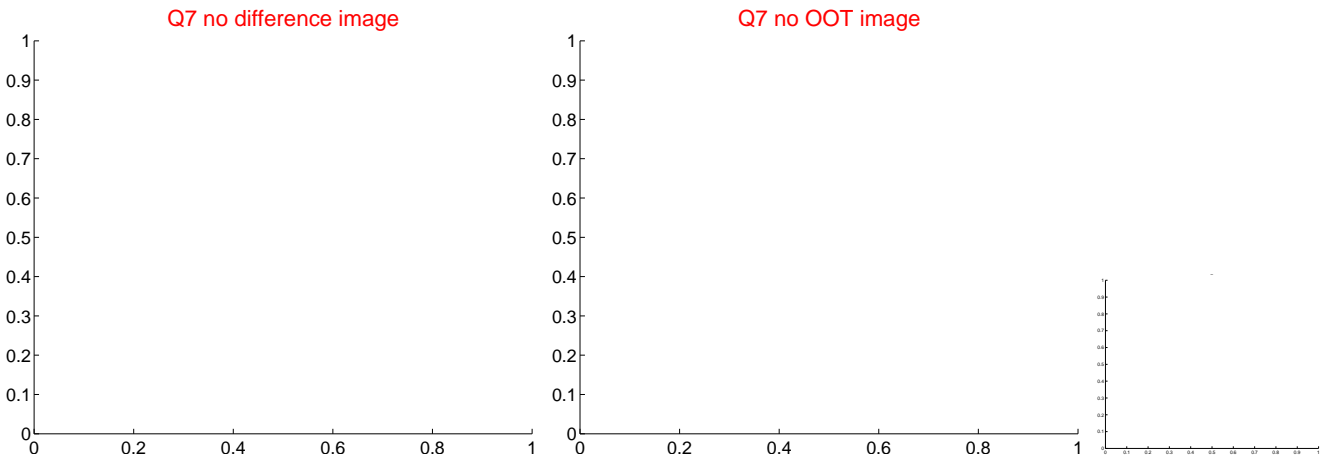
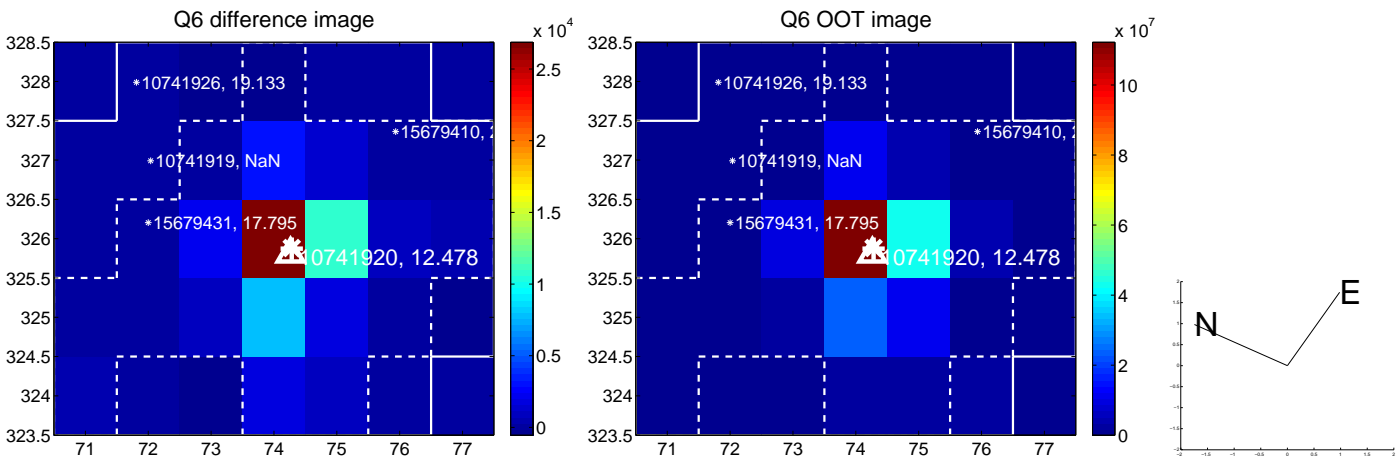
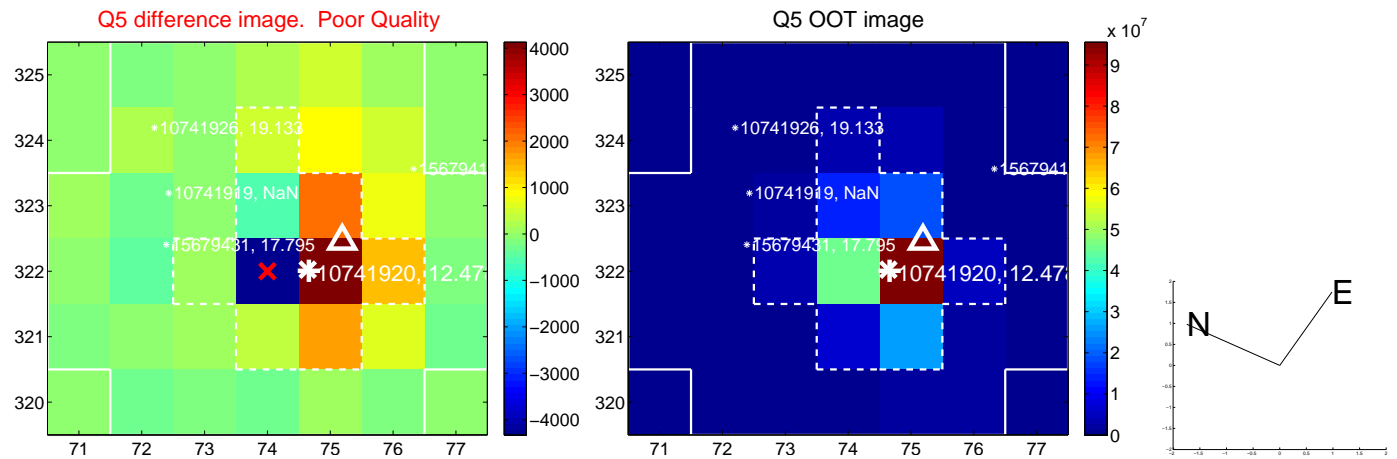


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

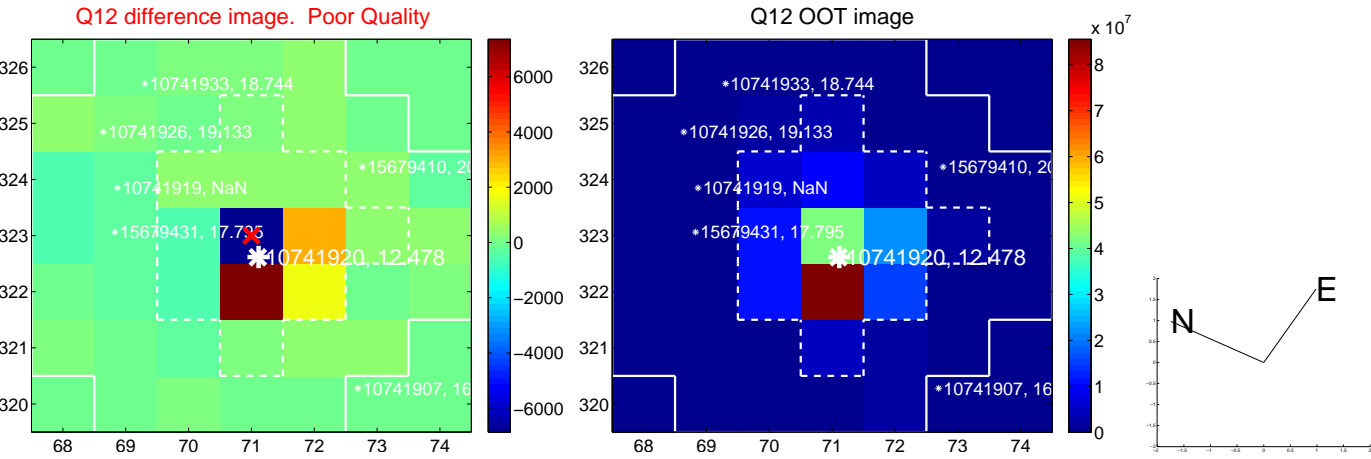
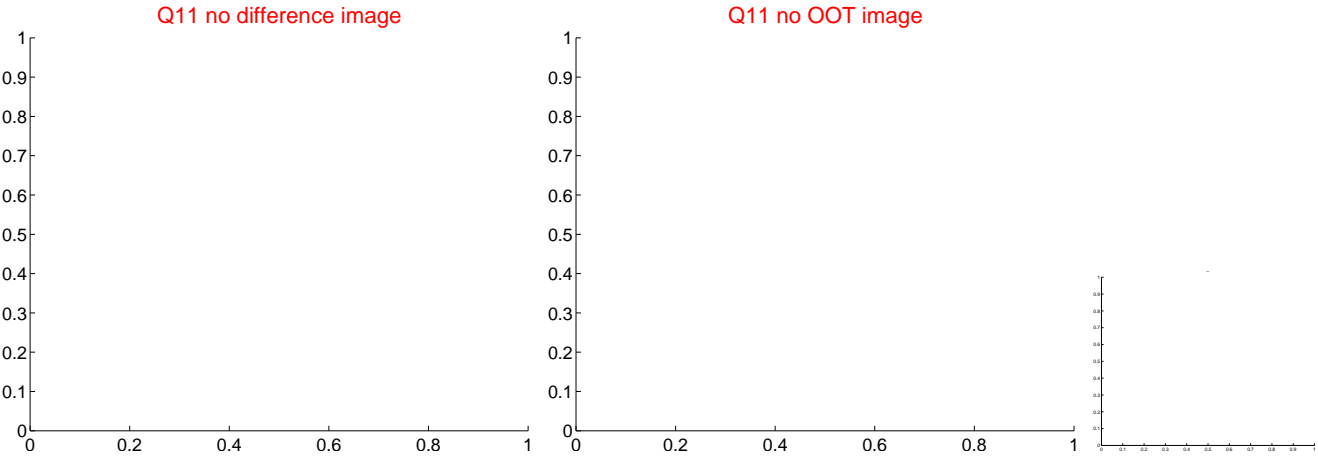
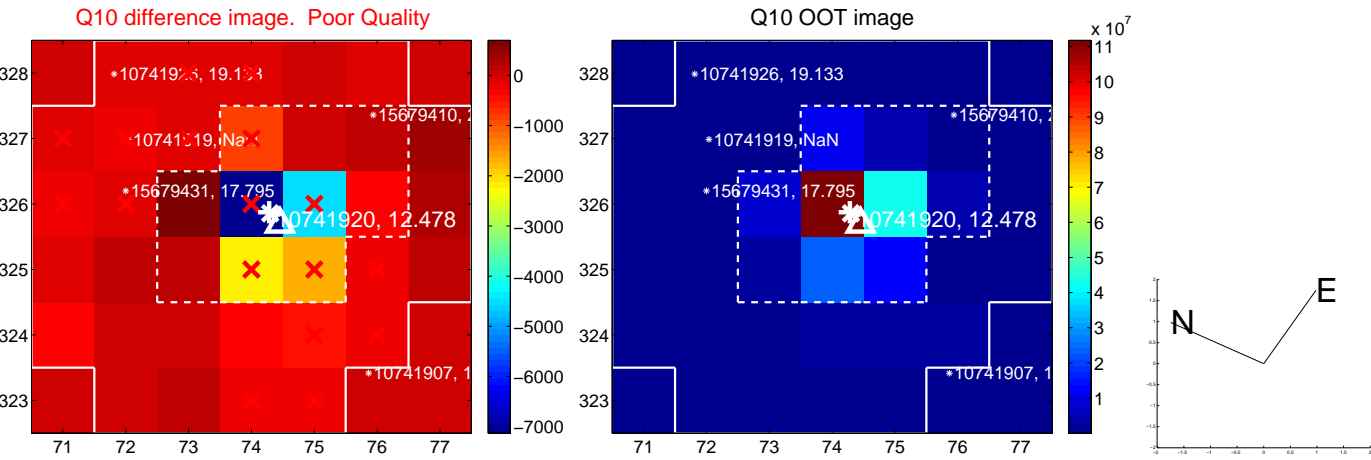
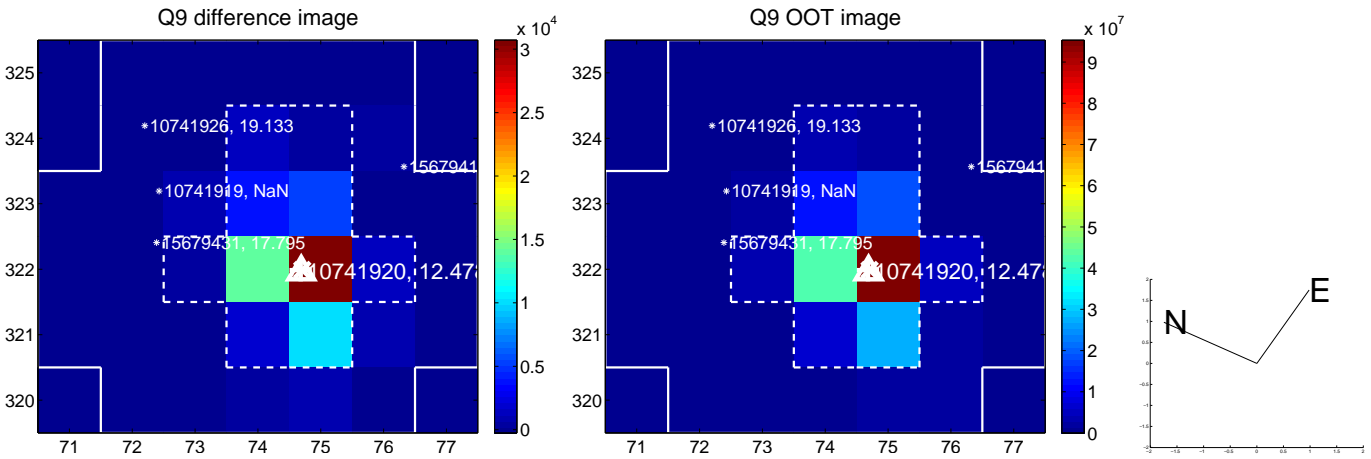
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



