

KIC 006721523

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})
006721523-01	OBS	No	2.582741	133.750098	51.6	7.849	11.3	12.7	4.86	6697	7.05	19471.46
006721523-02	OBS	No	0.804022	132.191771	24.6	3.400	10.8	10.6	4.86	6697	2.82	0.00
006721523-03	OBS	No	253.616155	295.821943	320.7	9.253	9.5	8.6	4.86	6697	9.00	42.98
006721523-04	OBS	No	121.015623	174.419378	191.8	13.243	9.1	7.1	4.86	6697	7.44	115.27
006721523-05	OBS	No	182.253762	293.333193	173.4	13.771	9.3	5.2	4.86	6697	7.42	66.77
006721523-06	OBS	No	68.022163	182.447275	171.6	14.651	9.0	7.3	4.86	6697	8.32	248.49
006721523-07	OBS	No	94.088726	165.233179	176.1	4.500	8.4	-1.0	4.86	6697	6.50	161.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006721523-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
006721523-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006721523-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNCERTAIN
006721523-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006721523-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
006721523-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006721523-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

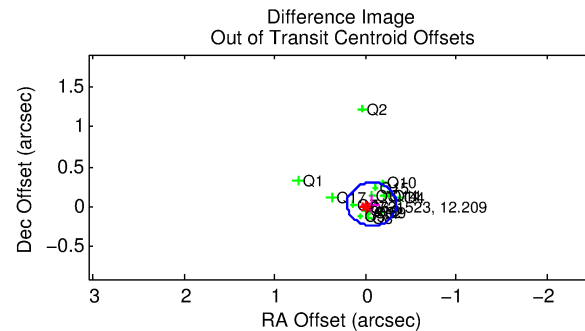
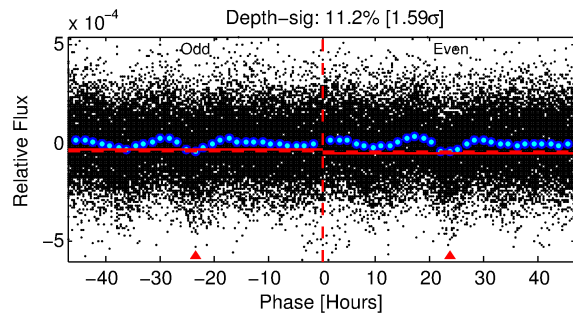
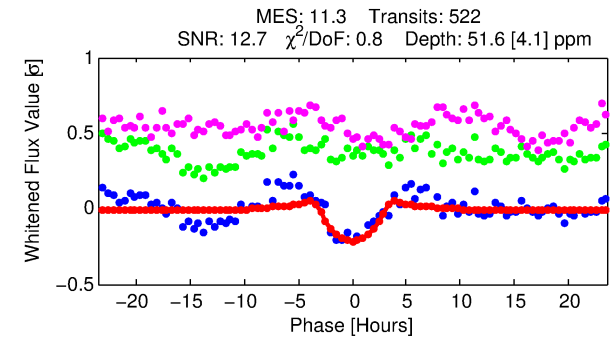
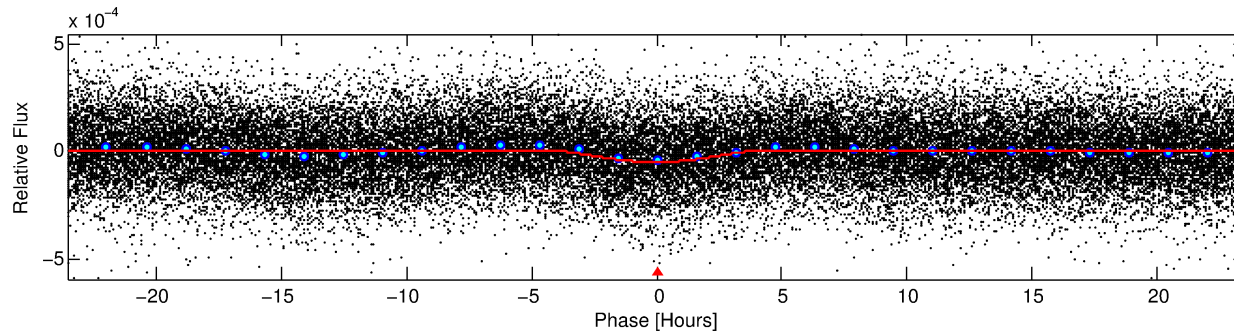
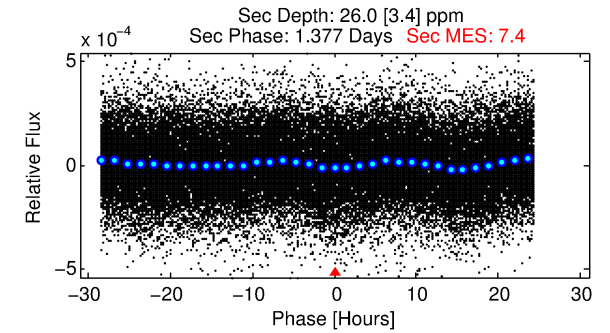
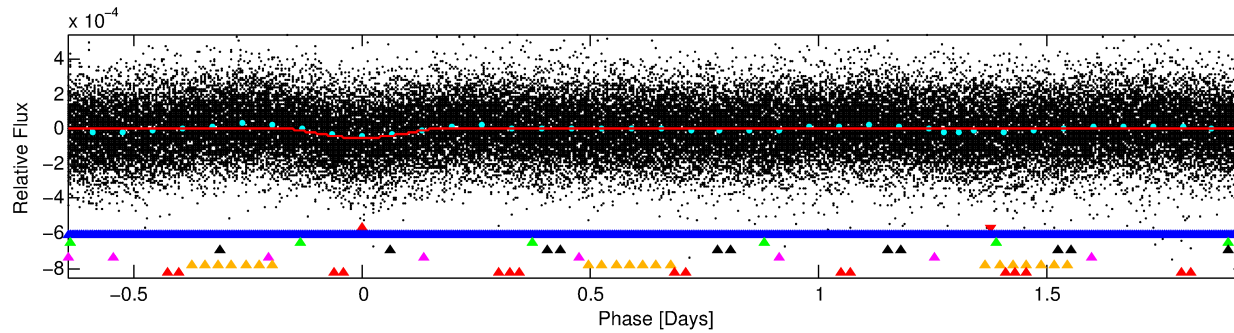
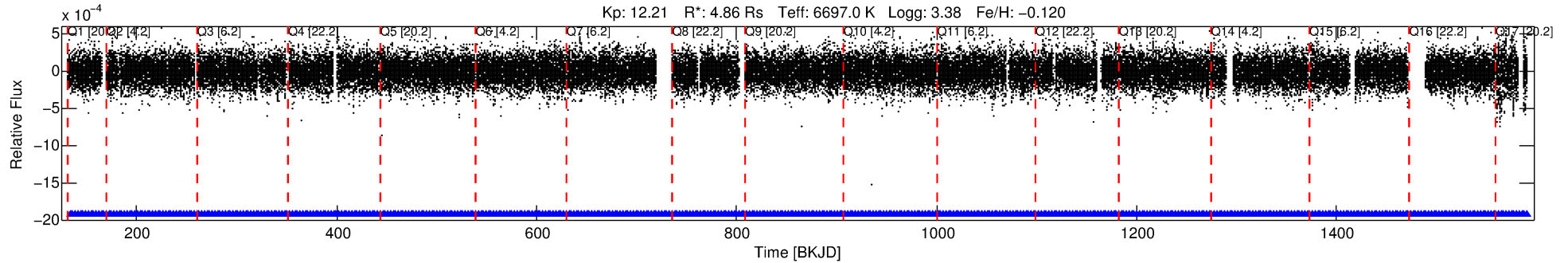
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006721523-01

No Significant Match Found

DV One-Page Summary

KIC: 6721523 Candidate: 1 of 7 Period: 2.583 d



DV Fit Results:

Period = 2.58274 [0.00004] d
Epoch = 133.7501 [0.0103] BKJD
Rp/R* = 0.0133 [0.0198]
a/R* = 1.09 [0.04]
b = 1.00 [0.03]
Seff = 19471.46 [12357.28]
Teq = 3012 [478] K
Rp = 7.05 [10.87] Re
a = 0.0468 [0.0180] AU
Ag = 0.63 [1.92] [-0.19σ]
Teffp = 4148 [3098] K [0.36σ]

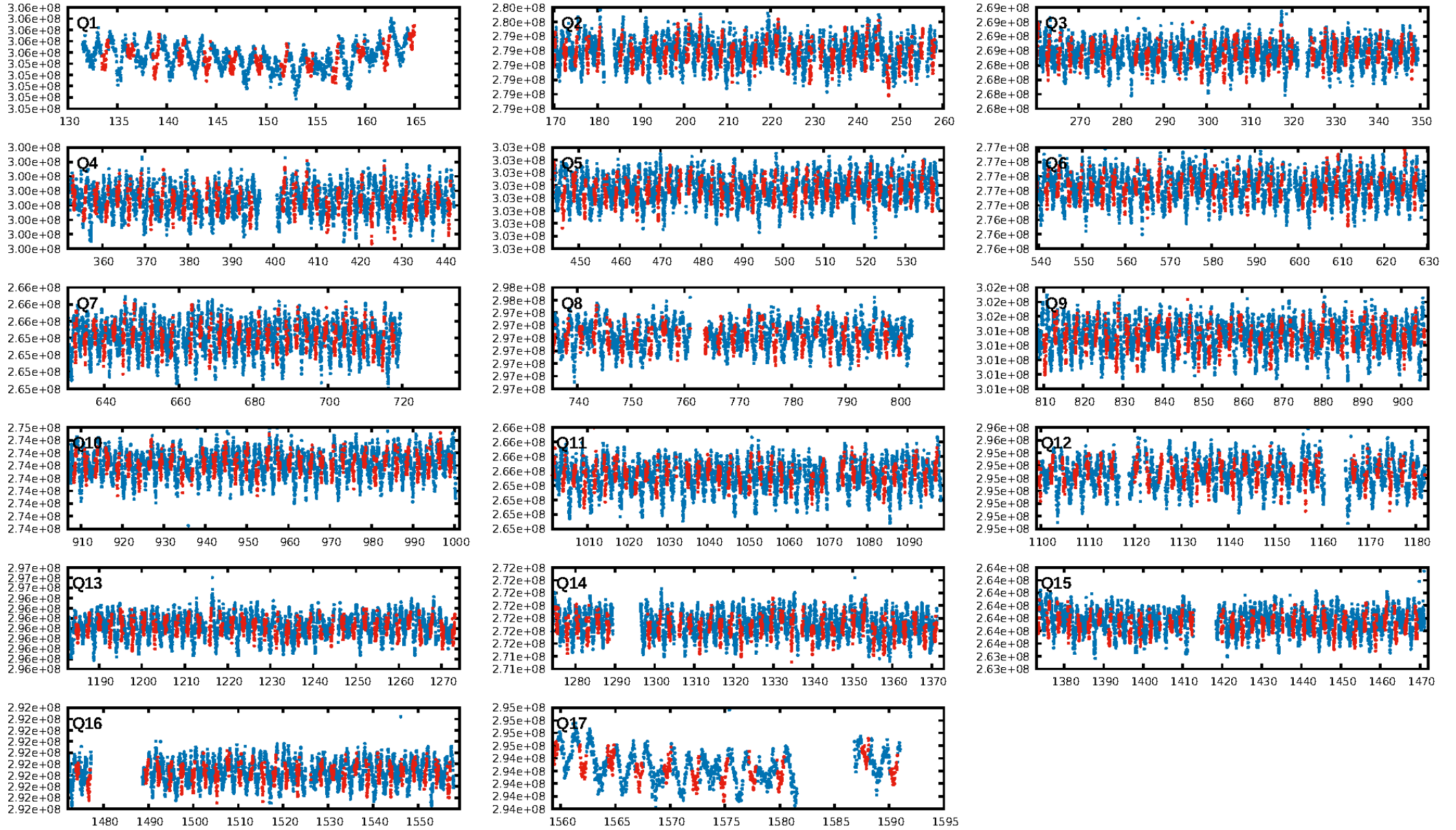
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.99σ]
LongPeriod-sig: 100.0% [94.49σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [498/498]
GhostDiagnostic-chr: 2.977
Centroid-sig: 0.0%
Centroid-so: 1.371 arcsec [2.91σ]
OotOffset-rm: 0.074 arcsec [0.83σ]
KicOffset-rm: 0.093 arcsec [1.06σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
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DiffImageOverlap-fno: 0.00 [0/17]

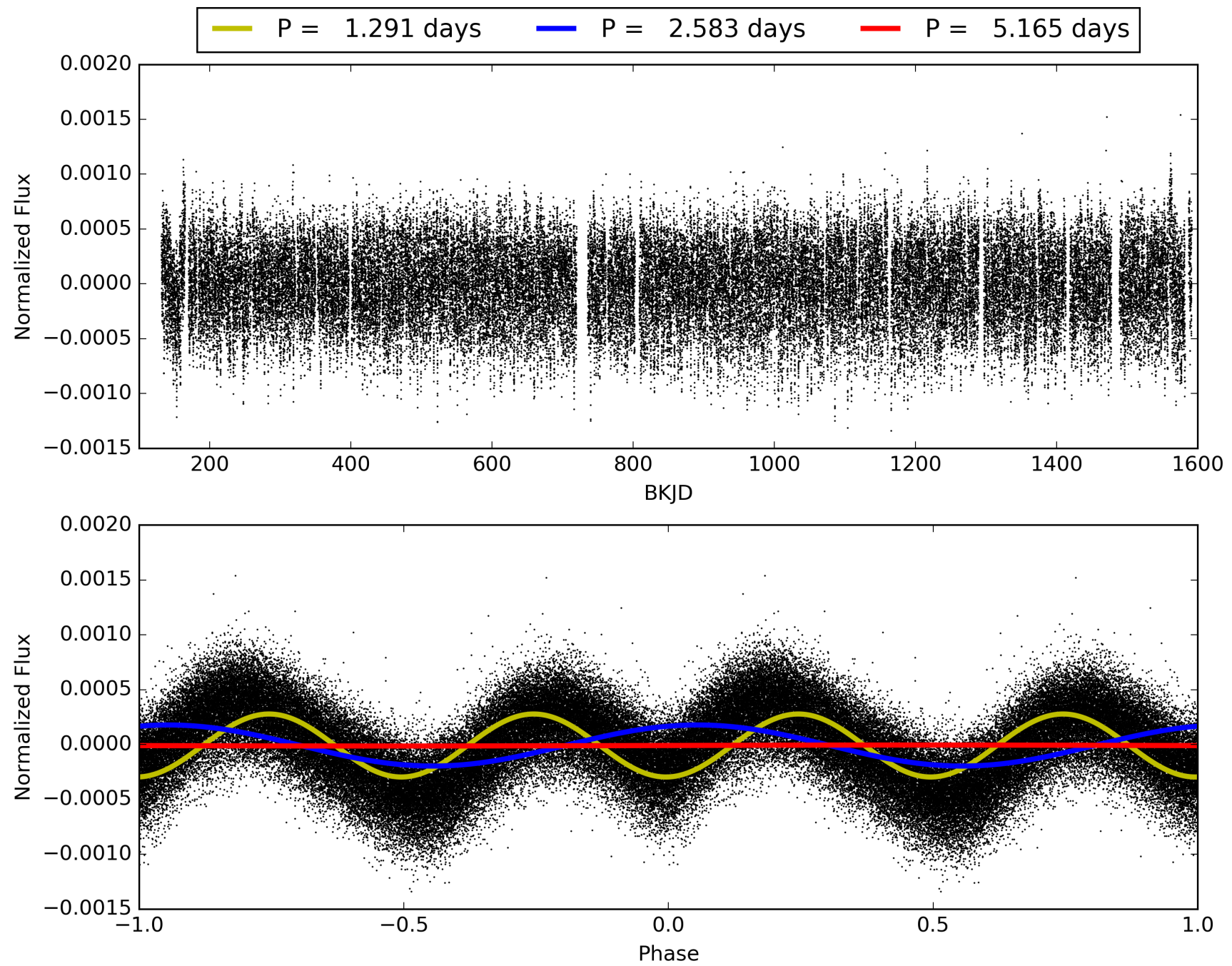
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:00:54 Z

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

TCE 006721523-01, PDC Light Curves

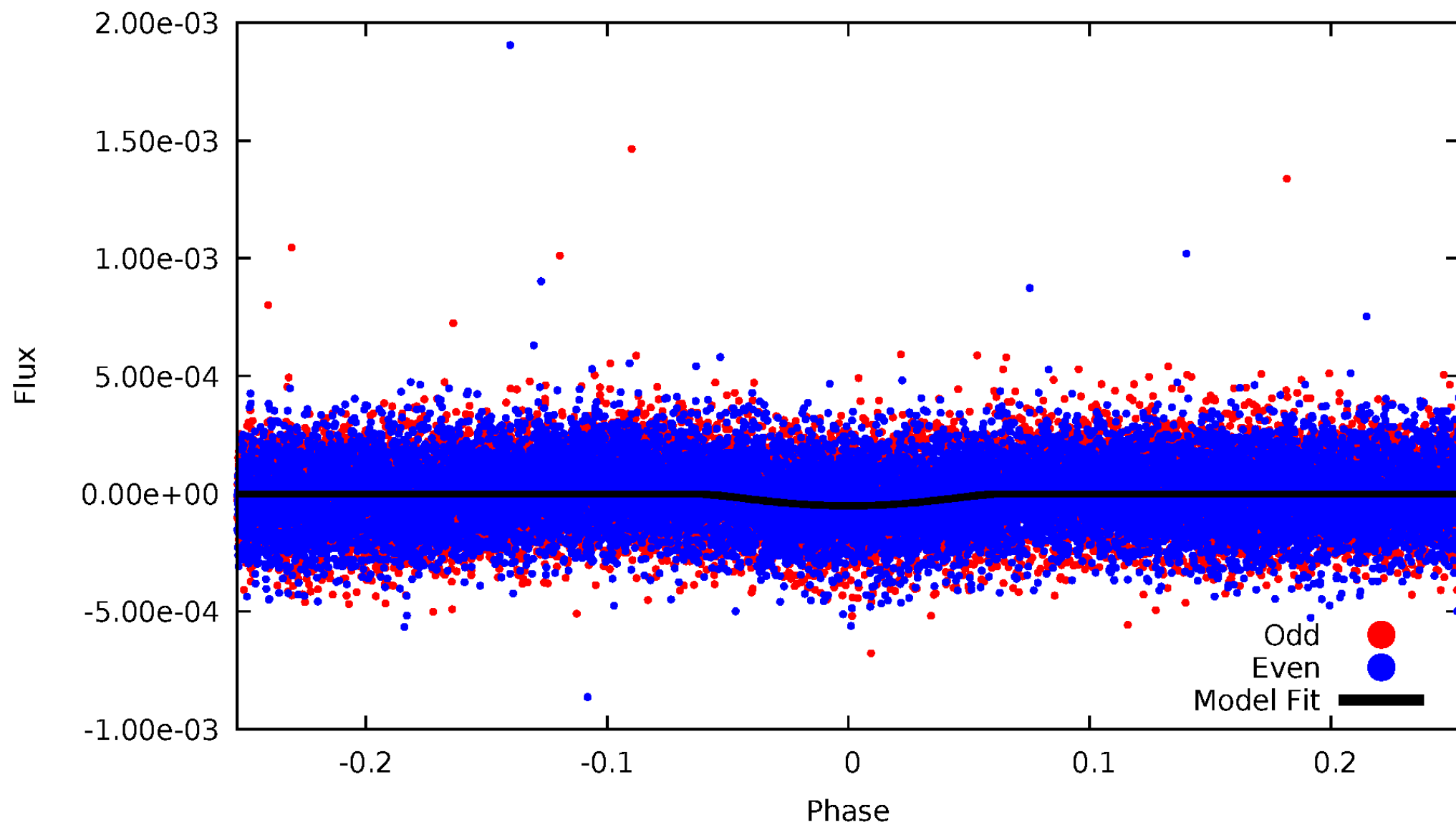


TCE 006721523-01



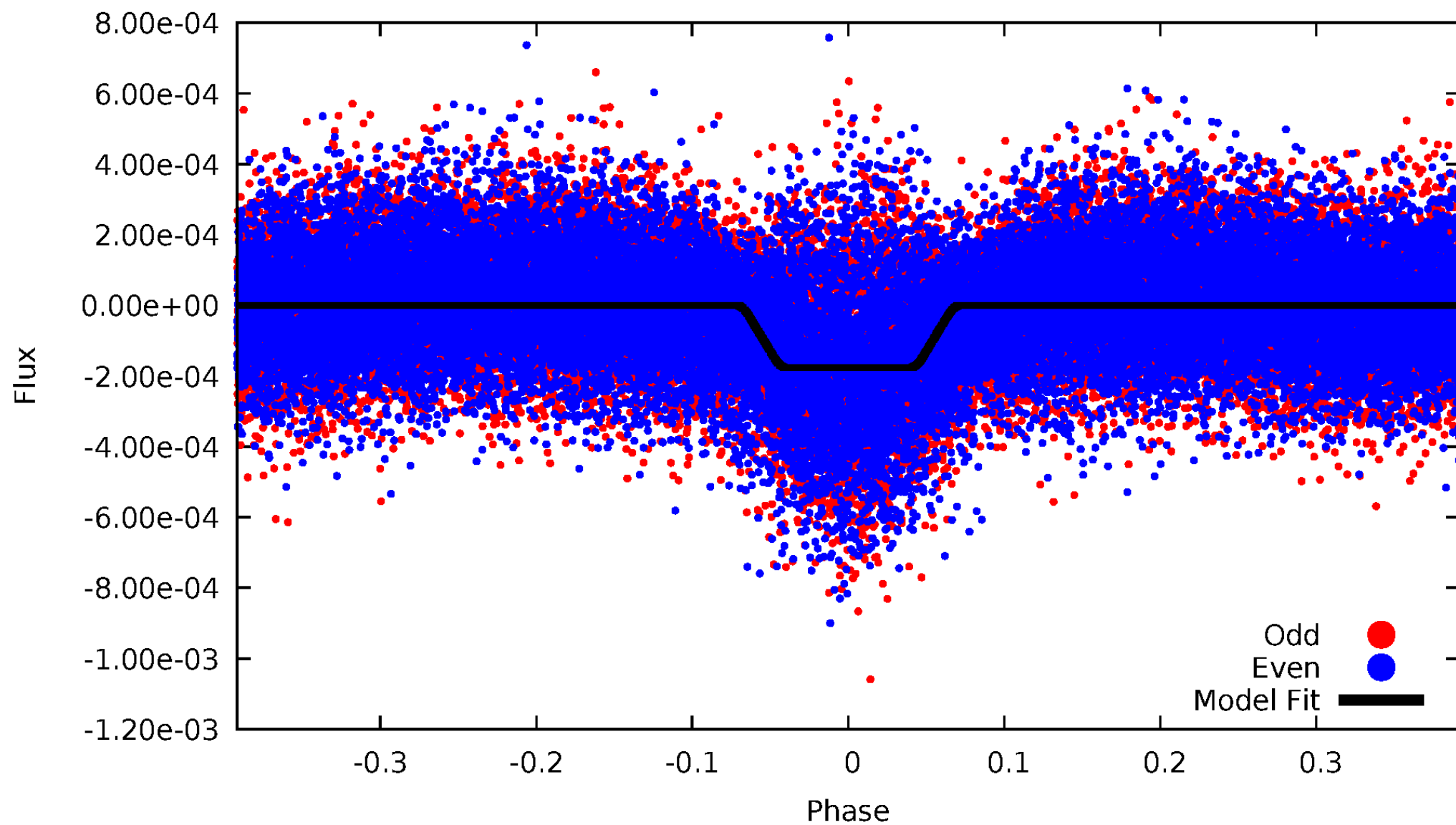
DV Odd/Even

TCE 006721523-01



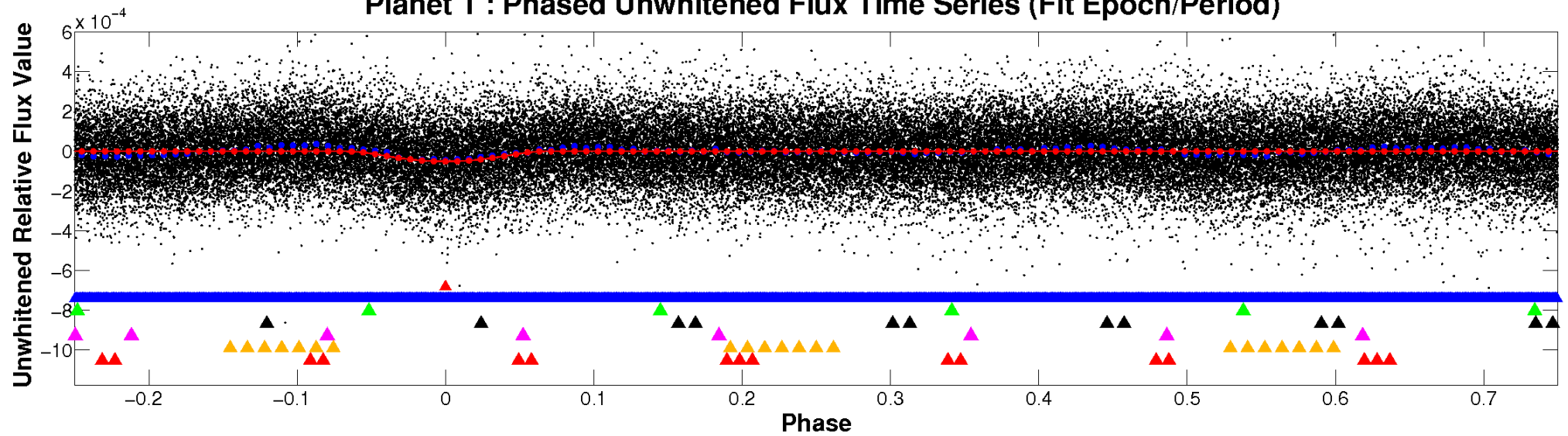
ALT Odd/Even

TCE 006721523-01

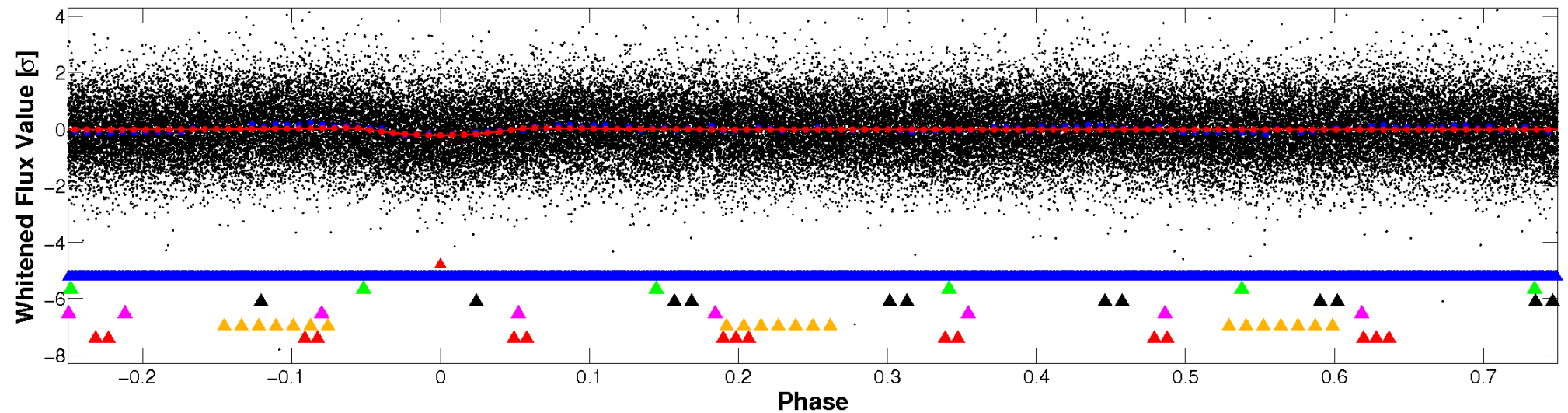


Non-Whitened Vs. Whitened Light Curve

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

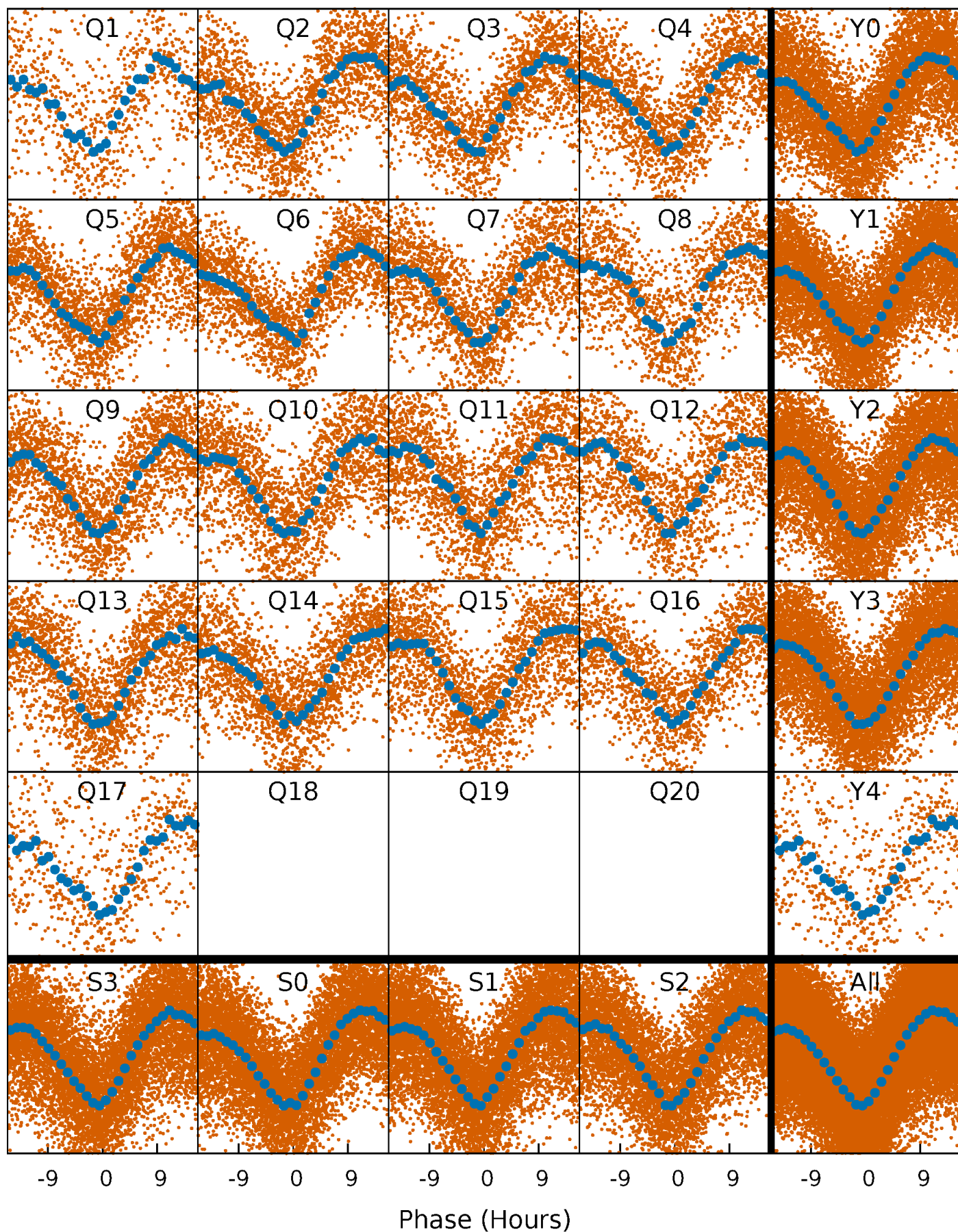


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



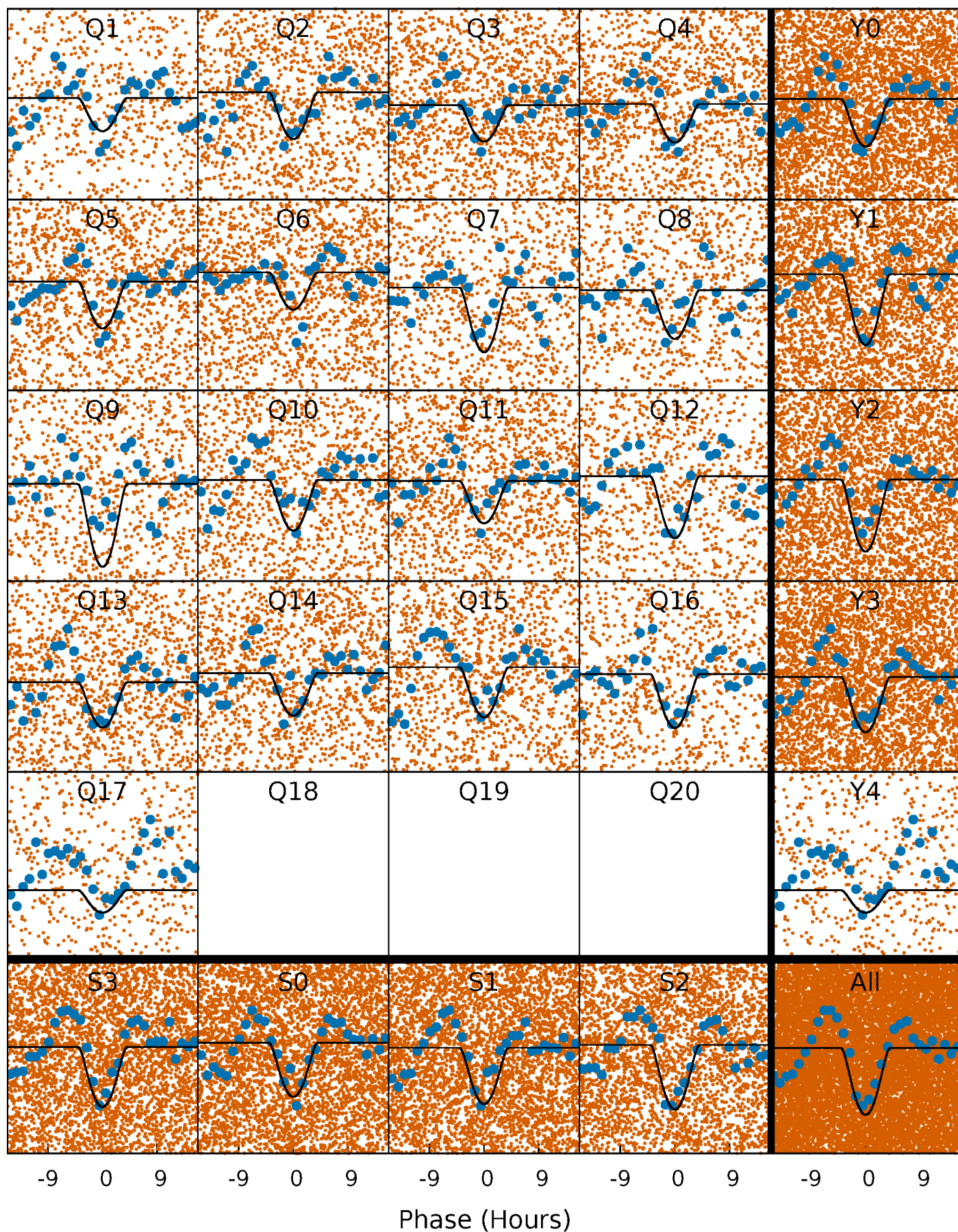
PDC Quarter-Phased Transit Curves

TCE 006721523-01 P= 2.582741 Days $T_0=133.750098$ (BKJD)



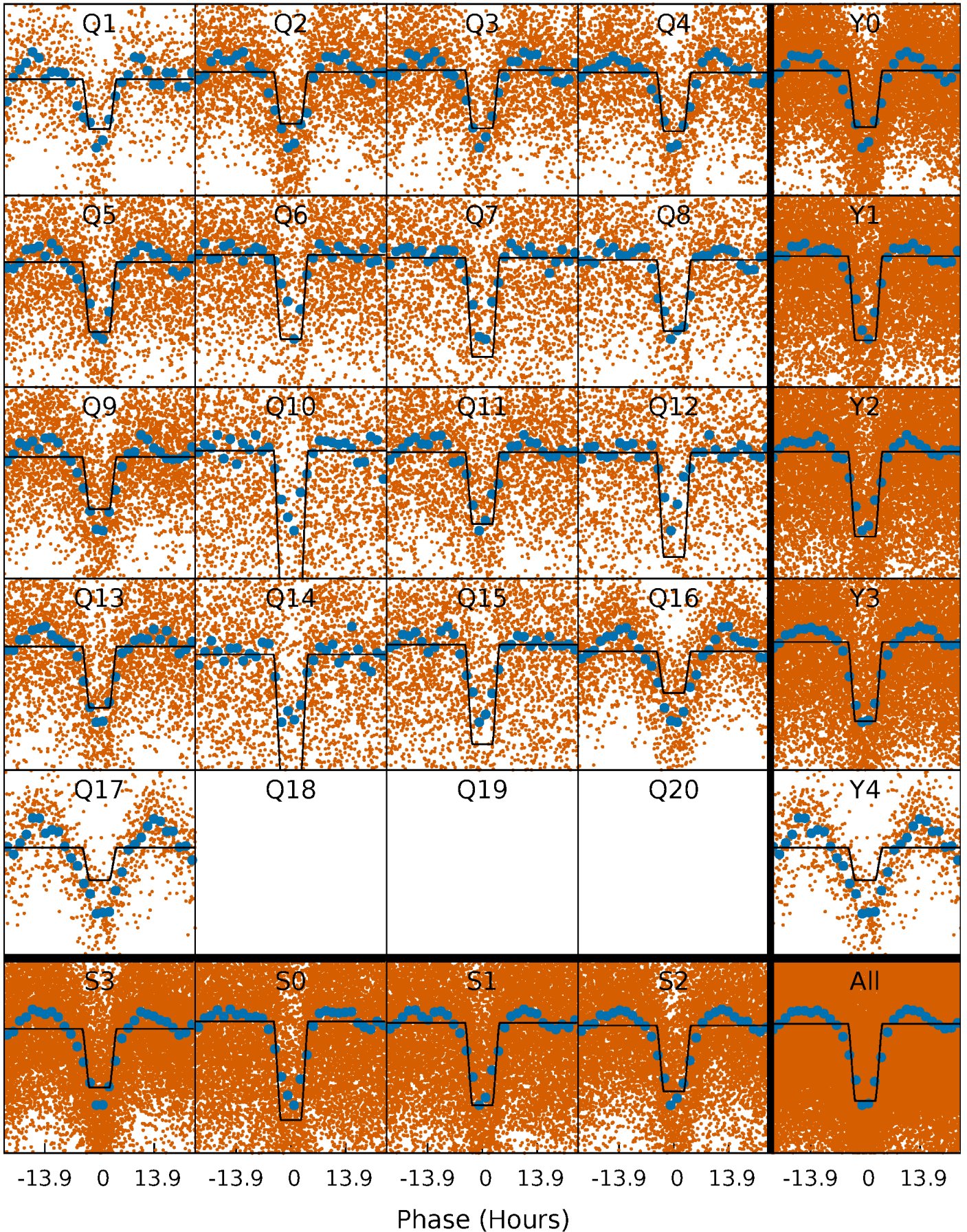
DV Quarter-Phased Transit Curves

TCE 006721523-01 P= 2.582741 Days $T_0=133.750098$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

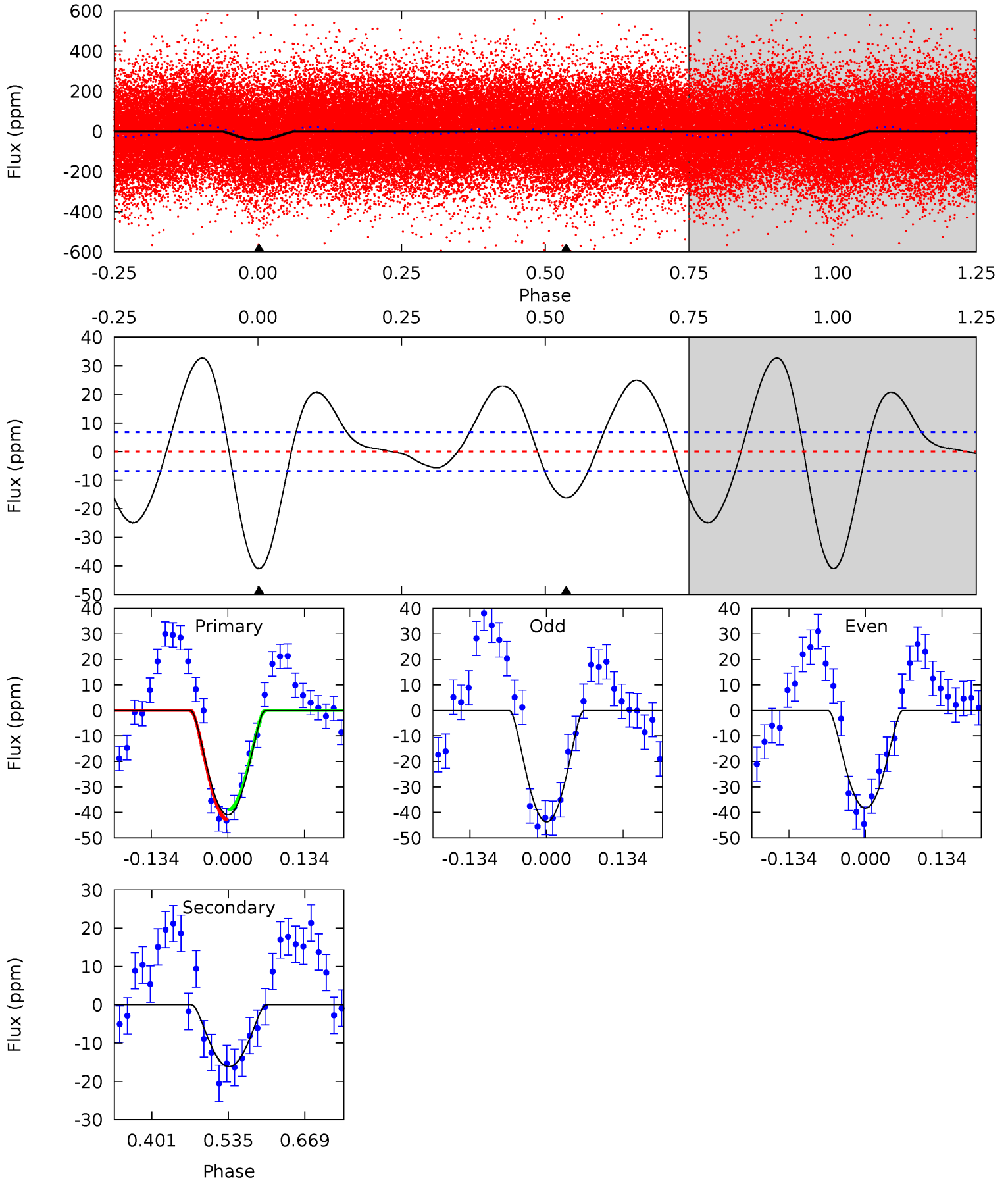
TCE 006721523-01 P= 2.582758 Days $T_0=133.731044$ (BKJD)



DV Model-Shift Uniqueness Test

006721523-01, P = 2.582741 Days, E = 131.167357 Days

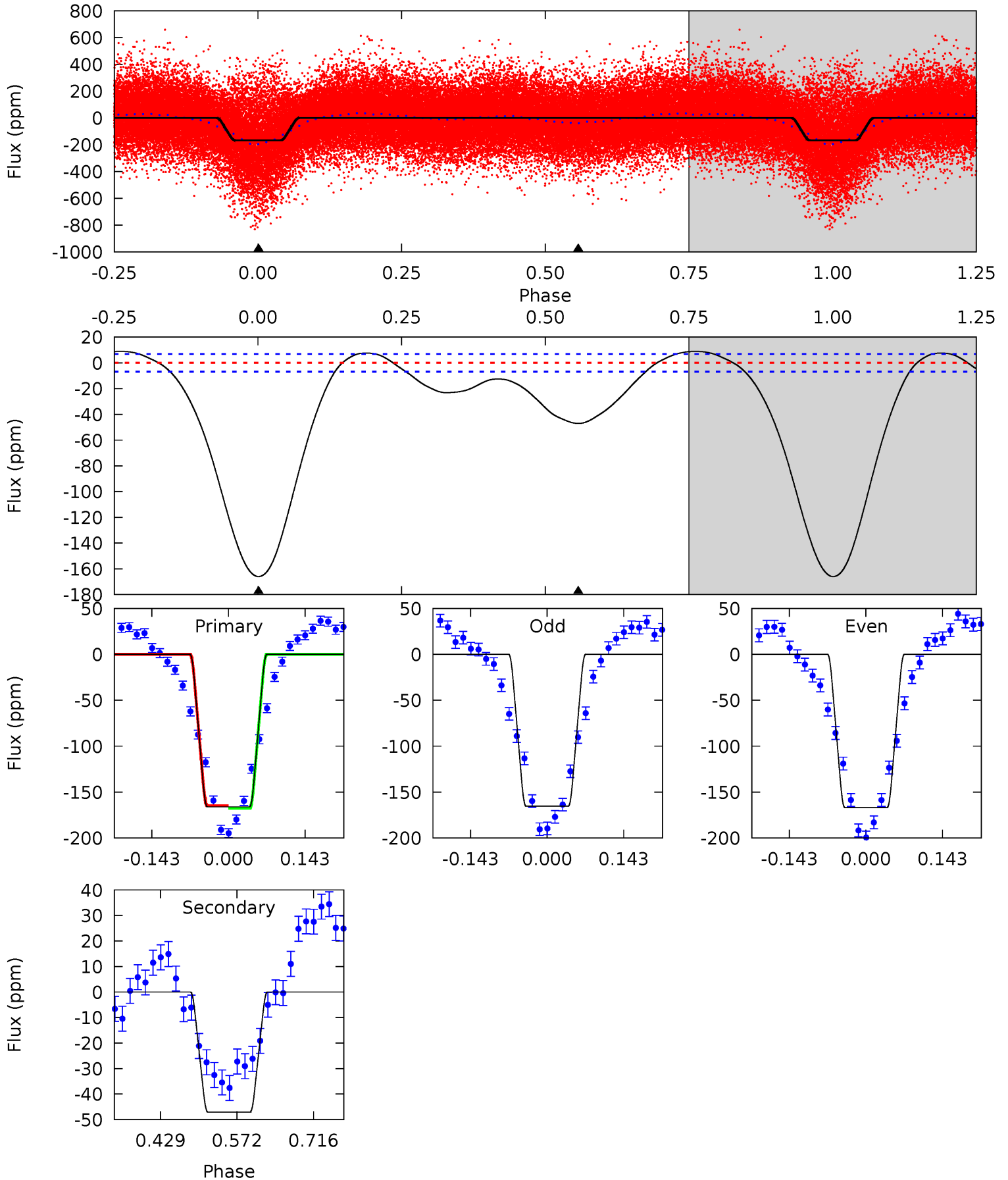
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.1	10.7	0	0	4.50	1.50	7.78	27.1	27.1	10.7	10.7	1.79	1.30	0.44	1.25



Alt Model-Shift Uniqueness Test

006721523-01, P = 2.582758 Days, E = 131.148286 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
108.0	30.6	0	0	4.49	1.46	7.46	108.0	108.0	30.6	30.6	0.51	0.95	0.05	0.91



Stellar Parameters For KIC 006721523

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6697^{+180}_{-200}	$3.375^{+0.369}_{-0.062}$	$-0.120^{+0.300}_{-0.250}$	$4.860^{+0.335}_{-1.896}$	$2.042^{+0.091}_{-0.366}$	$0.025^{+0.069}_{-0.005}$
	+3%/-3%	+11%/-2%	+250%/-208%	+7%/-39%	+4%/-18%	+277%/-20%
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 006721523-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-16 ± 2	$9.56^{+8.26}_{-6.46}$	4137^{+199}_{-406}	-3032^{+8093}_{-631}	$0.210^{+1.792}_{-0.152}$
Alt.	-47 ± 2	$9.35^{+8.89}_{-6.05}$	4131^{+193}_{-424}	3769^{+2929}_{-7073}	$0.635^{+4.418}_{-0.468}$

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

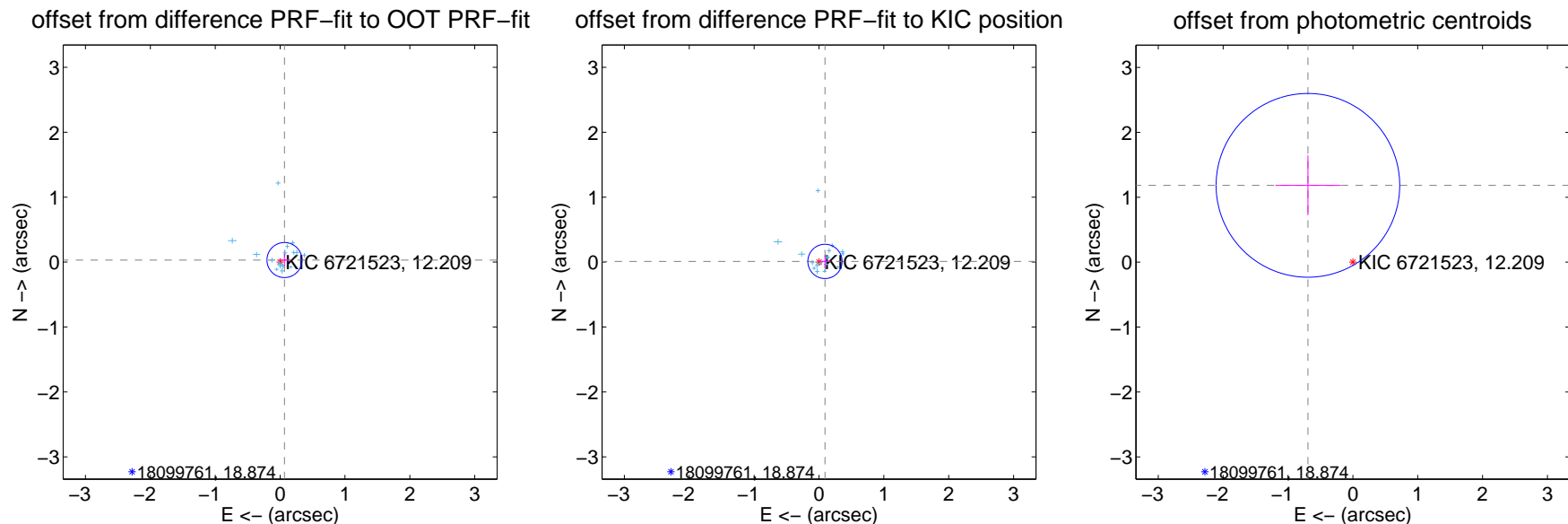
DV Centroid Data

Supplemental centroid analysis for 006721523-01. Kepler magnitude: 12.21. Transit SNR 12.72

There are 17 quarters with good PRF difference image offsets

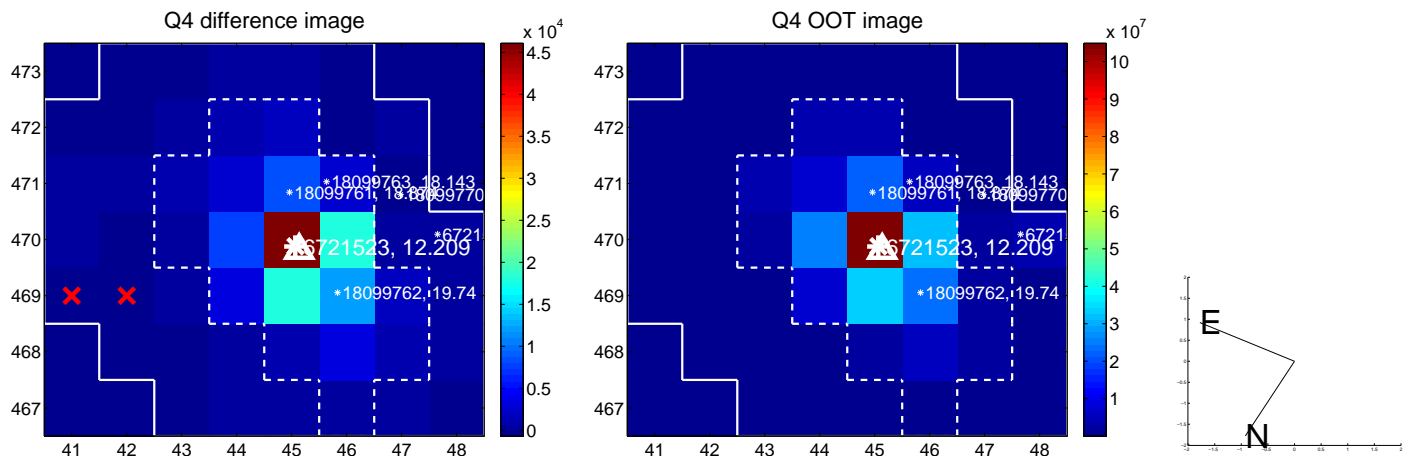
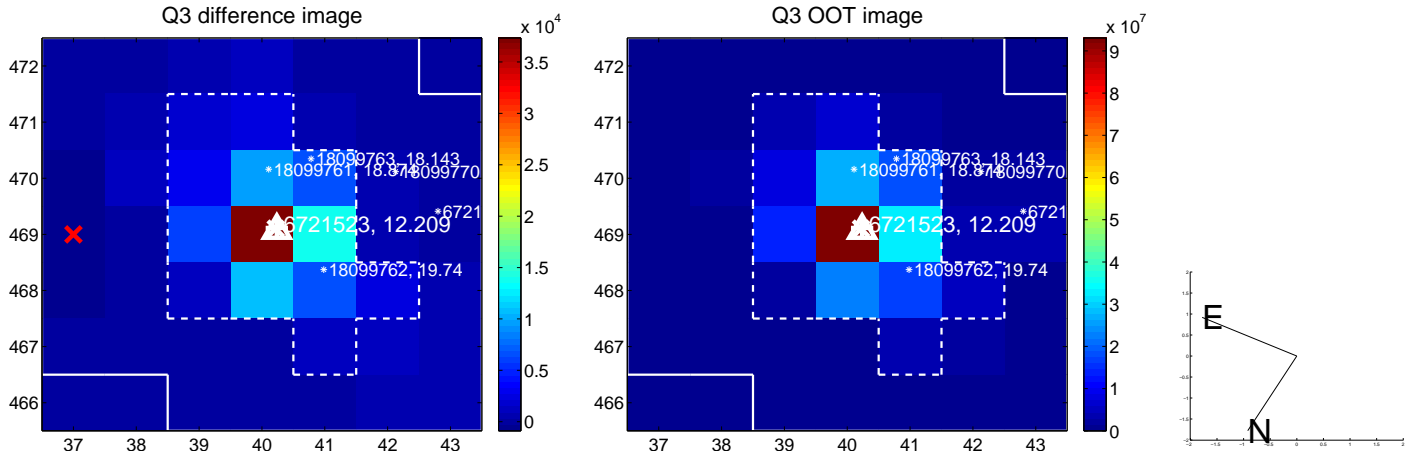
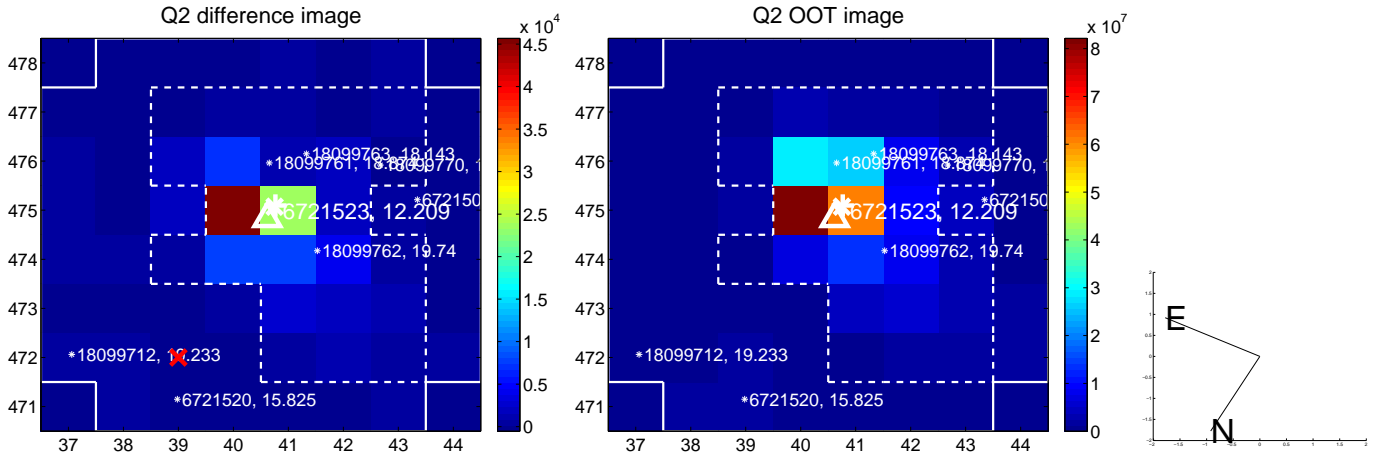
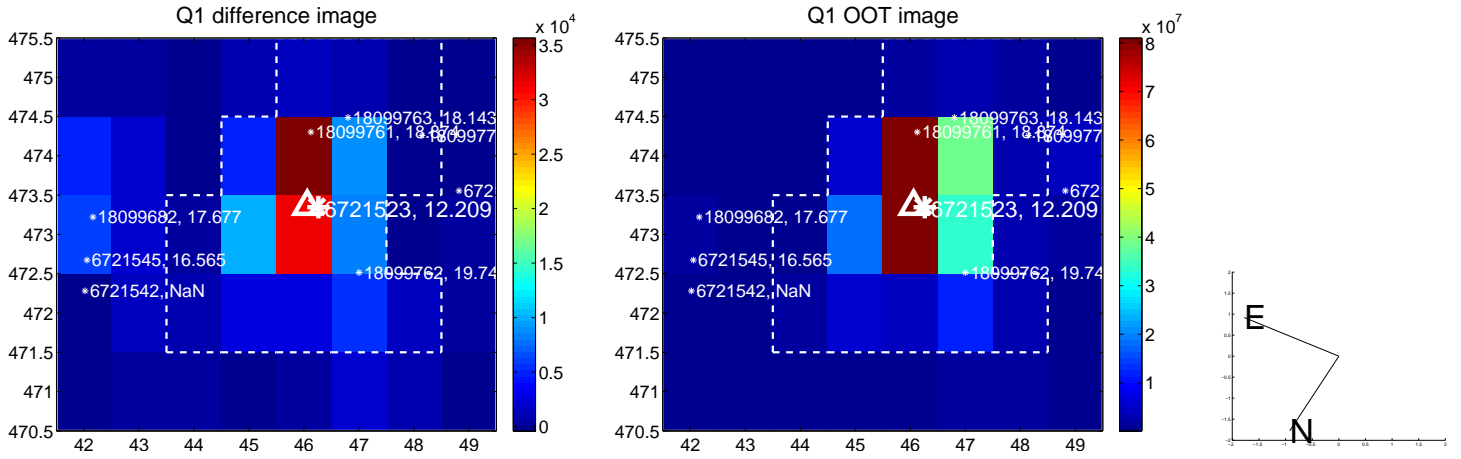
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.074 ± 0.090	0.83	-0.067 ± 0.091	0.032 ± 0.098
PRF-fit source offset from KIC position	0.093 ± 0.088	1.06	-0.092 ± 0.088	0.011 ± 0.100
photometric centroid source offset	1.37 ± 0.47	2.91	0.69 ± 0.50	1.18 ± 0.46

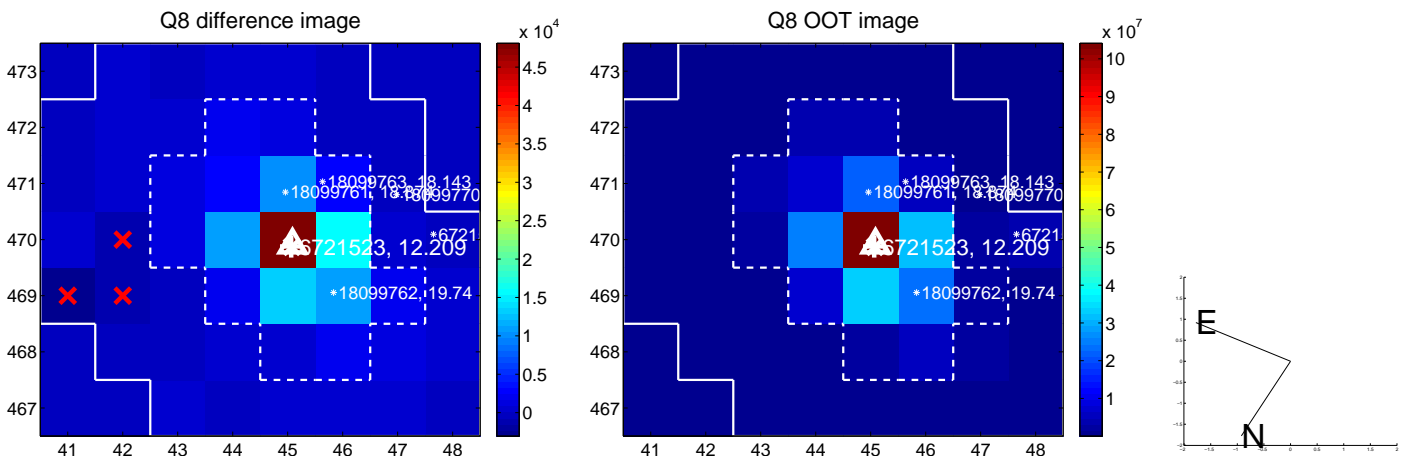
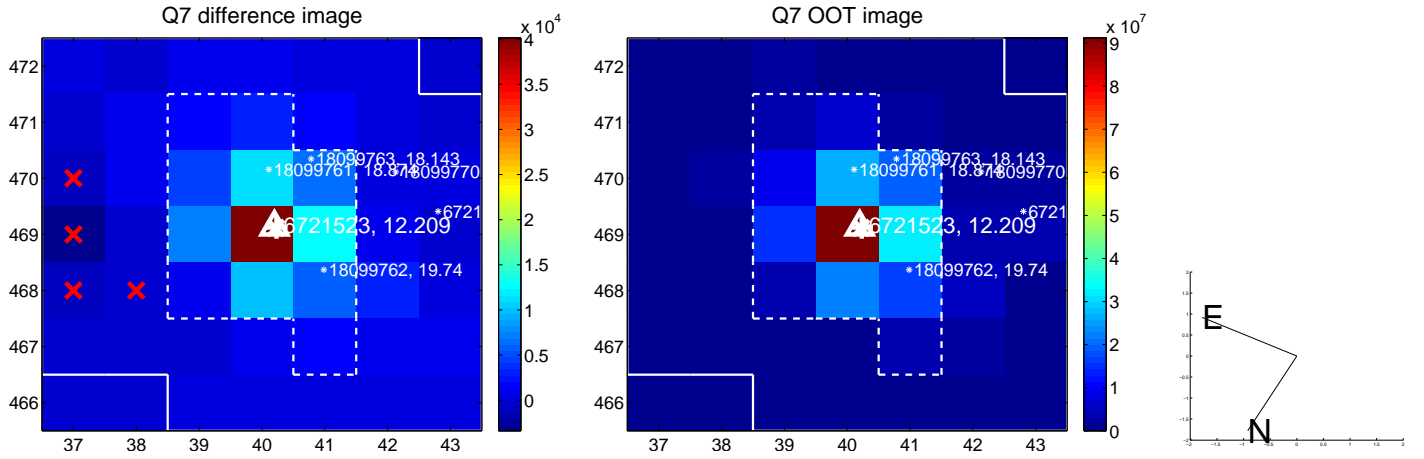
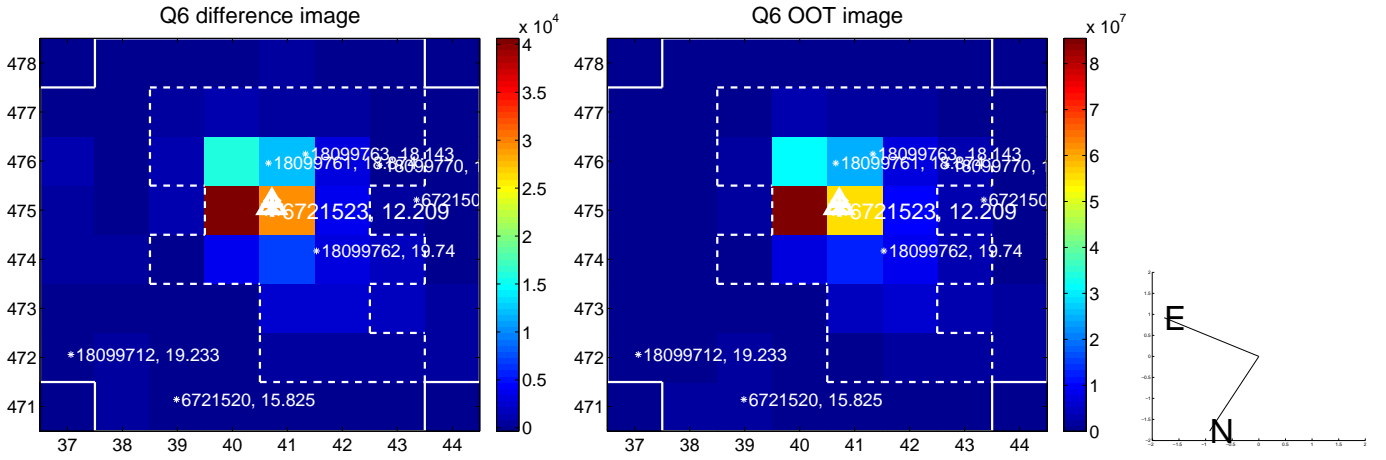
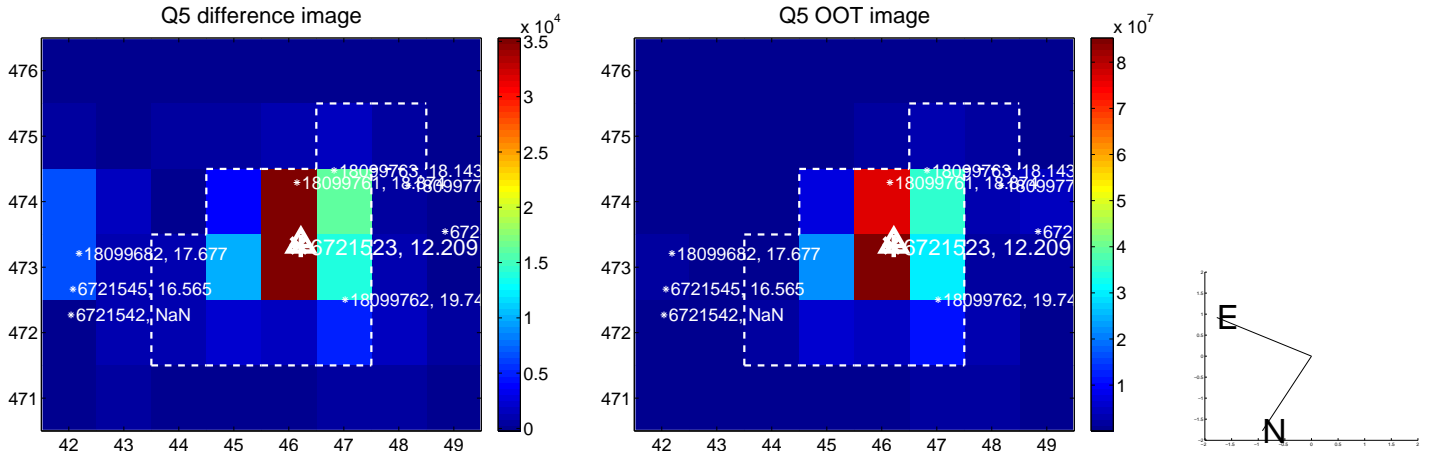


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

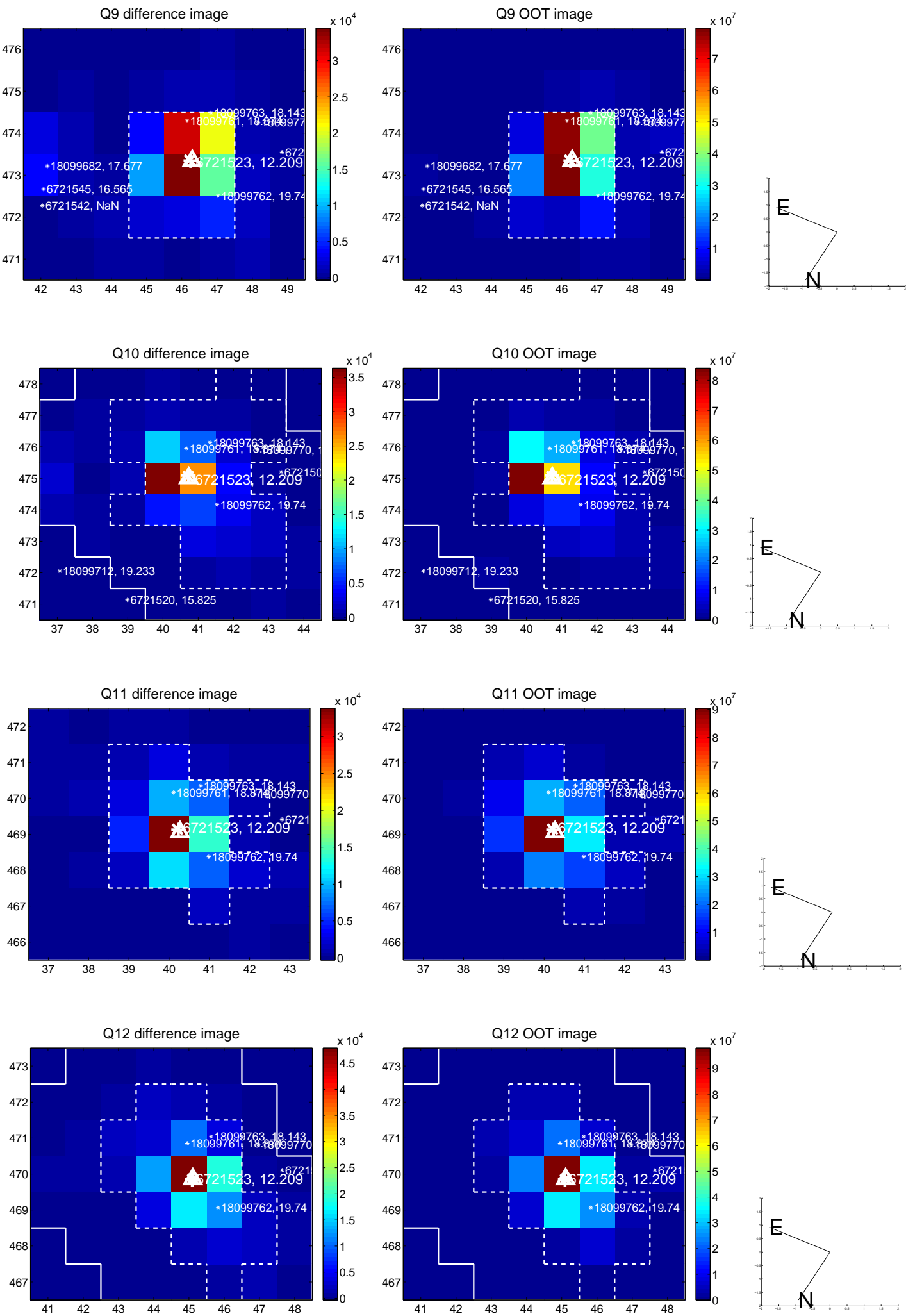
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



