

KIC 005374537

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})
005374537-01	OBS	No	1.094593	131.710975	27.4	5.060	7.7	5.6	1.05	5822	0.58	2831.59
005374537-02	OBS	No	77.068335	172.992793	451.9	3.256	7.1	7.0	1.05	5822	2.58	9.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005374537-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
005374537-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

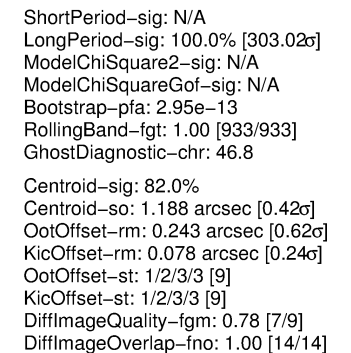
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

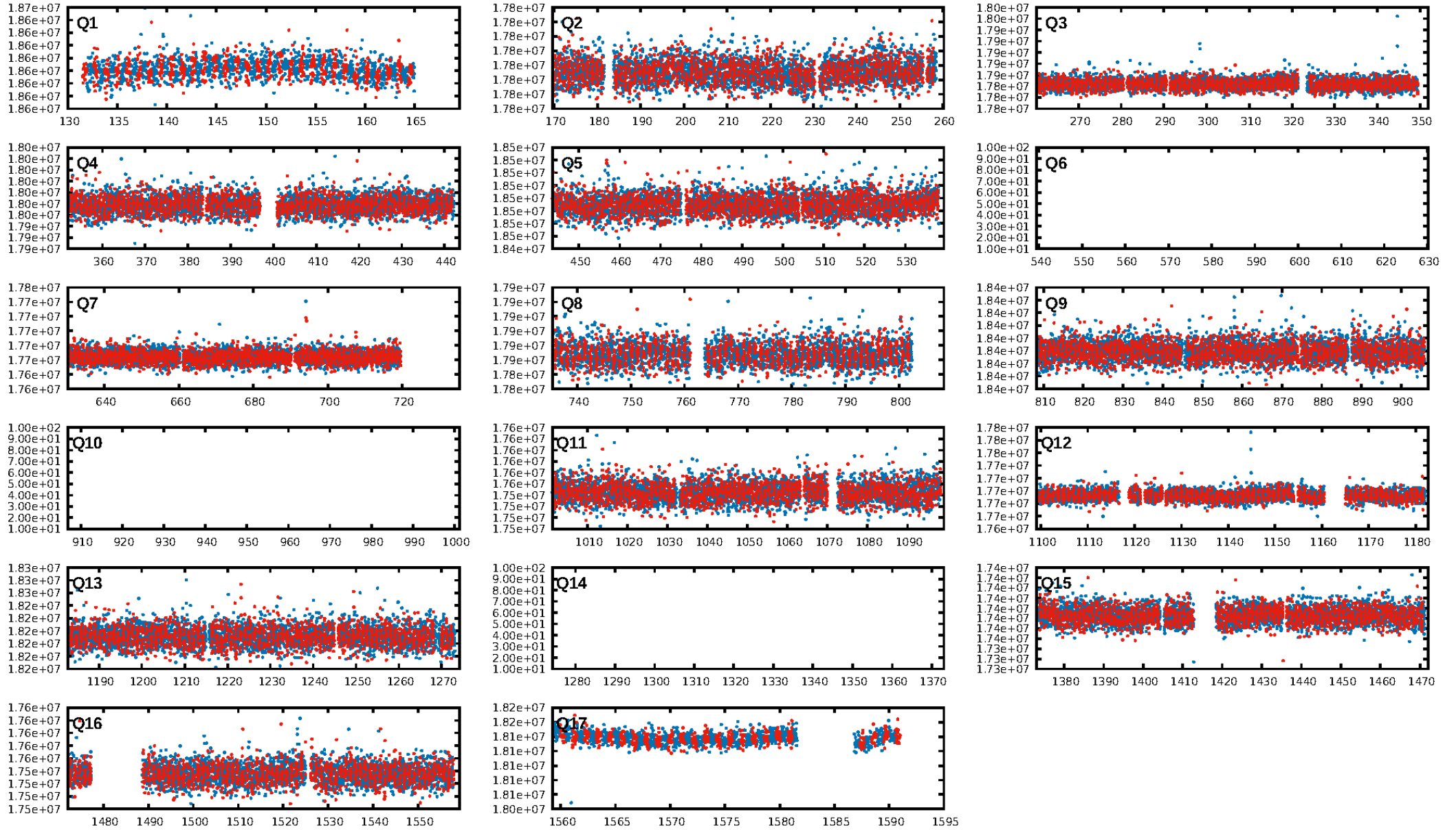
Ephemeris Match Information For 005374537-01