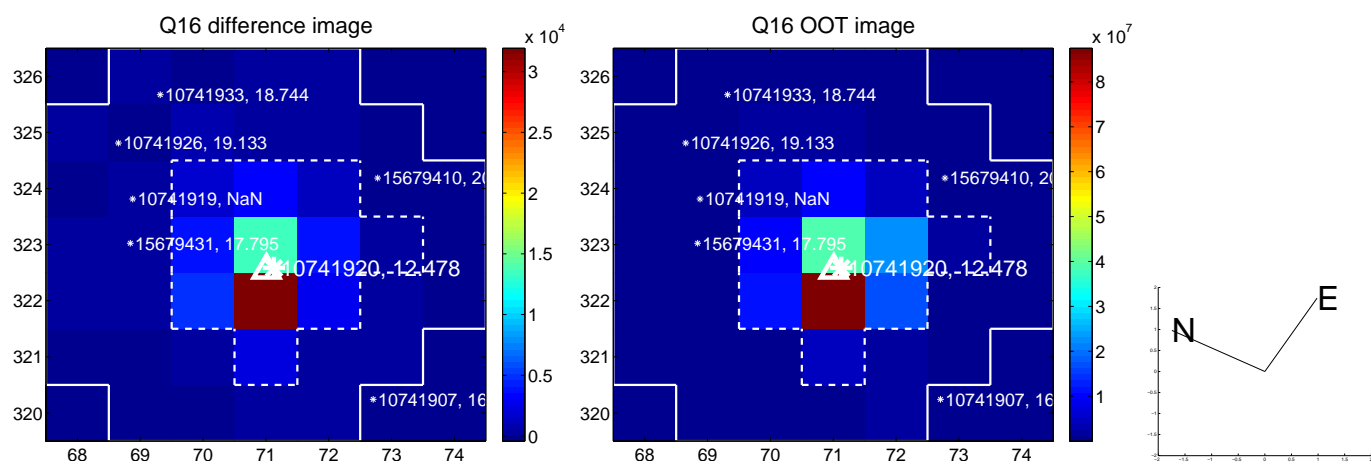
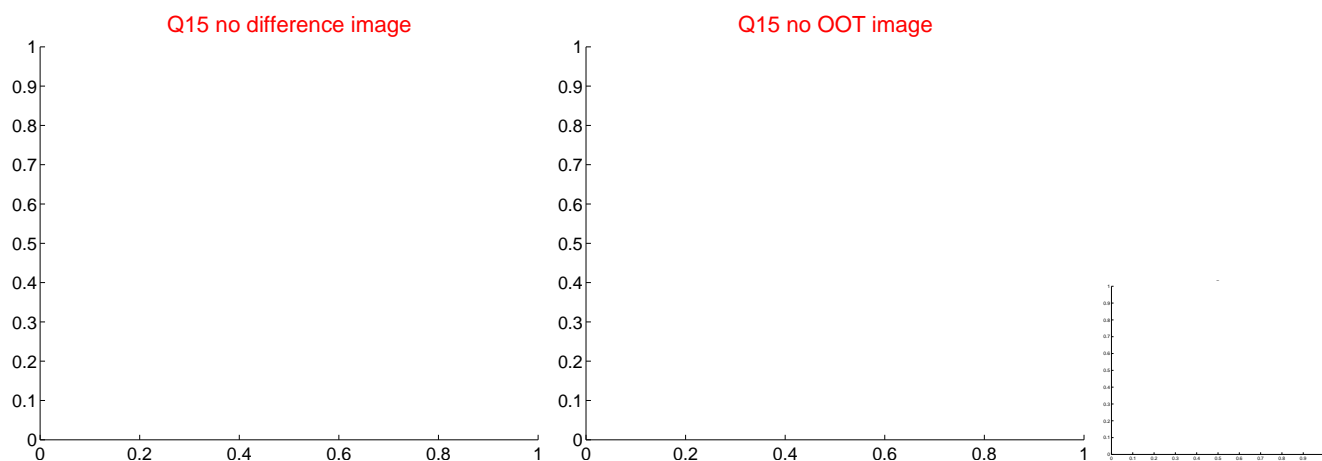
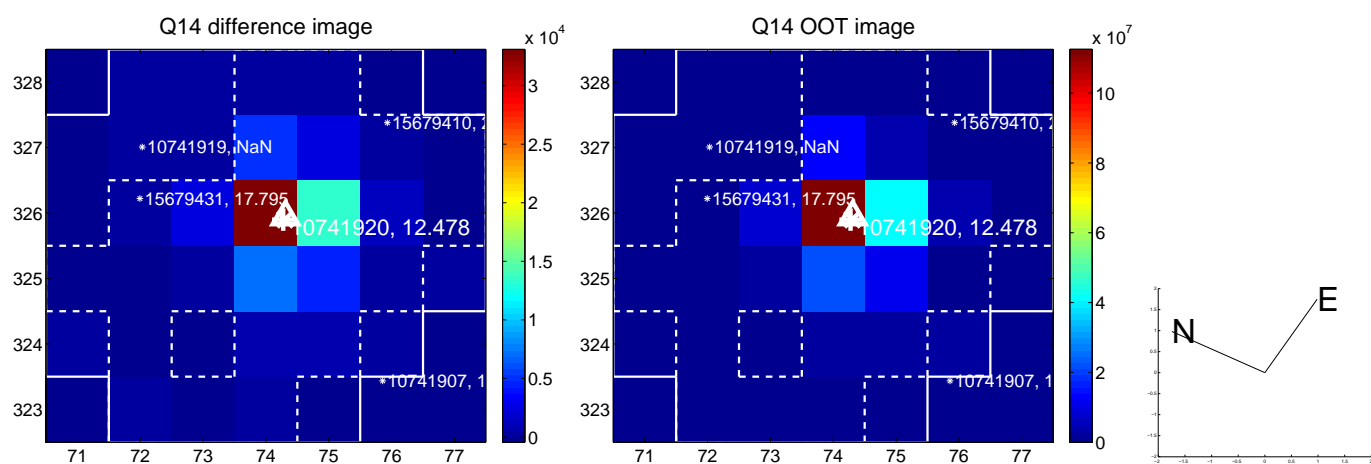
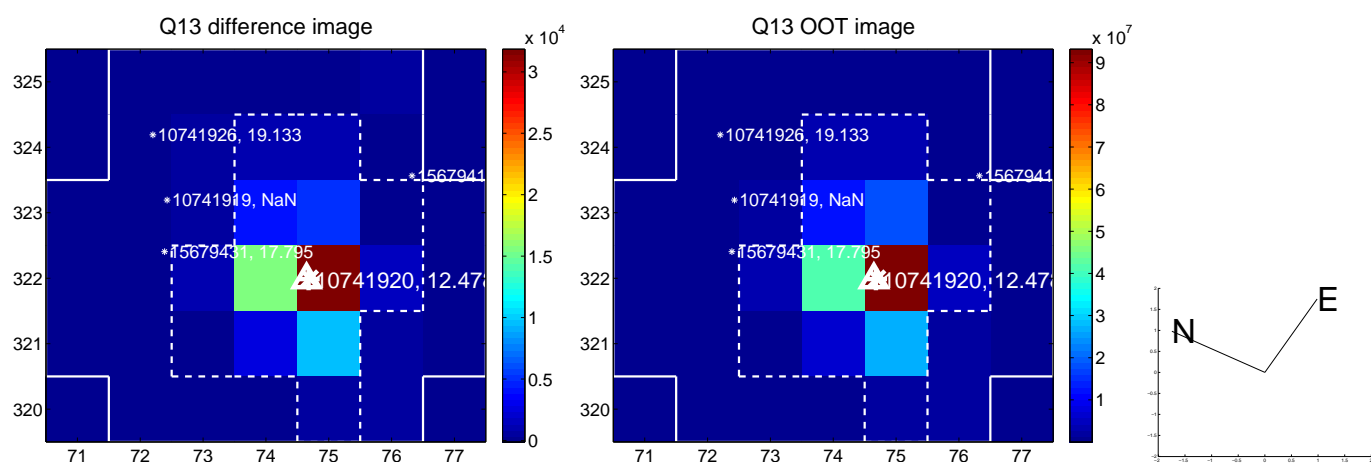
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



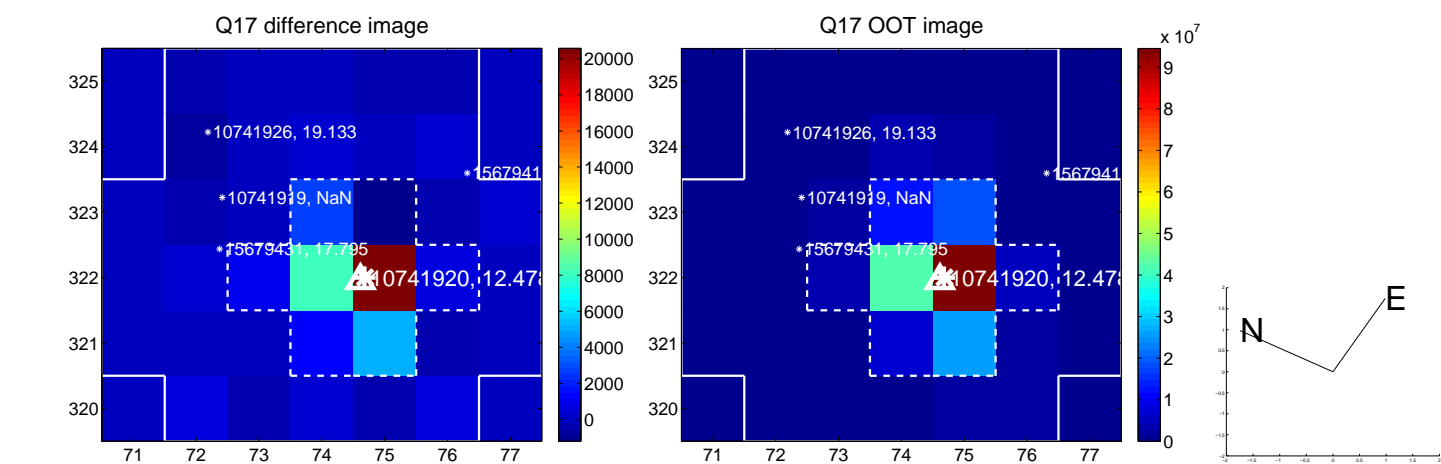
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



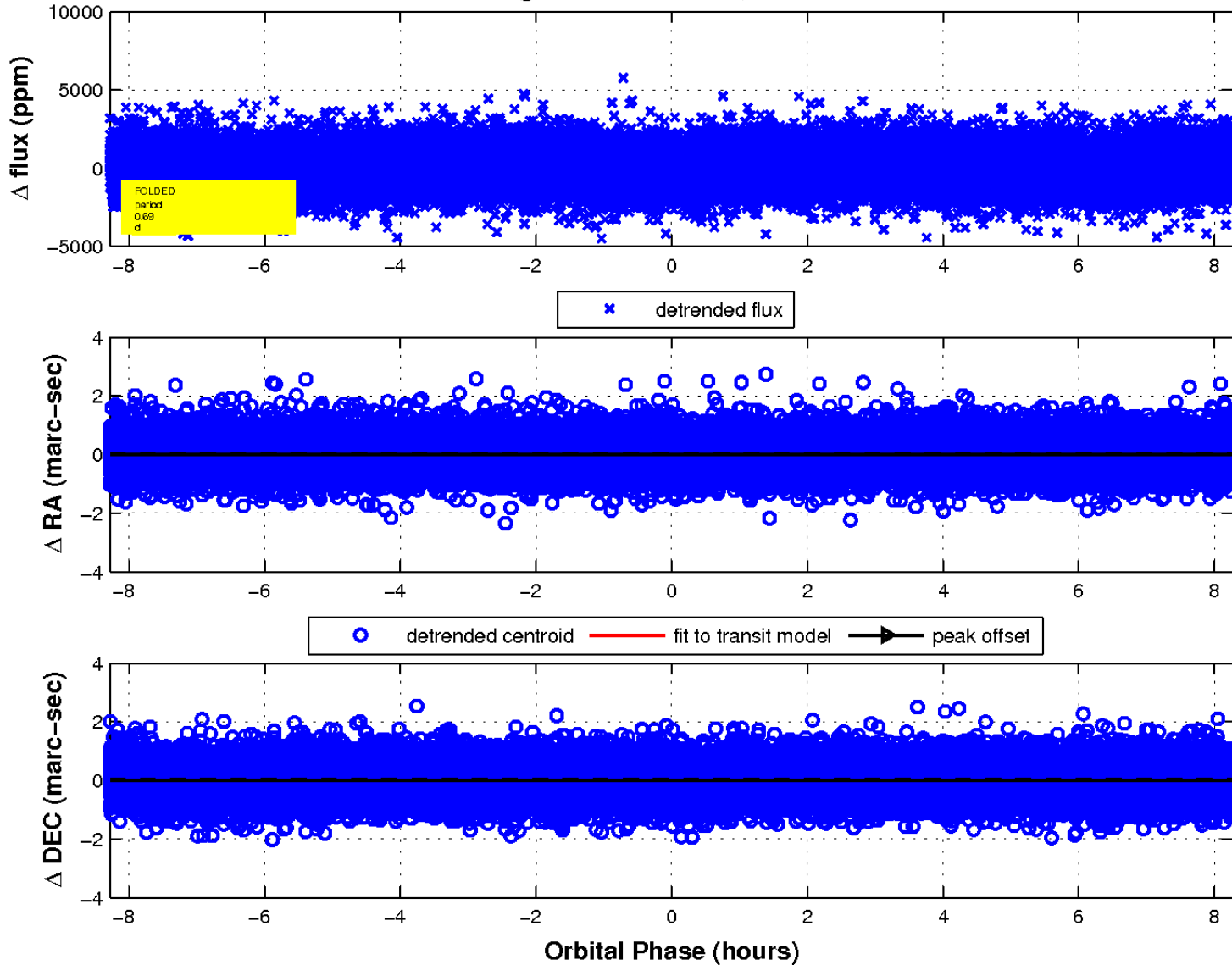
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