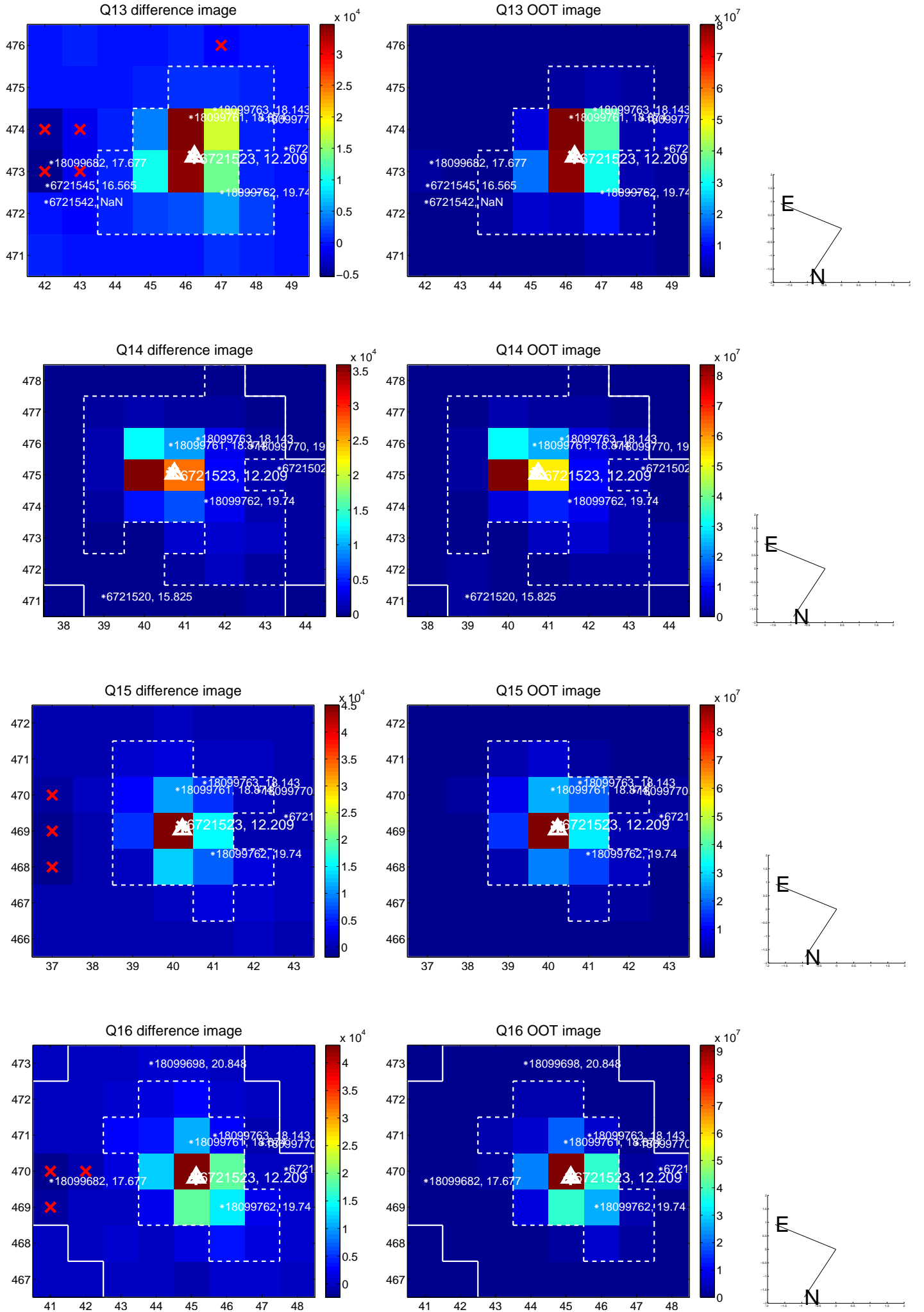
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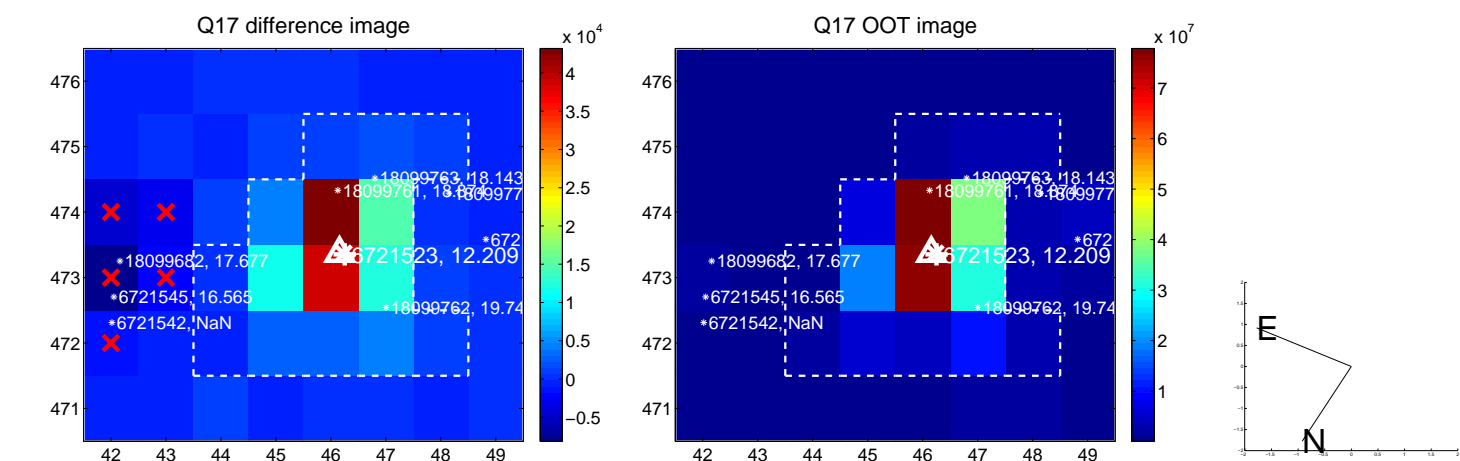
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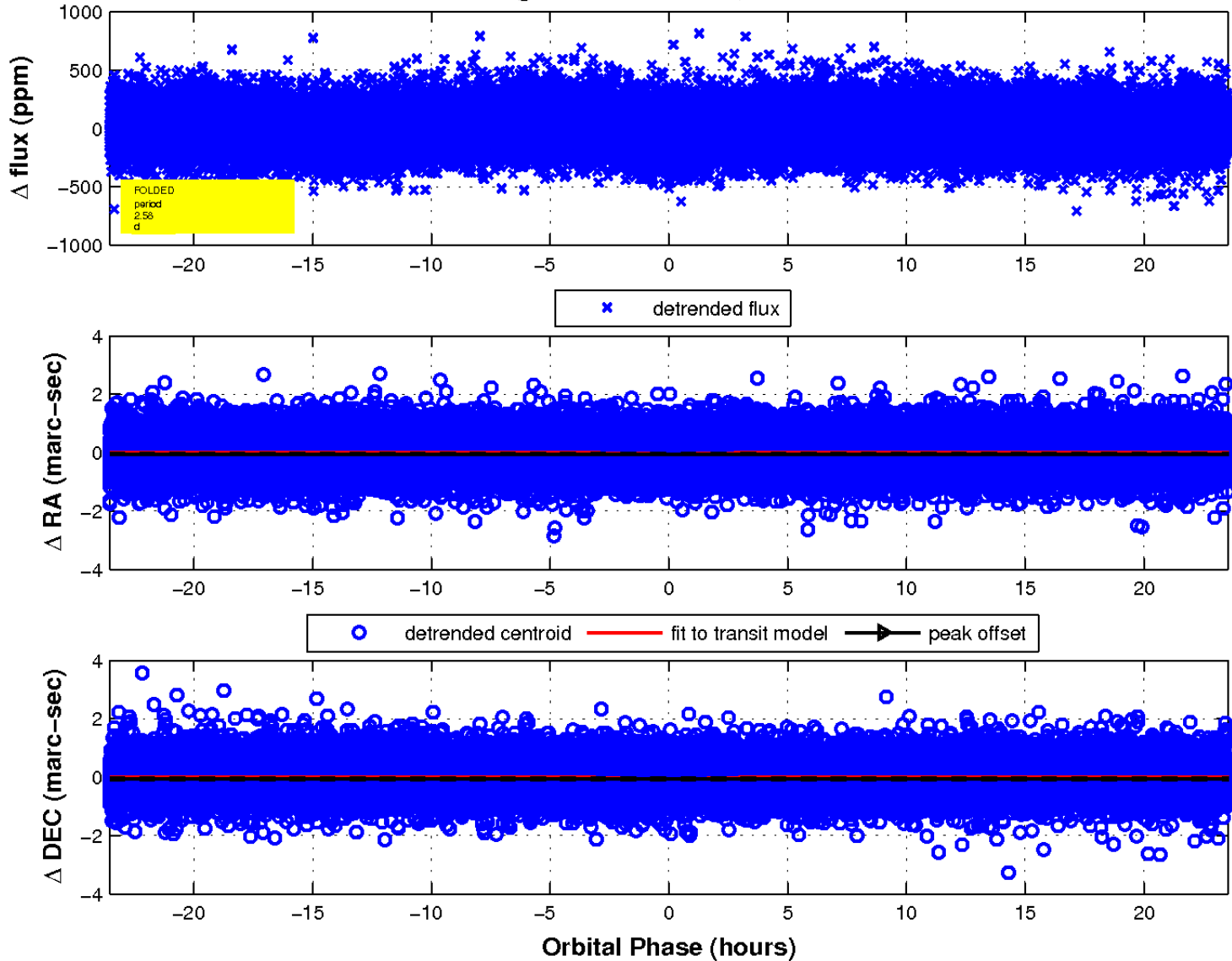
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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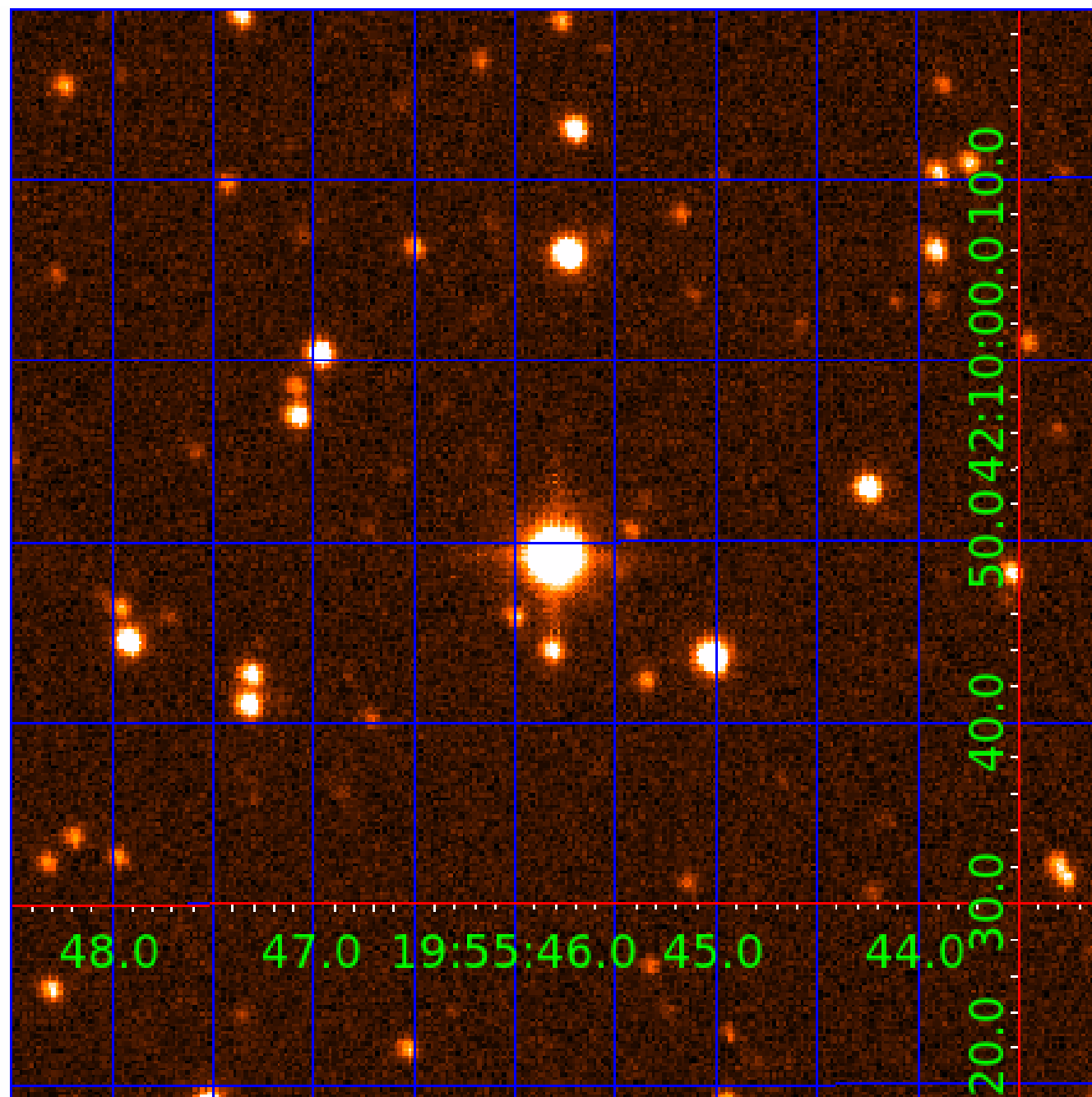


fluxWeightedCentroids, Planet 1 of 7



UKIRT Image

Declination



KIC 006721523

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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006721523-04	OBS	No	121.015623	174.419378	191.8	13.243	9.1	7.1	4.86	6697	7.44	115.27
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Robovetter Results

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006721523-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
006721523-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006721523-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNCERTAIN
006721523-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006721523-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
006721523-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006721523-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

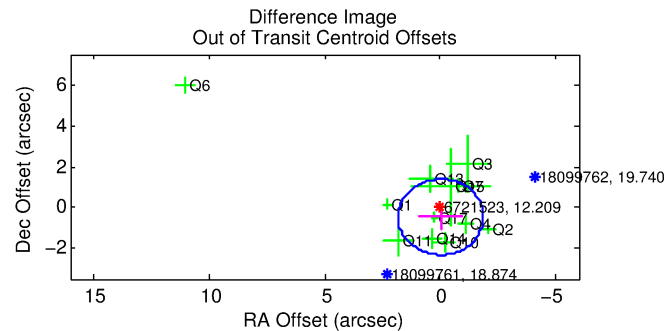
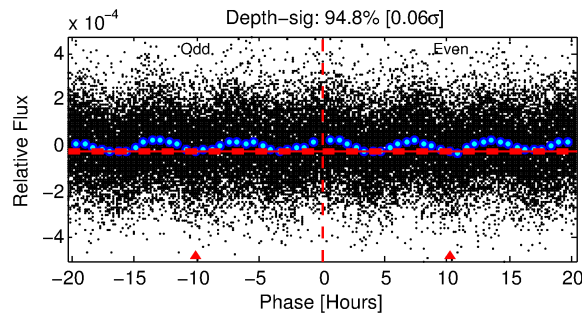
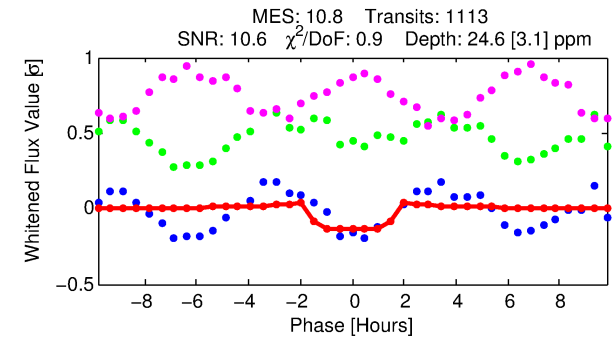
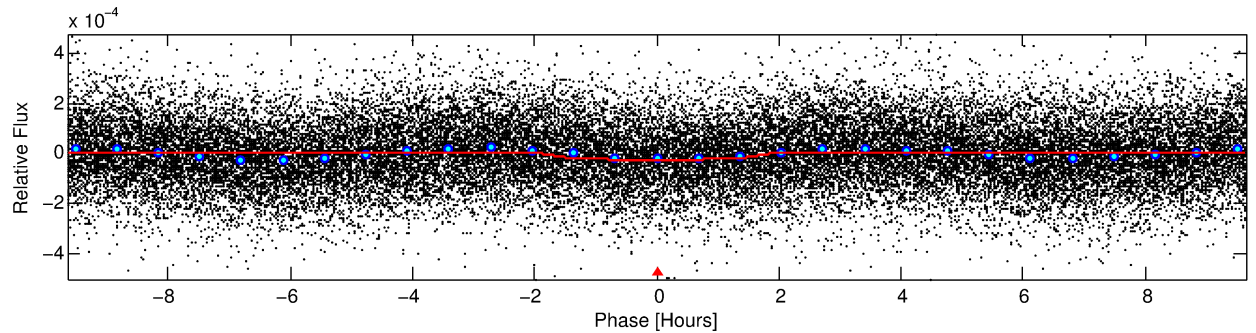
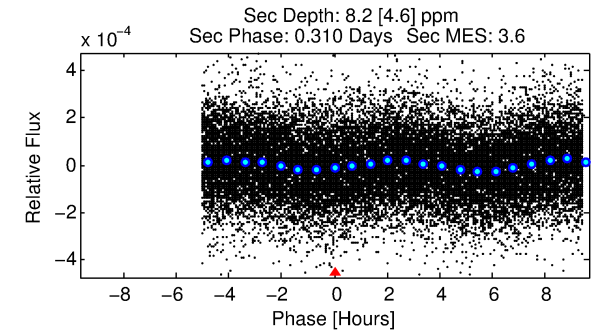
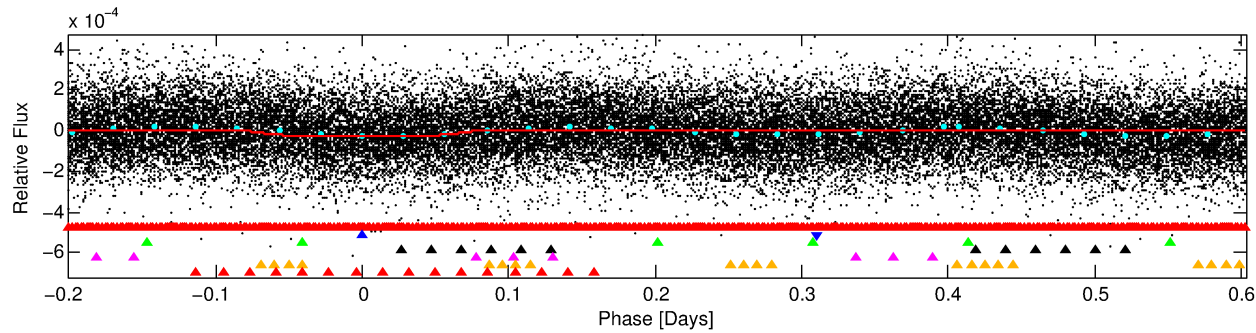
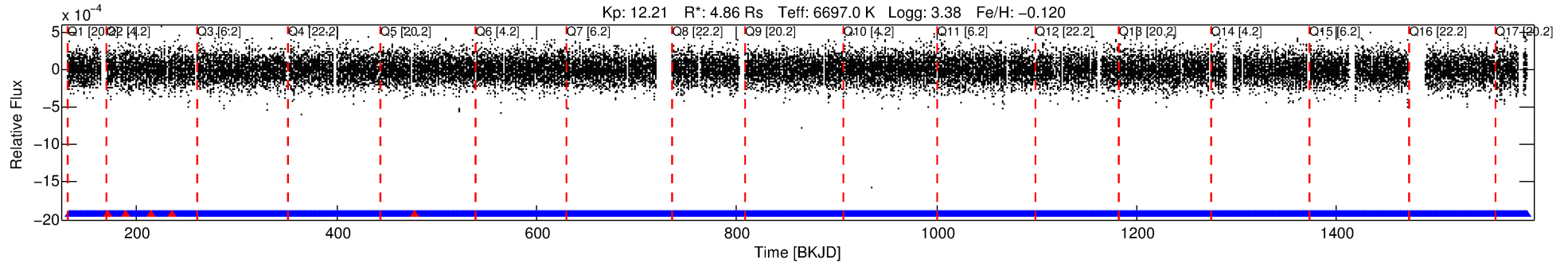
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006721523-02

No Significant Match Found

DV One-Page Summary

KIC: 6721523 Candidate: 2 of 7 Period: 0.804 d



DV Fit Results:

Period = 0.80402 [0.00001] d
Epoch = 132.1918 [0.0028] BKJD
Rp/R* = 0.0053 [0.0018]
a/R* = 1.23 [0.88]
b = 0.90 [0.43]
Seff = N/A
Teq = N/A
Rp = 2.82 [1.47] Re
a = N/A
Ag = N/A
Teffp = N/A

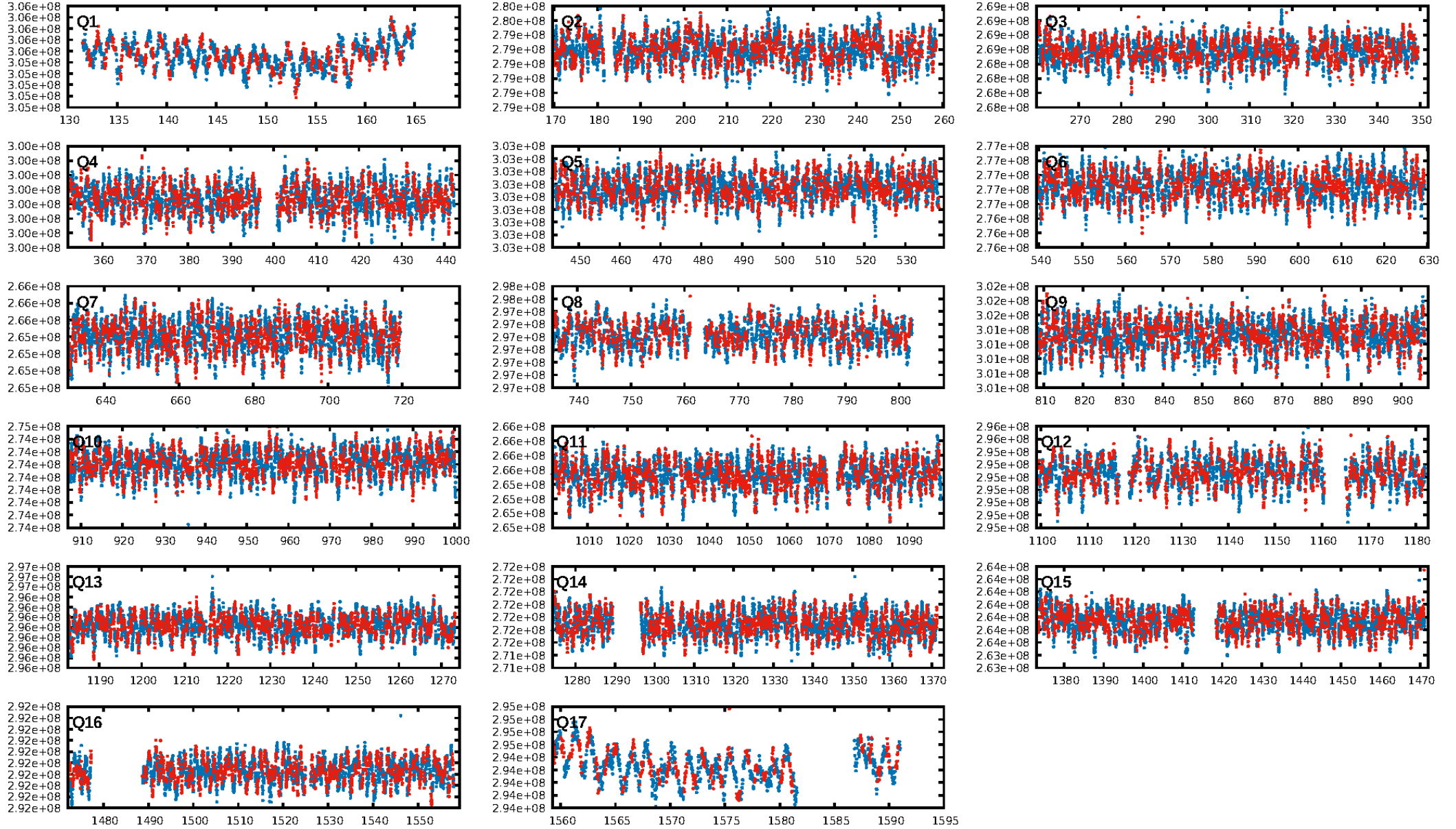
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [4.99σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1059/1064]
GhostDiagnostic-chr: 2.605
Centroid-sig: 7.7%
Centroid-so: 1.077 arcsec [1.82σ]
OotOffset-rm: 0.467 arcsec [0.76σ]
KicOffset-rm: 0.512 arcsec [0.71σ]
OotOffset-st: 4/4/1/3 [12]
KicOffset-st: 4/4/1/3 [12]
DiffImageQuality-fgm: 0.67 [8/12]
DiffImageOverlap-fno: 1.00 [17/17]

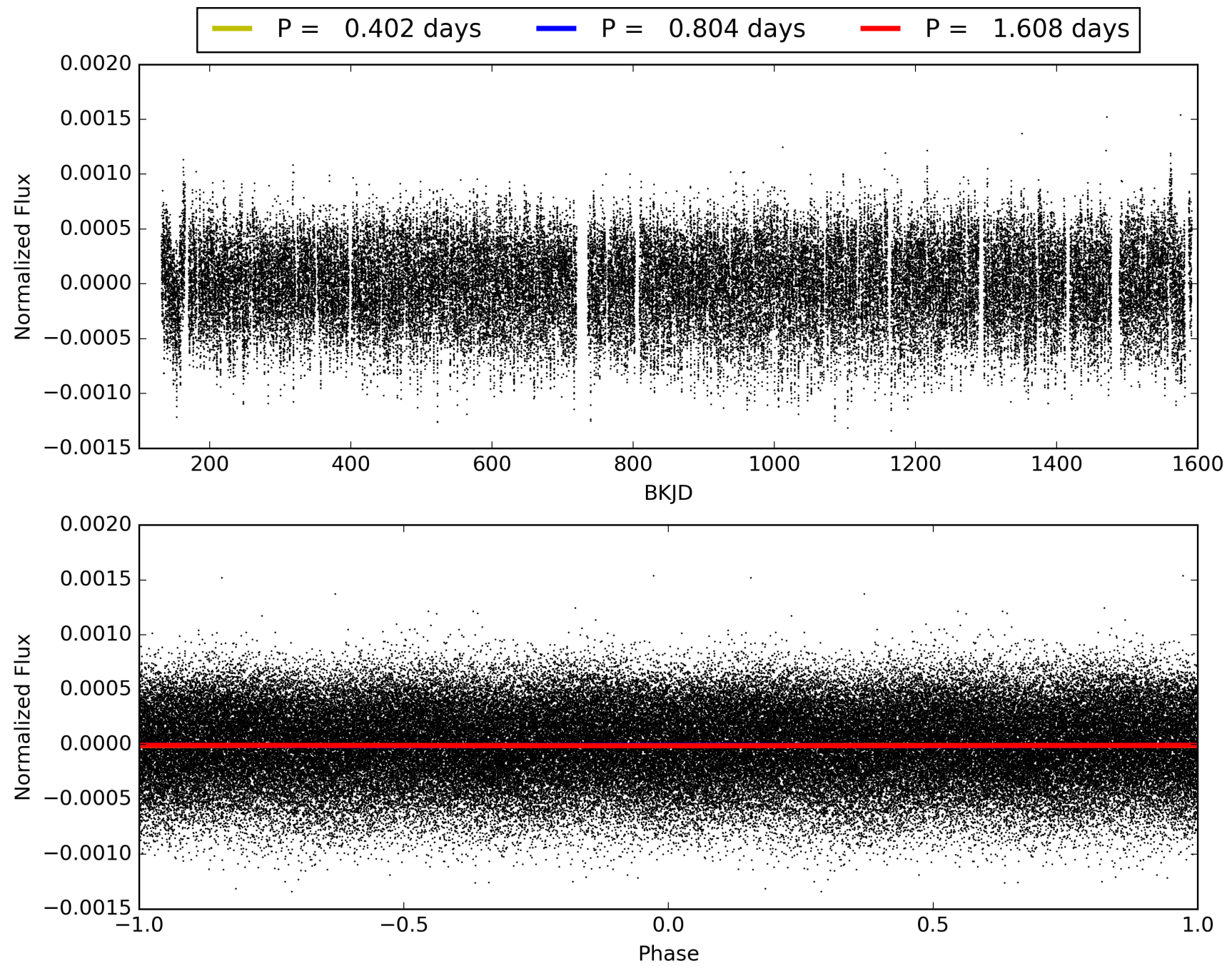
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:01:06 Z

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

TCE 006721523-02, PDC Light Curves

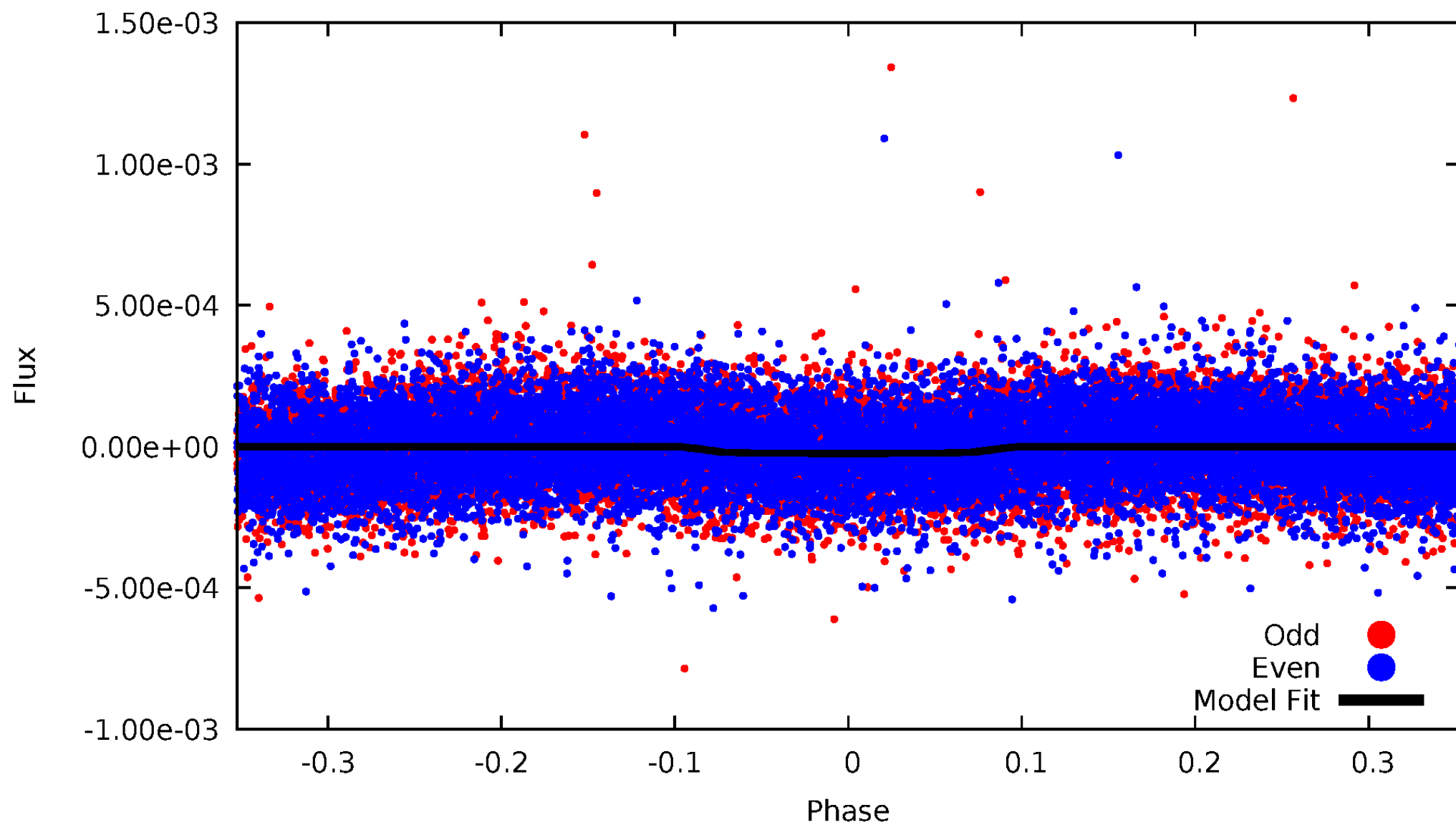


TCE 006721523-02



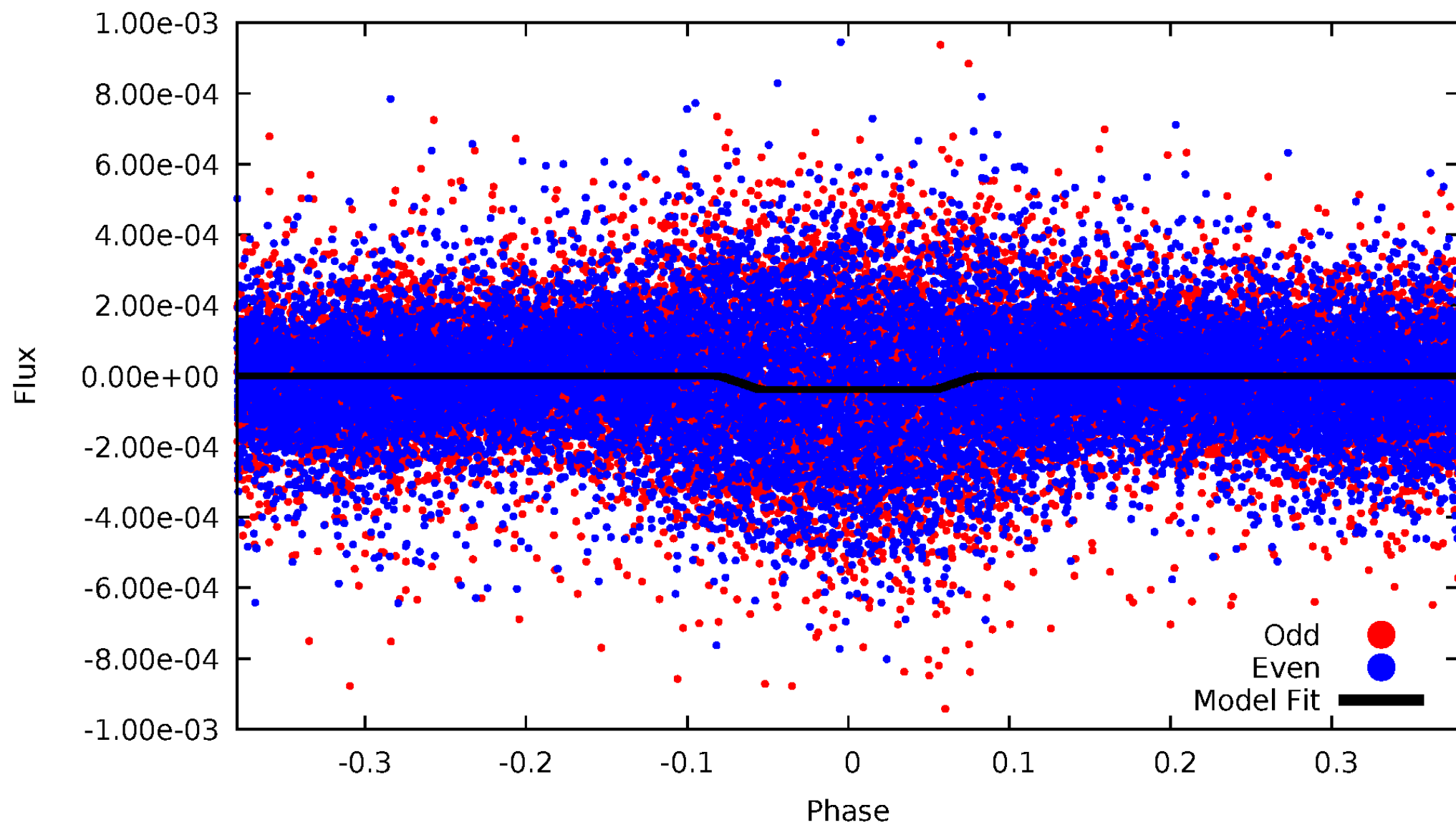
DV Odd/Even

TCE 006721523-02



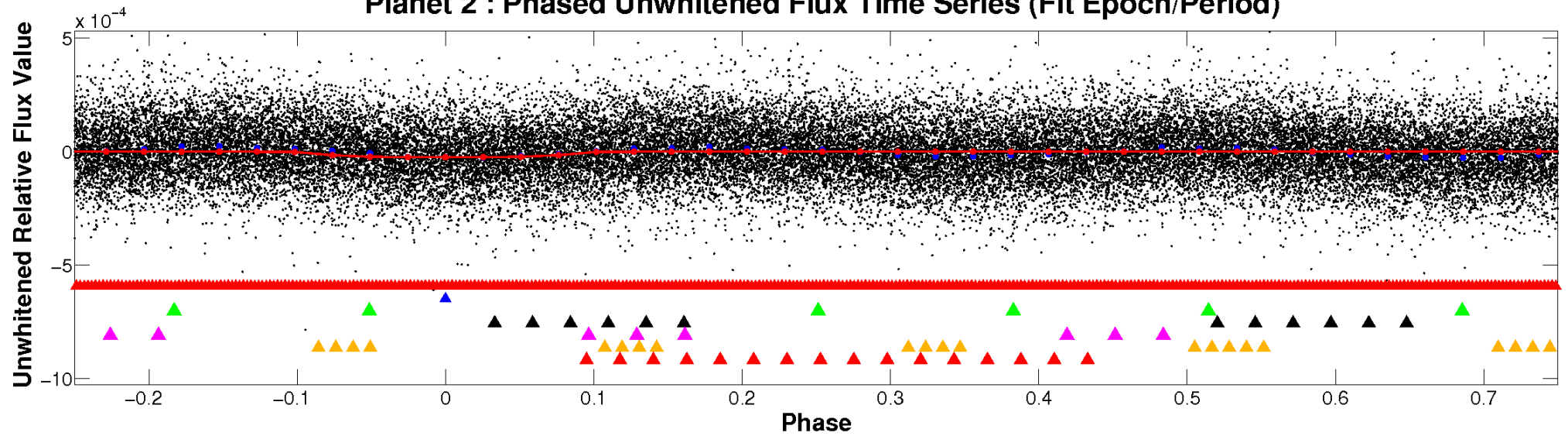
ALT Odd/Even

TCE 006721523-02

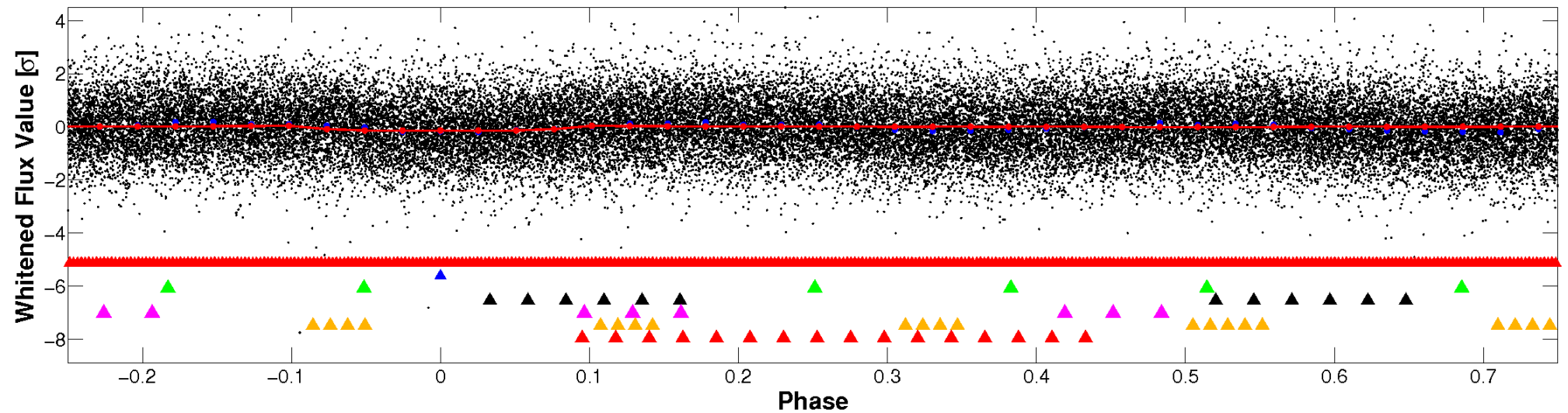


Non-Whitened Vs. Whitened Light Curve

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

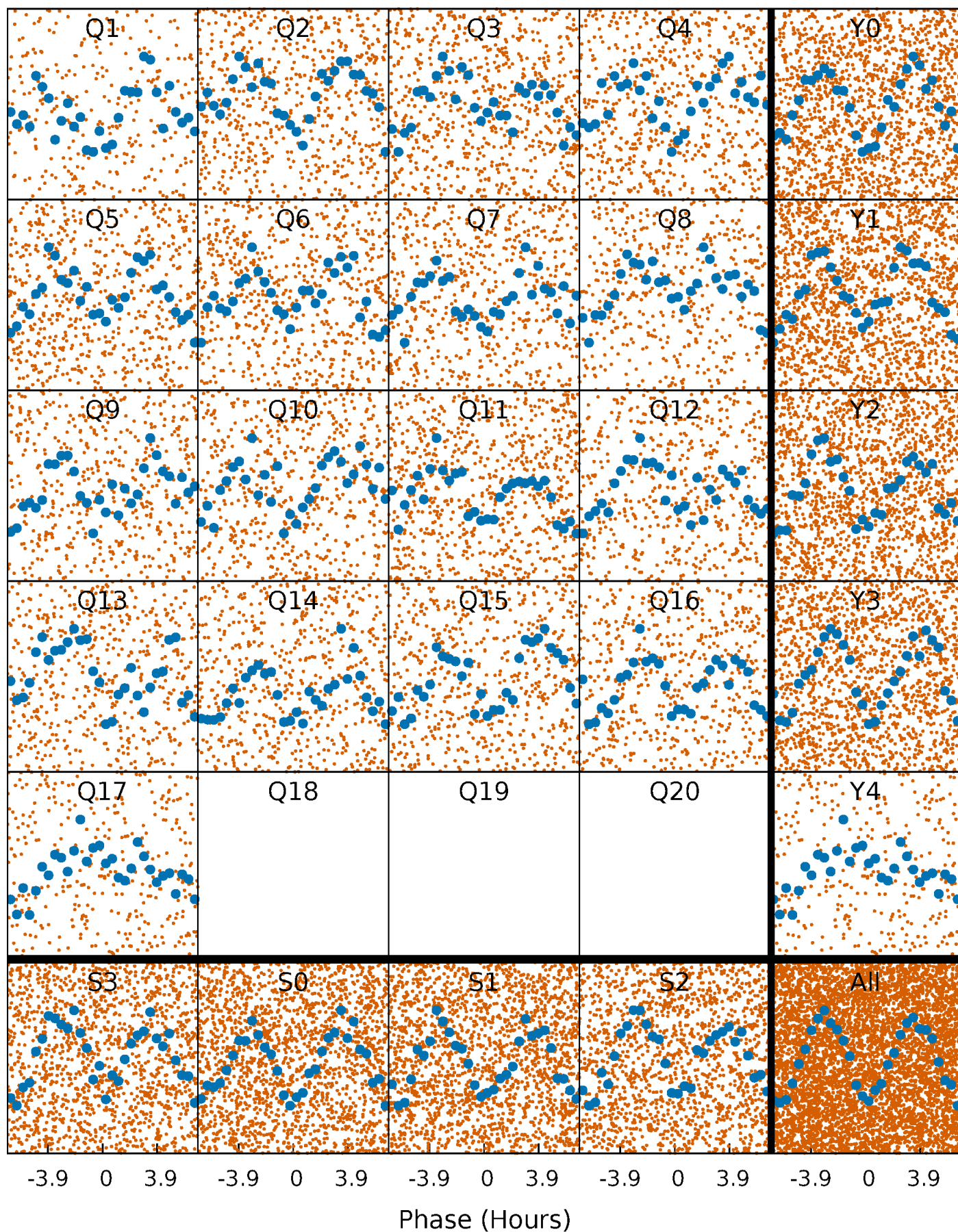


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



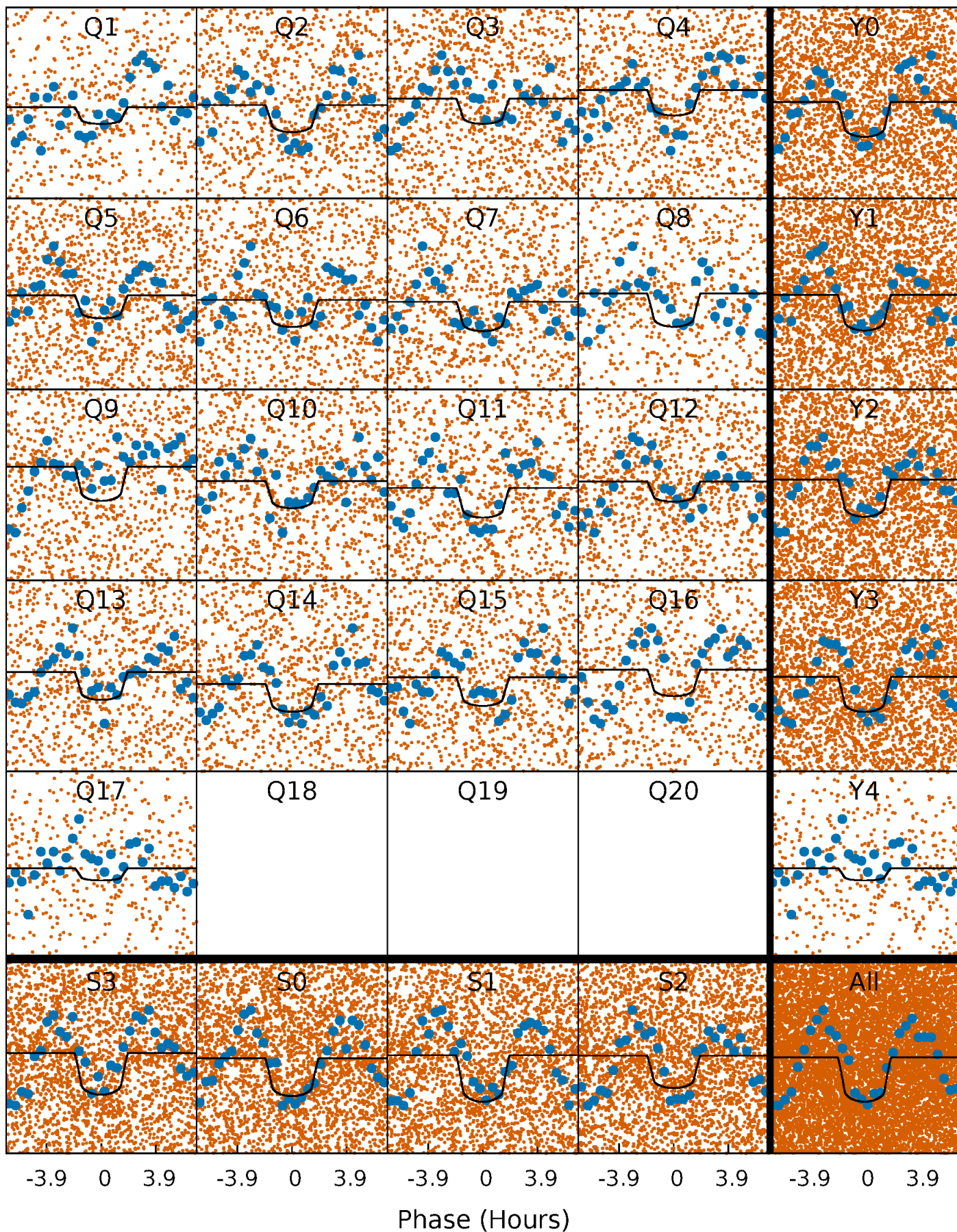
PDC Quarter-Phased Transit Curves

TCE 006721523-02 P= 0.804022 Days $T_0=132.191771$ (BKJD)



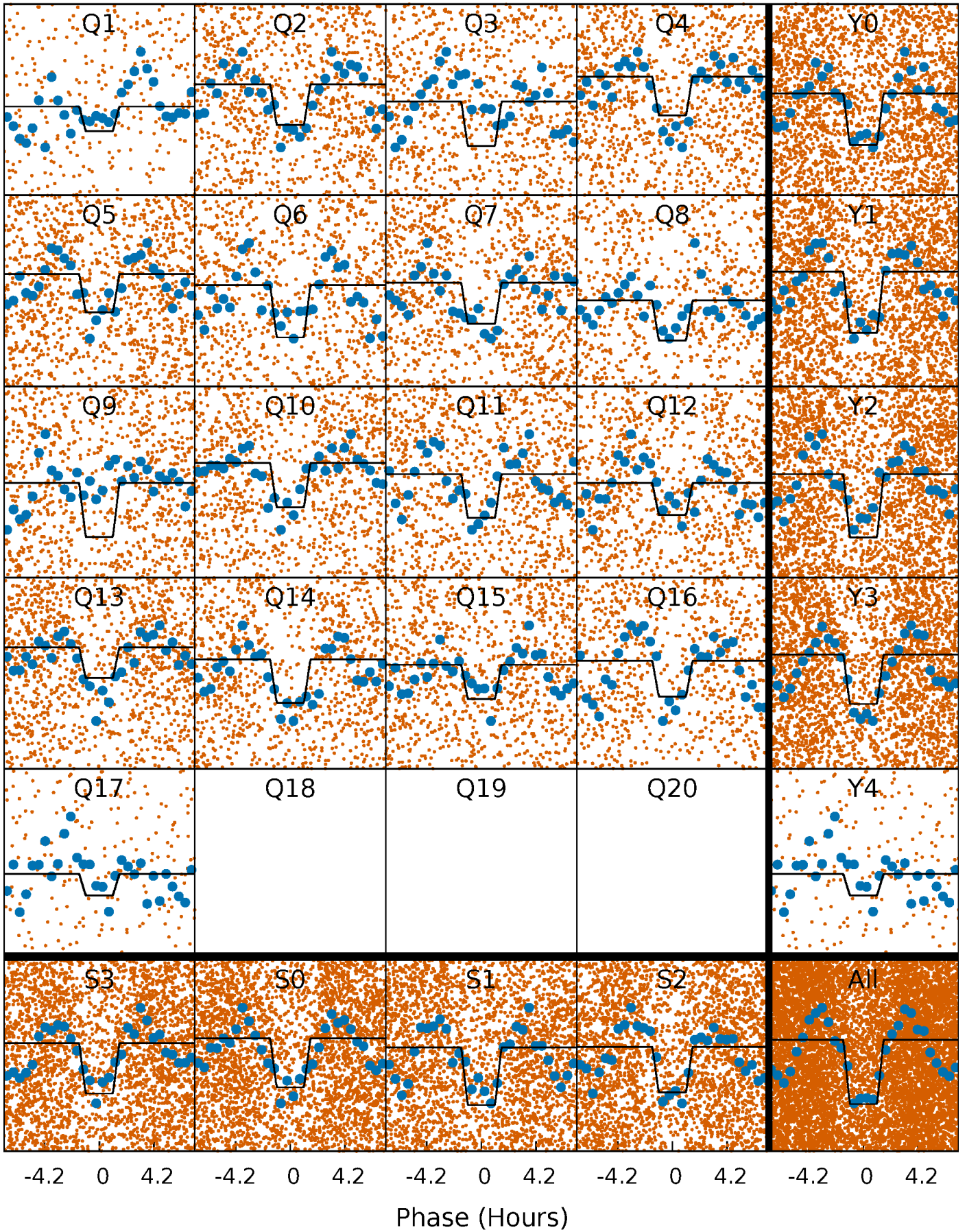
DV Quarter-Phased Transit Curves

TCE 006721523-02 P= 0.804022 Days $T_0=132.191771$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

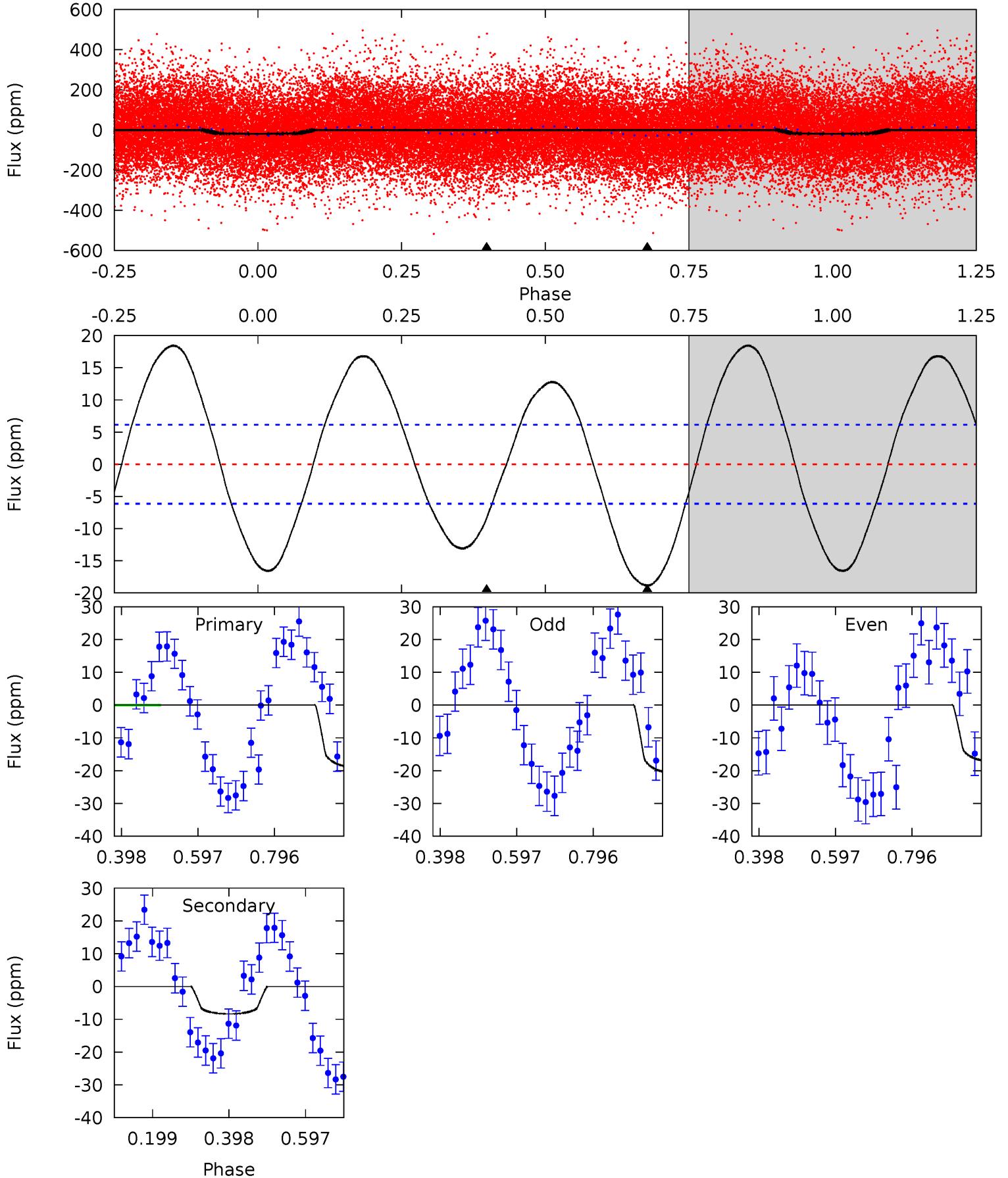
TCE 006721523-02 P= 0.804038 Days $T_0=132.186479$ (BKJD)



DV Model-Shift Uniqueness Test

006721523-02, P = 0.804022 Days, E = 131.387749 Days

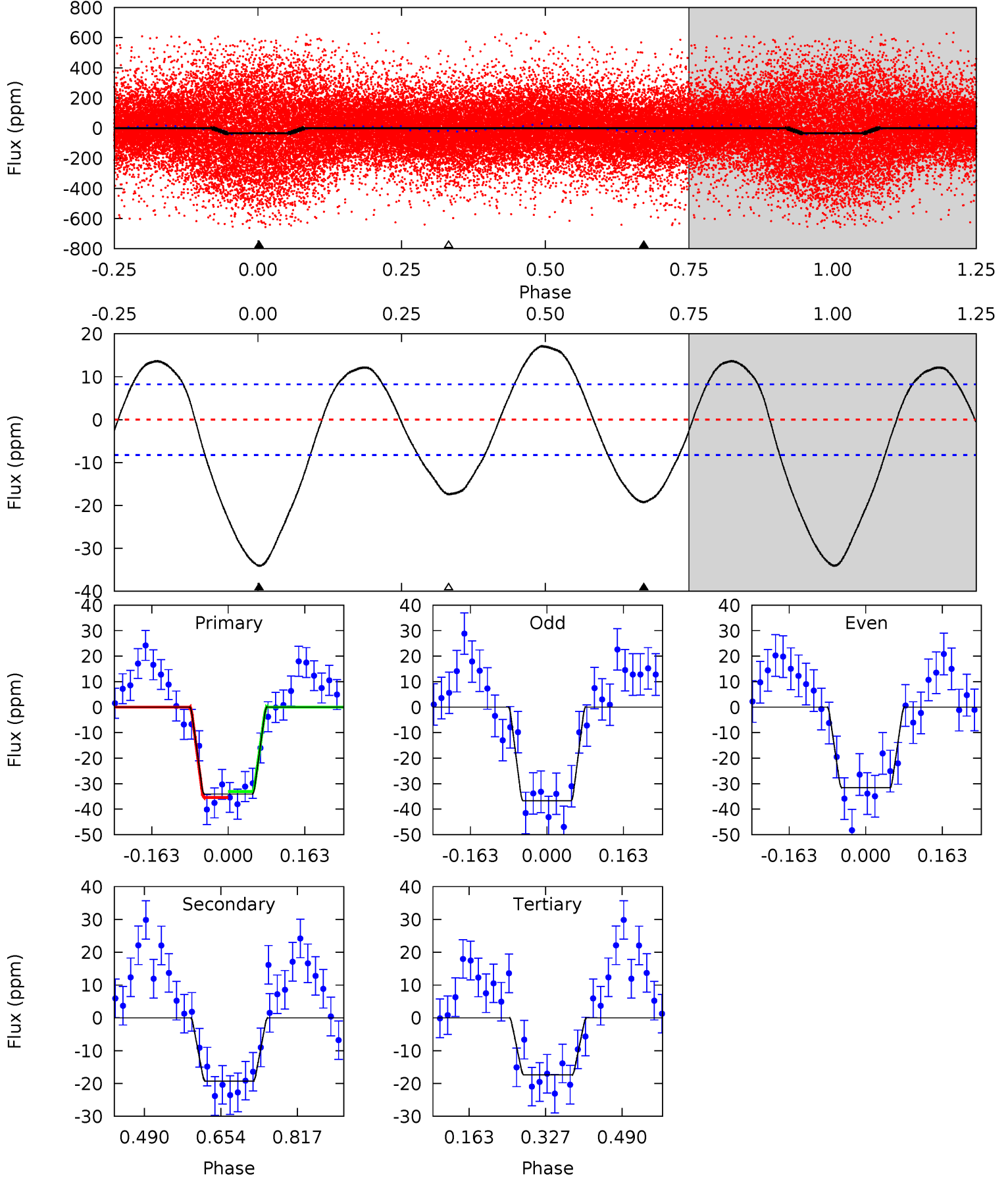
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	6.03	0	0	4.42	1.28	8.41	13.6	13.6	6.03	6.03	1.26	0.99	0.49	3.68



Alt Model-Shift Uniqueness Test

006721523-02, P = 0.804038 Days, E = 131.382441 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.5	10.4	9.43	0	4.46	1.39	6.30	9.04	18.5	1.01	10.4	1.37	1.00	0.33	0.65



Stellar Parameters For KIC 006721523

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6697^{+180}_{-200}	$3.375^{+0.369}_{-0.062}$	$-0.120^{+0.300}_{-0.250}$	$4.860^{+0.335}_{-1.896}$	$2.042^{+0.091}_{-0.366}$	$0.025^{+0.069}_{-0.005}$
	+3%/-3%	+11%/-2%	+250%/-208%	+7%/-39%	+4%/-18%	+277%/-20%
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 006721523-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-8 ± 1	$2.56^{+0.99}_{-0.90}$	6109^{+310}_{-570}	2830^{+2447}_{-7194}	$0.311^{+0.459}_{-0.147}$
Alt.	-19 ± 2	$3.08^{+1.04}_{-1.04}$	6092^{+293}_{-604}	4618^{+1563}_{-7799}	$0.512^{+0.667}_{-0.233}$

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 $A_{obs} \gg 1.0$

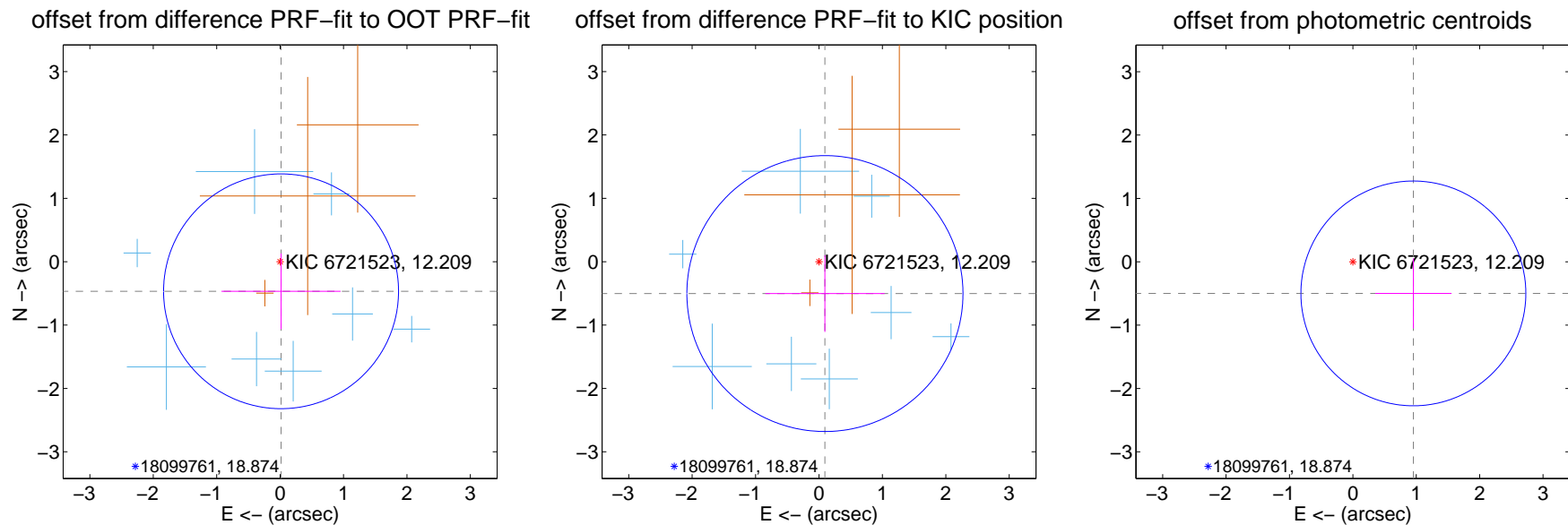
DV Centroid Data

Supplemental centroid analysis for 006721523-02. Kepler magnitude: 12.21. Transit SNR 10.57

There are 8 quarters with good PRF difference image offsets

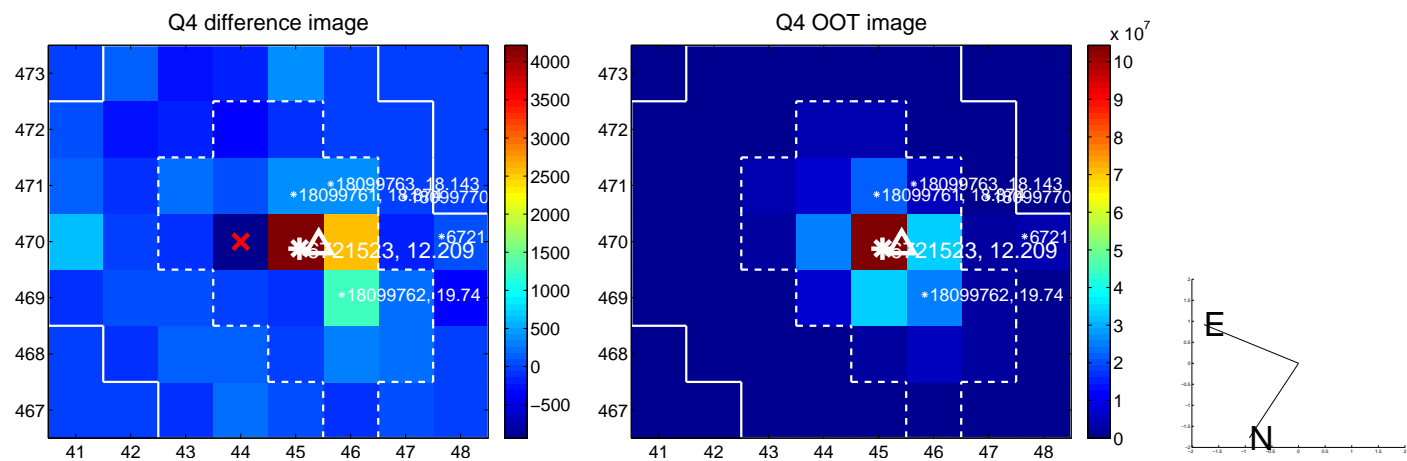
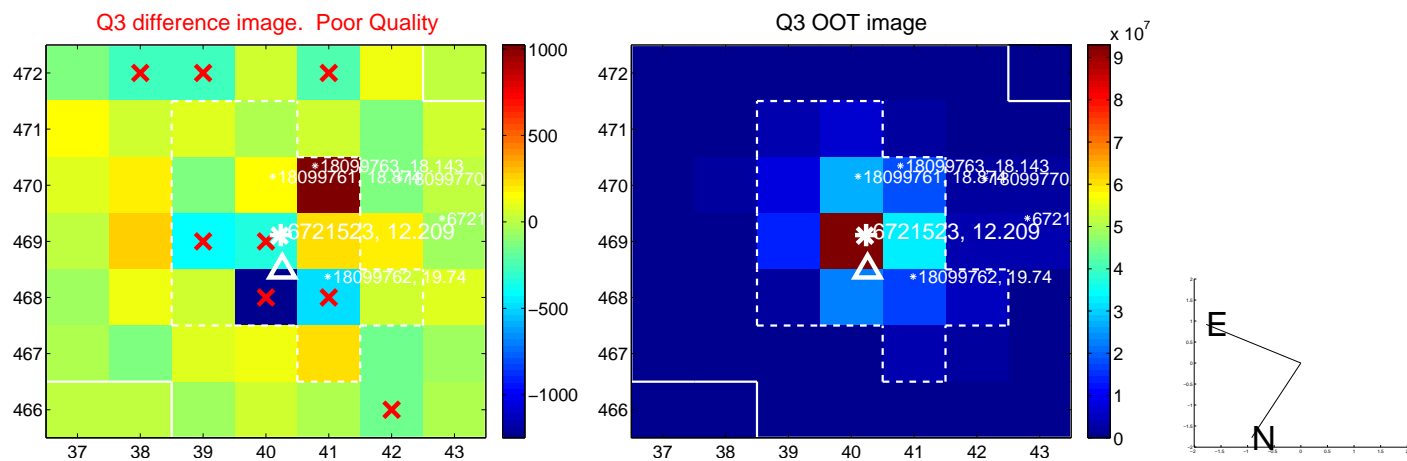
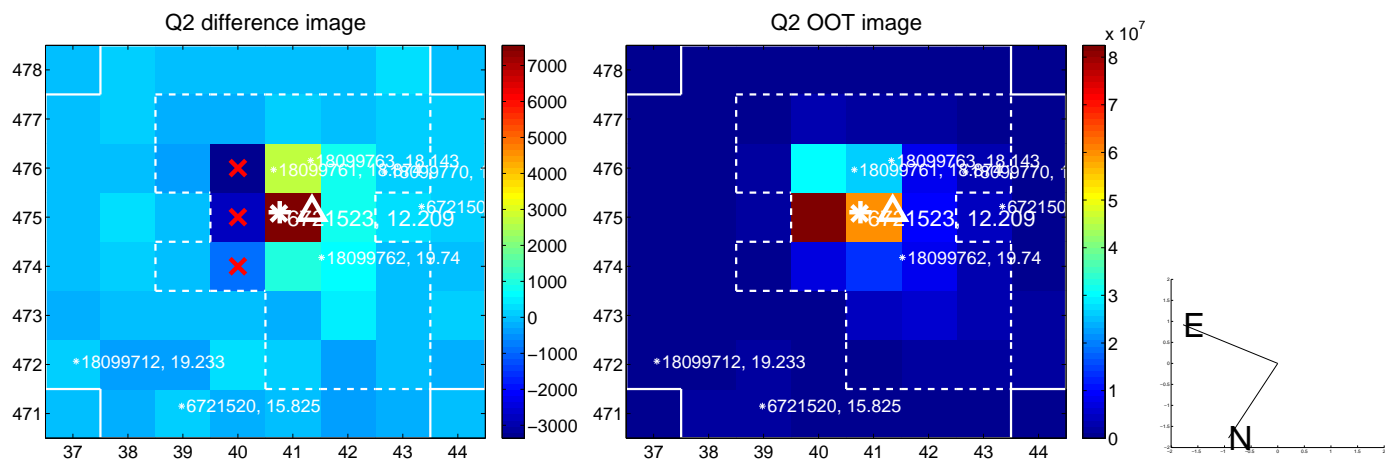
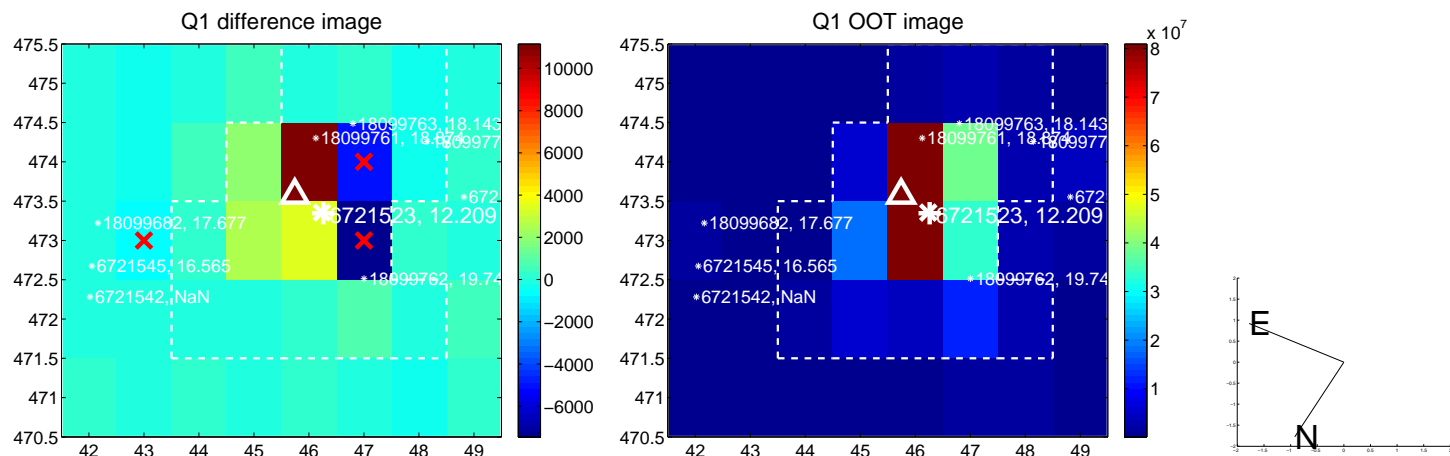
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.467 ± 0.617	0.76	-0.015 ± 0.940	-0.467 ± 0.598
PRF-fit source offset from KIC position	0.512 ± 0.726	0.71	-0.094 ± 0.940	-0.503 ± 0.606
photometric centroid source offset	1.08 ± 0.59	1.82	-0.95 ± 0.60	-0.50 ± 0.55