No Significant Match Found

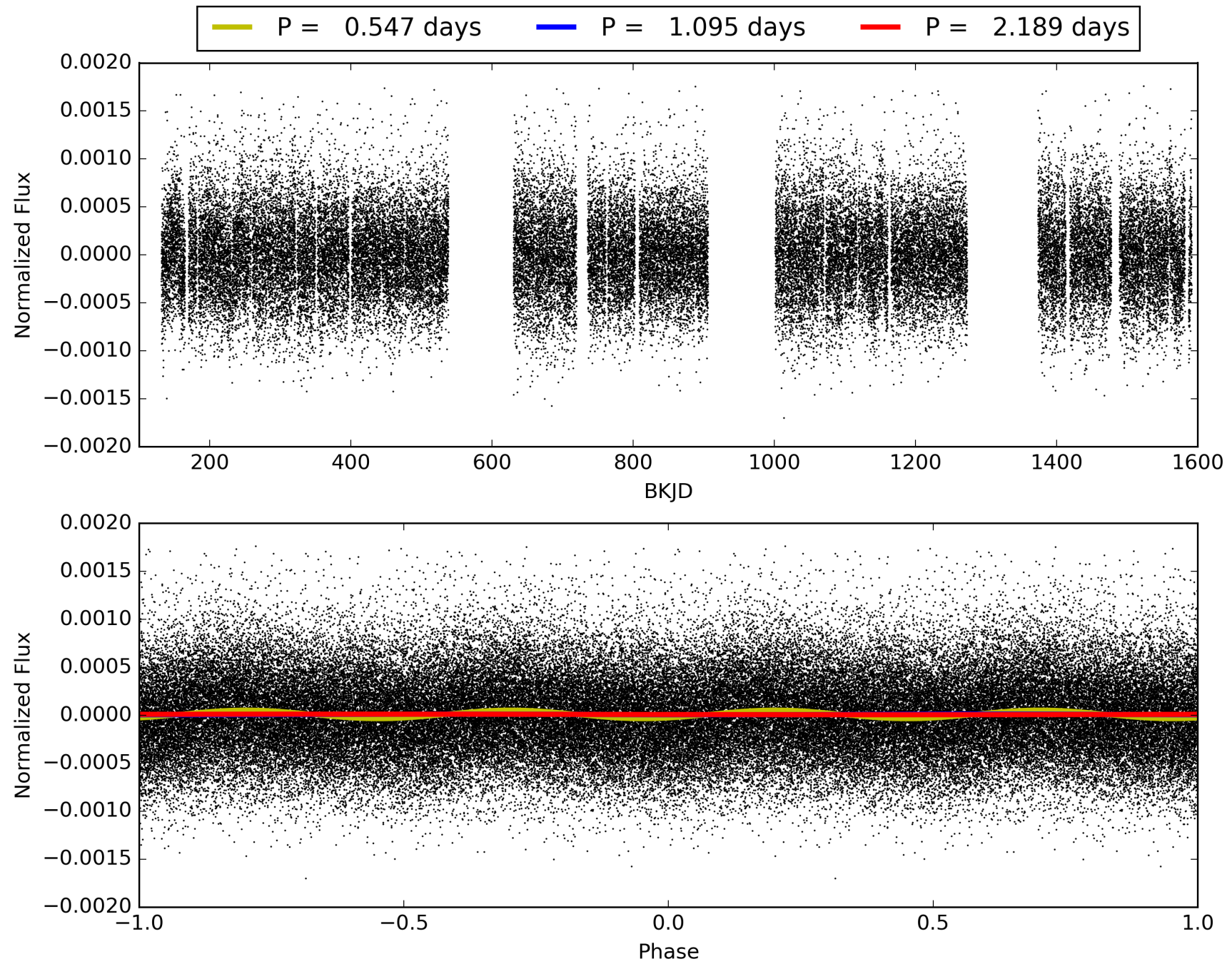
KIC: 5374537 Candidate: 1 of 2 Period: 1.095 d