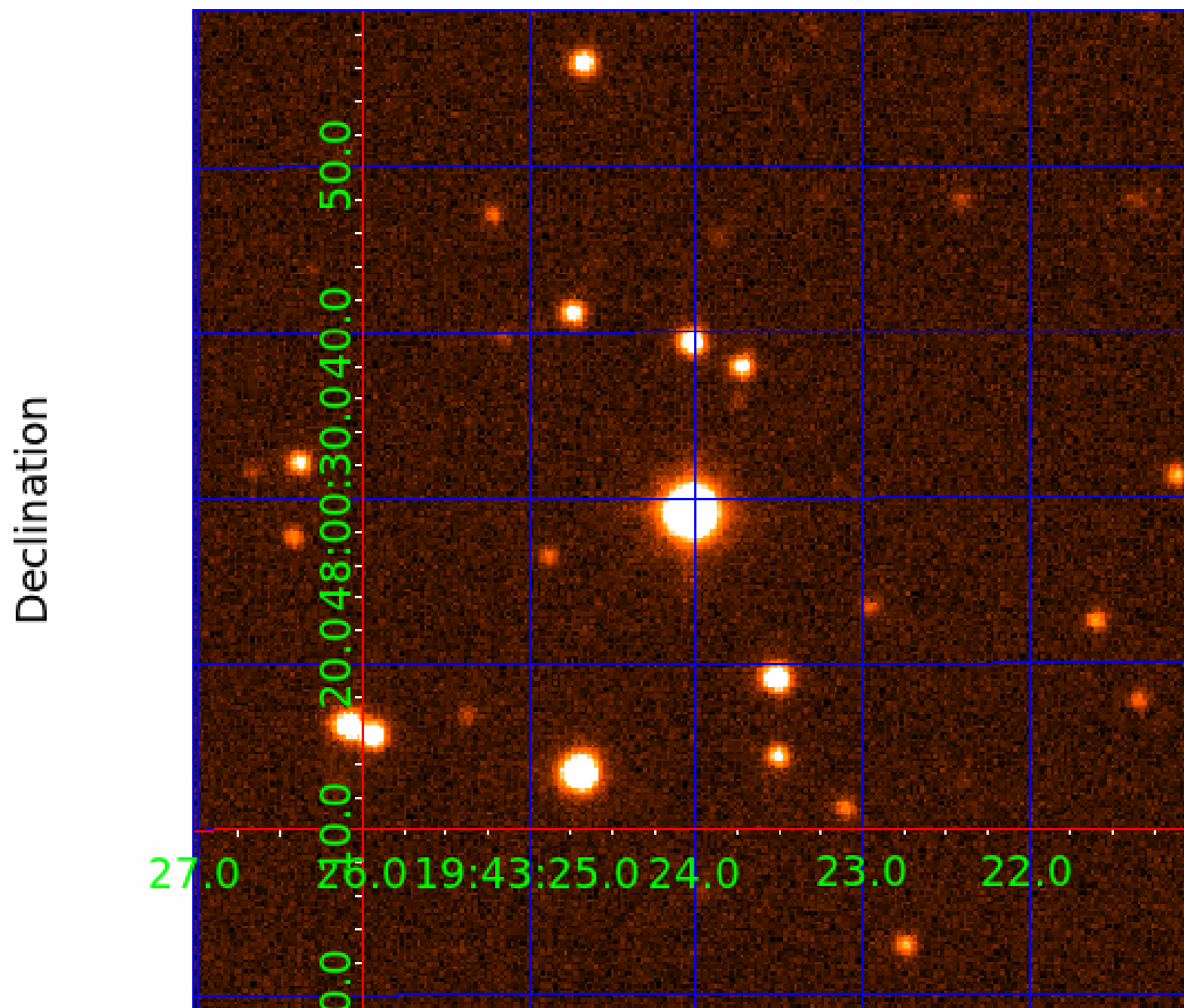
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image



KIC 010741920

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})
010741920-01	OBS	No	0.690034	131.515703	142.6	2.810	15.1	14.0	3.25	8048	4.53	105478.30
010741920-02	OBS	No	1.015841	131.599360	177.8	3.652	10.0	11.0	3.25	8048	5.05	62982.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010741920-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010741920-02	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

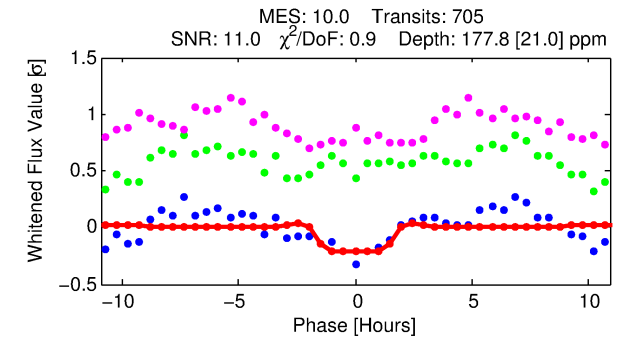
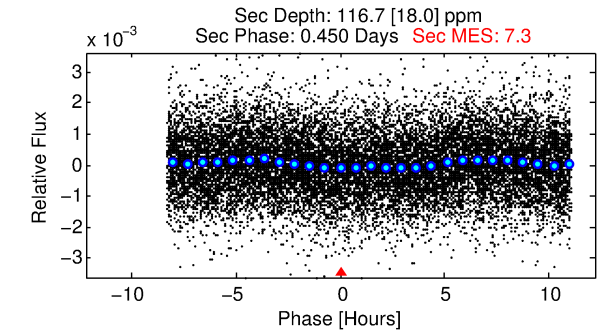
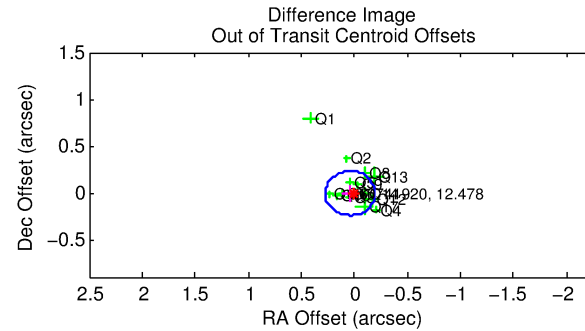
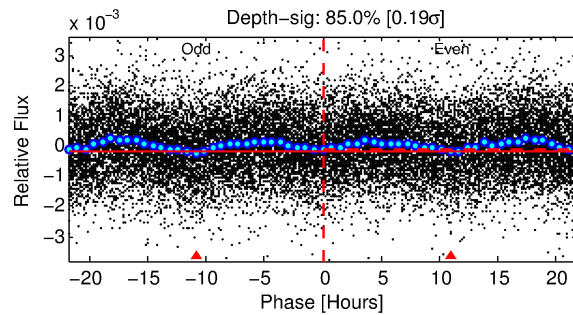
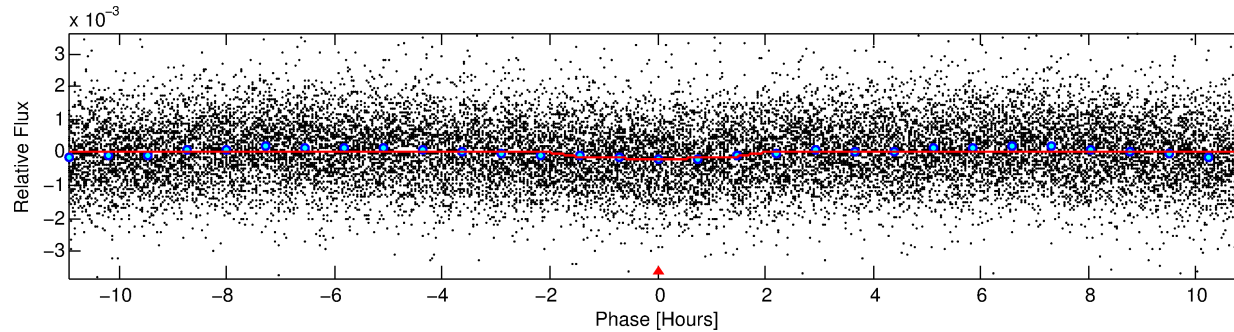
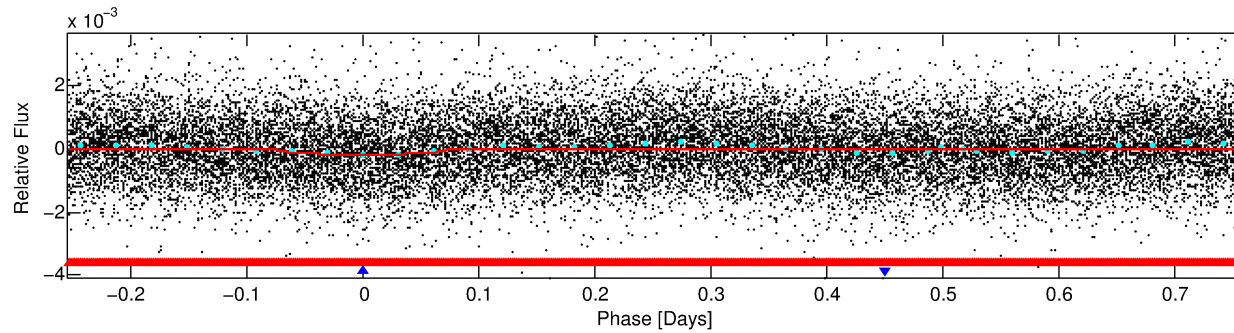
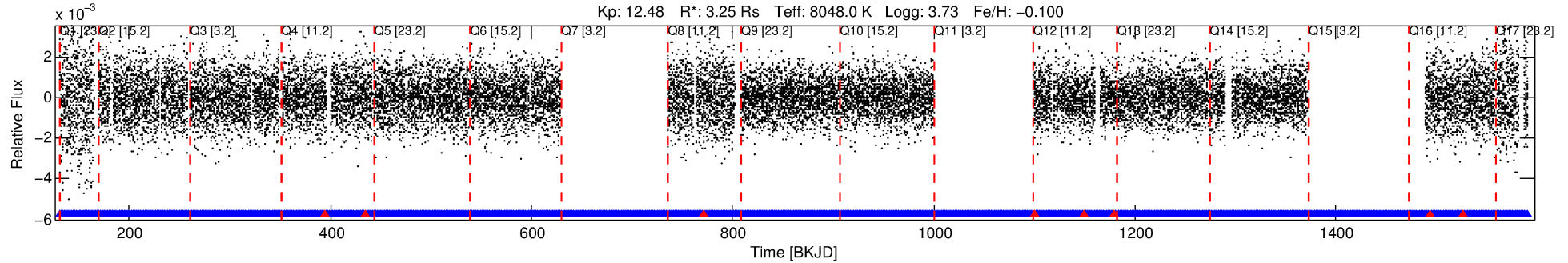
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010741920-02

No Significant Match Found

DV One-Page Summary

KIC: 10741920 Candidate: 2 of 2 Period: 1.016 d



DV Fit Results:

Period = 1.01584 [0.00001] d
Epoch = 131.5994 [0.0042] BKJD
Rp/R* = 0.0142 [0.0055]
a/R* = 1.37 [1.48]
b = 0.90 [0.50]
Seff = 62982.95 [48409.90]
Teff = 4040 [776] K
Rp = 5.05 [3.11] Re
a = 0.0251 [0.0117] AU
Ag = 1.59 [1.72] [0.34 σ]
Teffp = 7010 [1407] K [1.85 σ]

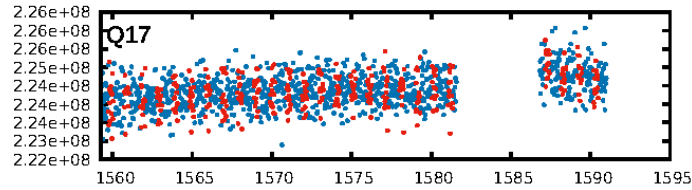
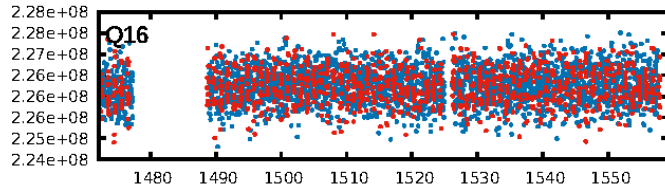
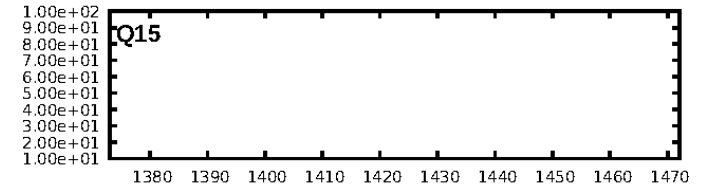
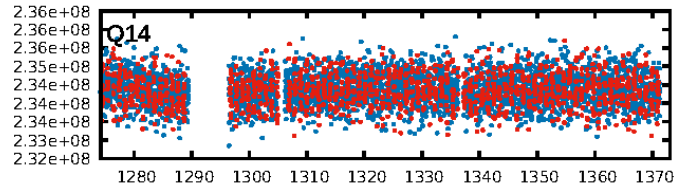
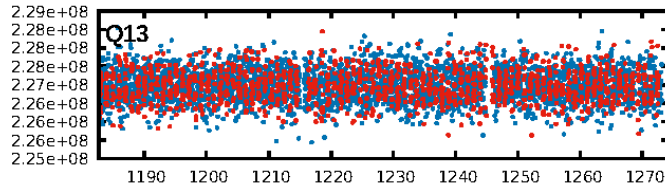
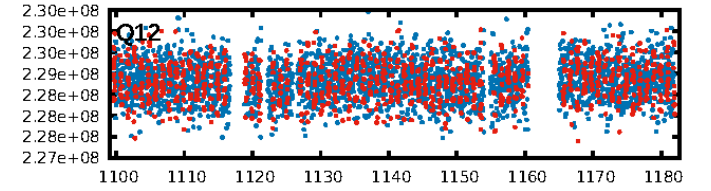
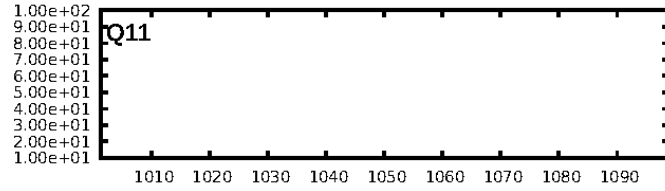
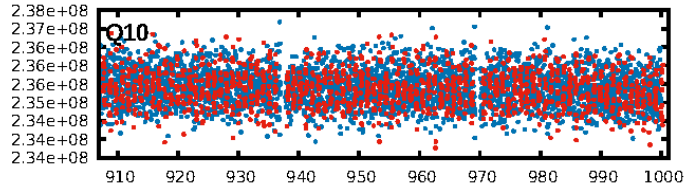
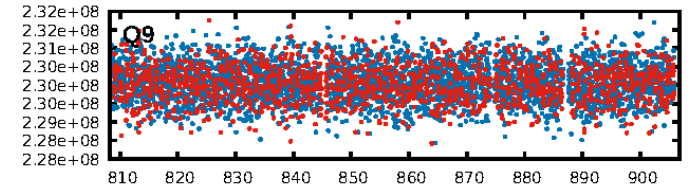
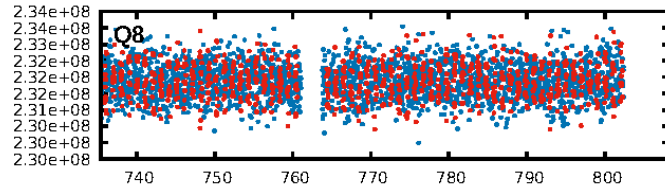
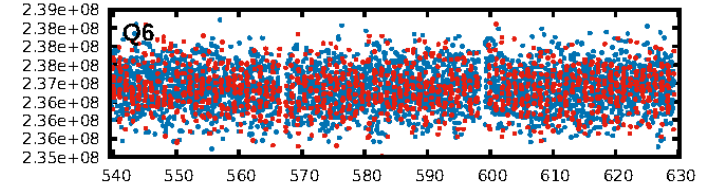
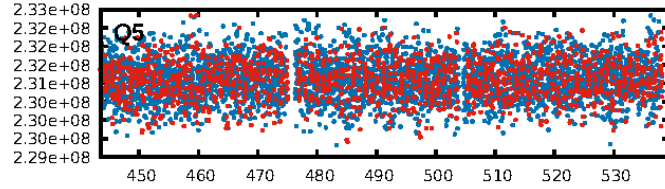
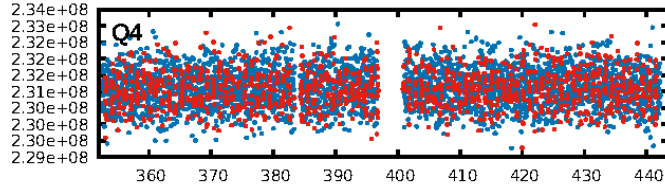
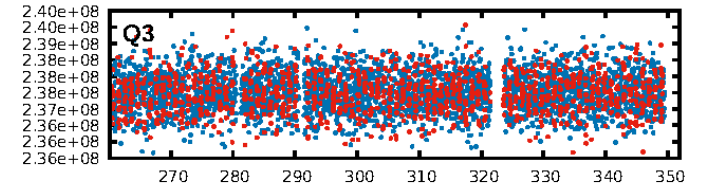
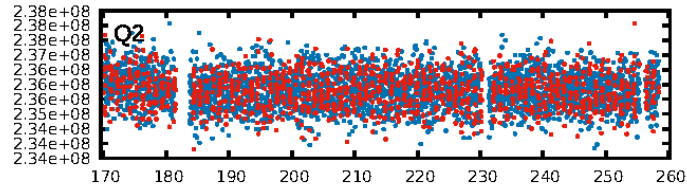
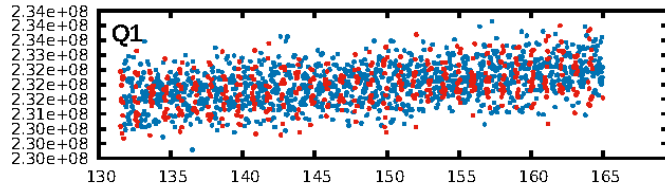
DV Diagnostic Results:

ShortPeriod-sig: 91.0% [1.70 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.93e-23
RollingBand-fgt: 0.99 [659/667]
GhostDiagnostic-chr: 0.1582
Centroid-sig: 0.1%
Centroid-so: 0.134 arcsec [1.54 σ]
OotOffset-rm: 0.039 arcsec [0.49 σ]
KicOffset-rm: 0.044 arcsec [0.54 σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

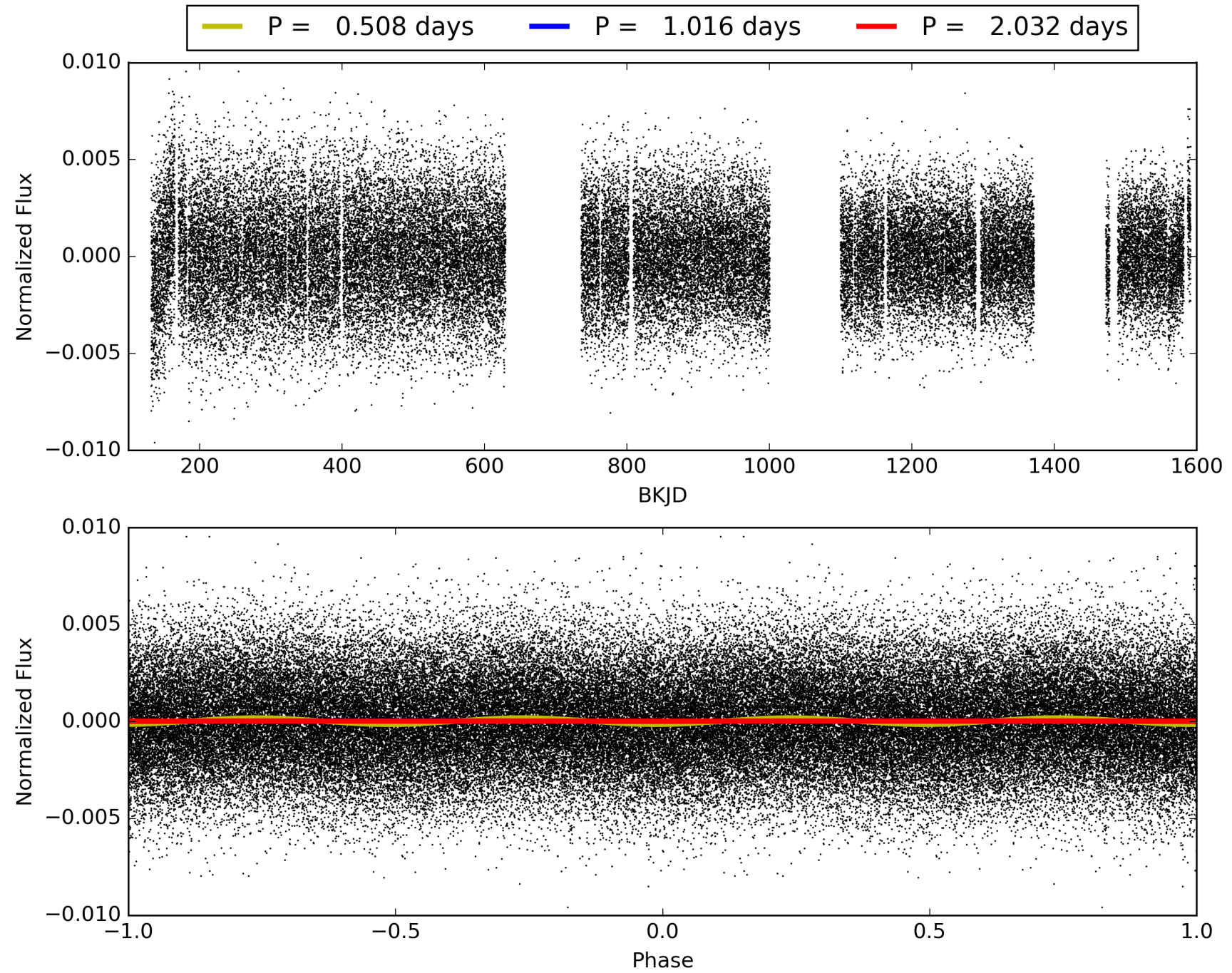
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 17:23:49 Z