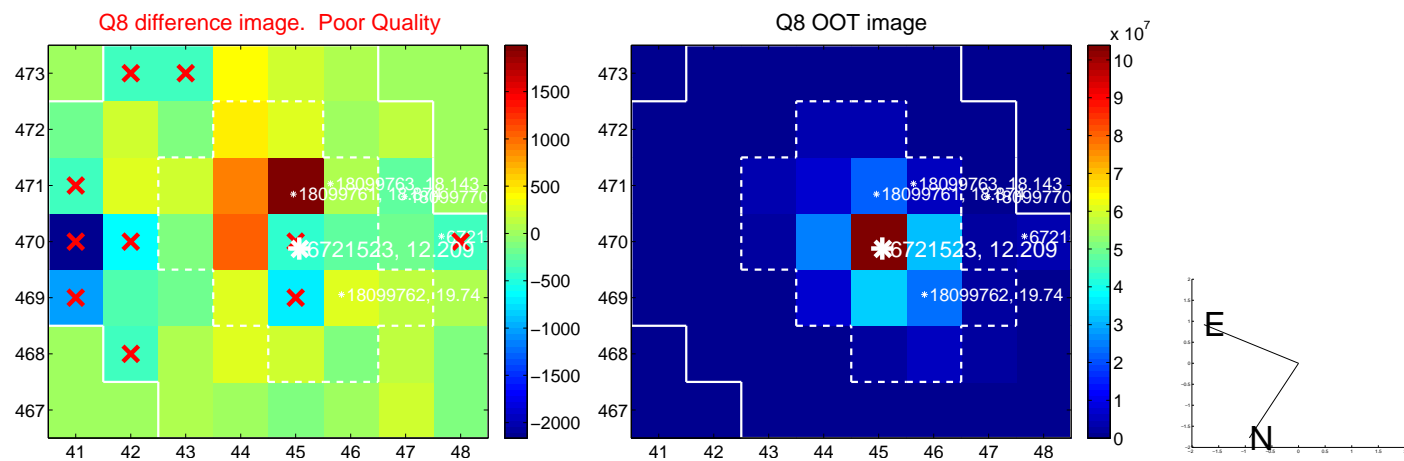
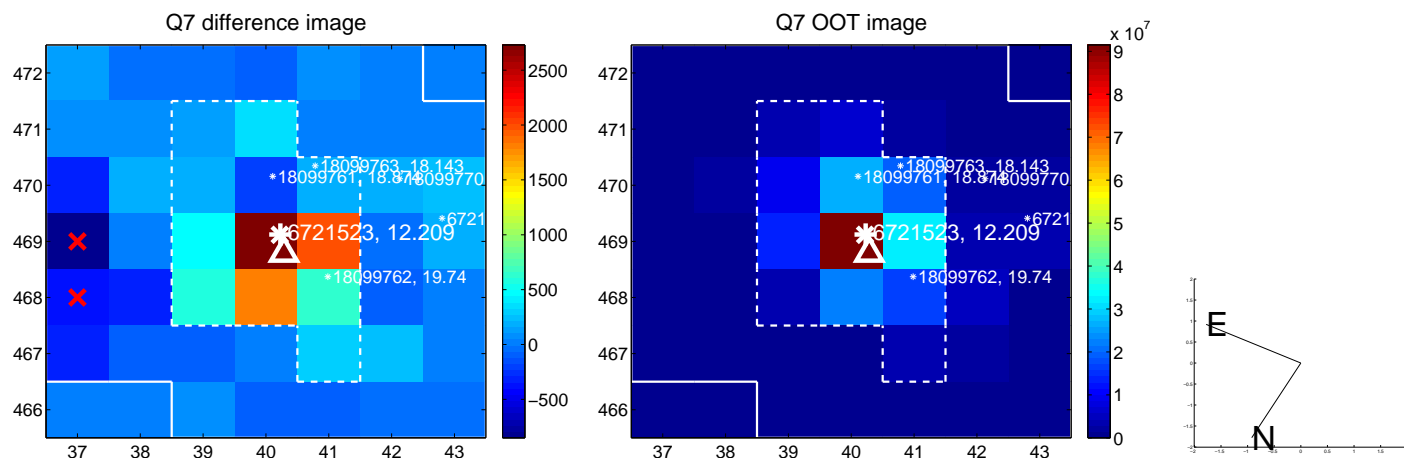
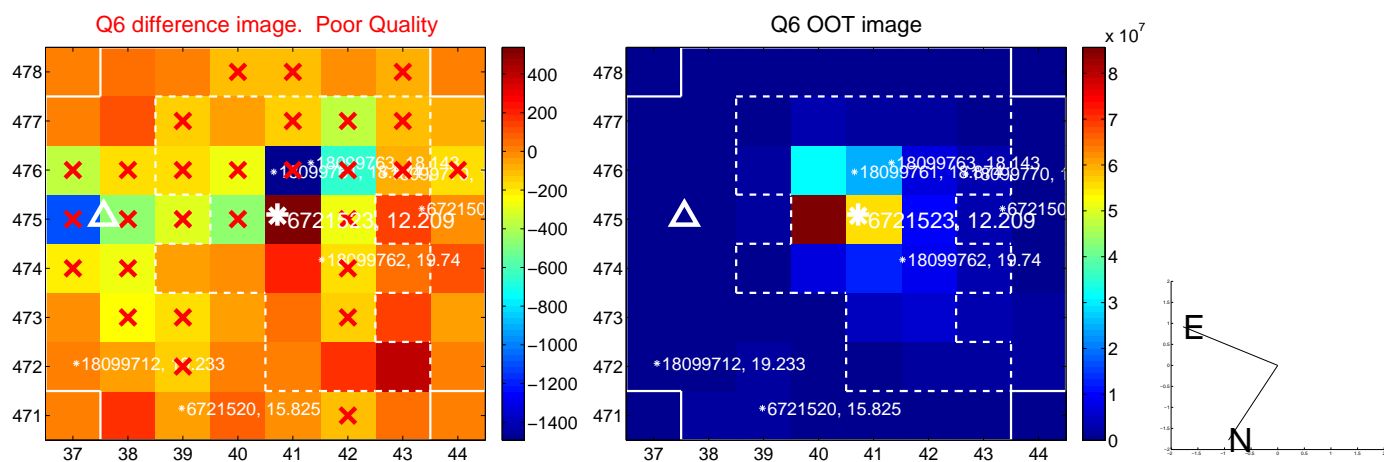
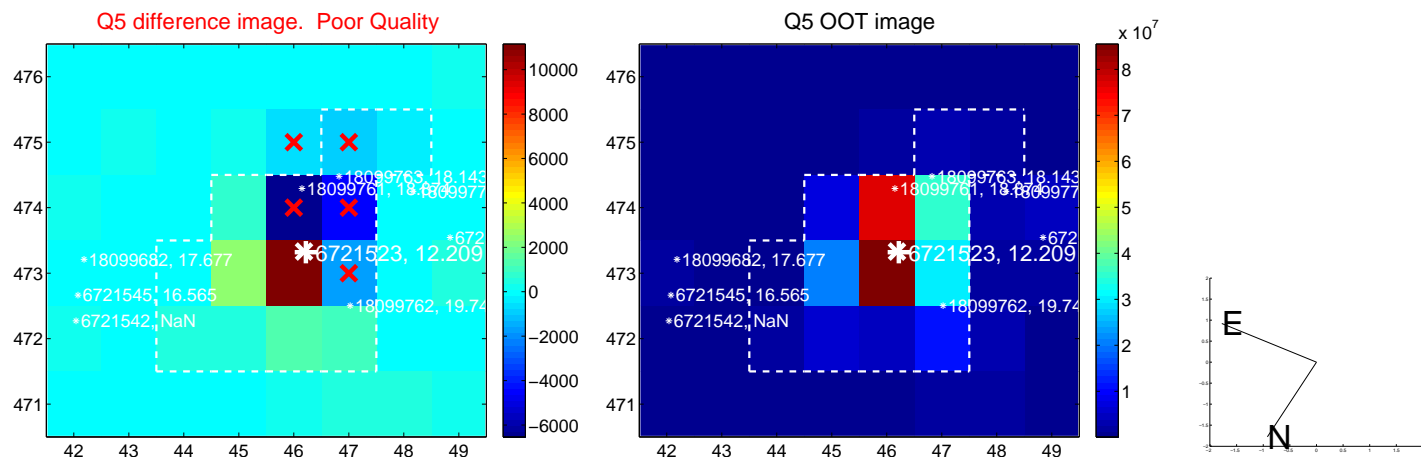


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

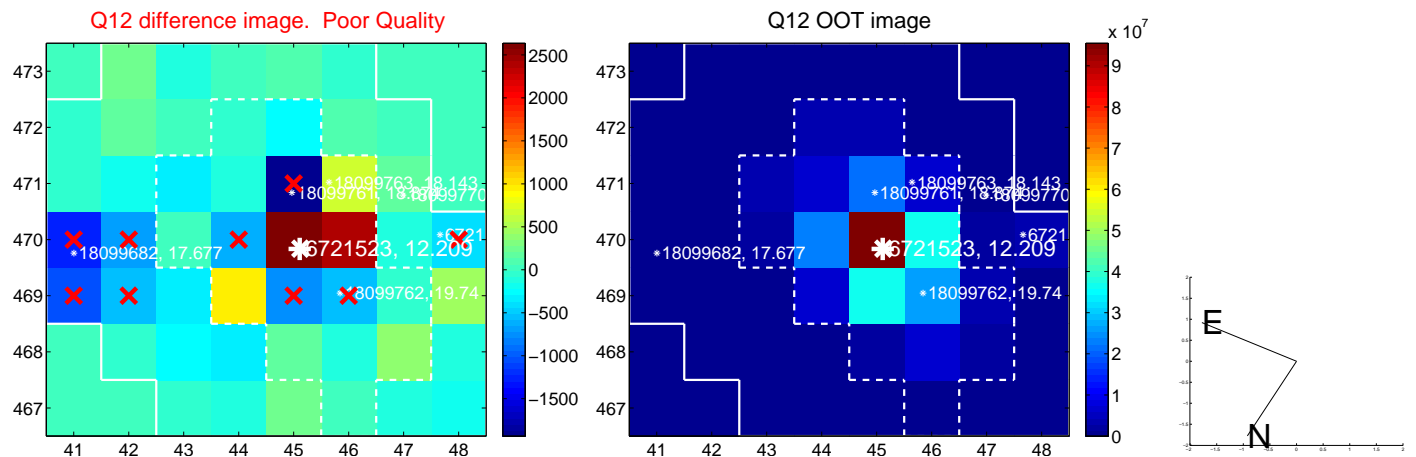
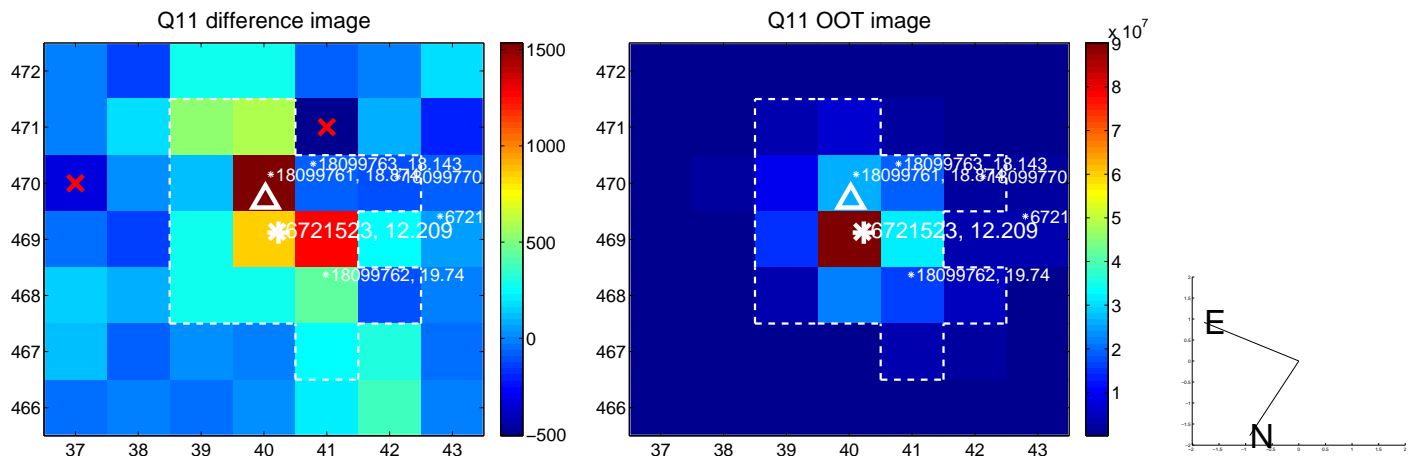
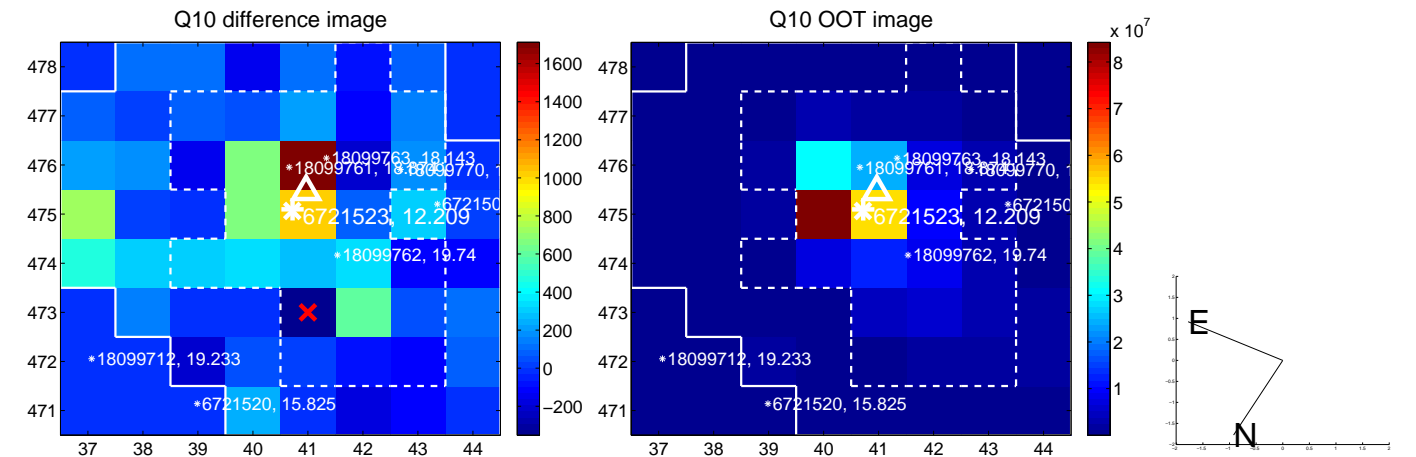
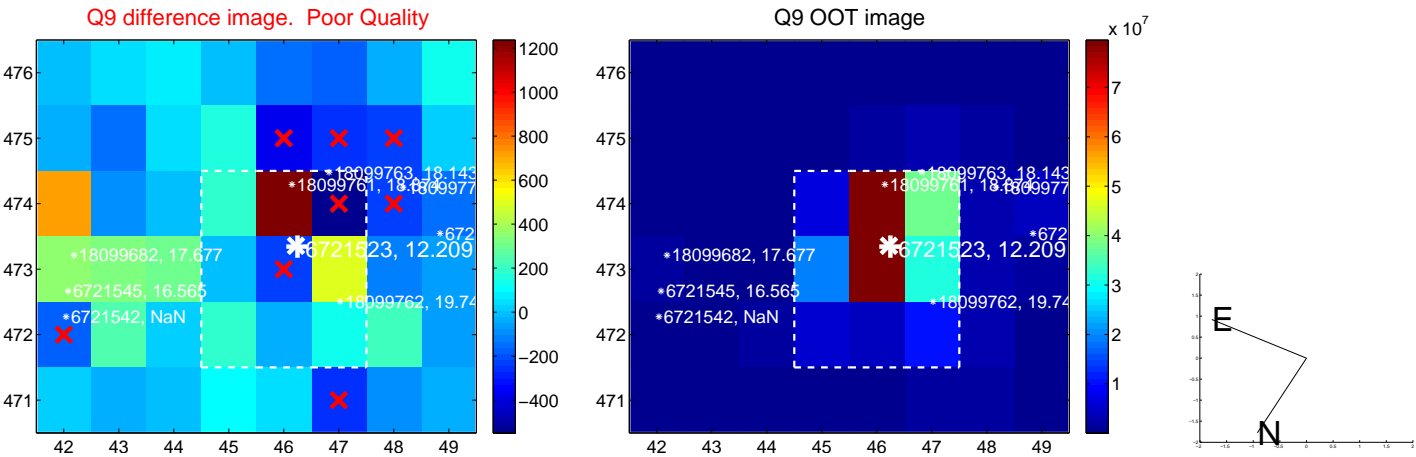
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



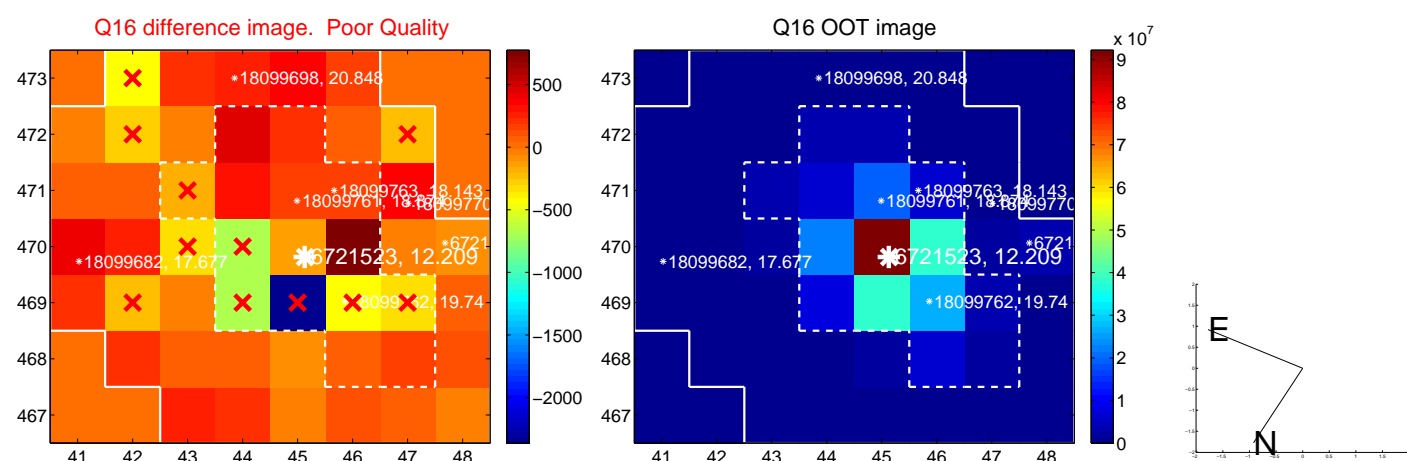
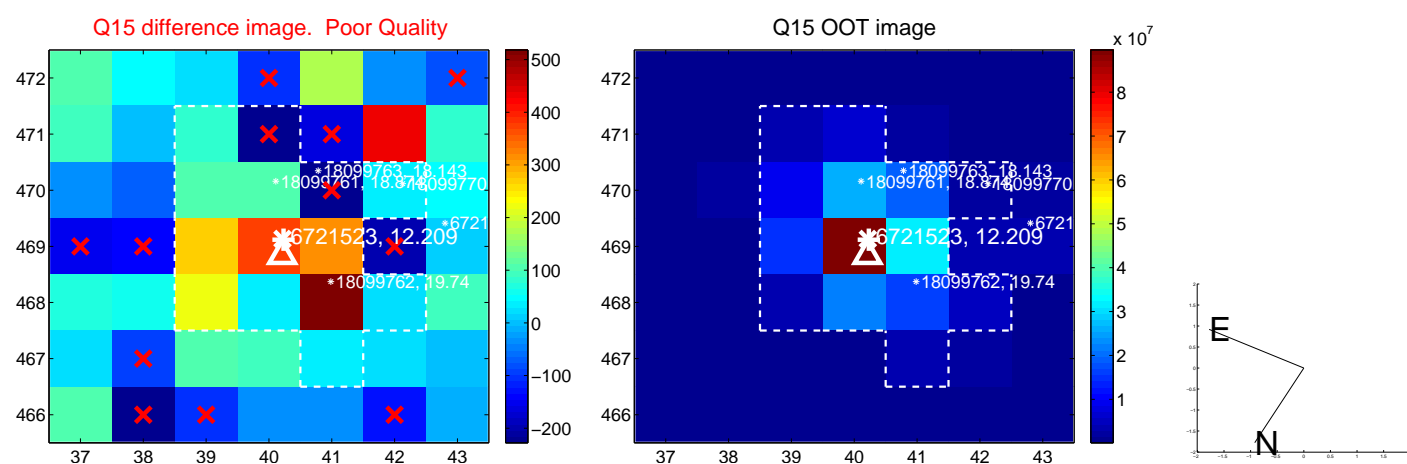
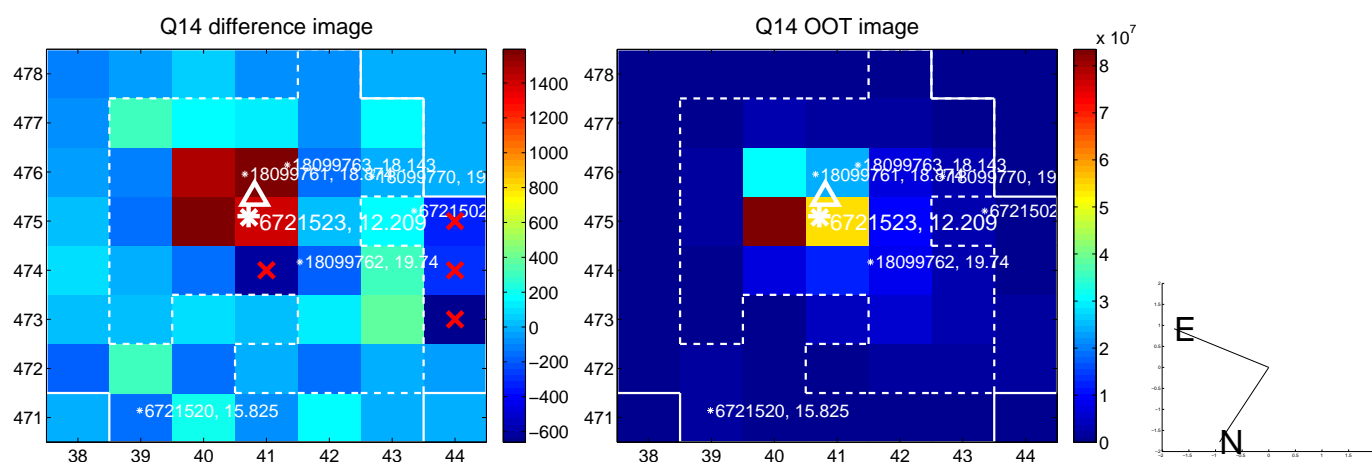
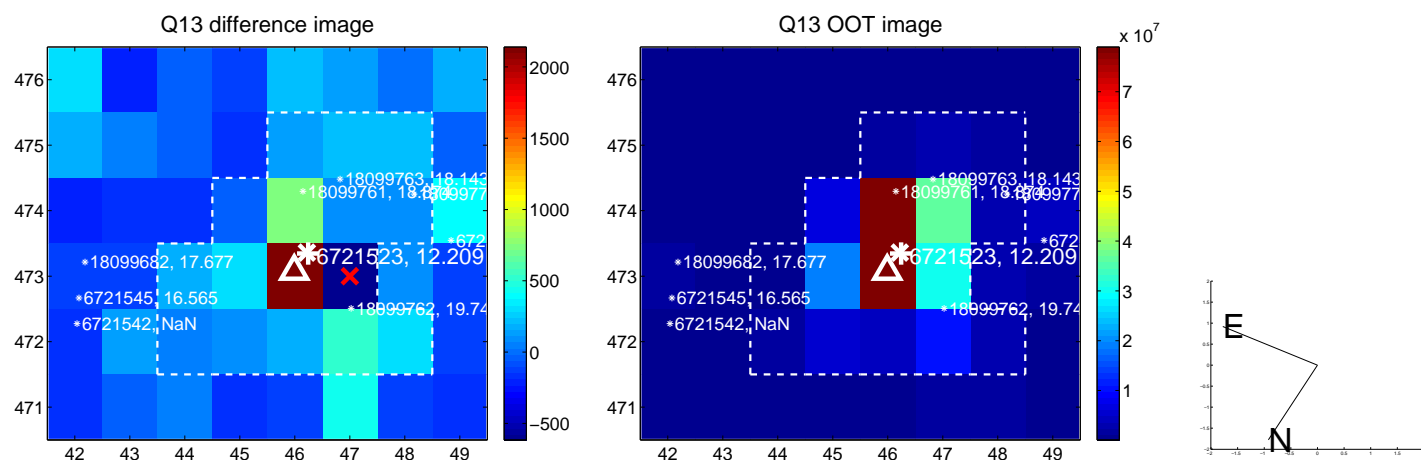
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



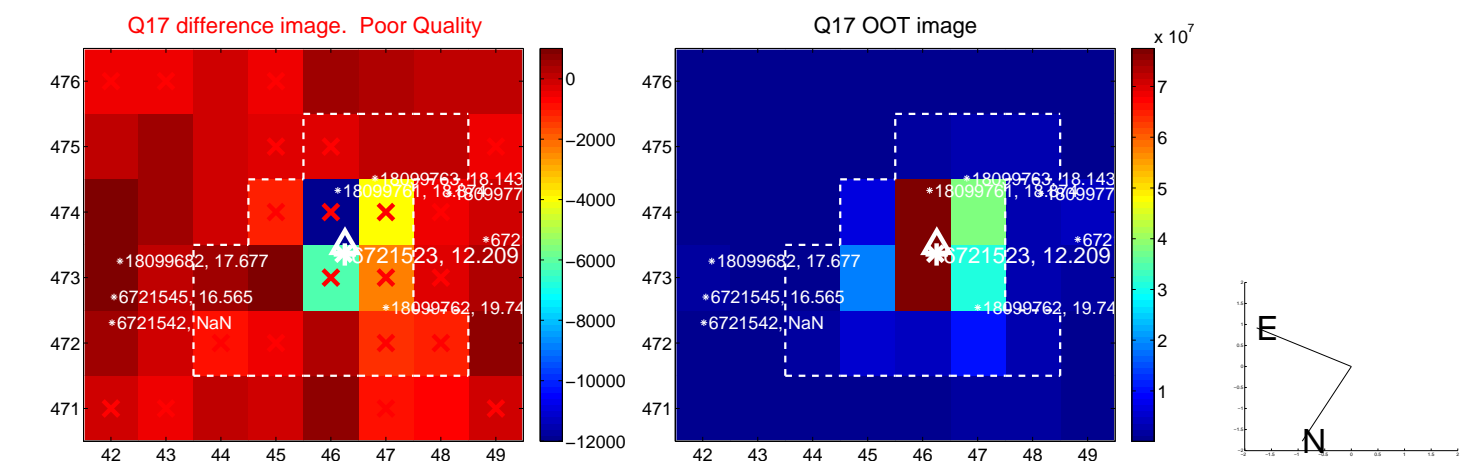
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



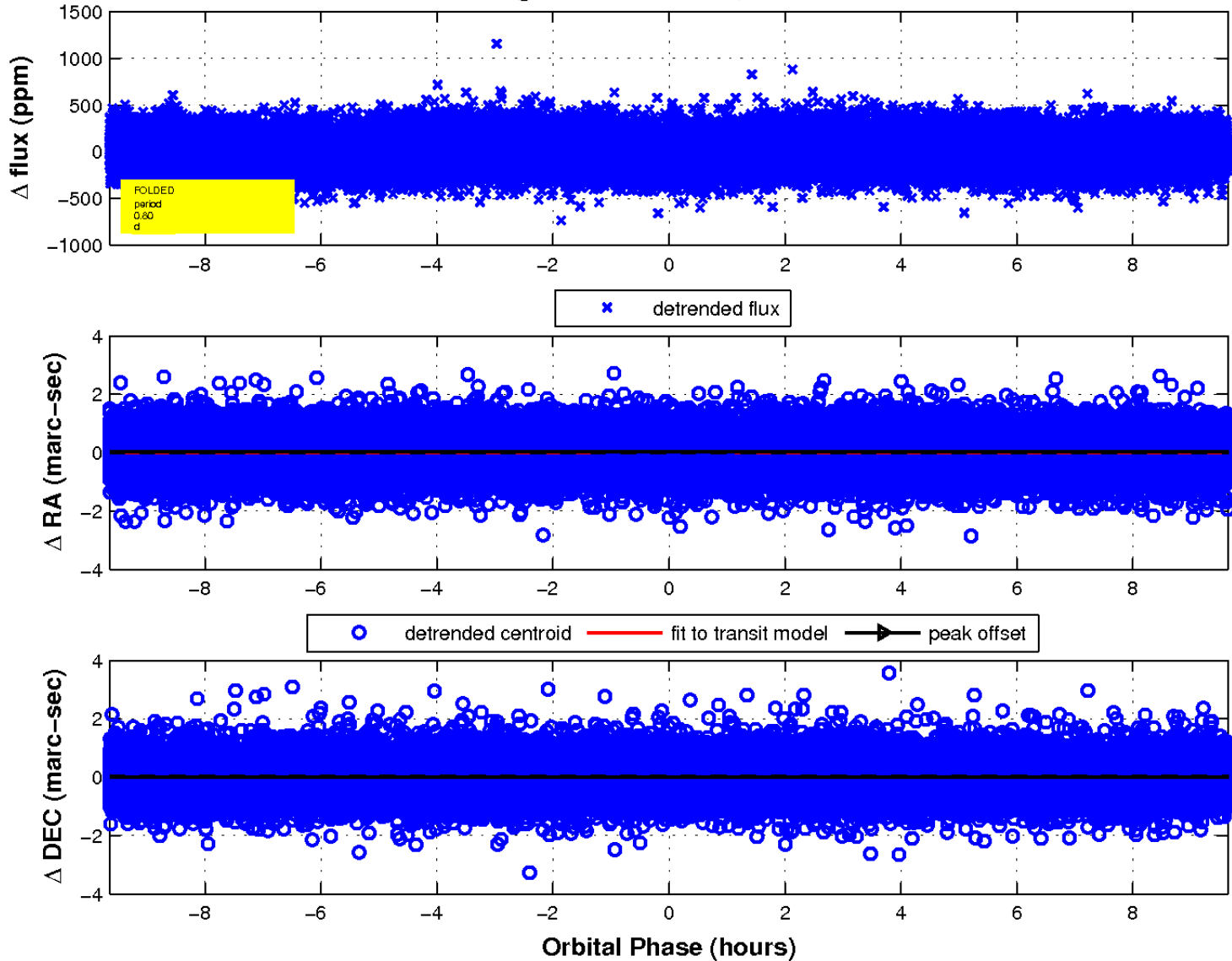
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

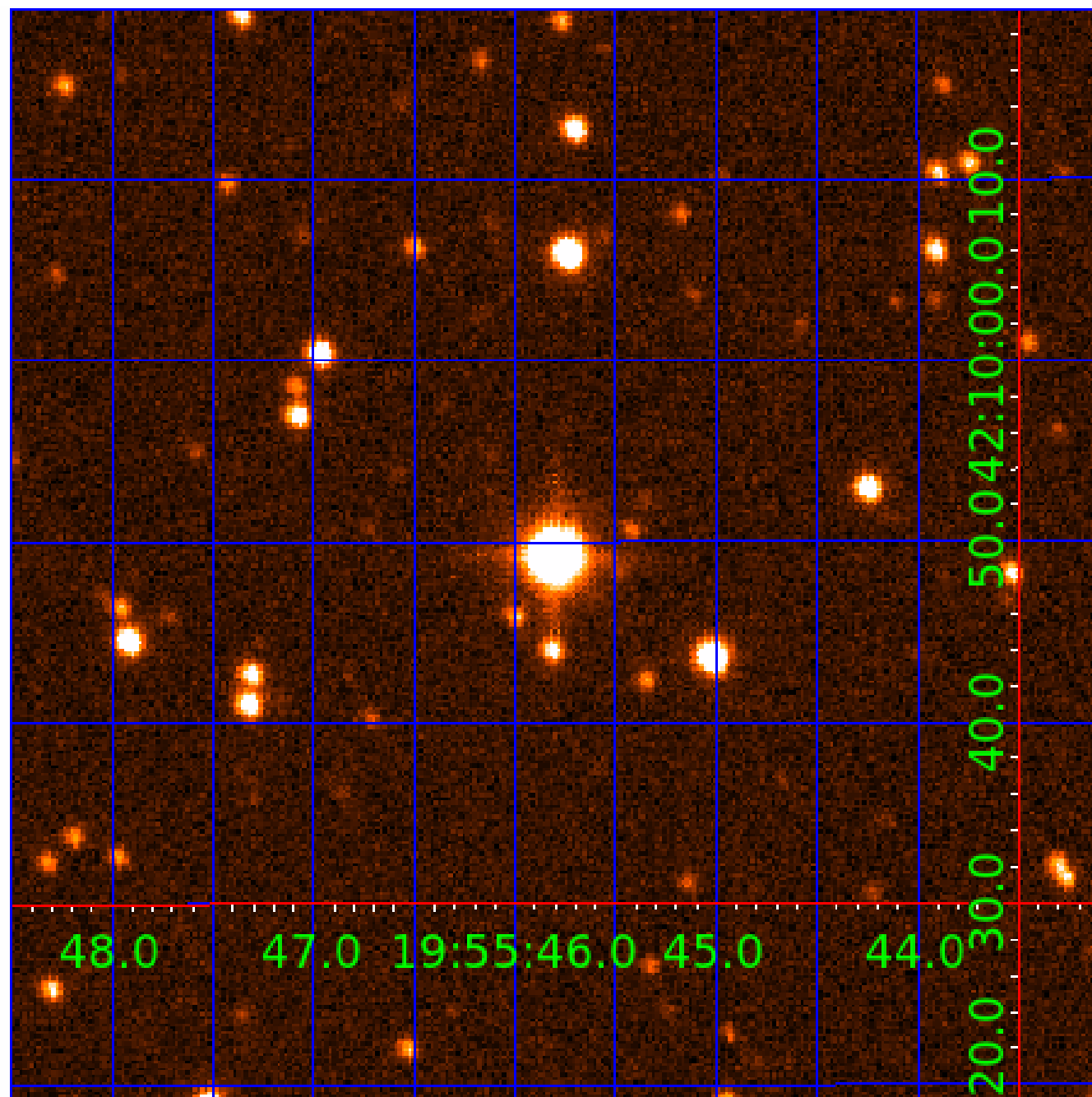


fluxWeightedCentroids, Planet 2 of 7



UKIRT Image

Declination



KIC 006721523

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})
006721523-01	OBS	No	2.582741	133.750098	51.6	7.849	11.3	12.7	4.86	6697	7.05	19471.46
006721523-02	OBS	No	0.804022	132.191771	24.6	3.400	10.8	10.6	4.86	6697	2.82	0.00
006721523-03	OBS	No	253.616155	295.821943	320.7	9.253	9.5	8.6	4.86	6697	9.00	42.98
006721523-04	OBS	No	121.015623	174.419378	191.8	13.243	9.1	7.1	4.86	6697	7.44	115.27
006721523-05	OBS	No	182.253762	293.333193	173.4	13.771	9.3	5.2	4.86	6697	7.42	66.77
006721523-06	OBS	No	68.022163	182.447275	171.6	14.651	9.0	7.3	4.86	6697	8.32	248.49
006721523-07	OBS	No	94.088726	165.233179	176.1	4.500	8.4	-1.0	4.86	6697	6.50	161.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006721523-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
006721523-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006721523-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNCERTAIN
006721523-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006721523-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
006721523-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006721523-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

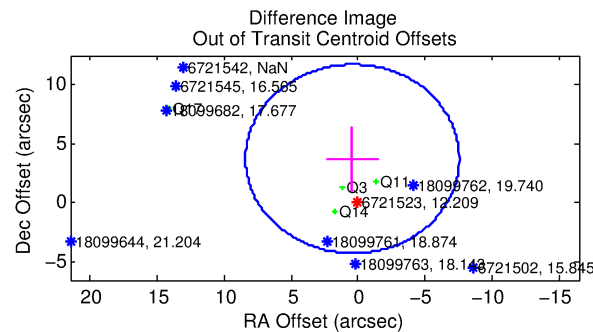
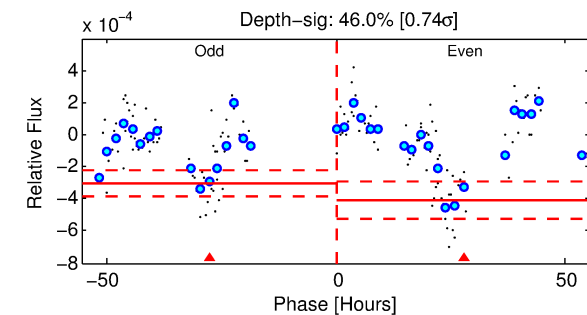
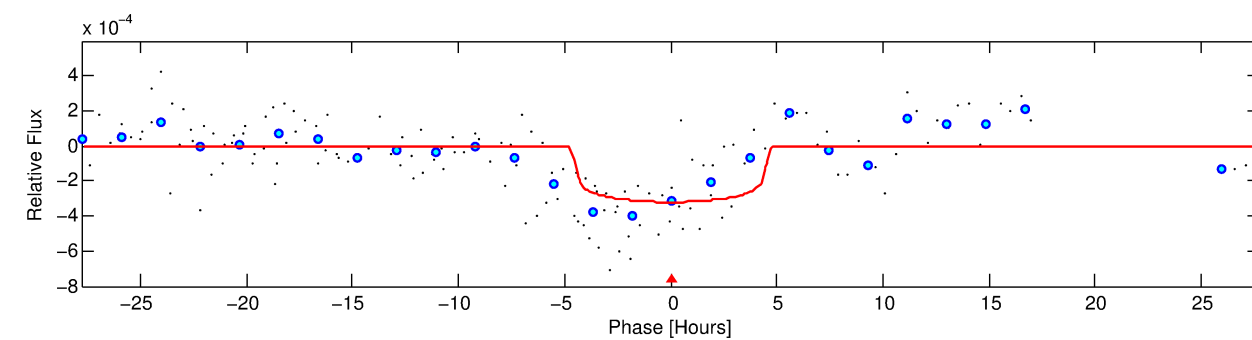
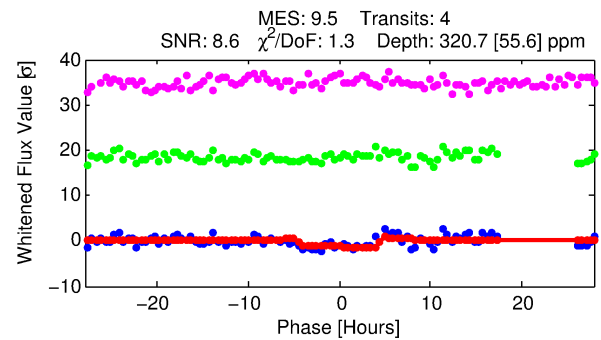
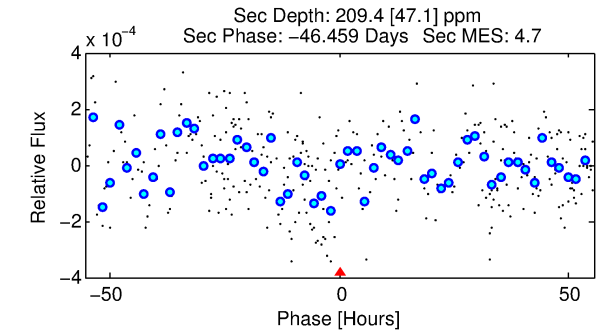
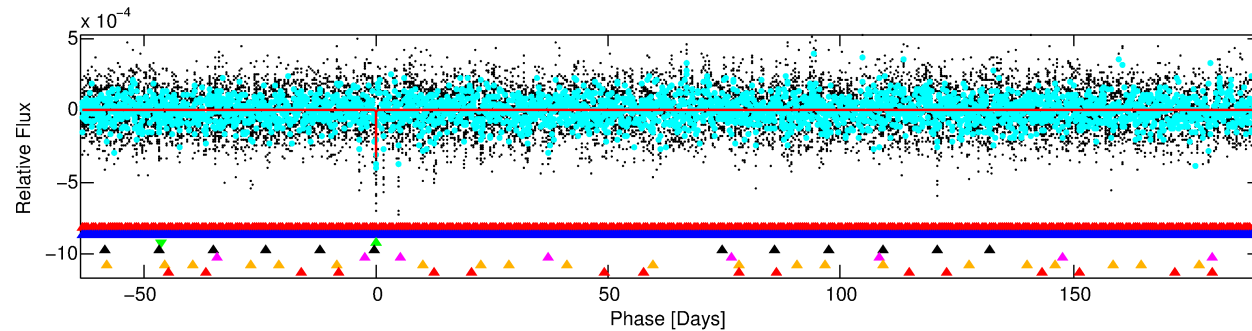
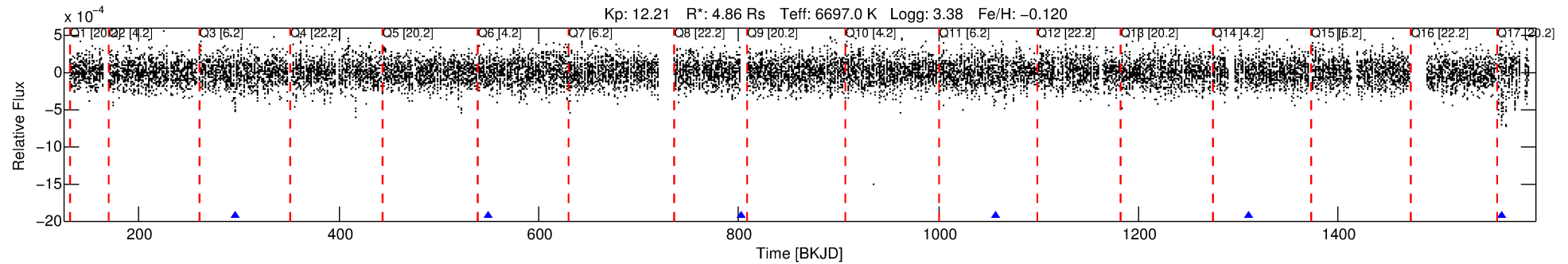
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006721523-03

No Significant Match Found

DV One-Page Summary

KIC: 6721523 Candidate: 3 of 7 Period: 253.616 d



DV Fit Results:

Period = 253.61615 [0.00374] d
Epoch = 295.8219 [0.0145] BKJD
Rp/R* = 0.0170 [0.0270]
a/R* = 185.90 [1655.39]
b = 0.50 [13.62]
Seff = 42.98 [27.28]
Teq = 653 [104] K
Rp = 9.00 [14.74] Re
a = 0.9952 [0.3827] AU
Ag = 1408.89 [4579.34] [0.31 σ]
Teffp = 6184 [4936] K [1.12 σ]

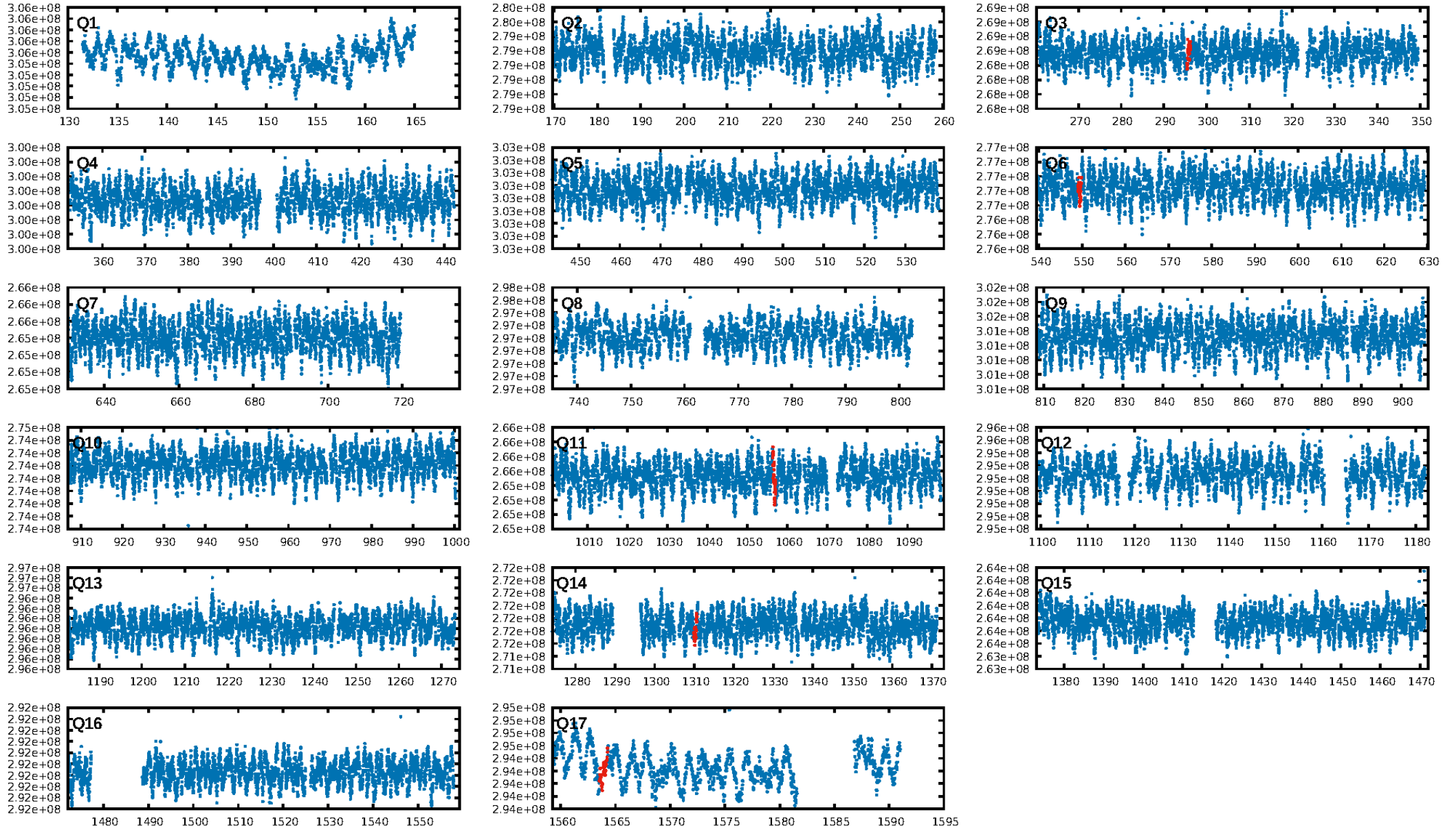
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [103.23 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.411
Centroid-sig: 0.2%
Centroid-so: 1.362 arcsec [2.27 σ]
OotOffset-rm: 3.768 arcsec [1.42 σ]
KicOffset-rm: 3.754 arcsec [1.41 σ]
OotOffset-st: 1/2/0/1 [4]
KicOffset-st: 1/2/0/1 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 0.00 [0/5]

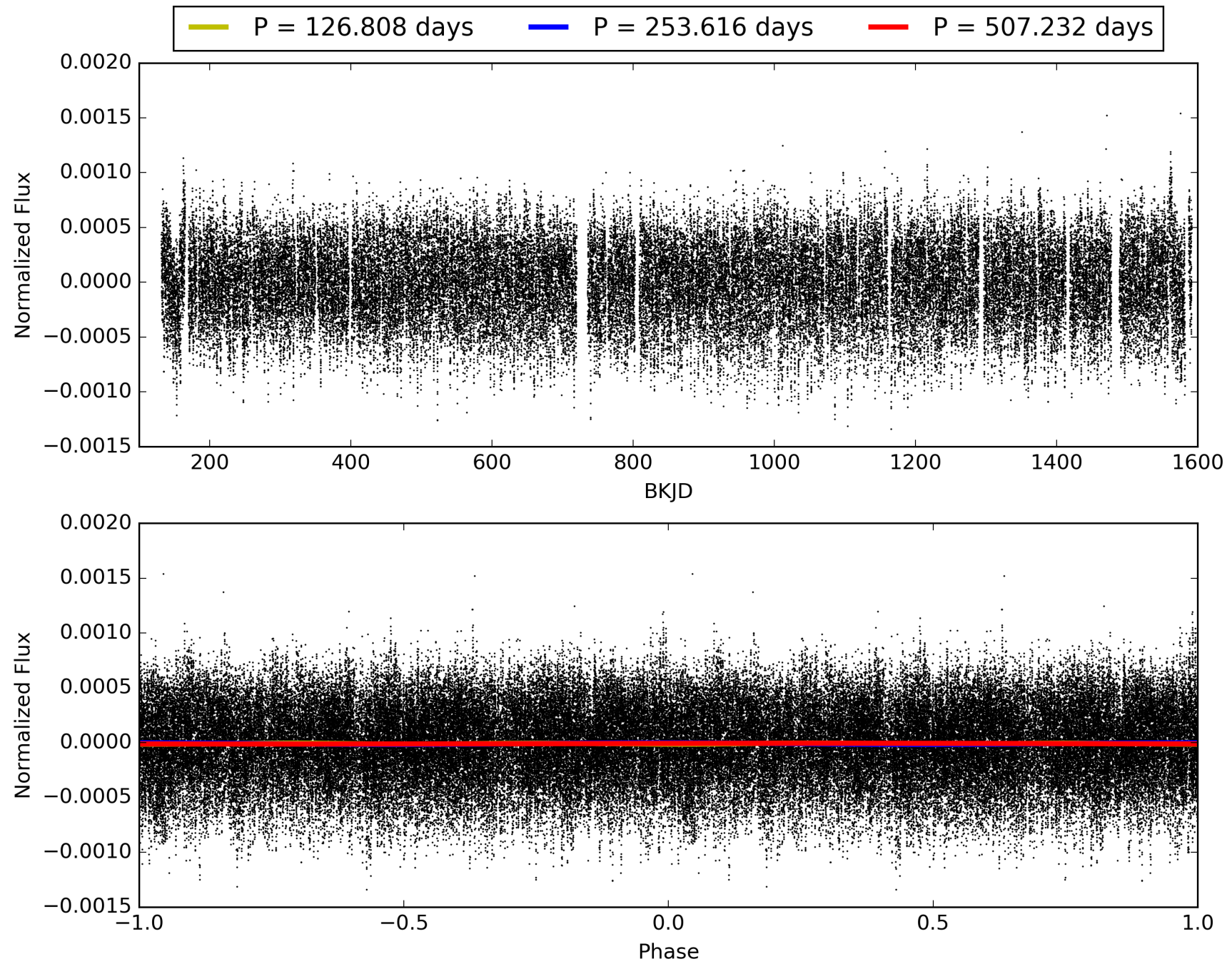
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:01:15 Z

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

TCE 006721523-03, PDC Light Curves

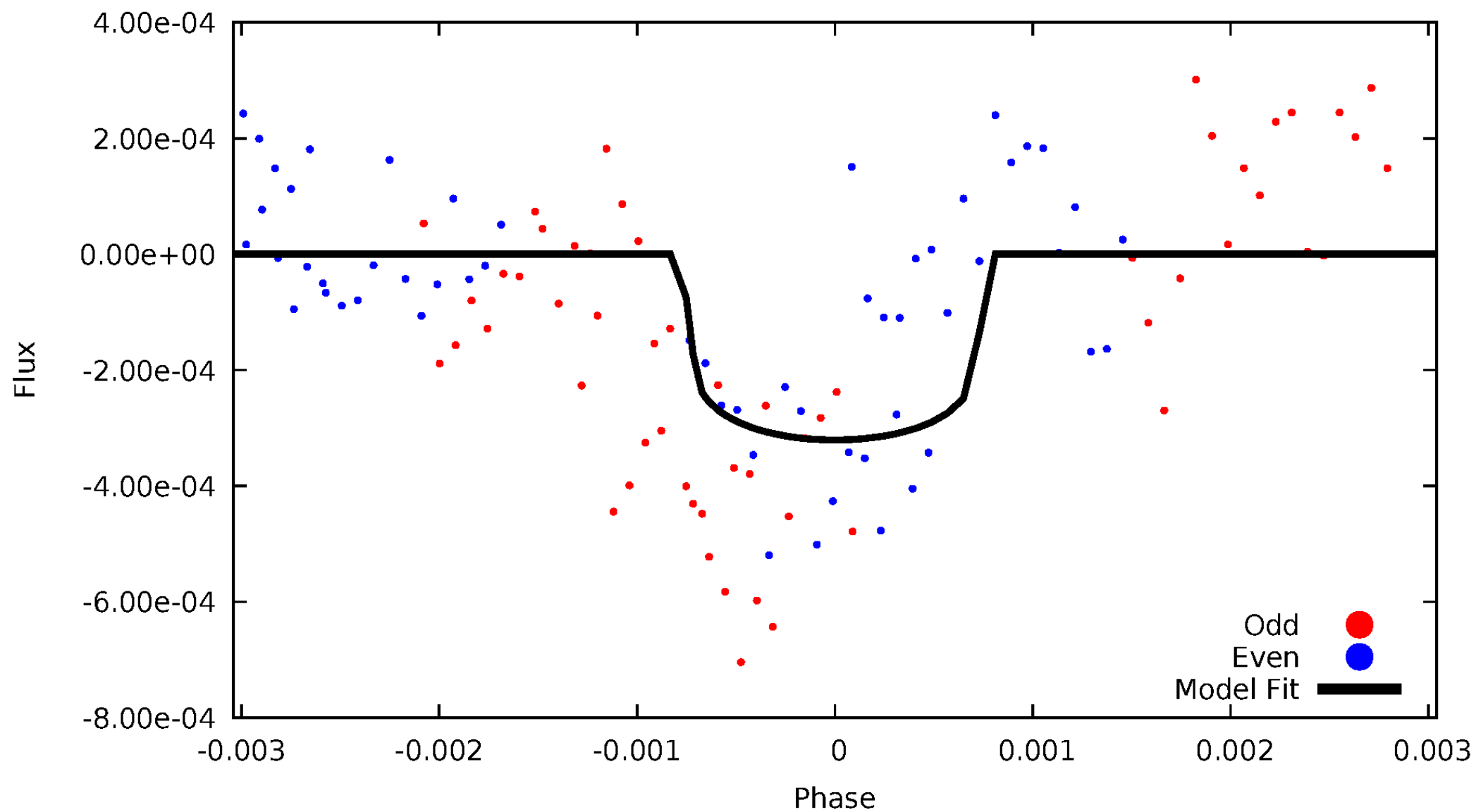


TCE 006721523-03



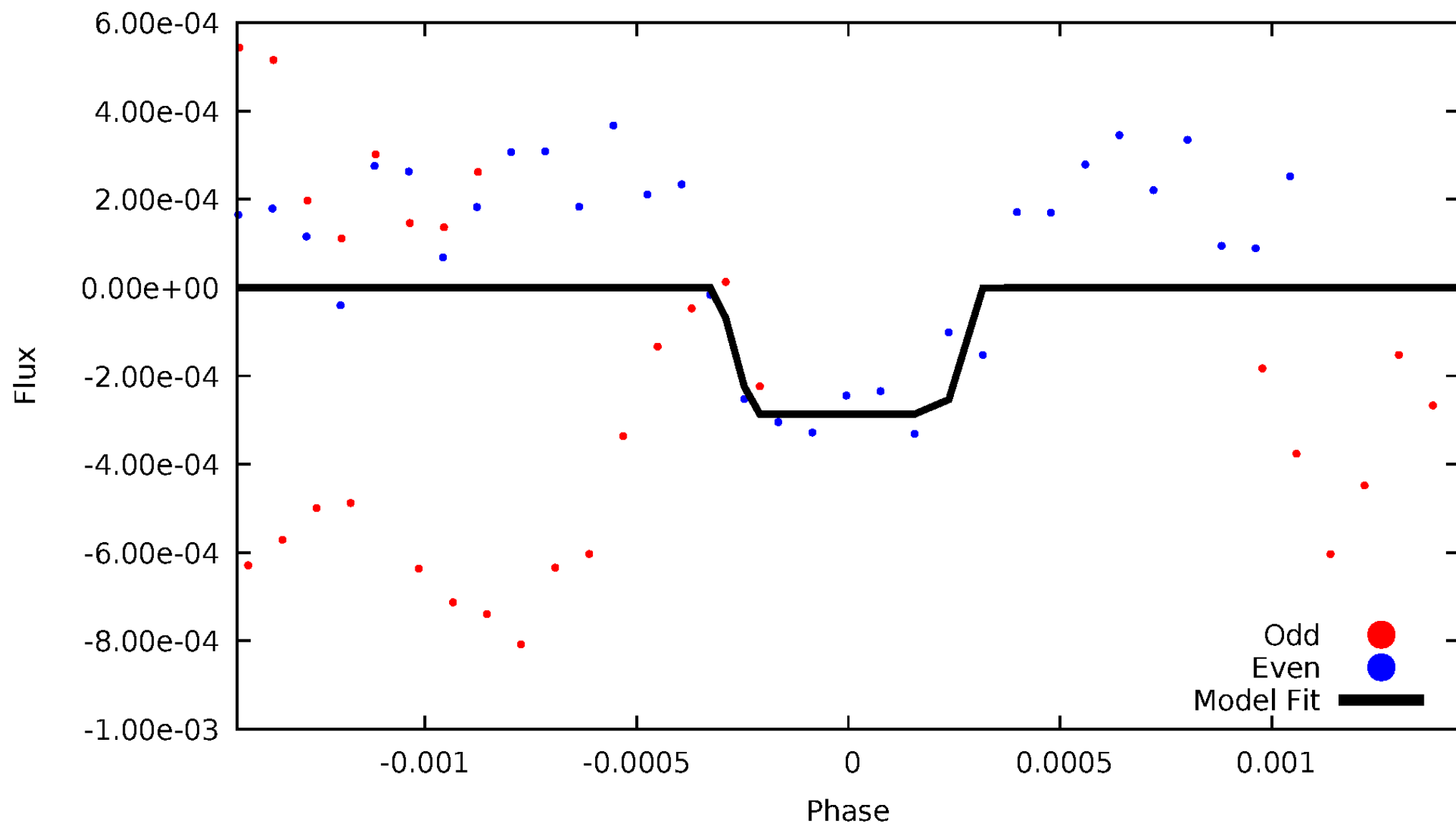
DV Odd/Even

TCE 006721523-03



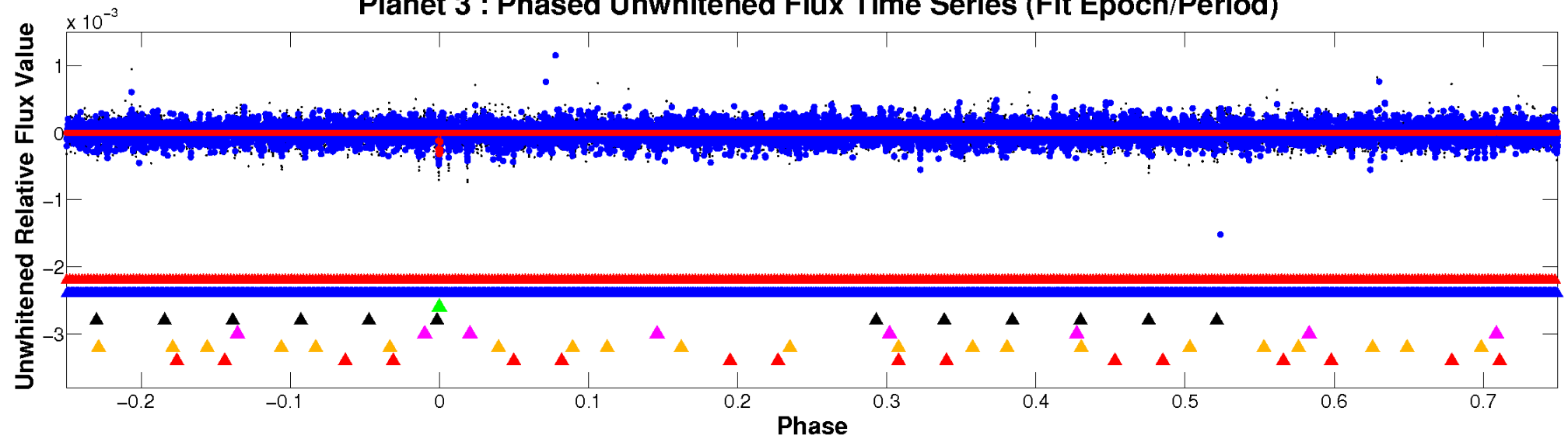
ALT Odd/Even

TCE 006721523-03

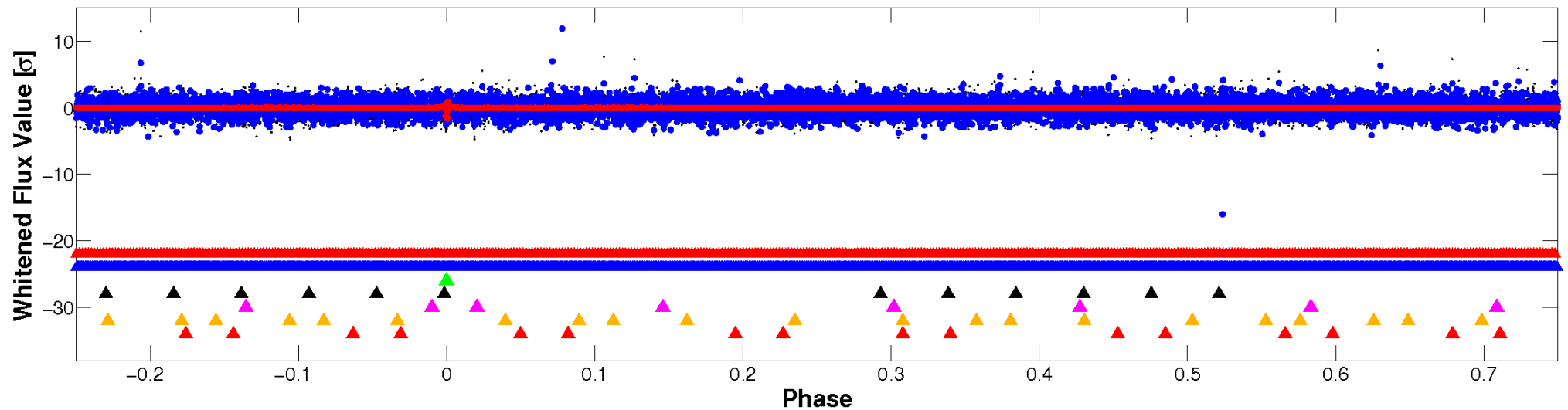


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

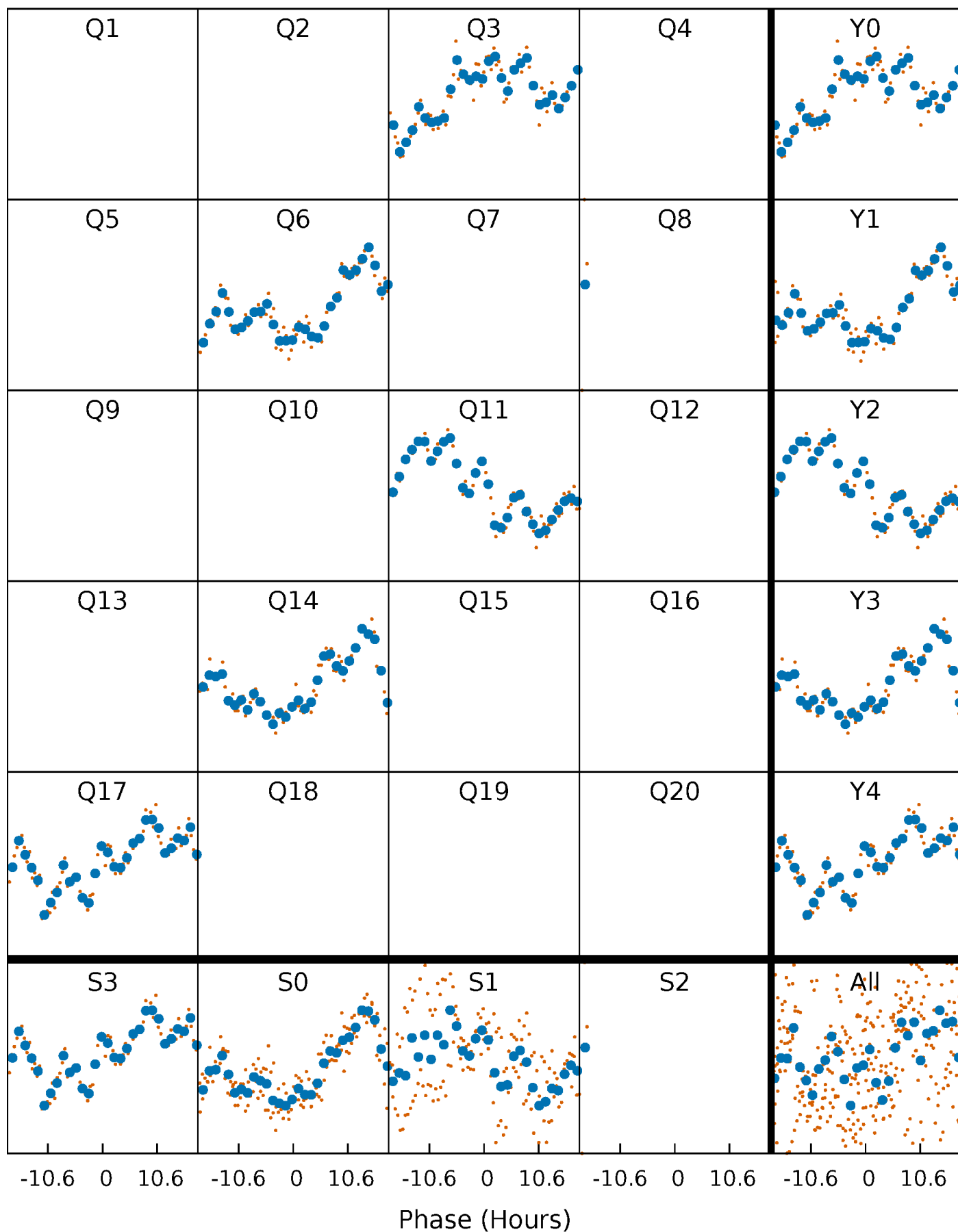


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



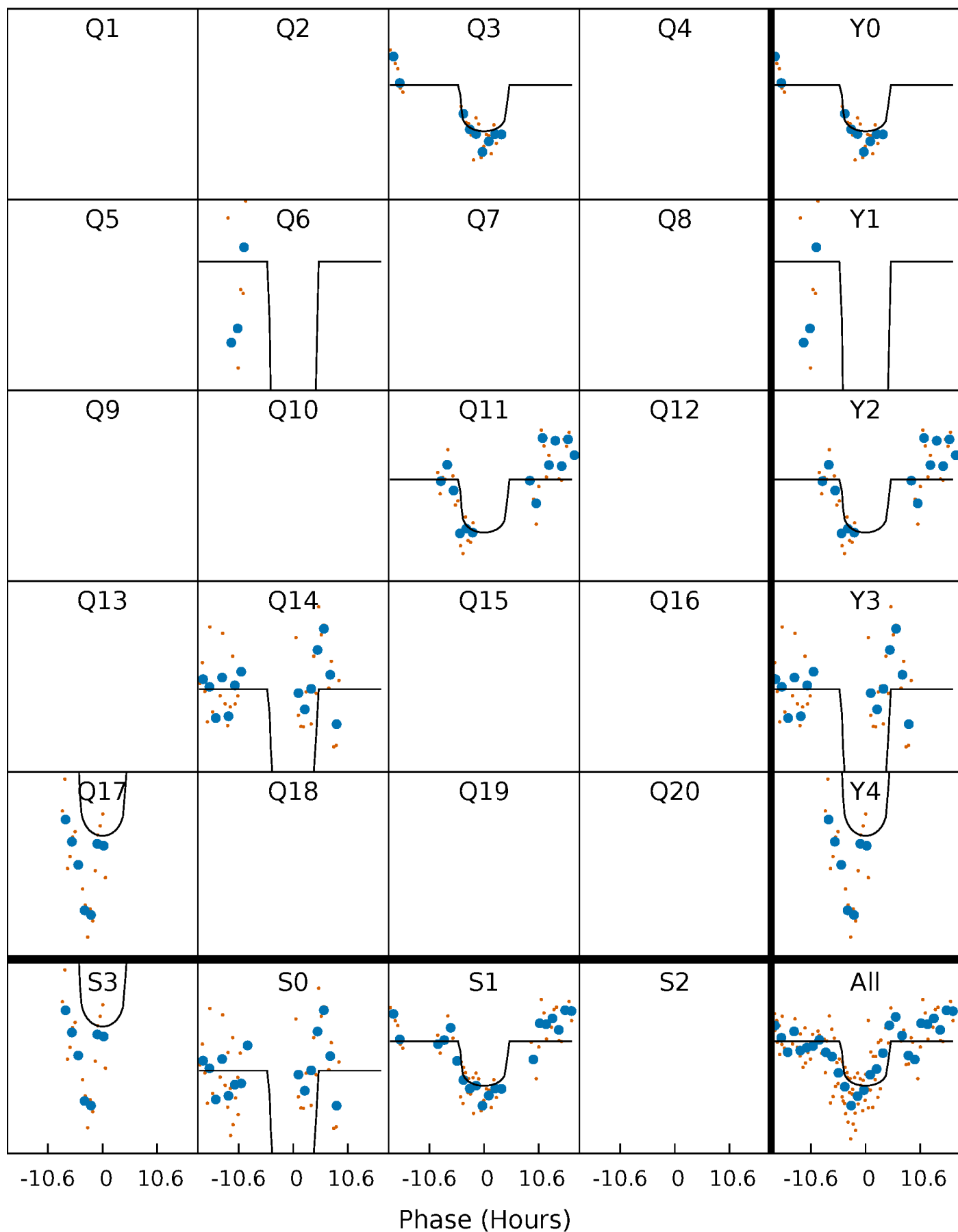
PDC Quarter-Phased Transit Curves

TCE 006721523-03 P=253.616155 Days $T_0=295.821943$ (BKJD)



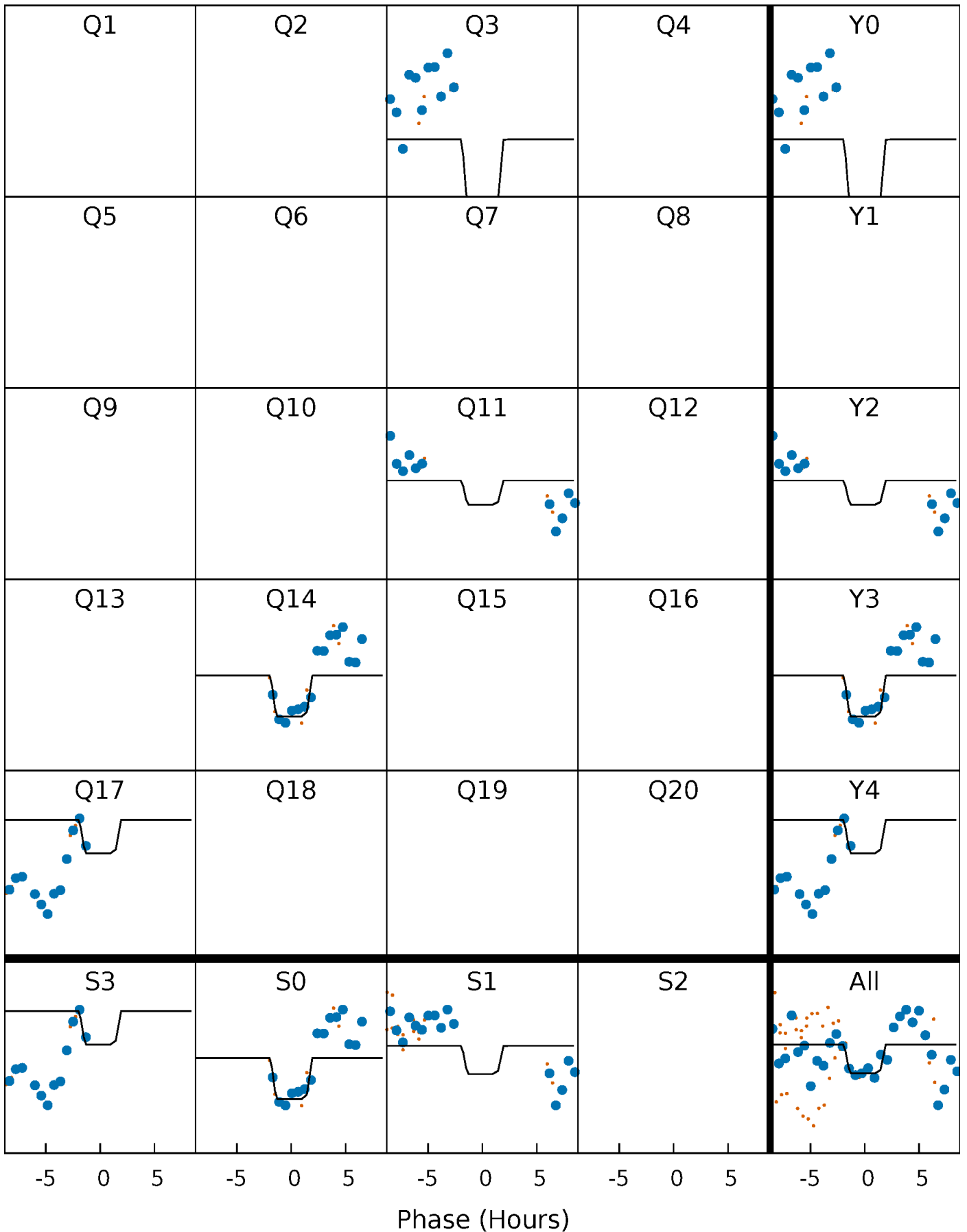
DV Quarter-Phased Transit Curves

TCE 006721523-03 $P=253.616155$ Days $T_0=295.821943$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

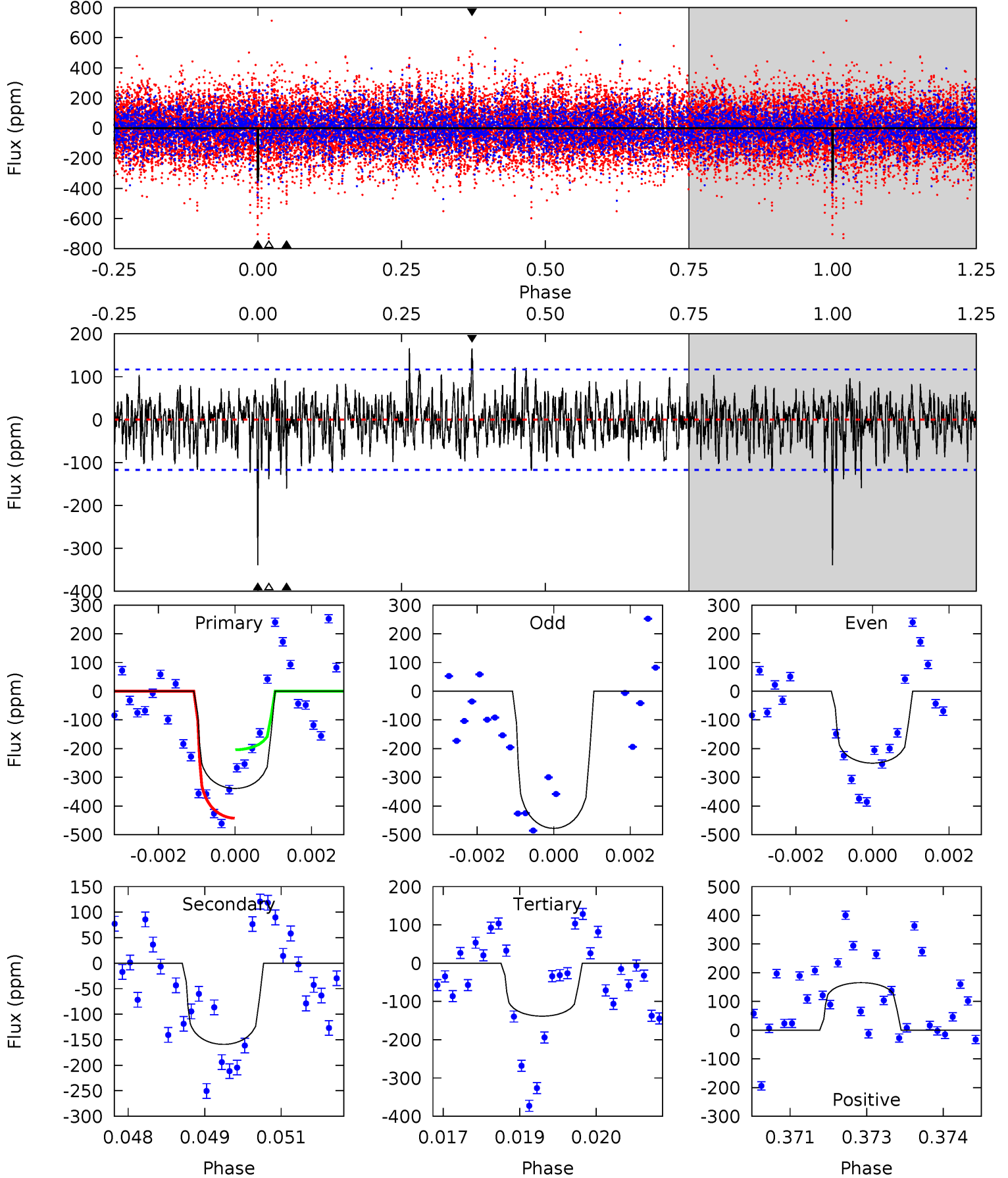
TCE 006721523-03 P=253.587291 Days $T_0=296.041856$ (BKJD)