TCE 005374537-01, PDC Light Curves

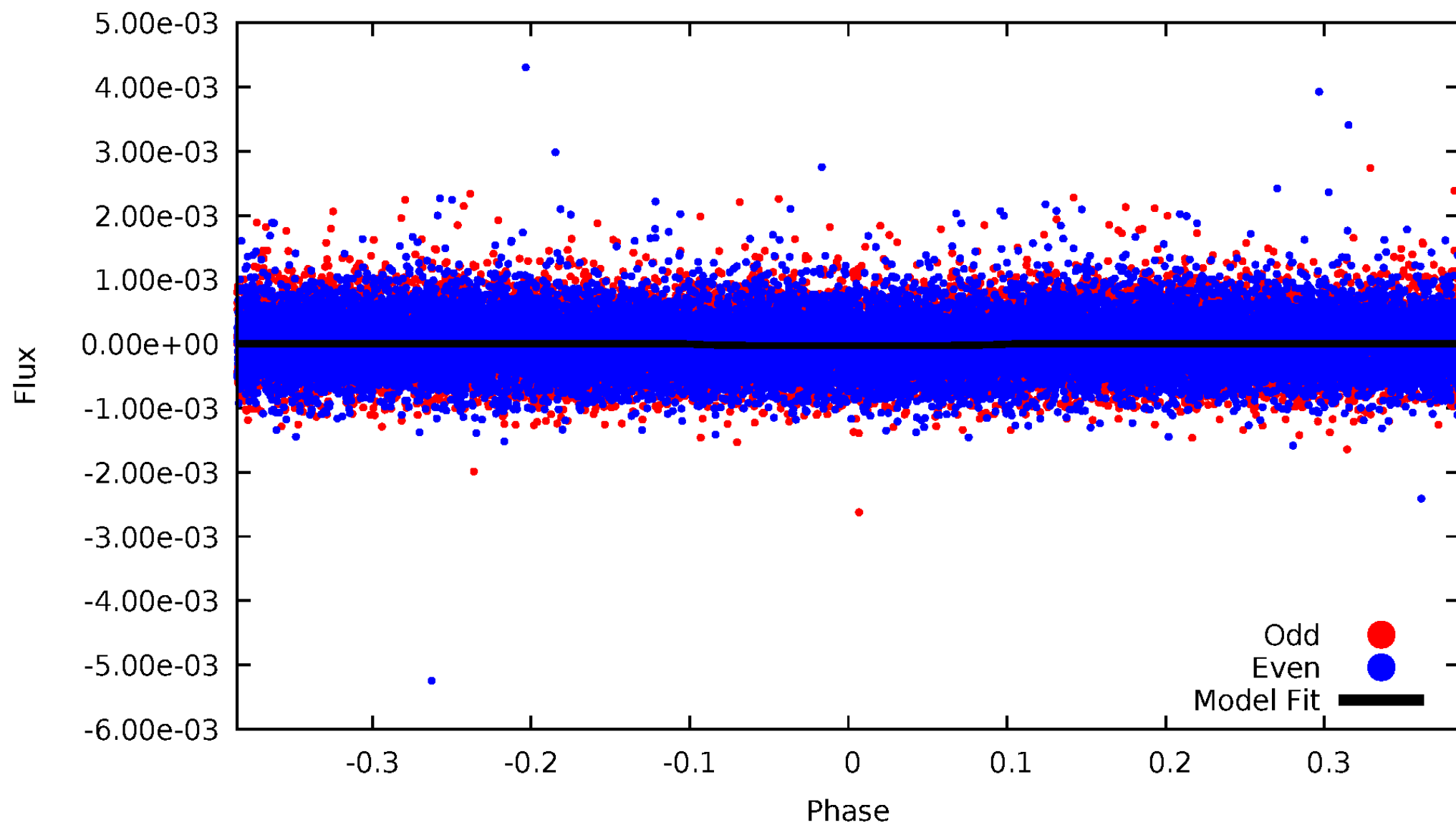


TCE 005374537-01



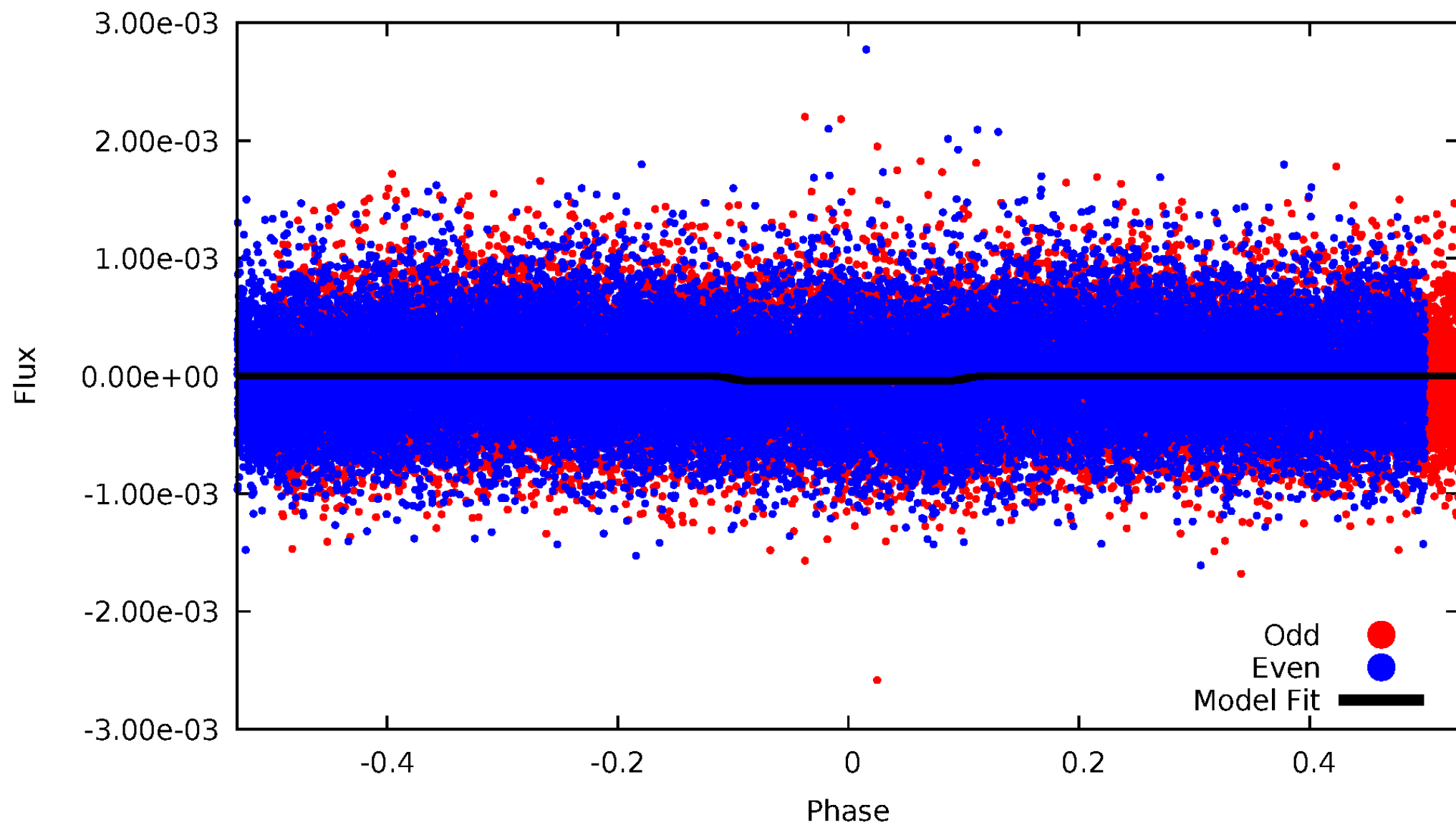