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

TCE 010741920-02, PDC Light Curves

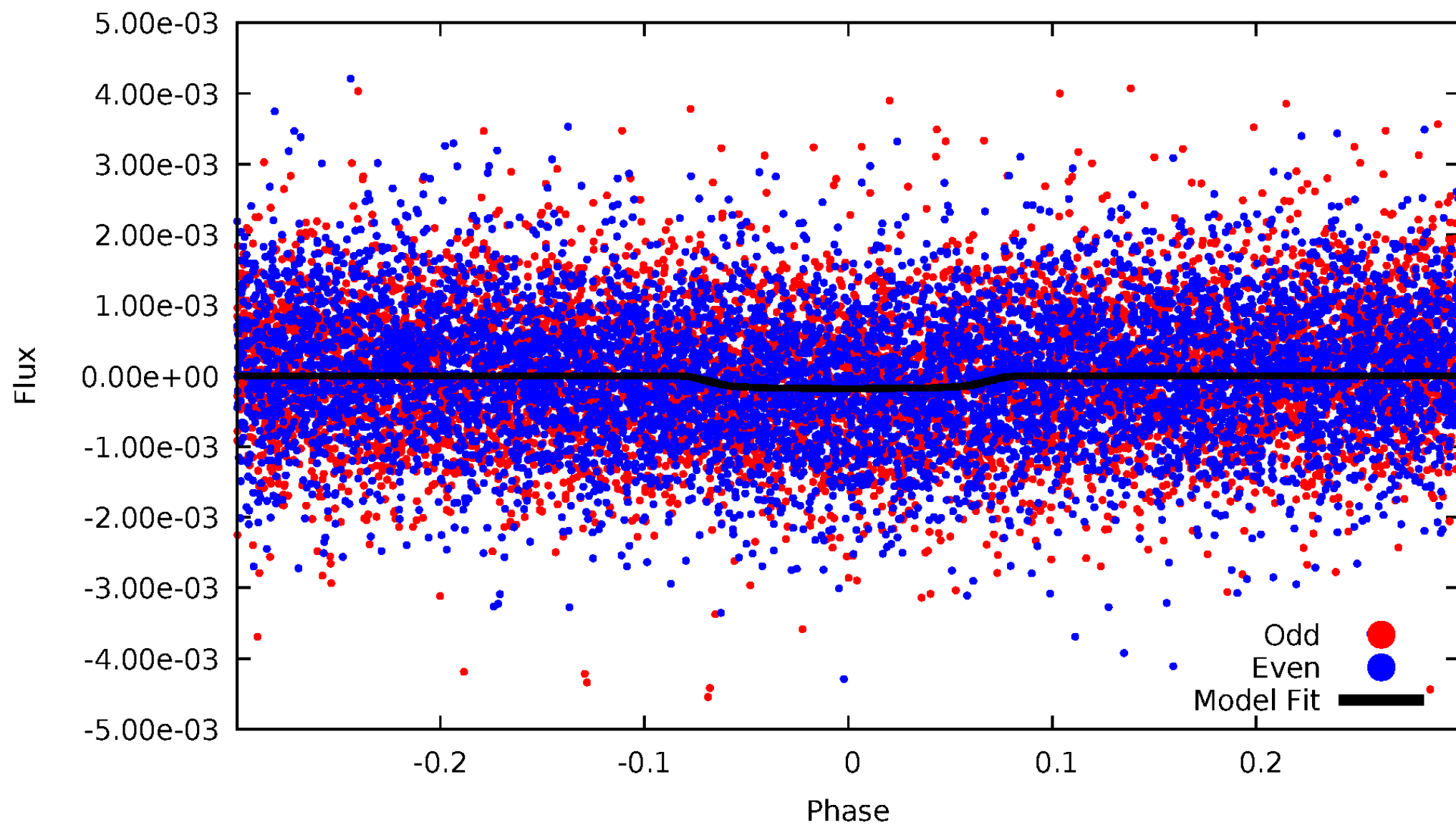


TCE 010741920-02



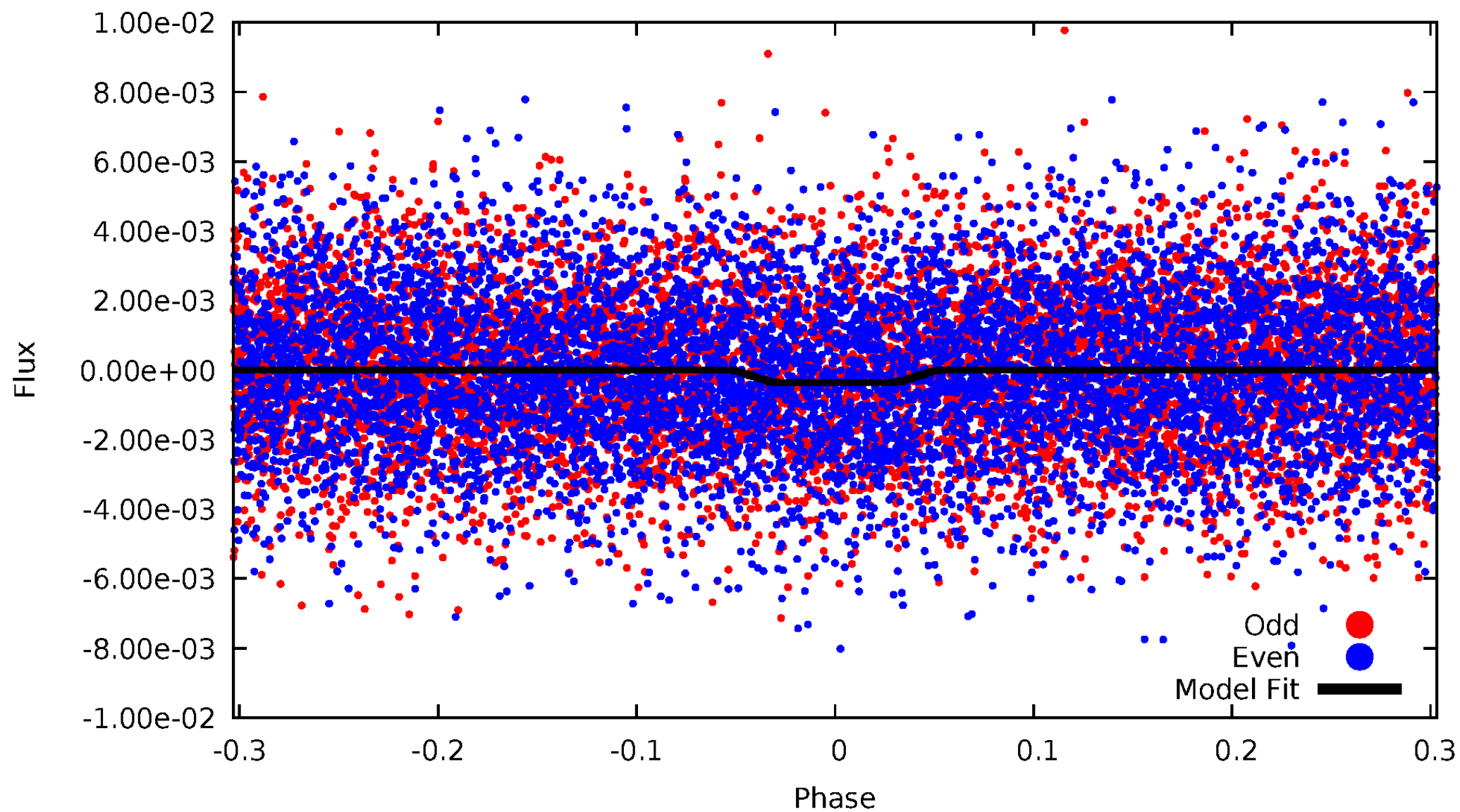
DV Odd/Even

TCE 010741920-02



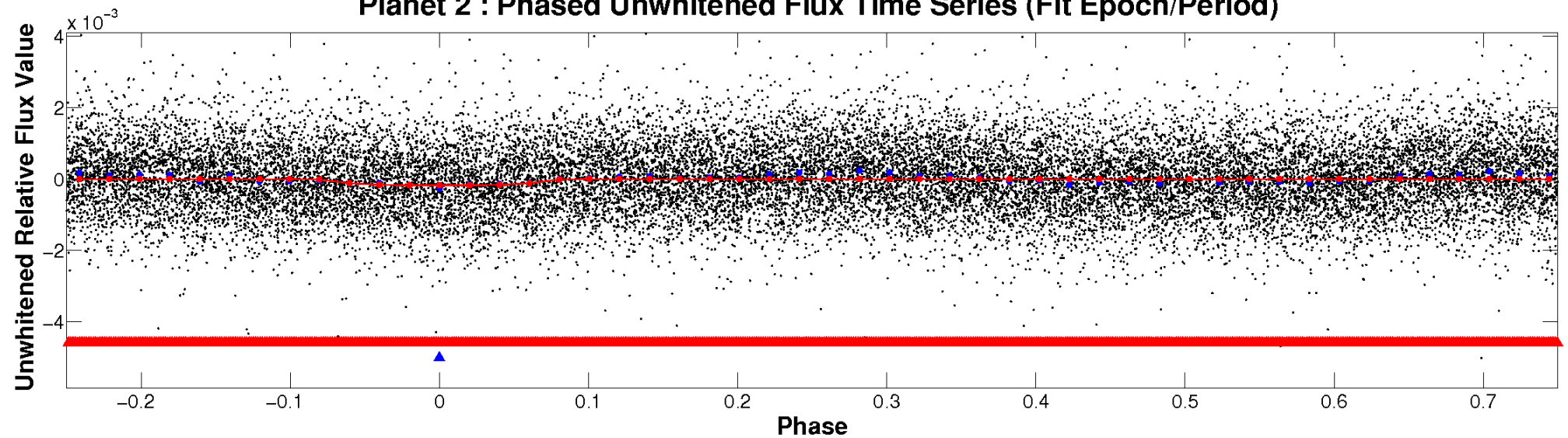
ALT Odd/Even

TCE 010741920-02

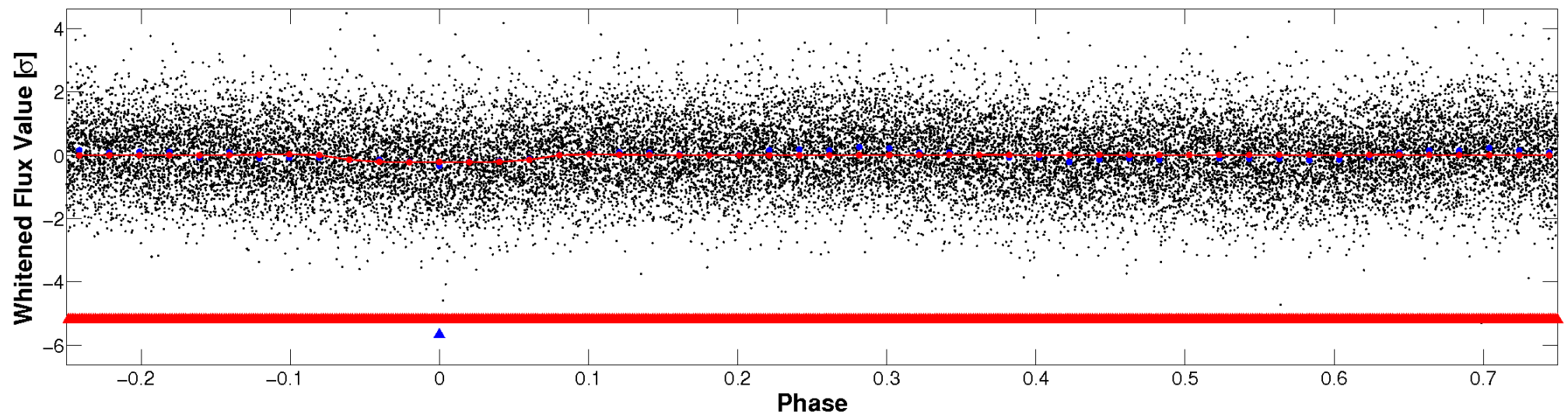


Non-Whitened Vs. Whitened Light Curve

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

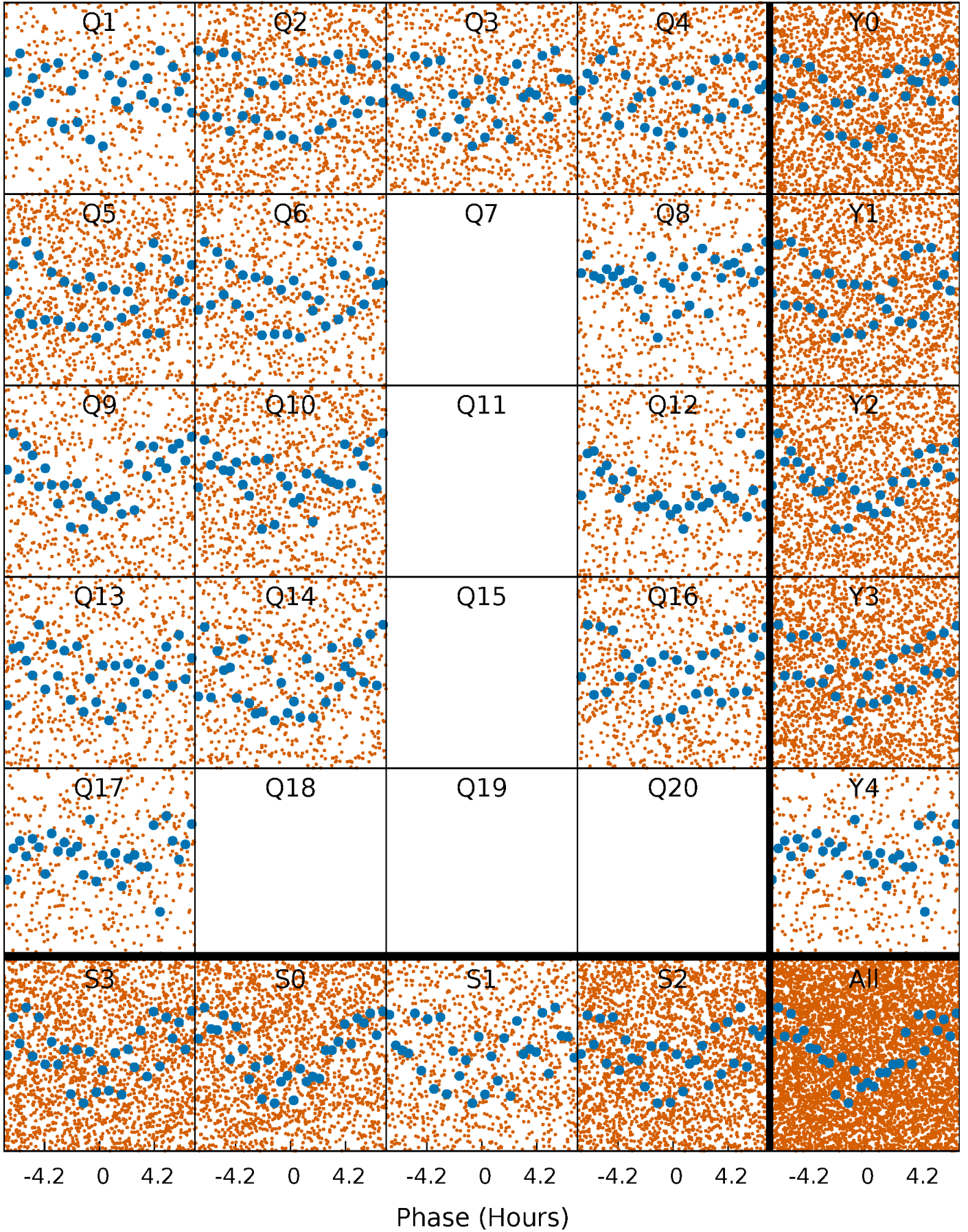


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



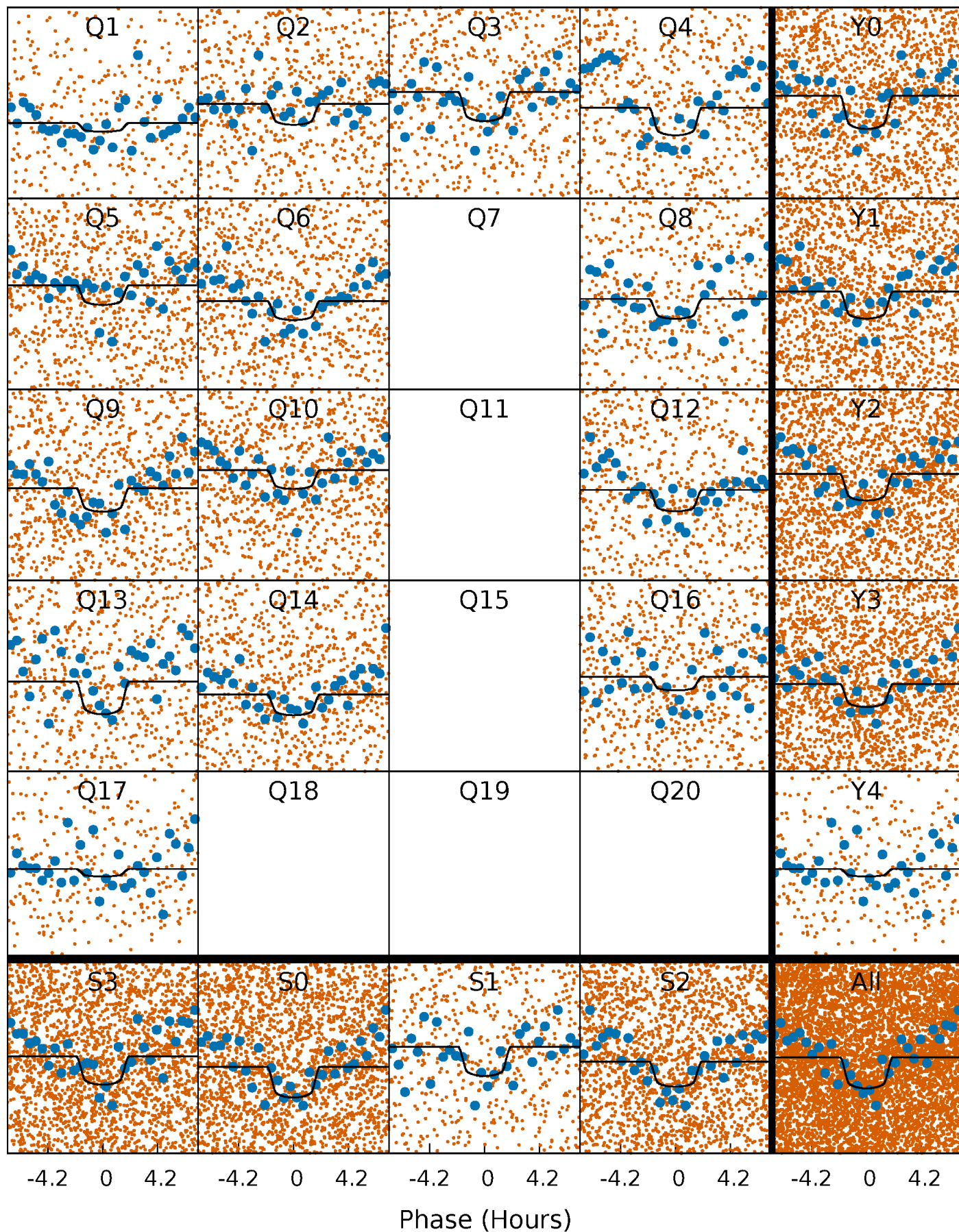
PDC Quarter-Phased Transit Curves

TCE 010741920-02 P= 1.015841 Days $T_0=131.599360$ (BKJD)



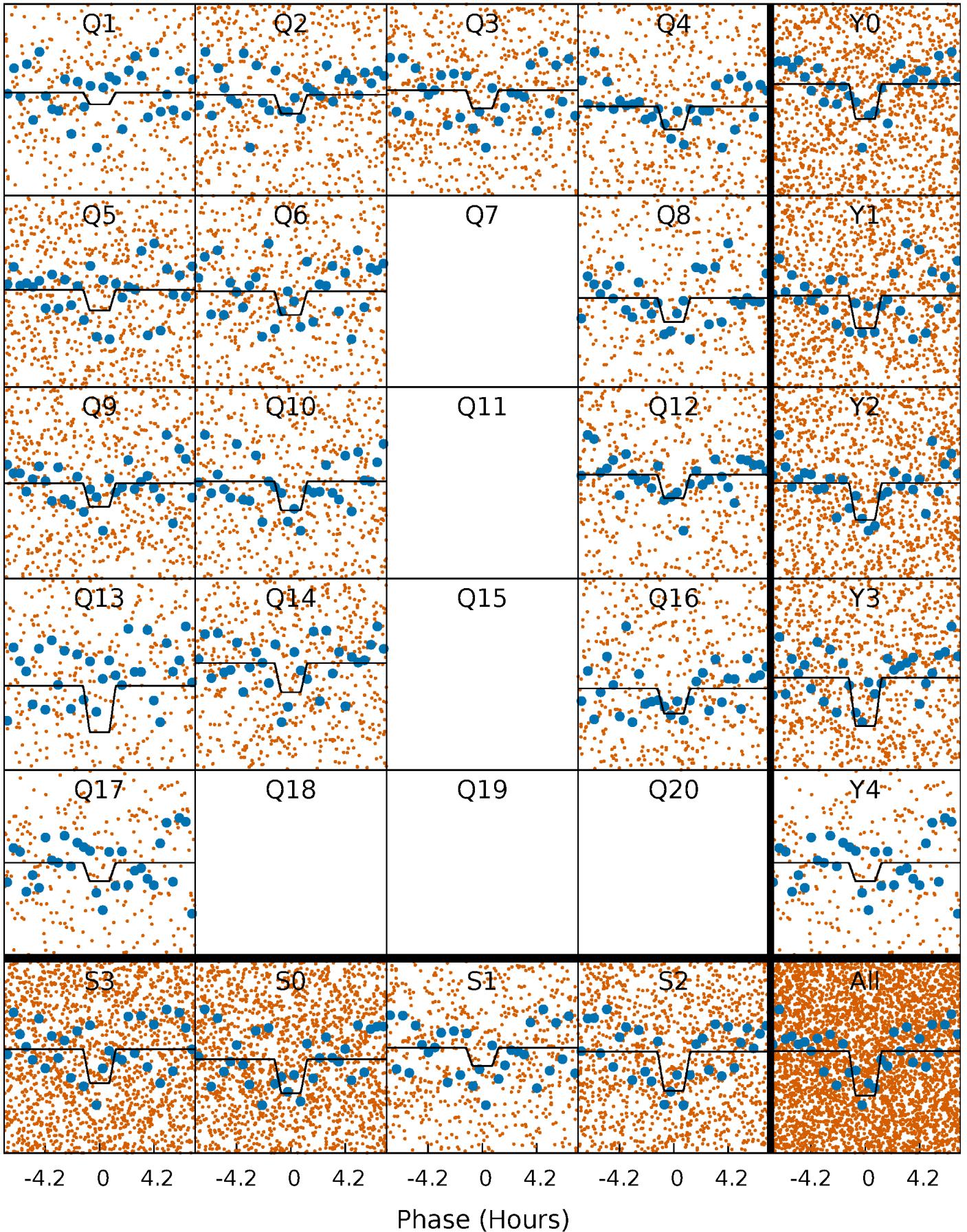
DV Quarter-Phased Transit Curves

TCE 010741920-02 P= 1.015841 Days $T_0=131.599360$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

