

KIC 006141503

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})
006141503-01	OBS	No	1.416705	131.758481	19.0	7.615	8.4	9.6	1.15	6665	0.56	3469.57
006141503-02	OBS	No	94.743017	161.486072	148.2	6.521	7.5	6.8	1.15	6665	1.51	12.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006141503-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
006141503-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

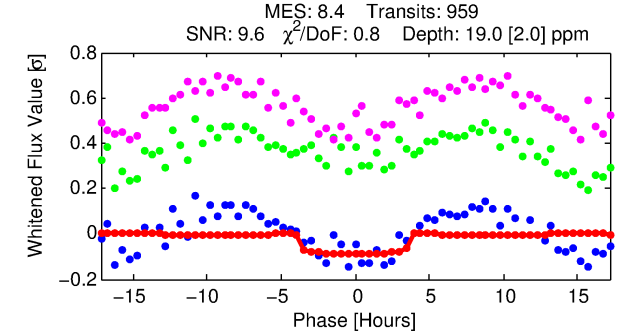
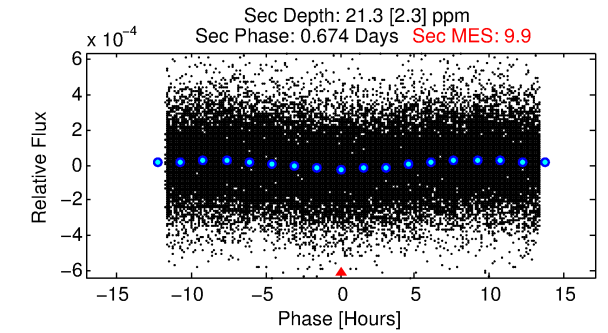
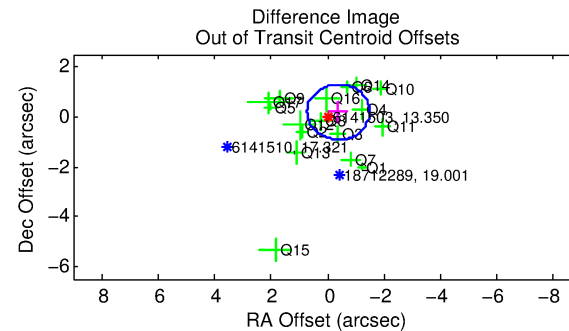
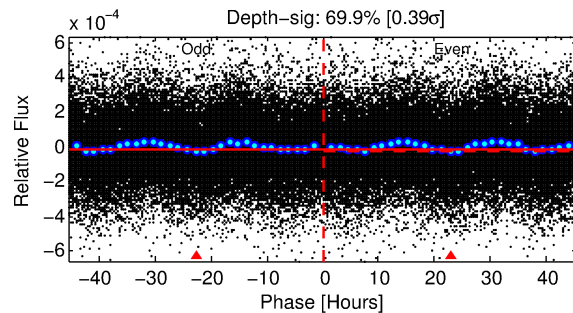
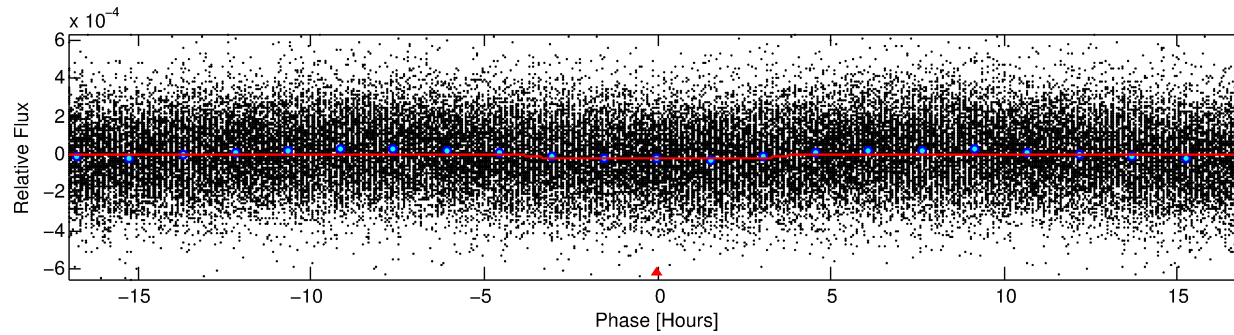
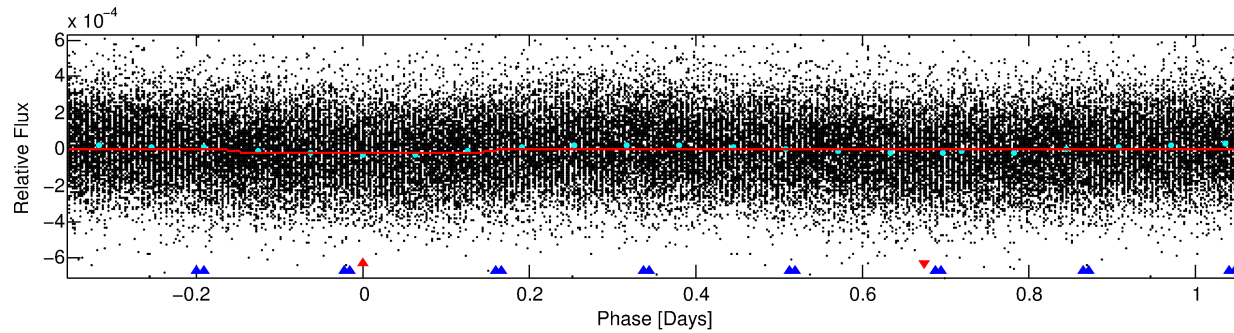
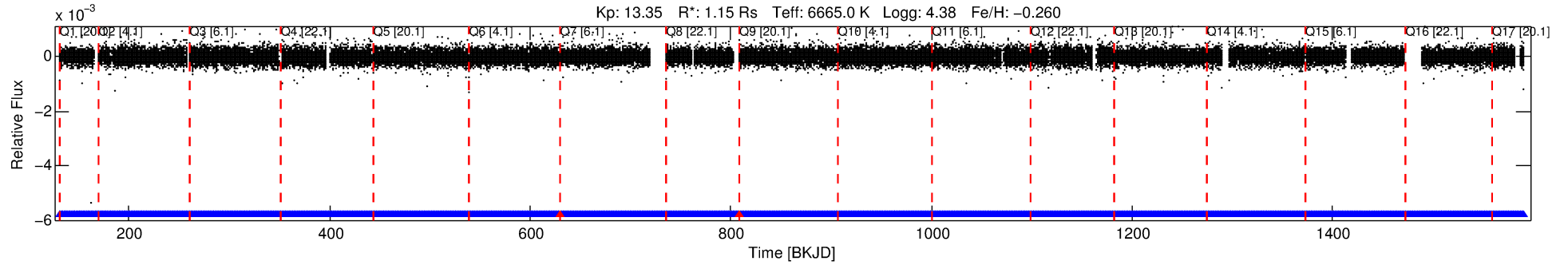
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006141503-01

No Significant Match Found

DV One-Page Summary

KIC: 6141503 Candidate: 1 of 2 Period: 1.417 d



DV Fit Results:

Period = 1.41670 [0.00002] d
Epoch = 131.7585 [0.0063] BKJD
Rp/R* = 0.0045 [0.0017]
a/R* = 1.21 [0.85]
b = 0.83 [0.86]
Seff = 3469.57 [1326.36]
Teq = 1957 [187] K
Rp = 0.56 [0.28] Re
a = 0.0260 [0.0066] AU
Ag = 25.22 [21.57] [1.12 σ]
Teffp = 6781 [1328] K [3.60 σ]

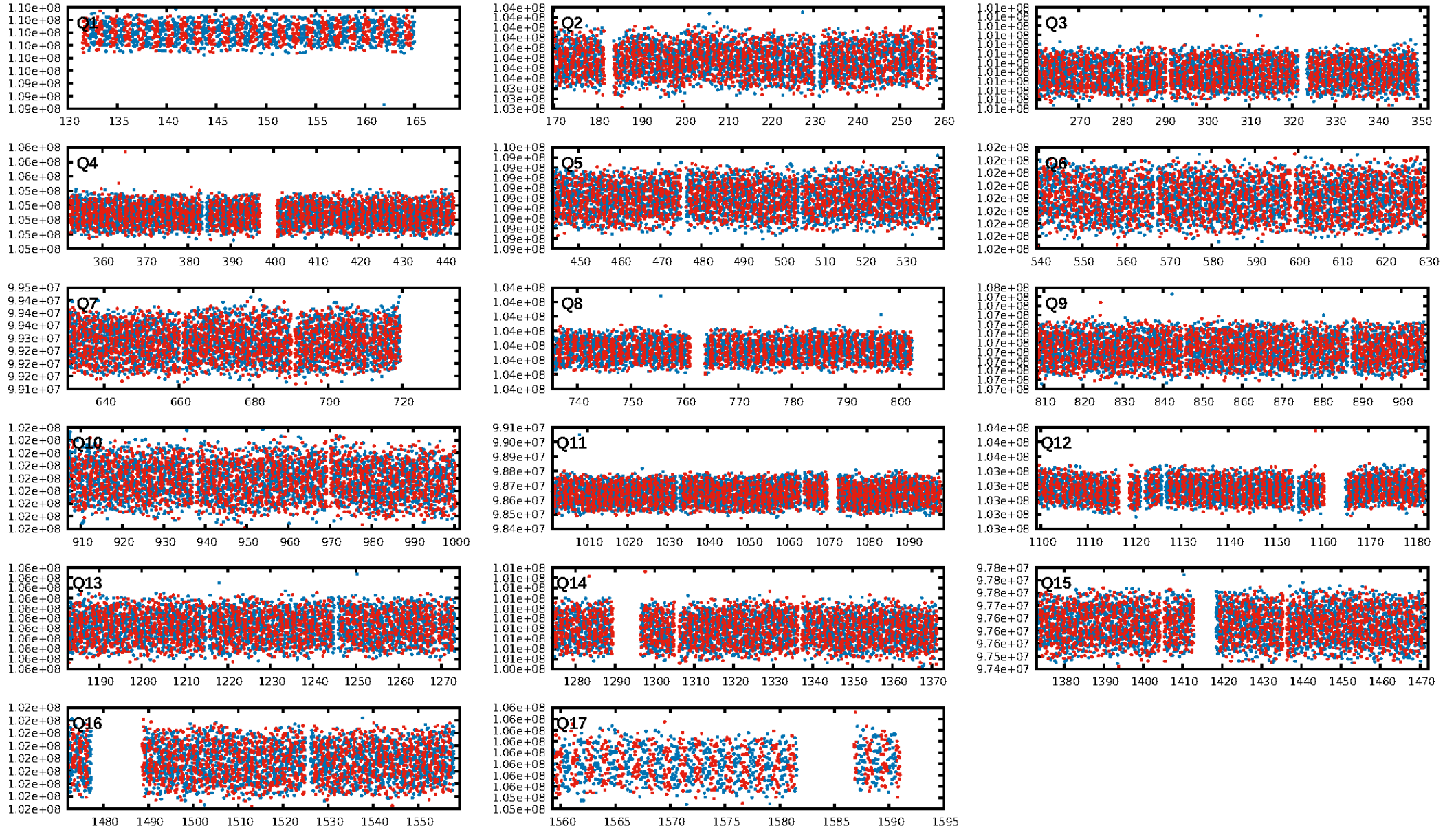
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [223.40 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.97e-08
RollingBand-fgt: 1.00 [913/915]
GhostDiagnostic-chr: 4.537
Centroid-sig: 21.9%
Centroid-so: 1.001 arcsec [0.96 σ]
OotOffset-rm: 0.424 arcsec [1.15 σ]
KicOffset-rm: 0.397 arcsec [1.08 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 1.00 [17/17]

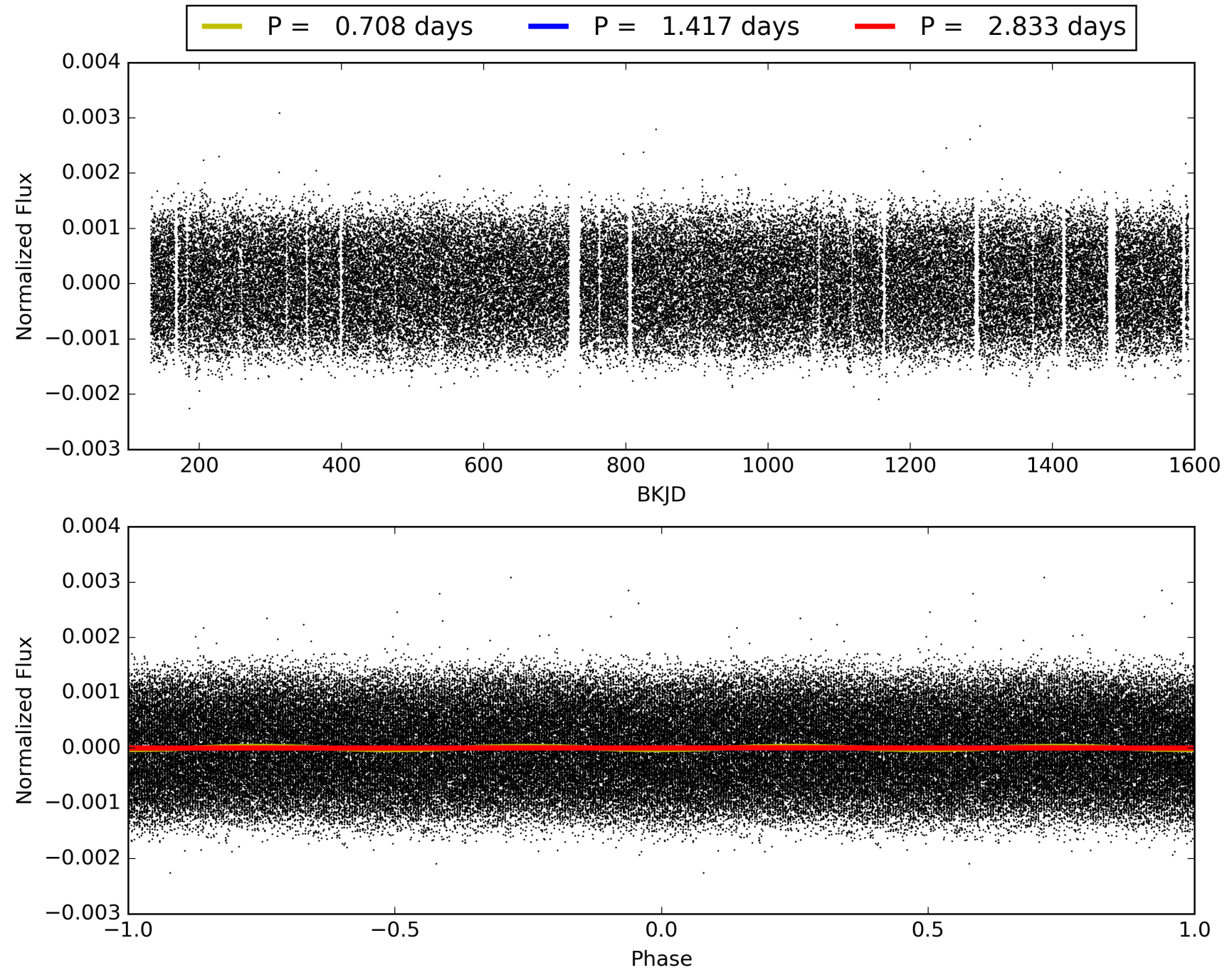
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:21:59 Z