DV Odd/Even

TCE 005374537-01



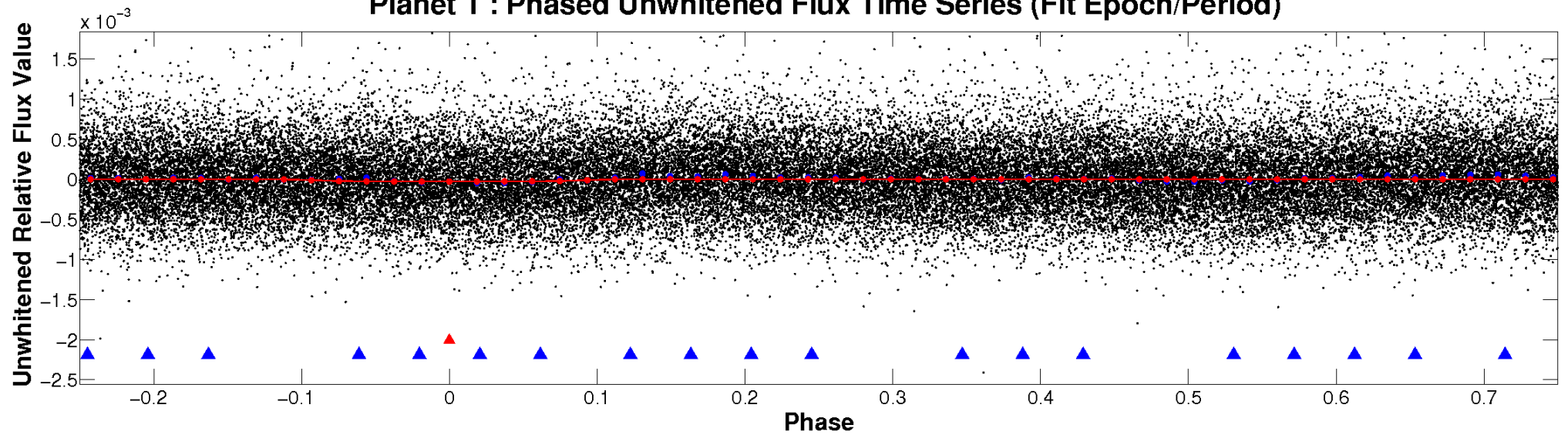
ALT Odd/Even

TCE 005374537-01