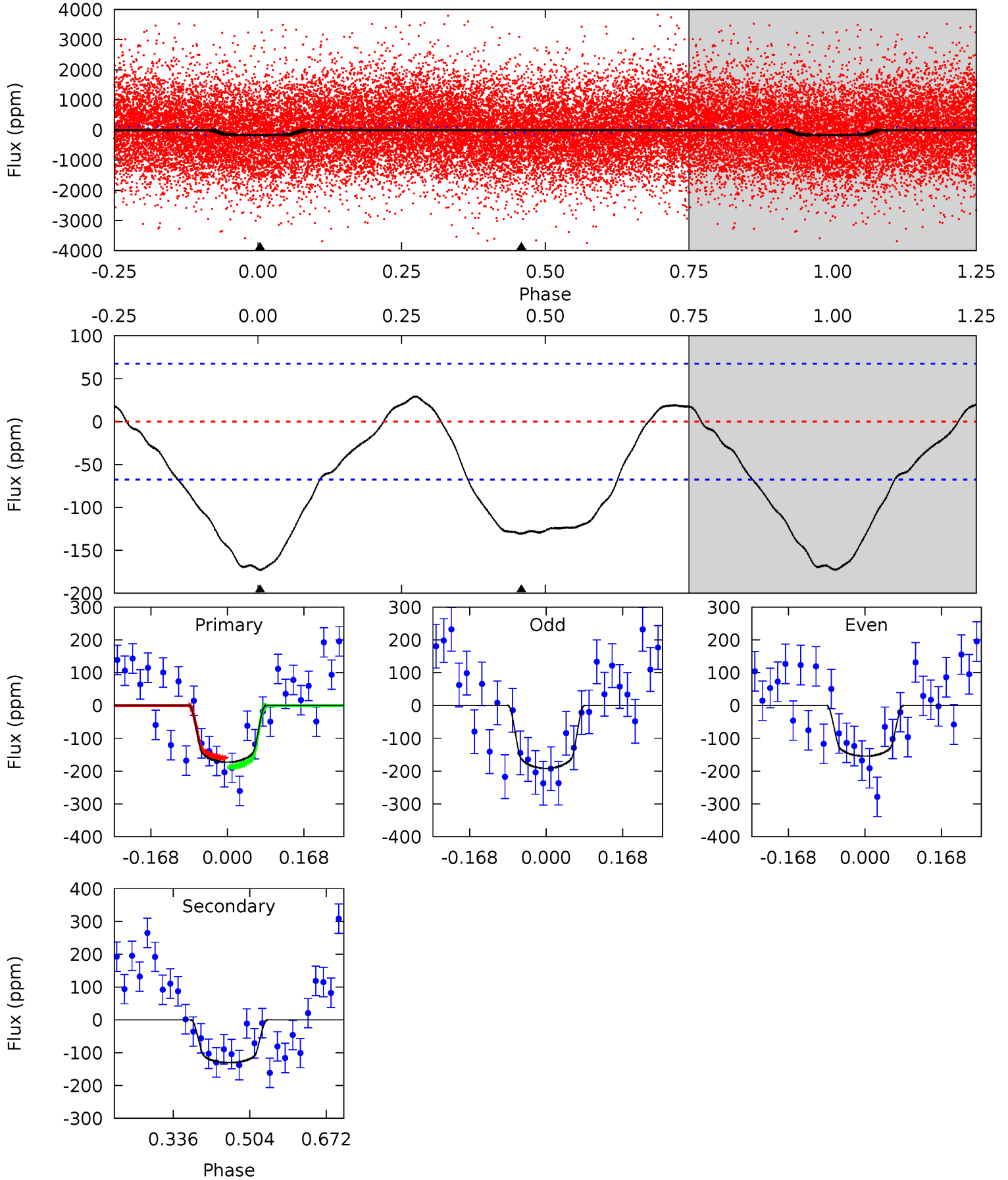
TCE 010741920-02 $P = 1.015856$ Days $T_0 = 131.590188$ (BKJD)



DV Model-Shift Uniqueness Test

010741920-02, P = 1.015841 Days, E = 131.599360 Days

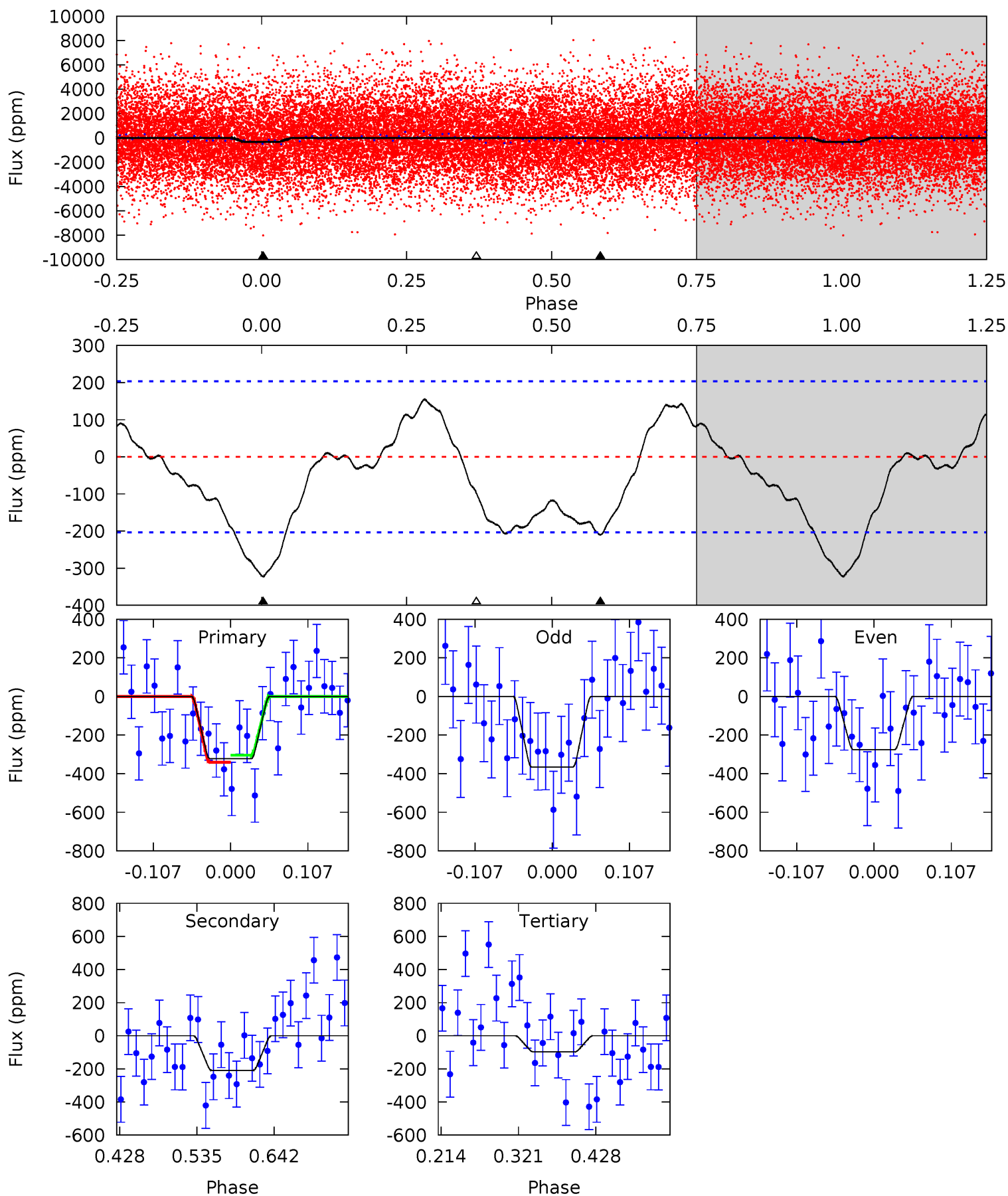
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	8.61	0	0	4.45	1.38	1.51	11.4	11.4	8.61	8.61	1.24	0.93	0.14	0.92



Alt Model-Shift Uniqueness Test

010741920-02, P = 1.015856 Days, E = 131.590188 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.21	4.70	2.18	0	4.55	1.61	2.32	5.03	7.21	2.52	4.70	1.01	0.97	0.32	0.42



Stellar Parameters For KIC 010741920

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8048^{+222}_{-334}	$3.725^{+0.442}_{-0.104}$	$-0.100^{+0.200}_{-0.350}$	$3.251^{+0.670}_{-1.564}$	$2.046^{+0.337}_{-0.547}$	$0.084^{+0.364}_{-0.029}$
	+3%/-4%	+12%/-3%	+200%/-350%	+21%/-48%	+16%/-27%	+434%/-35%
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 010741920-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-131 ± 15	$4.54^{+2.28}_{-1.98}$	5472^{+430}_{-669}	6747^{+2773}_{-1278}	$2.188^{+4.539}_{-1.188}$
Alt.	-210 ± 45	$5.98^{+2.48}_{-2.03}$	5437^{+418}_{-697}	6549^{+1655}_{-1083}	$2.027^{+2.543}_{-1.038}$

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

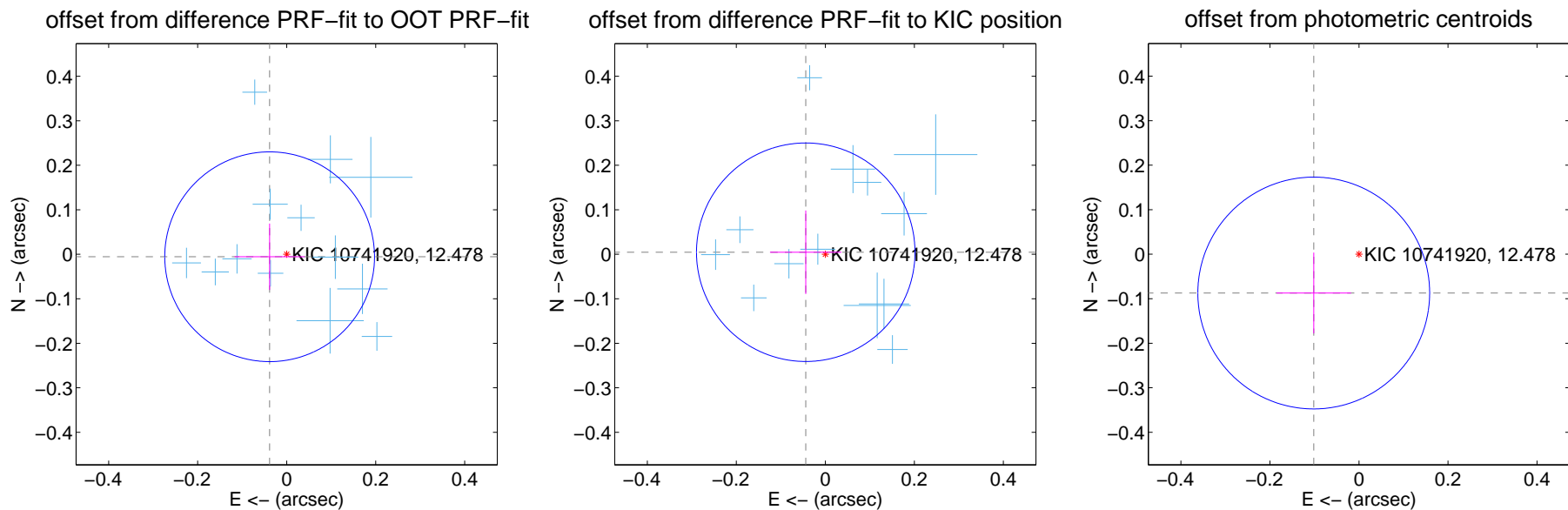
DV Centroid Data

Supplemental centroid analysis for 010741920-02. Kepler magnitude: 12.48. Transit SNR 11.00