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

TCE 006141503-01, PDC Light Curves

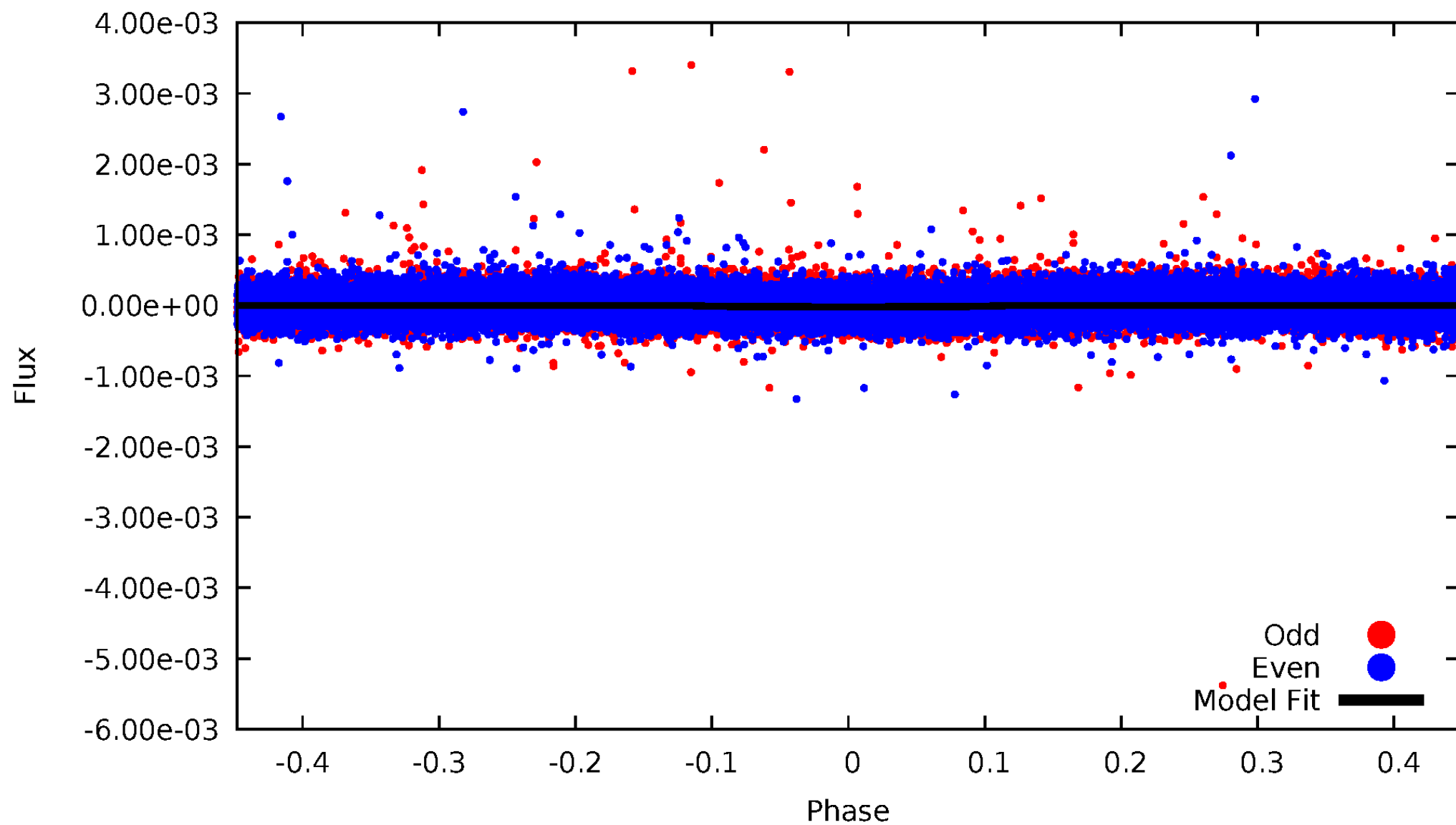


TCE 006141503-01



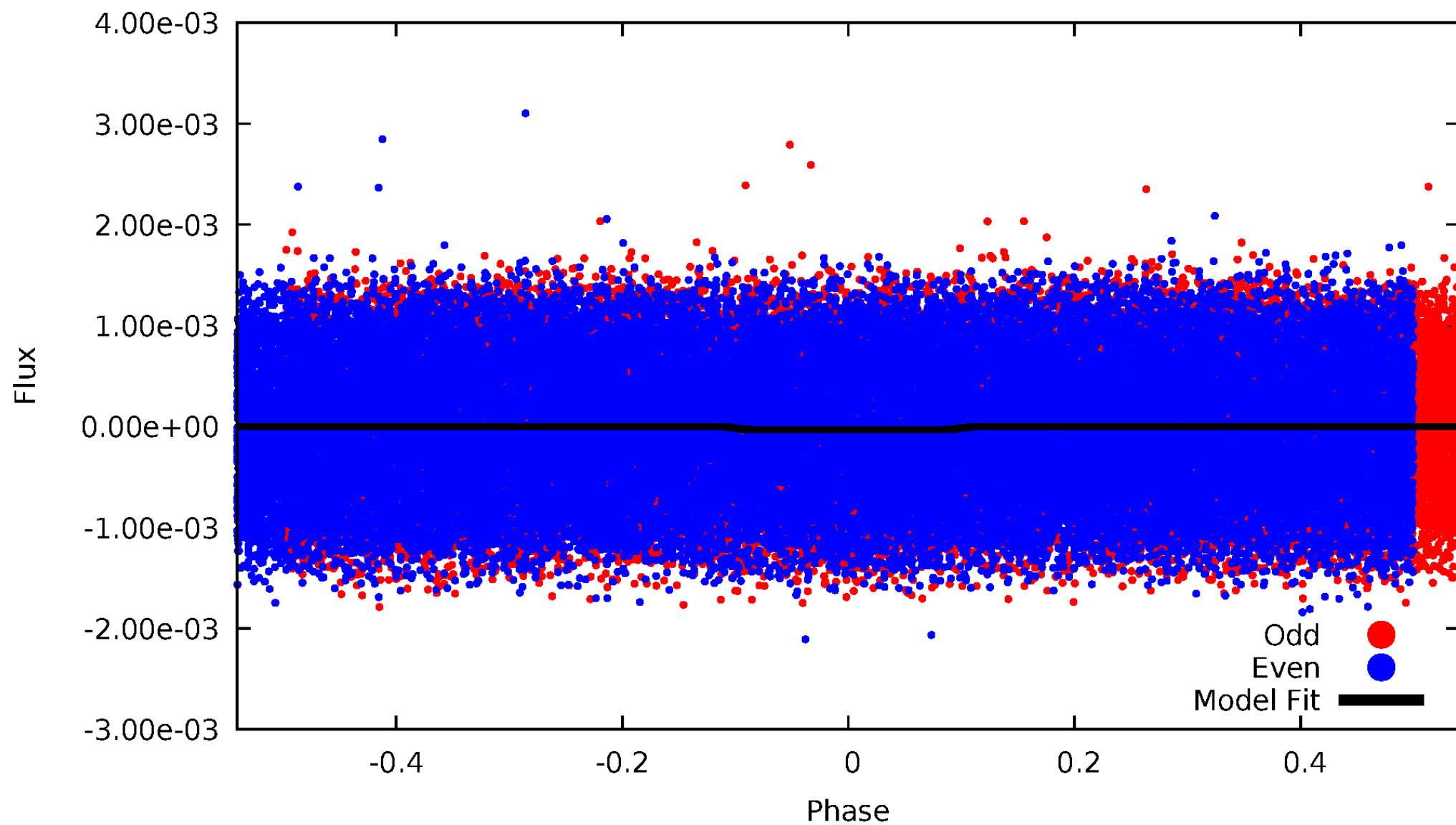
DV Odd/Even

TCE 006141503-01



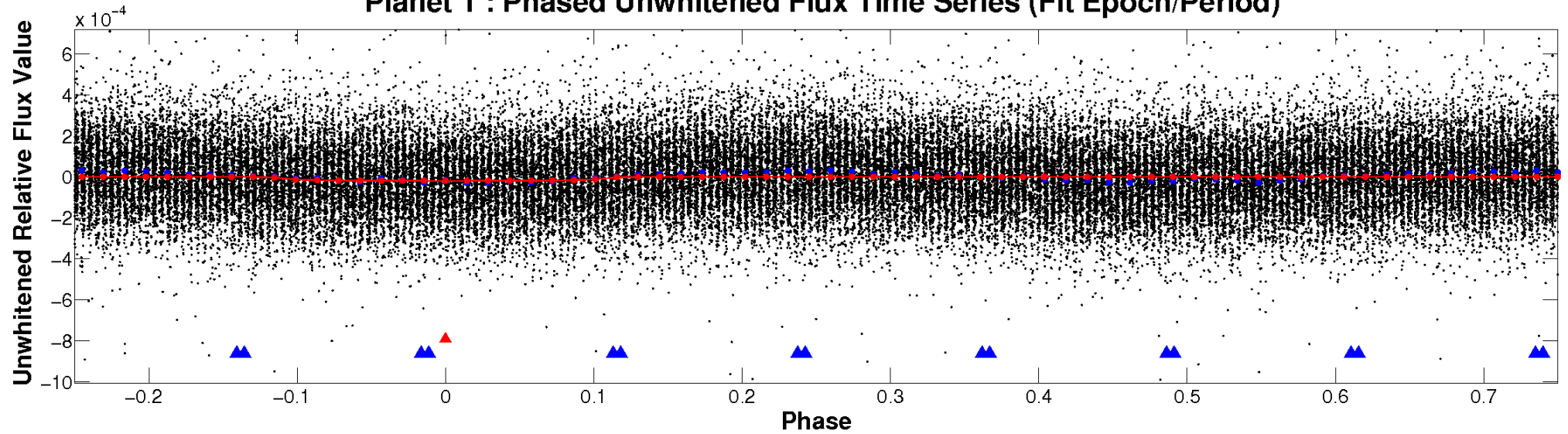
ALT Odd/Even

TCE 006141503-01

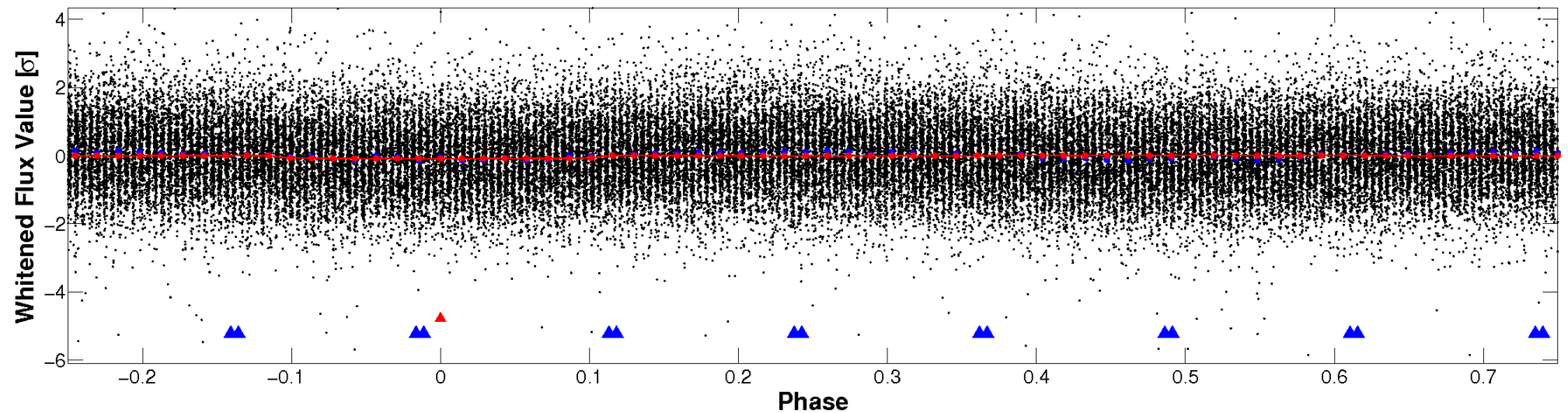


Non-Whitened Vs. Whitened Light Curve

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

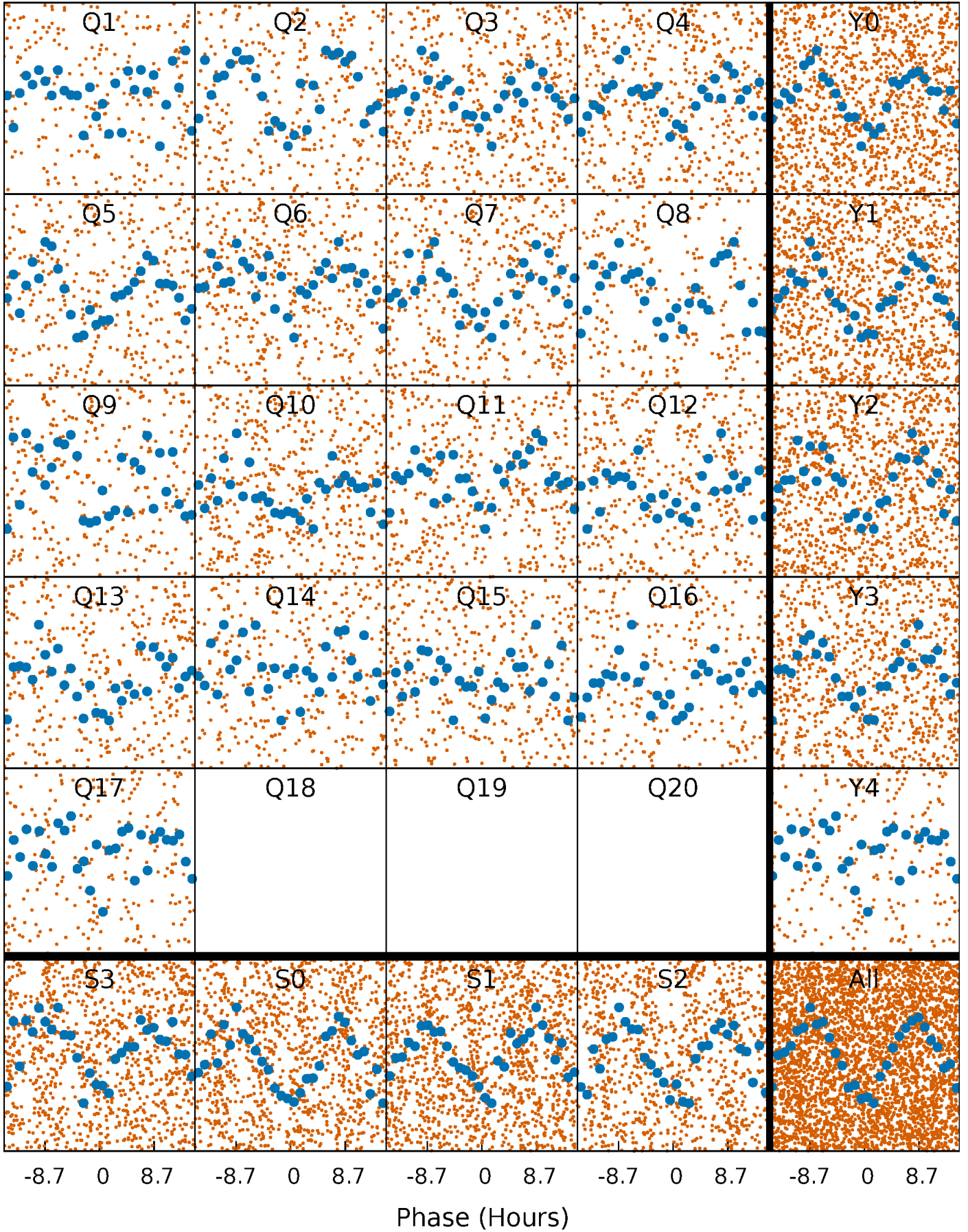


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



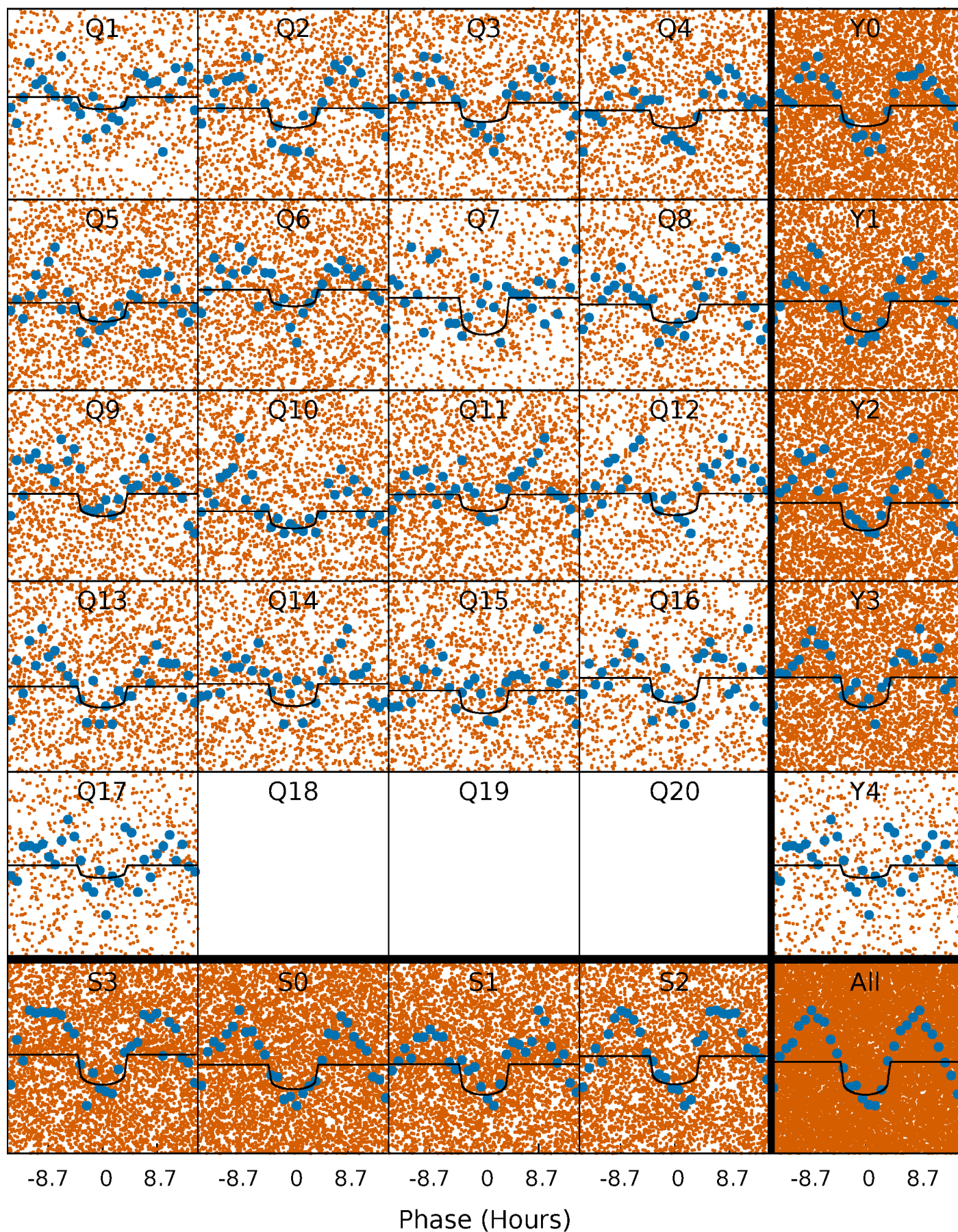
PDC Quarter-Phased Transit Curves

TCE 006141503-01 P= 1.416705 Days $T_0=131.758481$ (BKJD)



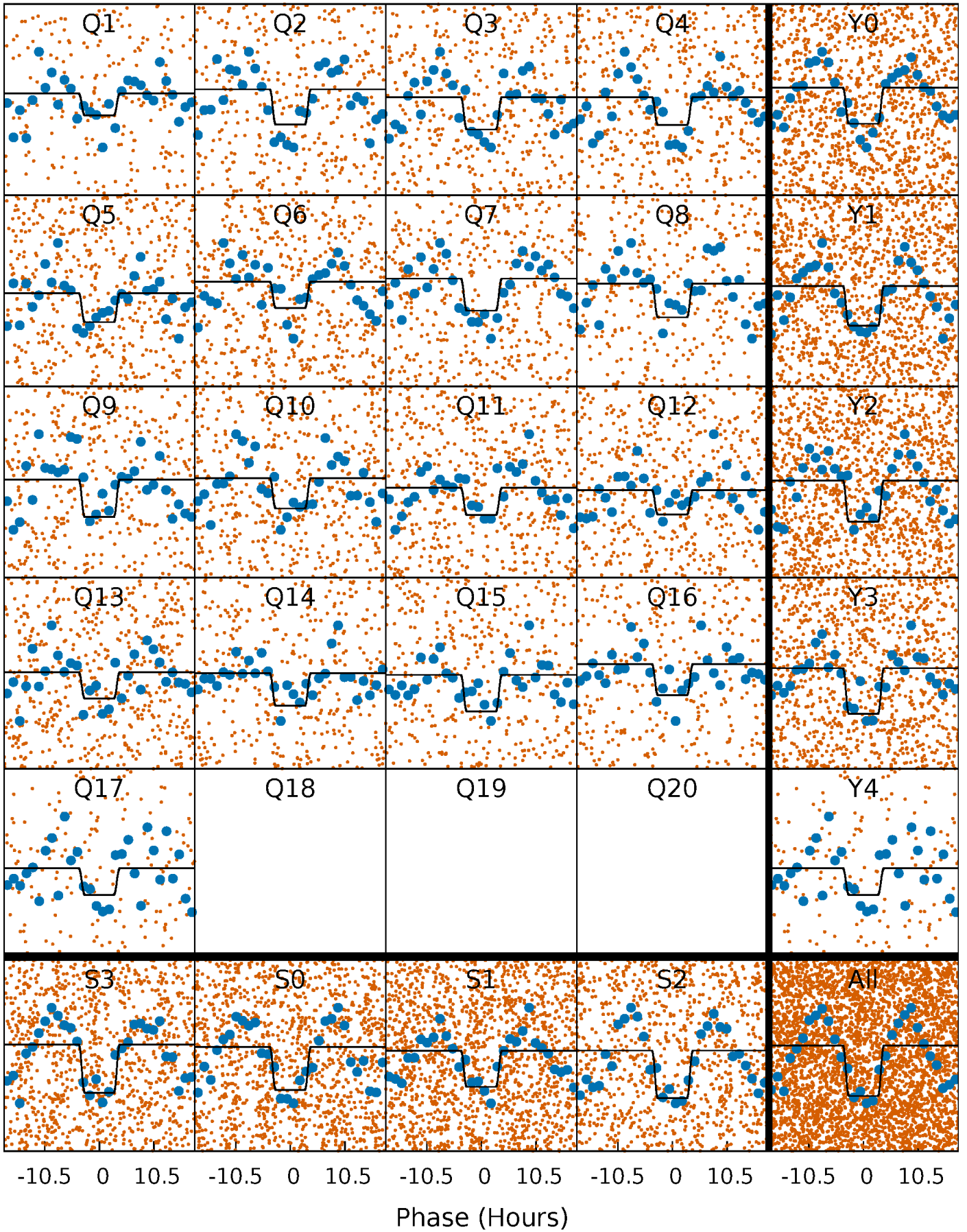
DV Quarter-Phased Transit Curves

TCE 006141503-01 P= 1.416705 Days $T_0=131.758481$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