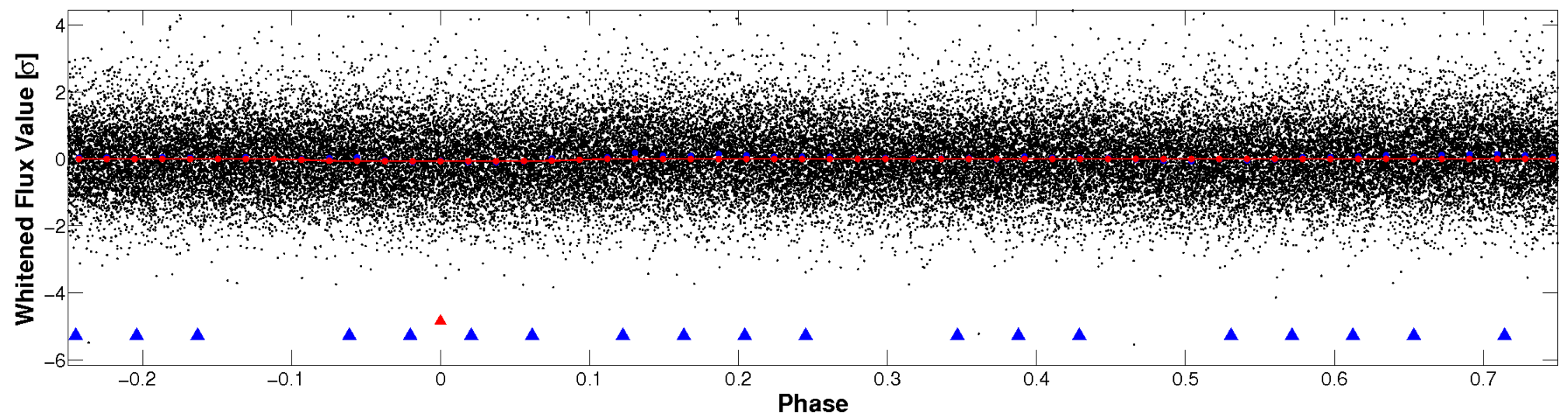


Non-Whitened Vs. Whitened Light Curve

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