There are 14 quarters with good PRF difference image offsets

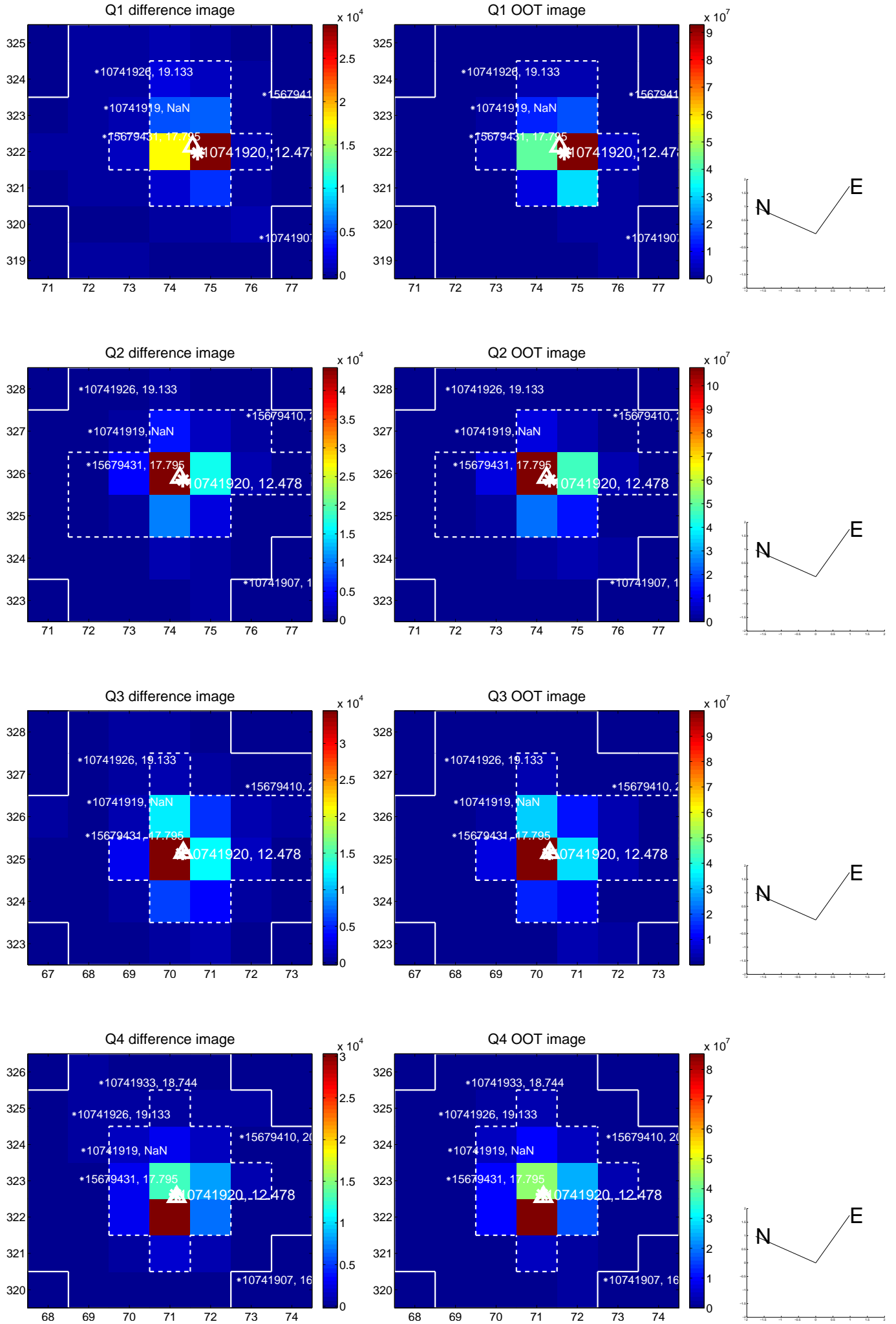
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.039 ± 0.079	0.49	0.038 ± 0.079	-0.006 ± 0.075
PRF-fit source offset from KIC position	0.044 ± 0.082	0.54	0.044 ± 0.080	0.005 ± 0.094
photometric centroid source offset	0.13 ± 0.09	1.54	0.10 ± 0.08	-0.09 ± 0.09

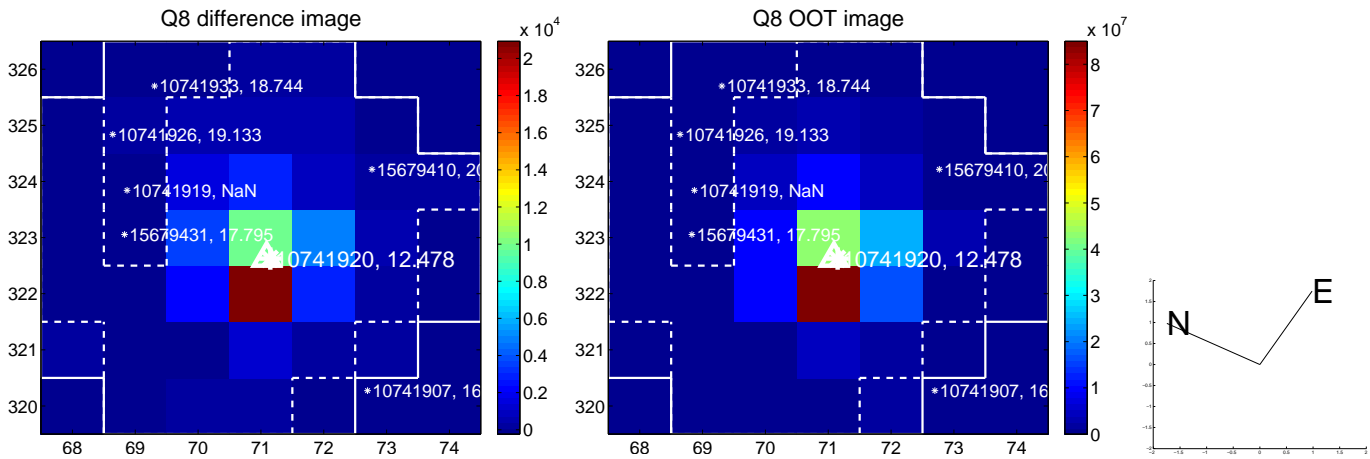
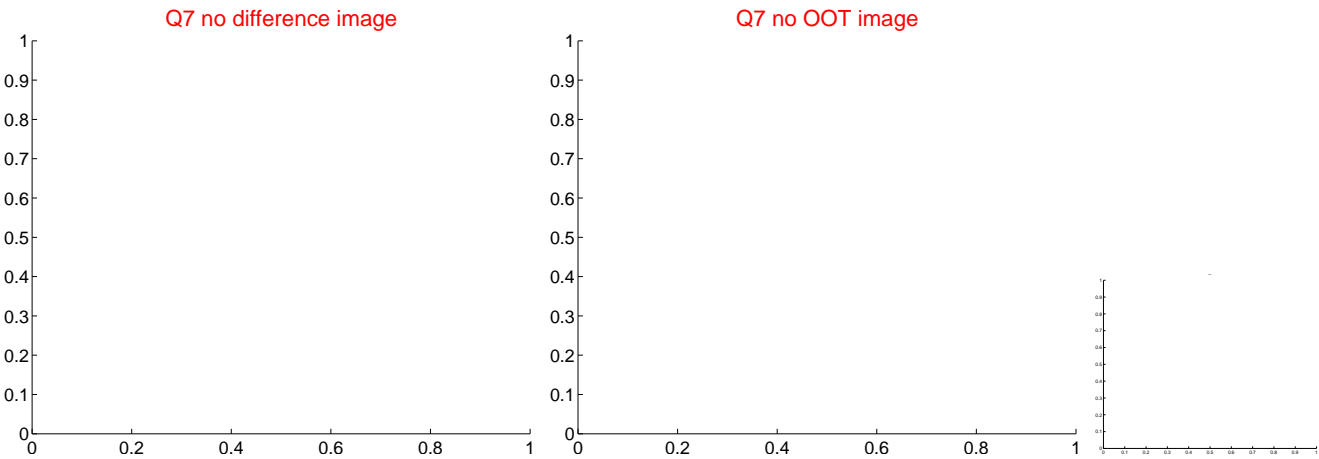
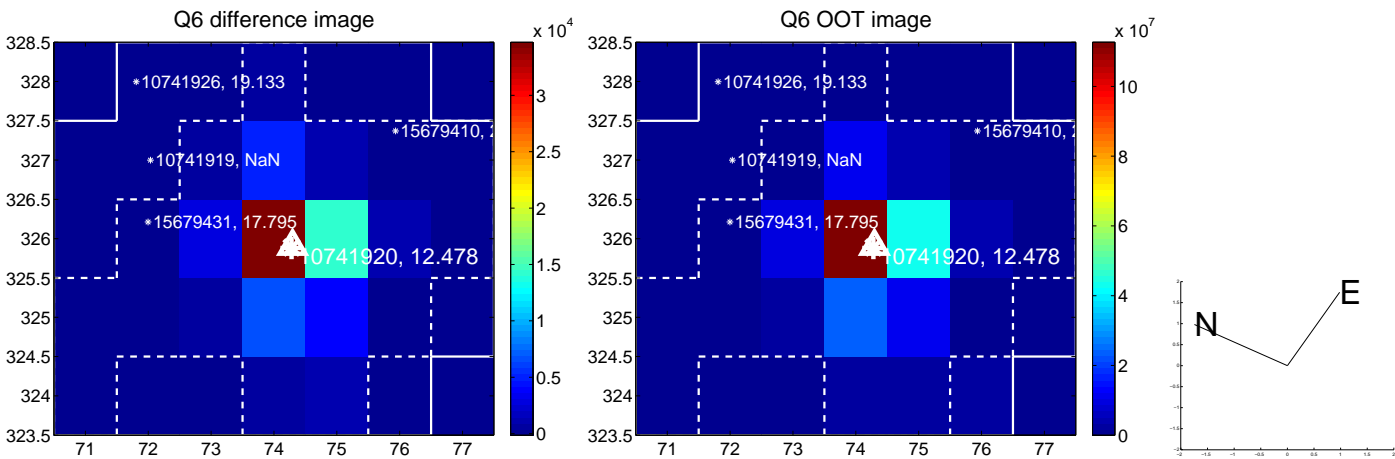
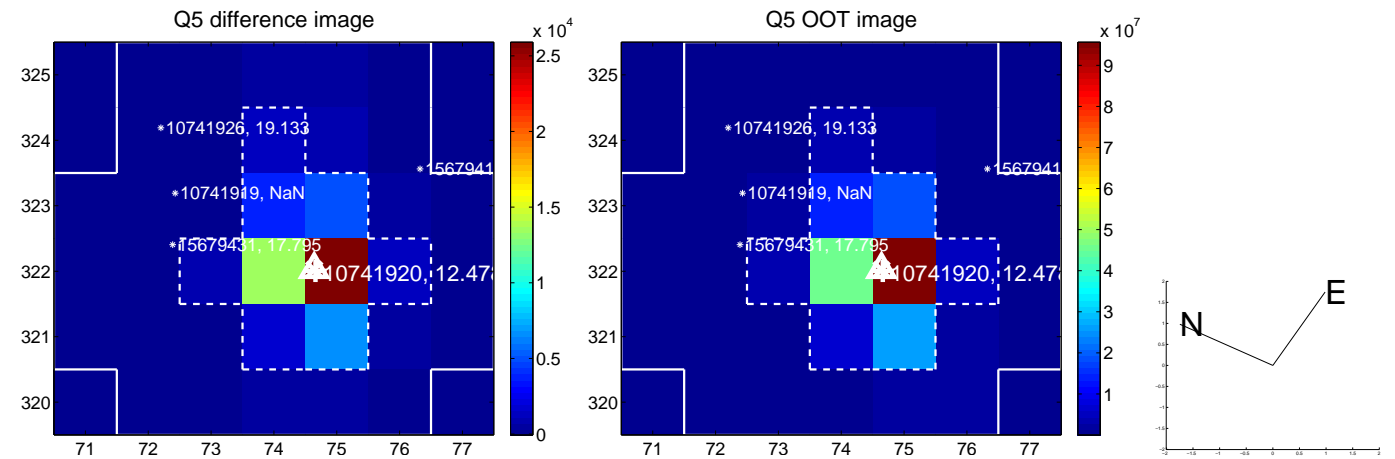


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

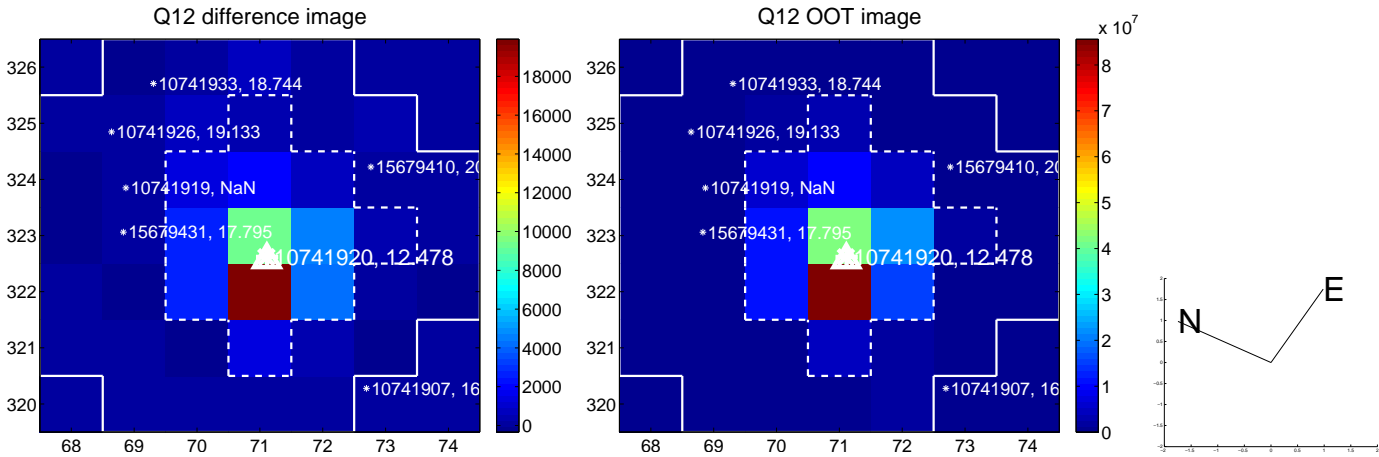
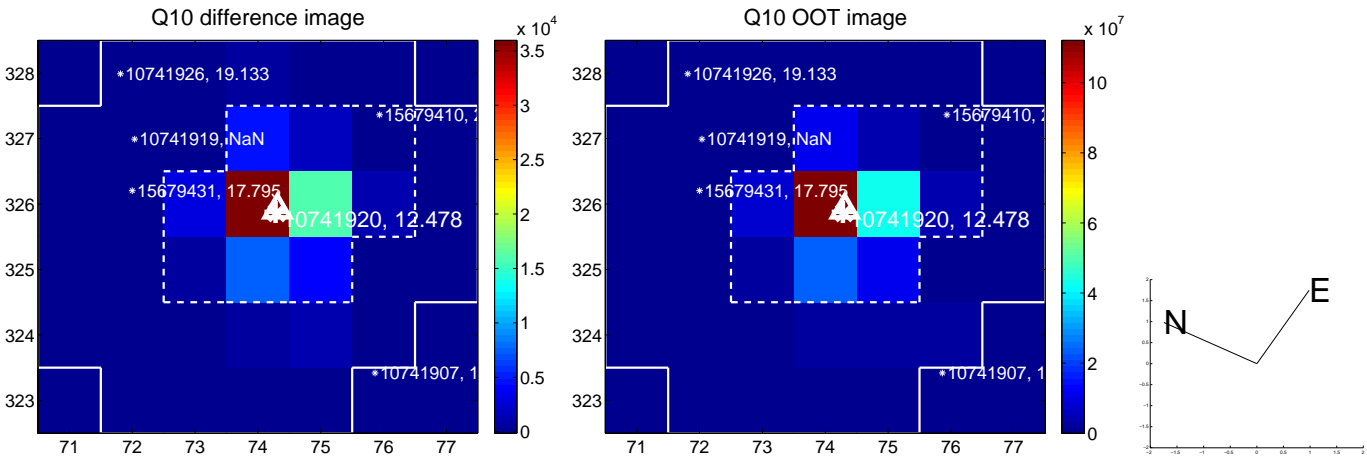
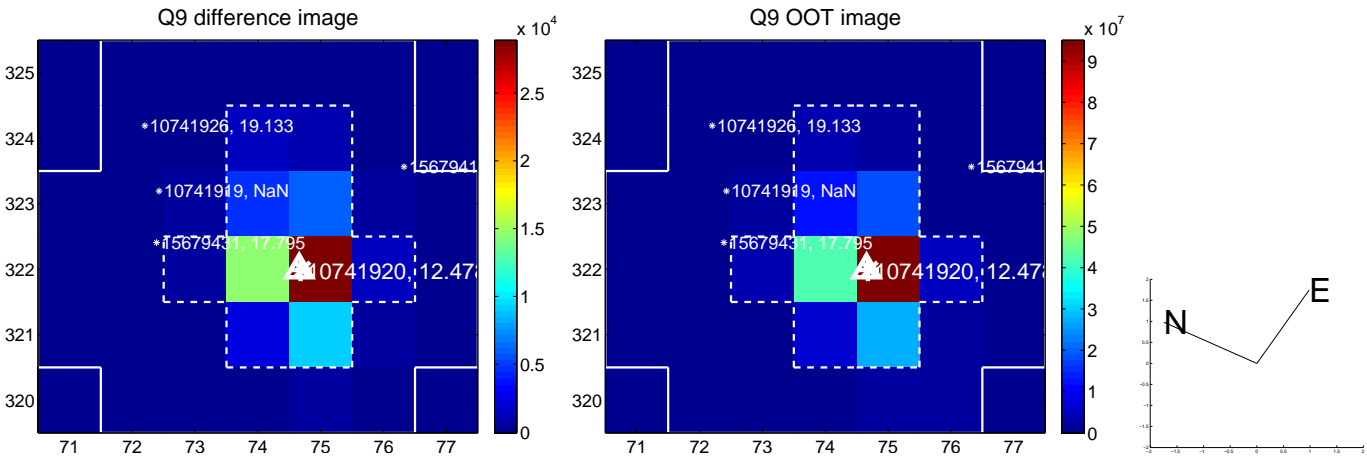
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