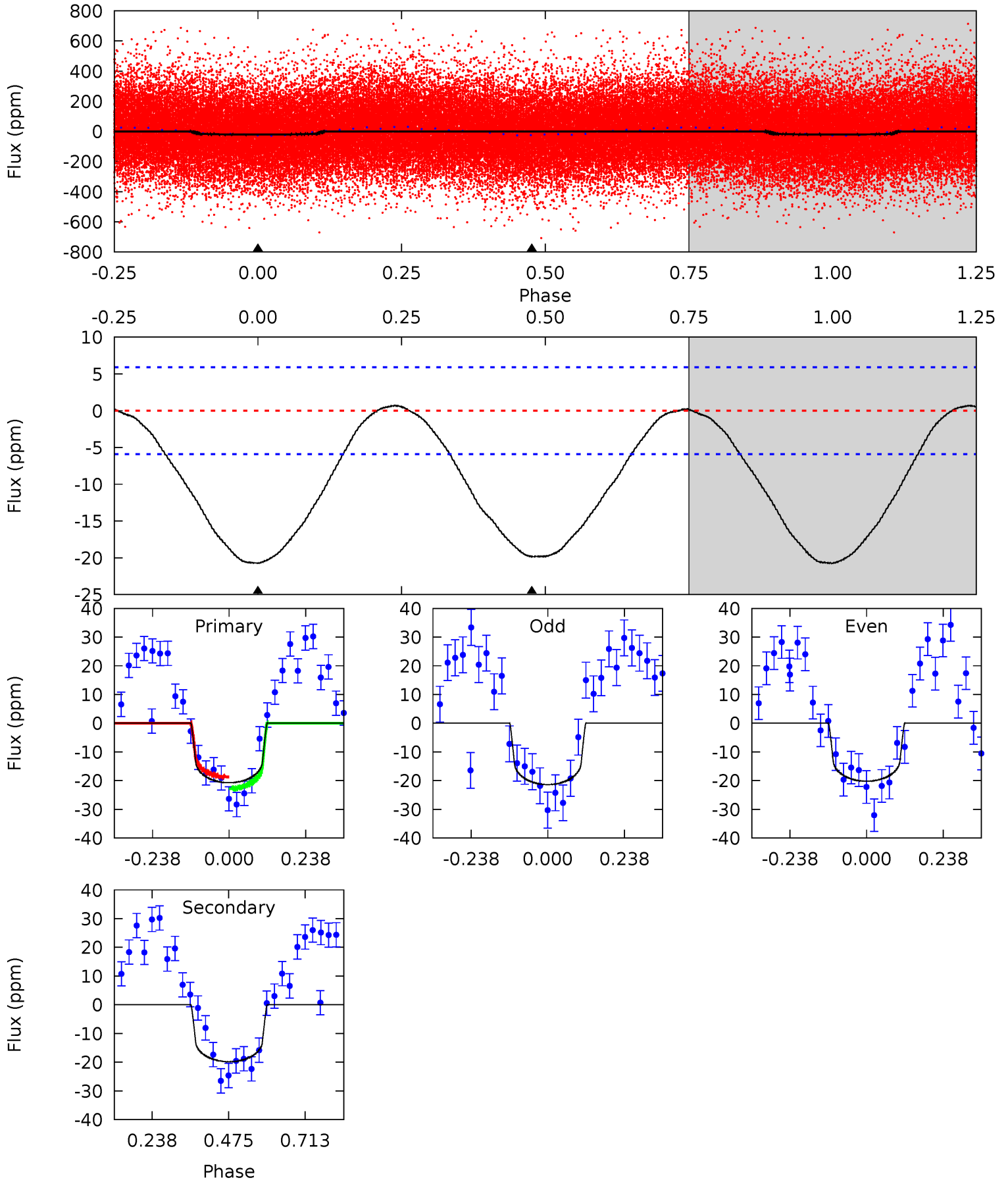
TCE 006141503-01 P= 1.416678 Days $T_0=131.766243$ (BKJD)



DV Model-Shift Uniqueness Test

006141503-01, P = 1.416705 Days, E = 130.341776 Days

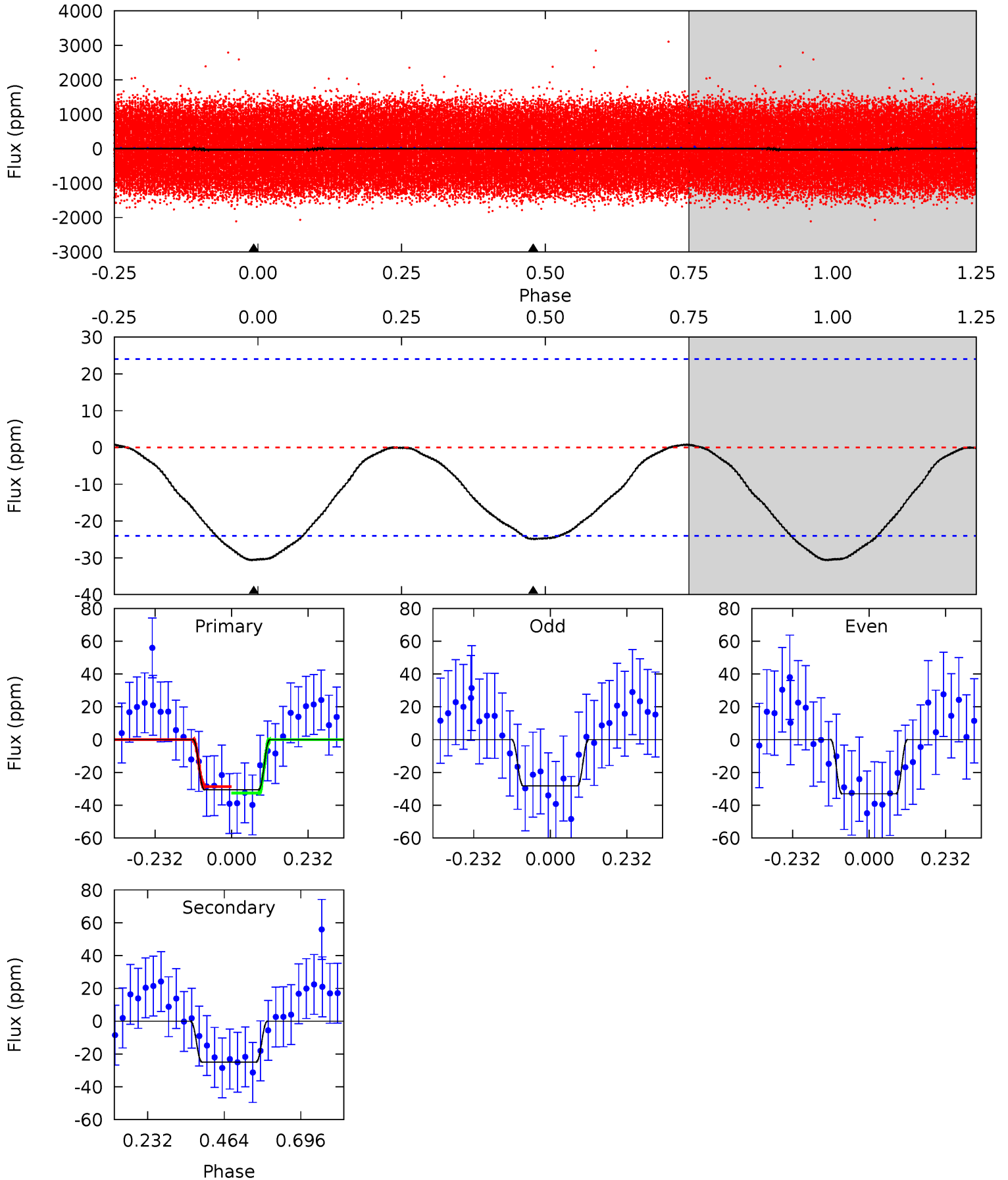
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.4	14.7	0	0	4.38	1.18	0.32	15.4	15.4	14.7	14.7	0.44	1.00	0.03	1.55



Alt Model-Shift Uniqueness Test

006141503-01, P = 1.416678 Days, E = 130.349565 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.58	4.54	0	0	4.38	1.19	0.08	5.58	5.58	4.54	4.54	0.44	0.98	0.02	0.35



Stellar Parameters For KIC 006141503

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6665^{+160}_{-200}	$4.383^{+0.065}_{-0.195}$	$-0.260^{+0.250}_{-0.300}$	$1.153^{+0.355}_{-0.118}$	$1.176^{+0.167}_{-0.150}$	$1.080^{+0.359}_{-0.549}$
	+2%/-3%	+1%/-4%	+96%/-115%	+31%/-10%	+14%/-13%	+33%/-51%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006141503-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-20 ± 1	$0.59^{+0.24}_{-0.22}$	2779^{+192}_{-141}	6599^{+2127}_{-1042}	21^{+33}_{-11}
Alt.	-25 ± 5	$0.77^{+0.23}_{-0.25}$	2779^{+200}_{-128}	6132^{+1266}_{-820}	15^{+18}_{-7}

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

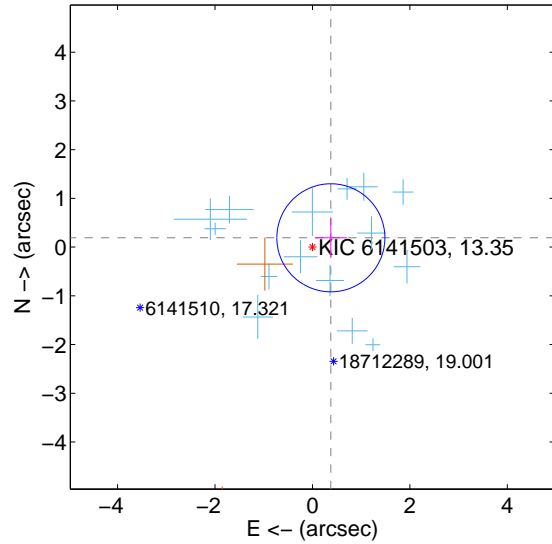
Supplemental centroid analysis for 006141503-01. Kepler magnitude: 13.35. Transit SNR 9.63

There are 15 quarters with good PRF difference image offsets

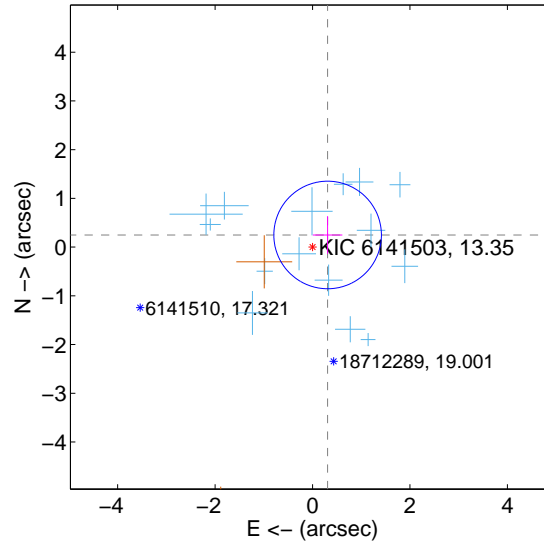
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.424 ± 0.370	1.15	-0.378 ± 0.329	0.191 ± 0.392
PRF-fit source offset from KIC position	0.397 ± 0.368	1.08	-0.310 ± 0.304	0.249 ± 0.386
photometric centroid source offset	1.00 ± 1.05	0.96	-0.91 ± 1.06	0.41 ± 0.99

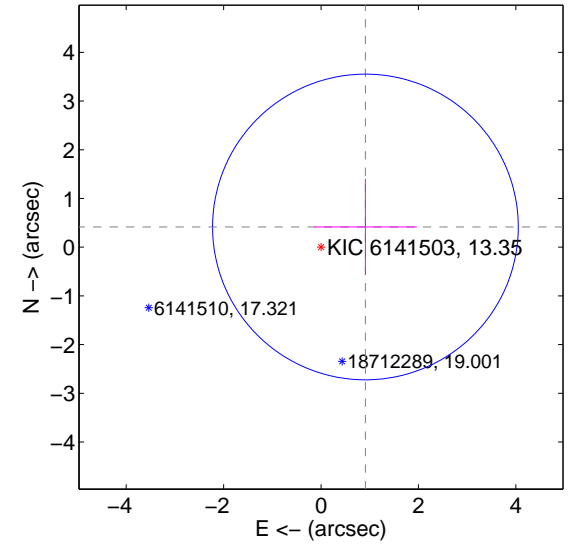
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

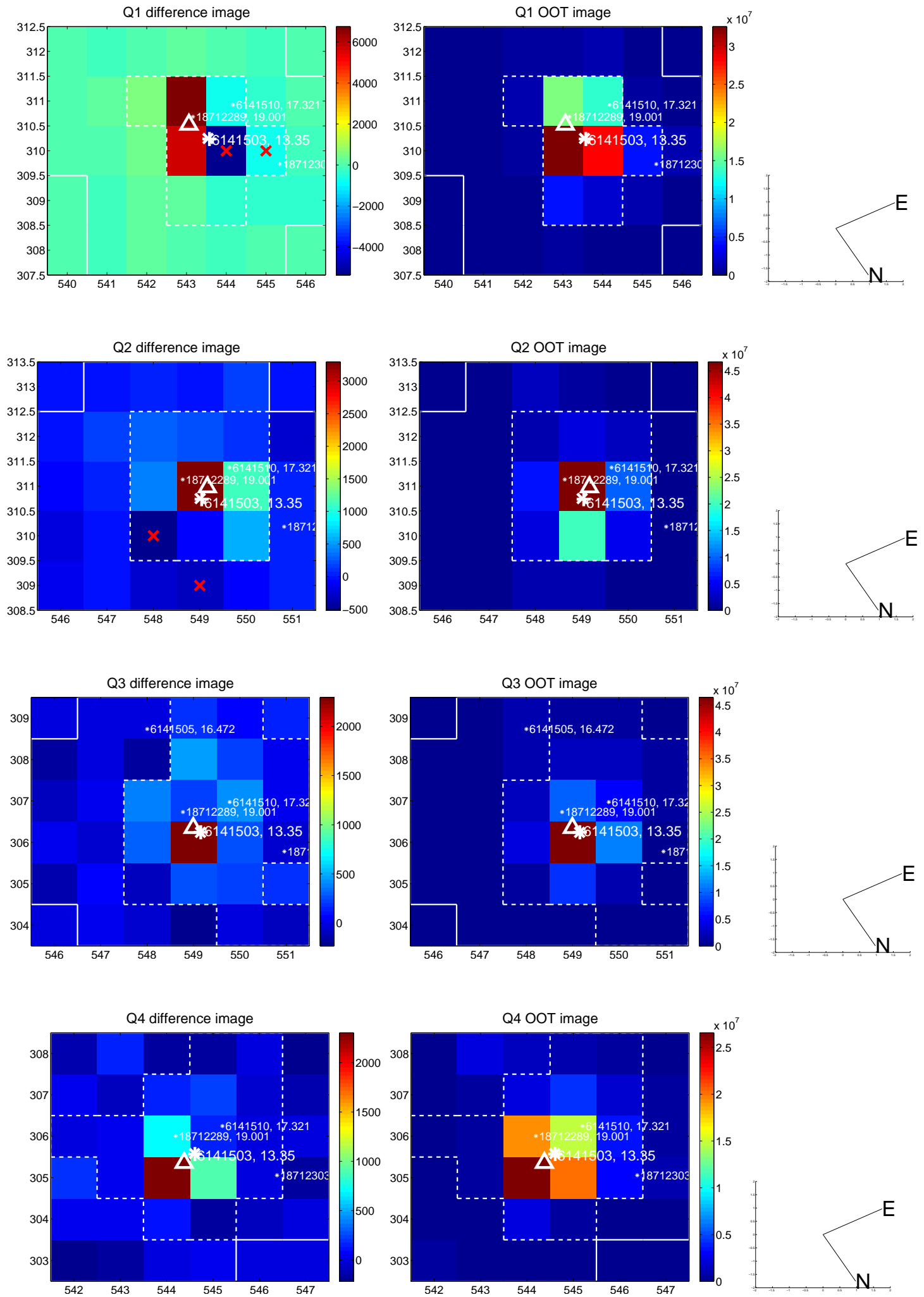


offset from photometric centroids

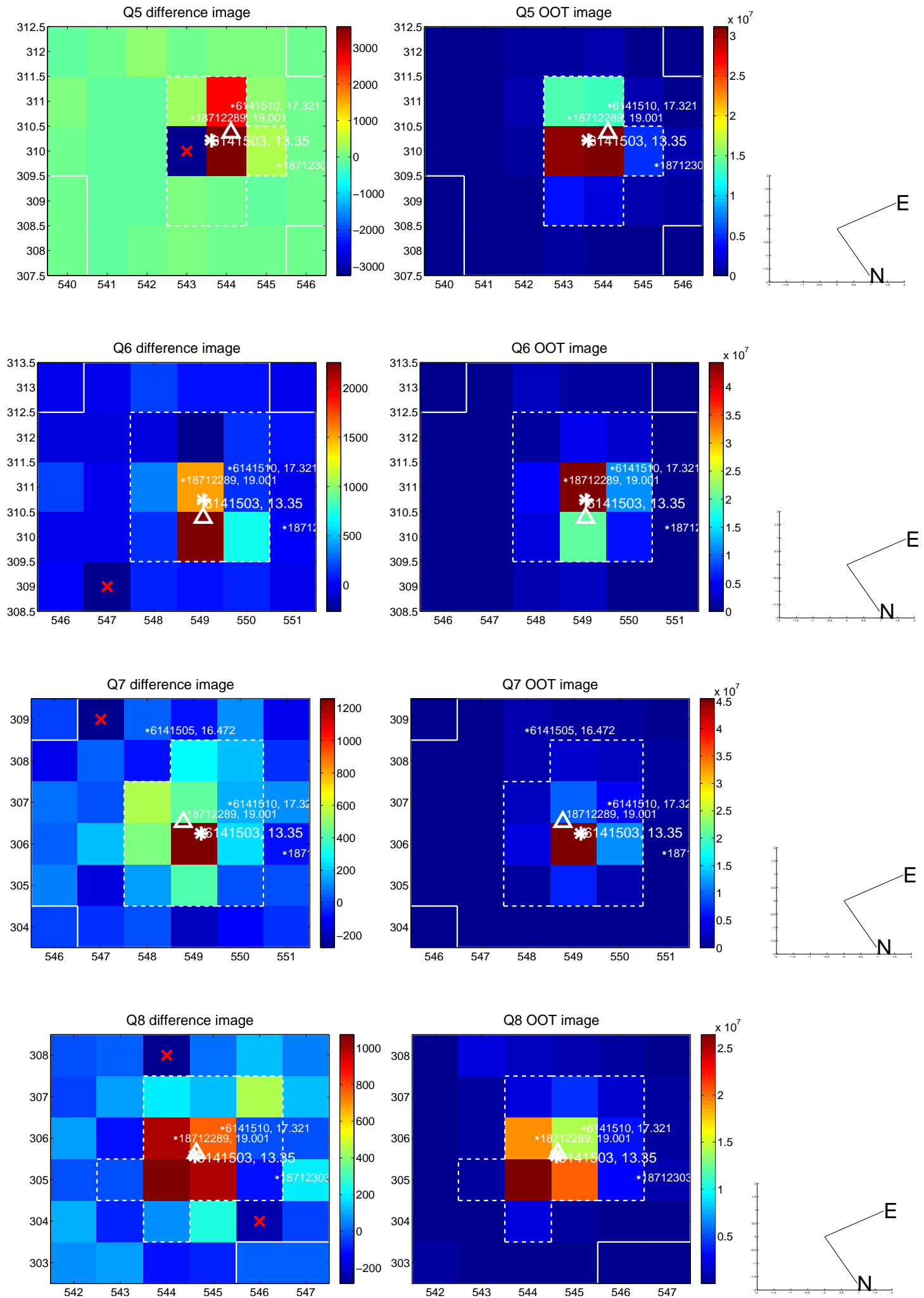


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

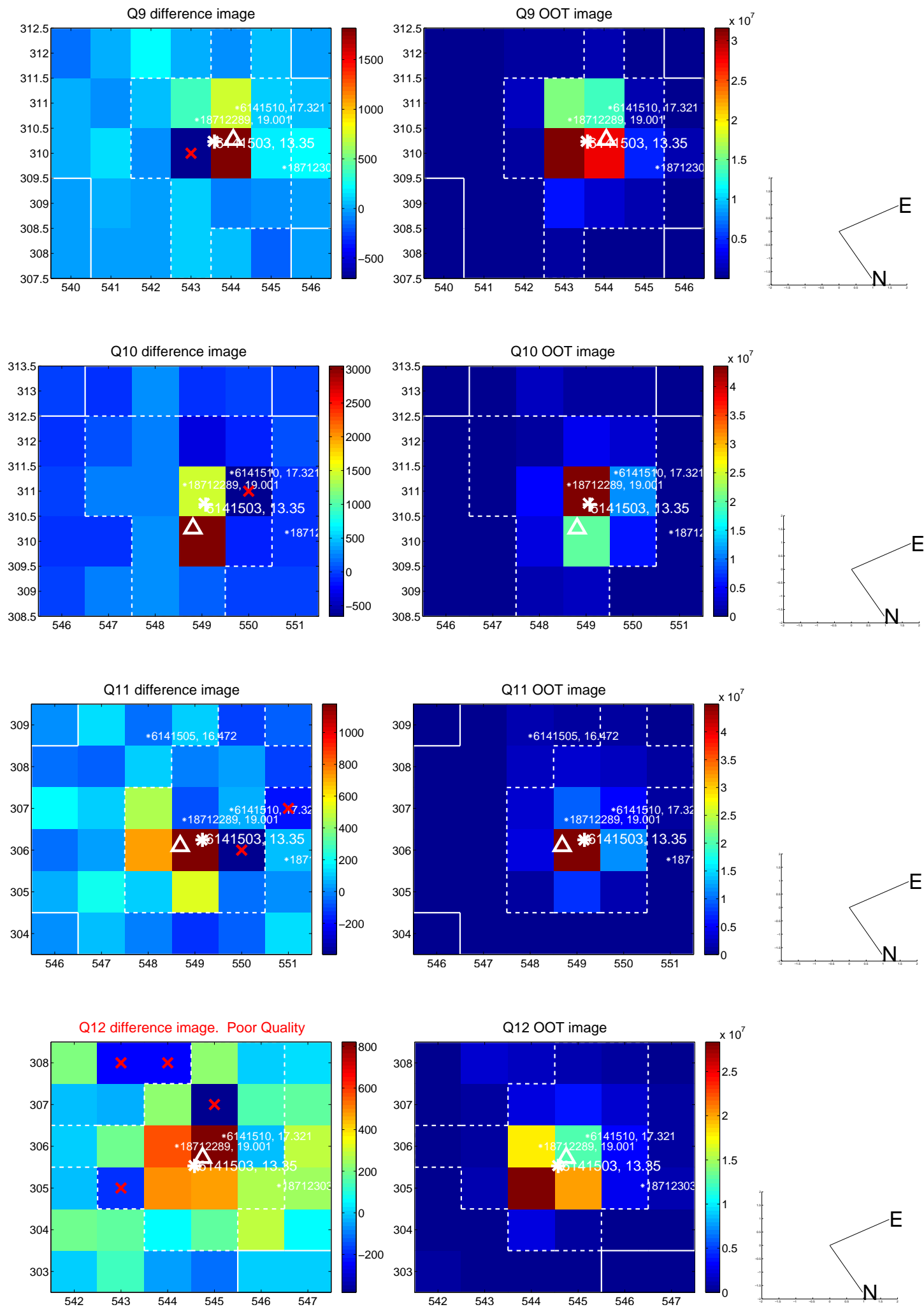
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