DV Model-Shift Uniqueness Test

006721523-03, P = 253.616155 Days, E = 42.205788 Days

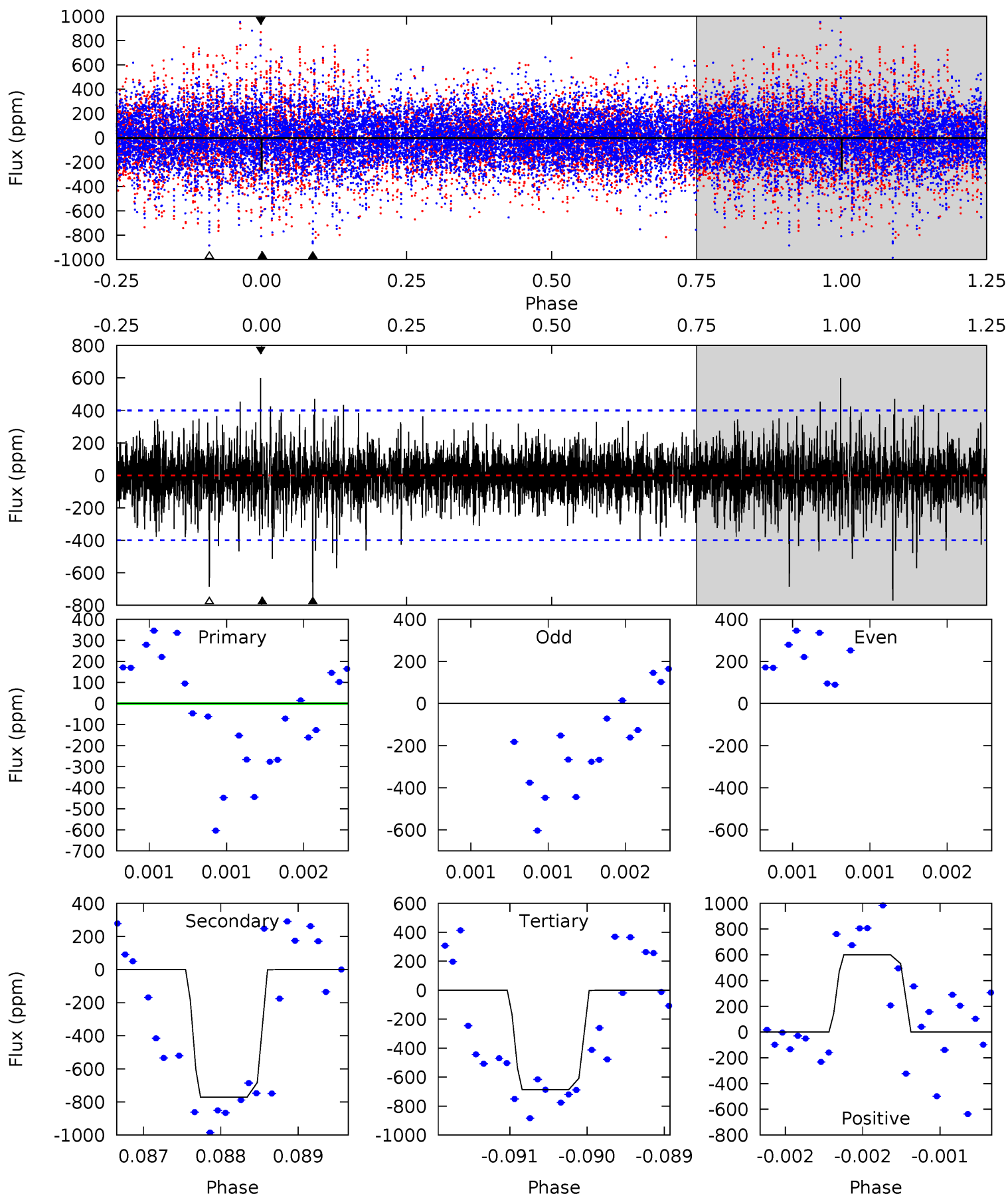
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	7.31	6.36	7.60	5.37	3.17	1.89	9.22	7.98	0.95	-0.29	5.18	0.85	0.33	5.40



Alt Model-Shift Uniqueness Test

006721523-03, P = 253.587291 Days, E = 42.454565 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.62	10.7	9.49	8.31	5.54	3.43	1.63	-5.88	-4.69	1.17	2.36	0.28	1.00	0.44	0.28



Stellar Parameters For KIC 006721523

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6697^{+180}_{-200}	$3.375^{+0.369}_{-0.062}$	$-0.120^{+0.300}_{-0.250}$	$4.860^{+0.335}_{-1.896}$	$2.042^{+0.091}_{-0.366}$	$0.025^{+0.069}_{-0.005}$
	+3%/-3%	+11%/-2%	+250%/-208%	+7%/-39%	+4%/-18%	+277%/-20%
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 006721523-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-159 ± 22	$12.49^{+12.33}_{-8.30}$	897^{+41}_{-91}	4756^{+3605}_{-1021}	526^{+4392}_{-391}
Alt.	-771 ± 72	$12.22^{+11.49}_{-8.52}$	898^{+44}_{-90}	7146^{+9805}_{-1964}	2783^{+28985}_{-2039}

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 $A_{obs} \gg 1.0$

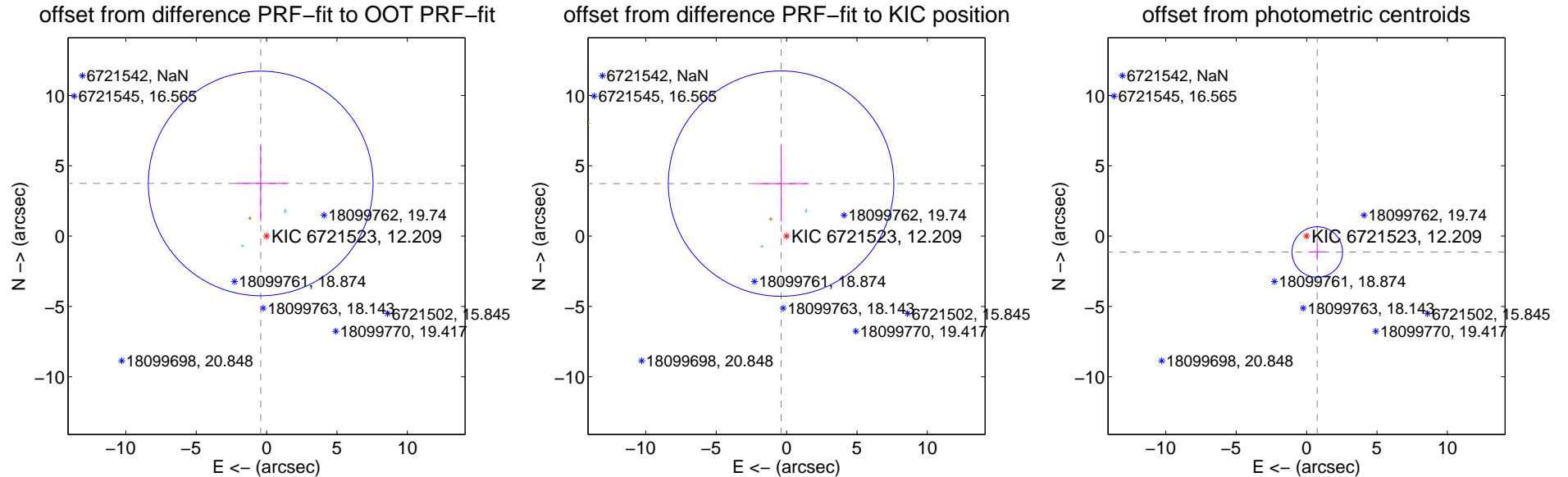
DV Centroid Data

Supplemental centroid analysis for 006721523-03. Kepler magnitude: 12.21. Transit SNR 8.56

There are 2 quarters with good PRF difference image offsets

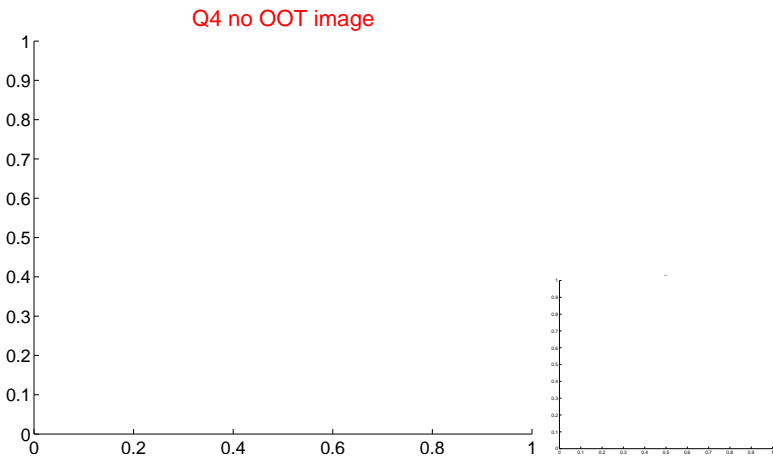
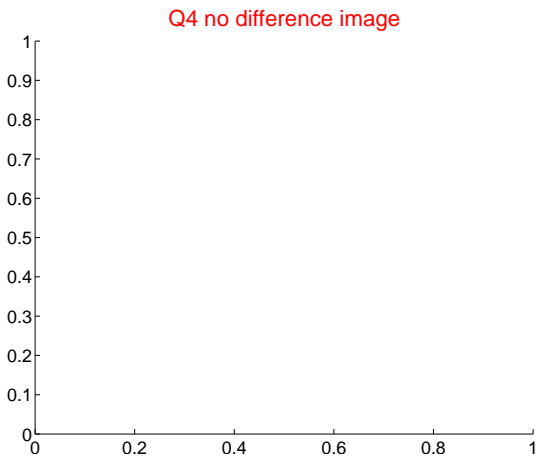
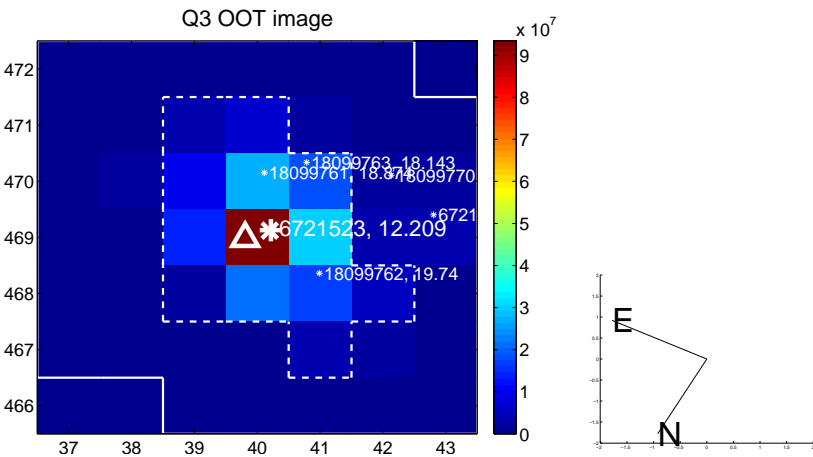
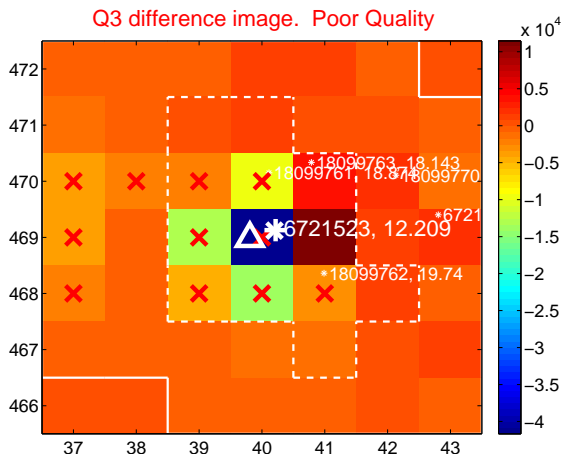
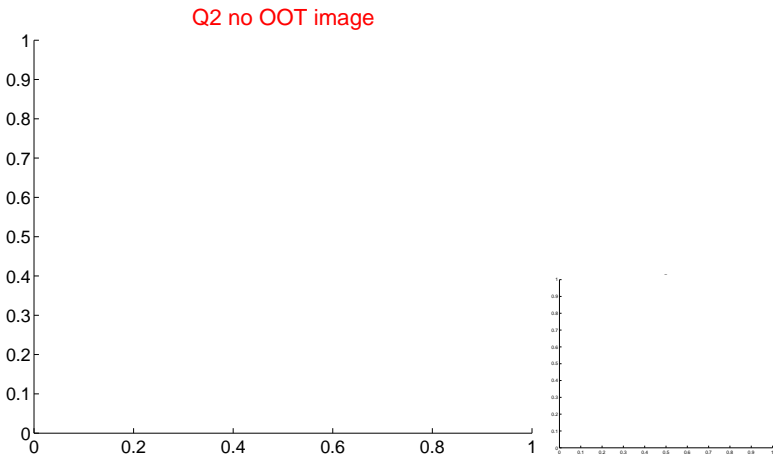
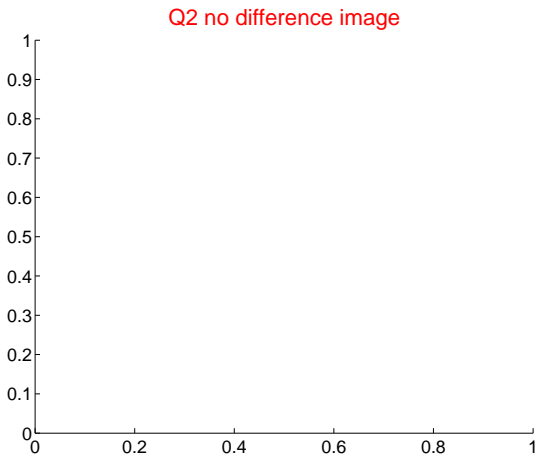
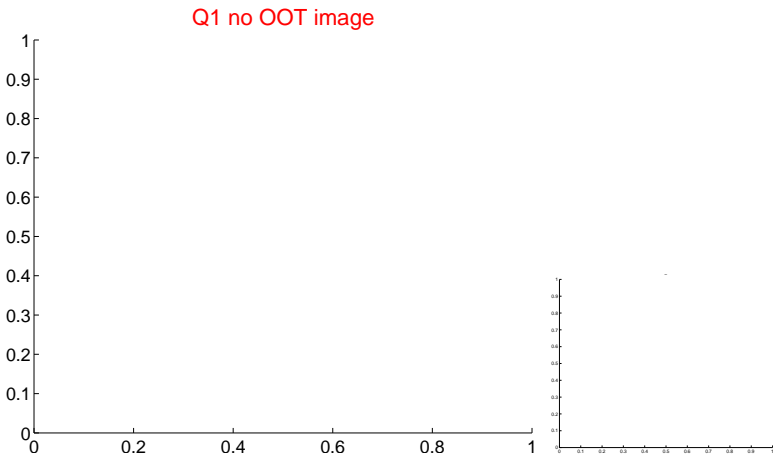
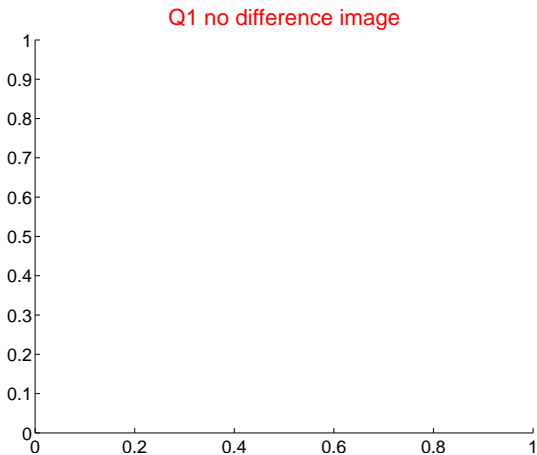
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.768 ± 2.661	1.42	0.419 ± 1.835	3.744 ± 2.670
PRF-fit source offset from KIC position	3.754 ± 2.670	1.41	0.390 ± 1.840	3.733 ± 2.678
photometric centroid source offset	1.36 ± 0.60	2.27	-0.76 ± 0.63	-1.13 ± 0.58

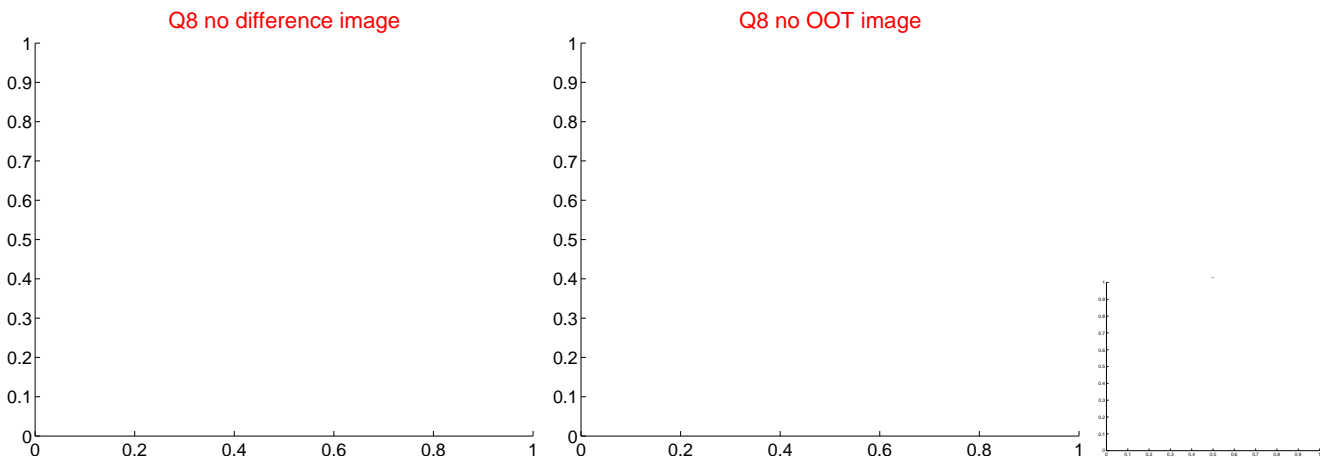
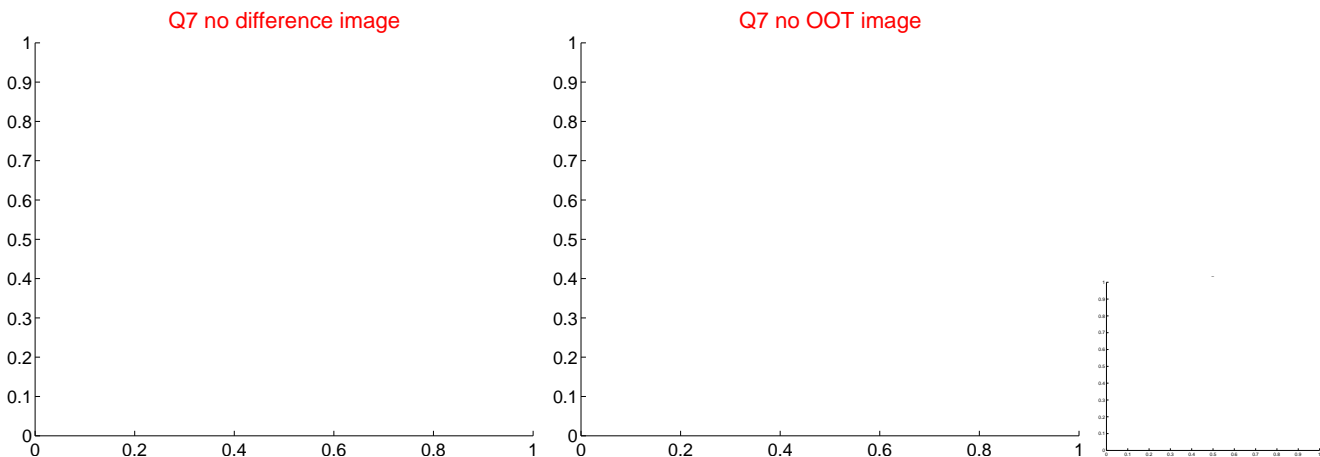
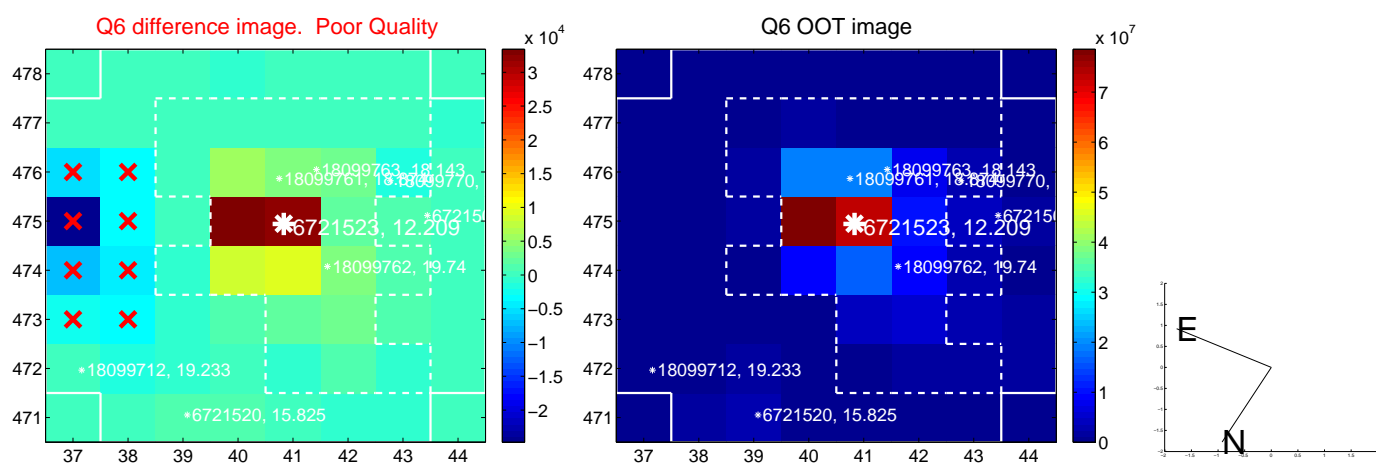
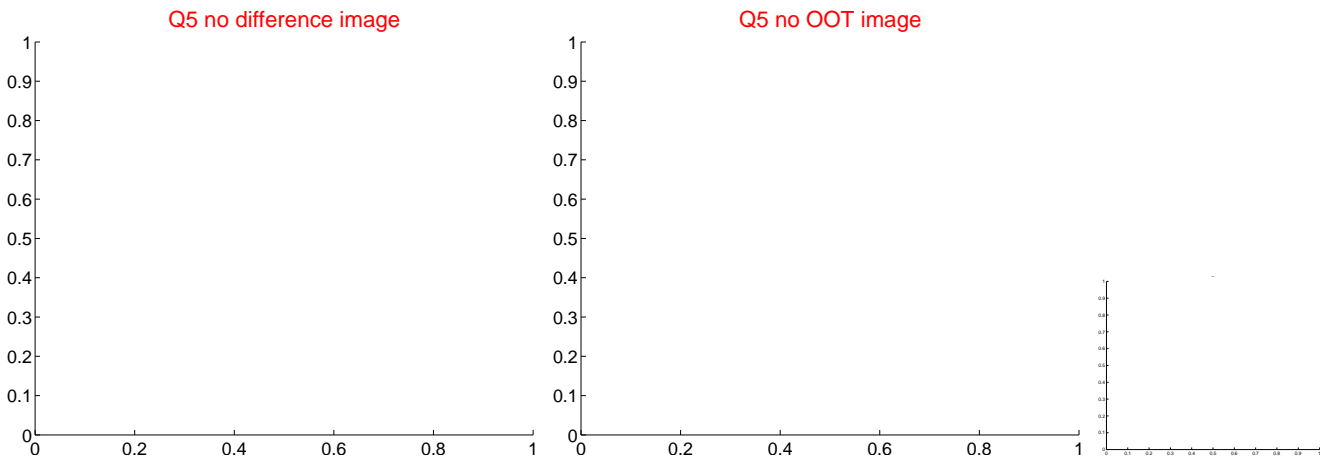


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

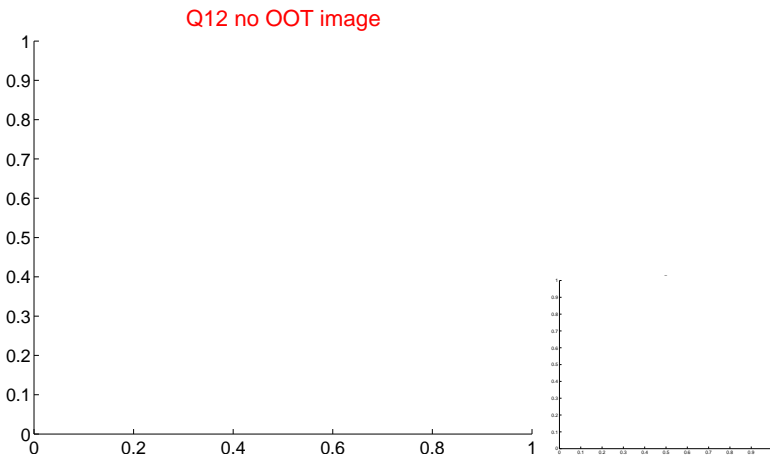
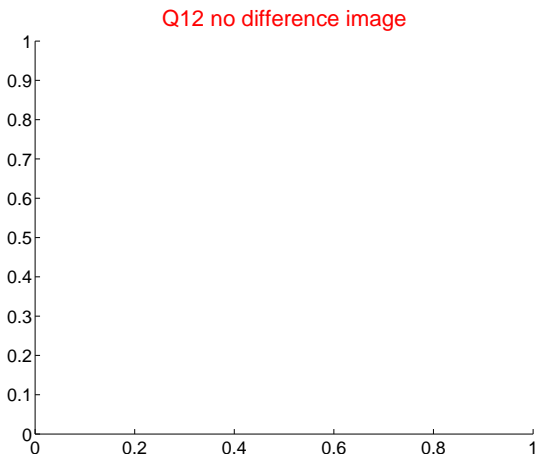
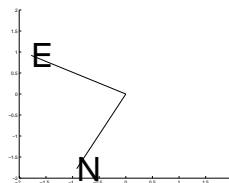
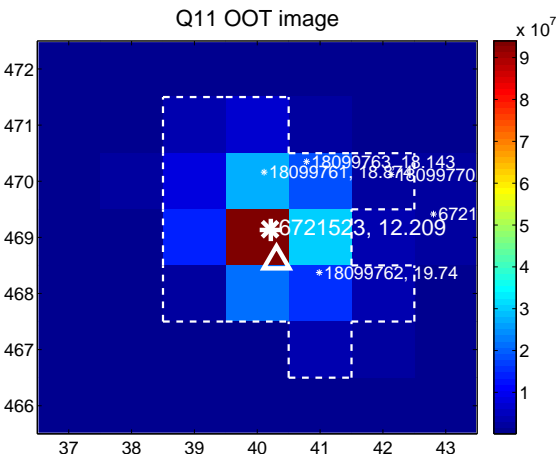
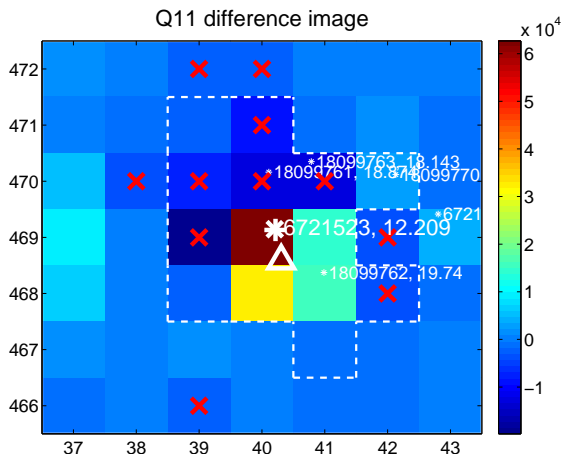
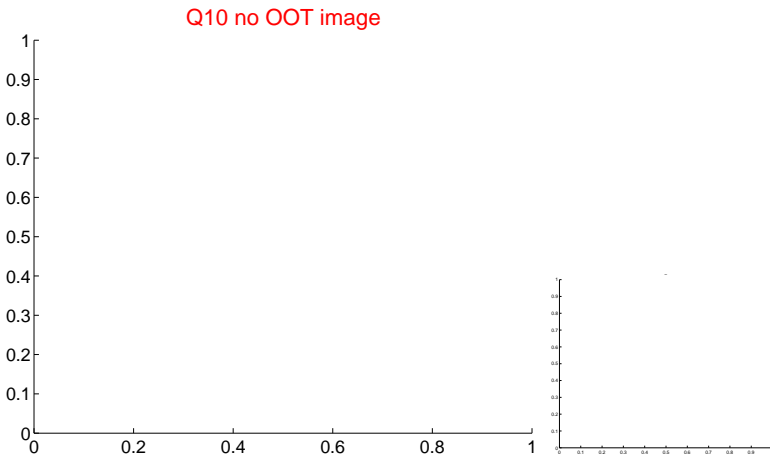
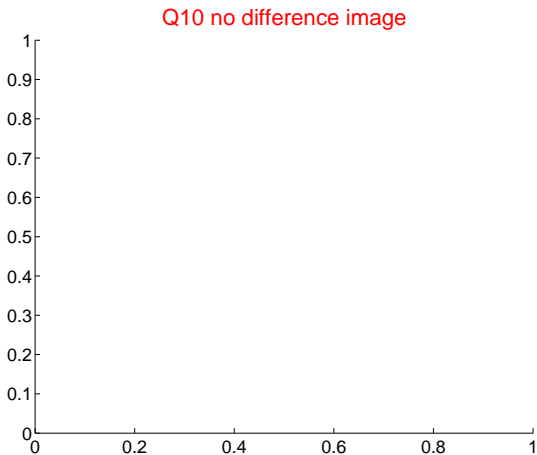
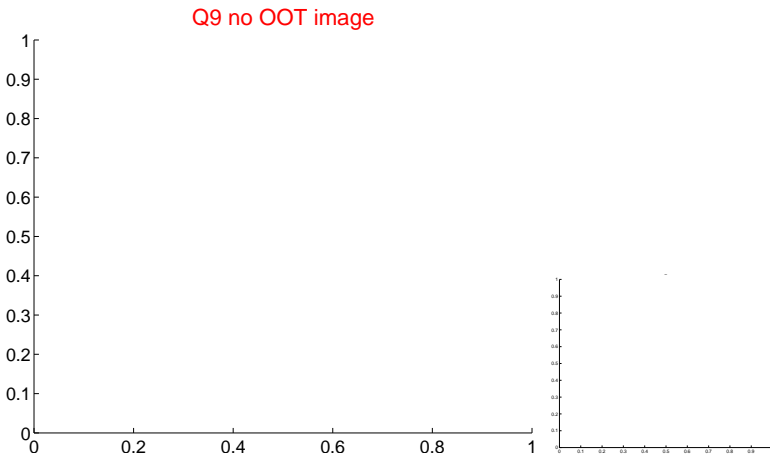
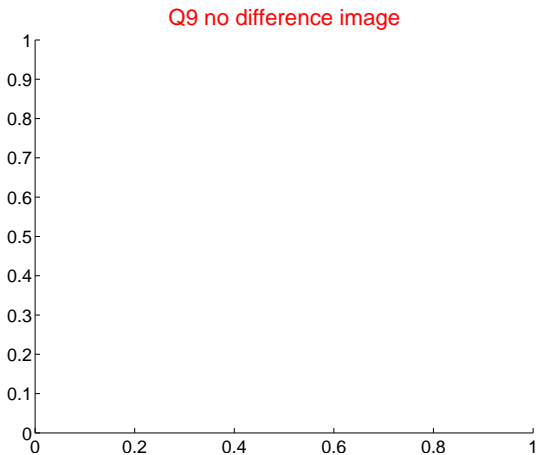
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



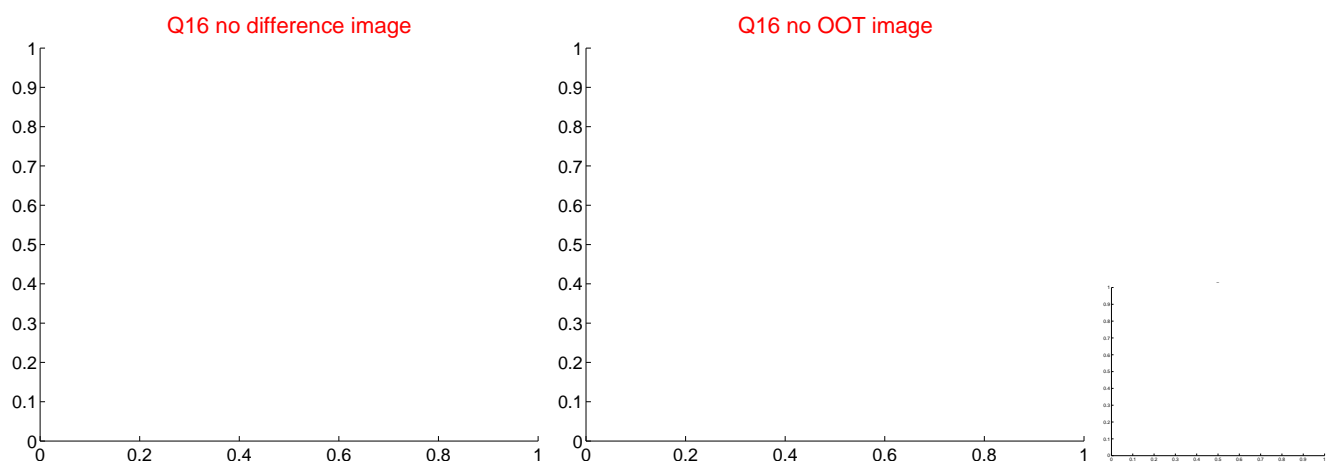
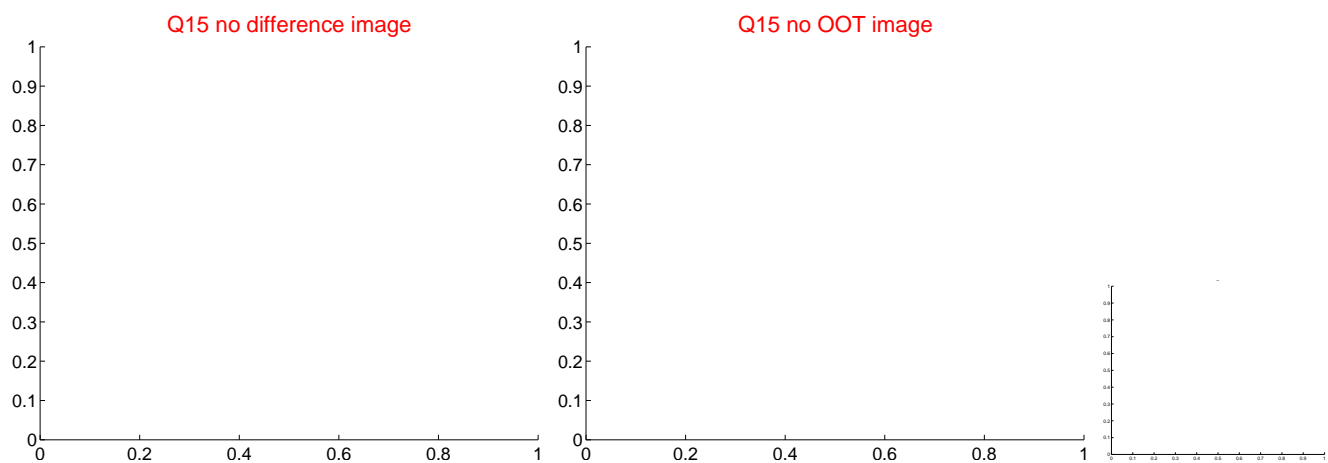
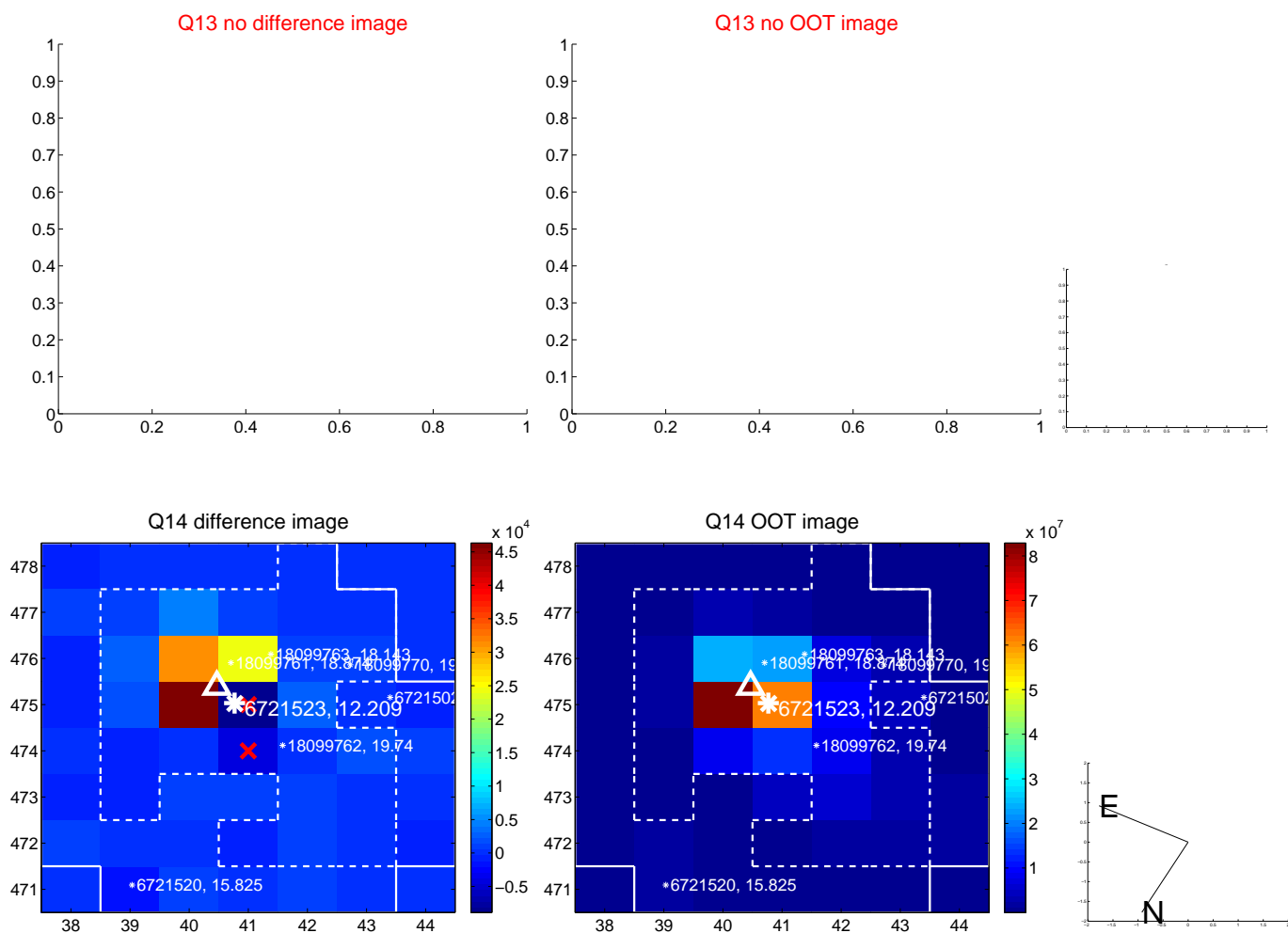
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



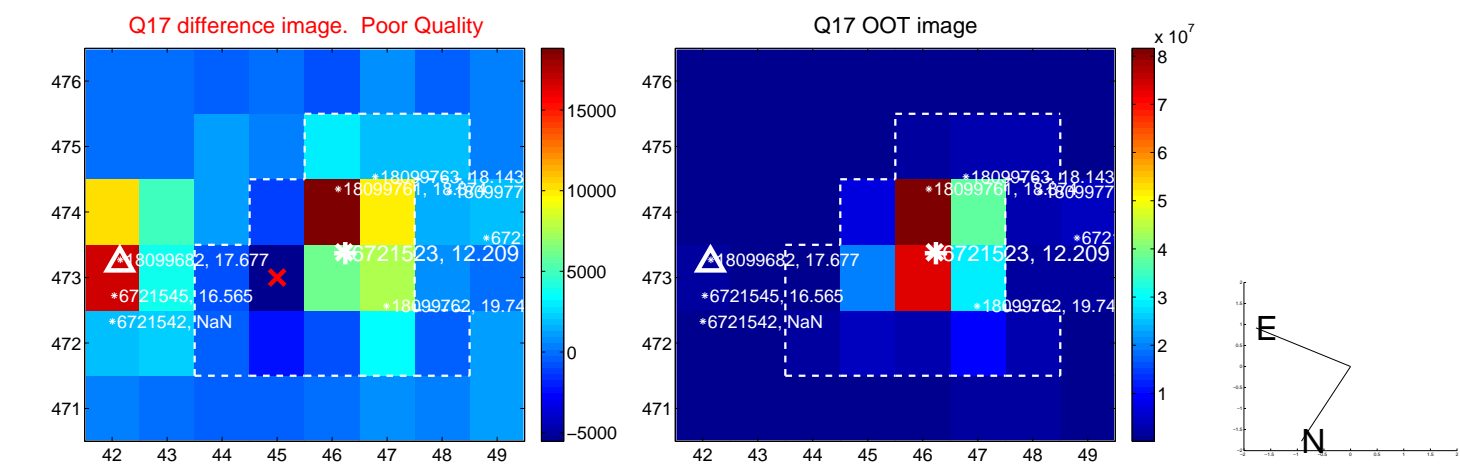
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



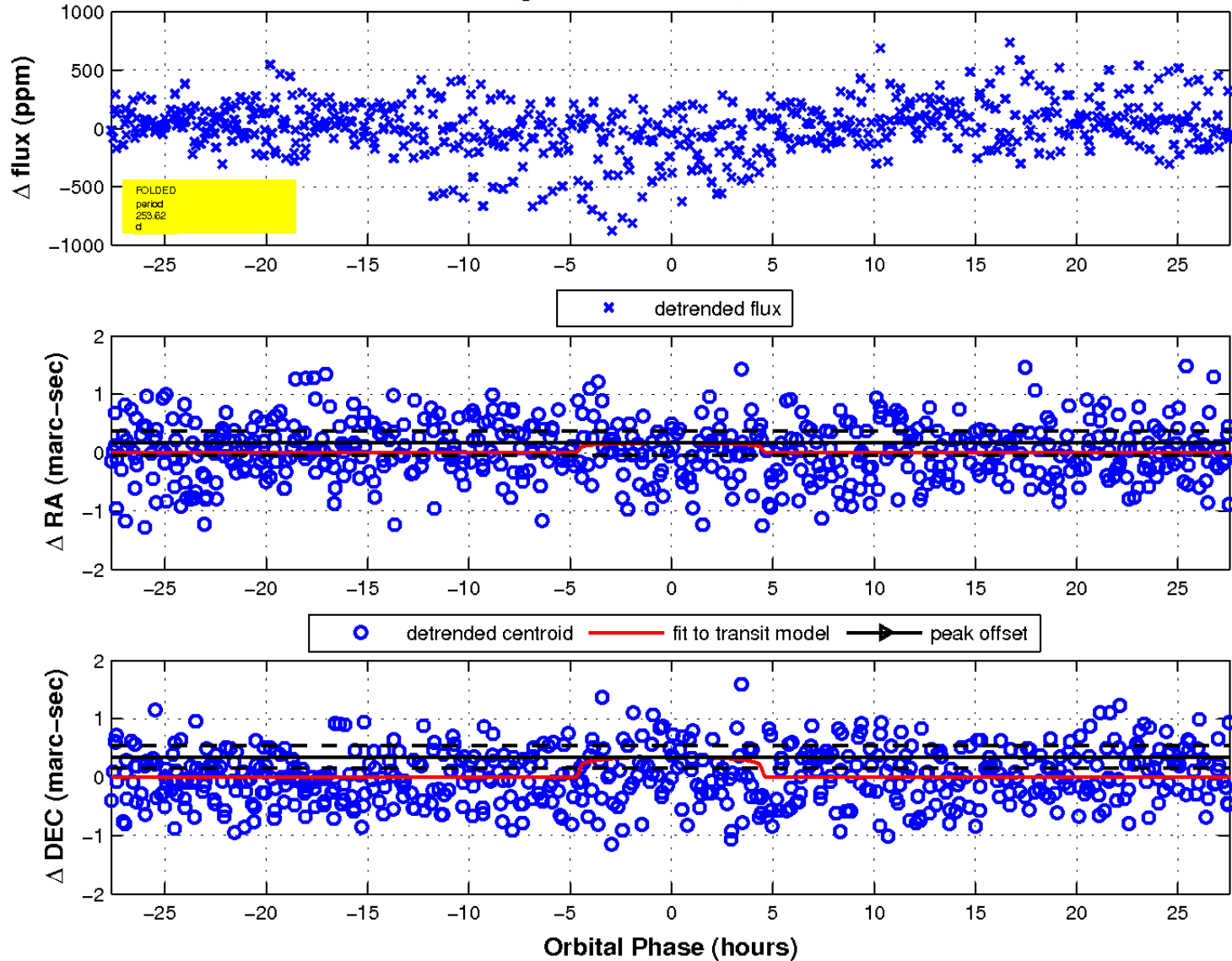
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

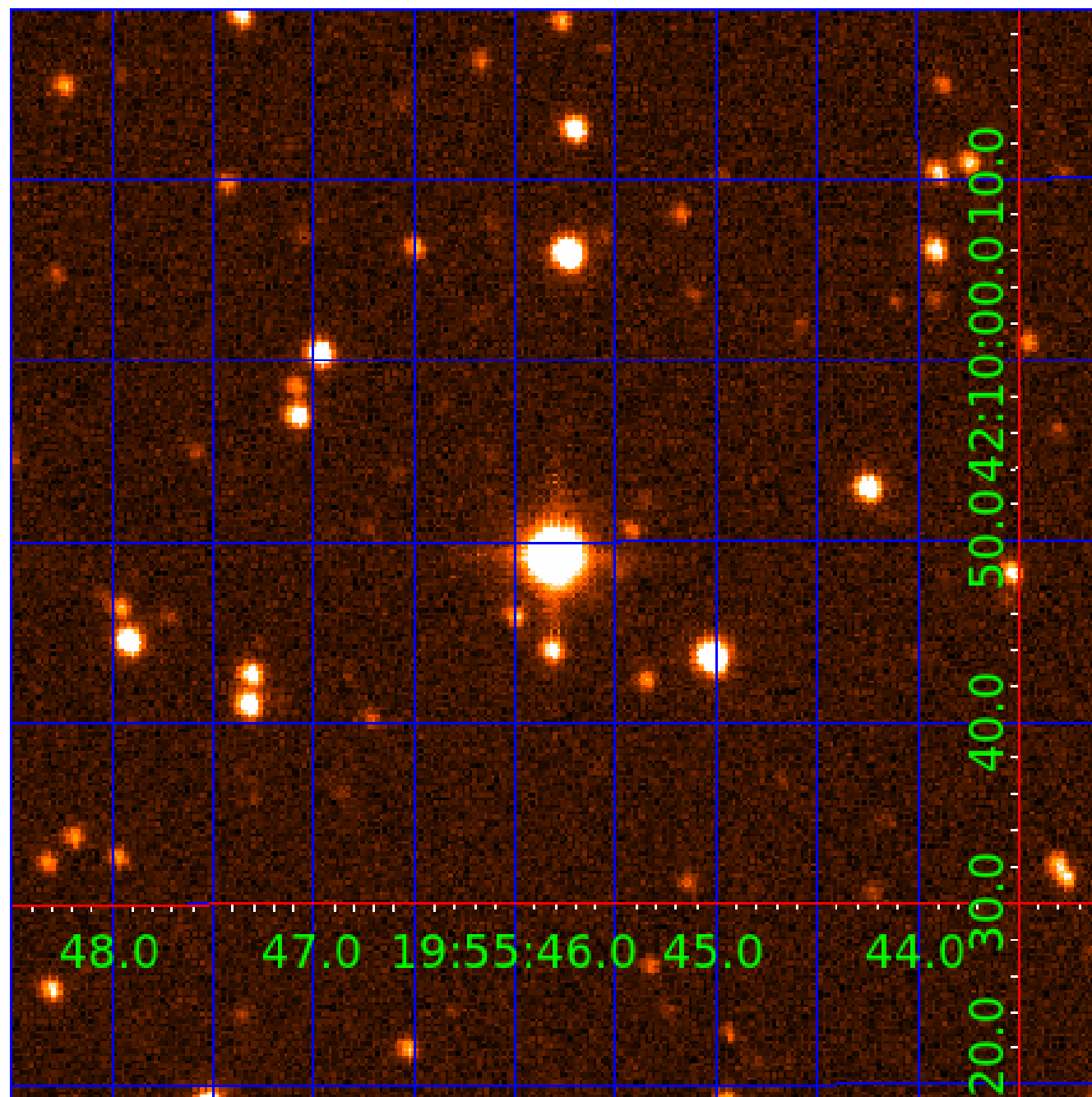


fluxWeightedCentroids, Planet 3 of 7



UKIRT Image

Declination



KIC 006721523

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})
006721523-01	OBS	No	2.582741	133.750098	51.6	7.849	11.3	12.7	4.86	6697	7.05	19471.46
006721523-02	OBS	No	0.804022	132.191771	24.6	3.400	10.8	10.6	4.86	6697	2.82	0.00
006721523-03	OBS	No	253.616155	295.821943	320.7	9.253	9.5	8.6	4.86	6697	9.00	42.98
006721523-04	OBS	No	121.015623	174.419378	191.8	13.243	9.1	7.1	4.86	6697	7.44	115.27
006721523-05	OBS	No	182.253762	293.333193	173.4	13.771	9.3	5.2	4.86	6697	7.42	66.77
006721523-06	OBS	No	68.022163	182.447275	171.6	14.651	9.0	7.3	4.86	6697	8.32	248.49
006721523-07	OBS	No	94.088726	165.233179	176.1	4.500	8.4	-1.0	4.86	6697	6.50	161.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006721523-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
006721523-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006721523-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNCERTAIN
006721523-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006721523-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
006721523-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006721523-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

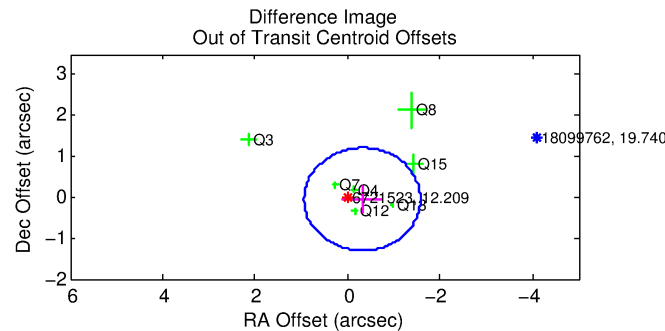
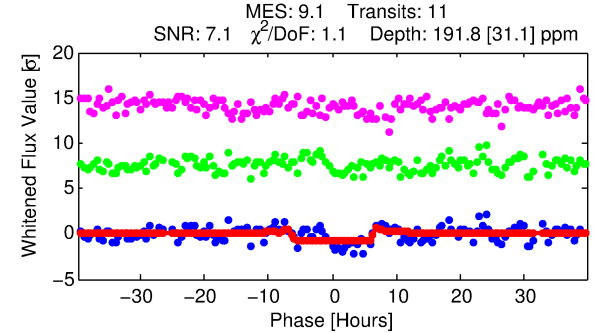
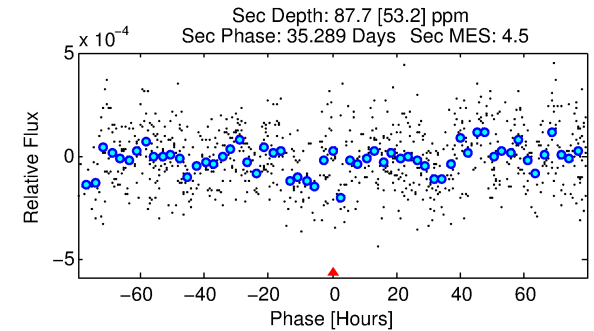
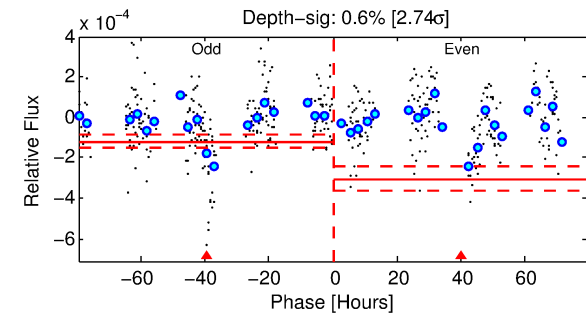
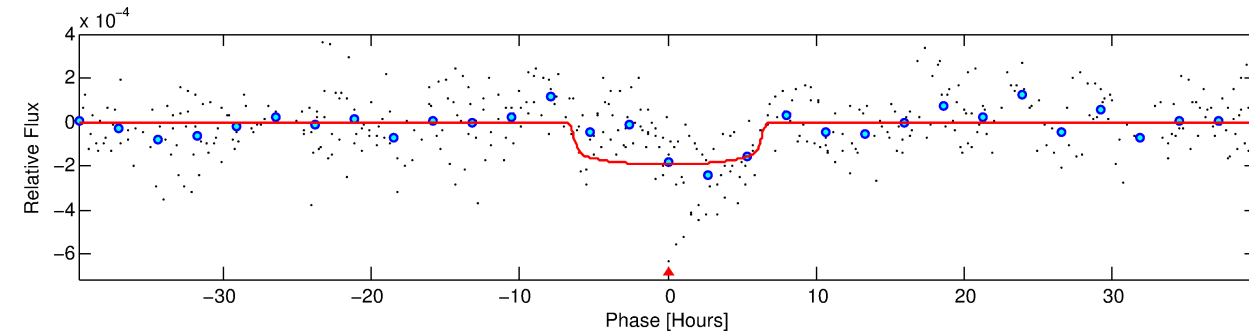
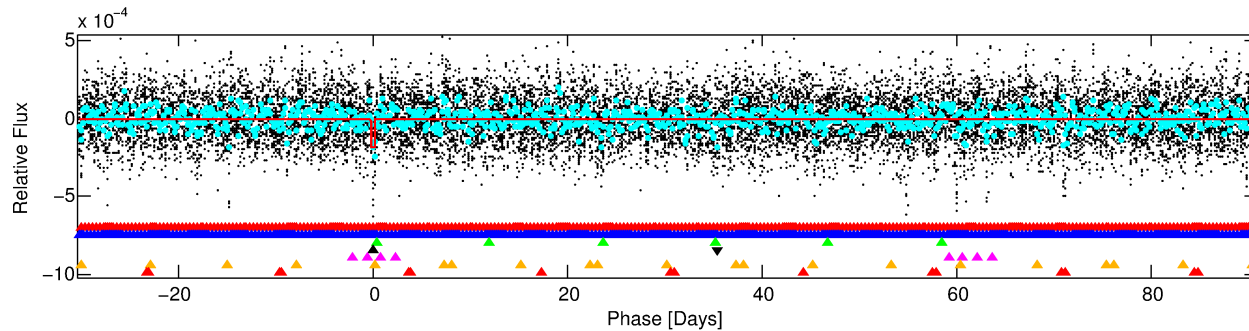
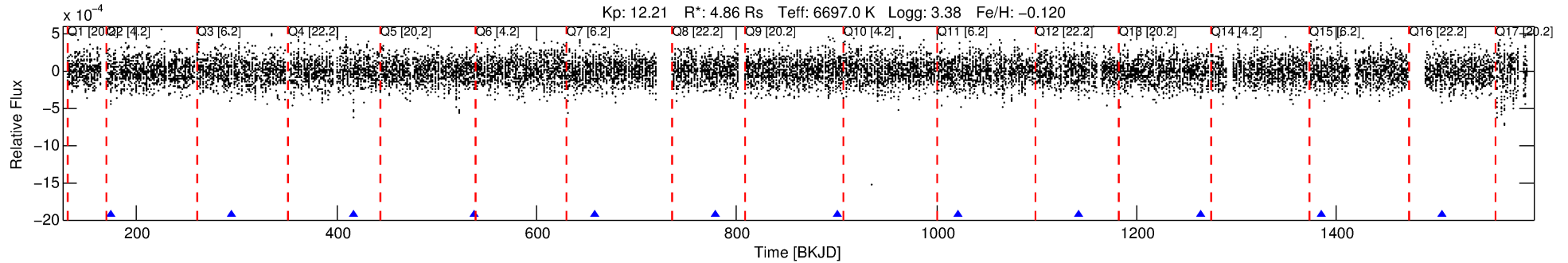
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006721523-04

No Significant Match Found

DV One-Page Summary

KIC: 6721523 Candidate: 4 of 7 Period: 121.016 d



DV Fit Results:

Period = 121.01562 [0.00238] d
Epoch = 174.4194 [0.0192] BKJD
Rp/R* = 0.0140 [0.0034]
a/R* = 43.01 [55.98]
b = 0.81 [0.57]
Seff = 115.27 [73.15]
Teq = 836 [133] K
Rp = 7.44 [3.43] Re
a = 0.6077 [0.2337] AU
Ag = 321.65 [321.14] [1.00 σ]
Teffp = 5471 [1079] K [4.26 σ]

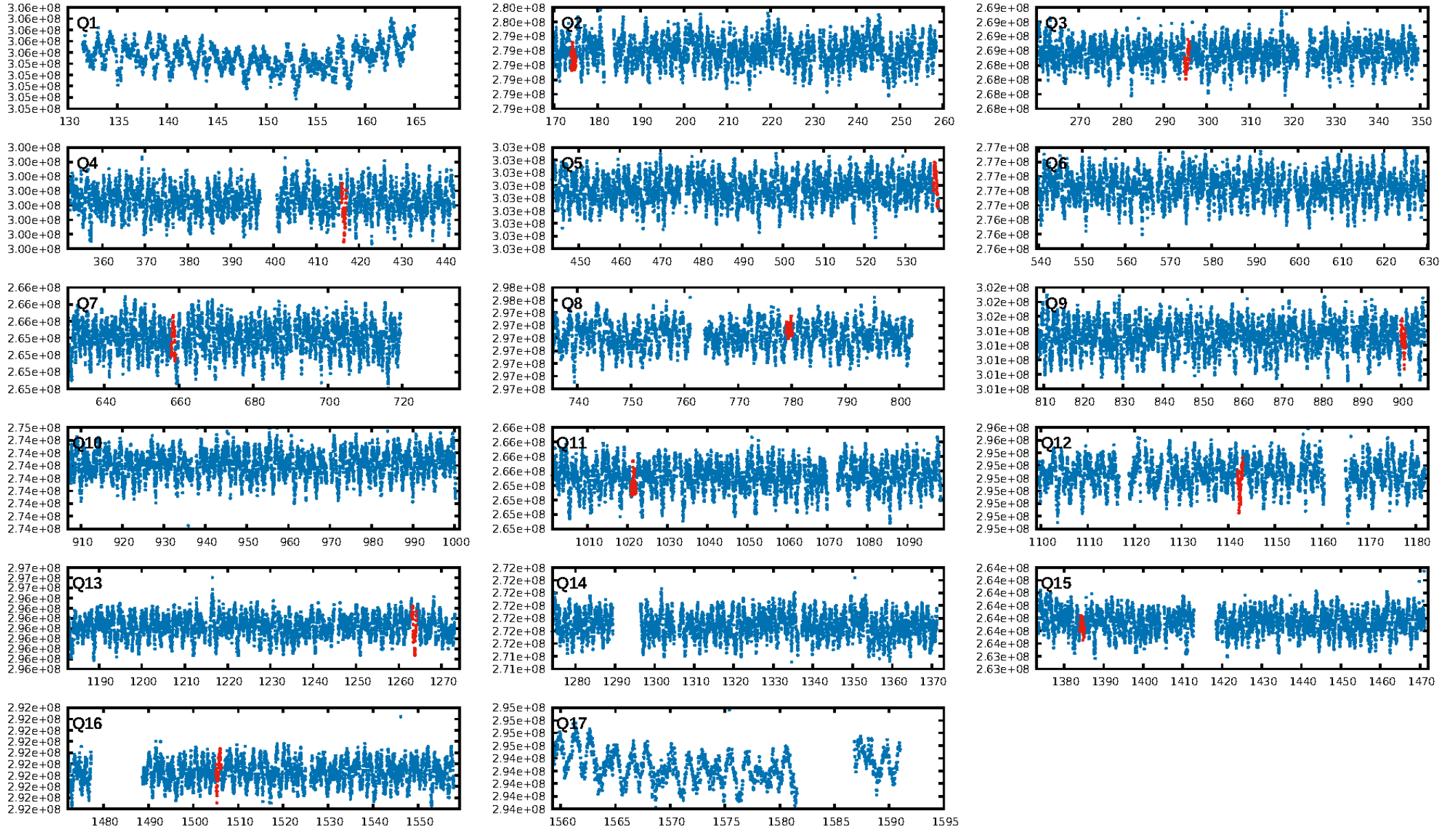
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [46.20 σ]
LongPeriod-sig: 100.0% [76.93 σ]
ModelChiSquare2-sig: 72.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: 0.6265
Centroid-sig: 38.6%
Centroid-so: 0.431 arcsec [0.77 σ]
OotOffset-rm: 0.317 arcsec [0.76 σ]
OotOffset-st: 0/3/3/1 [7]
KicOffset-rm: 0.341 arcsec [0.70 σ]
KicOffset-st: 0/3/3/1 [7]
DiffImageQuality-fgm: 0.57 [4/7]
DiffImageOverlap-fno: 0.00 [0/9]

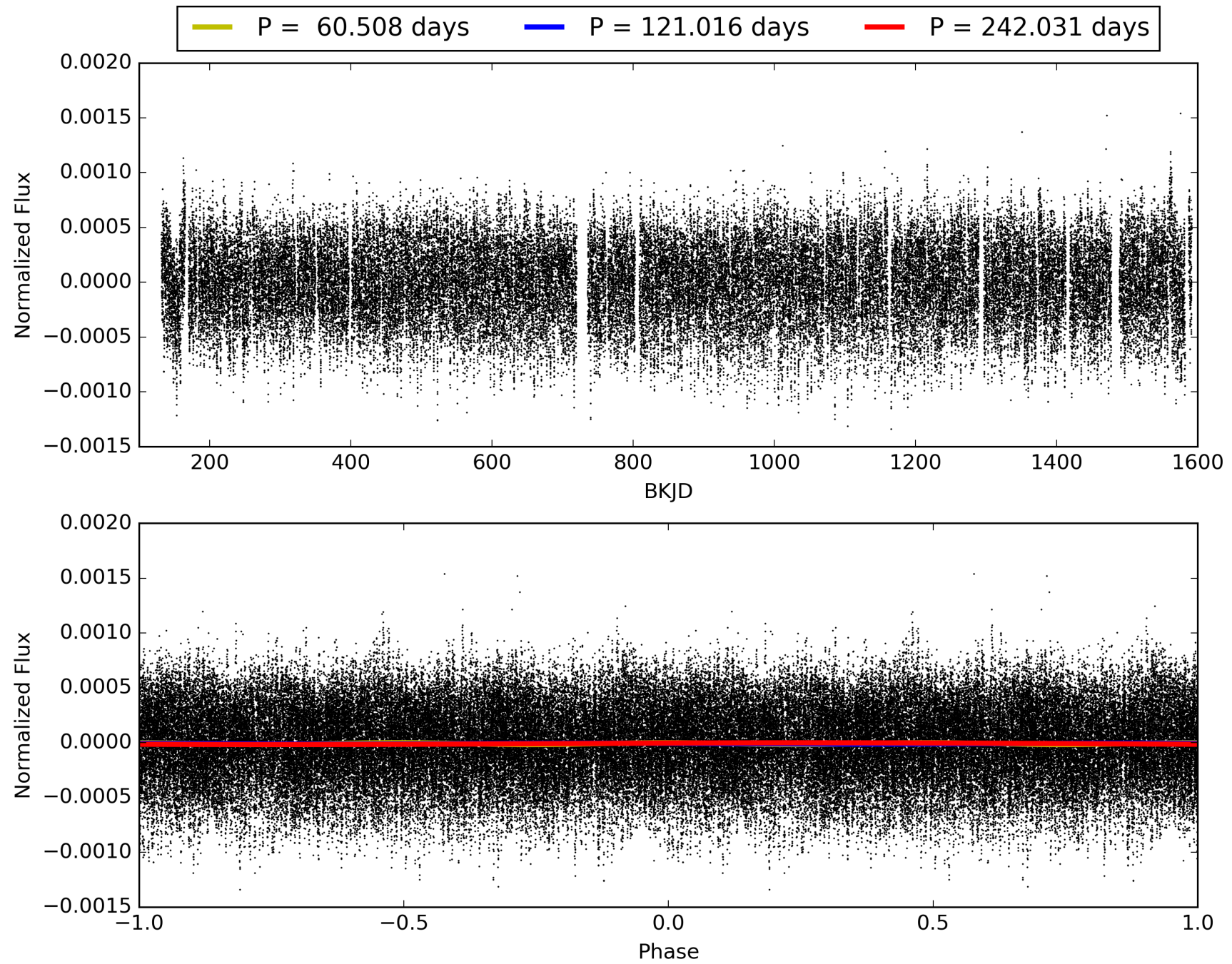
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:01:19 Z