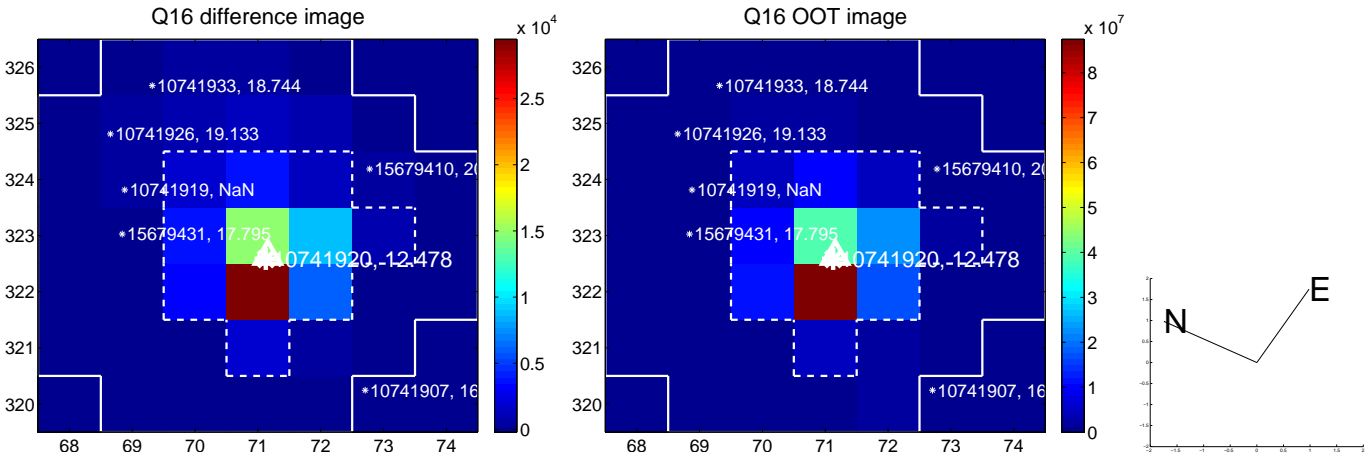
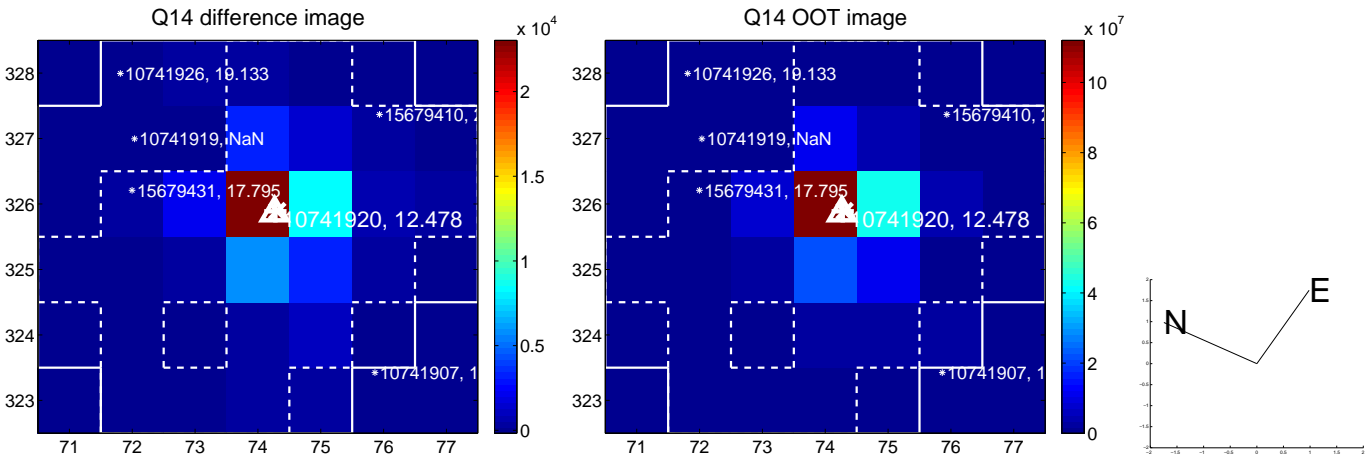
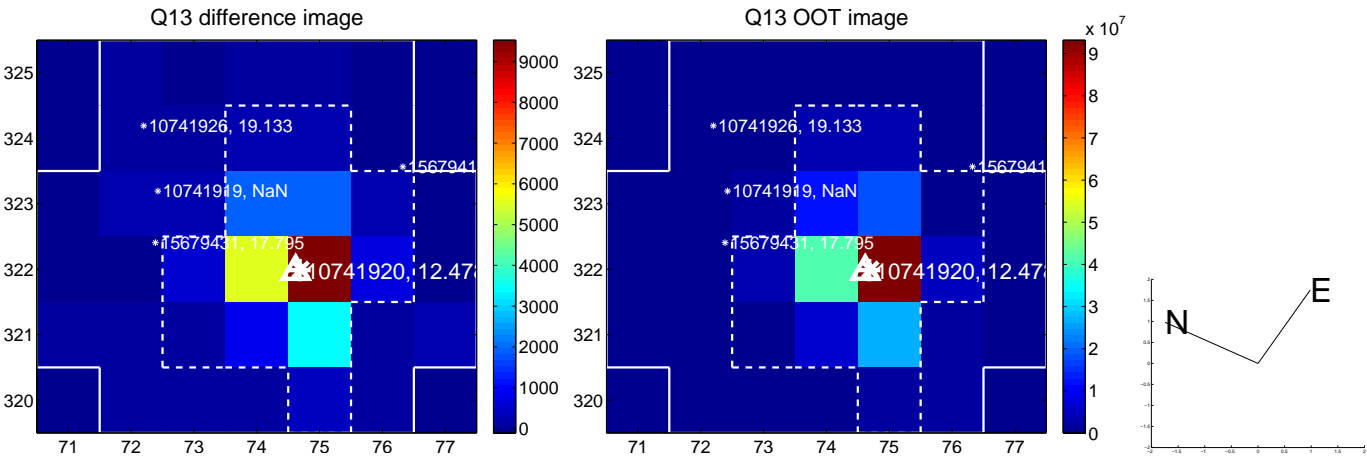
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



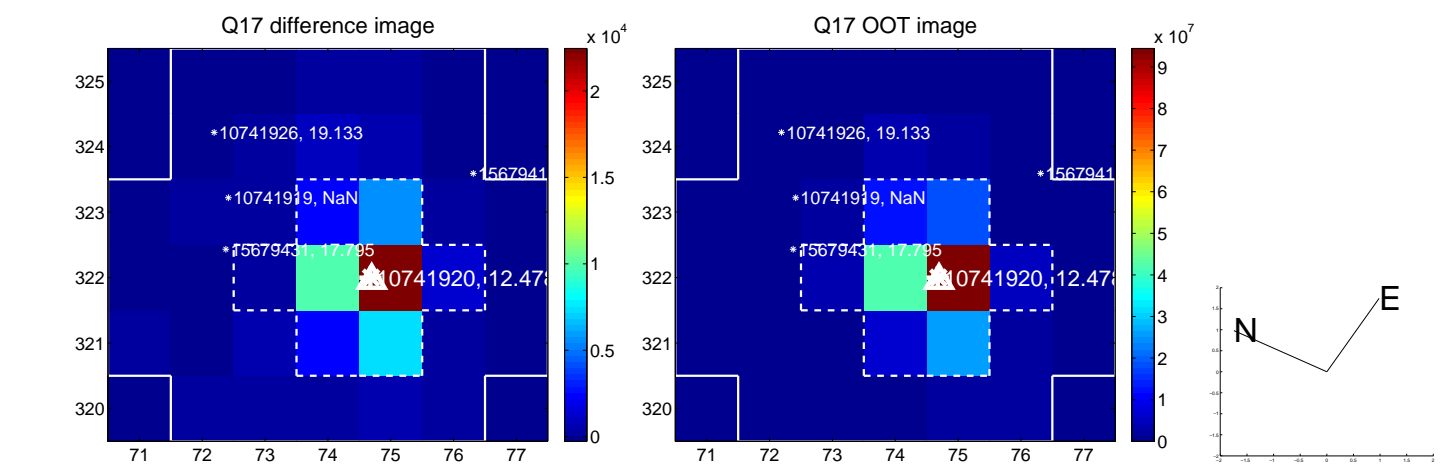
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



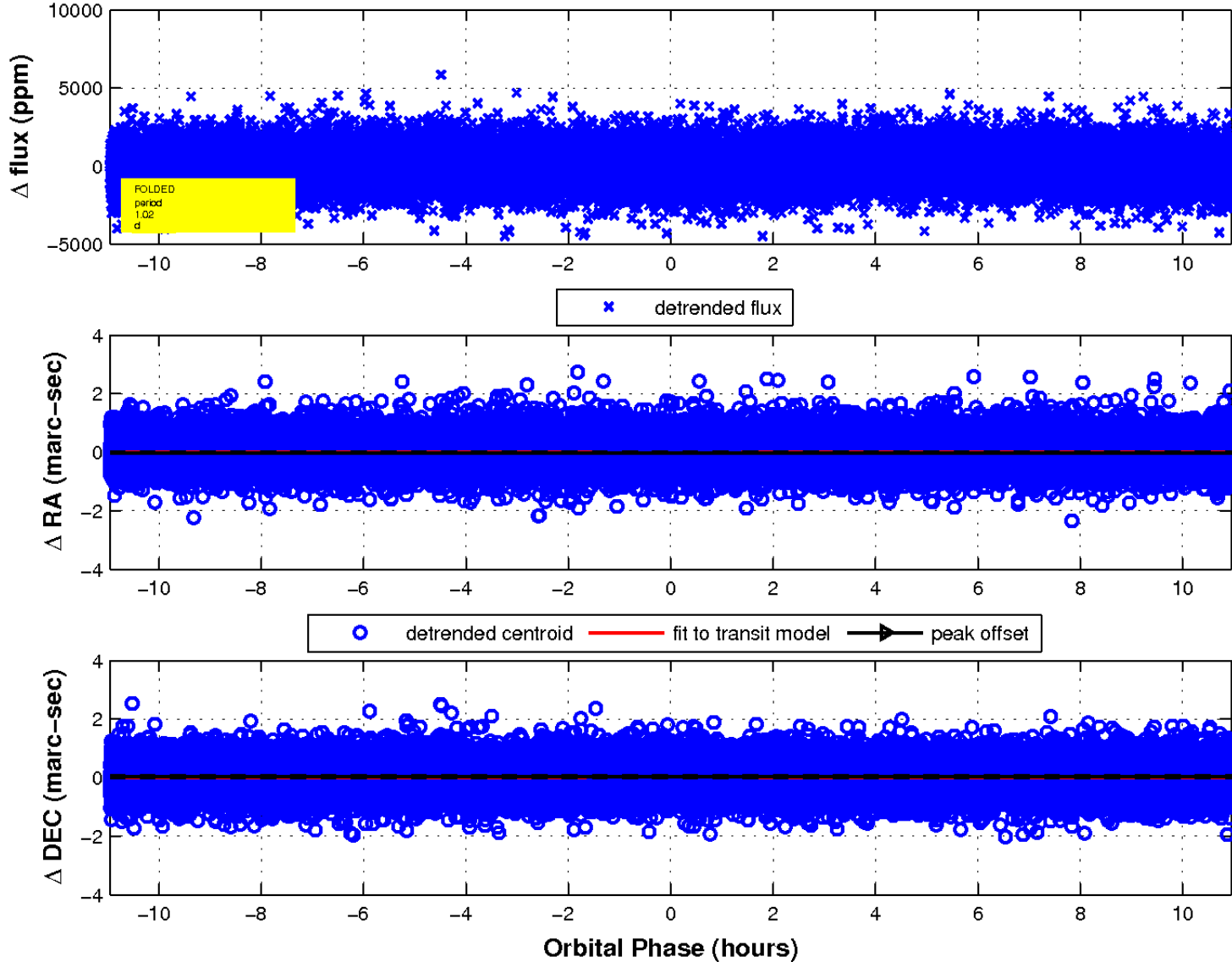
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