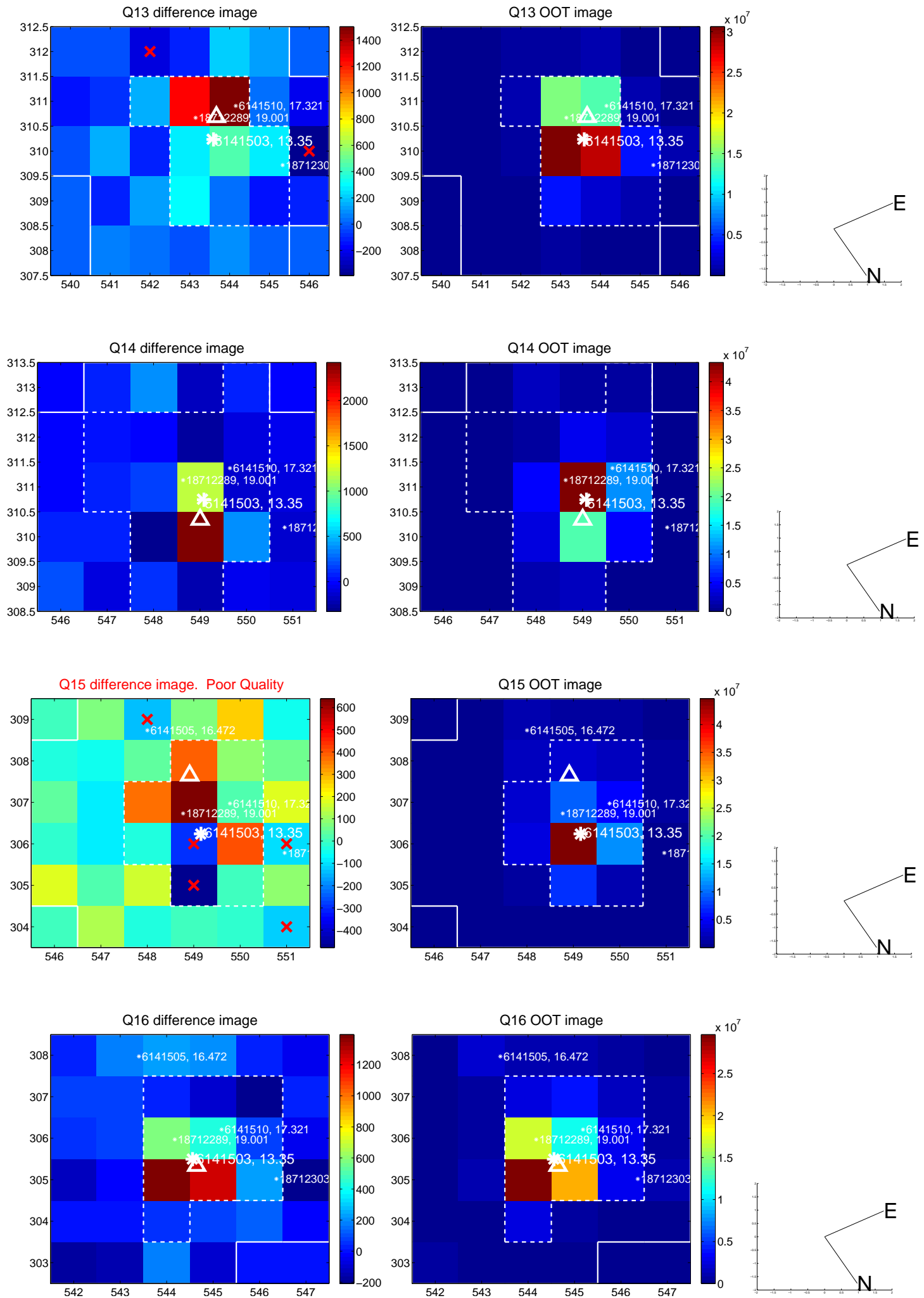
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



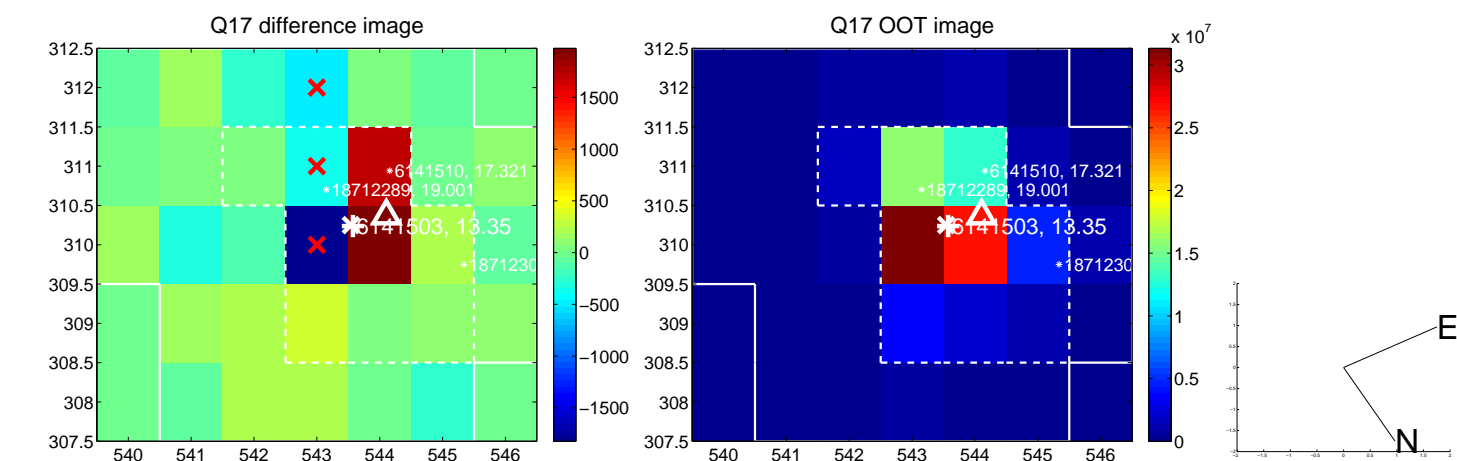
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



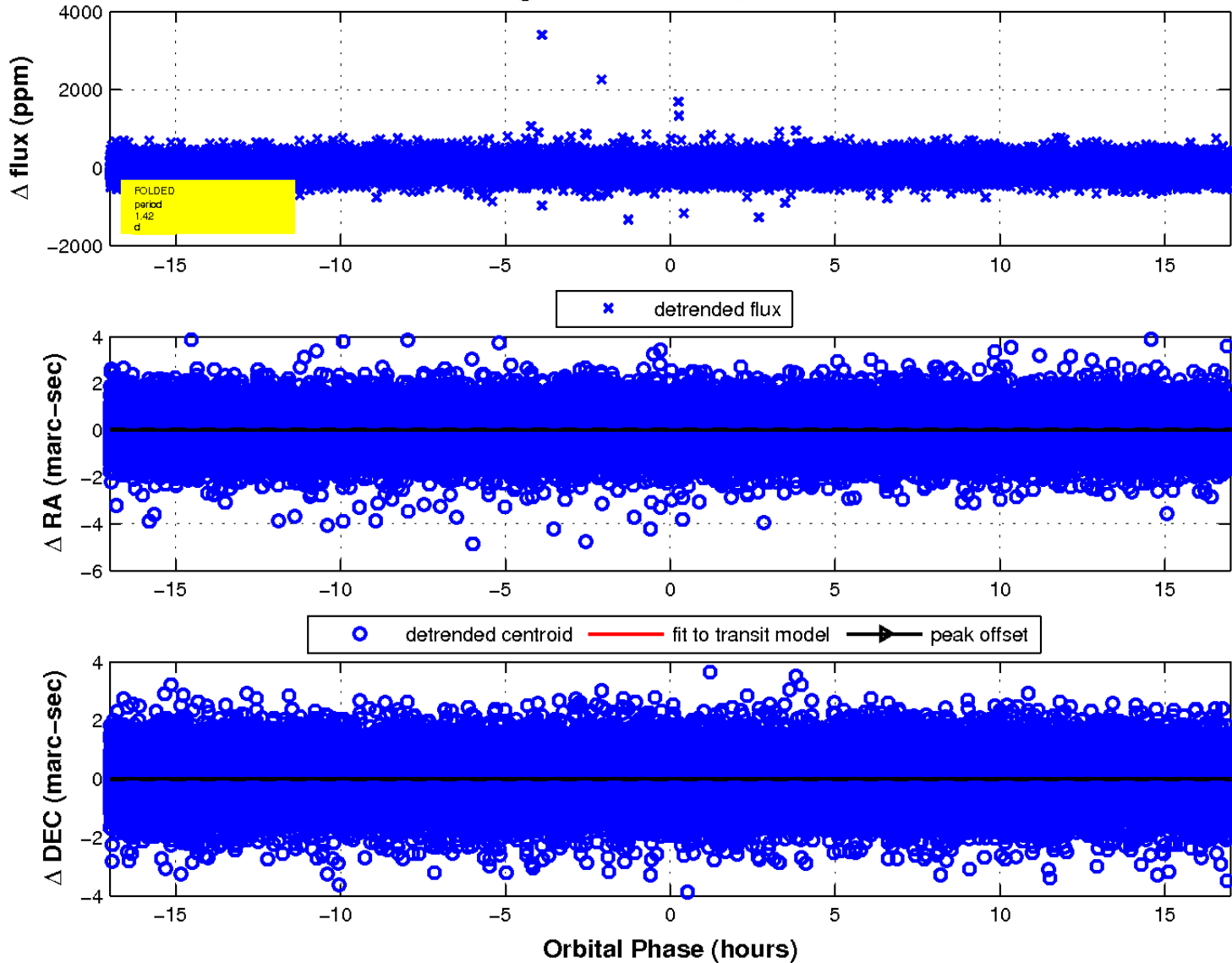
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

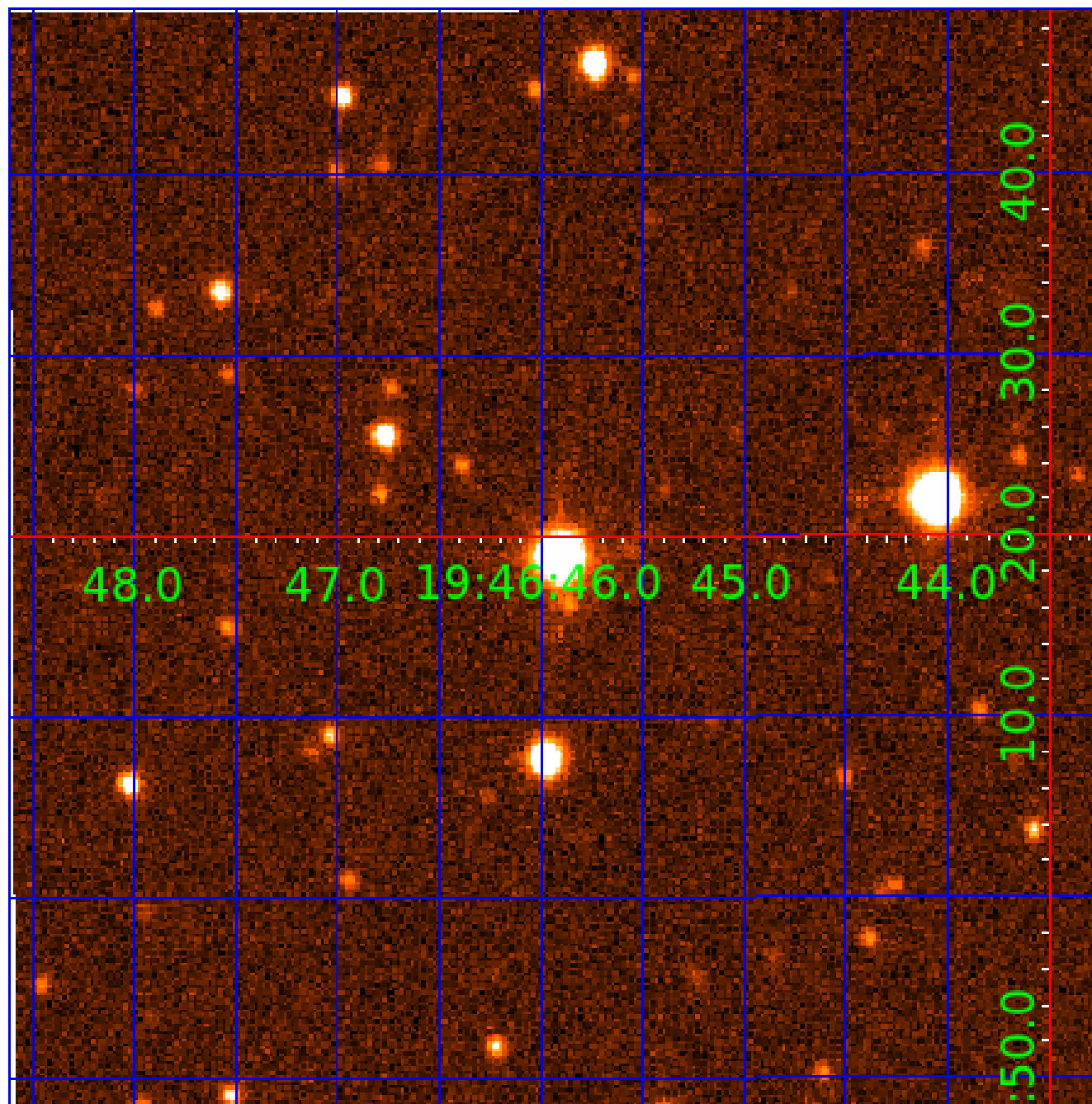


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 006141503

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})
006141503-01	OBS	No	1.416705	131.758481	19.0	7.615	8.4	9.6	1.15	6665	0.56	3469.57
006141503-02	OBS	No	94.743017	161.486072	148.2	6.521	7.5	6.8	1.15	6665	1.51	12.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006141503-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
006141503-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

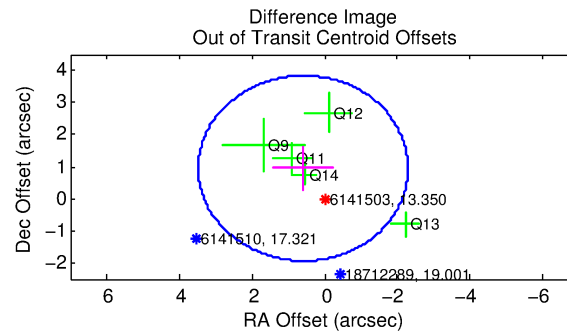
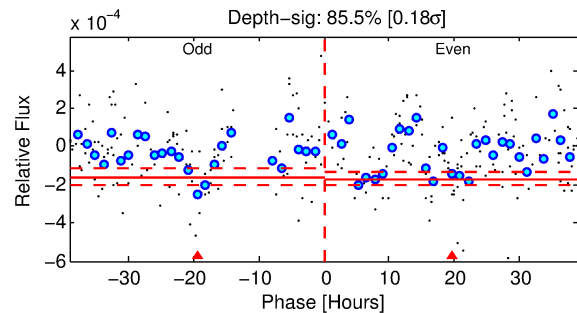
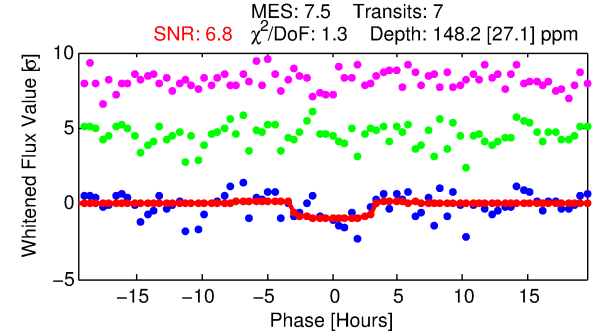
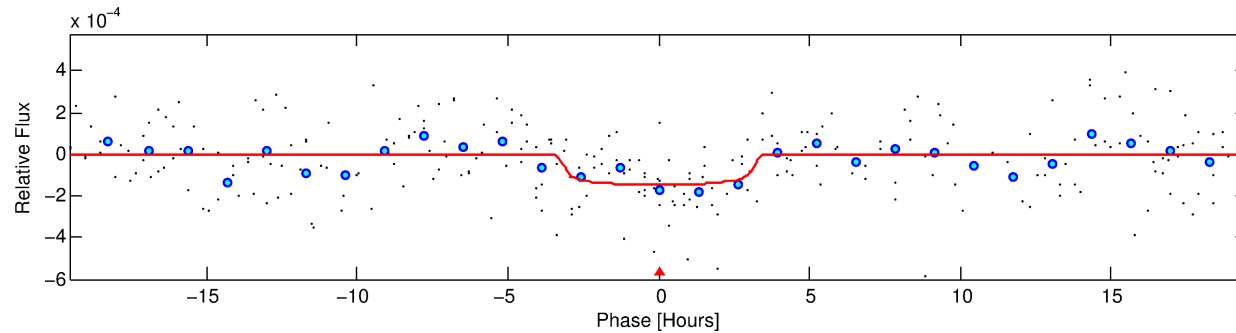
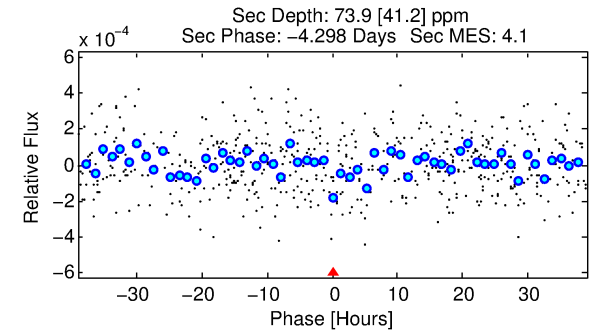
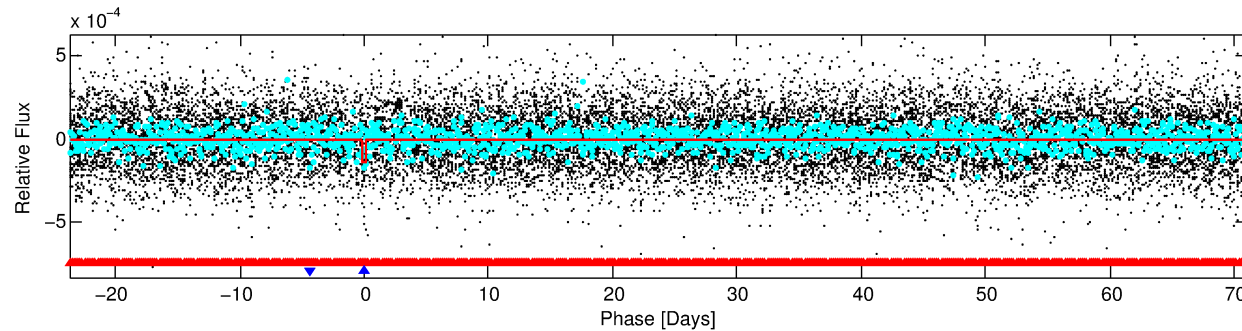
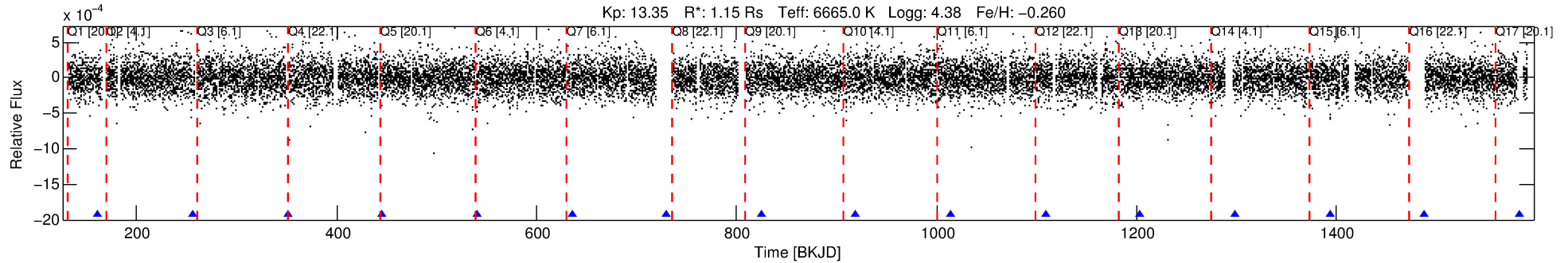
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006141503-02