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

TCE 006721523-04, PDC Light Curves

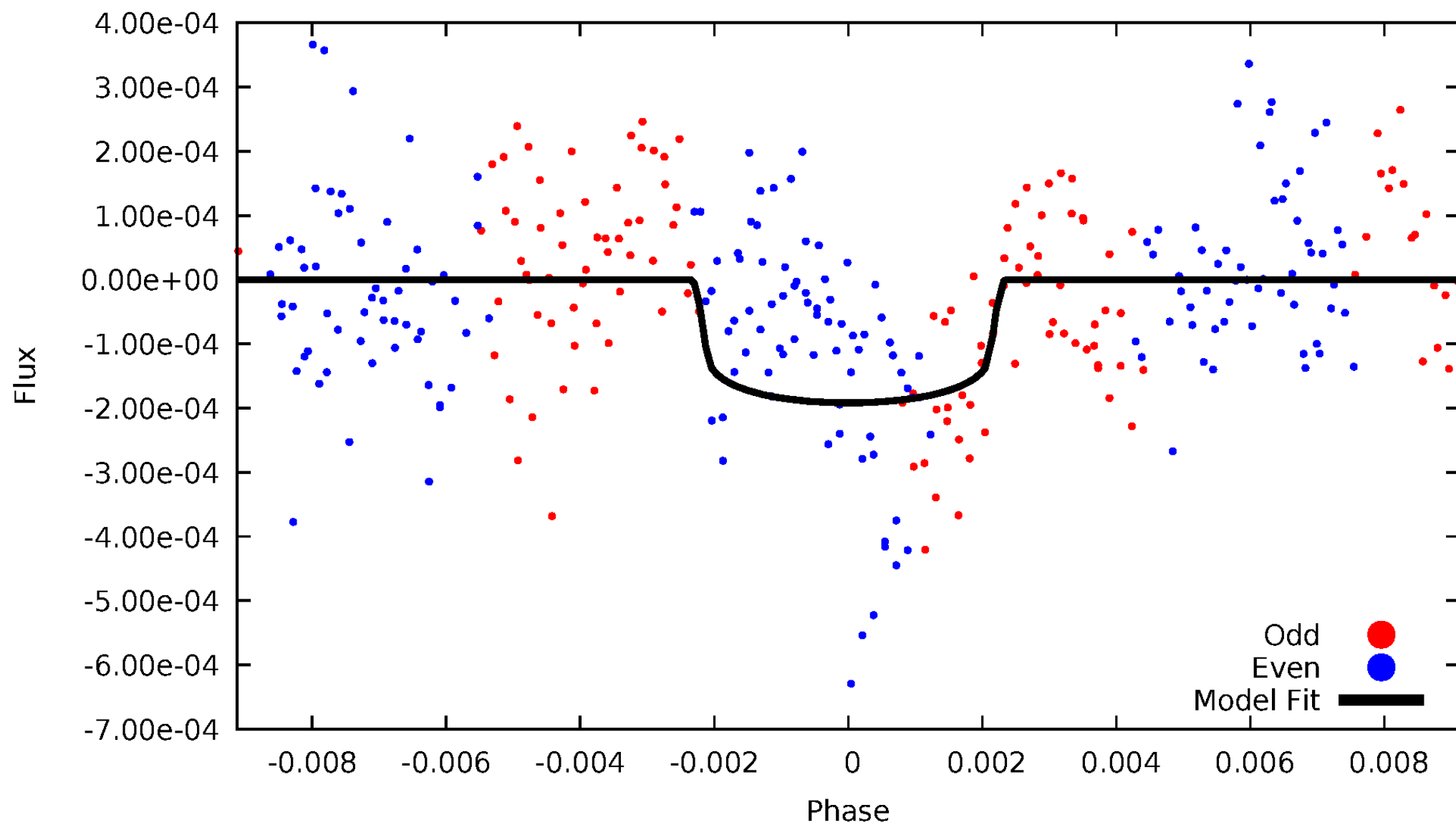


TCE 006721523-04



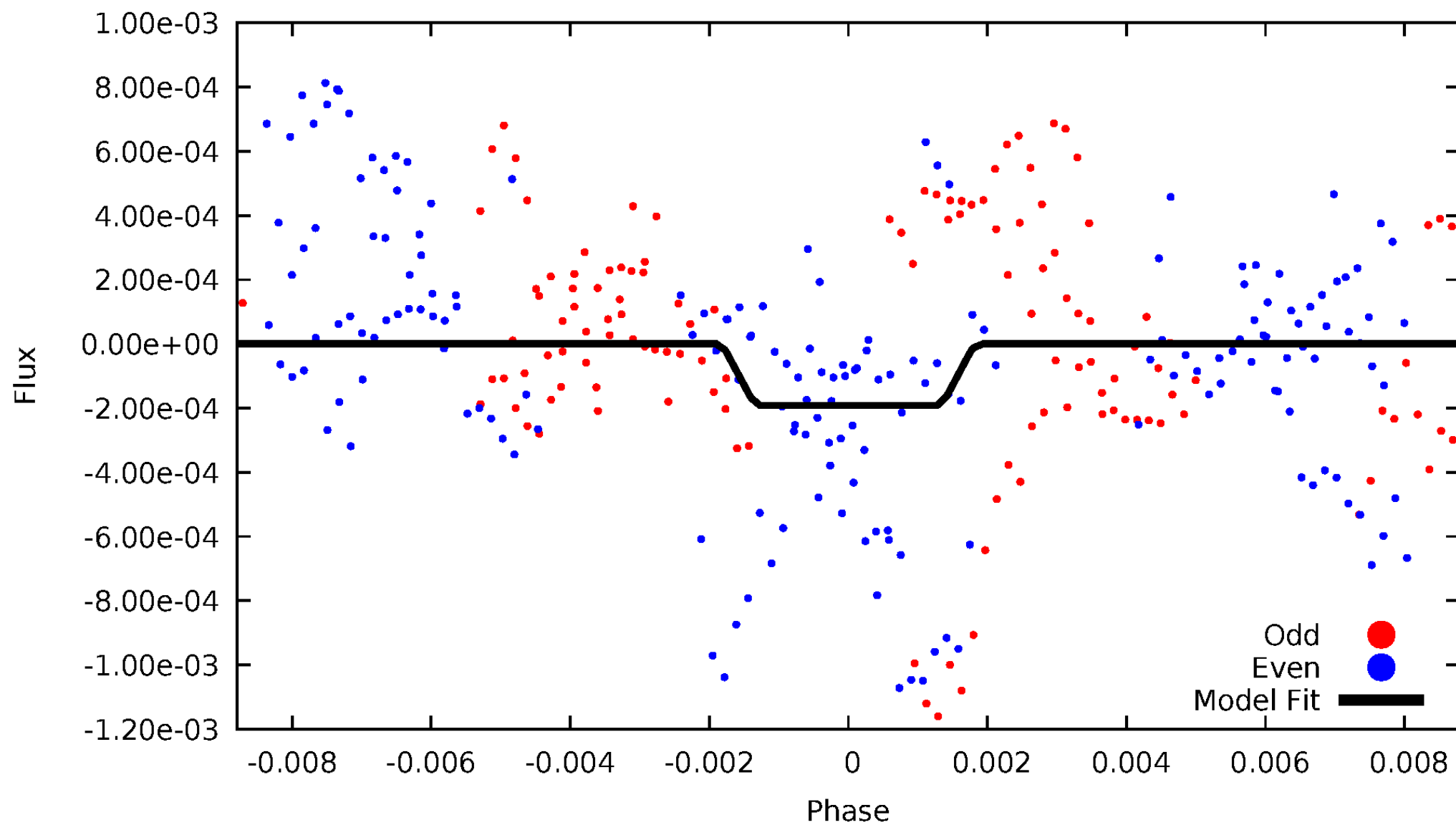
DV Odd/Even

TCE 006721523-04



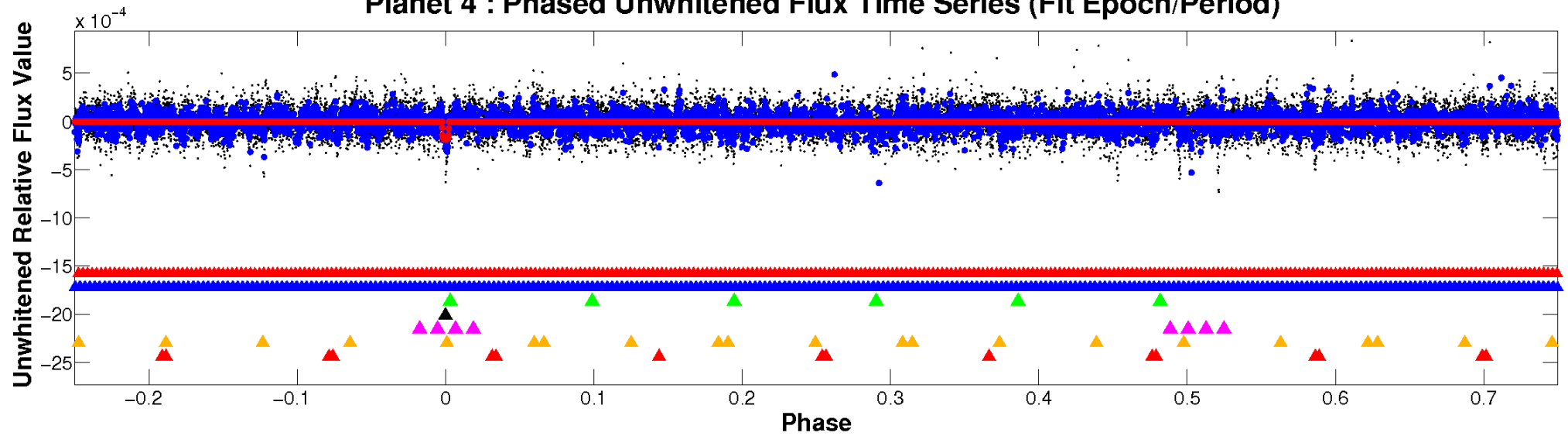
ALT Odd/Even

TCE 006721523-04

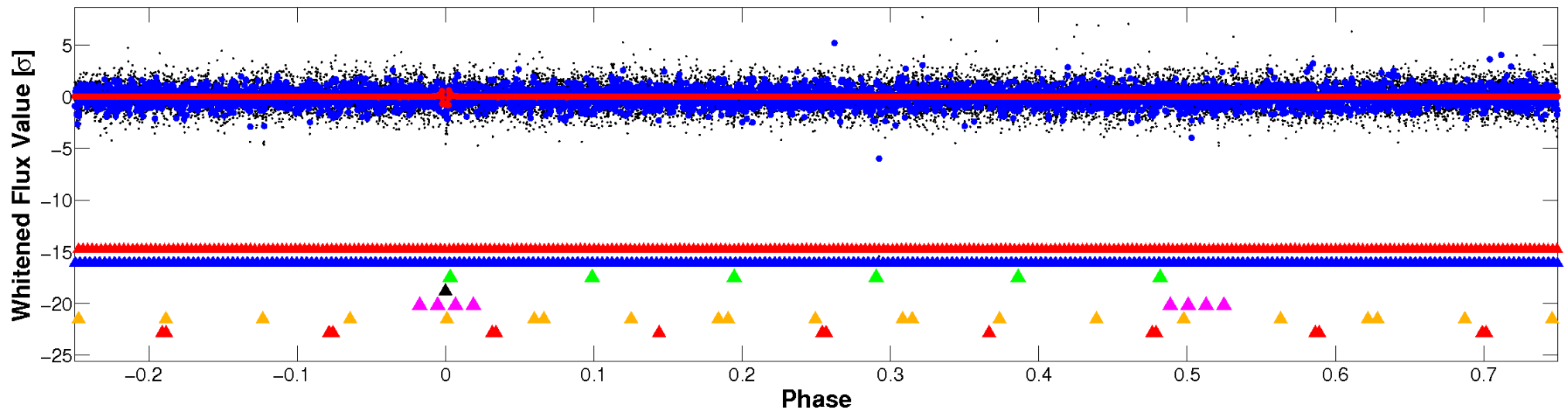


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

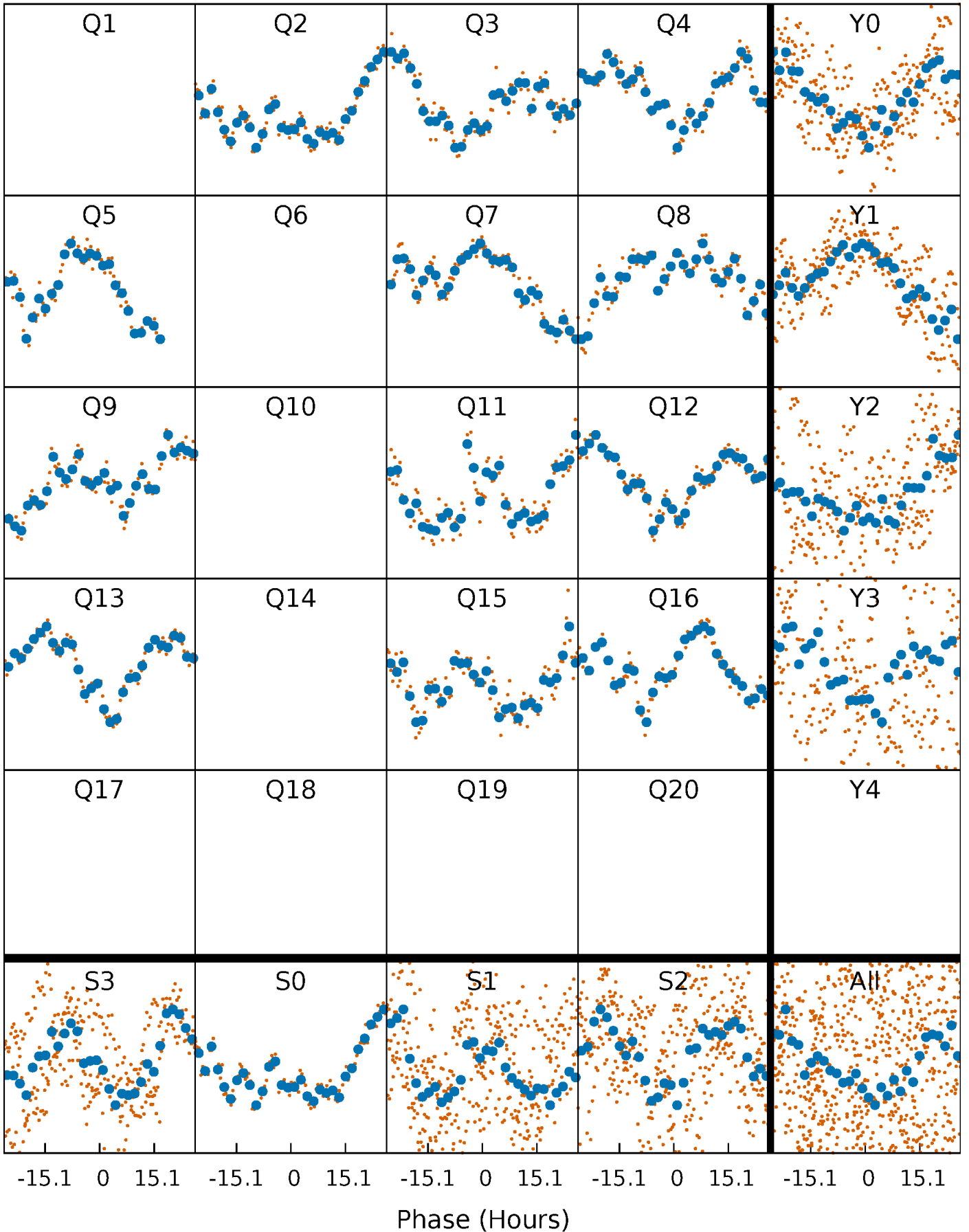


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



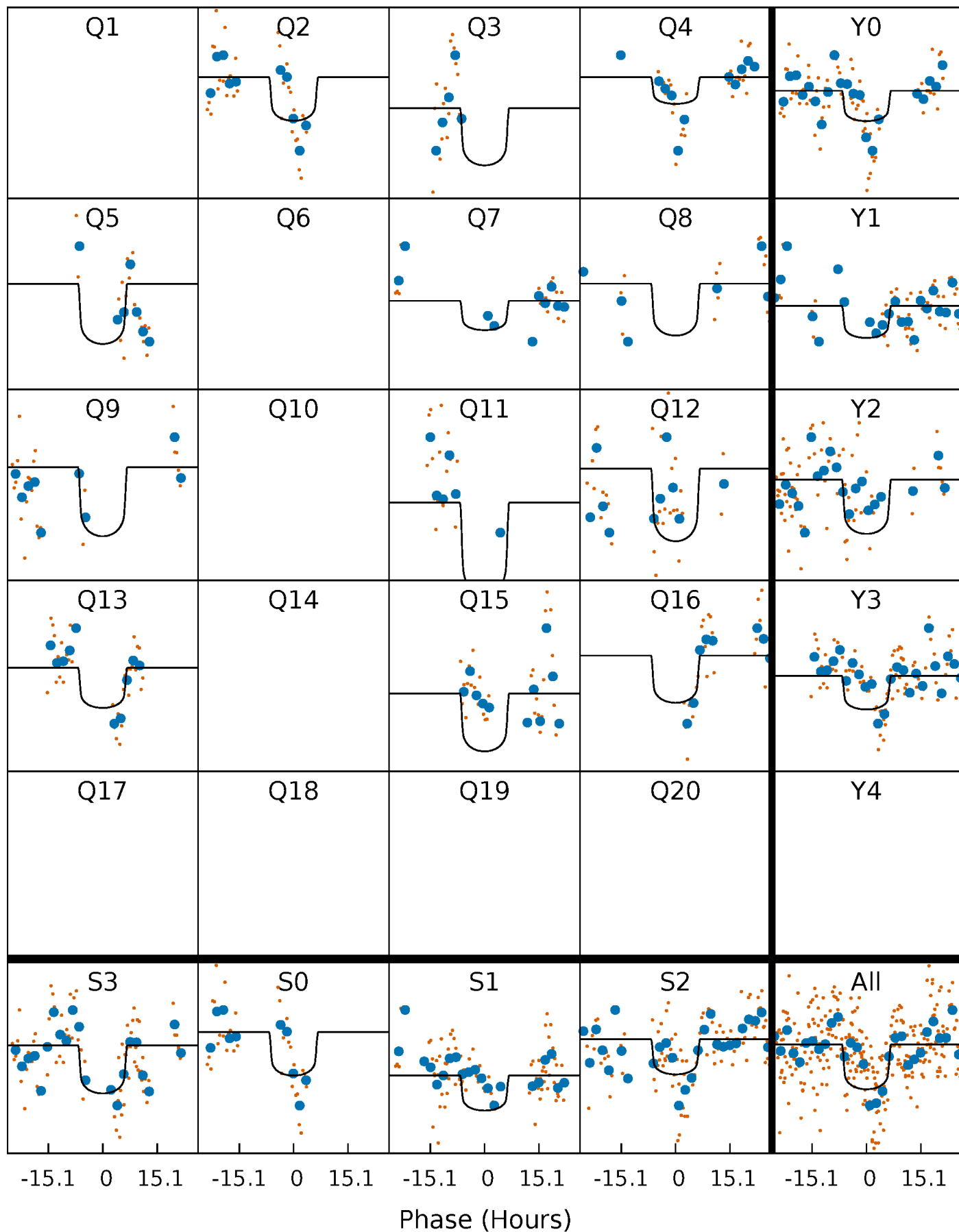
PDC Quarter-Phased Transit Curves

TCE 006721523-04 P=121.015623 Days $T_0=174.419378$ (BKJD)



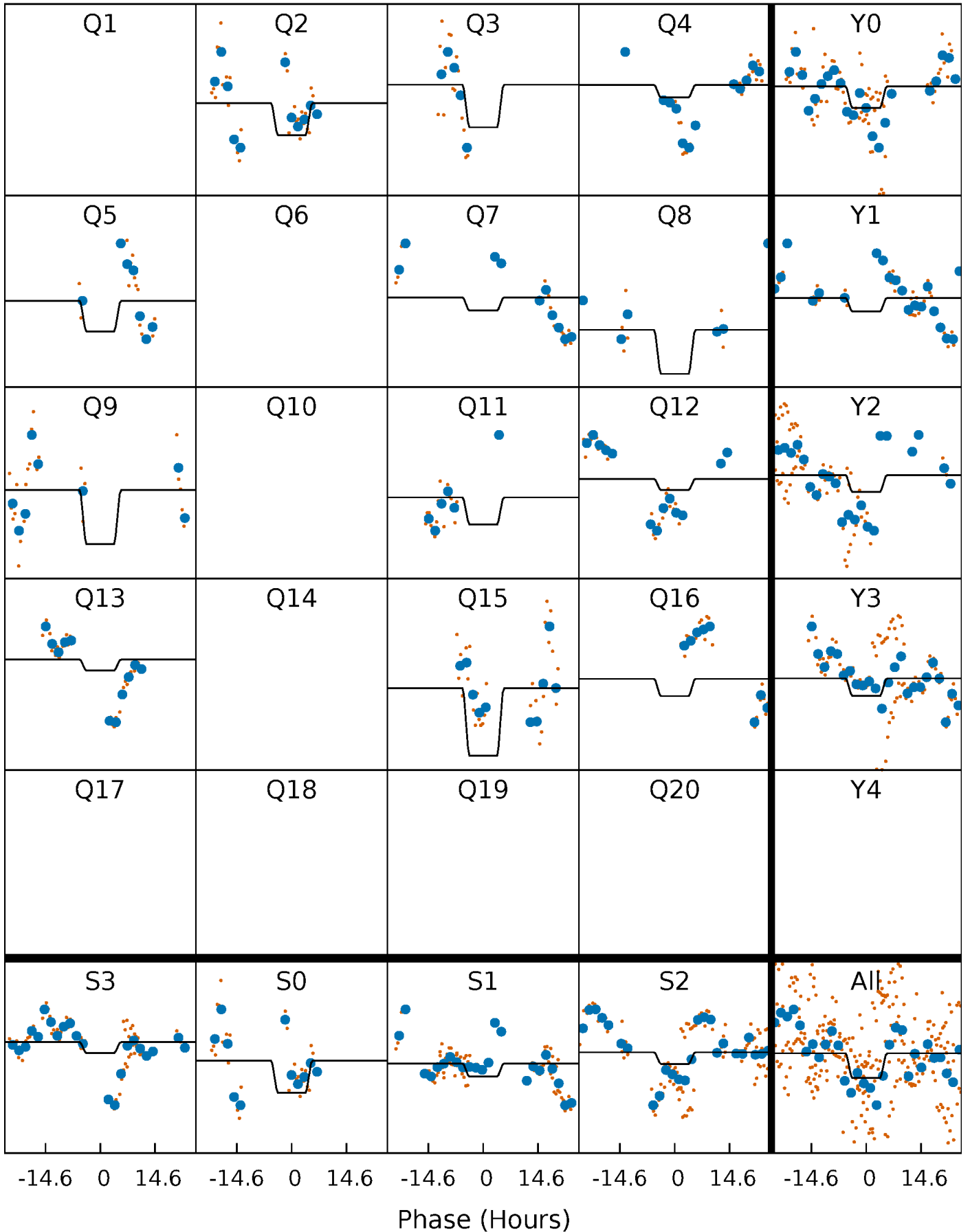
DV Quarter-Phased Transit Curves

TCE 006721523-04 P=121.015623 Days $T_0=174.419378$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

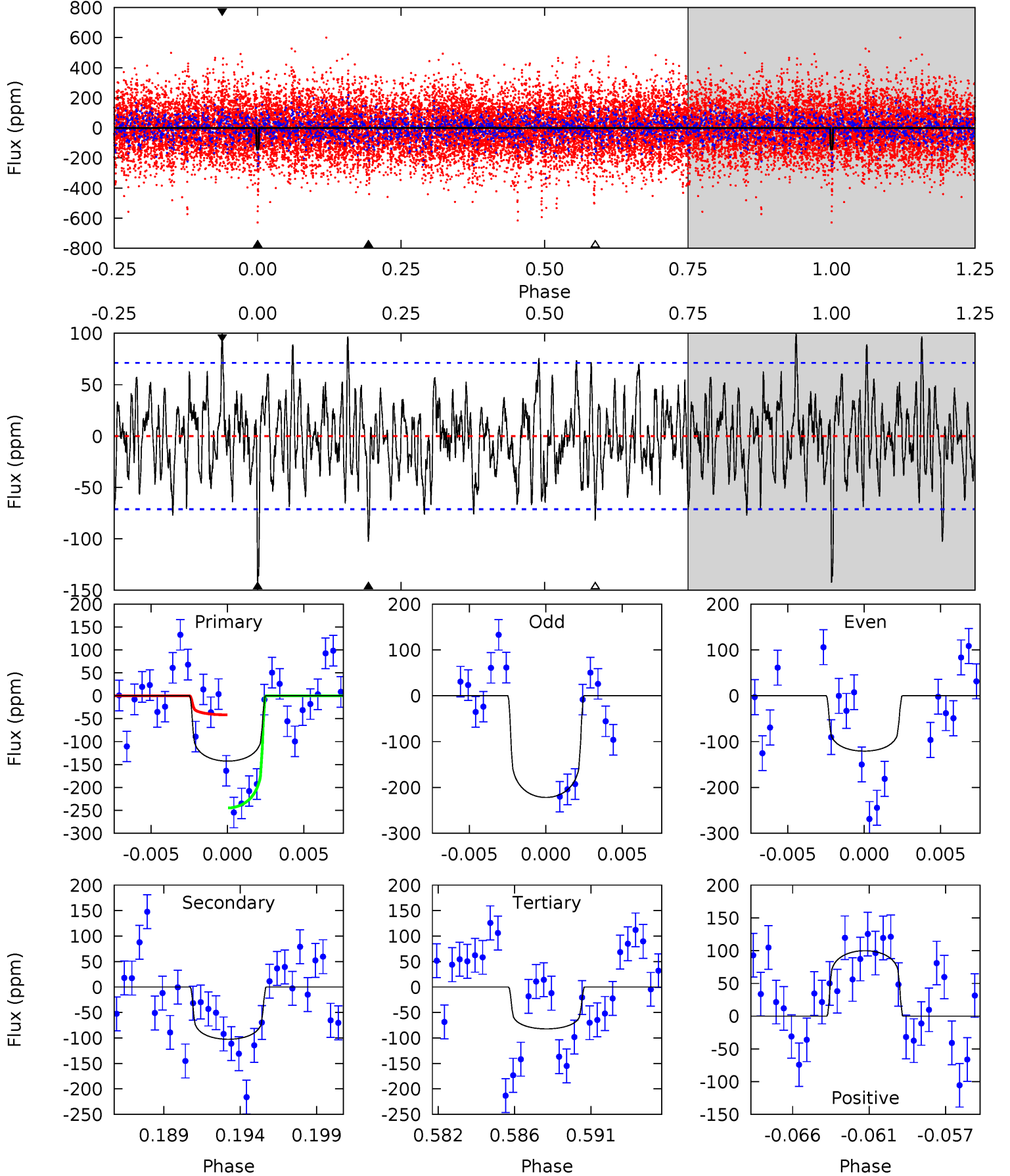
TCE 006721523-04 P=121.027882 Days $T_0=174.310648$ (BKJD)



DV Model-Shift Uniqueness Test

006721523-04, P = 121.015623 Days, E = 53.403755 Days

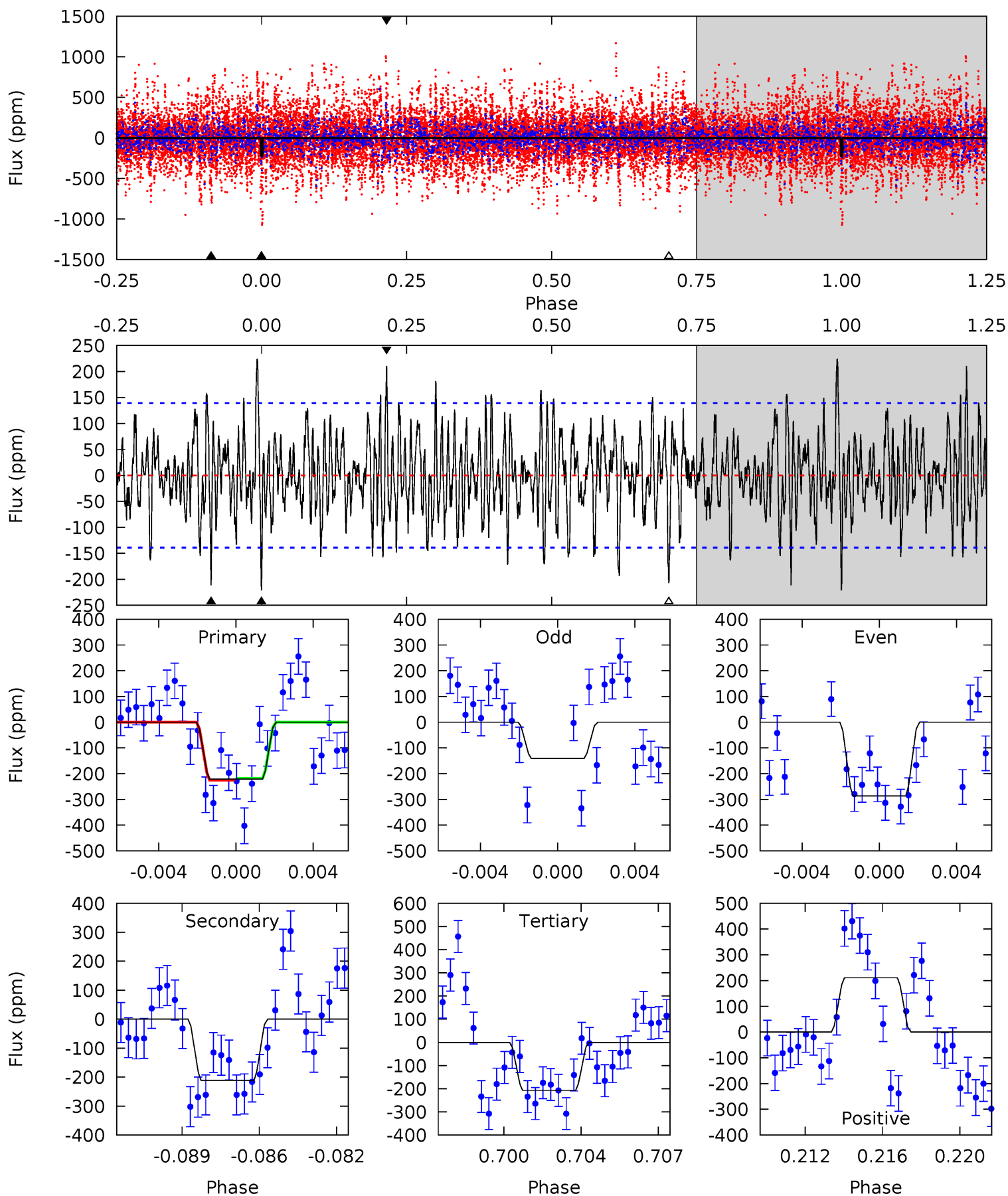
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	7.45	5.97	7.25	5.17	2.83	2.21	4.39	3.10	1.48	0.20	3.26	1.06	0.41	7.39



Alt Model-Shift Uniqueness Test

006721523-04, P = 121.027882 Days, E = 53.282766 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.28	7.91	7.77	7.88	5.21	2.90	2.45	0.51	0.40	0.14	0.03	2.35	2.84	0.50	0.12



Stellar Parameters For KIC 006721523

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6697^{+180}_{-200}	$3.375^{+0.369}_{-0.062}$	$-0.120^{+0.300}_{-0.250}$	$4.860^{+0.335}_{-1.896}$	$2.042^{+0.091}_{-0.366}$	$0.025^{+0.069}_{-0.005}$
	+3%/-3%	+11%/-2%	+250%/-208%	+7%/-39%	+4%/-18%	+277%/-20%
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 006721523-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-103 ± 14	$6.87^{+2.05}_{-1.88}$	1146^{+58}_{-116}	5674^{+749}_{-592}	437^{+366}_{-181}
Alt.	-211 ± 27	$6.68^{+2.19}_{-1.97}$	1141^{+61}_{-108}	6888^{+1271}_{-844}	921^{+888}_{-387}

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 $A_{obs} \gg 1.0$

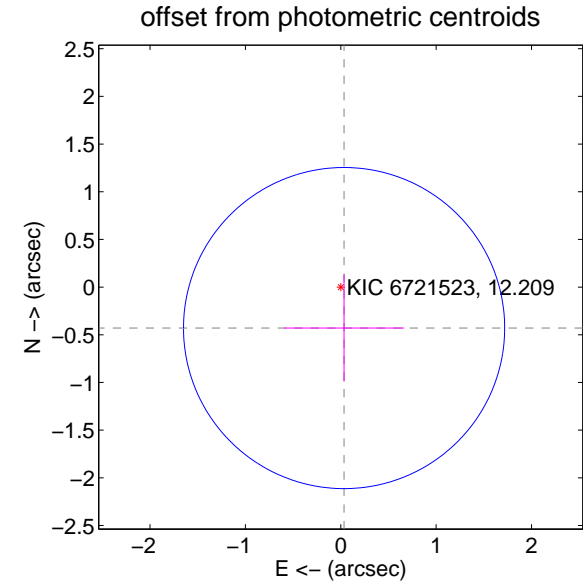
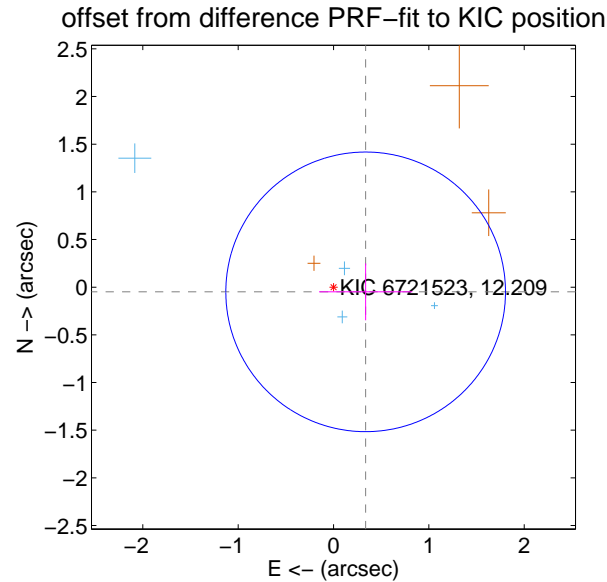
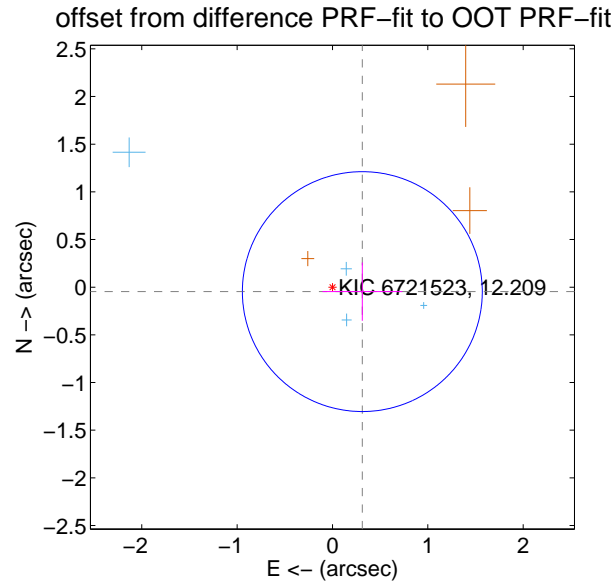
DV Centroid Data

Supplemental centroid analysis for 006721523-04. Kepler magnitude: 12.21. Transit SNR 7.14

There are 4 quarters with good PRF difference image offsets

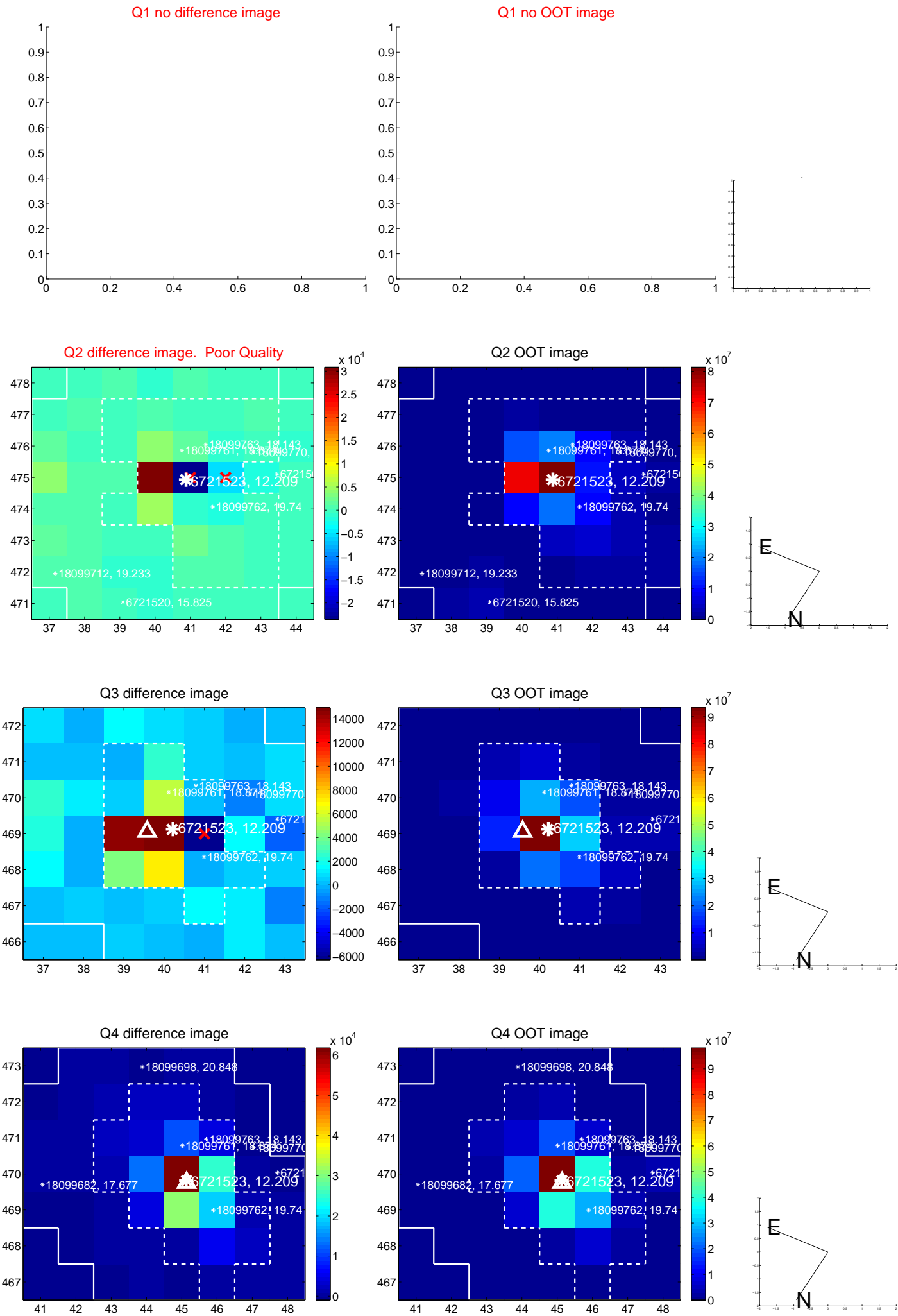
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.317 ± 0.419	0.76	-0.313 ± 0.418	-0.046 ± 0.306
PRF-fit source offset from KIC position	0.341 ± 0.489	0.70	-0.337 ± 0.489	-0.049 ± 0.298
photometric centroid source offset	0.43 ± 0.56	0.77	-0.03 ± 0.63	-0.43 ± 0.56

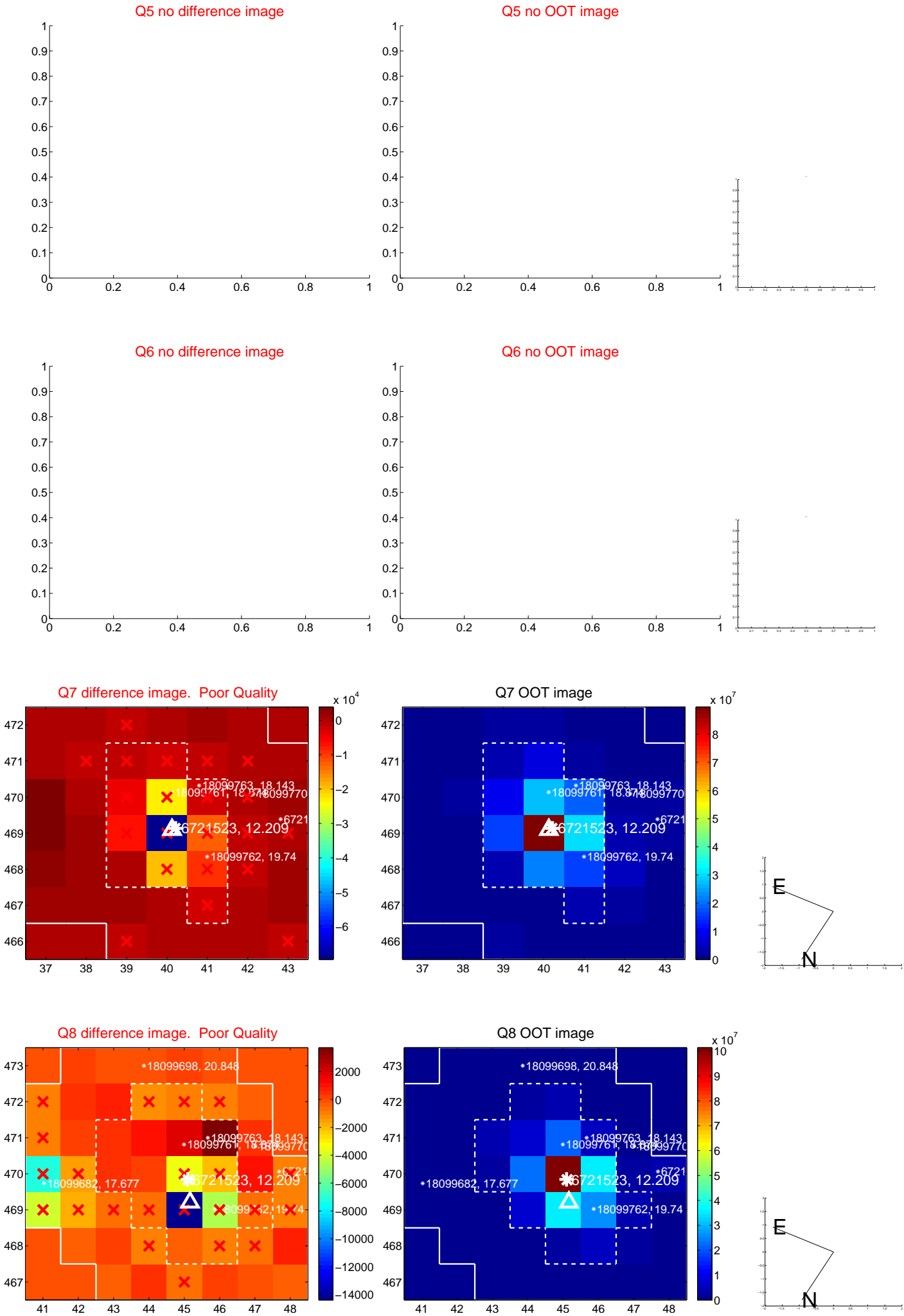


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

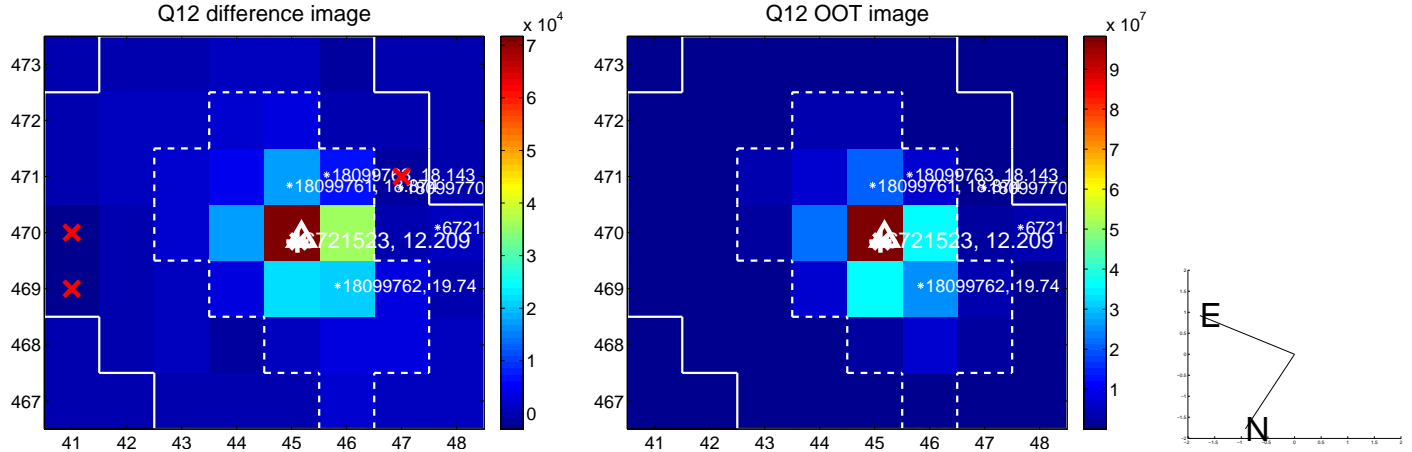
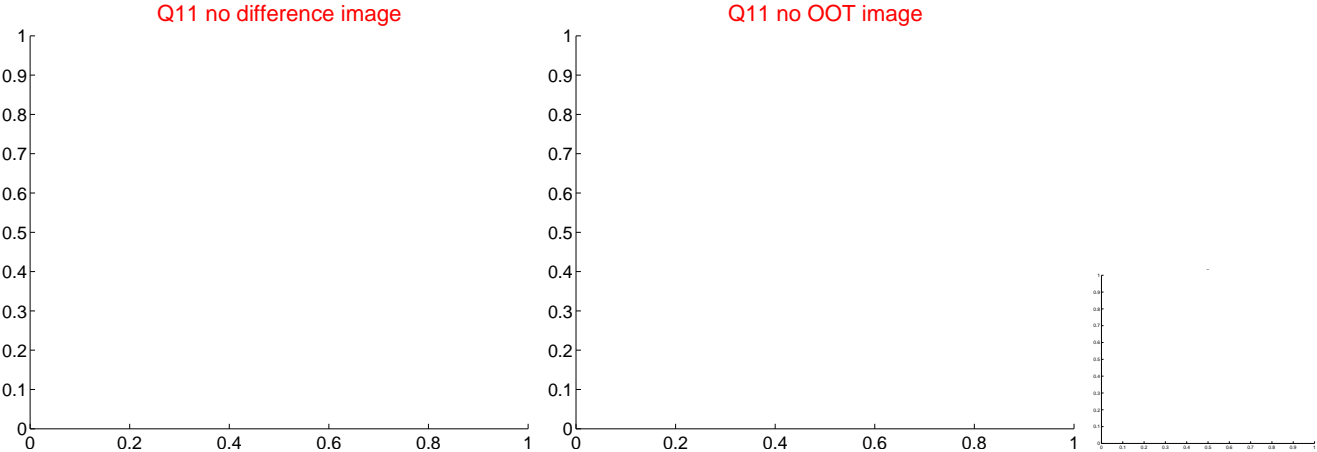
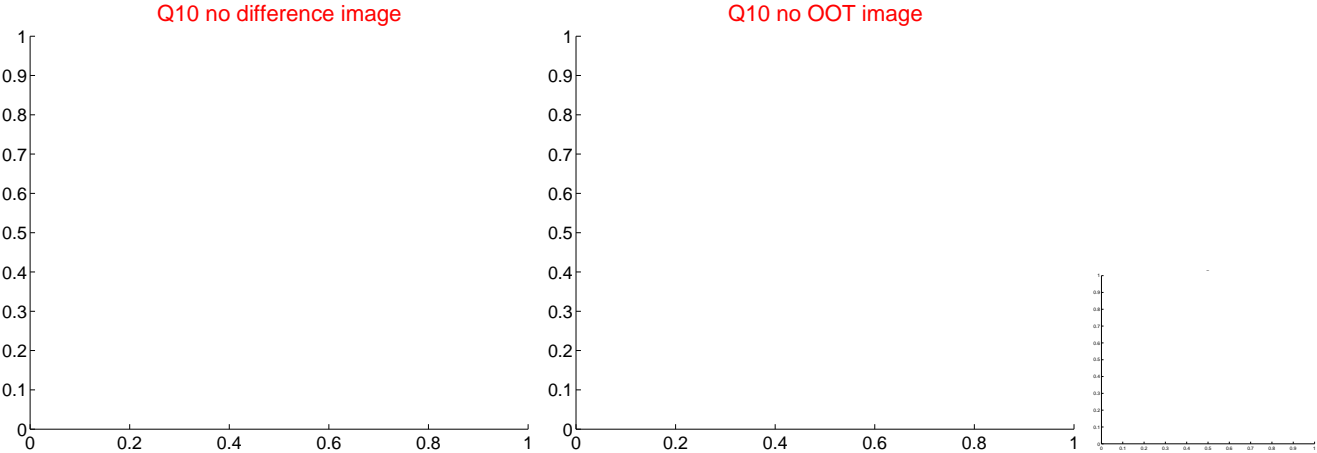
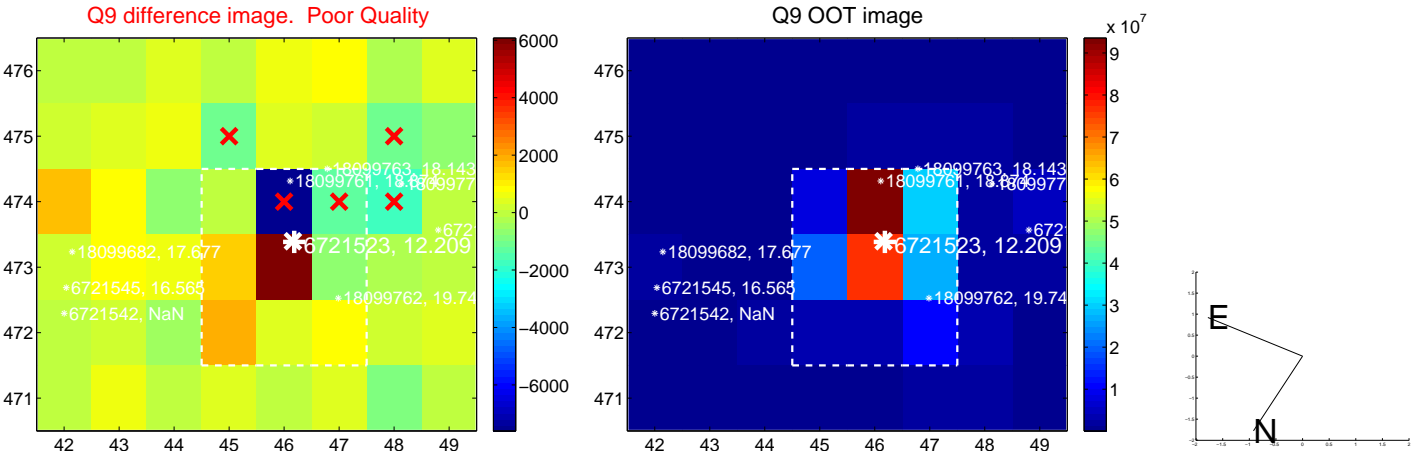
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



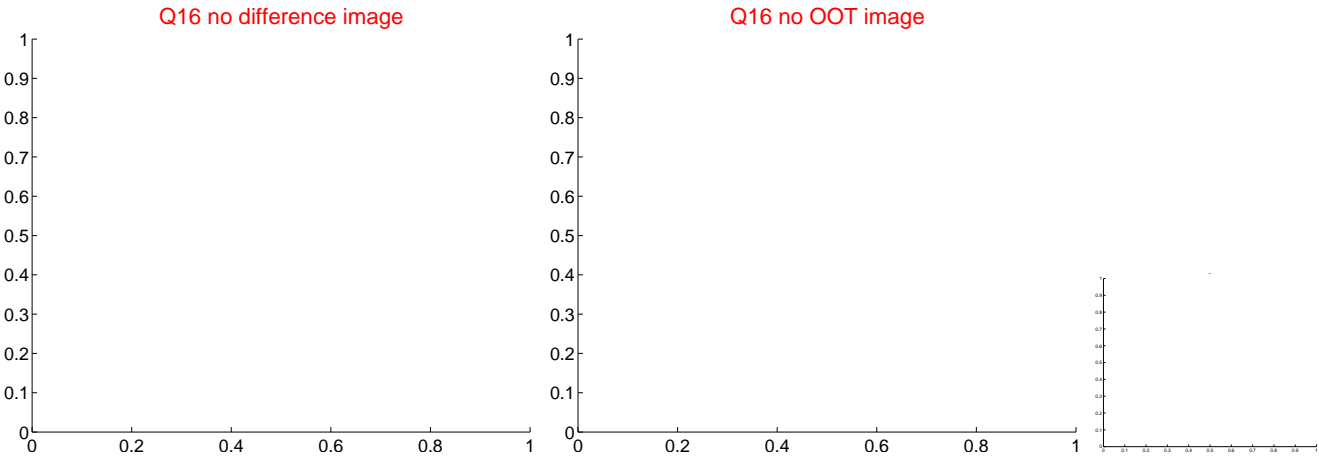
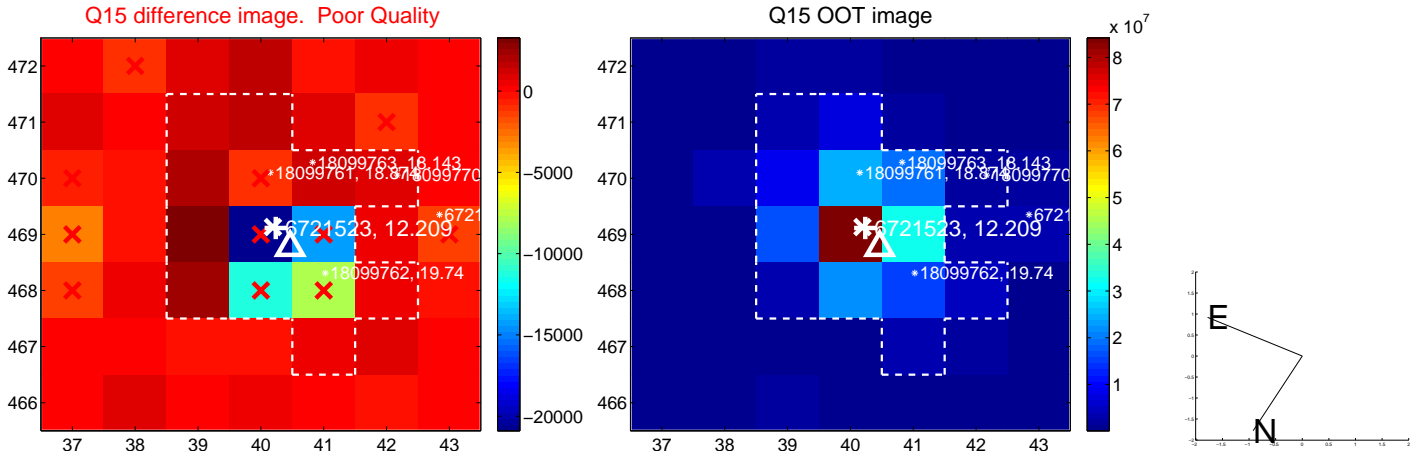
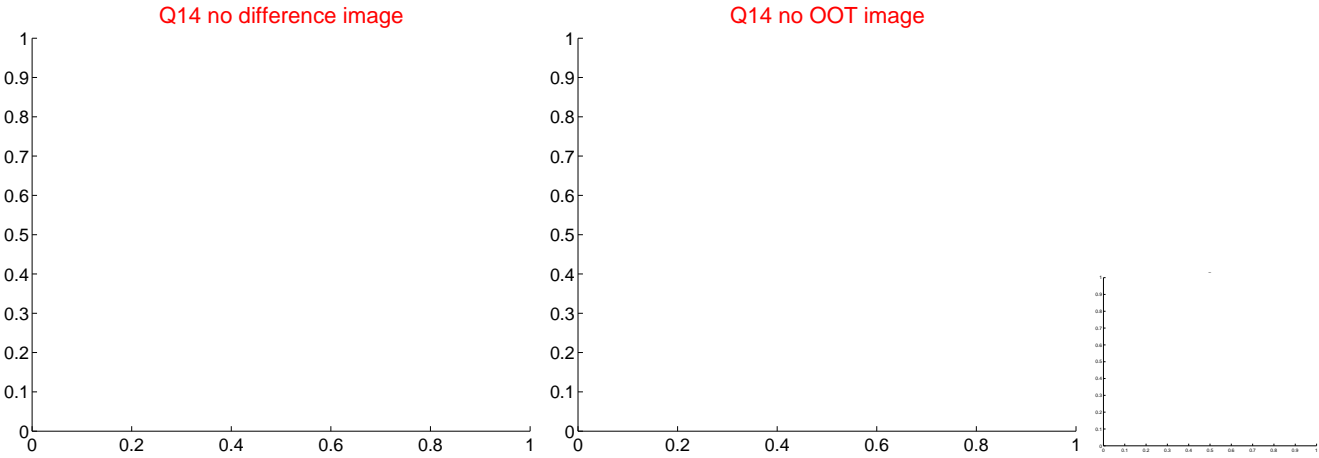
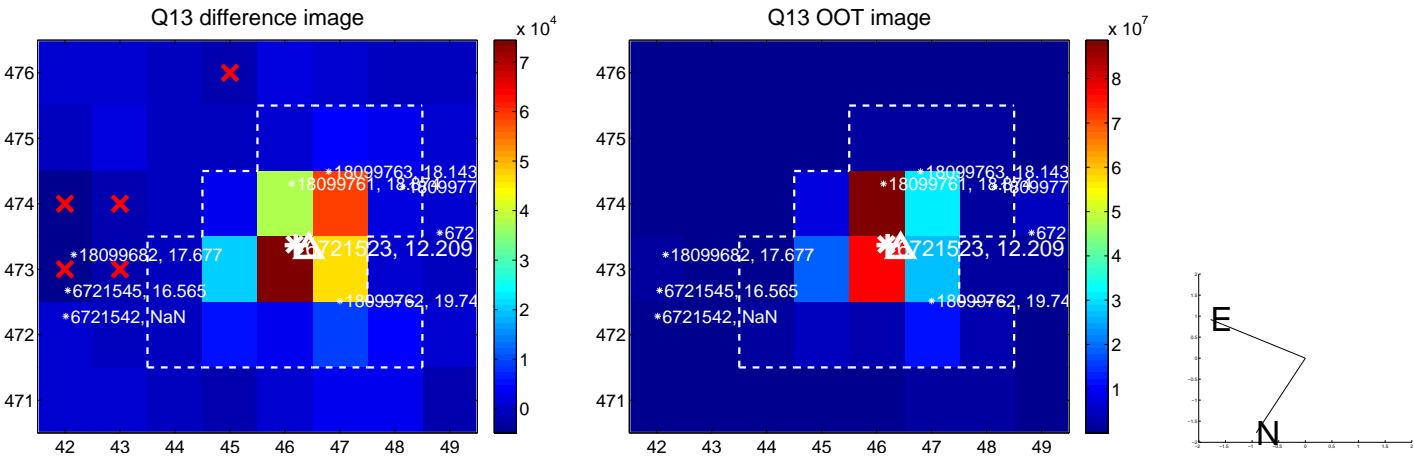
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



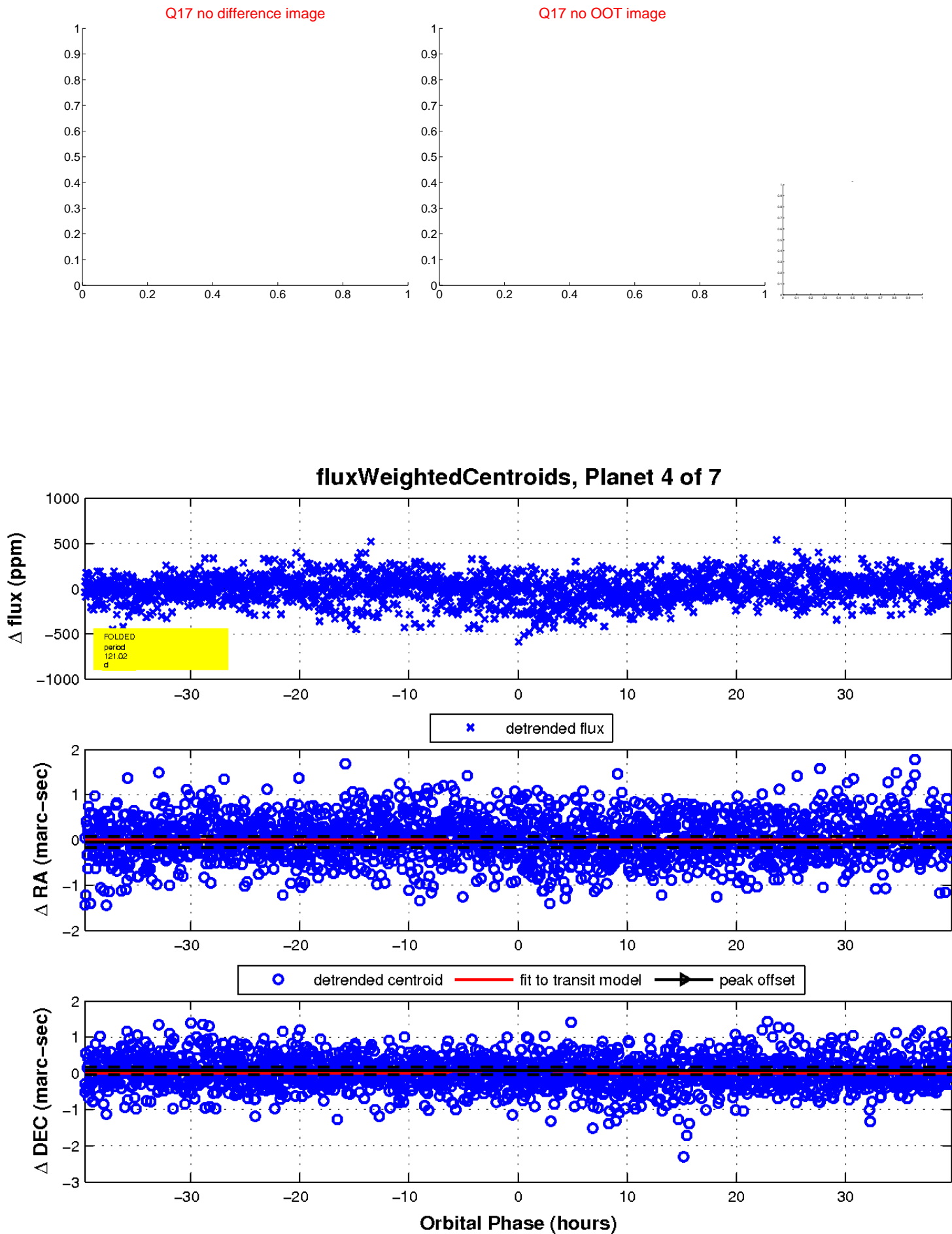
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

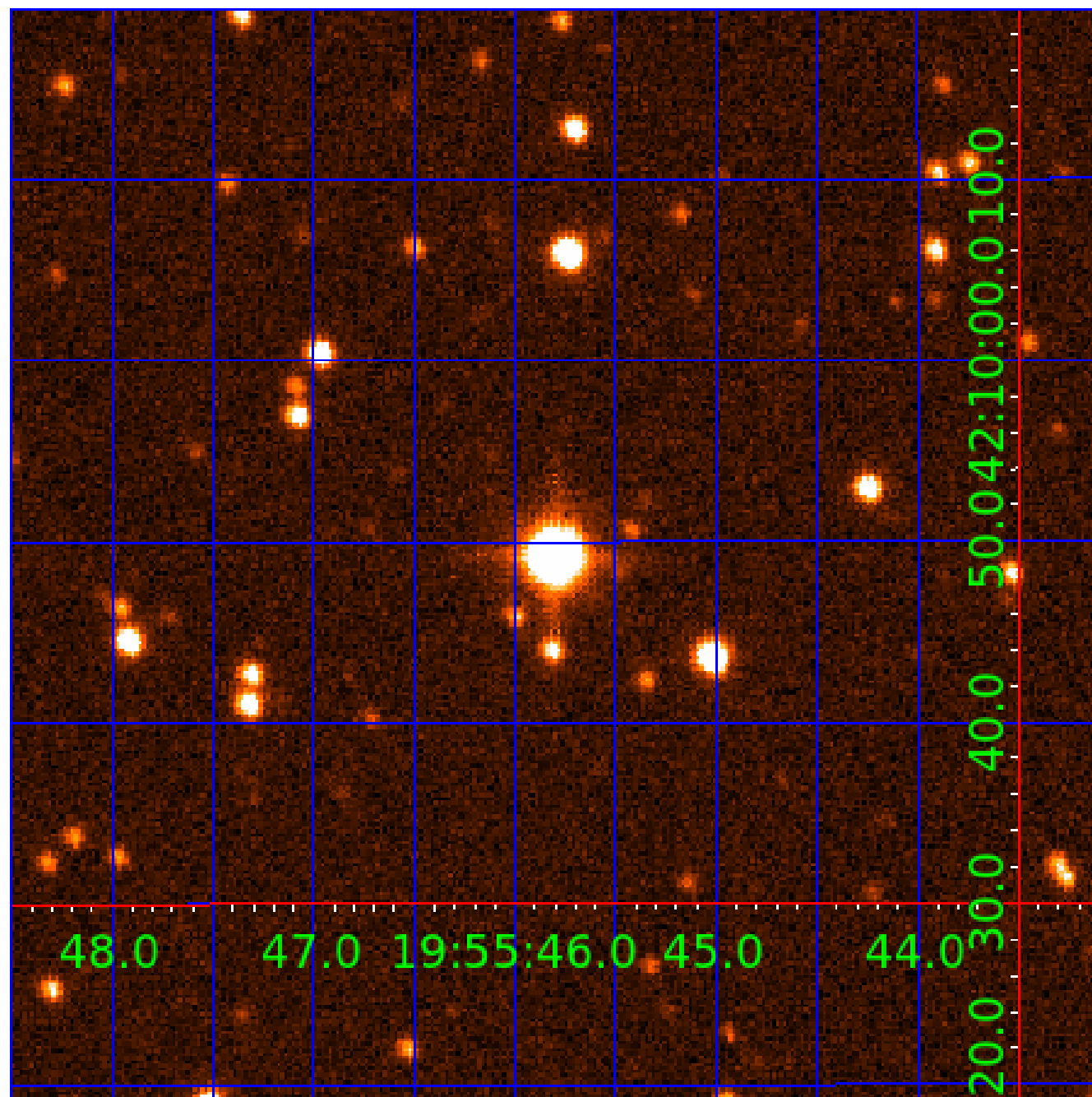


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006721523

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})
006721523-01	OBS	No	2.582741	133.750098	51.6	7.849	11.3	12.7	4.86	6697	7.05	19471.46
006721523-02	OBS	No	0.804022	132.191771	24.6	3.400	10.8	10.6	4.86	6697	2.82	0.00
006721523-03	OBS	No	253.616155	295.821943	320.7	9.253	9.5	8.6	4.86	6697	9.00	42.98
006721523-04	OBS	No	121.015623	174.419378	191.8	13.243	9.1	7.1	4.86	6697	7.44	115.27
006721523-05	OBS	No	182.253762	293.333193	173.4	13.771	9.3	5.2	4.86	6697	7.42	66.77
006721523-06	OBS	No	68.022163	182.447275	171.6	14.651	9.0	7.3	4.86	6697	8.32	248.49
006721523-07	OBS	No	94.088726	165.233179	176.1	4.500	8.4	-1.0	4.86	6697	6.50	161.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006721523-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
006721523-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006721523-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNCERTAIN
006721523-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006721523-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
006721523-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006721523-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

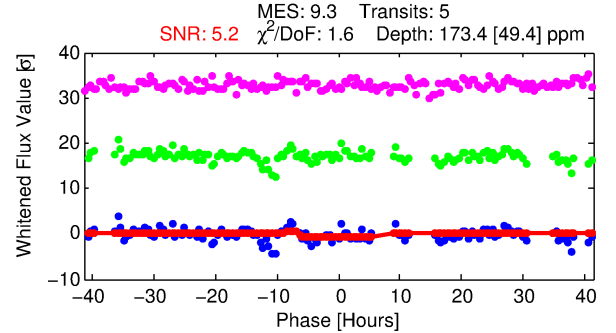
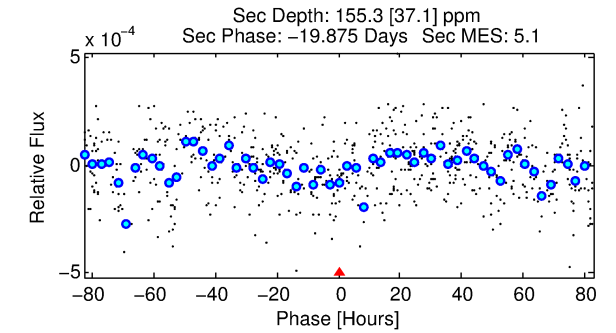
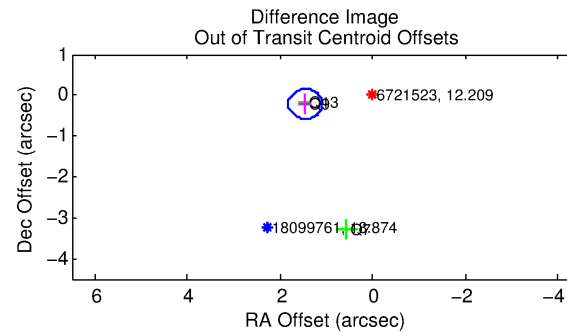
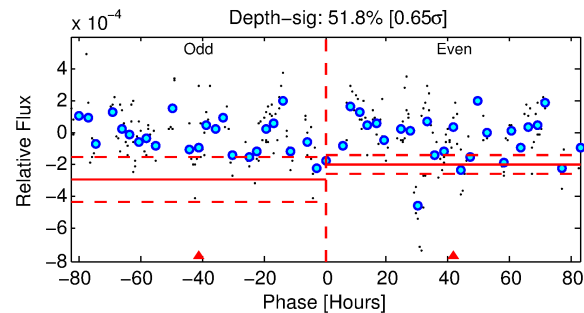
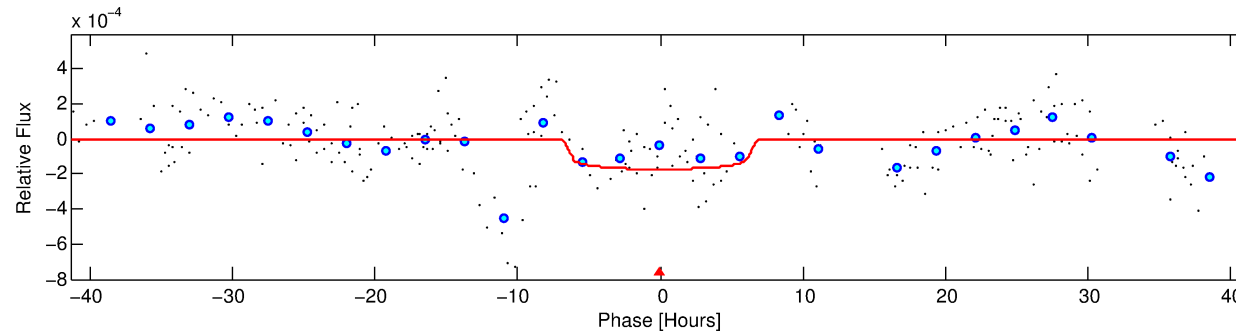
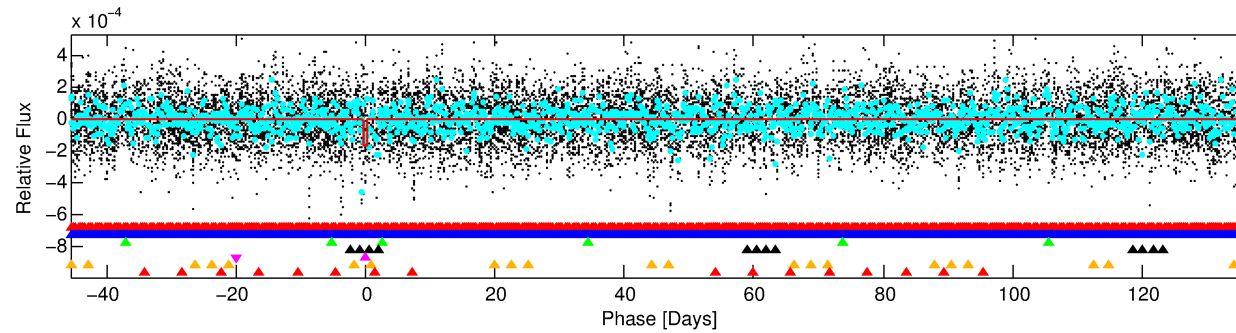
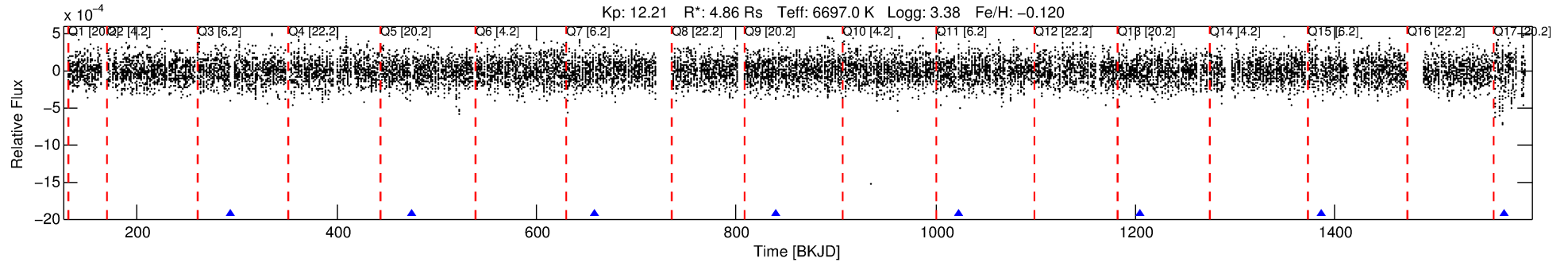
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006721523-05

No Significant Match Found

DV One-Page Summary

KIC: 6721523 Candidate: 5 of 7 Period: 182.254 d



DV Fit Results:

Period = 182.25376 [0.06692] d
Epoch = 293.3332 [0.3304] BKJD
Rp/R* = 0.0140 [0.0082]
a/R* = 48.39 [164.50]
b = 0.89 [0.77]
Seff = 66.77 [42.38]
Teq = 729 [116] K
Rp = 7.42 [5.23] Re
a = 0.7984 [0.3070] AU
Ag = 989.99 [1338.26] [0.74 σ]
Teffp = 6322 [1906] K [2.93 σ]

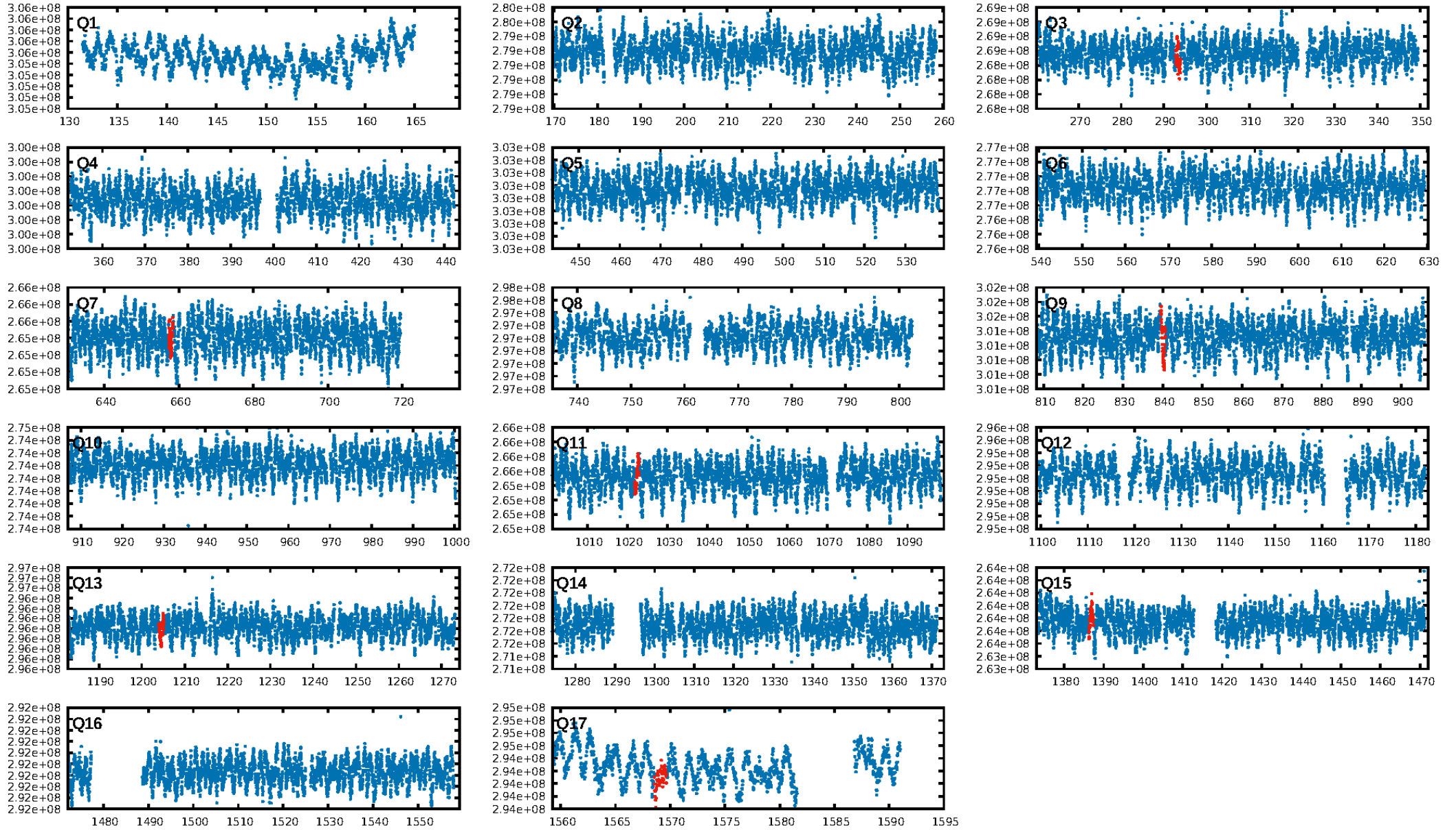
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [76.93 σ]
LongPeriod-sig: 100.0% [103.23 σ]
ModelChiSquare2-sig: 43.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.695
Centroid-sig: 22.8%
Centroid-so: 1.245 arcsec [1.53 σ]
OotOffset-rm: 1.477 arcsec [12.18 σ]
KicOffset-rm: 1.356 arcsec [11.64 σ]
OotOffset-st: 0/1/0/2 [3]
KicOffset-st: 0/1/0/2 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.00 [0/6]

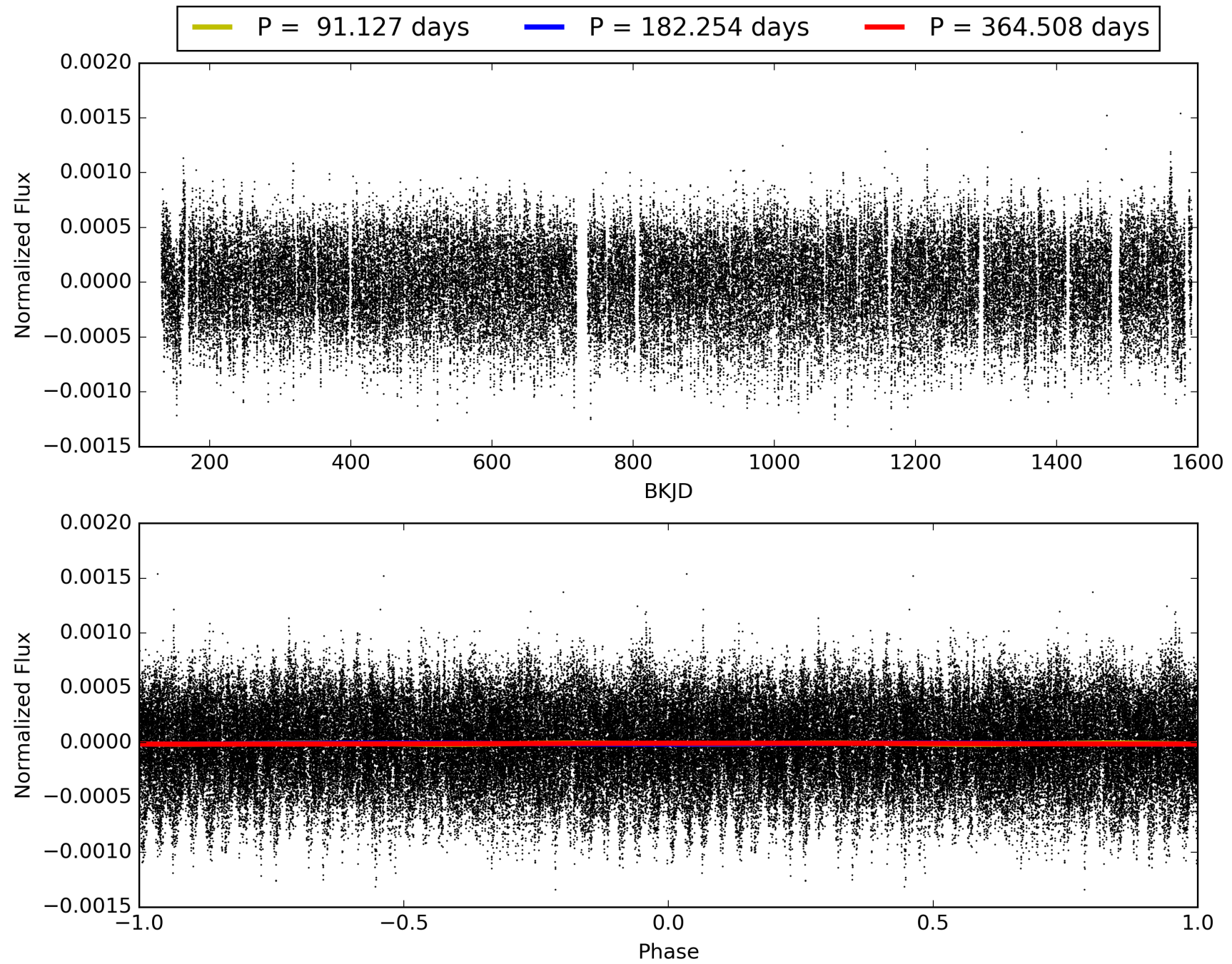
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:01:24 Z