No Significant Match Found

DV One-Page Summary

KIC: 6141503 Candidate: 2 of 2 Period: 94.743 d



DV Fit Results:

Period = 94.74302 [0.00319] d
Epoch = 161.4861 [0.0285] BKJD
Rp/R* = 0.0120 [0.0106]
a/R* = 78.63 [390.83]
b = 0.72 [3.31]
Seff = 12.78 [4.89]
Teq = 482 [46] K
Rp = 1.51 [1.41] Re
a = 0.4288 [0.1089] AU
Ag = 3273.96 [6178.82] [0.53σ]
Teffp = 5639 [2616] K [1.97σ]

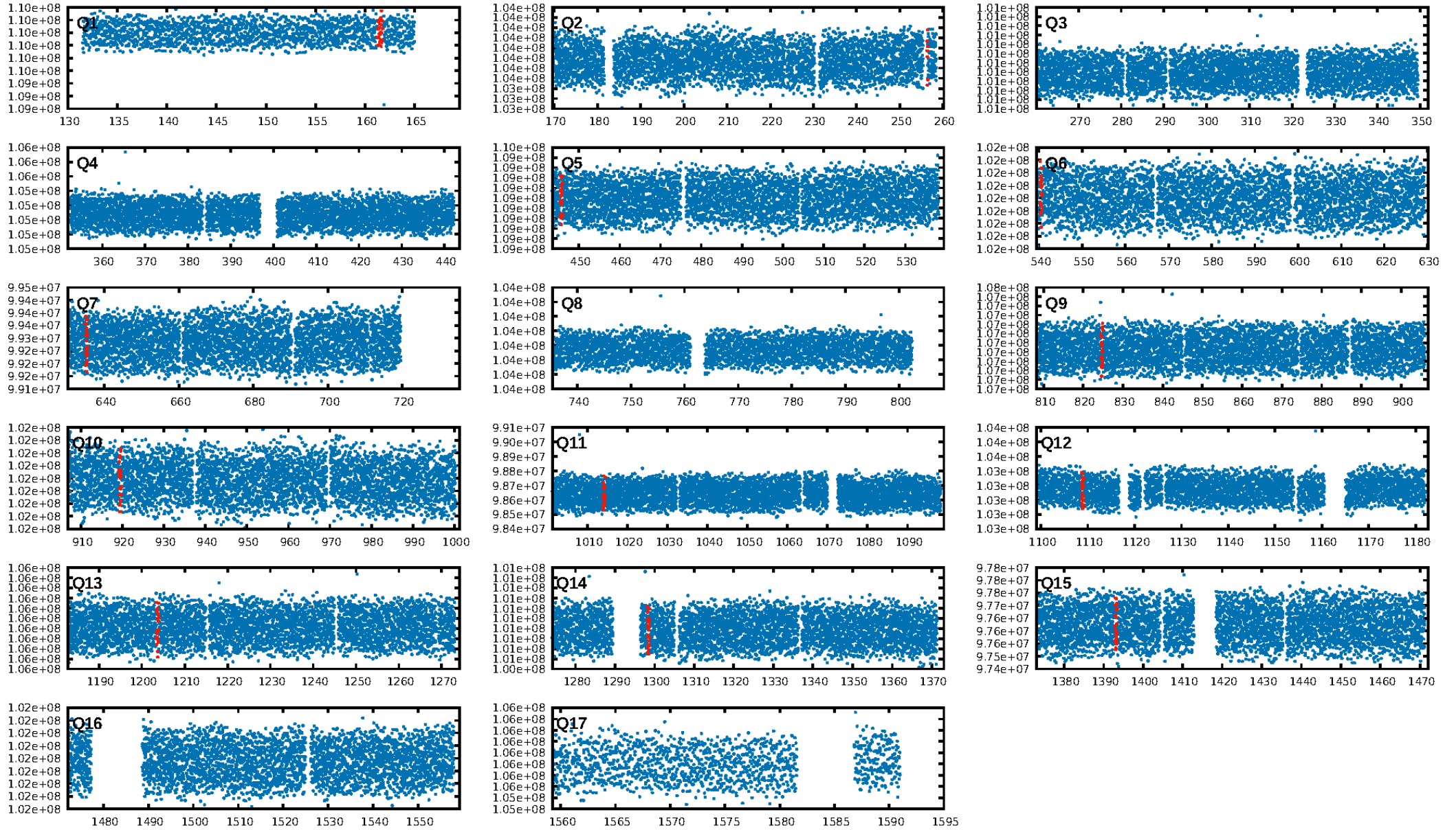
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [223.40σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 63.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.70e-08
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 0.6908
Centroid-sig: 56.0%
Centroid-so: 1.014 arcsec [0.78σ]
OotOffset-rm: 1.117 arcsec [1.16σ]
KicOffset-rm: 1.254 arcsec [1.83σ]
OotOffset-st: 1/1/1/2 [5]
KicOffset-st: 1/1/1/2 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 0.00 [0/9]

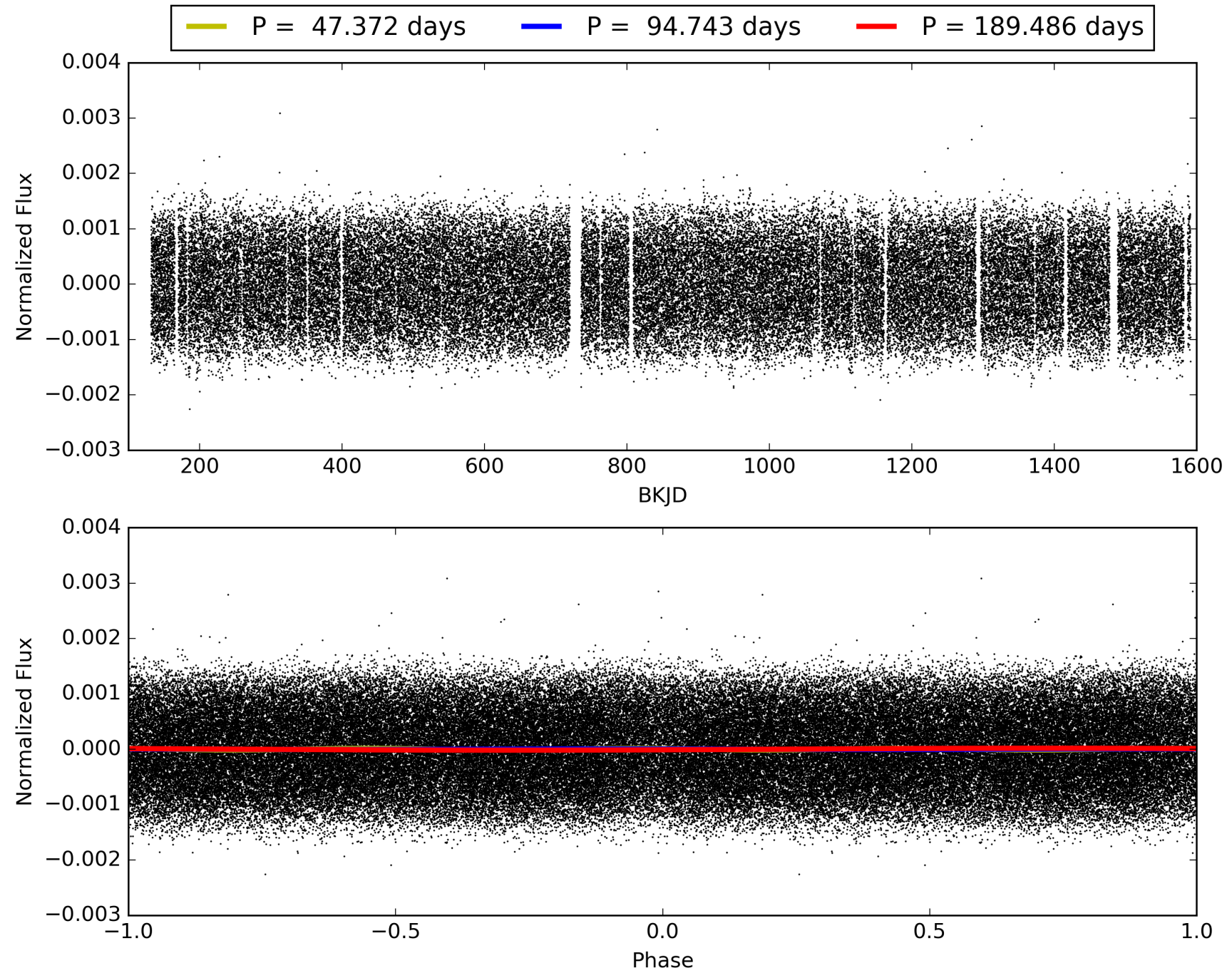
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:22:09 Z

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

TCE 006141503-02, PDC Light Curves

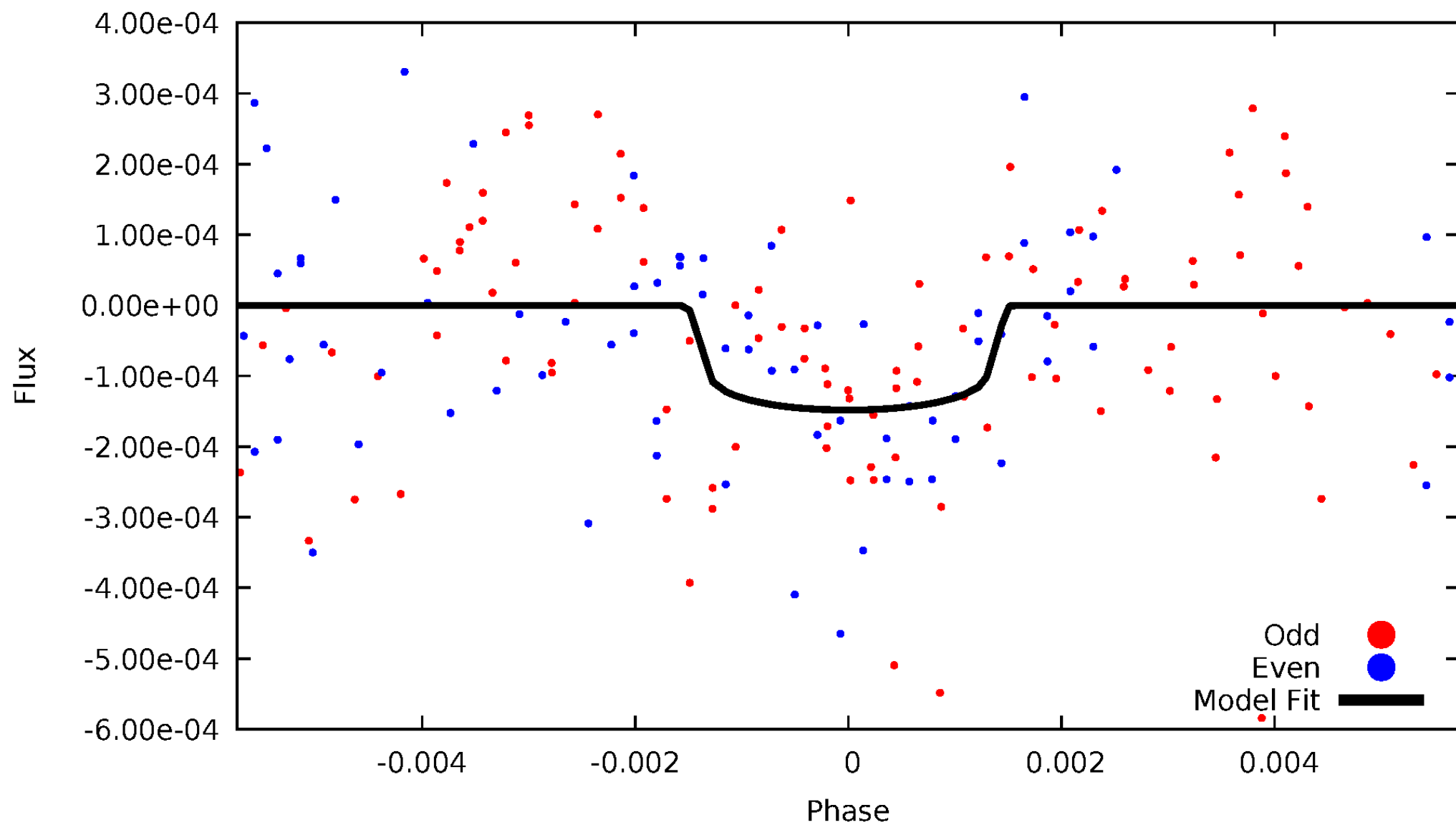


TCE 006141503-02



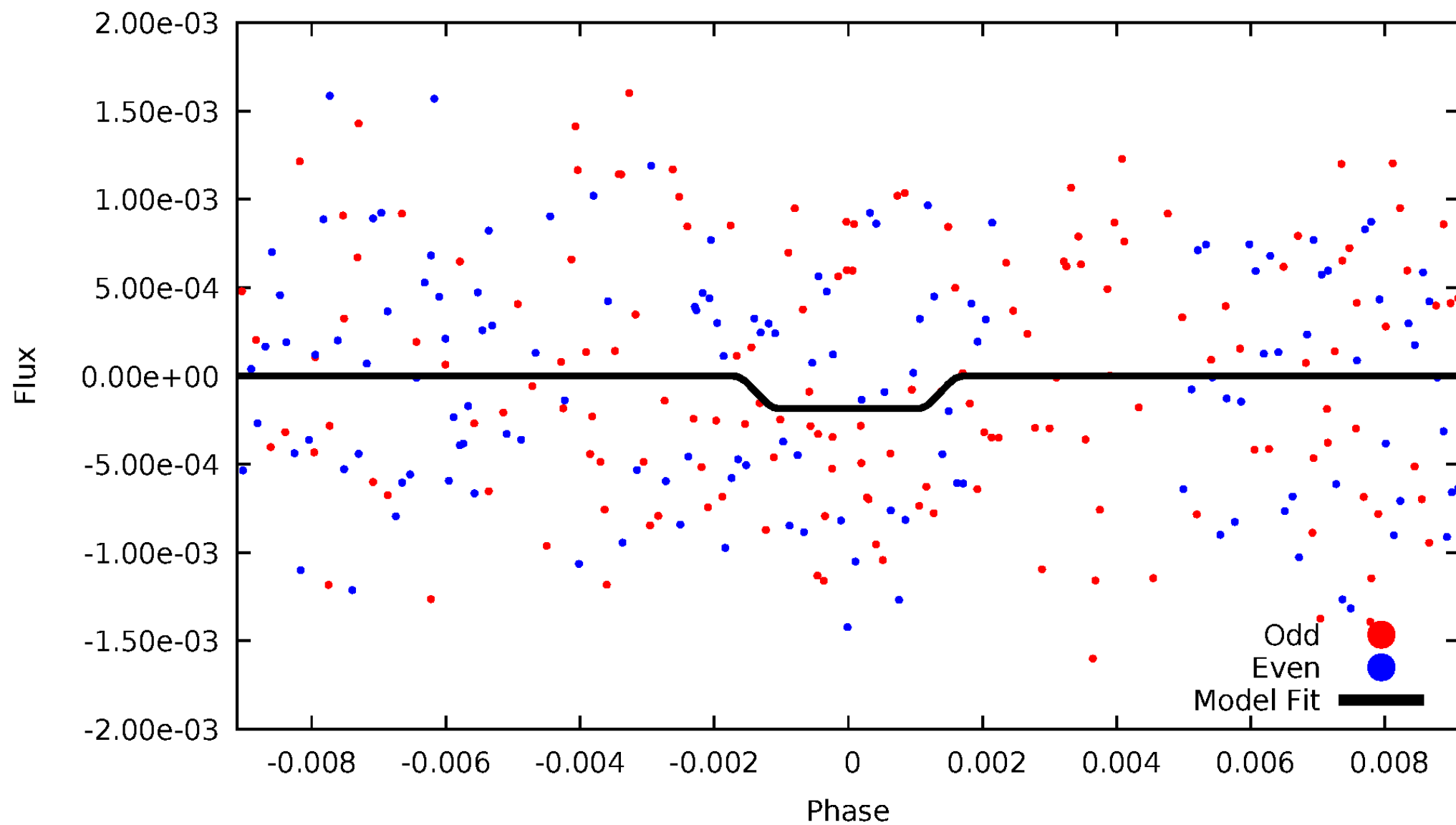
DV Odd/Even

TCE 006141503-02



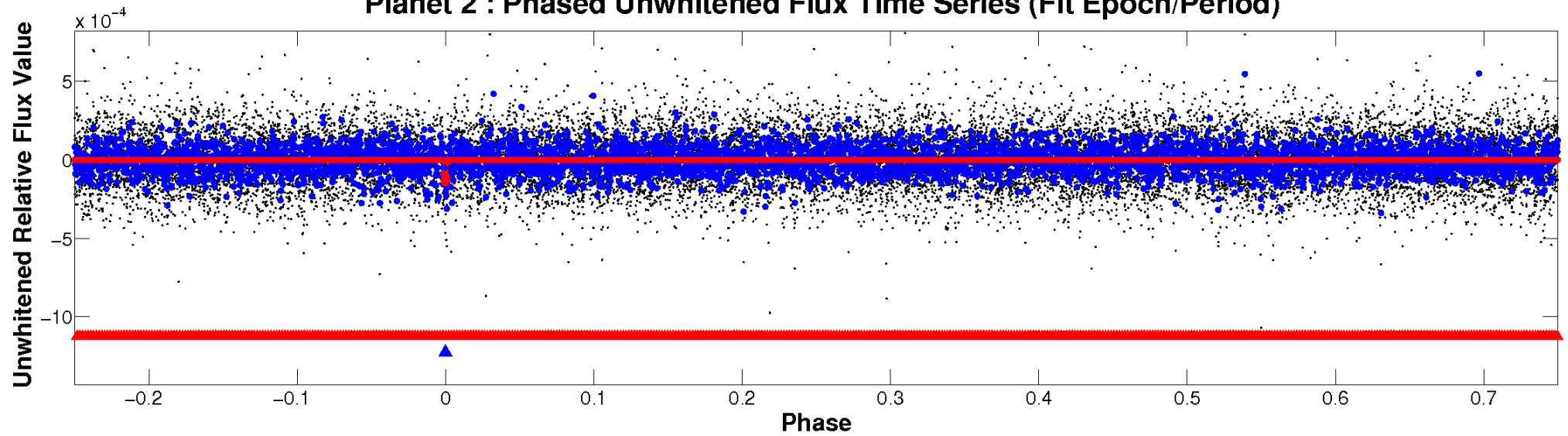
ALT Odd/Even

TCE 006141503-02

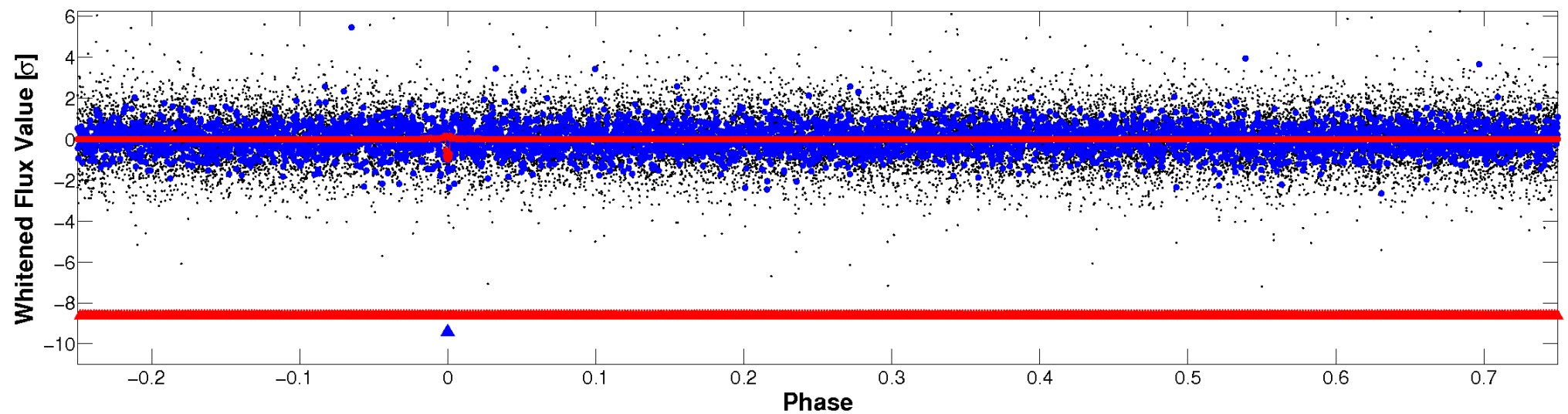


Non-Whitened Vs. Whitened Light Curve

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

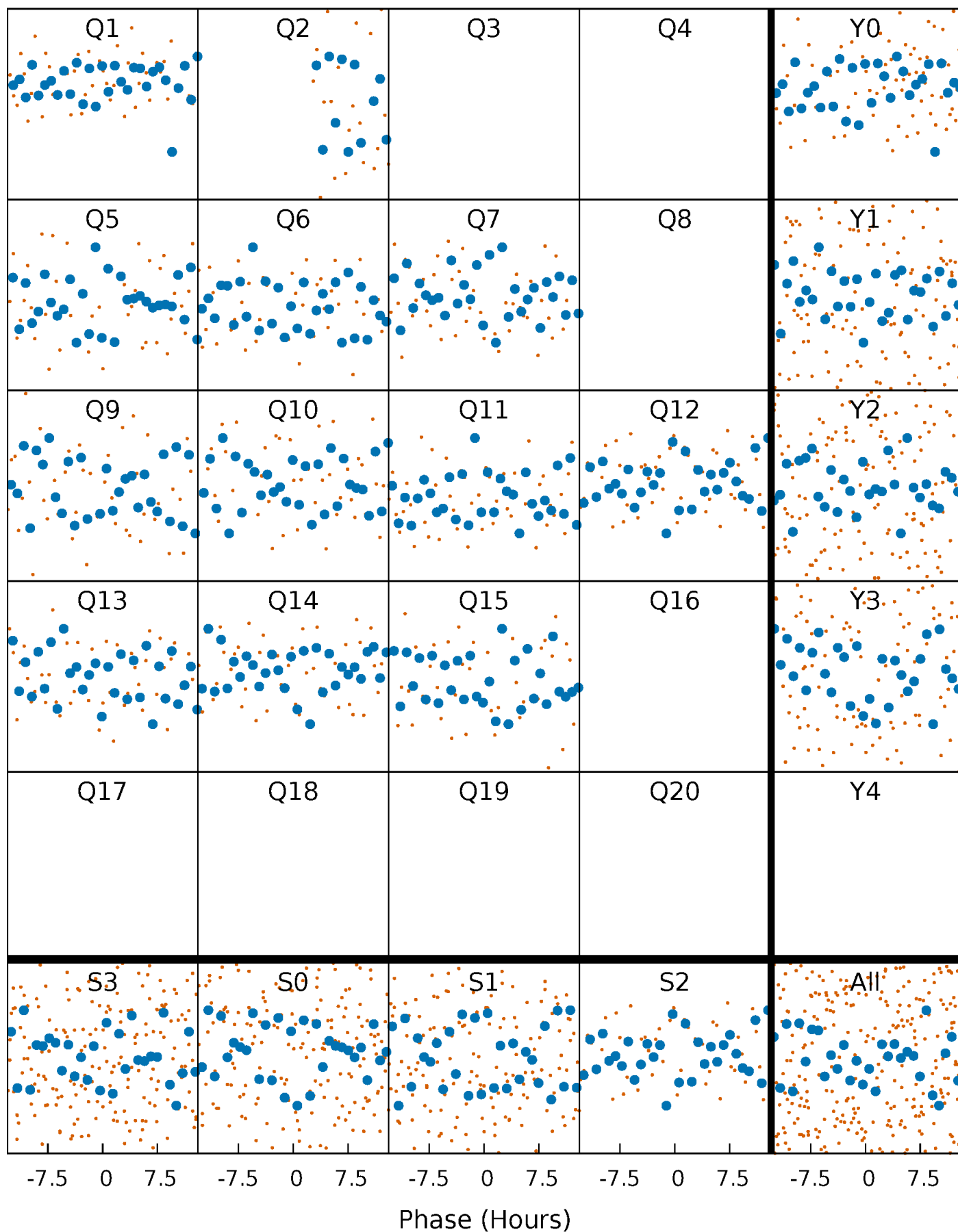


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



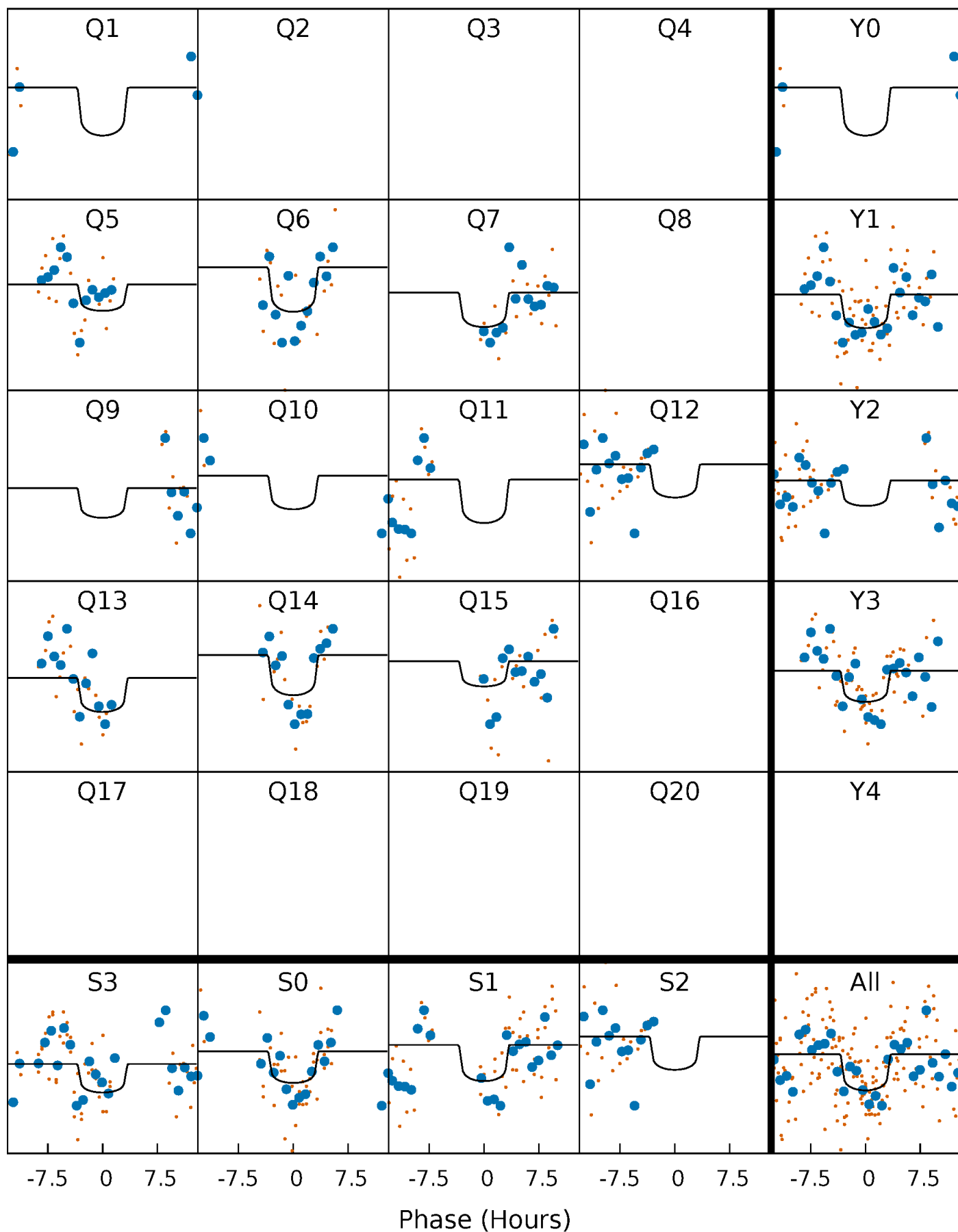
PDC Quarter-Phased Transit Curves

TCE 006141503-02 P= 94.743017 Days $T_0=161.486072$ (BKJD)



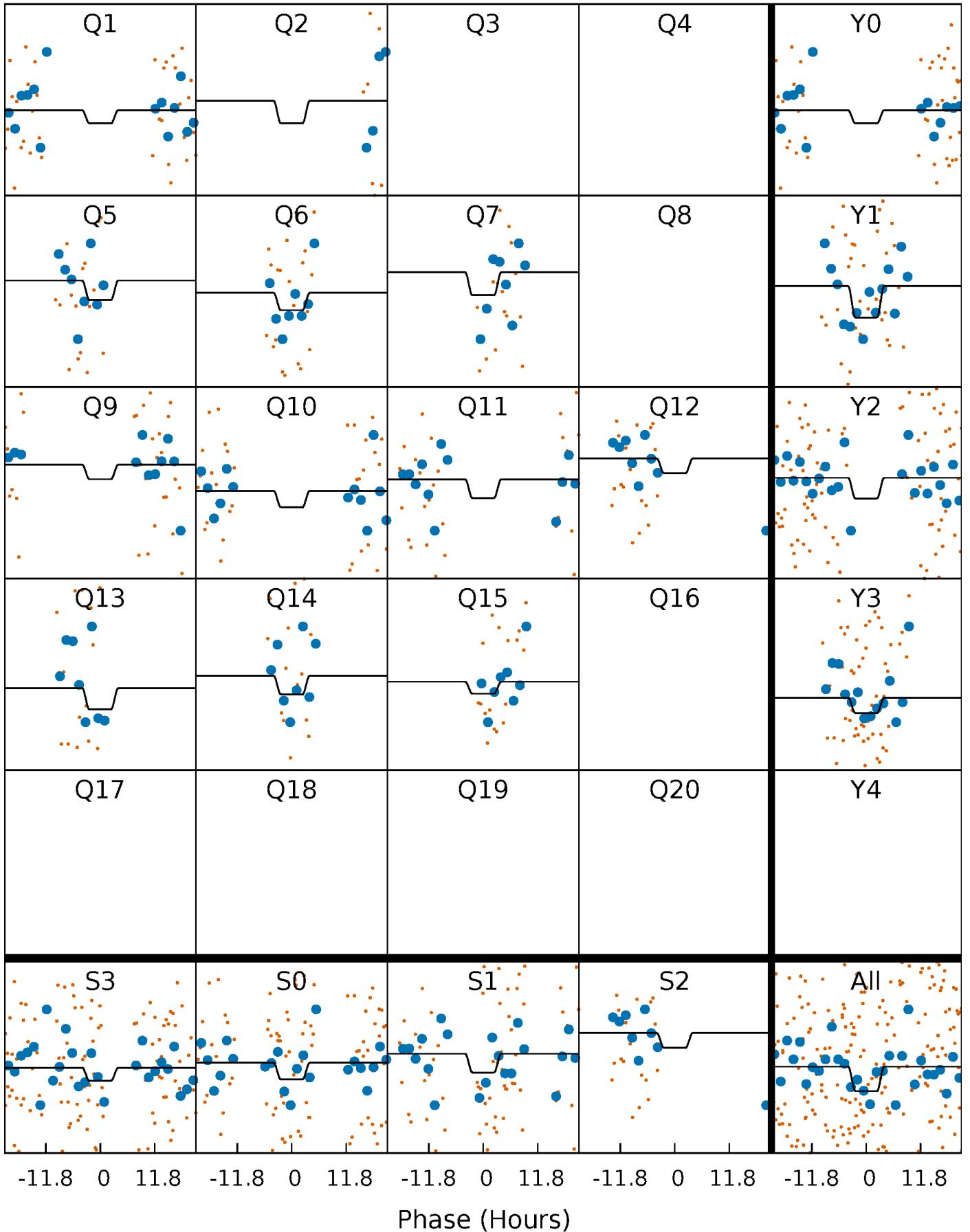
DV Quarter-Phased Transit Curves

TCE 006141503-02 P= 94.743017 Days $T_0=161.486072$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

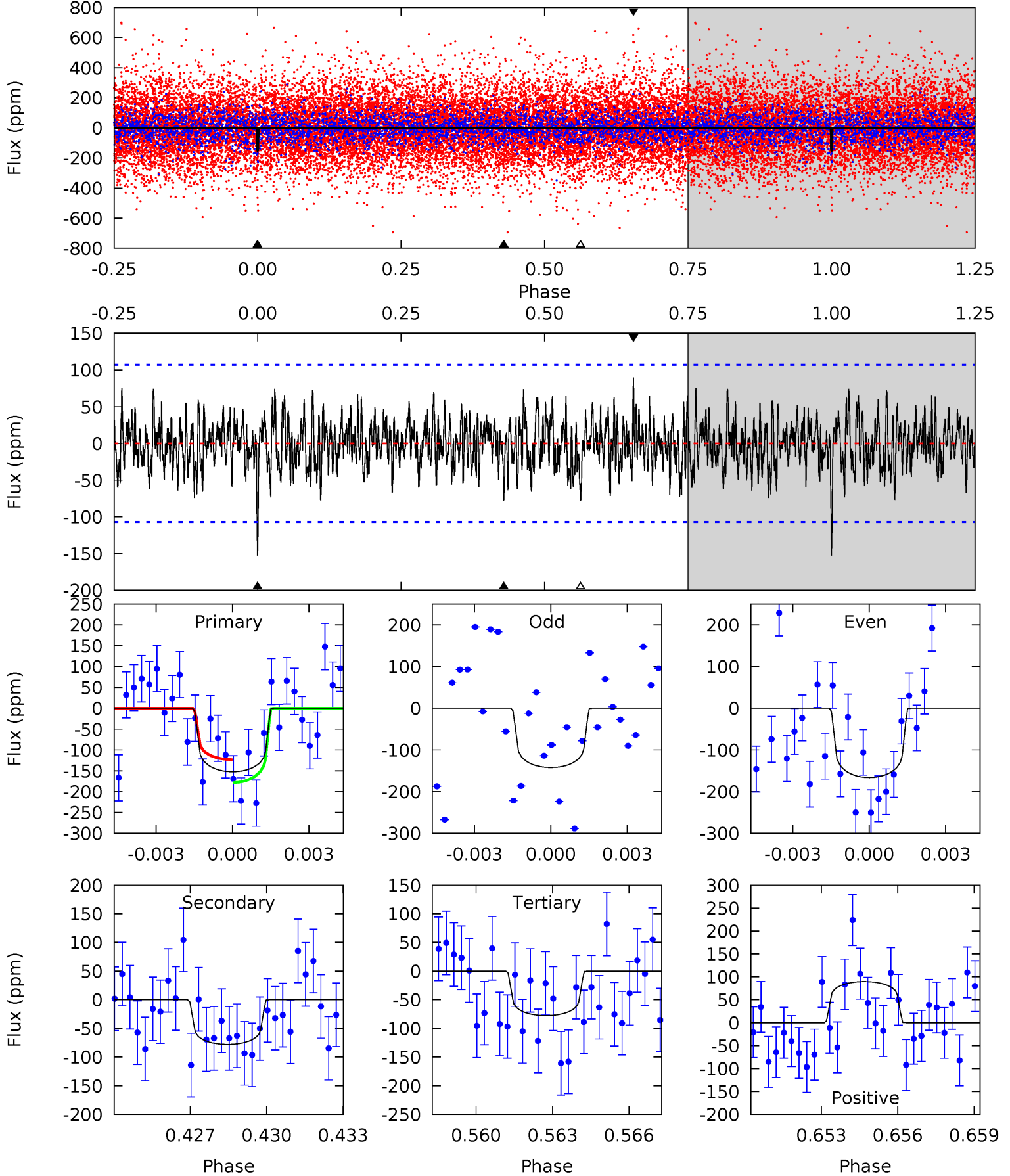
TCE 006141503-02 P= 94.741558 Days $T_0=161.527250$ (BKJD)



DV Model-Shift Uniqueness Test

006141503-02, P = 94.743017 Days, E = 66.743055 Days

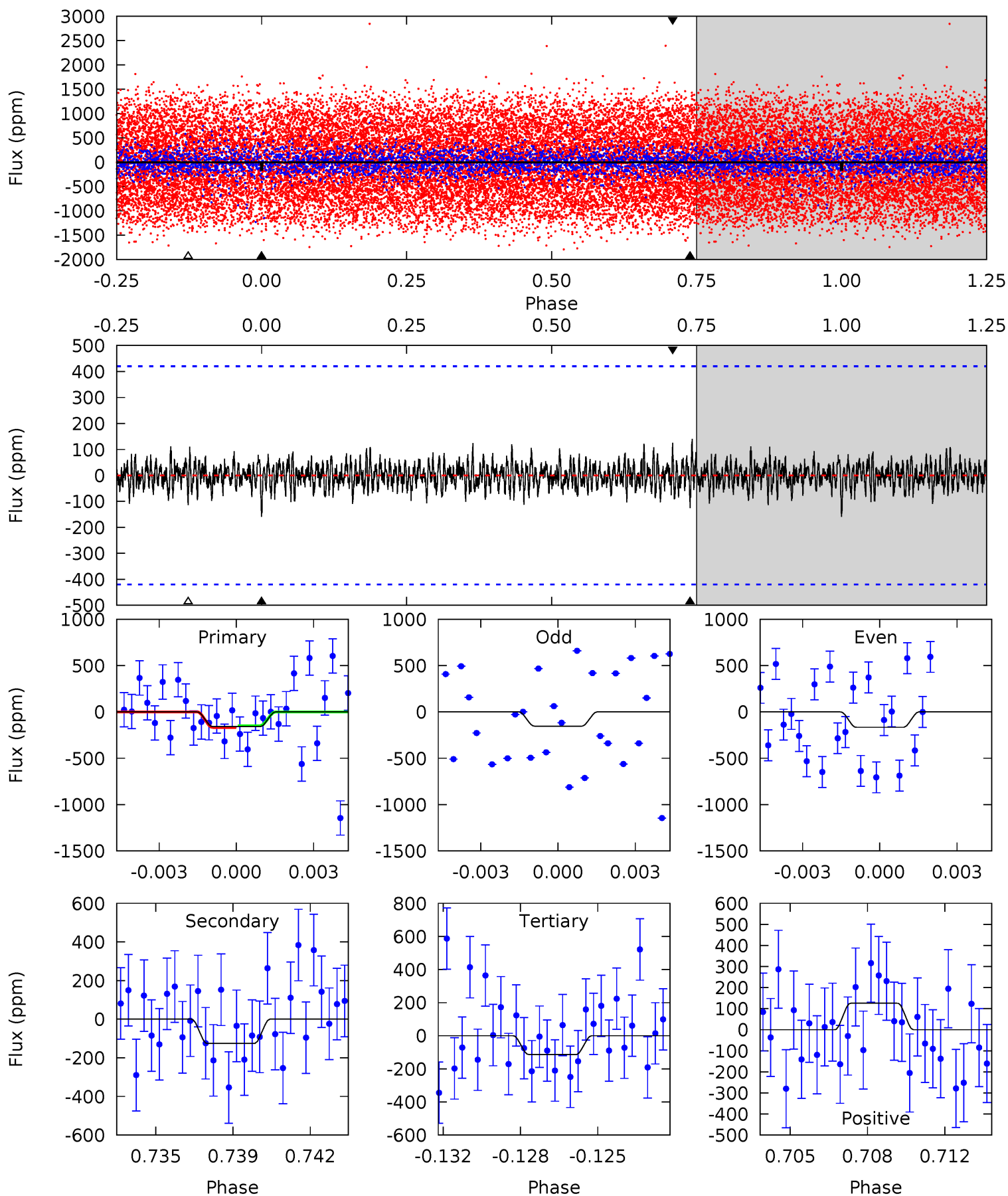
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.48	3.83	3.81	4.40	5.25	2.97	1.38	3.66	3.08	0.01	-0.57	0.59	0.93	0.37	1.35