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

TCE 006721523-05, PDC Light Curves

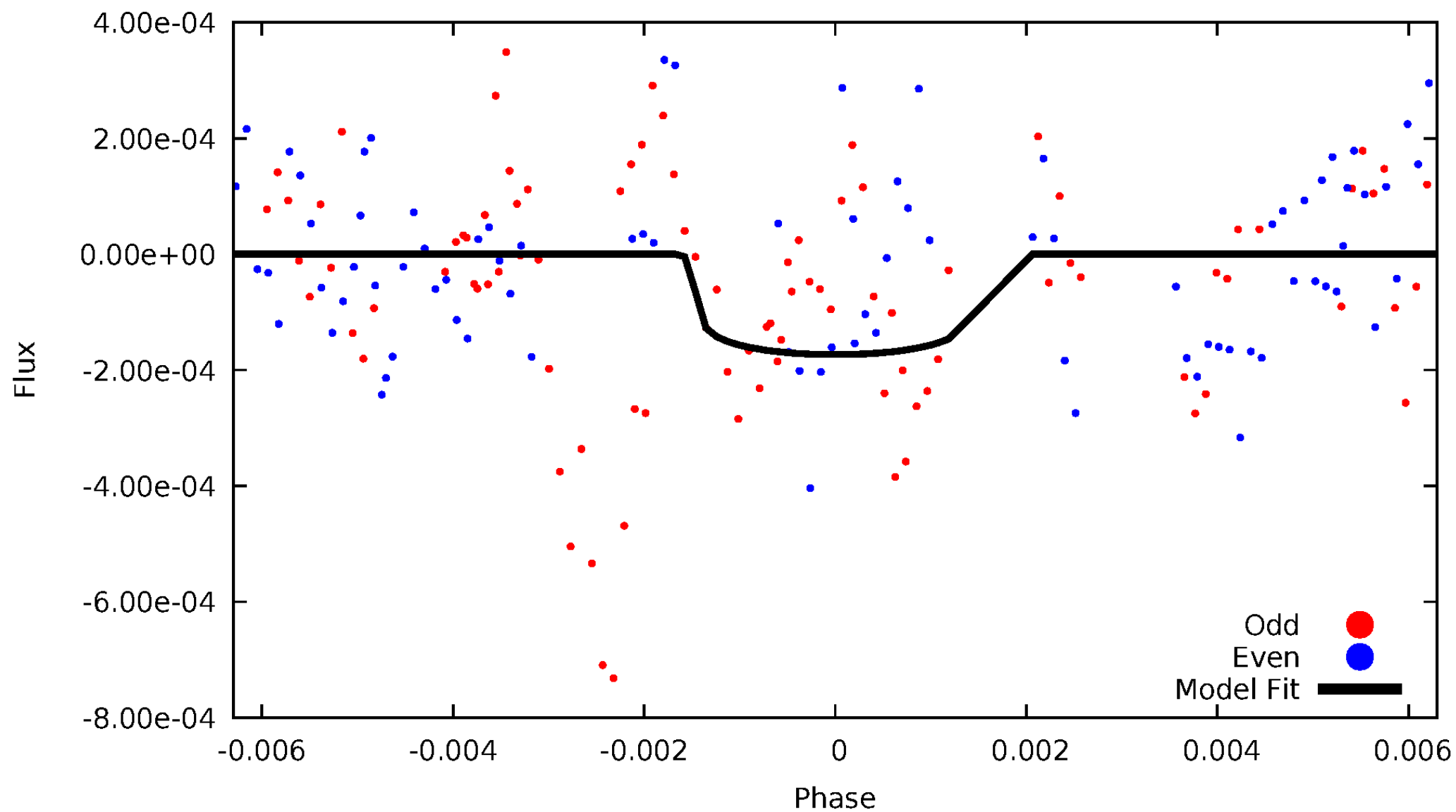


TCE 006721523-05



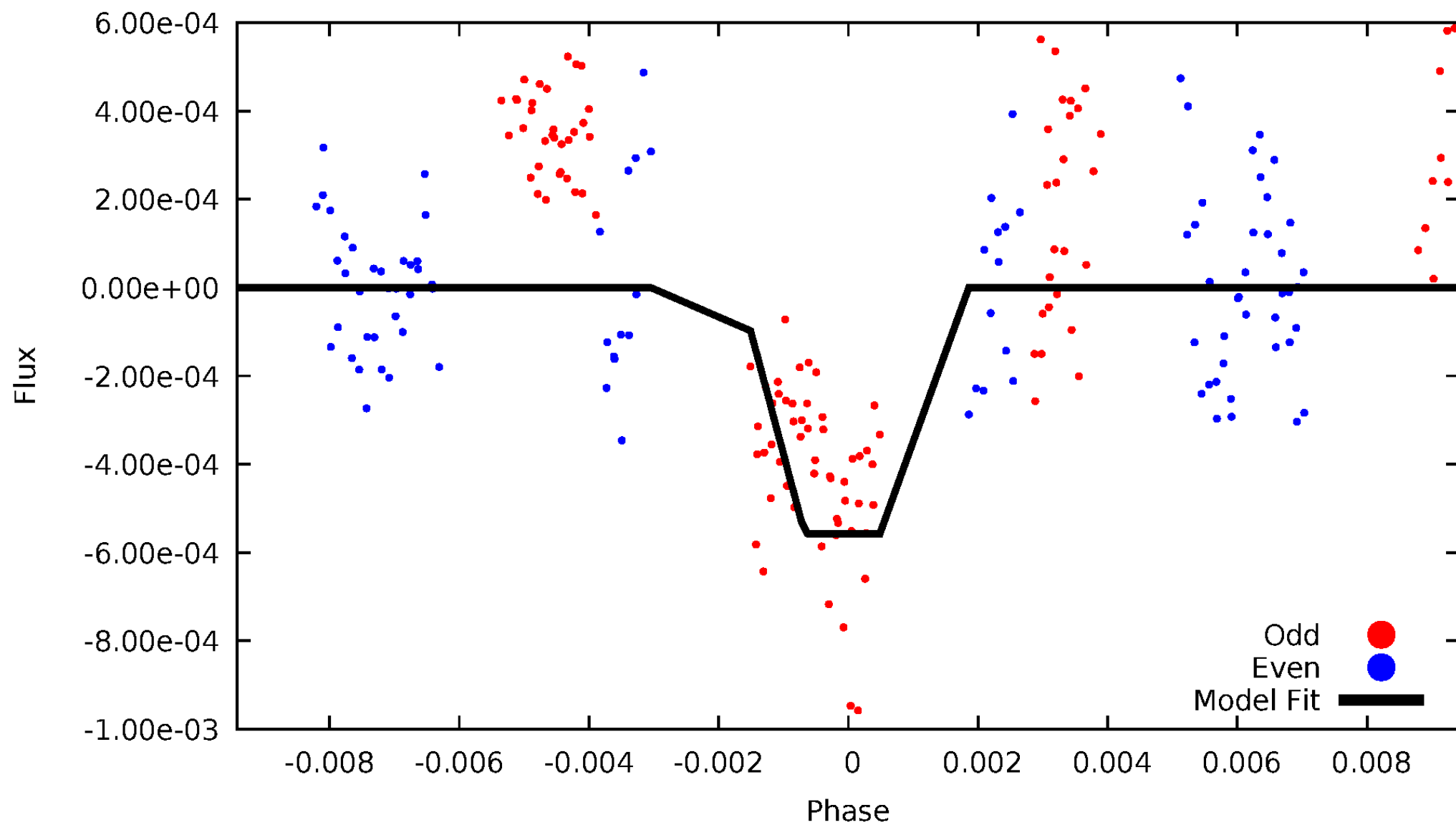
DV Odd/Even

TCE 006721523-05



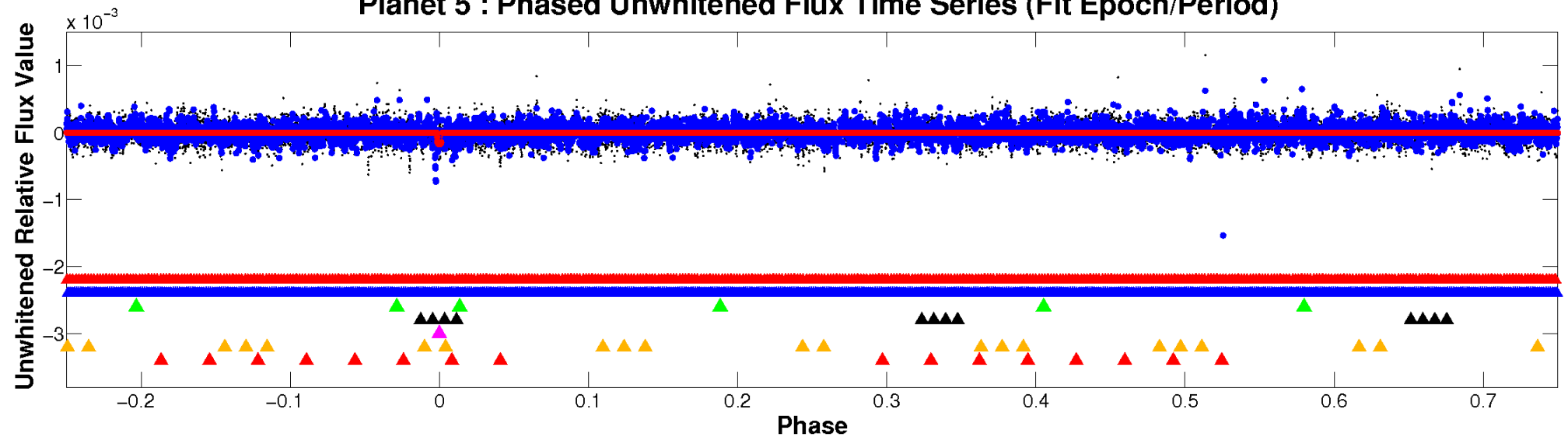
ALT Odd/Even

TCE 006721523-05

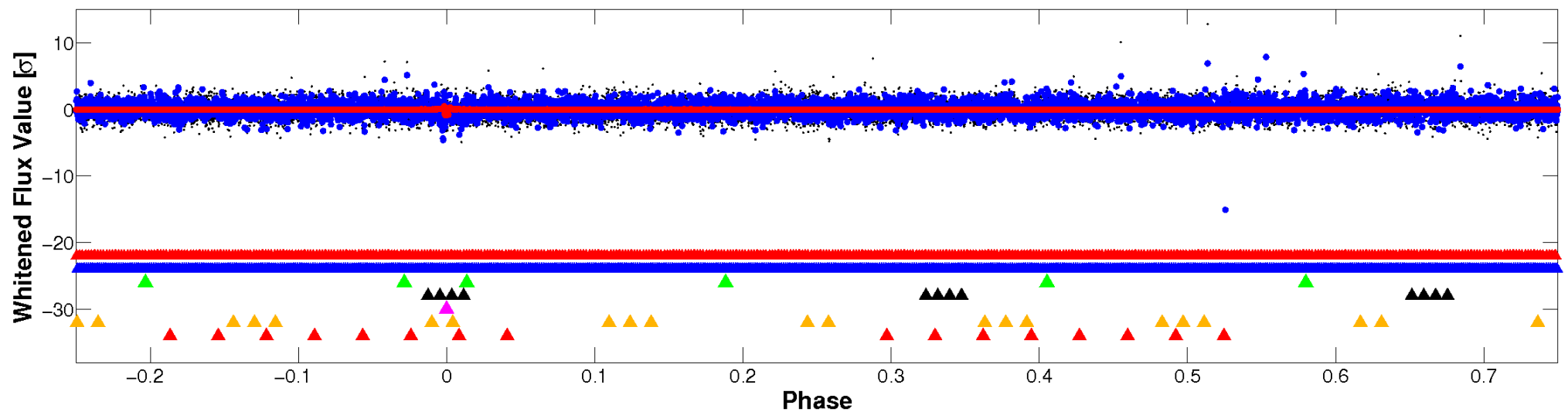


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

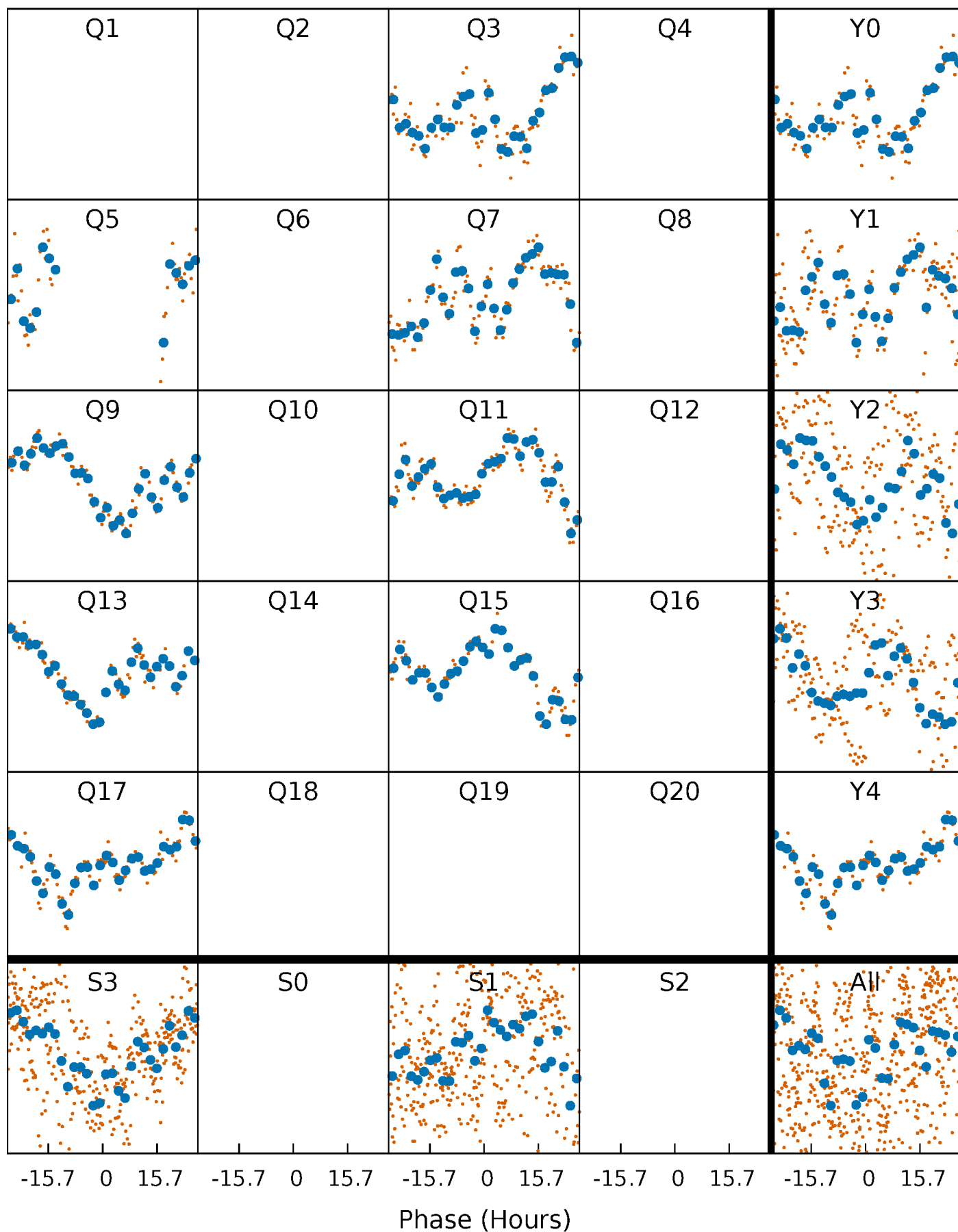


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



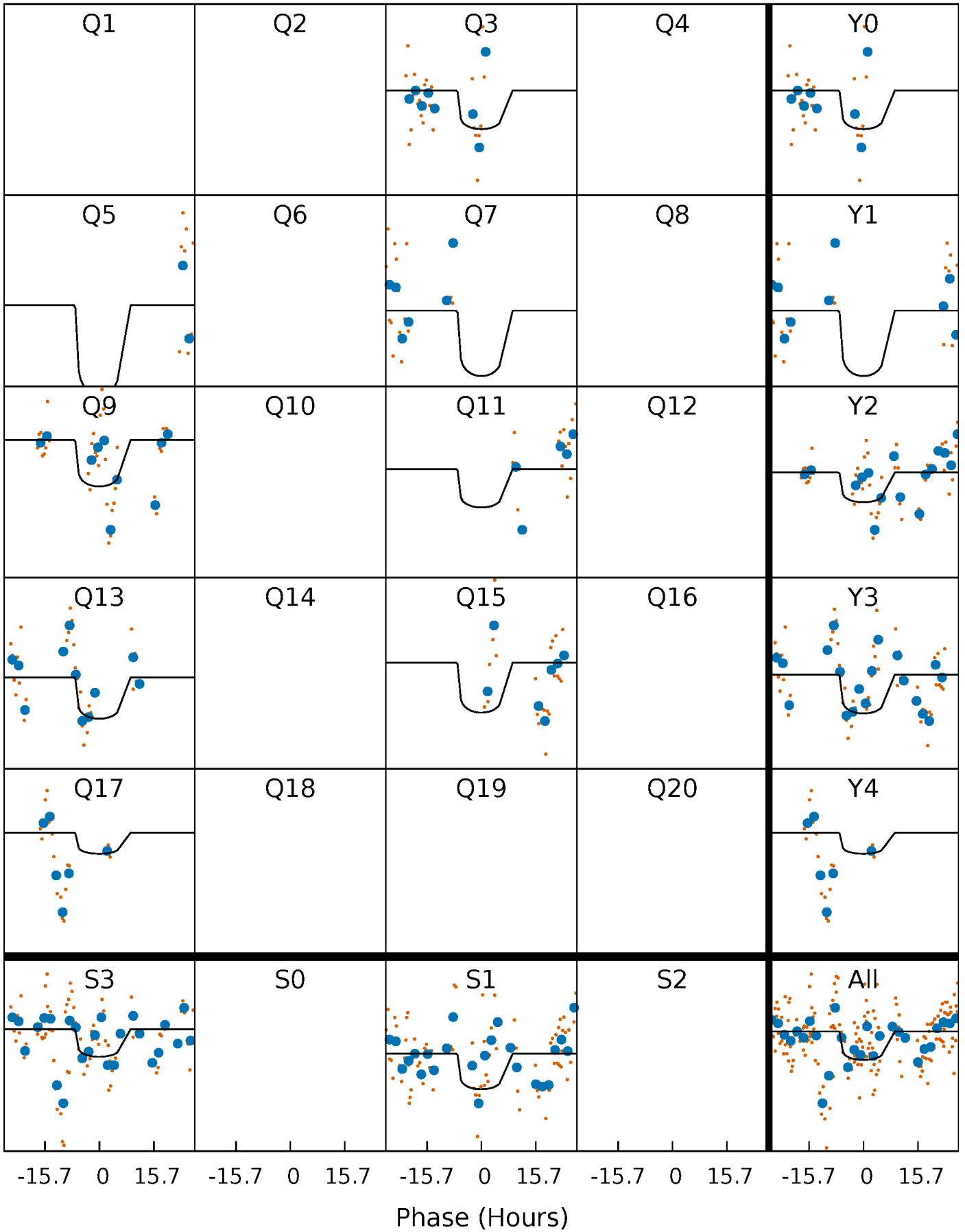
PDC Quarter-Phased Transit Curves

TCE 006721523-05 $P=182.253762$ Days $T_0=293.333192$ (BKJD)



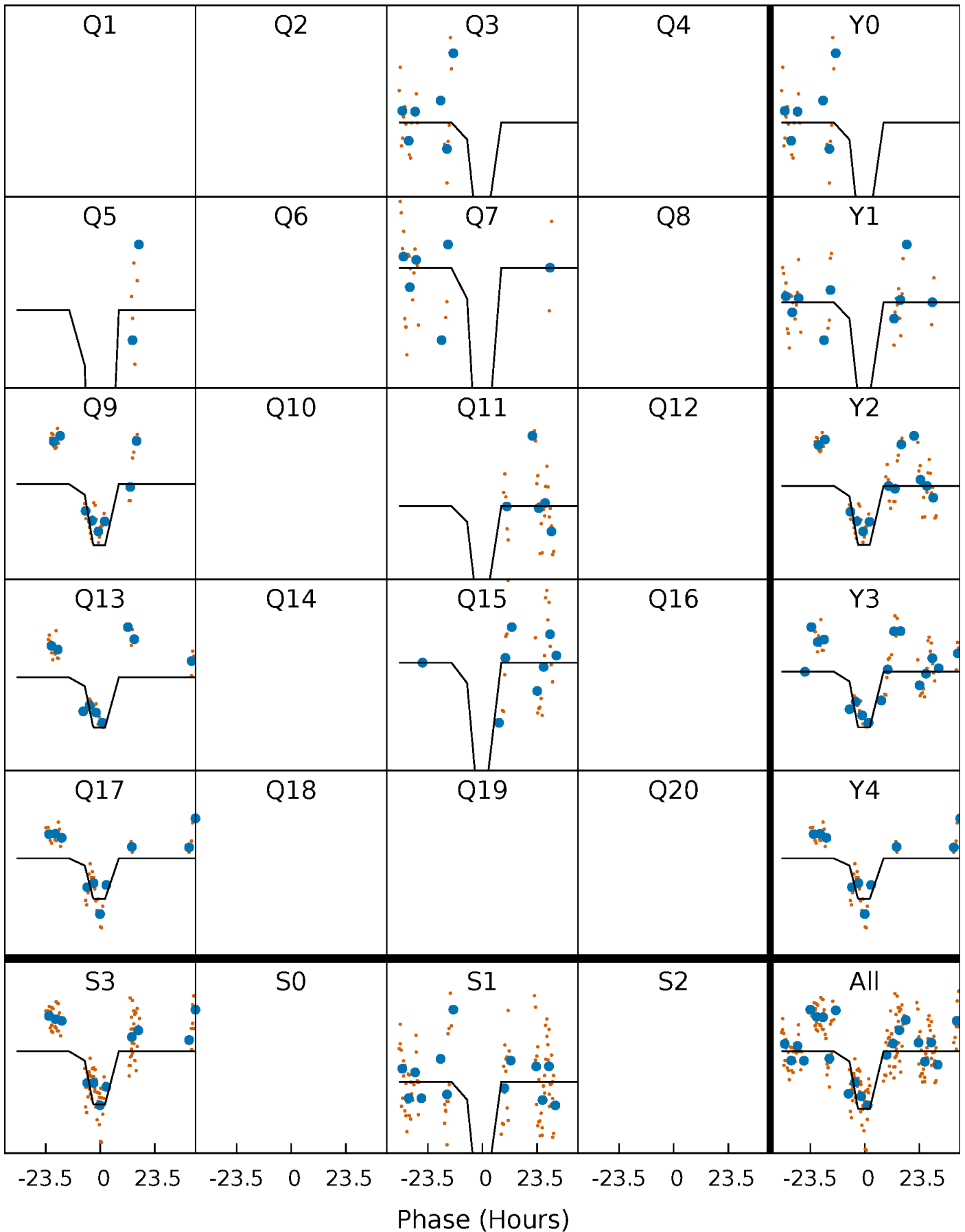
DV Quarter-Phased Transit Curves

TCE 006721523-05 $P=182.253762$ Days $T_0=293.333192$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

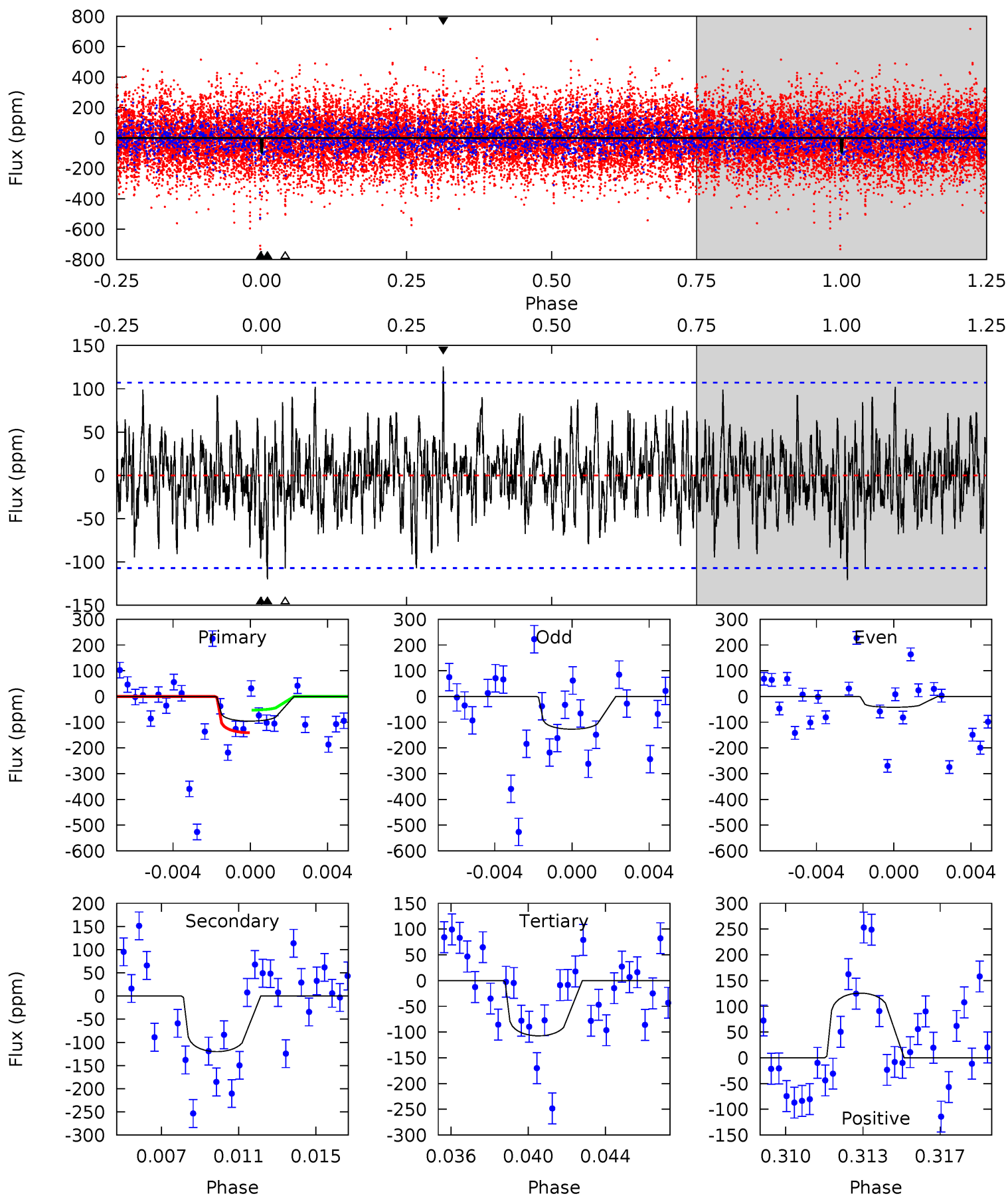
TCE 006721523-05 $P=182.105344$ Days $T_0=293.922048$ (BKJD)



DV Model-Shift Uniqueness Test

006721523-05, P = 182.253762 Days, E = 111.079430 Days

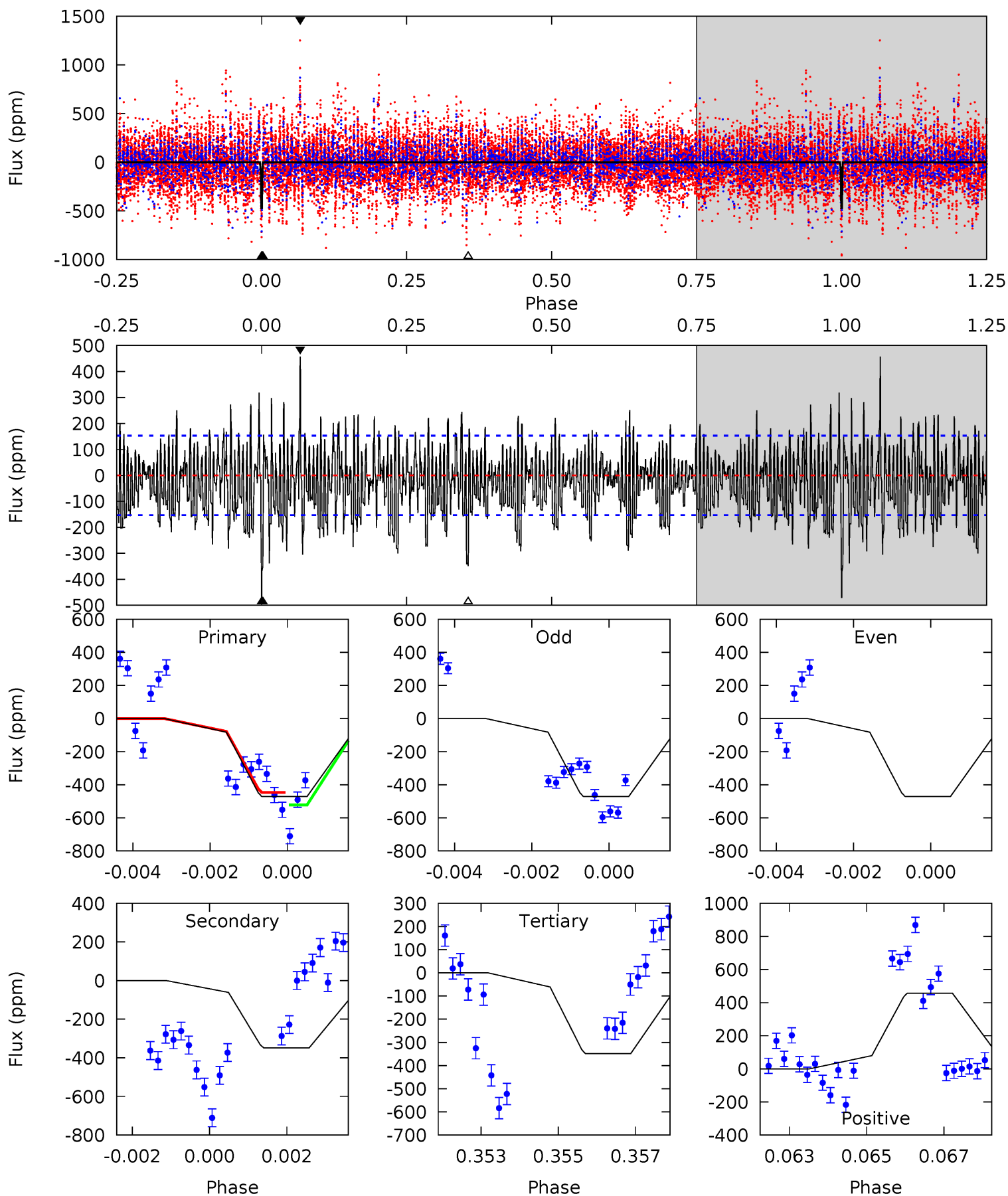
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.67	5.85	5.23	6.12	5.22	2.91	1.60	-0.56	-1.45	0.62	-0.27	1.98	0.97	0.51	2.15



Alt Model-Shift Uniqueness Test

006721523-05, P = 182.105344 Days, E = 111.816704 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.5	12.2	12.2	15.9	5.34	3.10	3.62	4.28	0.51	0.01	-3.75	0	1.05	0.49	1.11



Stellar Parameters For KIC 006721523

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6697^{+180}_{-200}	$3.375^{+0.369}_{-0.062}$	$-0.120^{+0.300}_{-0.250}$	$4.860^{+0.335}_{-1.896}$	$2.042^{+0.091}_{-0.366}$	$0.025^{+0.069}_{-0.005}$
	+3%/-3%	+11%/-2%	+250%/-208%	+7%/-39%	+4%/-18%	+277%/-20%
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 006721523-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-120 ± 21	$6.95^{+4.28}_{-3.51}$	998^{+51}_{-103}	5815^{+2553}_{-1052}	856^{+2875}_{-529}
Alt.	-349 ± 29	$11.10^{+4.58}_{-4.37}$	995^{+53}_{-94}	6020^{+1532}_{-829}	977^{+1623}_{-482}

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

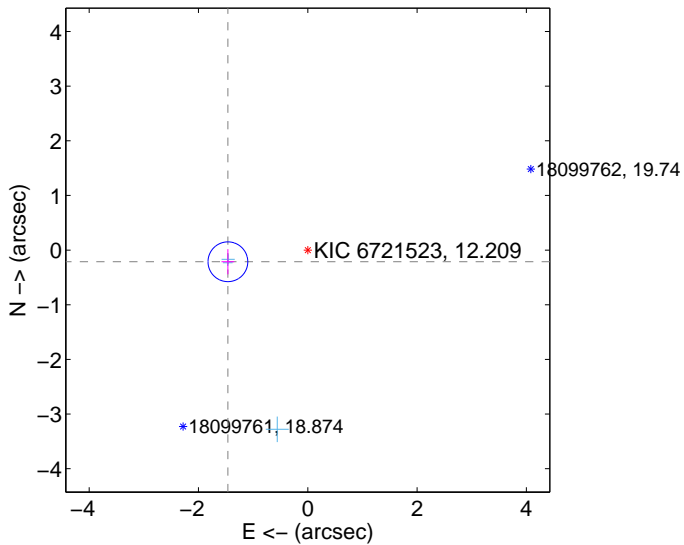
Supplemental centroid analysis for 006721523-05. Kepler magnitude: 12.21. Transit SNR 5.23

There are 3 quarters with good PRF difference image offsets

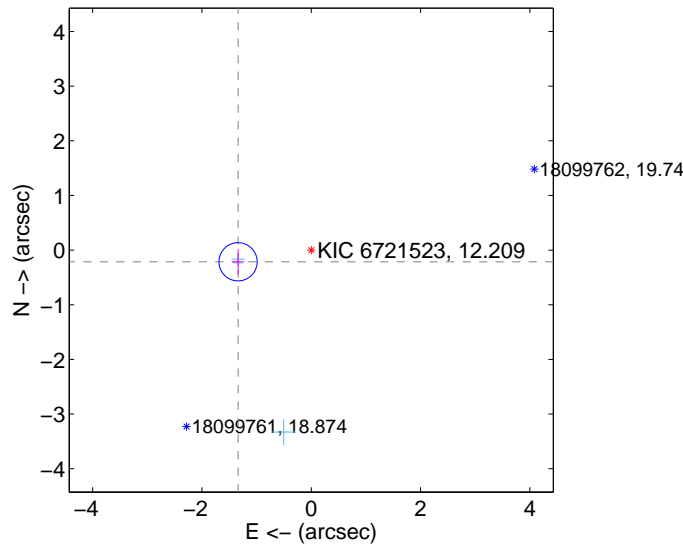
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.477 ± 0.121	12.18	1.462 ± 0.118	-0.213 ± 0.230
PRF-fit source offset from KIC position	1.356 ± 0.117	11.64	1.339 ± 0.112	-0.214 ± 0.234
photometric centroid source offset	1.24 ± 0.82	1.53	-1.23 ± 0.82	-0.22 ± 0.79

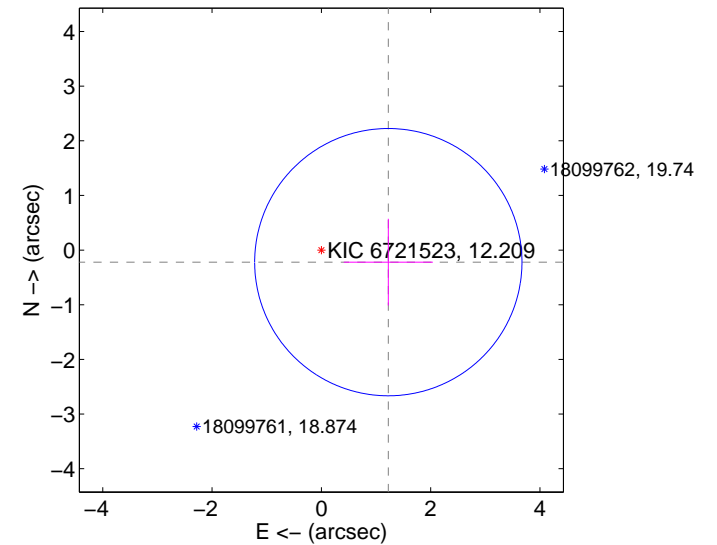
offset from difference PRF-fit to OOT PRF-fit



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.

Q1 no difference image



Q1 no OOT image



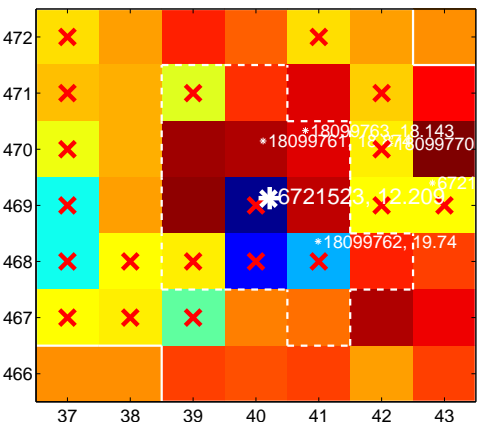
Q2 no difference image



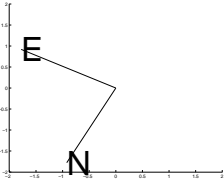
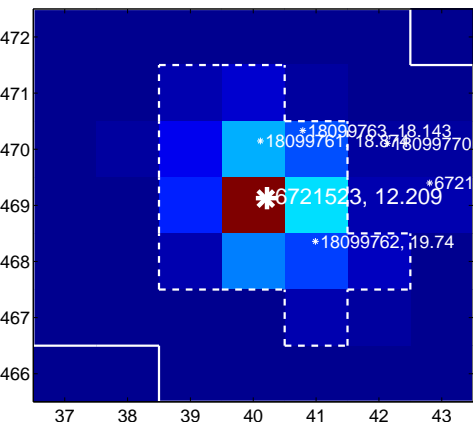
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



Q4 no difference image

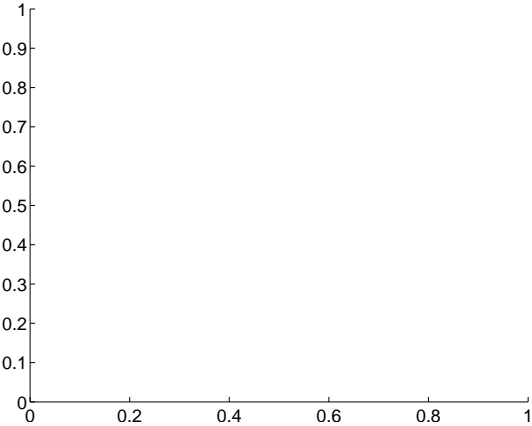


Q4 no OOT image

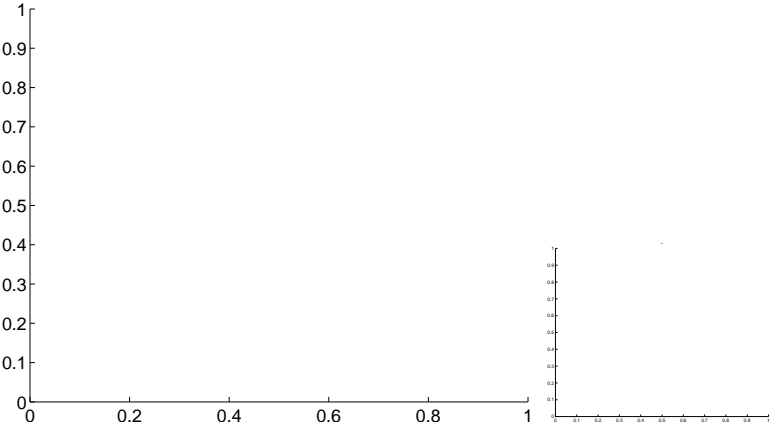


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

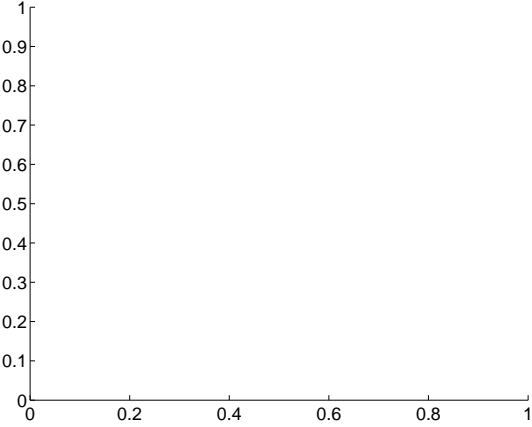
Q5 no difference image



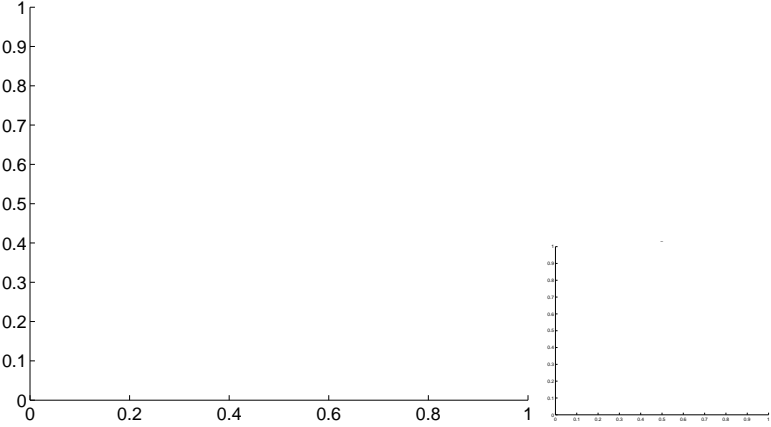
Q5 no OOT image



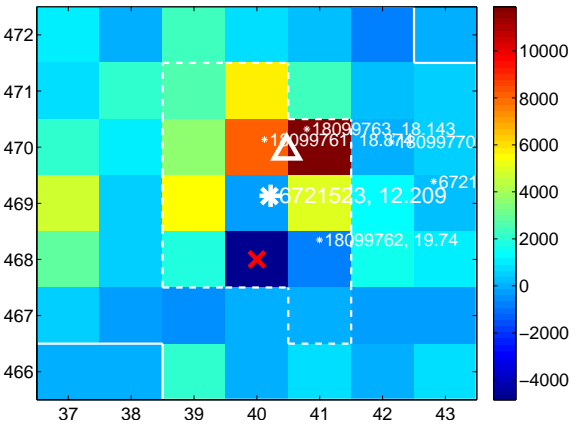
Q6 no difference image



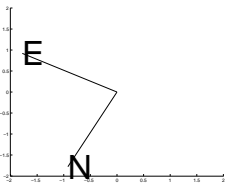
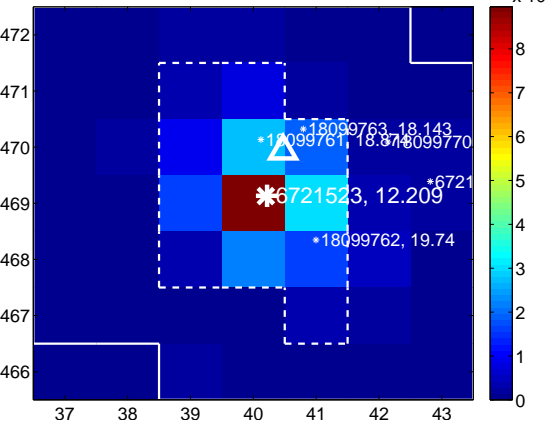
Q6 no OOT image



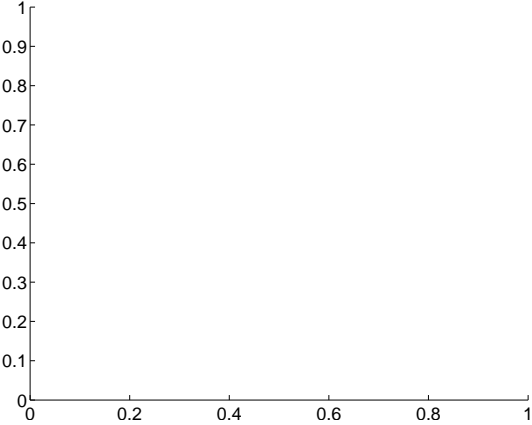
Q7 difference image



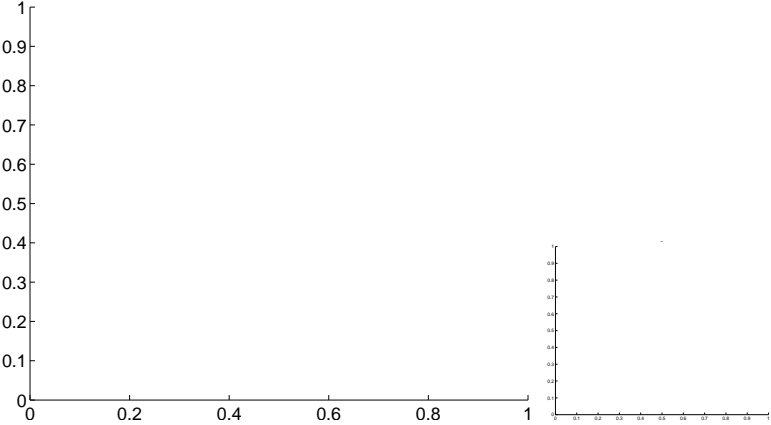
Q7 OOT image



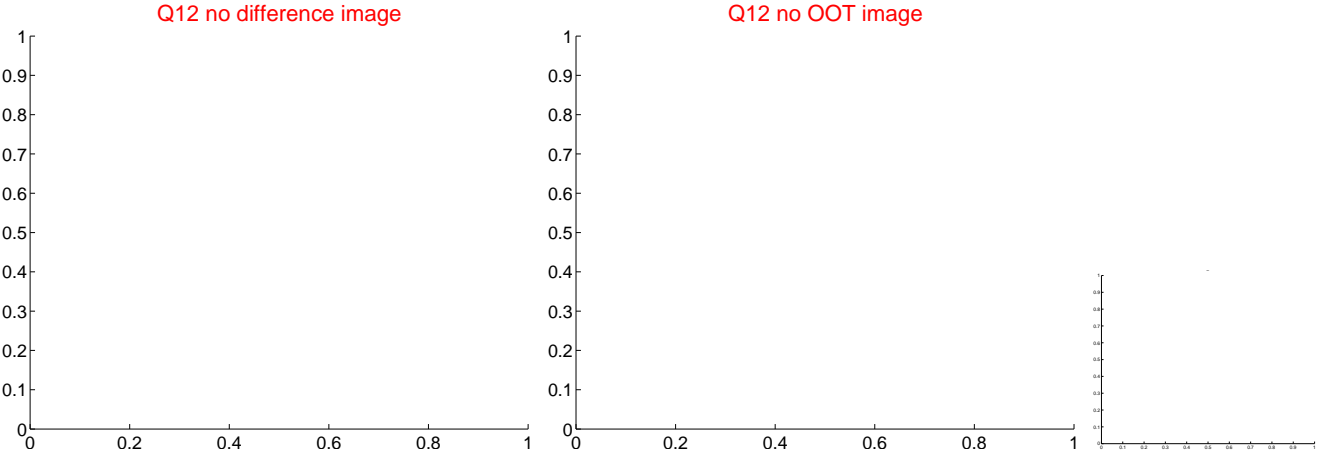
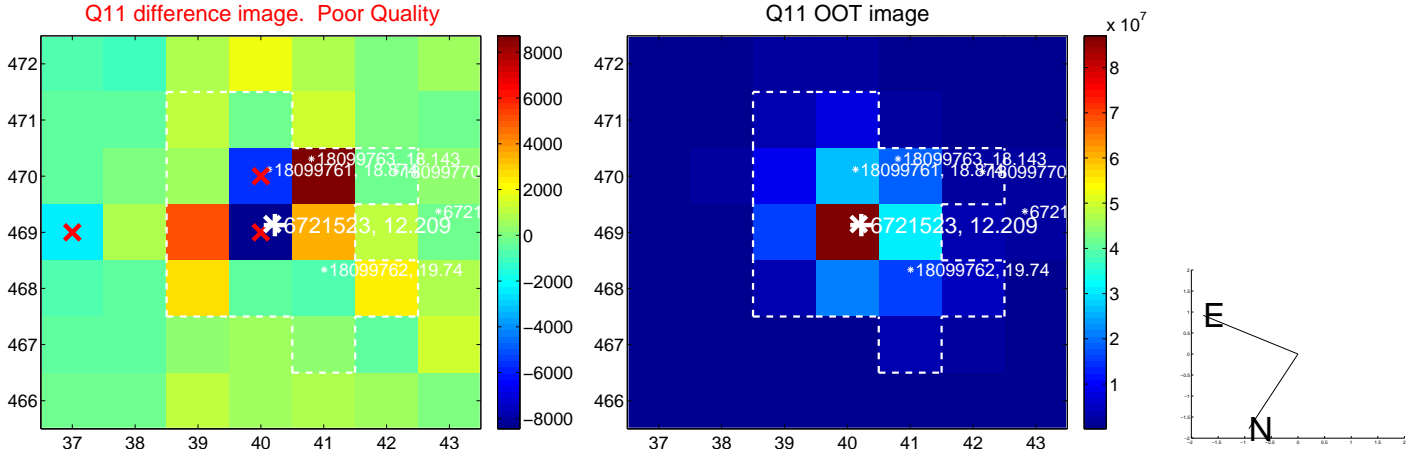
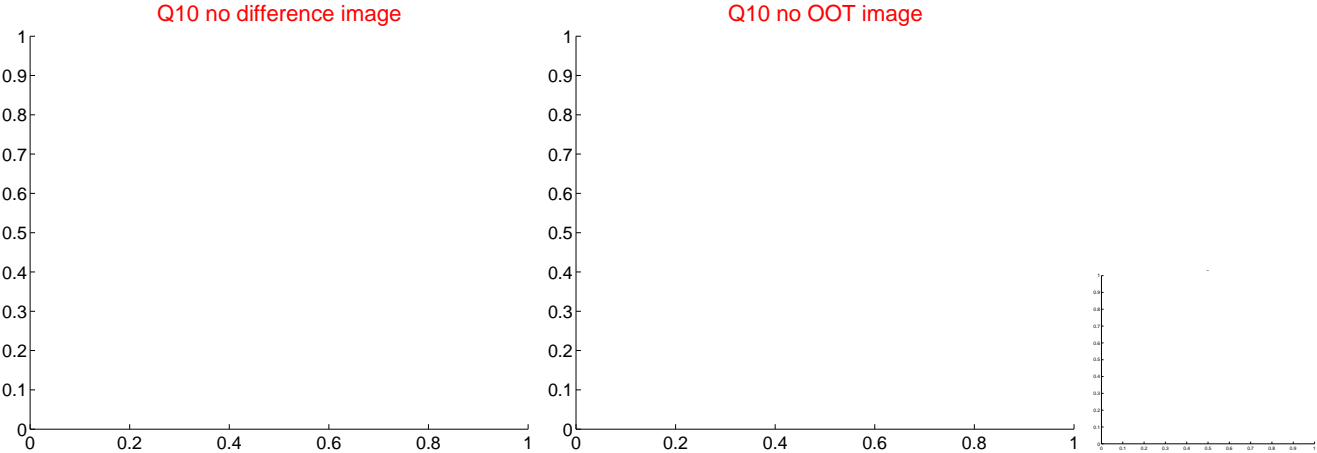
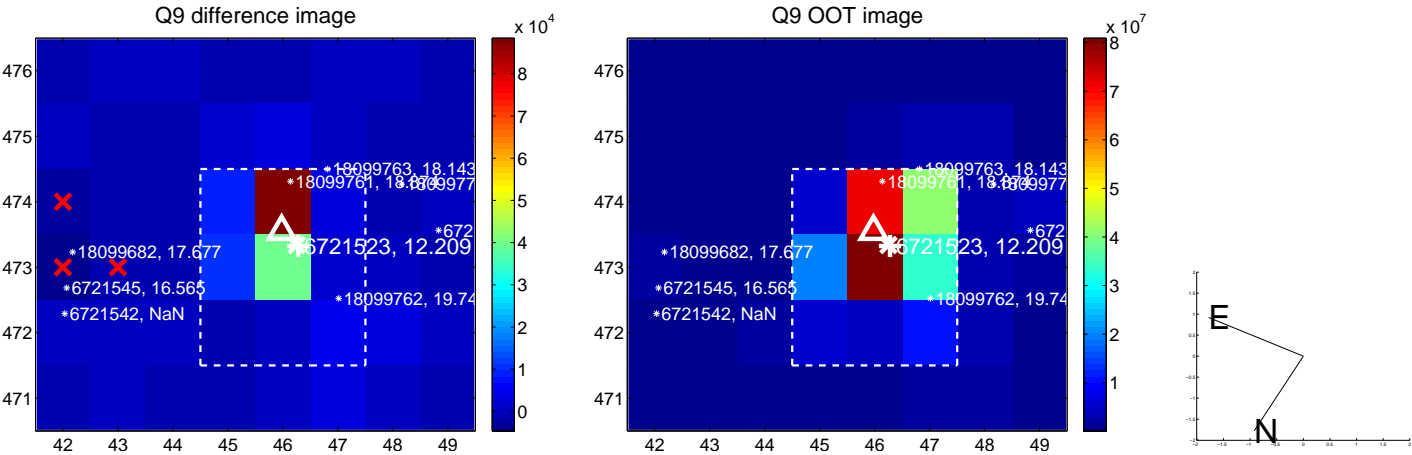
Q8 no difference image



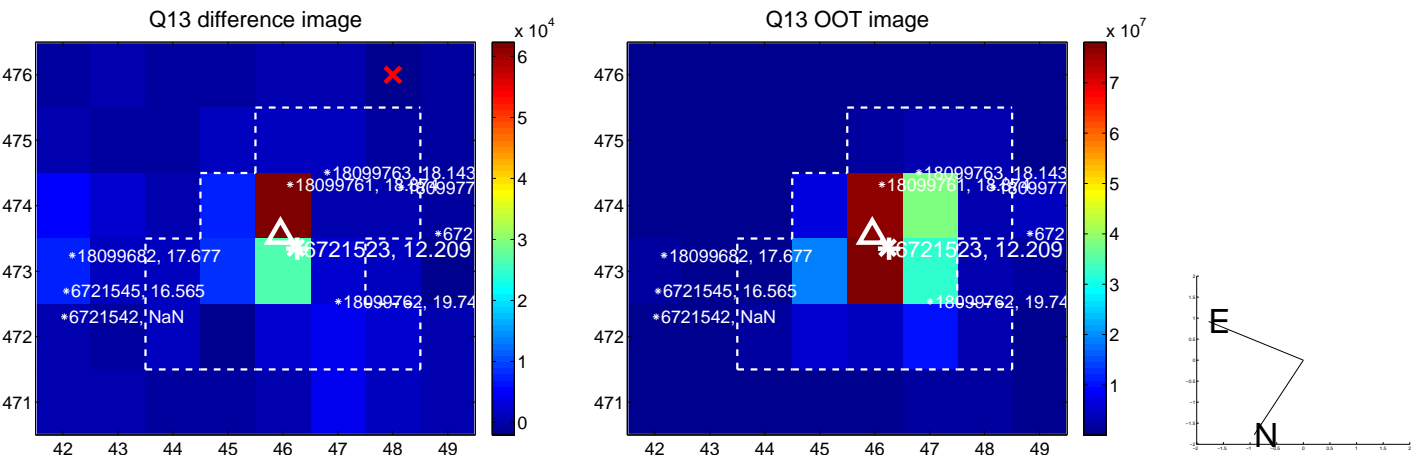
Q8 no OOT image



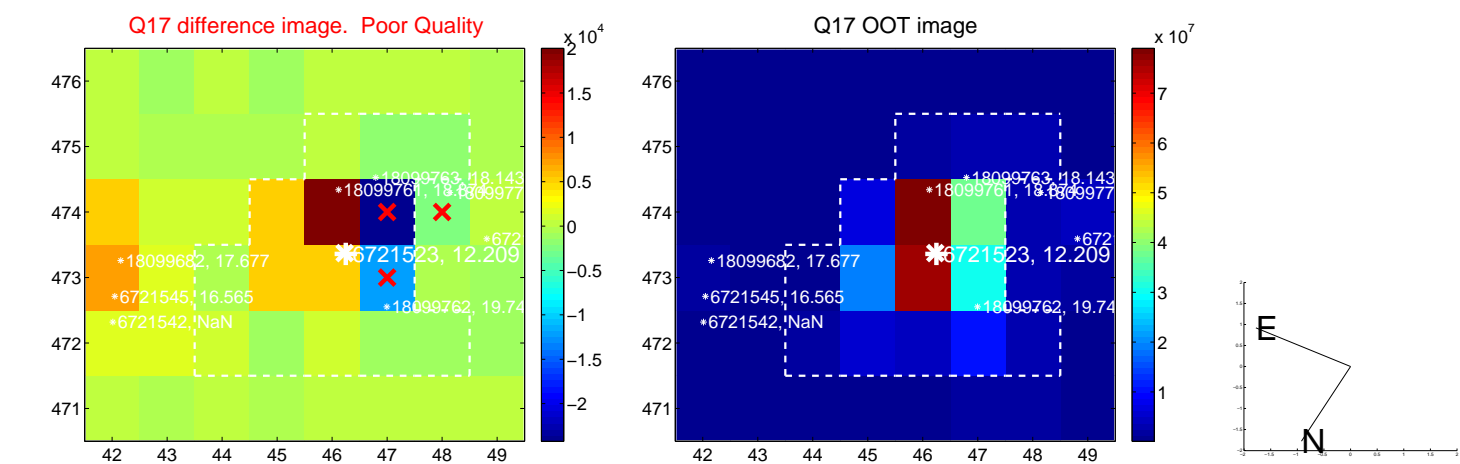
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



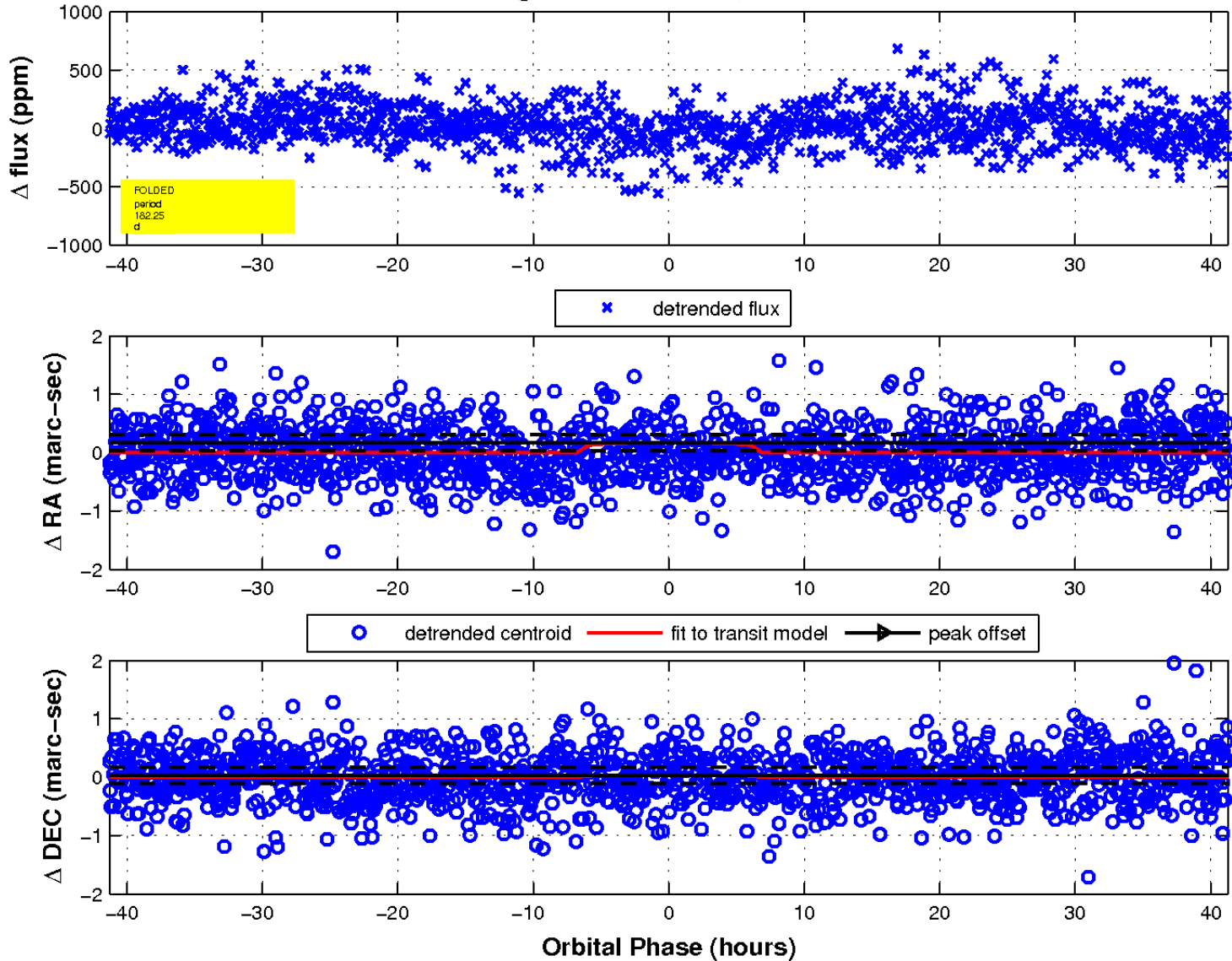
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

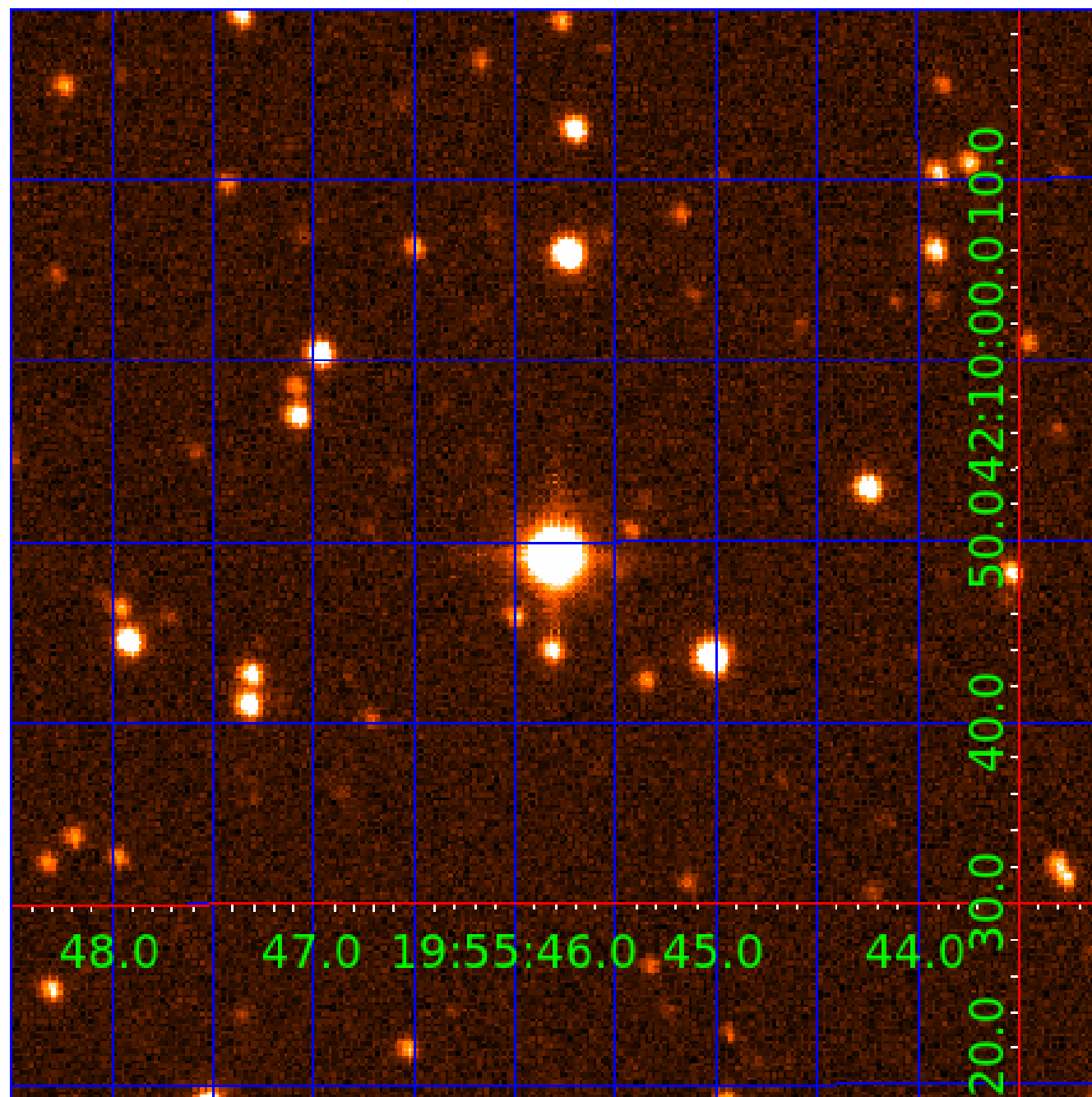


fluxWeightedCentroids, Planet 5 of 7



UKIRT Image

Declination



KIC 006721523

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})
006721523-01	OBS	No	2.582741	133.750098	51.6	7.849	11.3	12.7	4.86	6697	7.05	19471.46
006721523-02	OBS	No	0.804022	132.191771	24.6	3.400	10.8	10.6	4.86	6697	2.82	0.00
006721523-03	OBS	No	253.616155	295.821943	320.7	9.253	9.5	8.6	4.86	6697	9.00	42.98
006721523-04	OBS	No	121.015623	174.419378	191.8	13.243	9.1	7.1	4.86	6697	7.44	115.27
006721523-05	OBS	No	182.253762	293.333193	173.4	13.771	9.3	5.2	4.86	6697	7.42	66.77
006721523-06	OBS	No	68.022163	182.447275	171.6	14.651	9.0	7.3	4.86	6697	8.32	248.49
006721523-07	OBS	No	94.088726	165.233179	176.1	4.500	8.4	-1.0	4.86	6697	6.50	161.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006721523-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
006721523-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006721523-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNCERTAIN
006721523-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006721523-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
006721523-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006721523-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

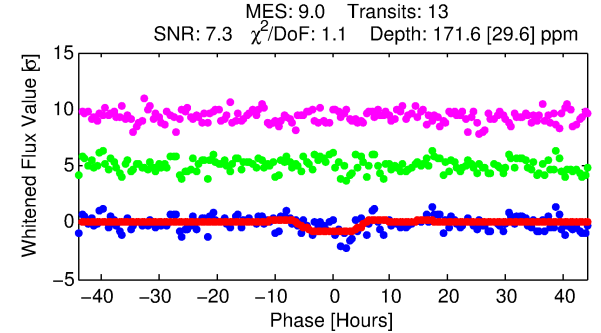
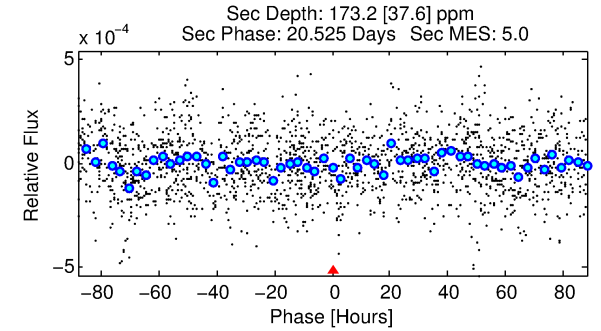
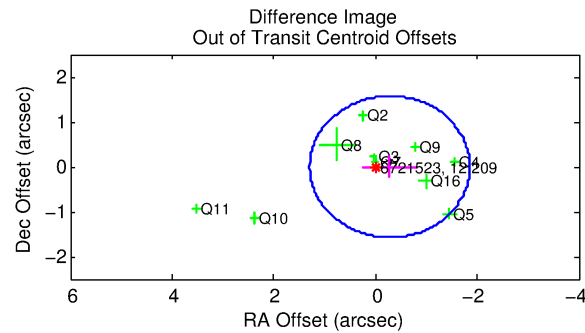
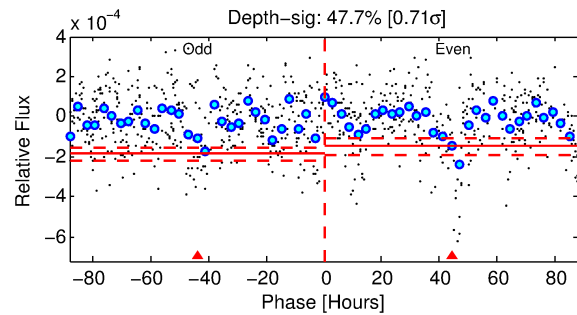
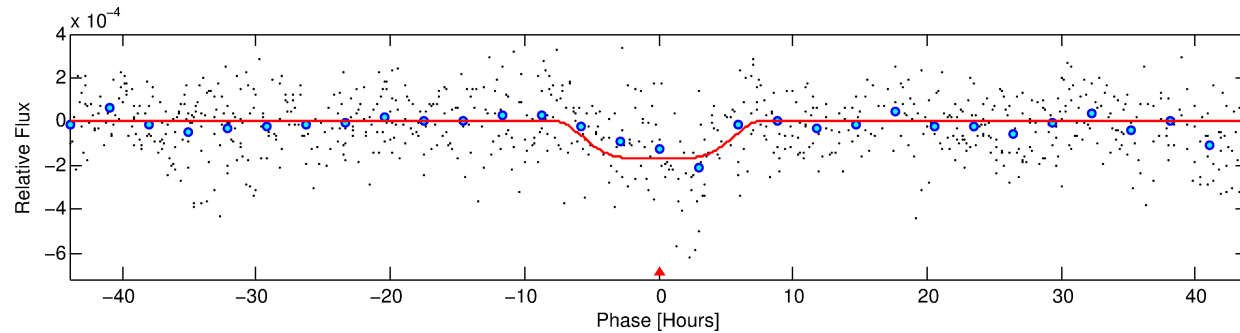
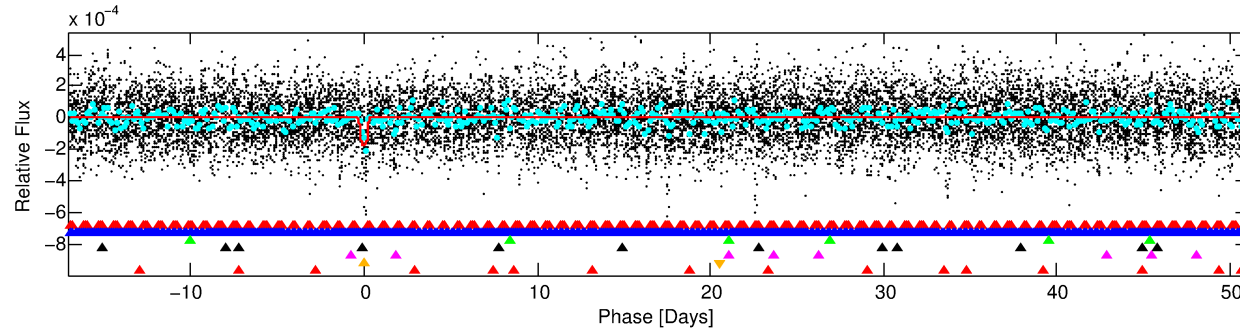
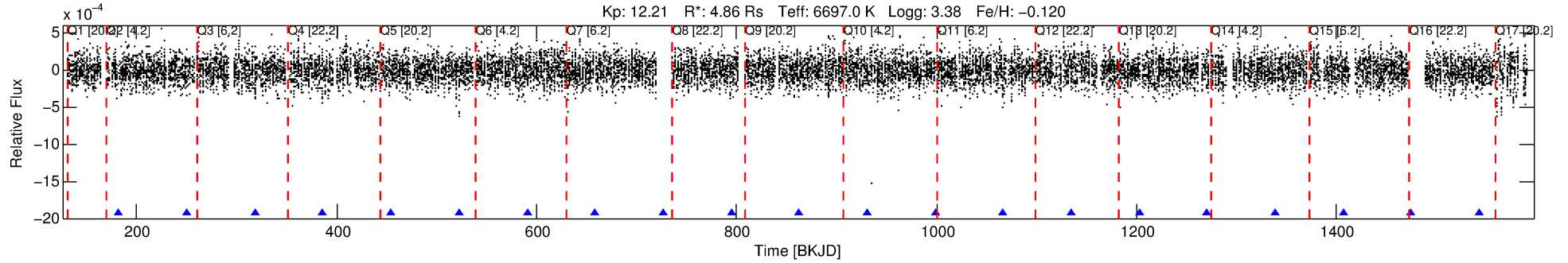
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006721523-06