Alt Model-Shift Uniqueness Test

006141503-02, P = 94.741558 Days, E = 66.785692 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.98	1.56	1.42	1.57	5.23	2.93	0.49	0.56	0.42	0.15	-0.00	0.08	0.96	0.47	0.11



Stellar Parameters For KIC 006141503

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6665^{+160}_{-200}	$4.383^{+0.065}_{-0.195}$	$-0.260^{+0.250}_{-0.300}$	$1.153^{+0.355}_{-0.118}$	$1.176^{+0.167}_{-0.150}$	$1.080^{+0.359}_{-0.549}$
	+2%/-3%	+1%/-4%	+96%/-115%	+31%/-10%	+14%/-13%	+33%/-51%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006141503-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-78 ± 20	$1.74^{+1.35}_{-1.04}$	683^{+43}_{-29}	5340^{+3347}_{-1069}	2373^{+11750}_{-1577}
Alt.	-126 ± 80	$1.81^{+1.49}_{-1.07}$	686^{+45}_{-30}	5823^{+4270}_{-1699}	3392^{+17288}_{-2751}

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

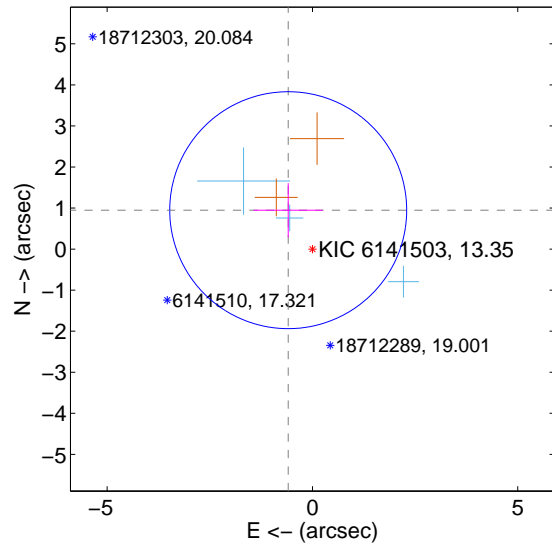
Supplemental centroid analysis for 006141503-02. Kepler magnitude: 13.35. Transit SNR 6.84

There are 3 quarters with good PRF difference image offsets

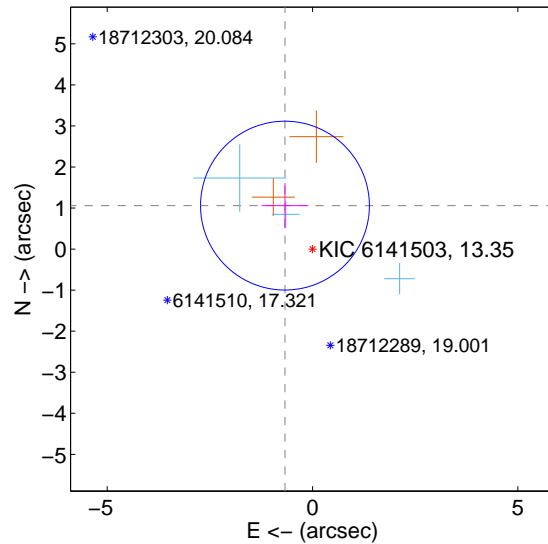
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.117 ± 0.962	1.16	0.590 ± 0.843	0.948 ± 0.659
PRF-fit source offset from KIC position	1.254 ± 0.685	1.83	0.671 ± 0.565	1.059 ± 0.550
photometric centroid source offset	1.01 ± 1.30	0.78	-0.11 ± 1.33	-1.01 ± 1.30

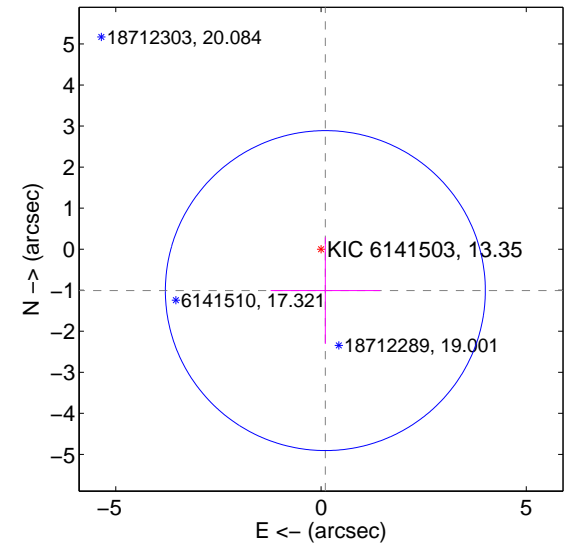
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

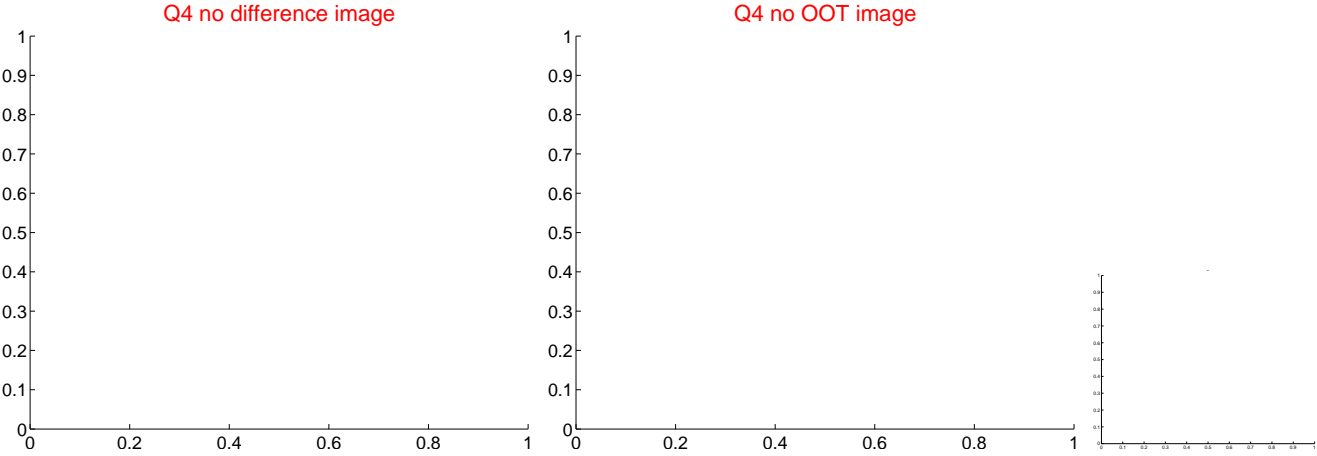
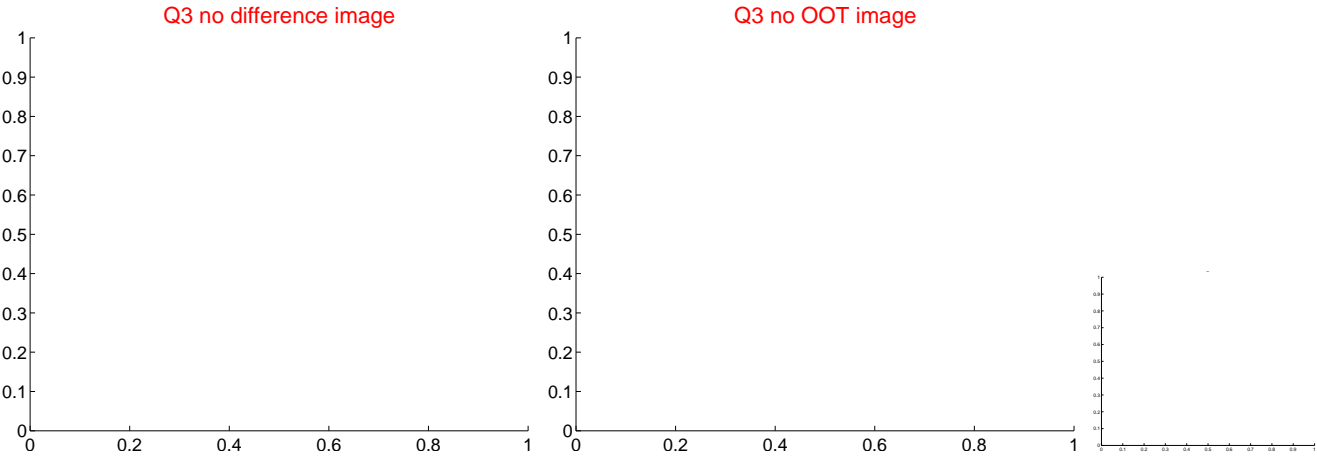
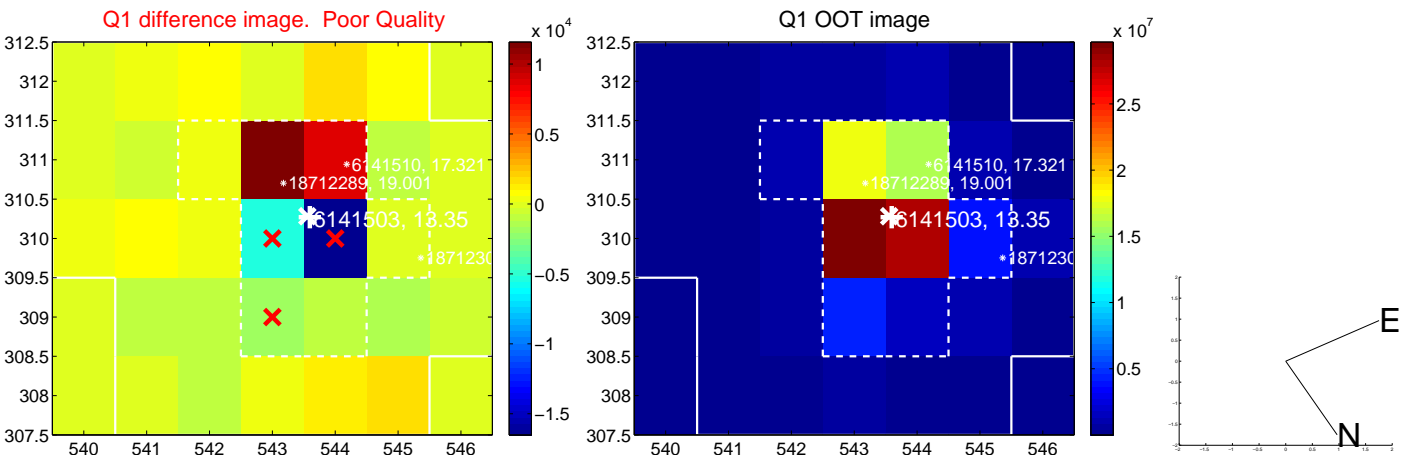


offset from photometric centroids

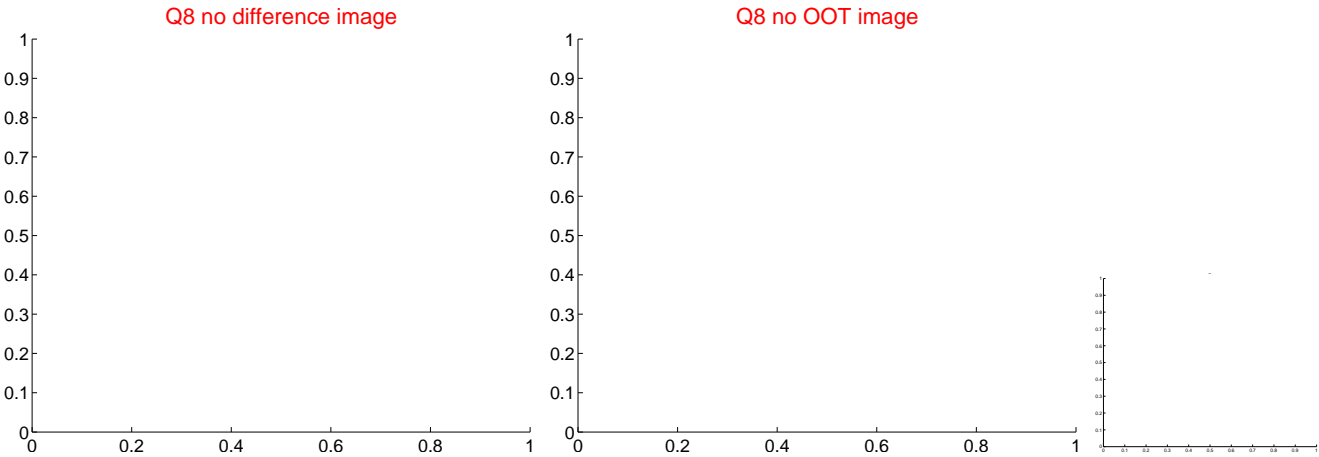
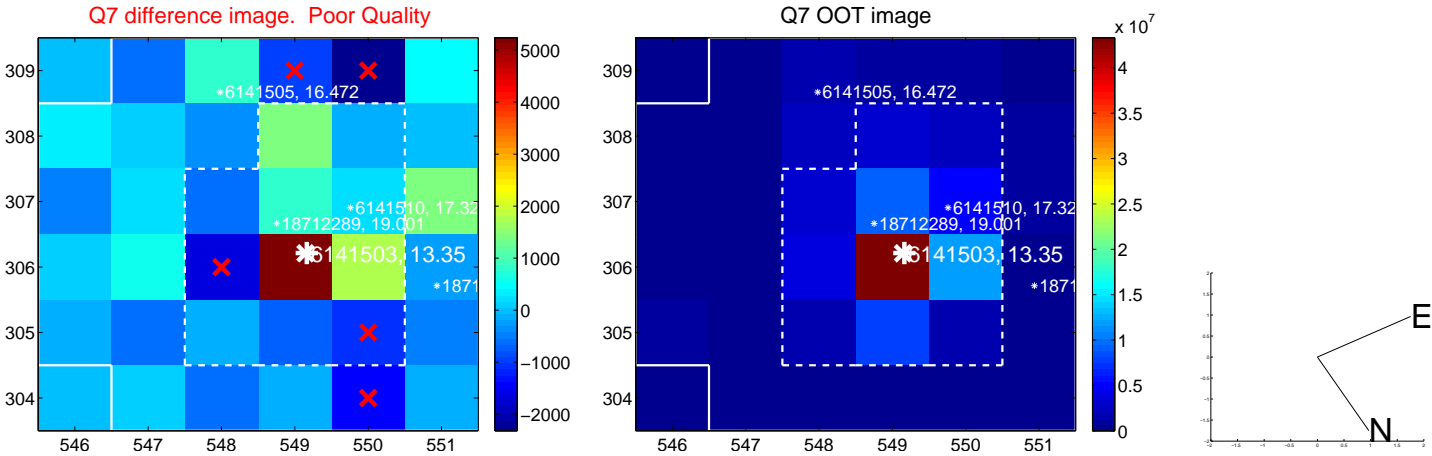
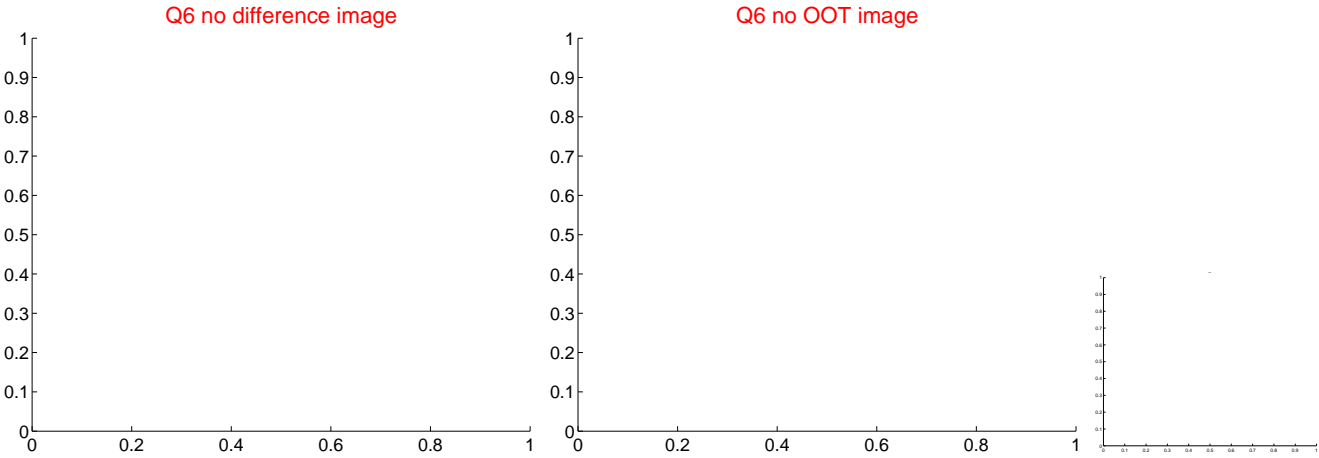
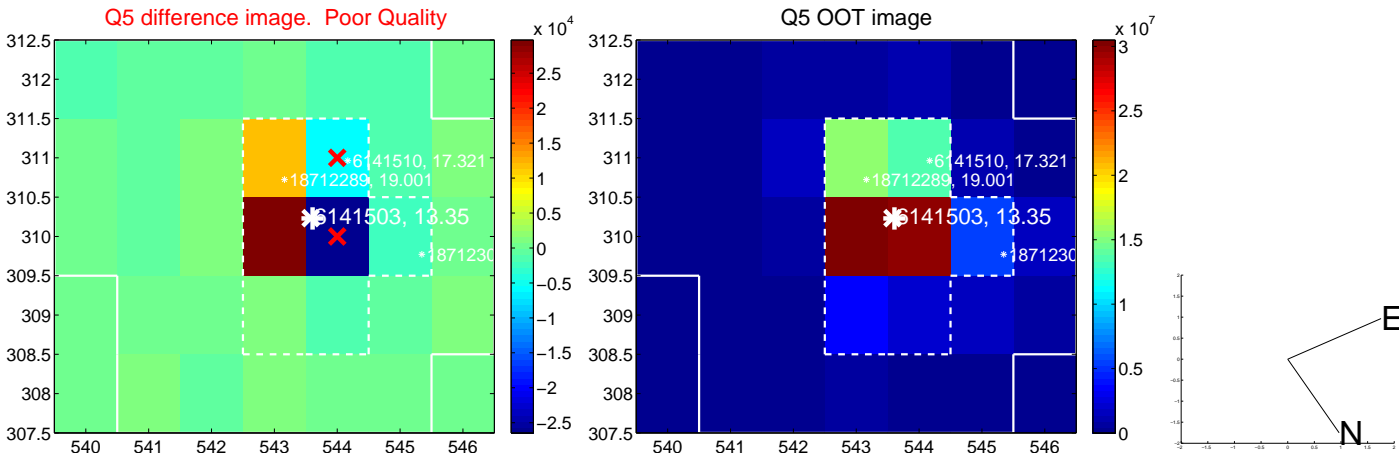


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

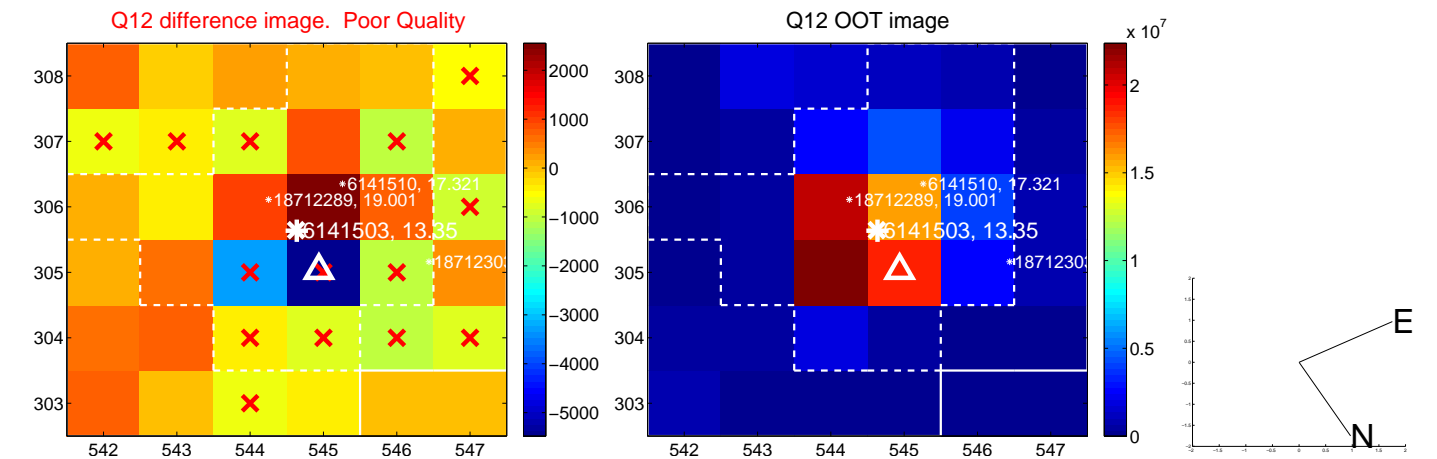
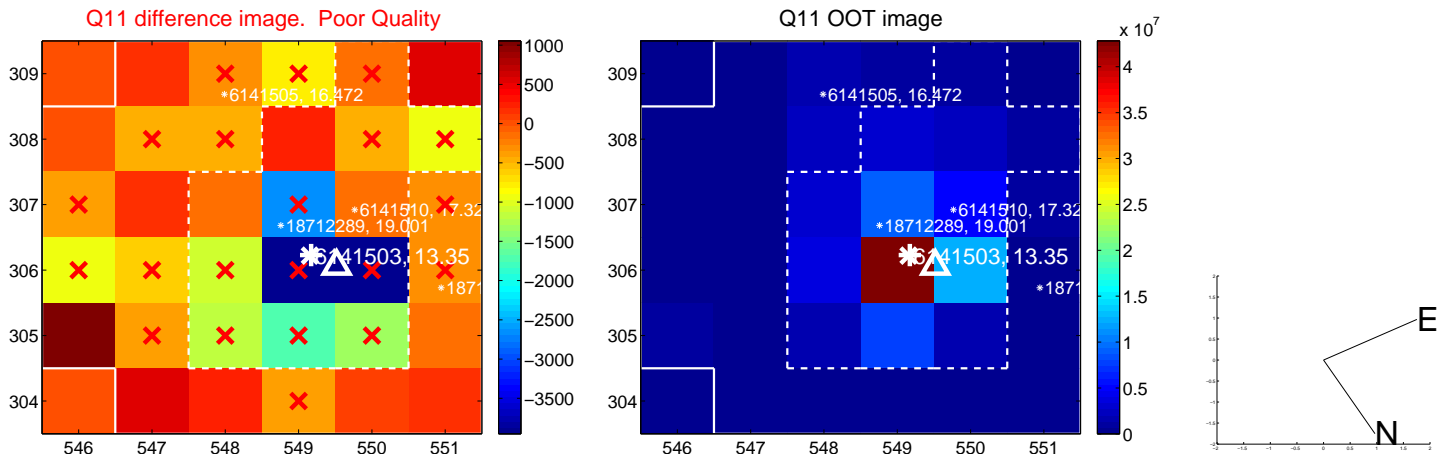
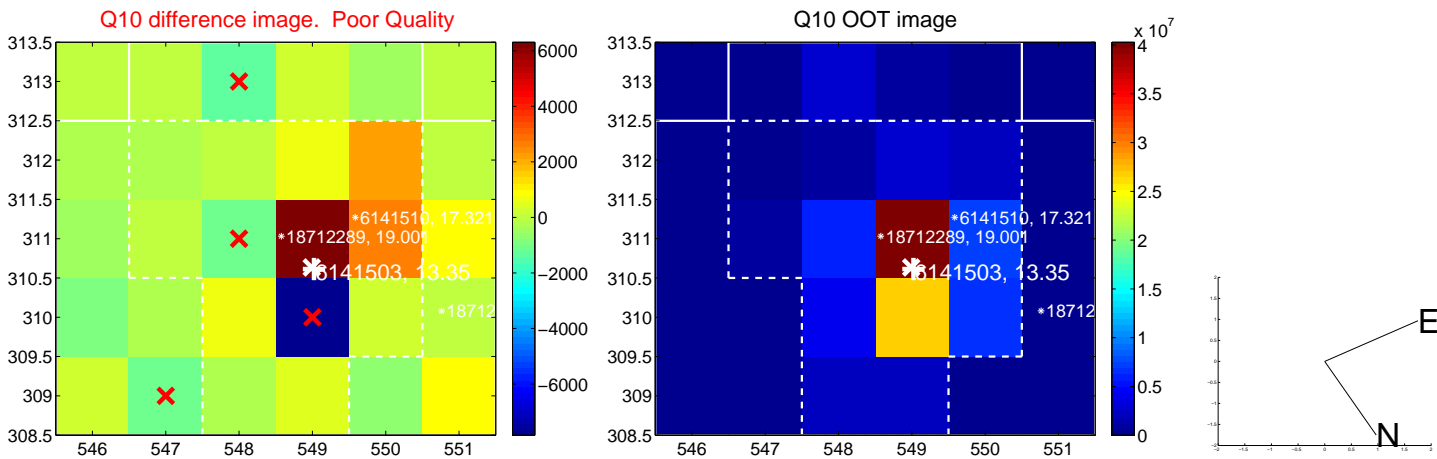
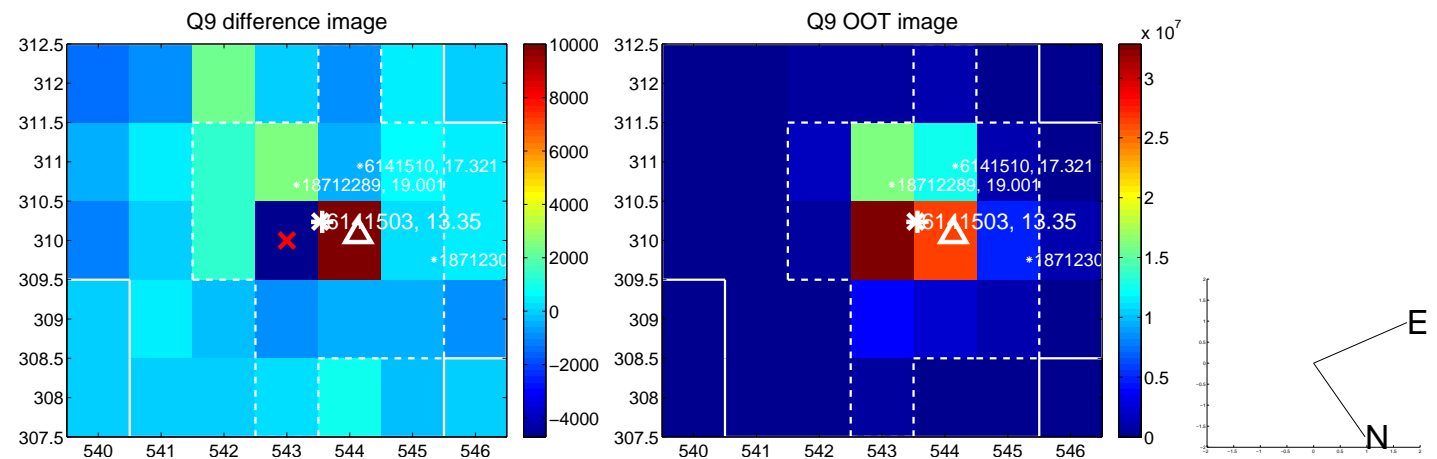
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



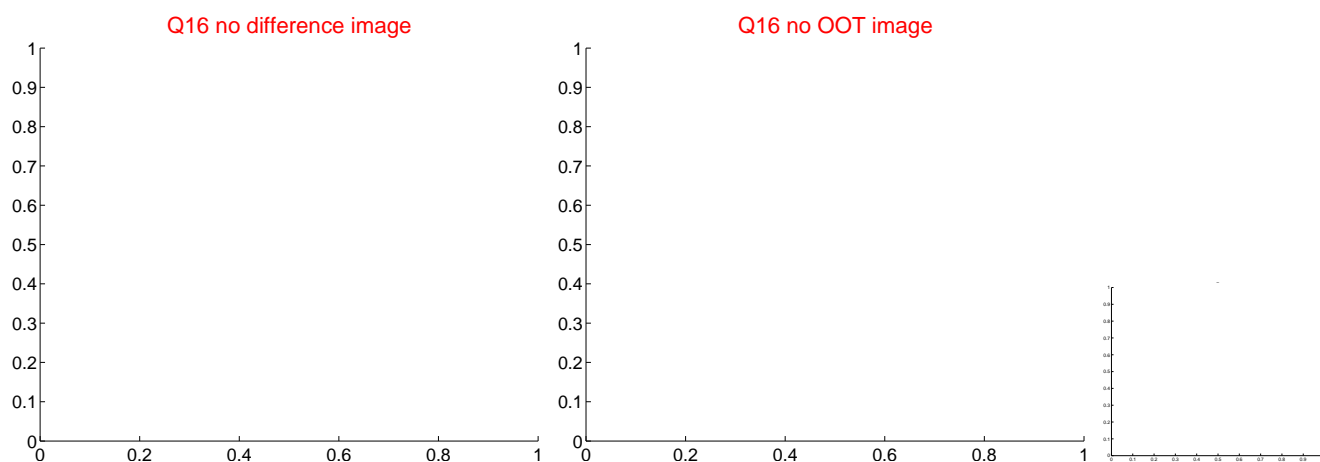
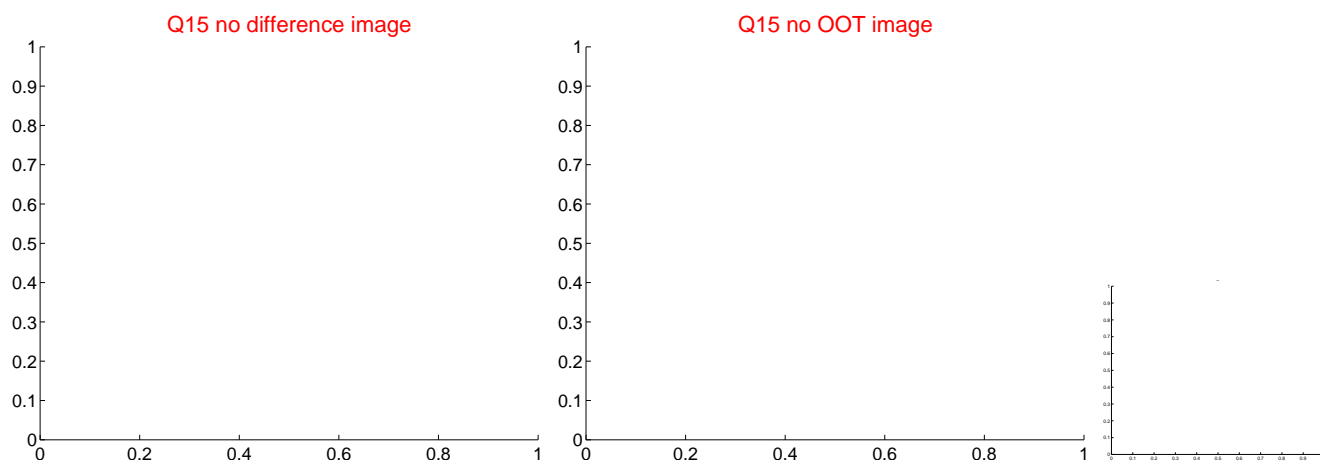
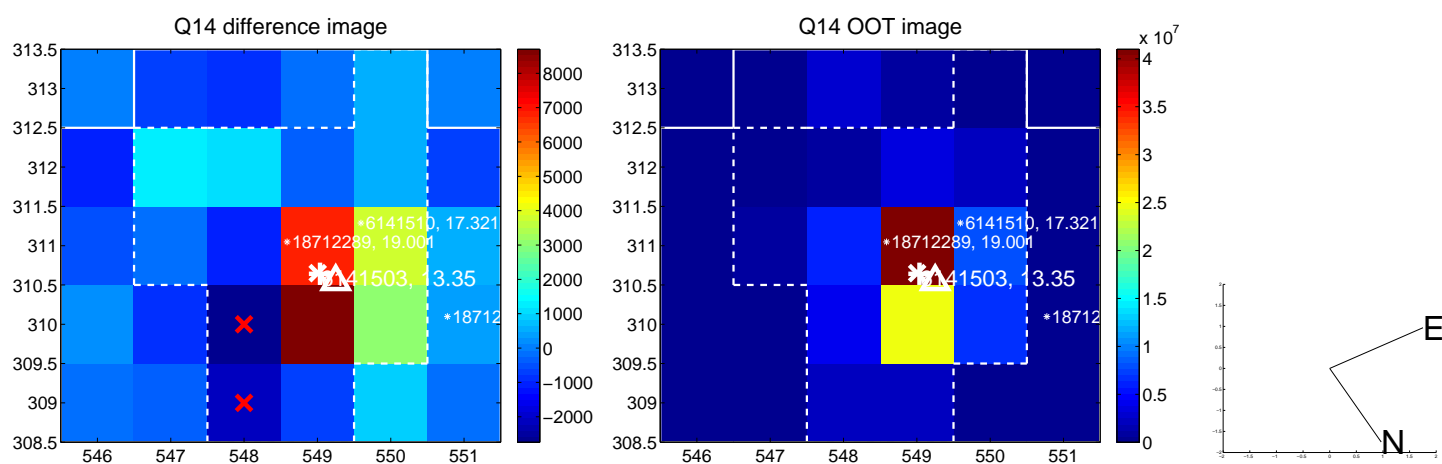
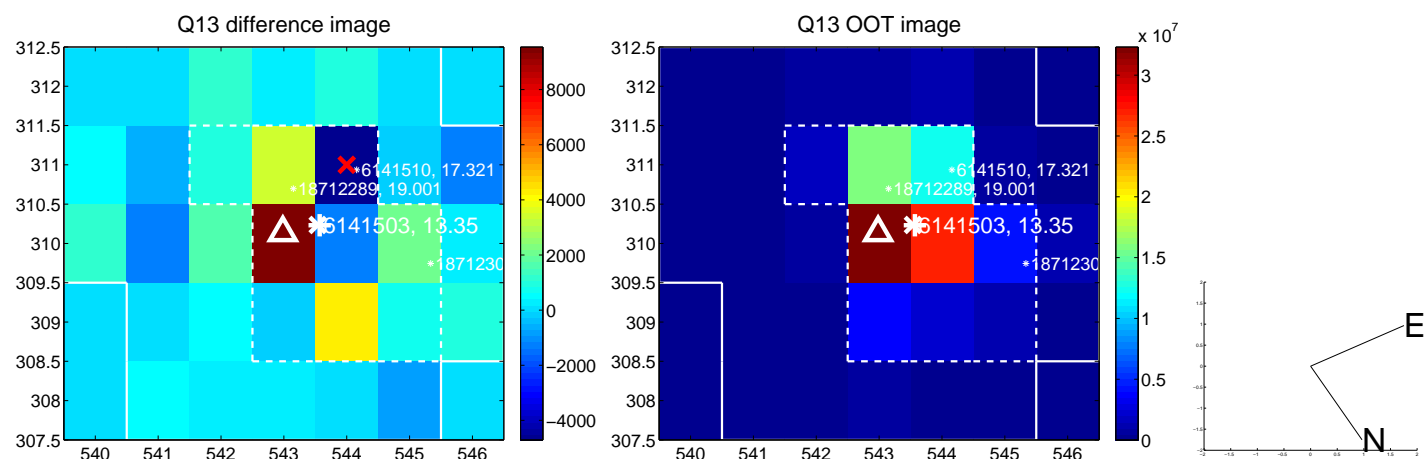
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



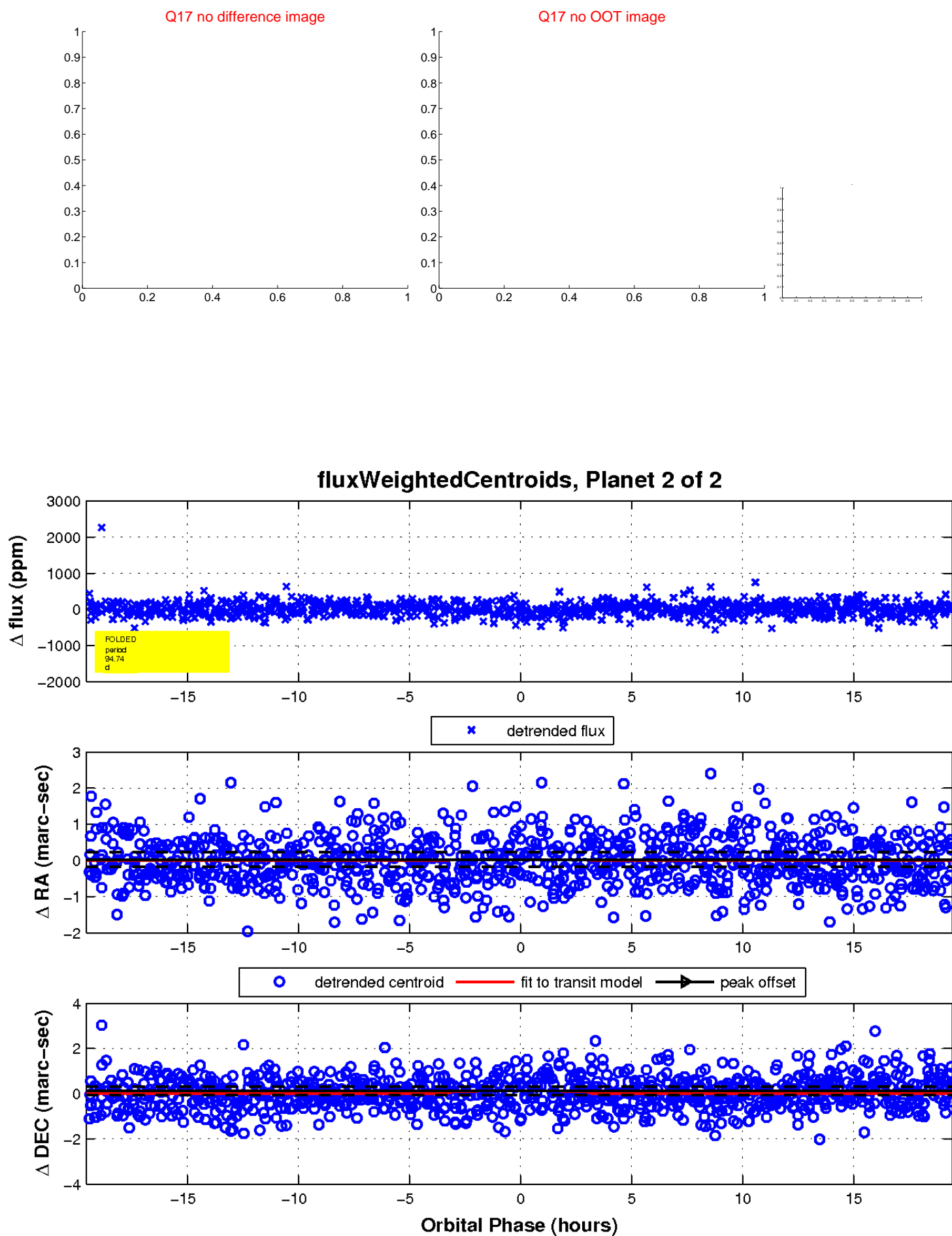
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