No Significant Match Found

DV One-Page Summary

KIC: 6721523 Candidate: 6 of 7 Period: 68.022 d



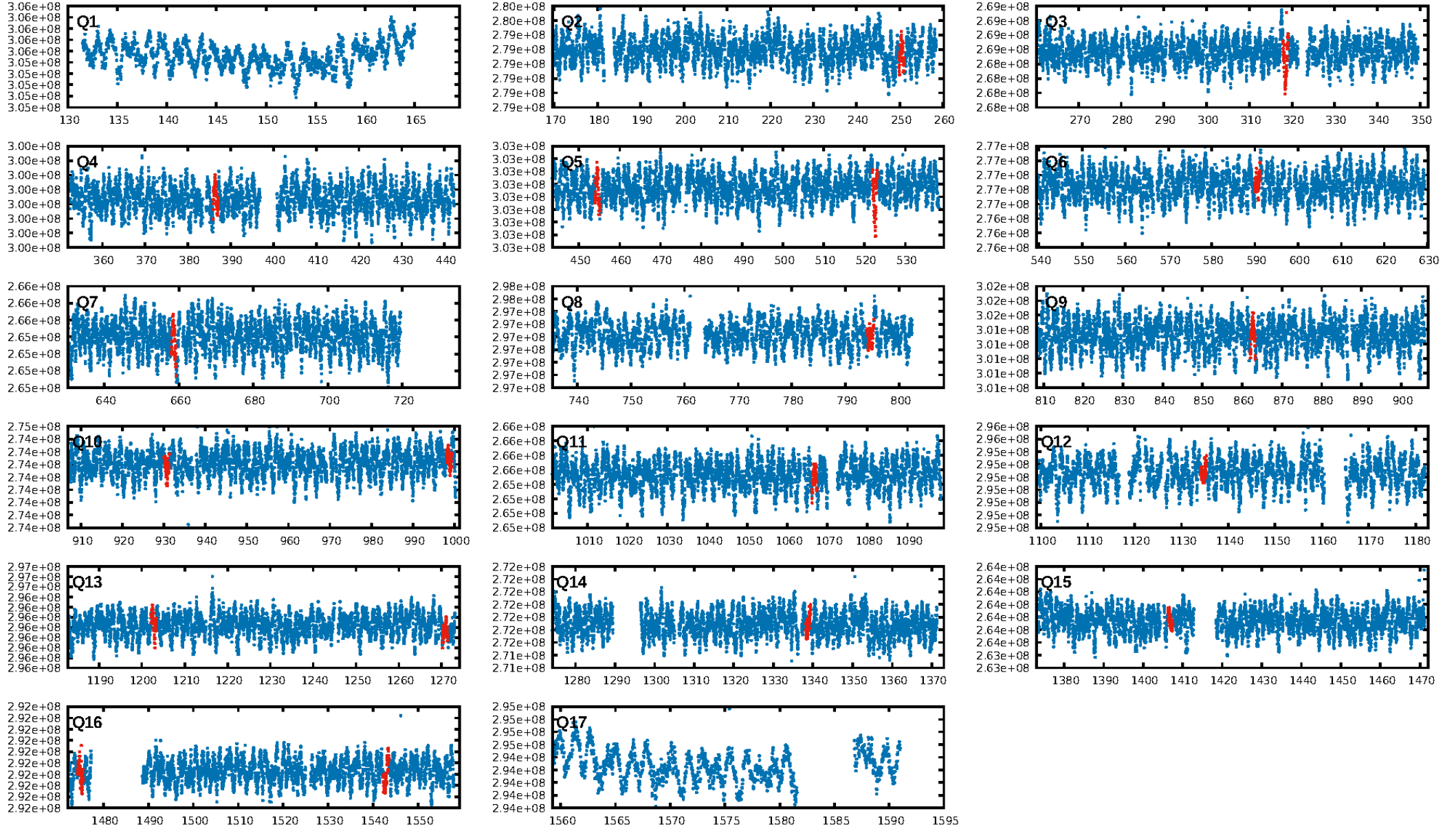
DV Fit Results:

Period = 68.02216 [0.00373] d
Epoch = 182.4473 [0.0460] BKJD
Rp/R* = 0.0157 [0.0016]
a/R* = 9.81 [2.24]
b = 0.98 [0.01]
Seff = 248.49 [157.70]
Teq = 1012 [161] K
Rp = 8.32 [3.36] Re
a = 0.4139 [0.1591] AU
Ag = 235.77 [163.26] [1.44 σ]
Teffp = 6134 [498] K [9.80 σ]

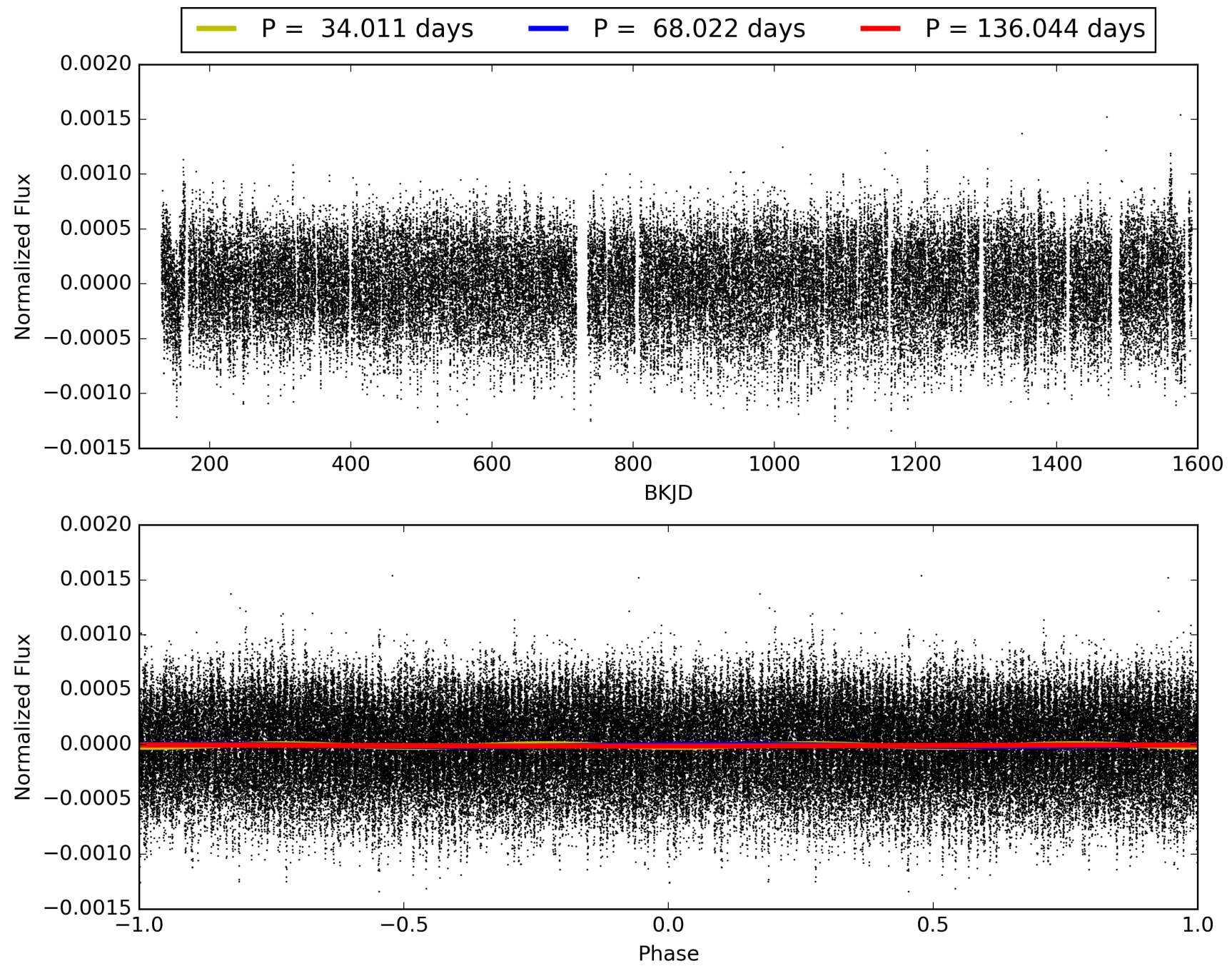
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [94.49 σ]
LongPeriod-sig: 100.0% [40.82 σ]
ModelChiSquare2-sig: 4.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [13/13]
GhostDiagnostic-chr: 0.5559
Centroid-sig: 1.1%
Centroid-so: 1.494 arcsec [2.31 σ]
OotOffset-rm: 0.278 arcsec [0.53 σ]
KicOffset-rm: 0.295 arcsec [0.61 σ]
OotOffset-st: 2/3/3/2 [10]
KicOffset-st: 2/3/3/2 [10]
DiffImageQuality-fgm: 0.50 [5/10]
DiffImageOverlap-fno: 0.00 [0/12]

TCE 006721523-06, PDC Light Curves

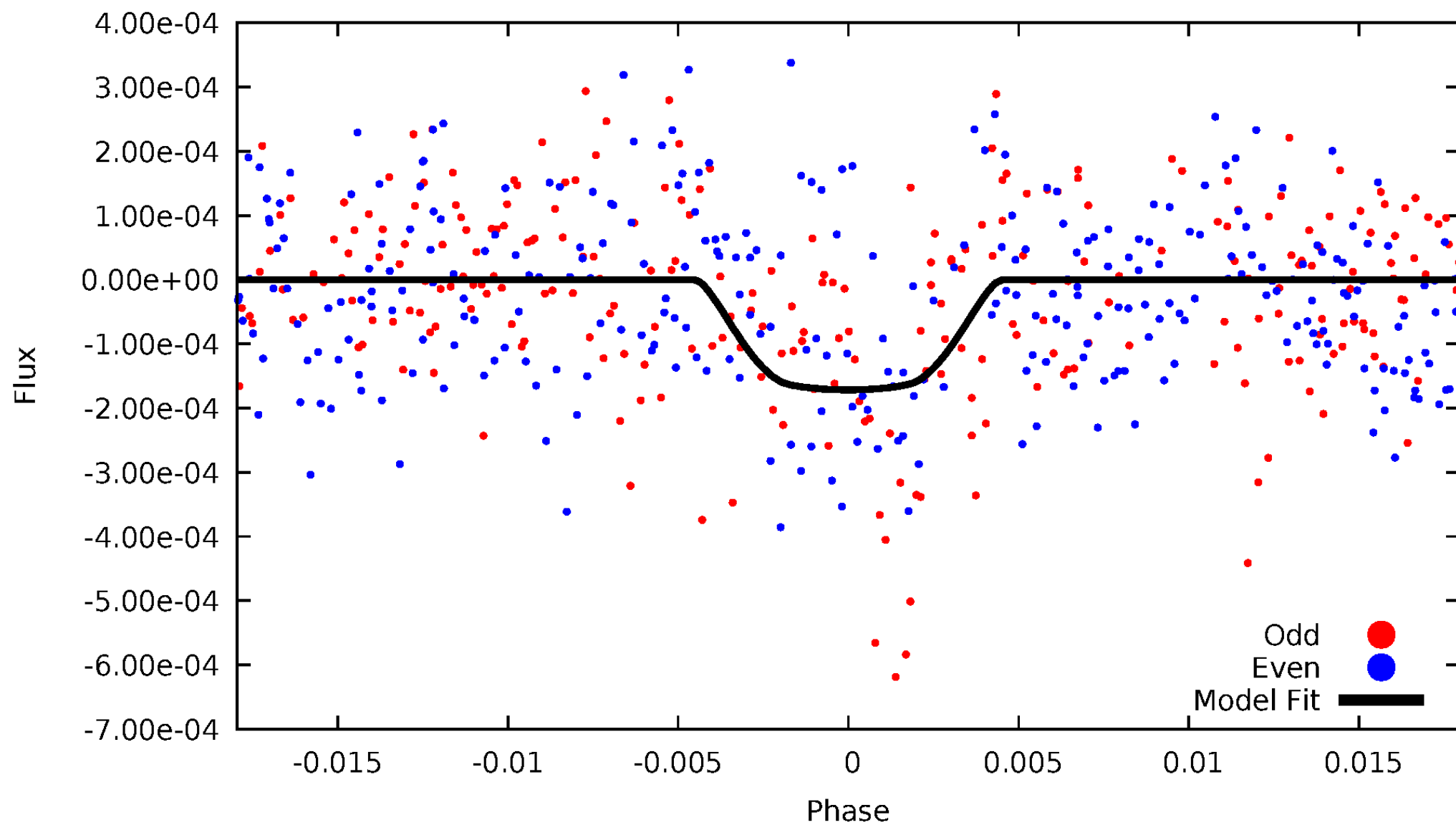


TCE 006721523-06



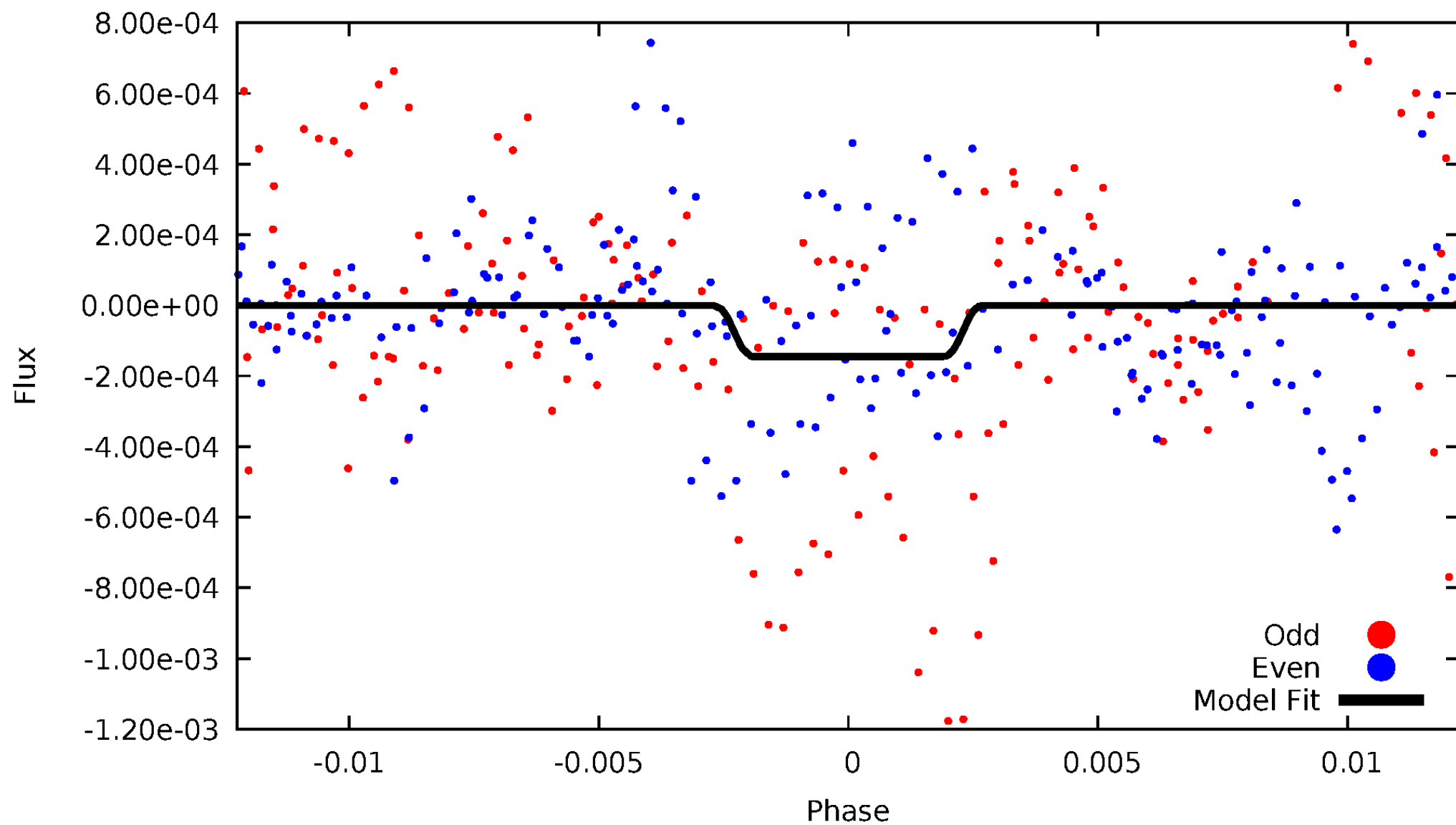
DV Odd/Even

TCE 006721523-06



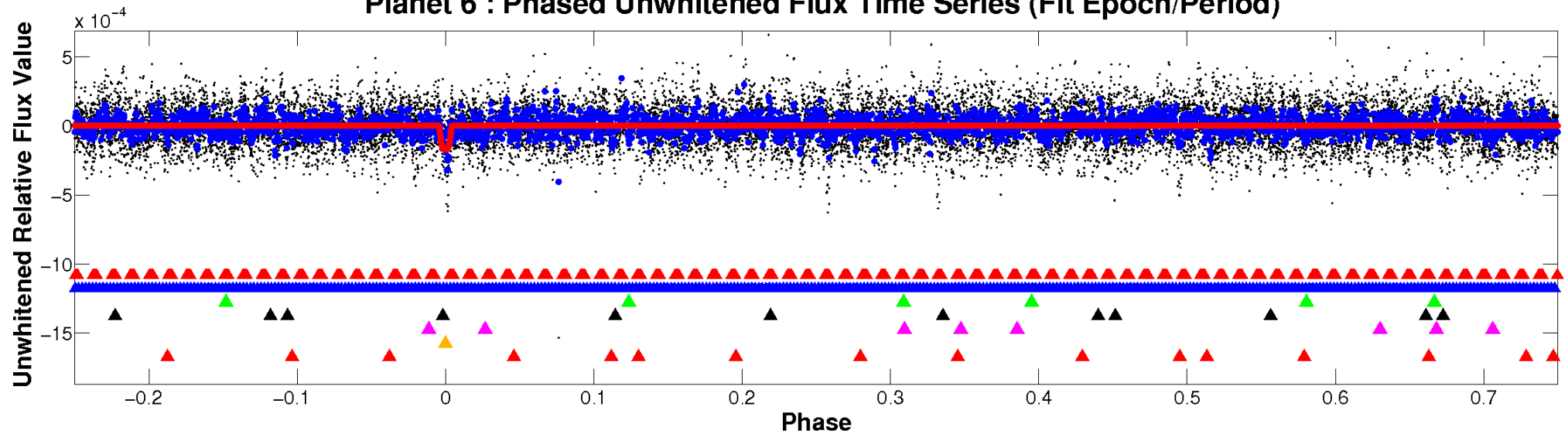
ALT Odd/Even

TCE 006721523-06

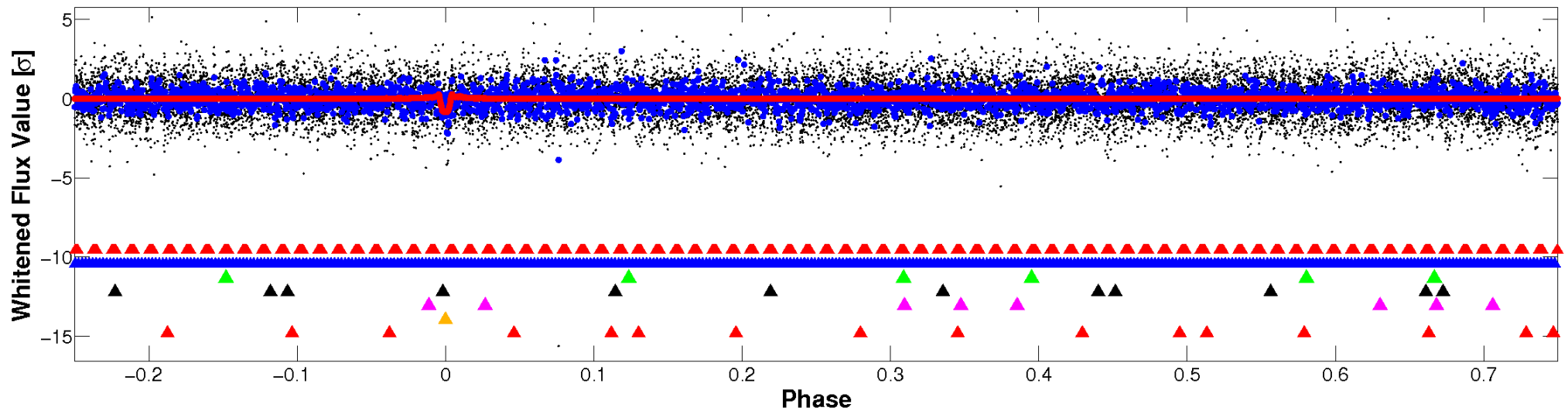


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

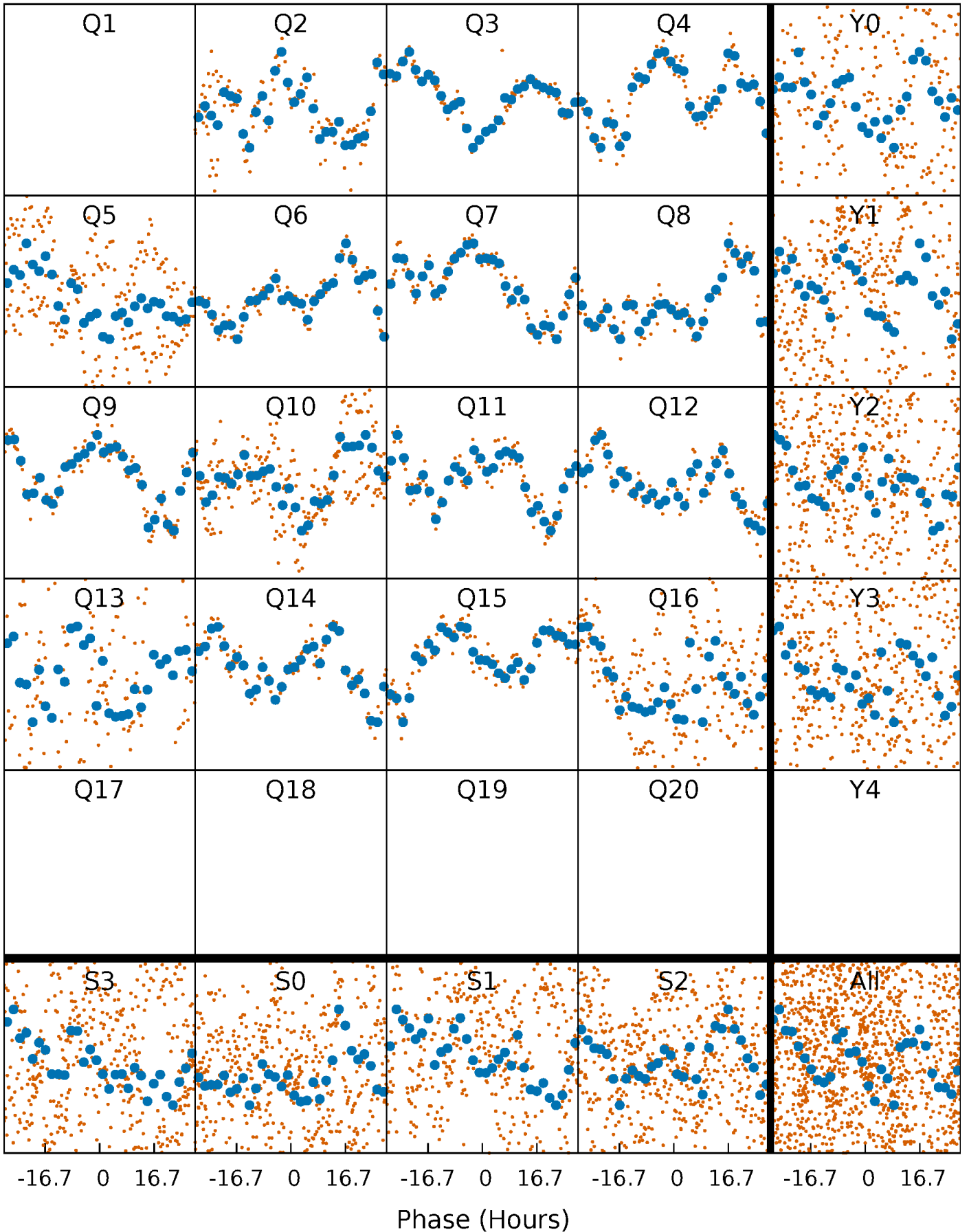


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



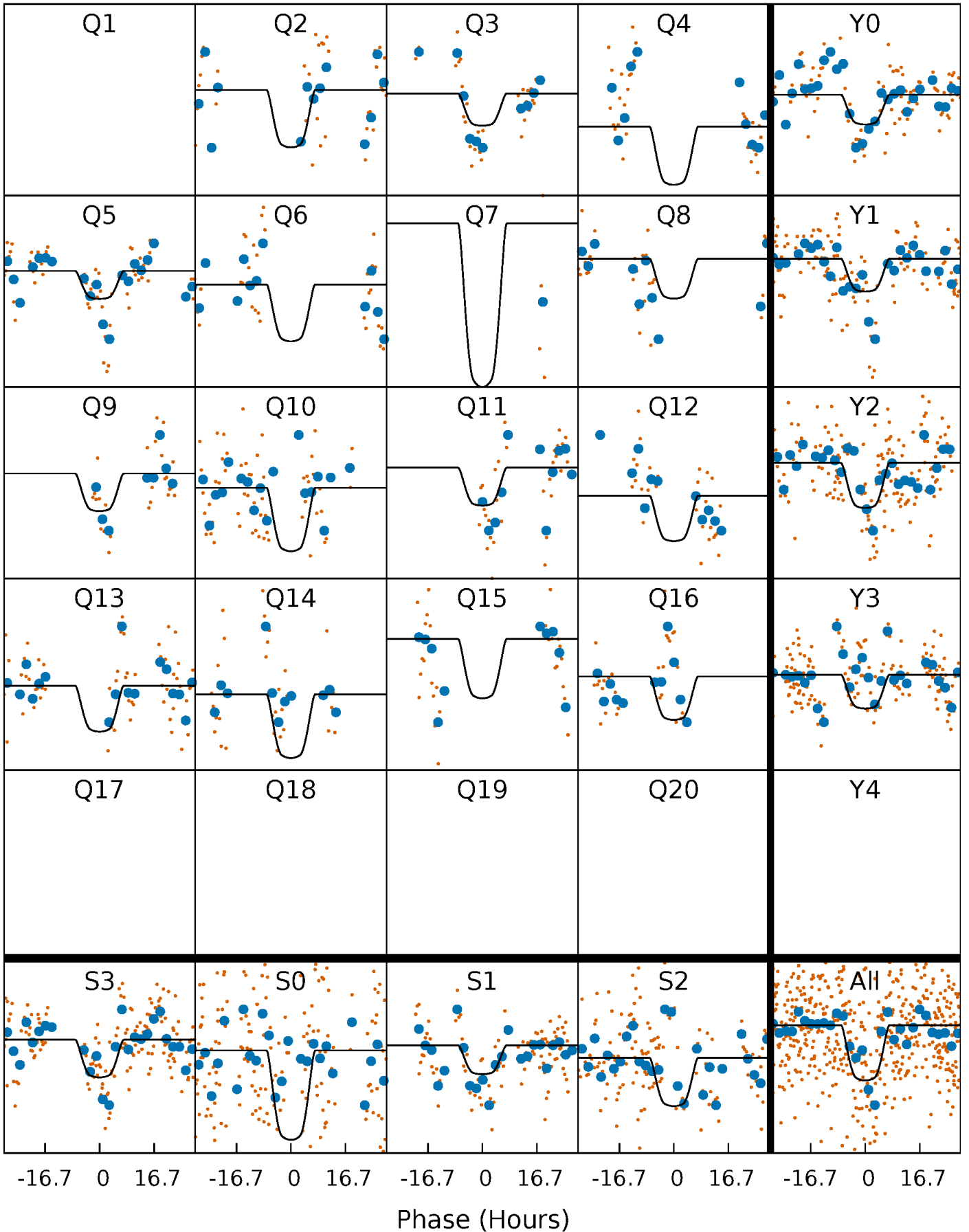
PDC Quarter-Phased Transit Curves

TCE 006721523-06 P= 68.022163 Days $T_0=182.447275$ (BKJD)



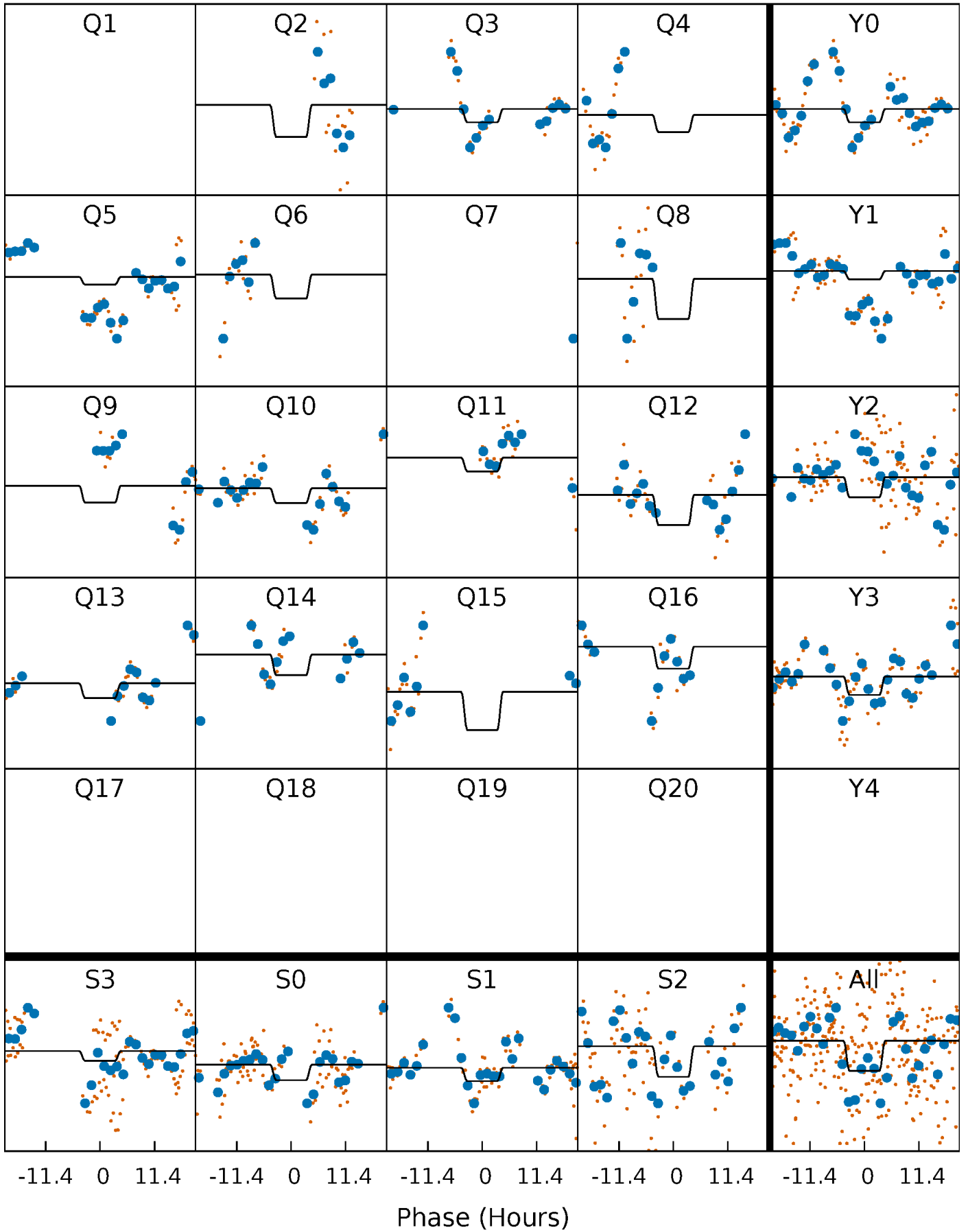
DV Quarter-Phased Transit Curves

TCE 006721523-06 P= 68.022163 Days $T_0=182.447275$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

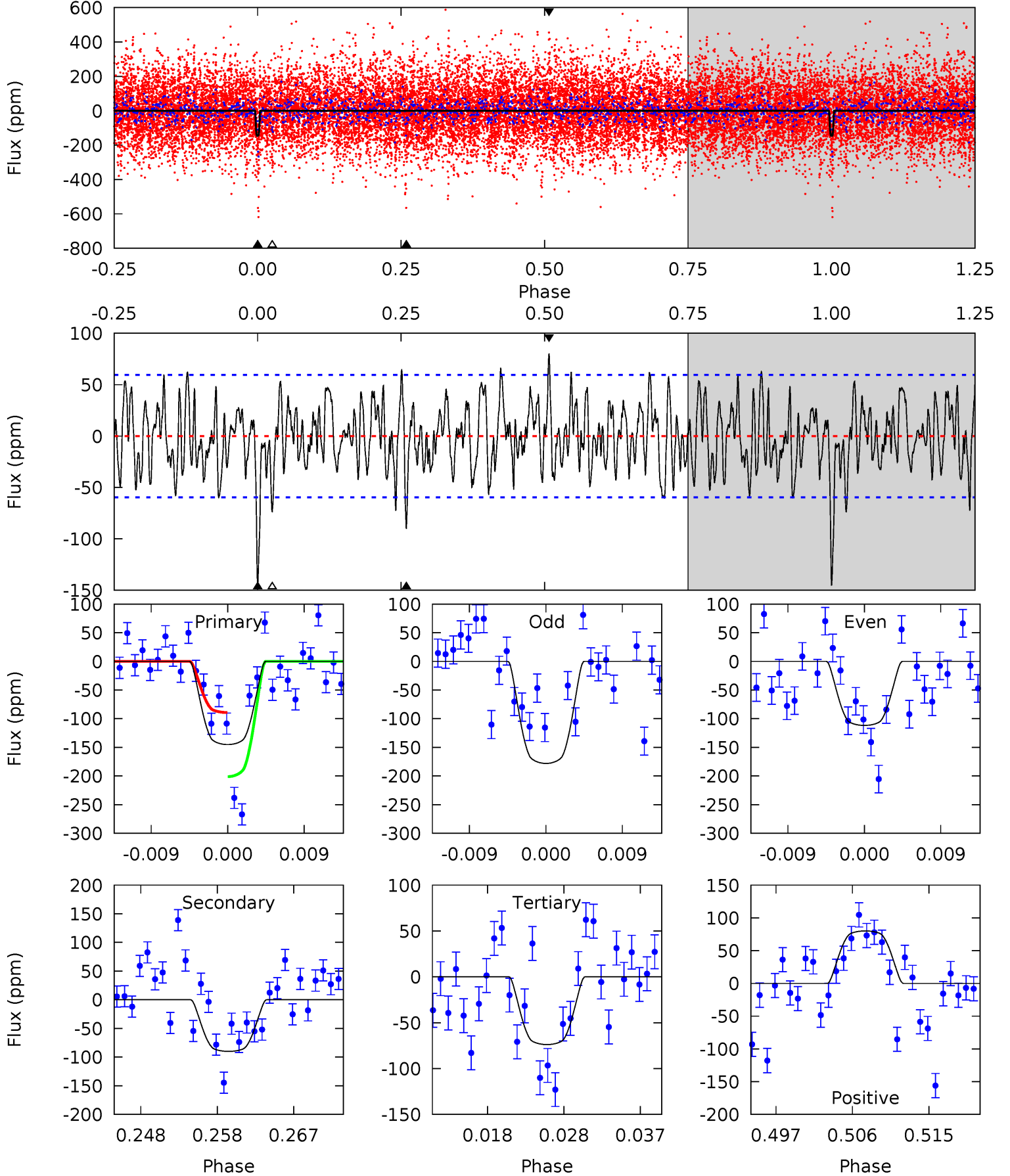
TCE 006721523-06 $P = 68.024766$ Days $T_0 = 182.392674$ (BKJD)



DV Model-Shift Uniqueness Test

006721523-06, P = 68.022163 Days, E = 114.425112 Days

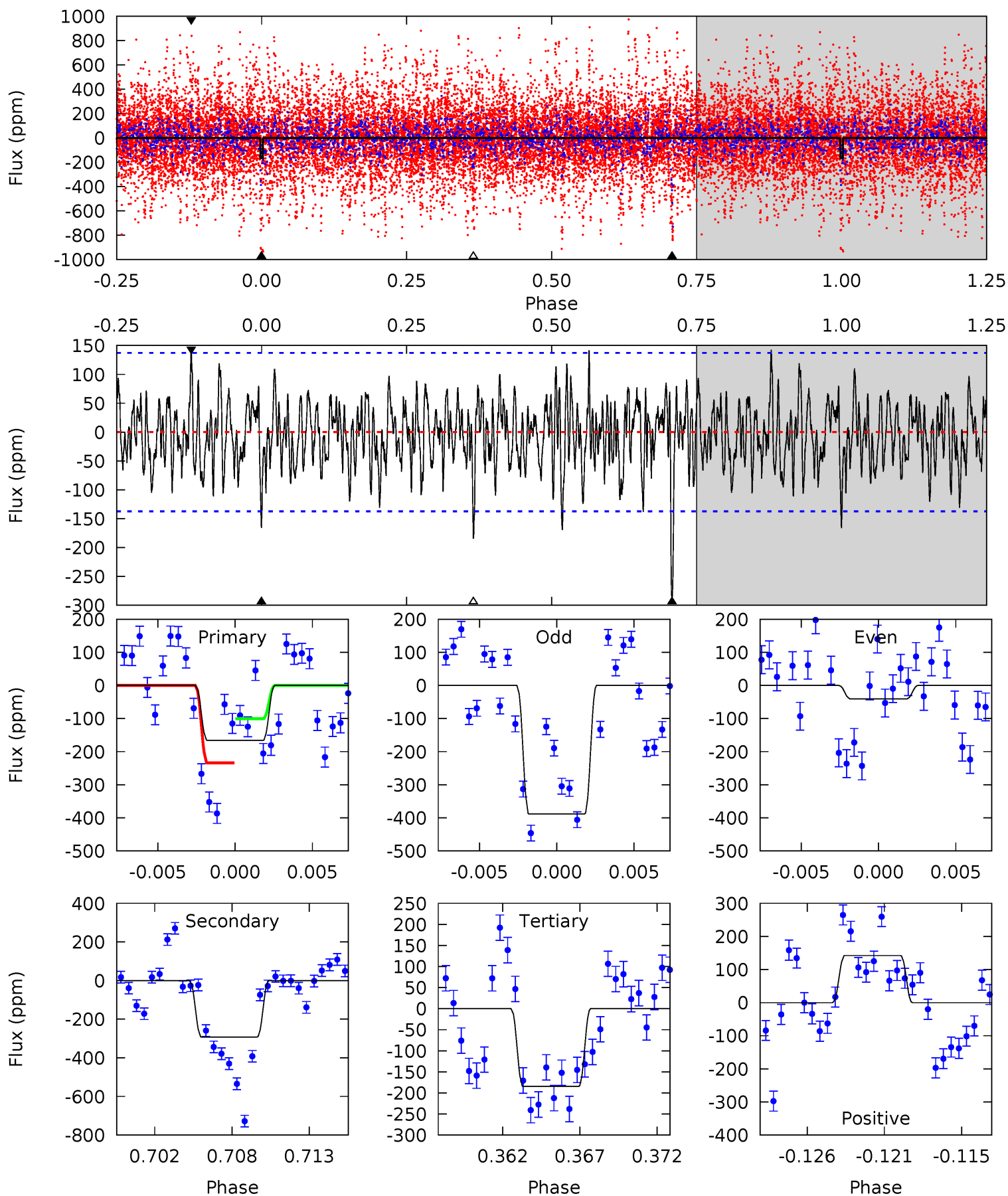
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.3	7.63	6.26	6.78	5.04	2.60	2.29	6.04	5.52	1.37	0.85	2.82	1.52	0.36	4.74



Alt Model-Shift Uniqueness Test

006721523-06, P = 68.024766 Days, E = 114.367908 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.24	11.0	6.93	5.34	5.15	2.79	1.85	-0.69	0.90	4.06	5.65	6.58	1.12	0.33	2.52



Stellar Parameters For KIC 006721523

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6697^{+180}_{-200}	$3.375^{+0.369}_{-0.062}$	$-0.120^{+0.300}_{-0.250}$	$4.860^{+0.335}_{-1.896}$	$2.042^{+0.091}_{-0.366}$	$0.025^{+0.069}_{-0.005}$
	+3%/-3%	+11%/-2%	+250%/-208%	+7%/-39%	+4%/-18%	+277%/-20%
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 006721523-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-90 ± 12	$7.90^{+1.19}_{-1.55}$	1390^{+69}_{-133}	5245^{+349}_{-312}	135^{+67}_{-36}
Alt.	-293 ± 27	$6.01^{+1.14}_{-1.35}$	1385^{+69}_{-140}	8151^{+886}_{-749}	756^{+448}_{-229}

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 $A_{obs} \gg 1.0$

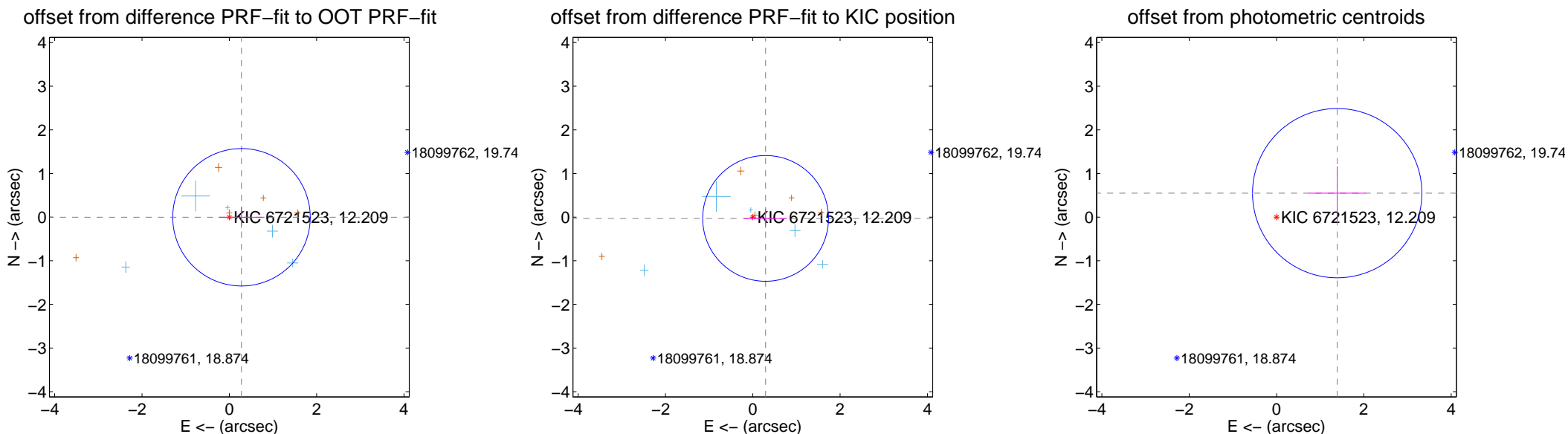
DV Centroid Data

Supplemental centroid analysis for 006721523-06. Kepler magnitude: 12.21. Transit SNR 7.29

There are 5 quarters with good PRF difference image offsets

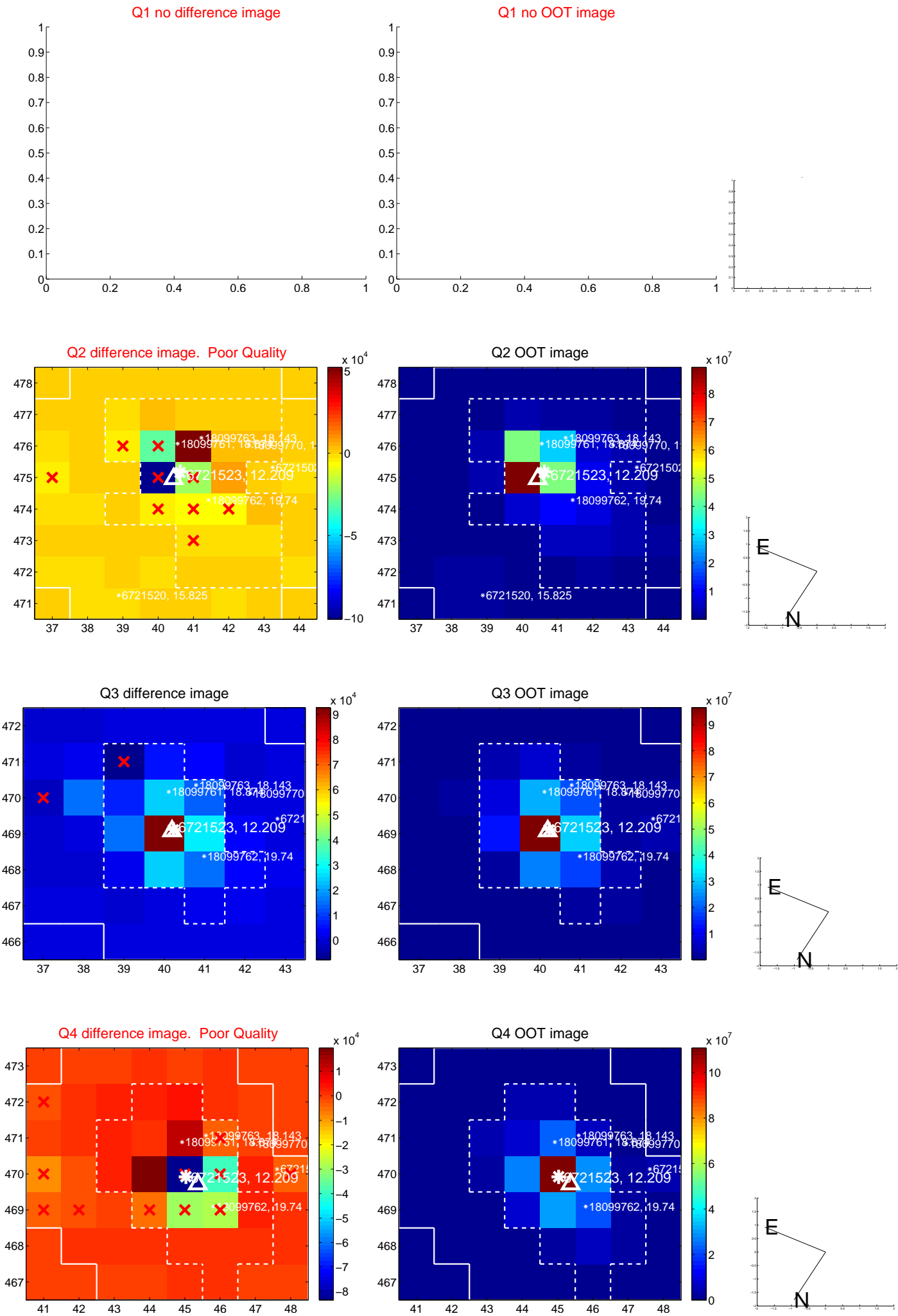
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.278 ± 0.525	0.53	-0.278 ± 0.526	-0.003 ± 0.243
PRF-fit source offset from KIC position	0.295 ± 0.480	0.61	-0.293 ± 0.488	-0.029 ± 0.216
photometric centroid source offset	1.49 ± 0.65	2.31	-1.39 ± 0.65	0.55 ± 0.61

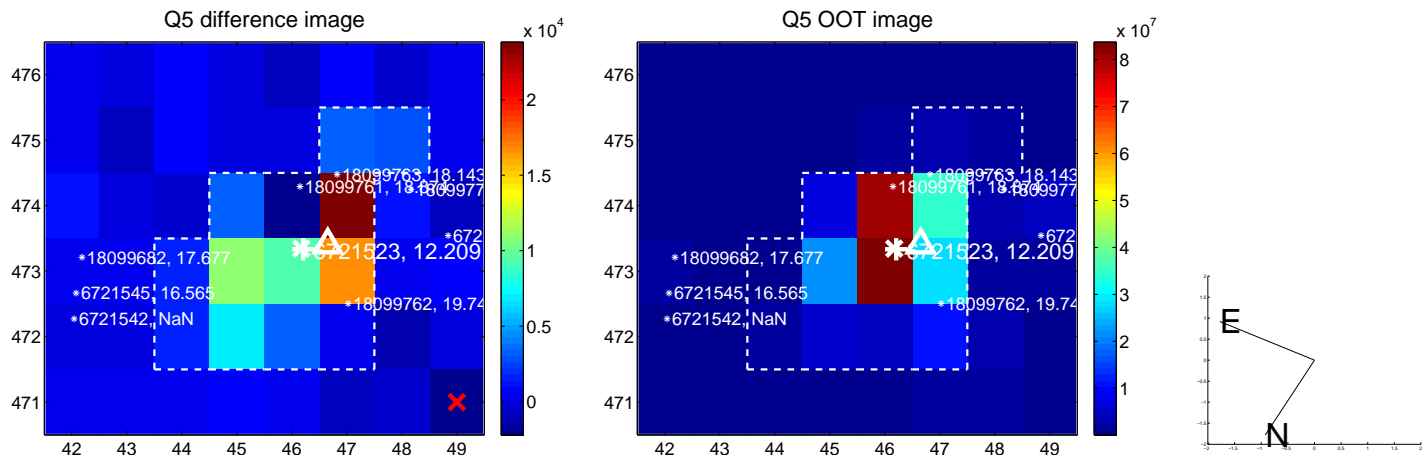


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

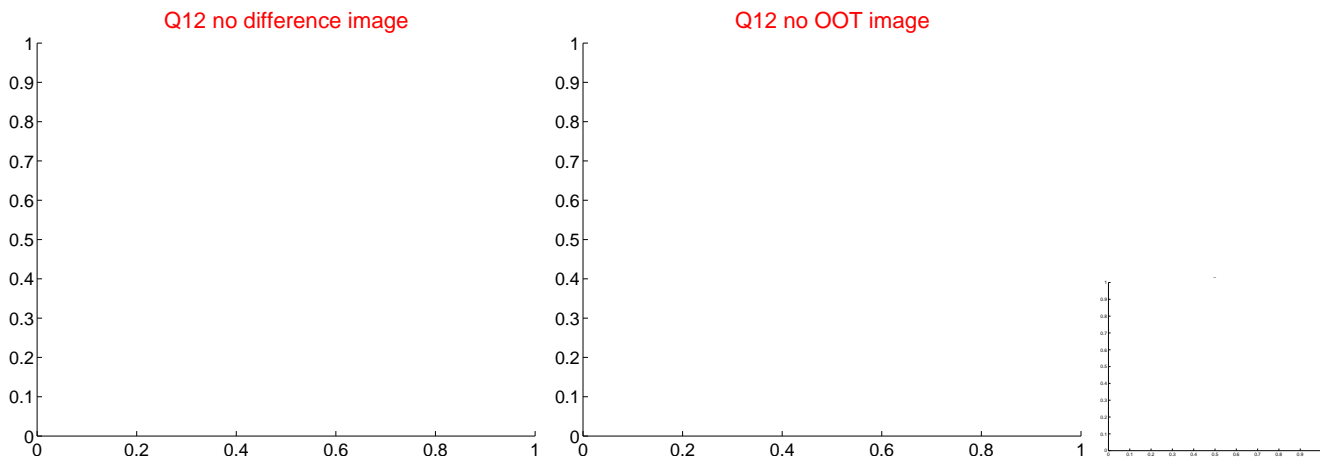
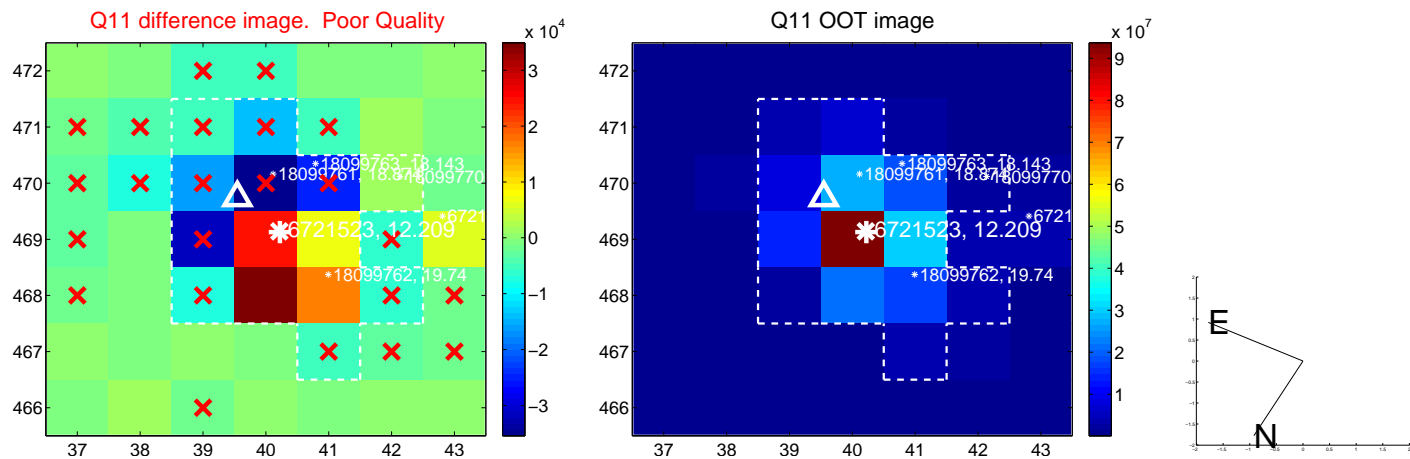
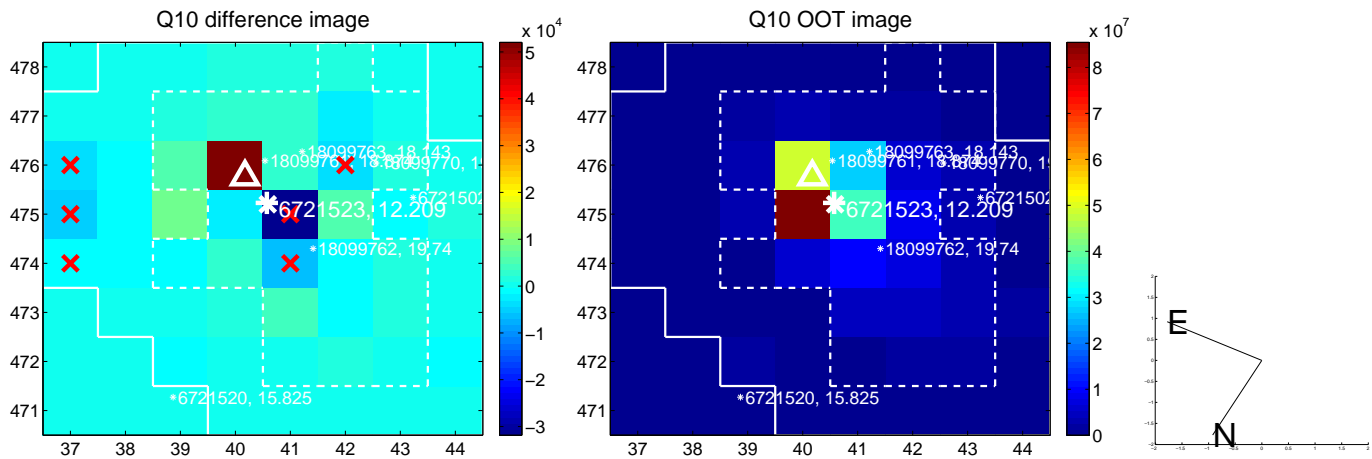
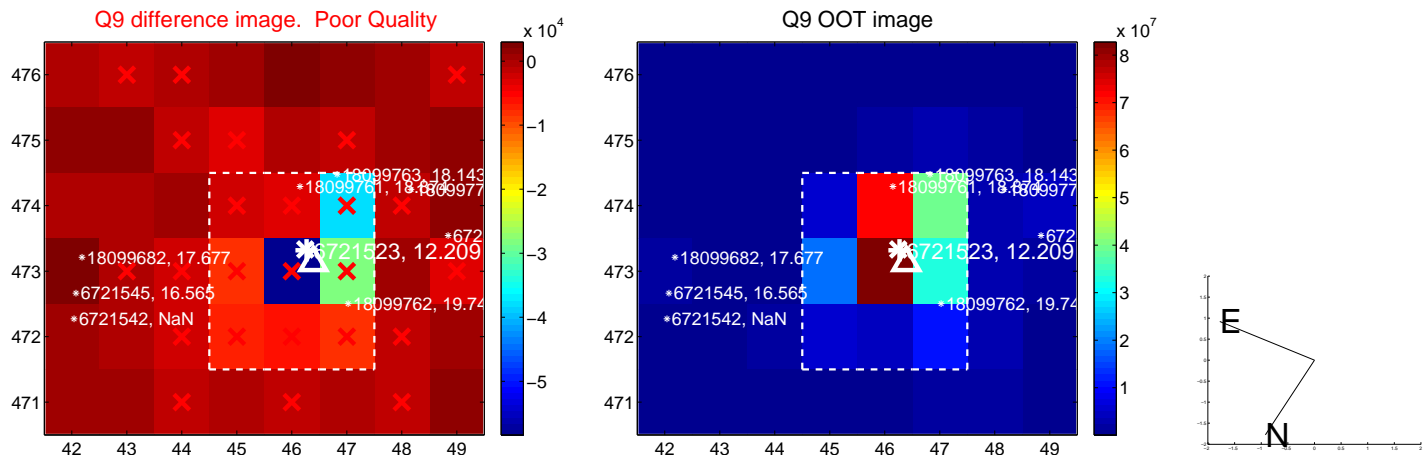
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



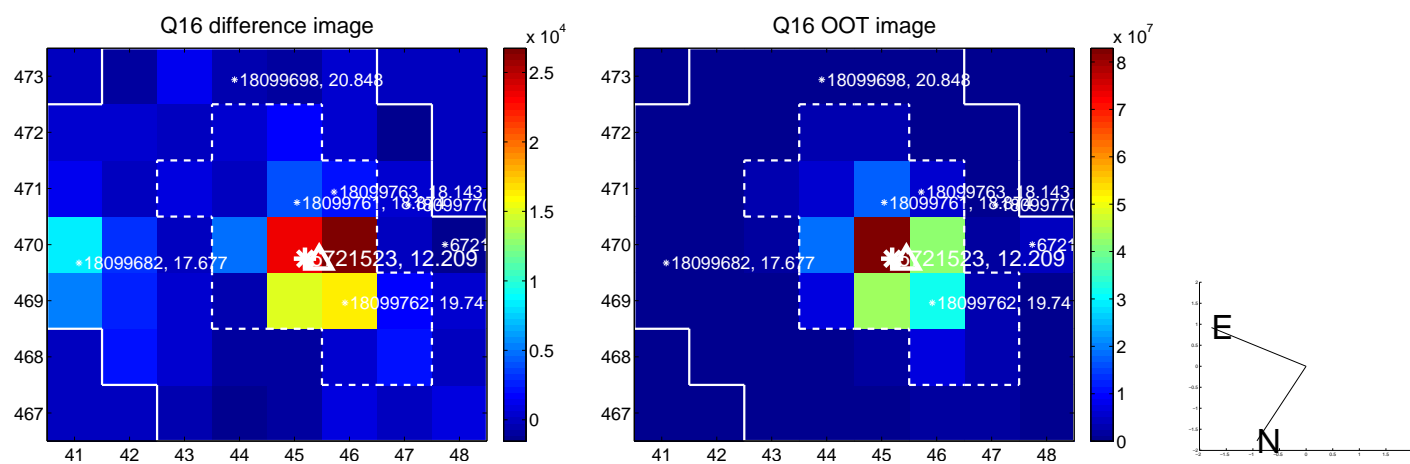
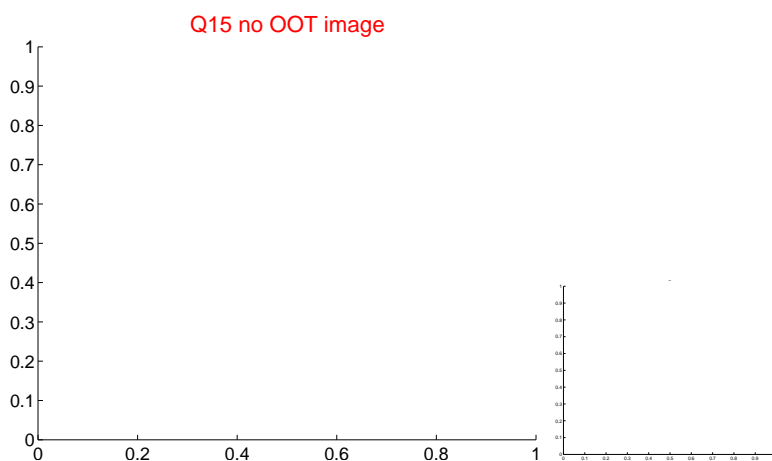
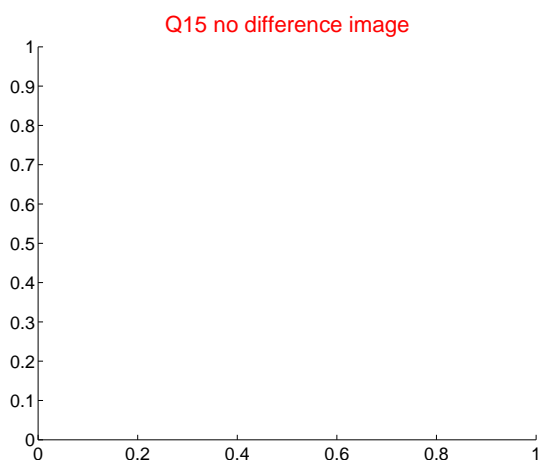
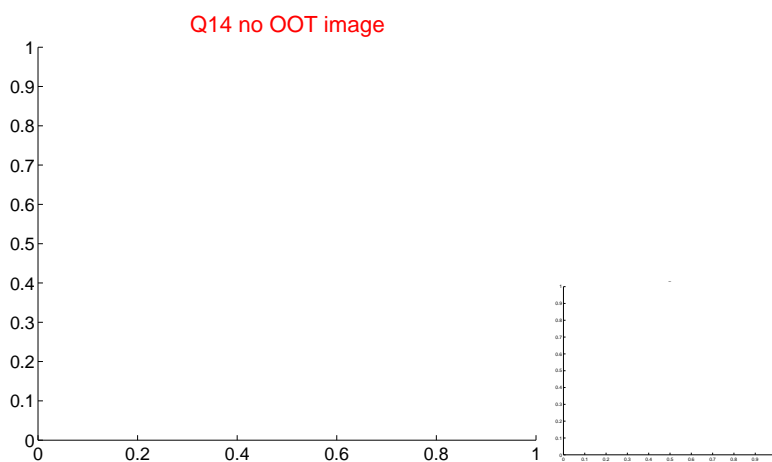
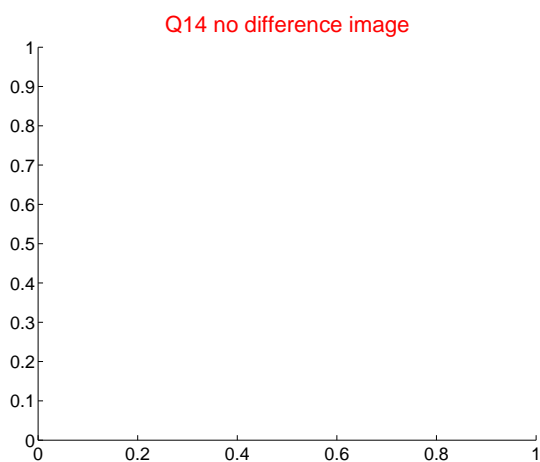
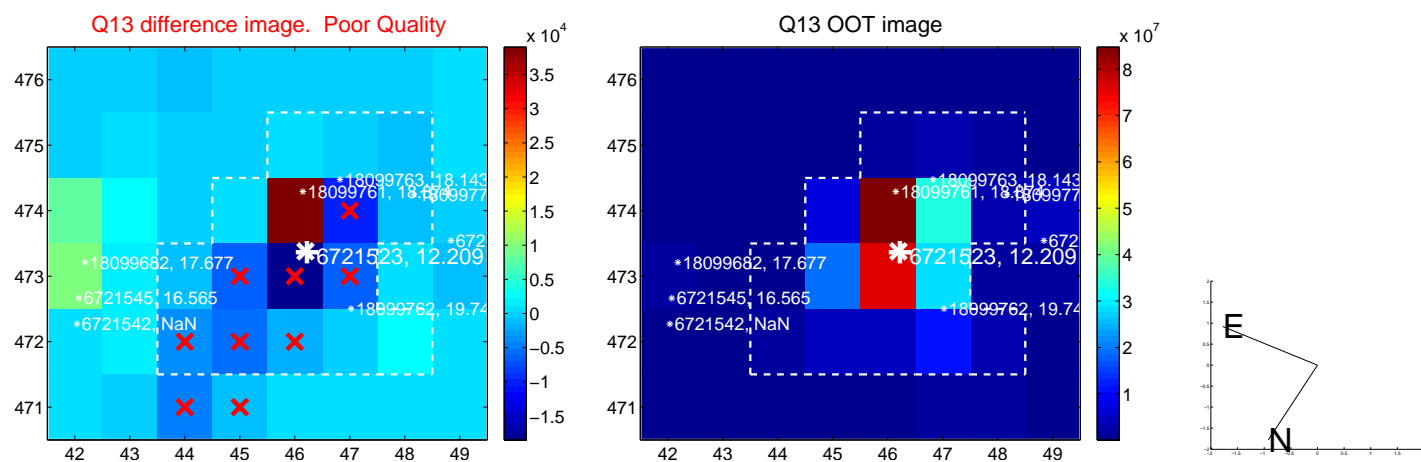
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



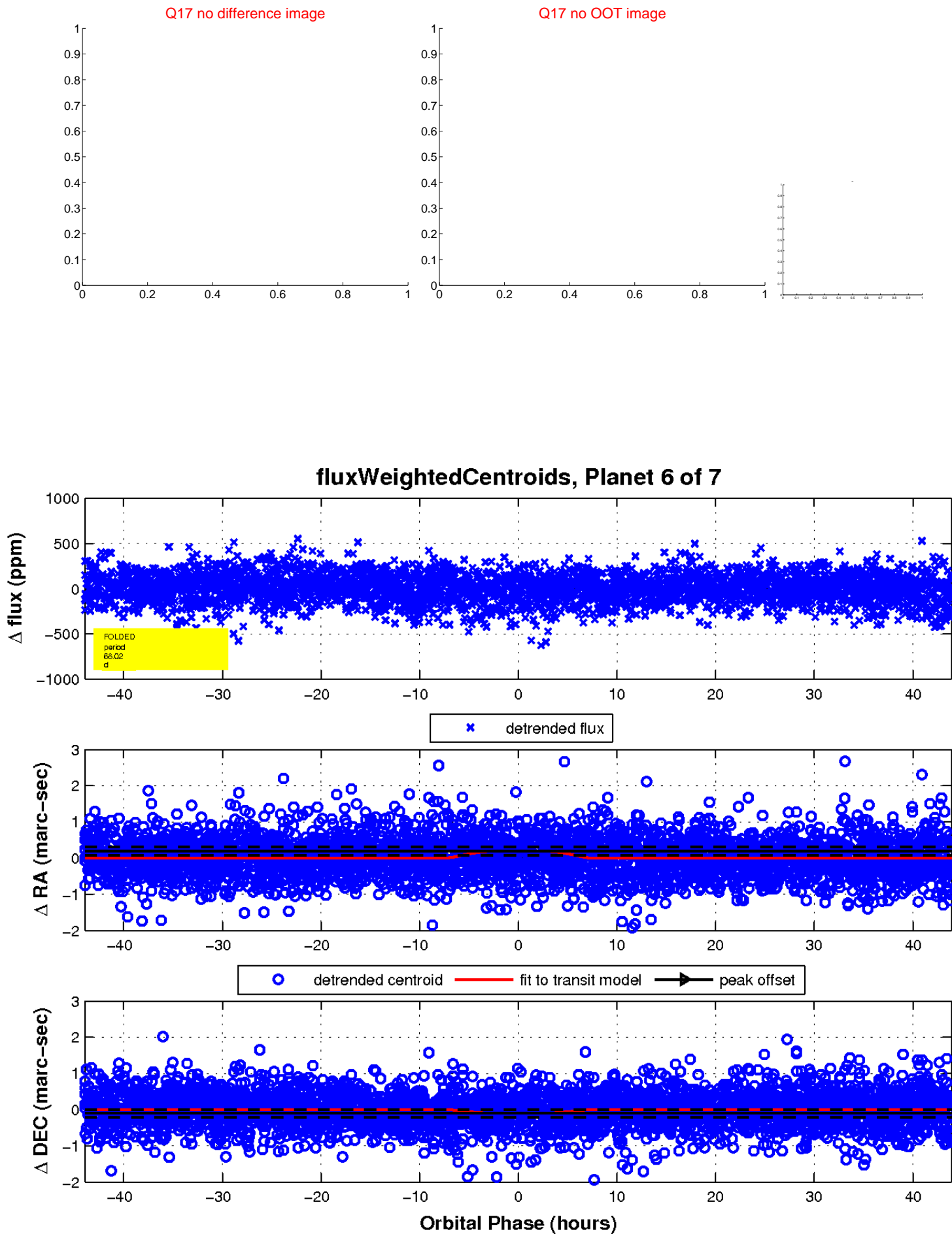
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

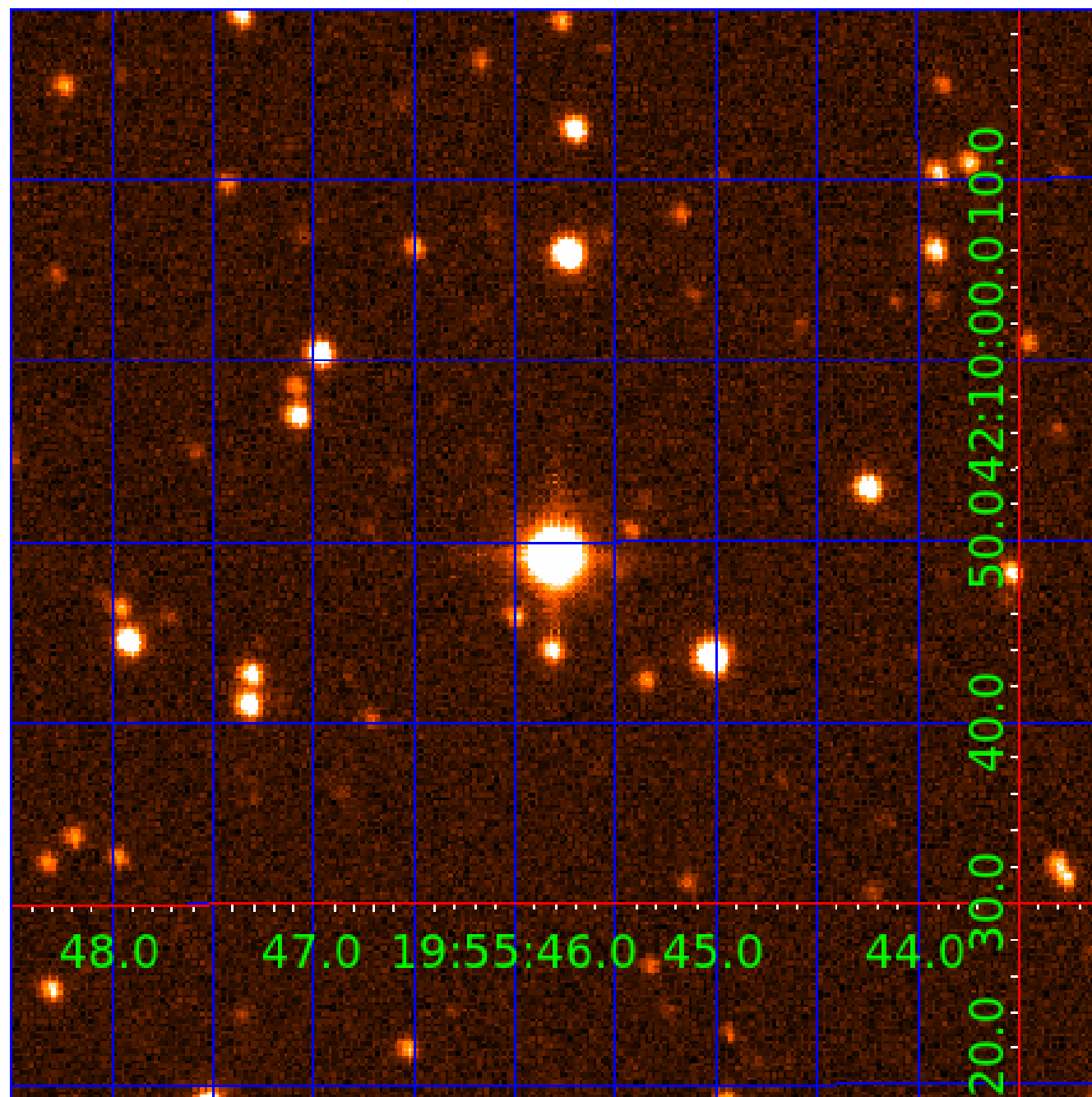


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006721523

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})
006721523-01	OBS	No	2.582741	133.750098	51.6	7.849	11.3	12.7	4.86	6697	7.05	19471.46
006721523-02	OBS	No	0.804022	132.191771	24.6	3.400	10.8	10.6	4.86	6697	2.82	0.00
006721523-03	OBS	No	253.616155	295.821943	320.7	9.253	9.5	8.6	4.86	6697	9.00	42.98
006721523-04	OBS	No	121.015623	174.419378	191.8	13.243	9.1	7.1	4.86	6697	7.44	115.27
006721523-05	OBS	No	182.253762	293.333193	173.4	13.771	9.3	5.2	4.86	6697	7.42	66.77
006721523-06	OBS	No	68.022163	182.447275	171.6	14.651	9.0	7.3	4.86	6697	8.32	248.49
006721523-07	OBS	No	94.088726	165.233179	176.1	4.500	8.4	-1.0	4.86	6697	6.50	161.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006721523-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
006721523-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006721523-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNCERTAIN
006721523-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006721523-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
006721523-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006721523-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

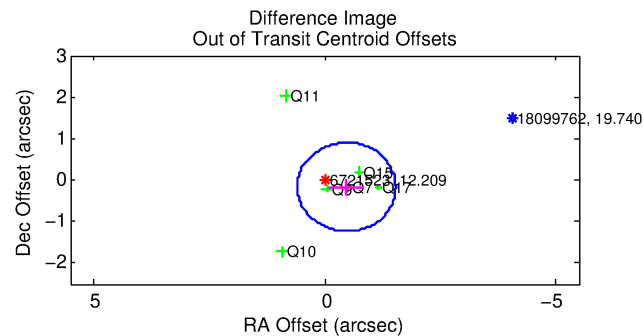
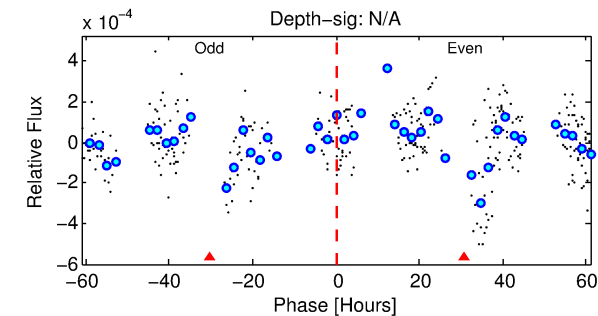
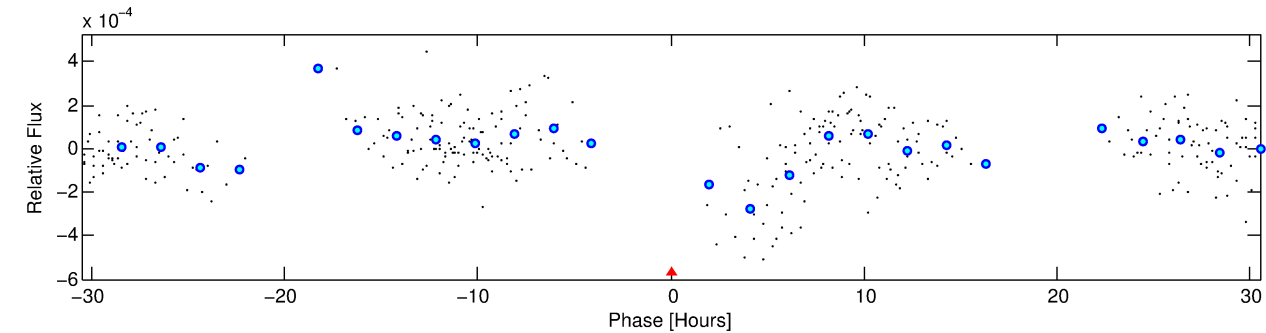
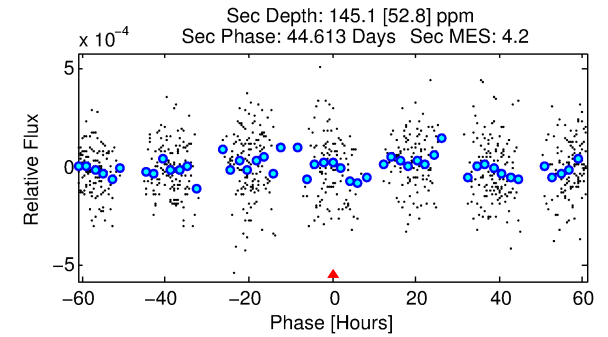
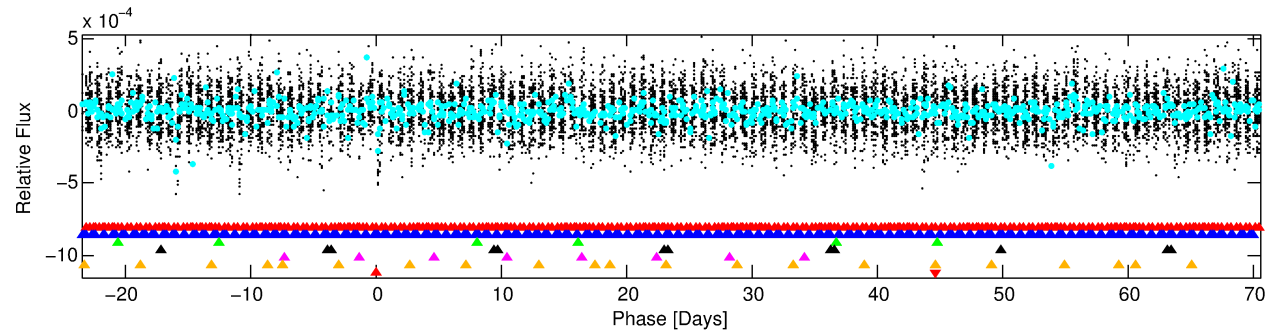
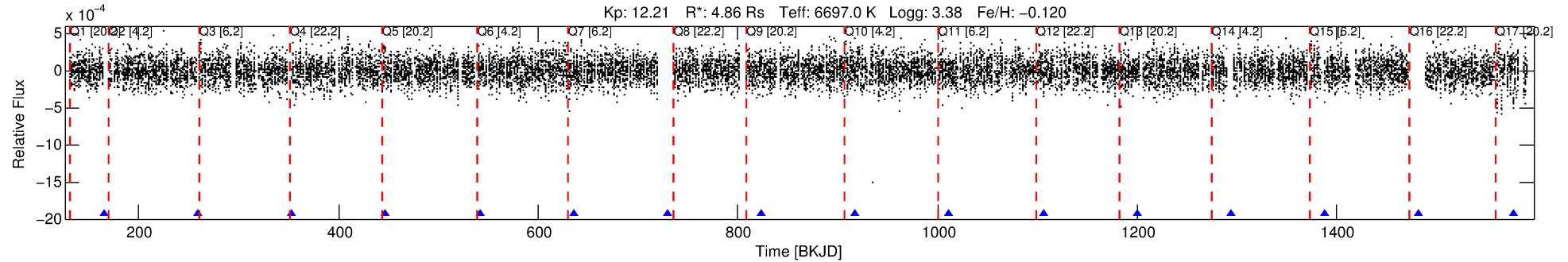
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006721523-07

No Significant Match Found

DV One-Page Summary

KIC: 6721523 Candidate: 7 of 7 Period: 94.089 d



TPS TCE Results:

Period = 94.08873 d
Epoch = 165.2332 BKJD

DV fit results are unavailable

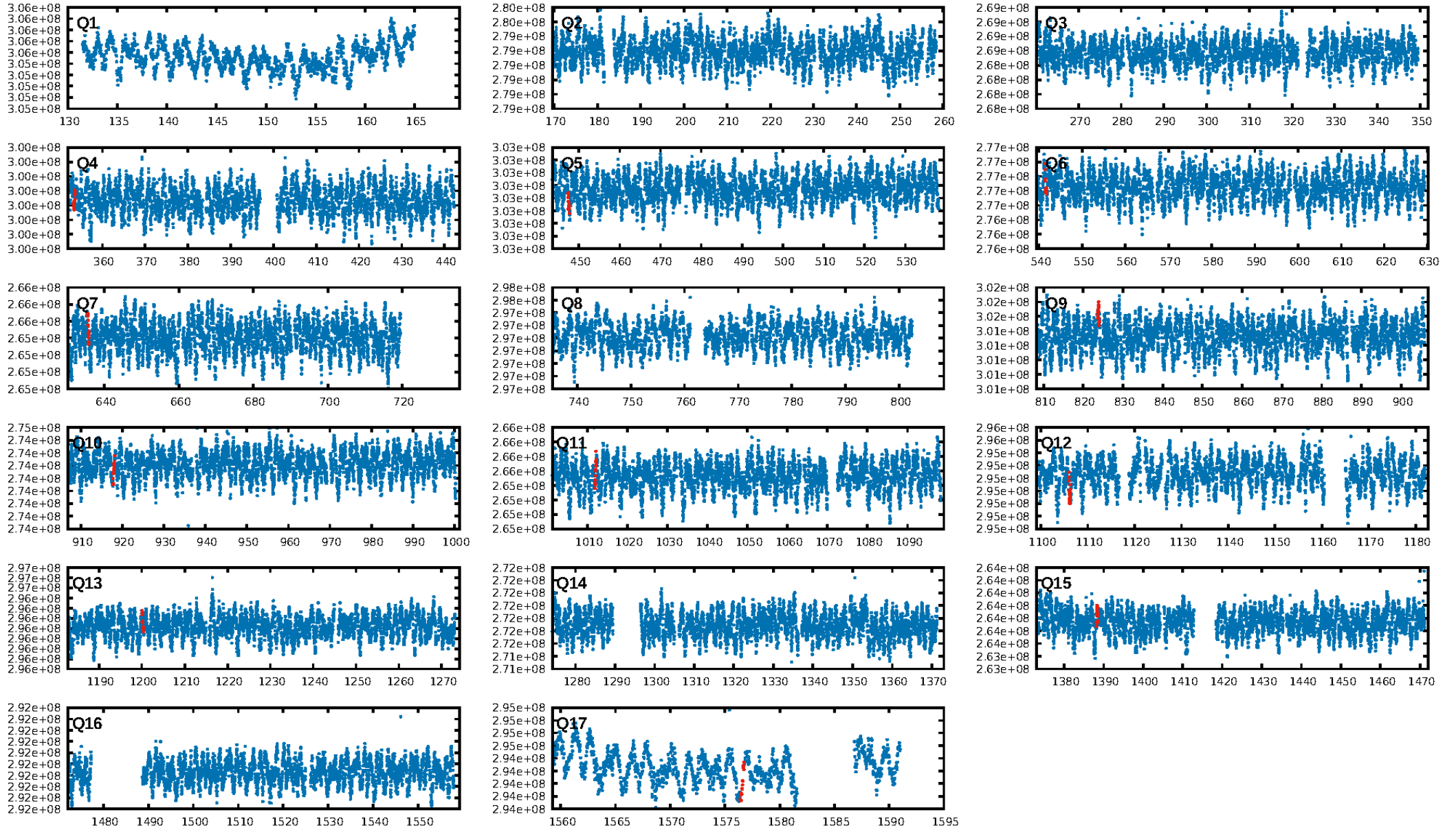
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [40.82σ]
LongPeriod-sig: 100.0% [46.20σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -0.5954
Centroid-sig: 5.5%
Centroid-so: 0.390 arcsec [1.06σ]
OotOffset-rm: 0.498 arcsec [1.40σ]
KicOffset-rm: 0.620 arcsec [1.70σ]
OotOffset-st: 1/3/0/2 [6]
KicOffset-st: 1/3/0/2 [6]
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DiffImageOverlap-fno: 0.00 [0/9]

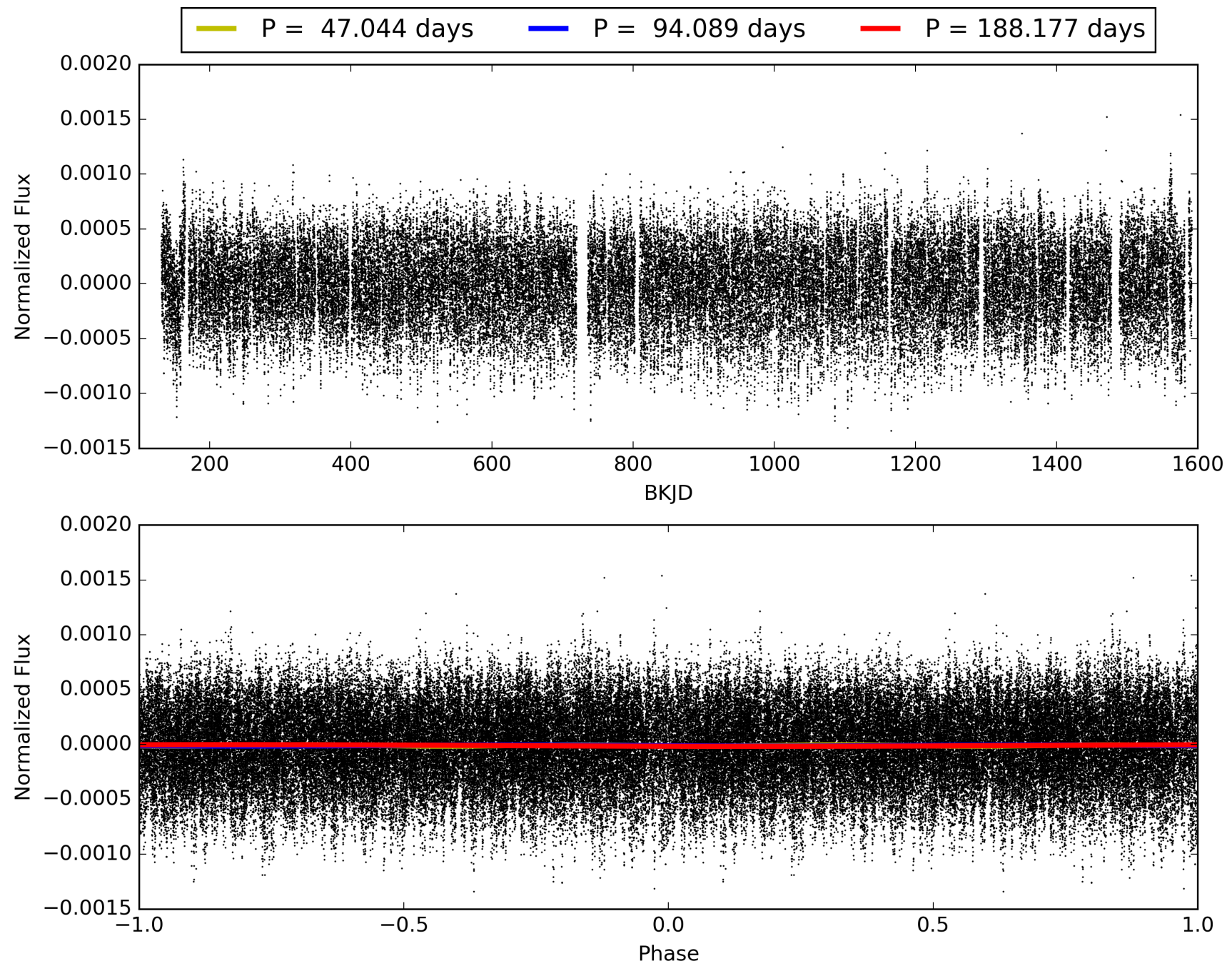
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:01:32 Z

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

TCE 006721523-07, PDC Light Curves

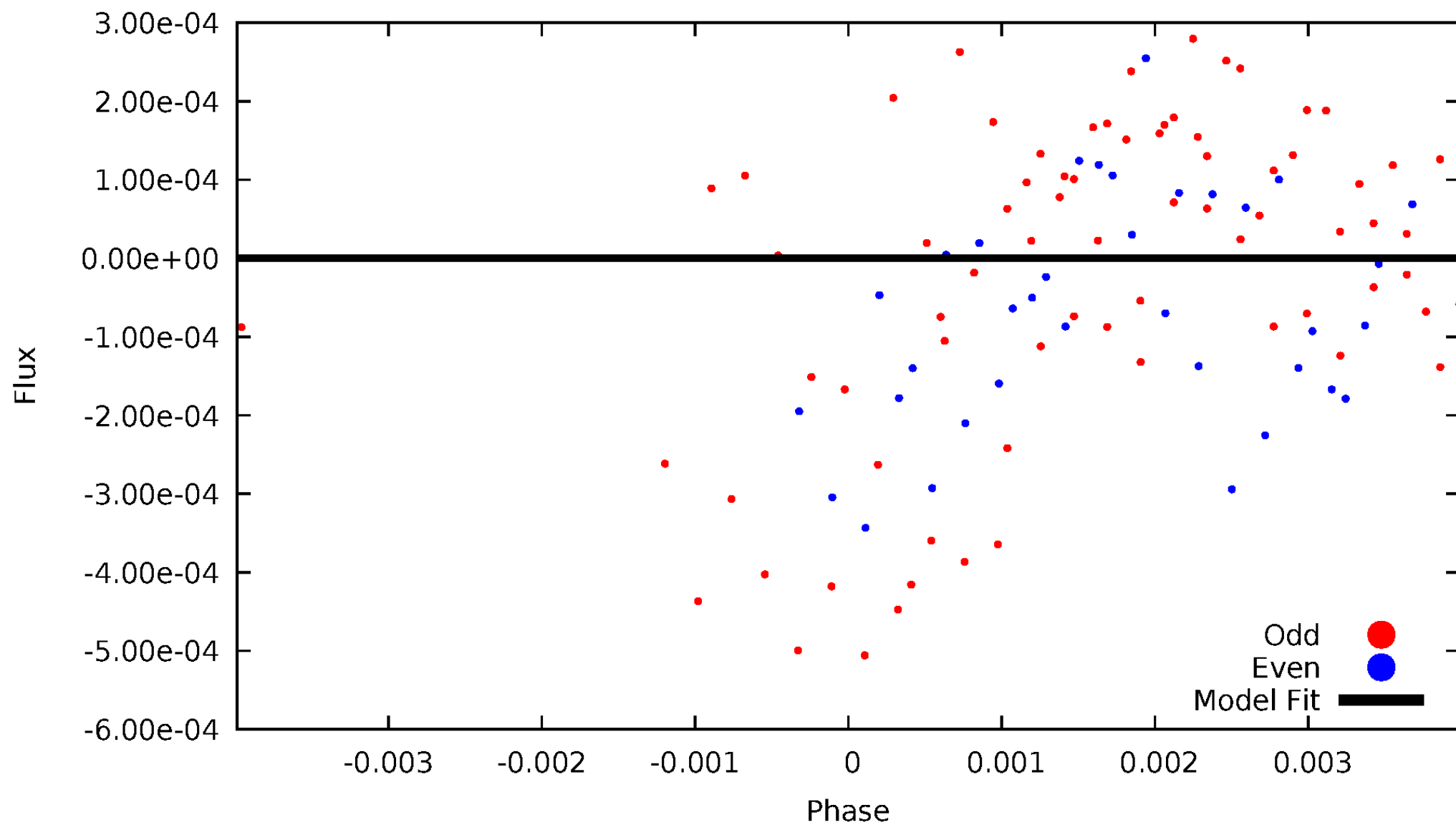


TCE 006721523-07



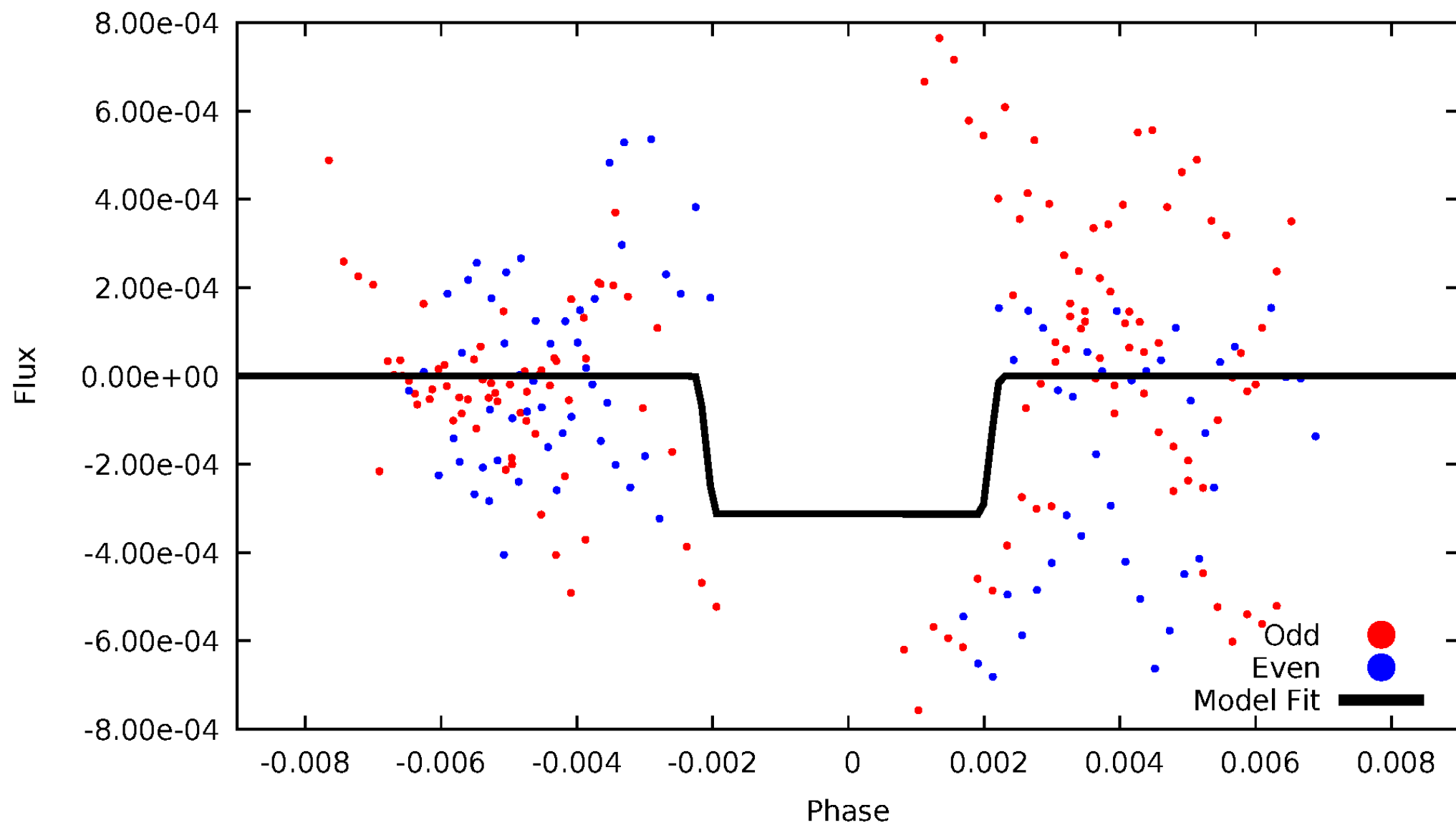
DV Odd/Even

TCE 006721523-07

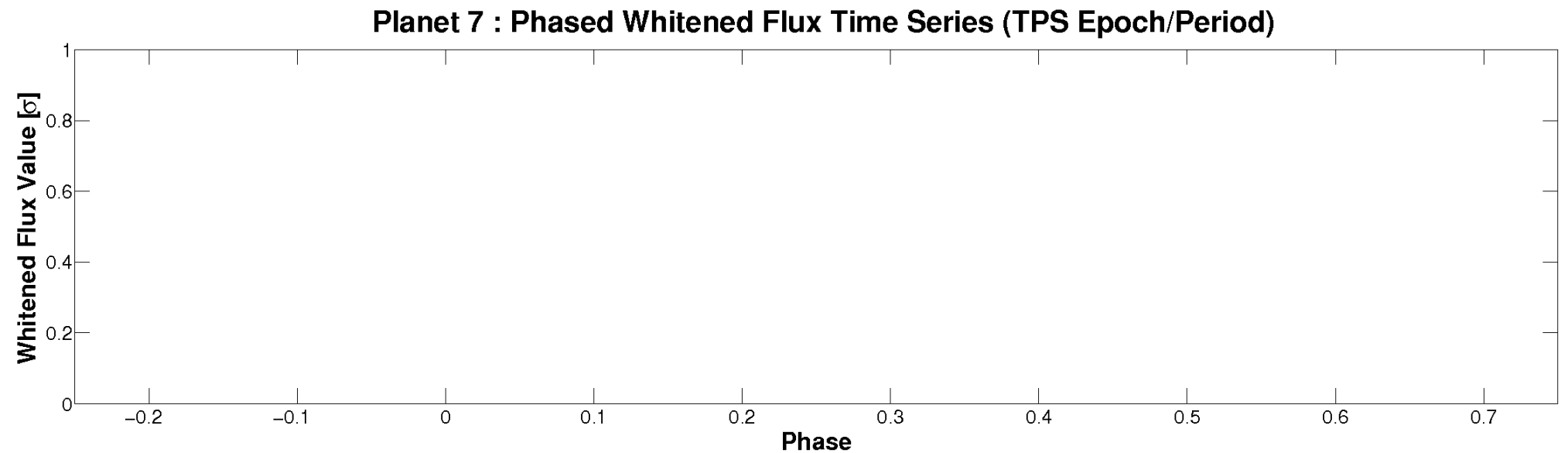
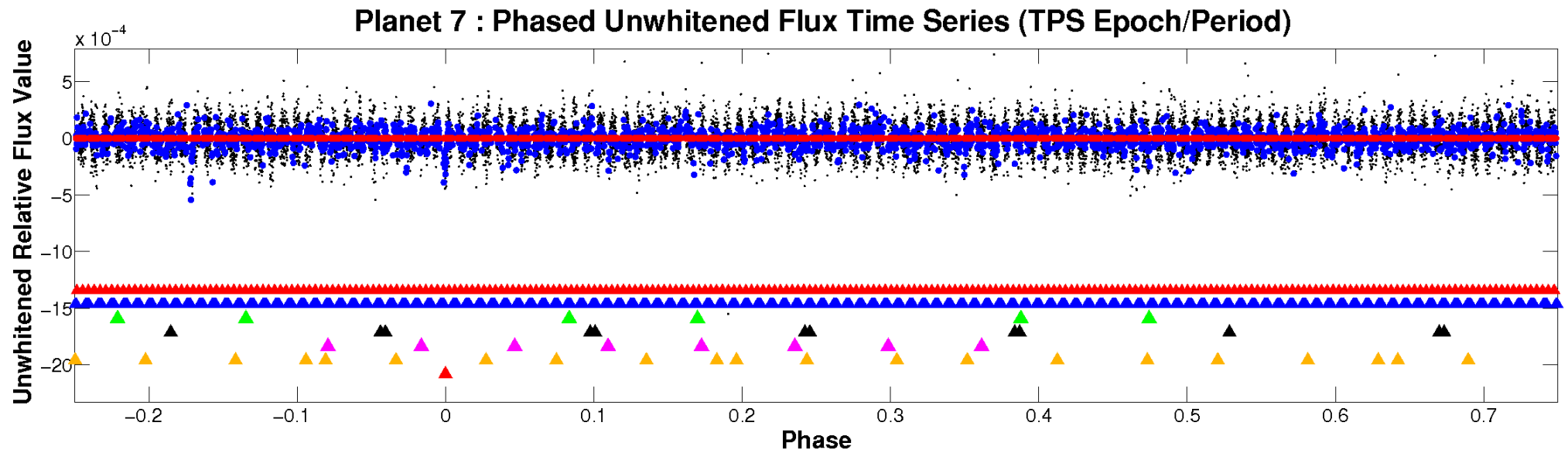


ALT Odd/Even

TCE 006721523-07

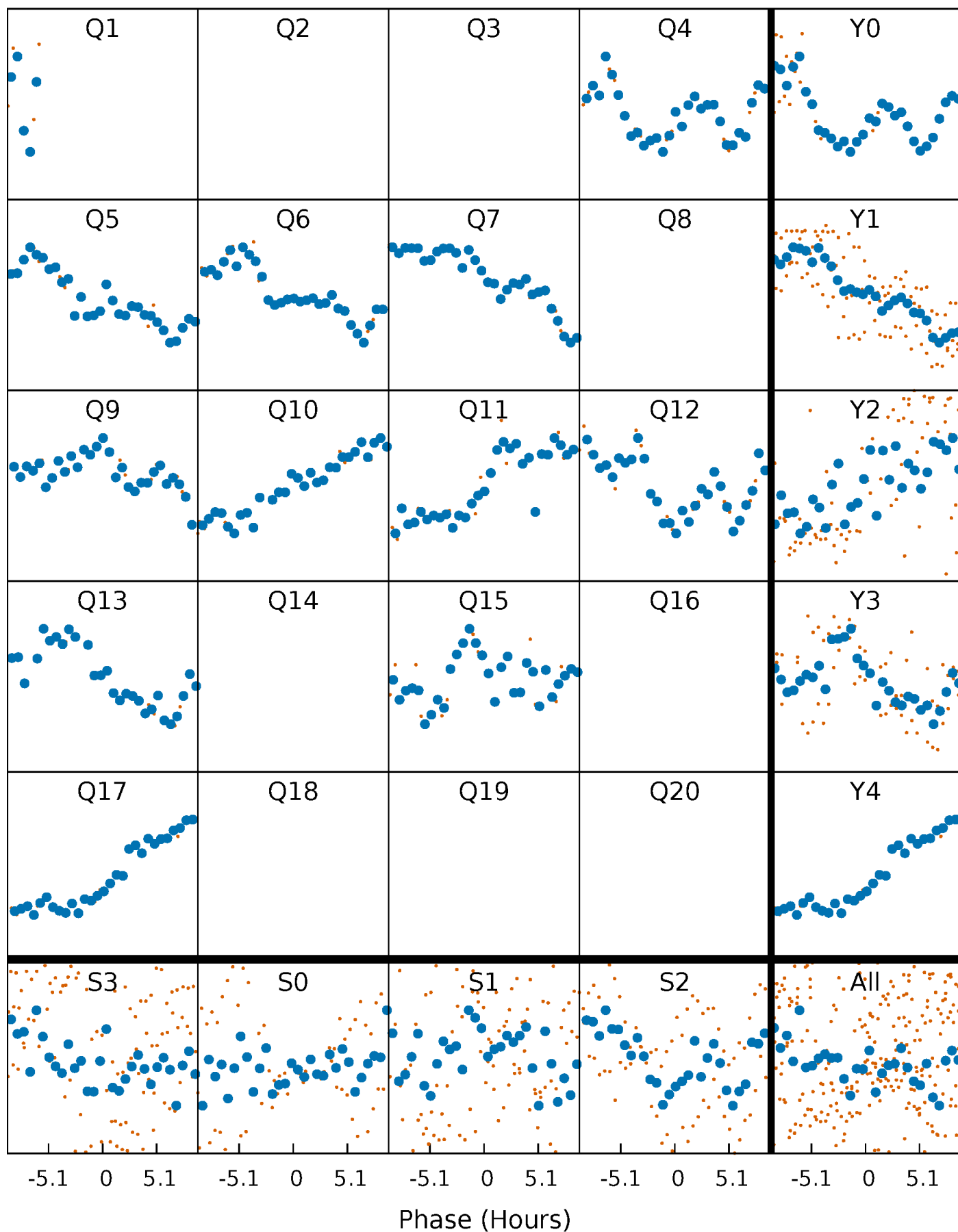


Non-Whitened Vs. Whitened Light Curve



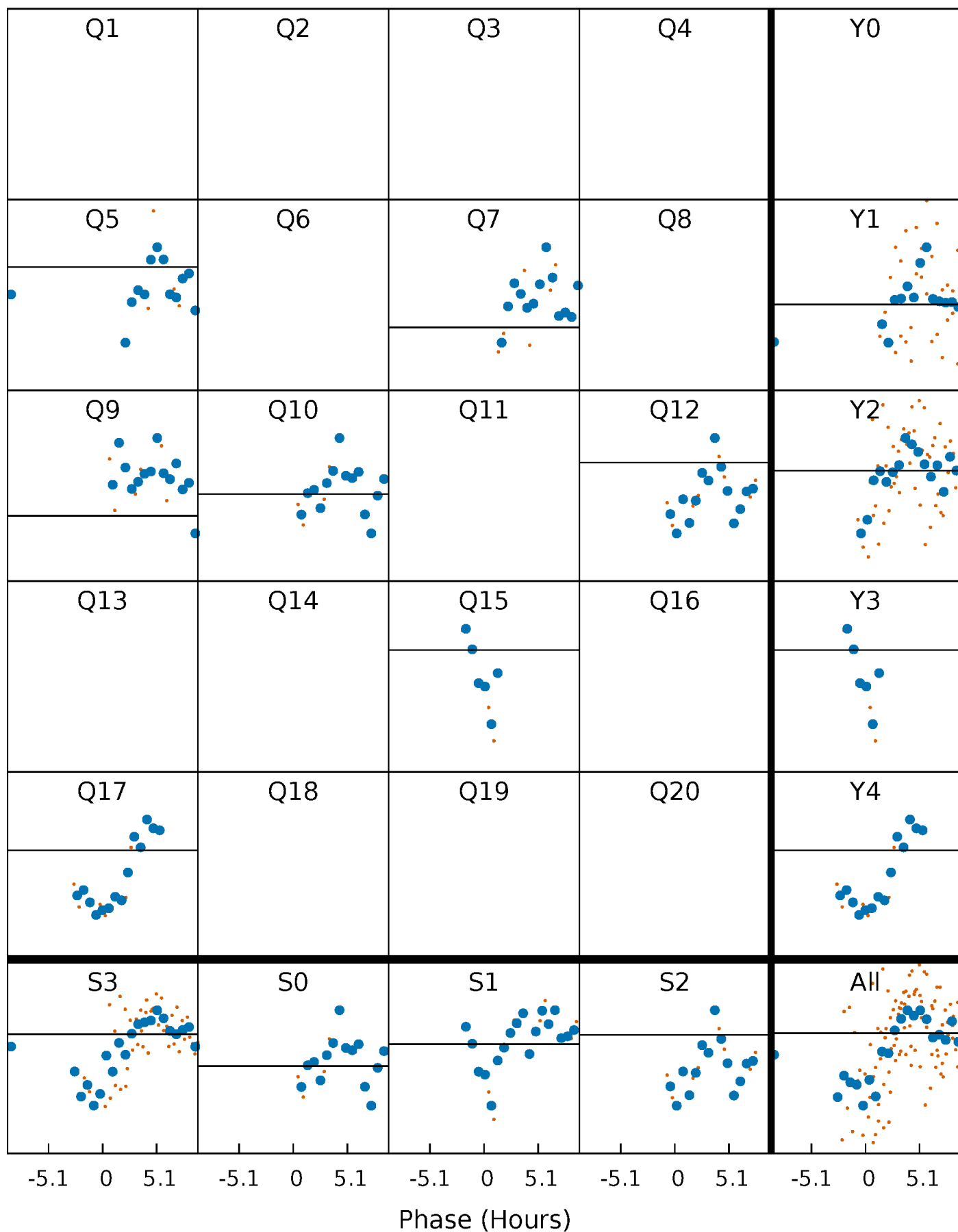
PDC Quarter-Phased Transit Curves

TCE 006721523-07 P= 94.088726 Days $T_0=165.233179$ (BKJD)



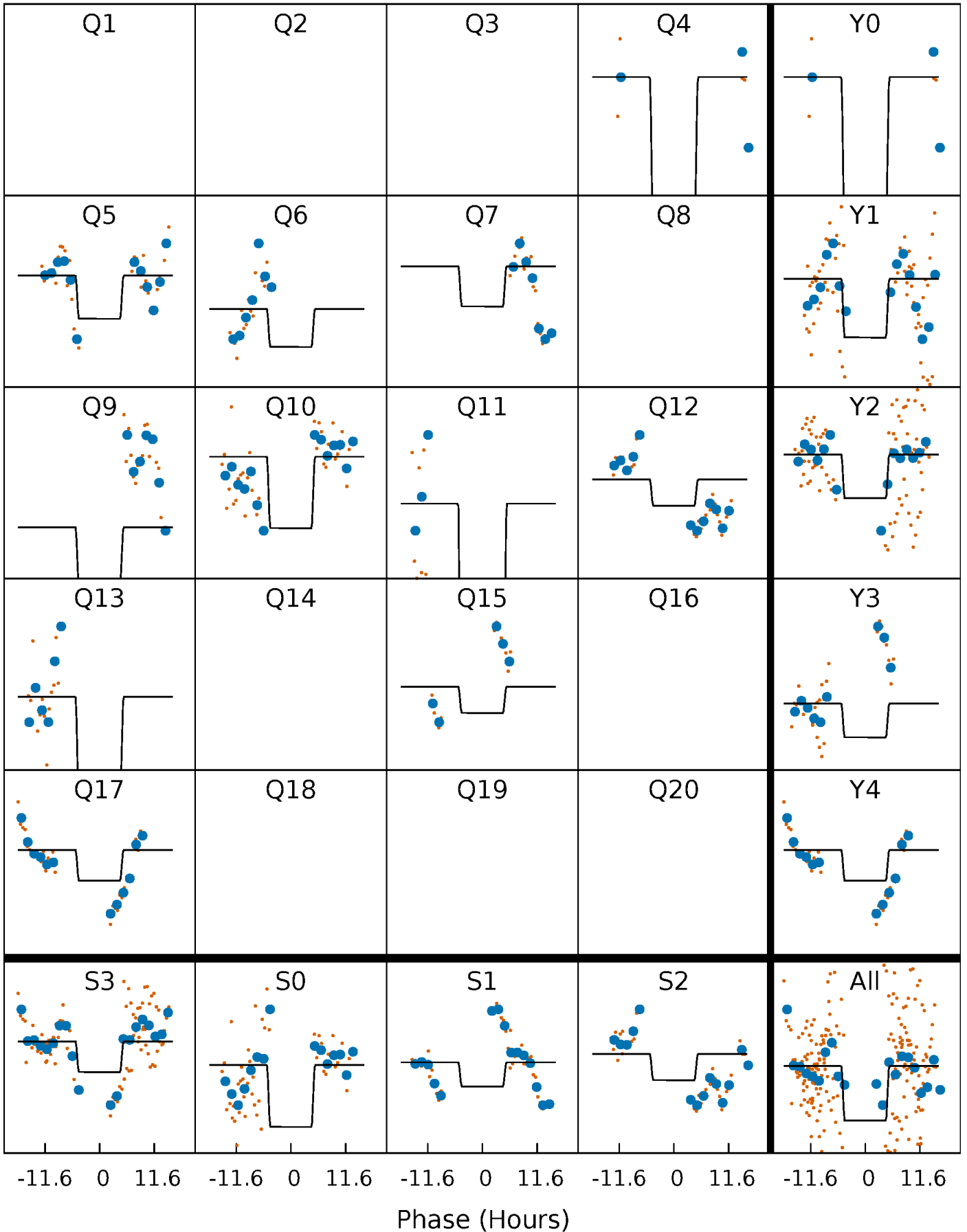
DV Quarter-Phased Transit Curves

TCE 006721523-07 P= 94.088726 Days $T_0=165.233179$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

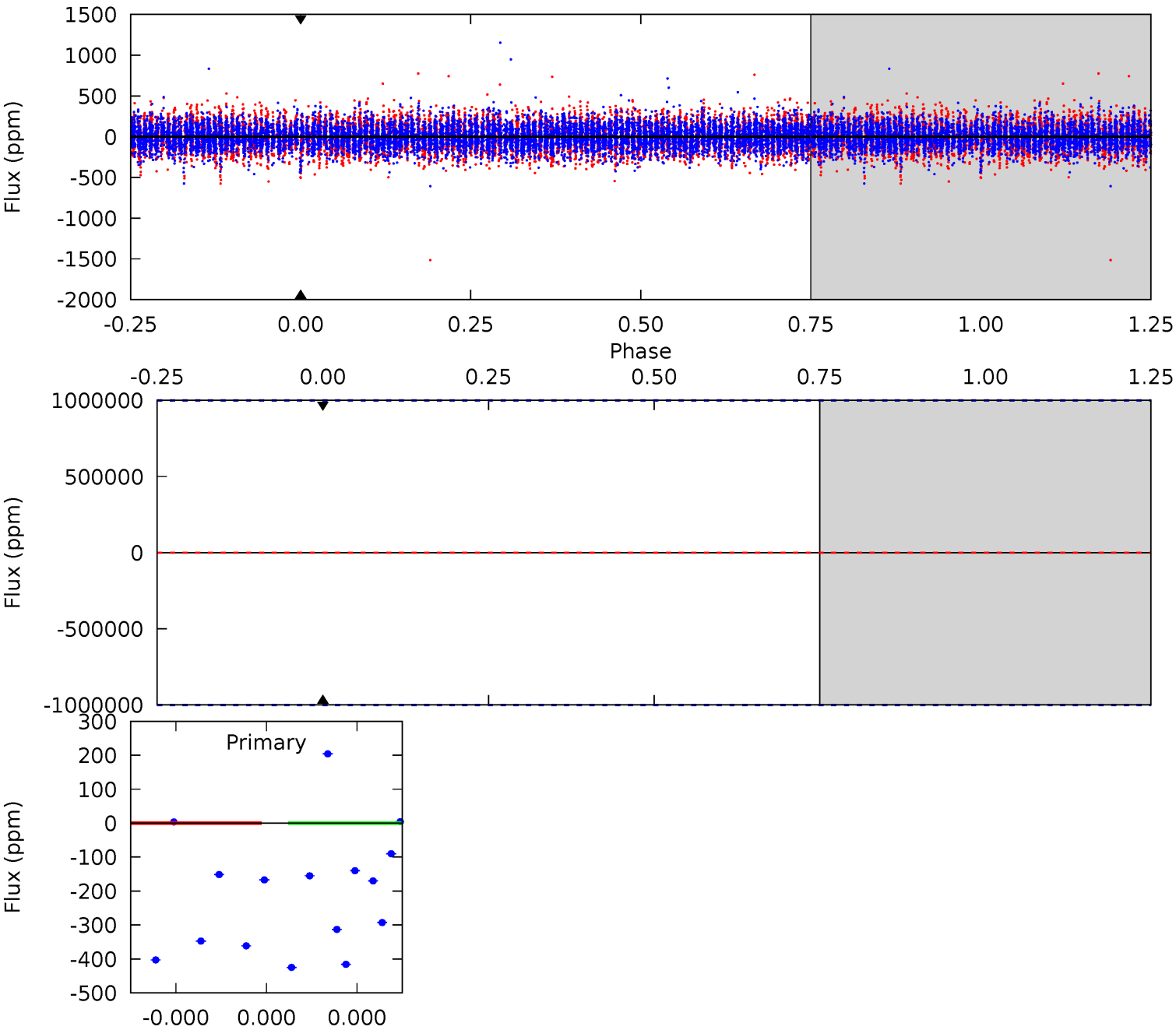
TCE 006721523-07 $P = 94.088726$ Days $T_0 = 165.043607$ (BKJD)



DV Model-Shift Uniqueness Test

006721523-07, P = 94.088726 Days, E = 71.144453 Days

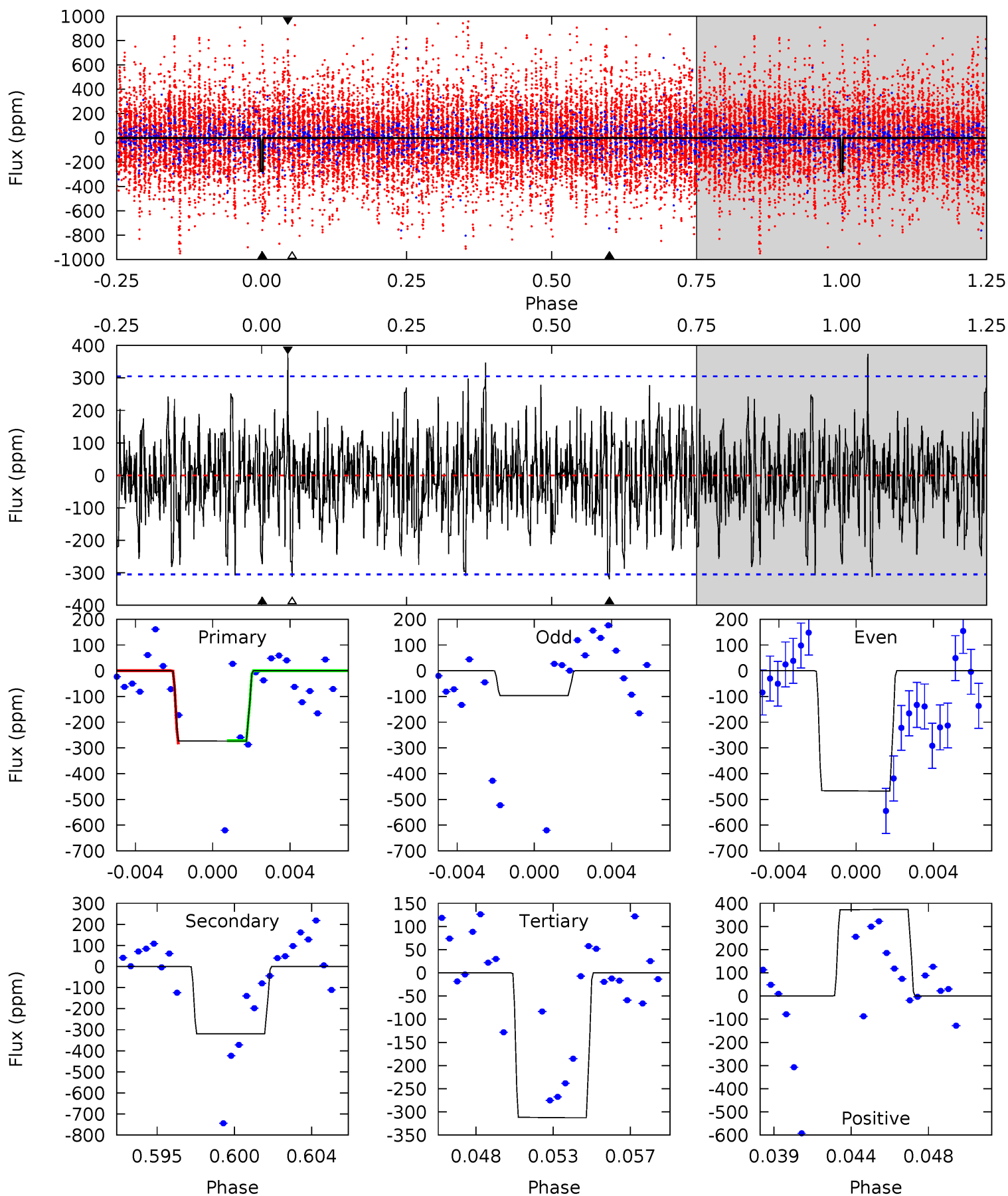
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

006721523-07, P = 94.088726 Days, E = 70.954881 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.65	5.43	5.31	6.35	5.18	2.85	1.44	-0.67	-1.70	0.12	-0.91	3.02	0.33	0.54	0.08



Stellar Parameters For KIC 006721523

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6697^{+180}_{-200}	$3.375^{+0.369}_{-0.062}$	$-0.120^{+0.300}_{-0.250}$	$4.860^{+0.335}_{-1.896}$	$2.042^{+0.091}_{-0.366}$	$0.025^{+0.069}_{-0.005}$
	+3%/-3%	+11%/-2%	+250%/-208%	+7%/-39%	+4%/-18%	+277%/-20%
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 006721523-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$33.94^{+36.22}_{-23.19}$	1247^{+60}_{-122}	3071^{+31120}_{-36121}	$9.871^{+24249.401}_{-22531.902}$
Alt.	-320 ± 59	$34.79^{+37.79}_{-23.81}$	1243^{+66}_{-125}	3706^{+2256}_{-739}	38^{+333}_{-30}

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

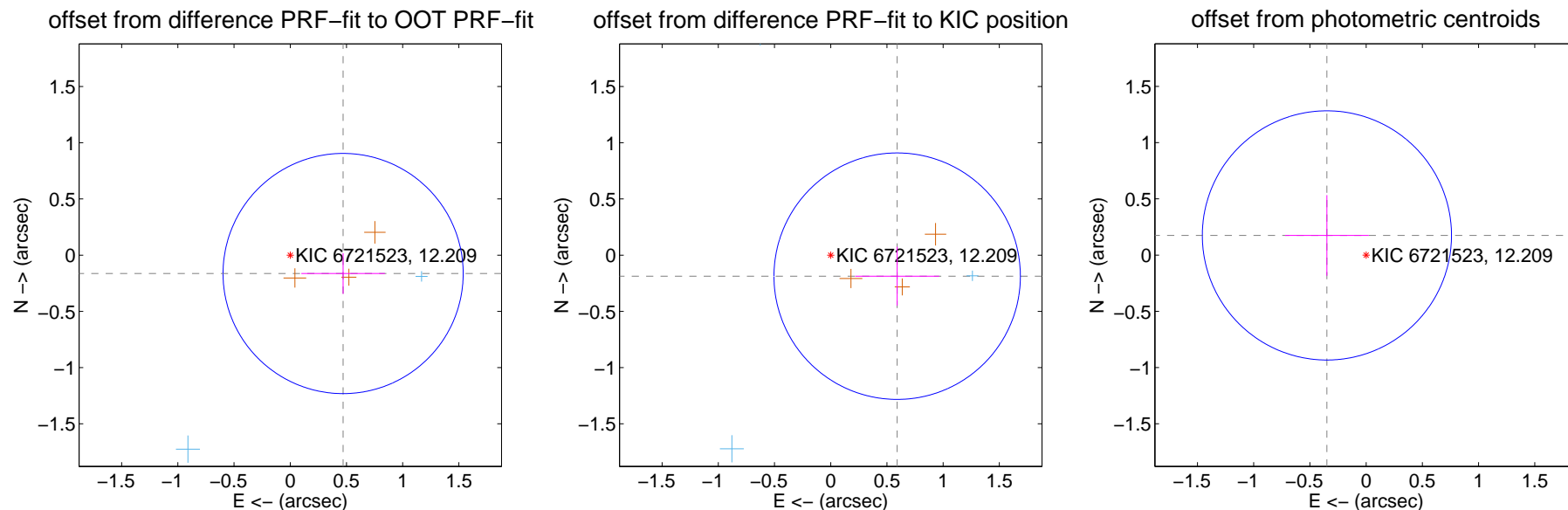
DV Centroid Data

Supplemental centroid analysis for 006721523-07. Kepler magnitude: 12.21. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.498 ± 0.356	1.40	-0.470 ± 0.372	-0.163 ± 0.181
PRF-fit source offset from KIC position	0.620 ± 0.365	1.70	-0.591 ± 0.374	-0.187 ± 0.262
photometric centroid source offset	0.39 ± 0.37	1.06	0.35 ± 0.37	0.17 ± 0.36

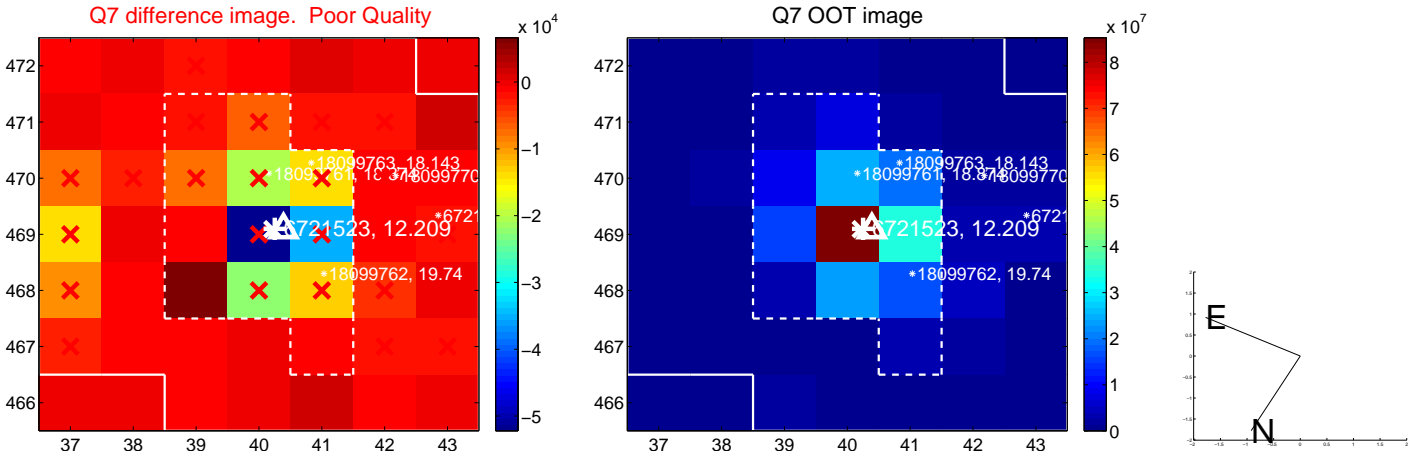
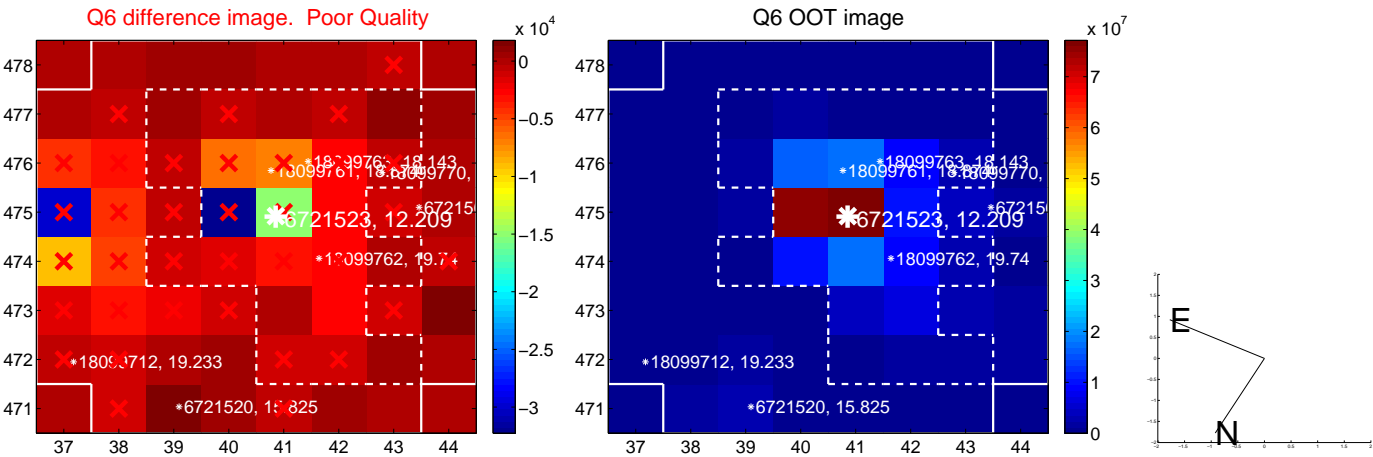
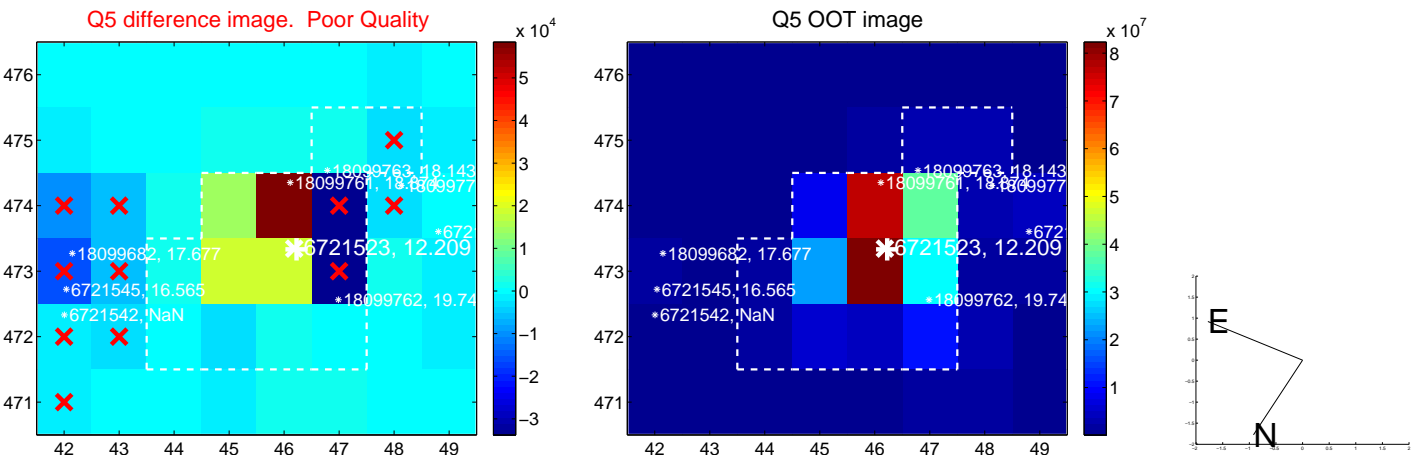


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

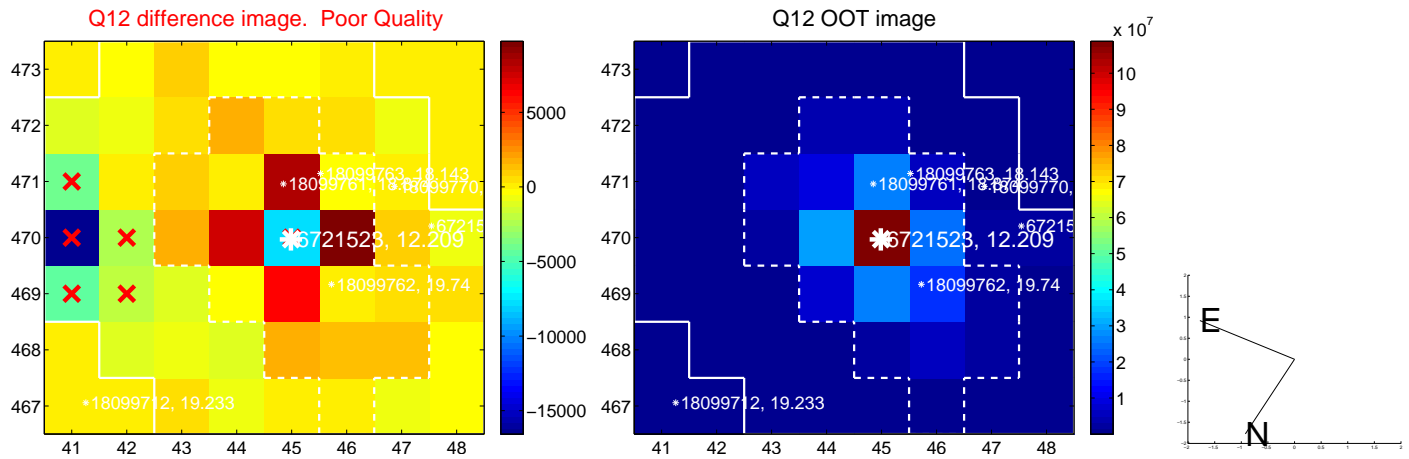
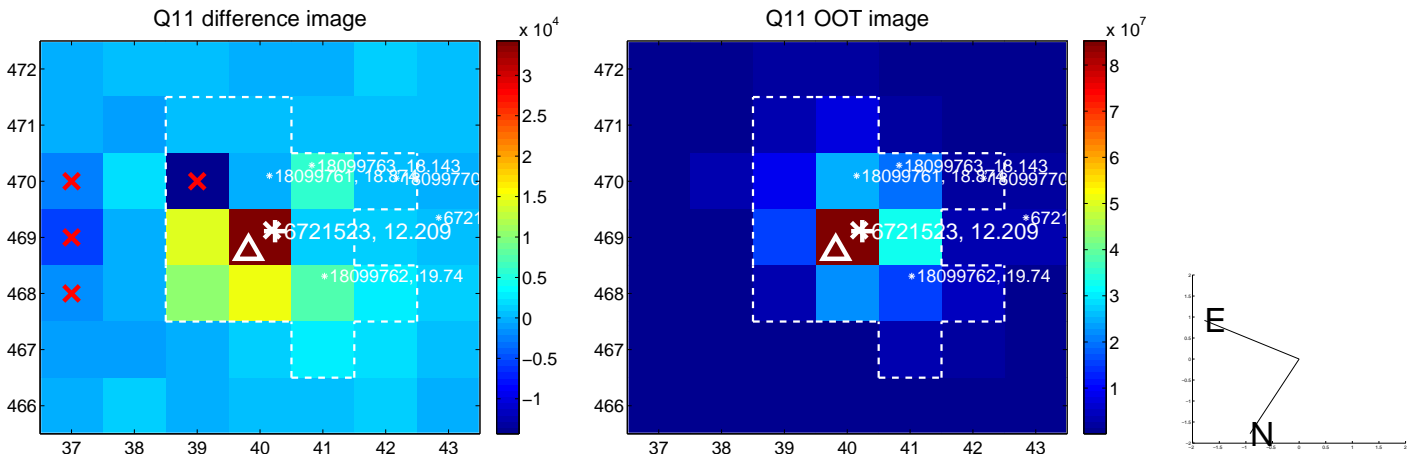
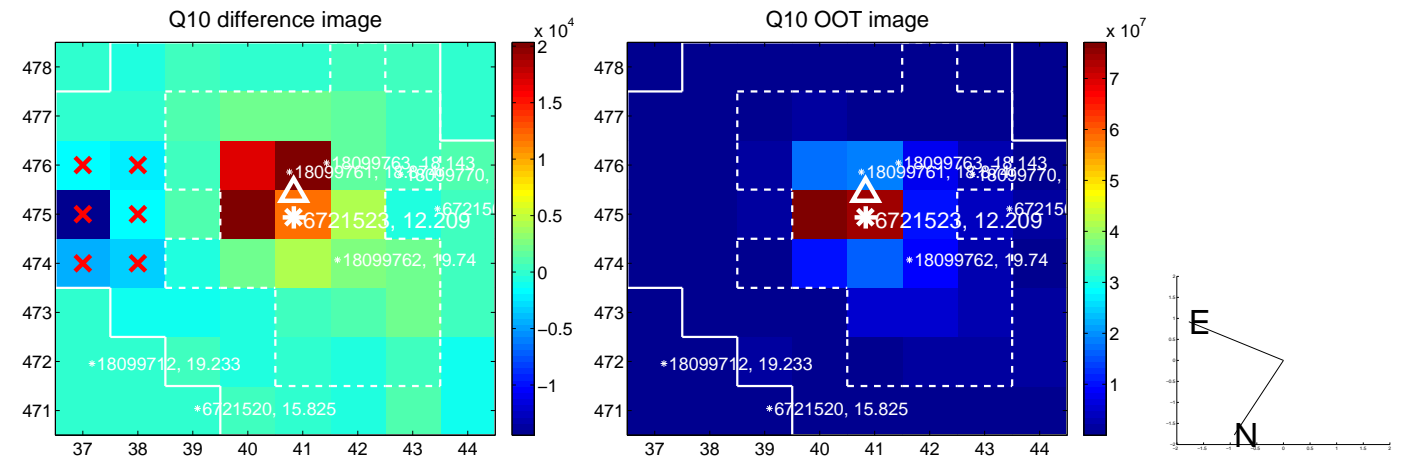
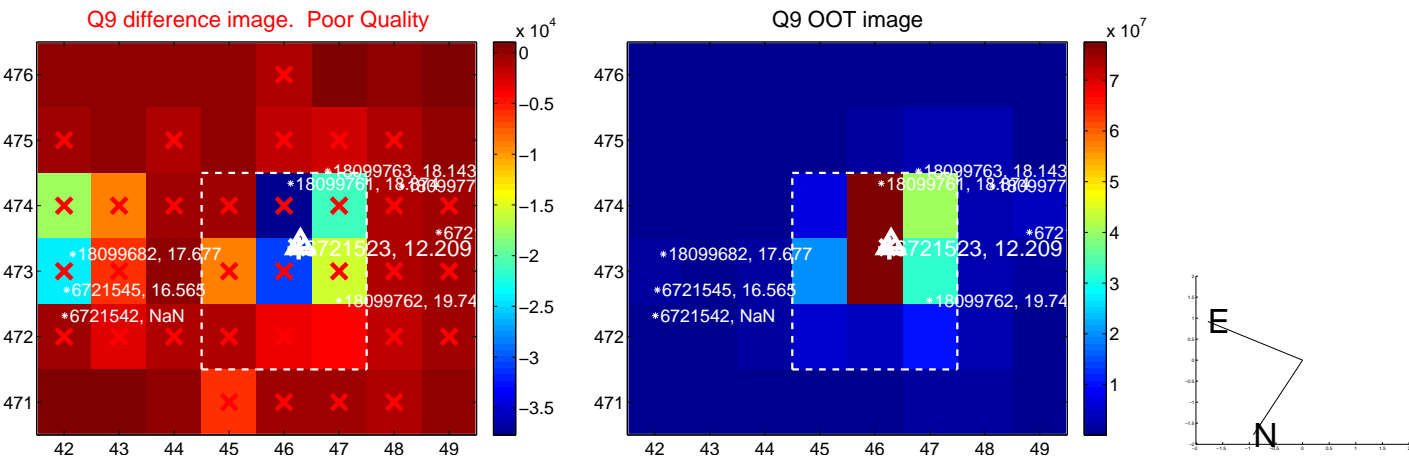
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



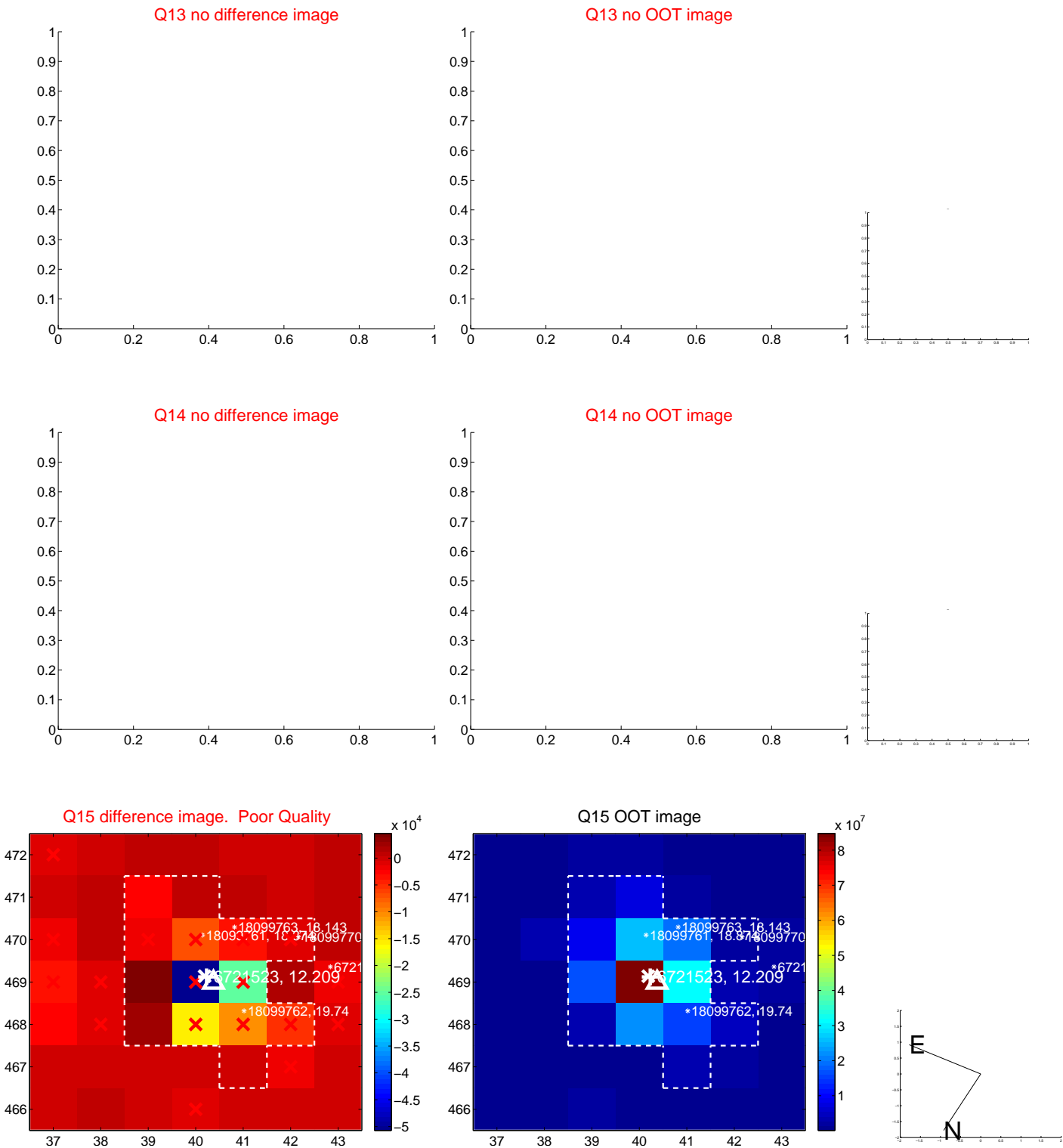
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



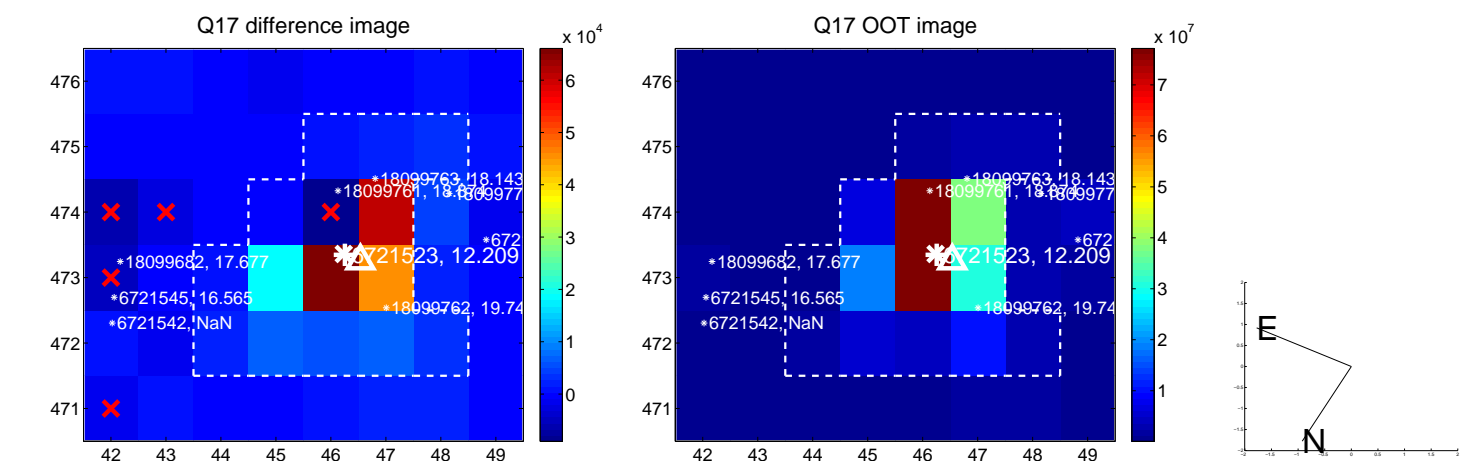
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



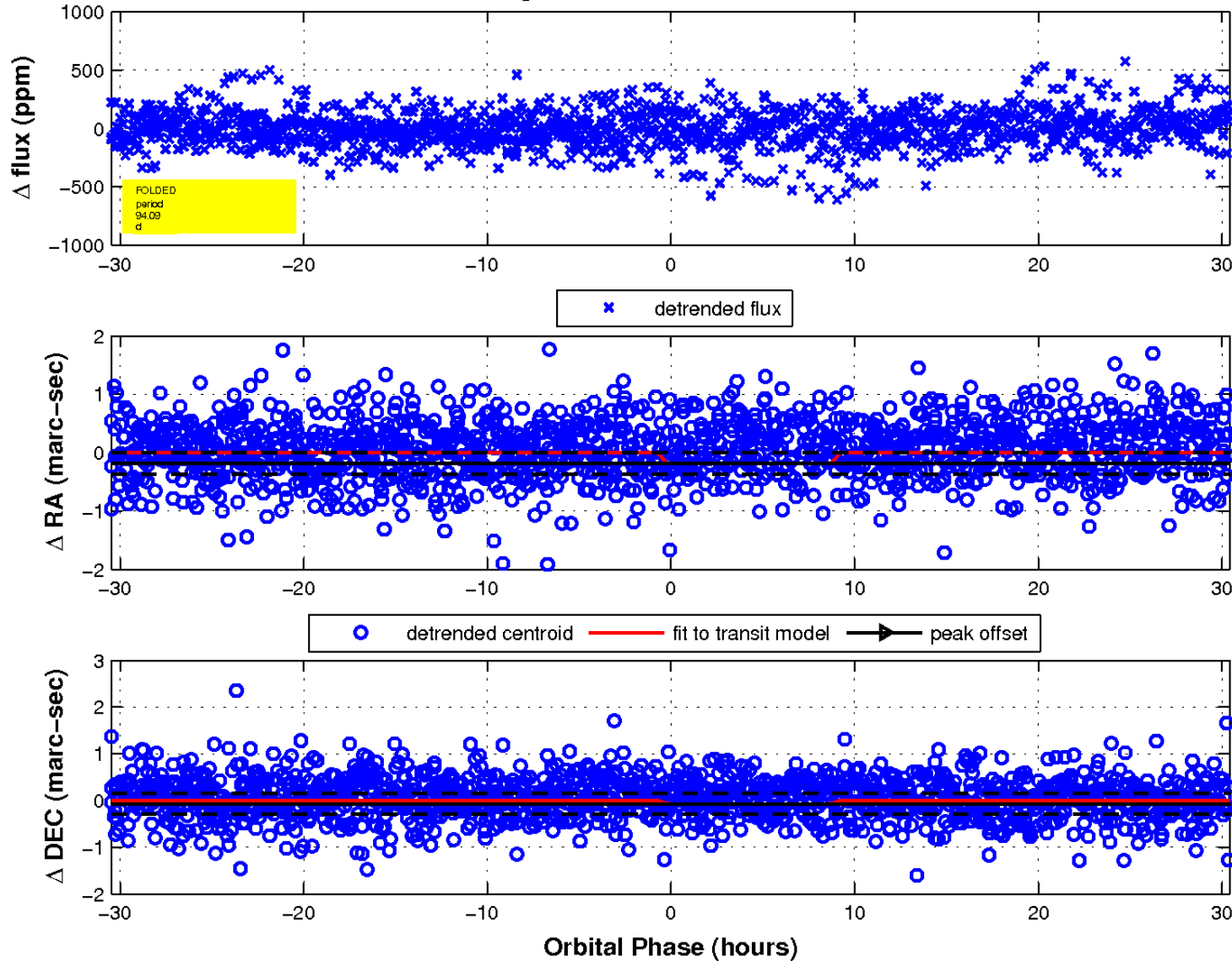
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



fluxWeightedCentroids, Planet 7 of 7



UKIRT Image

Declination