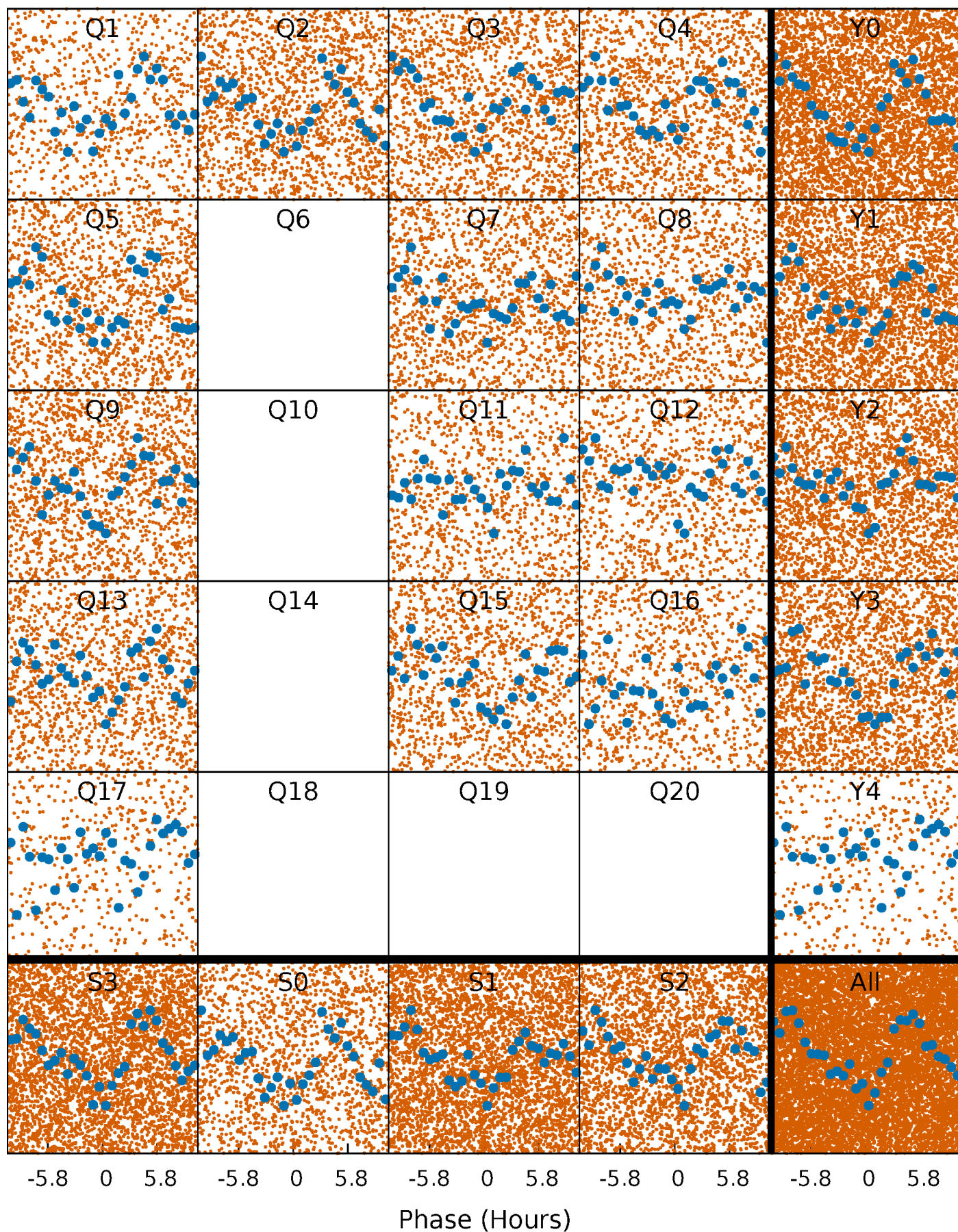


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



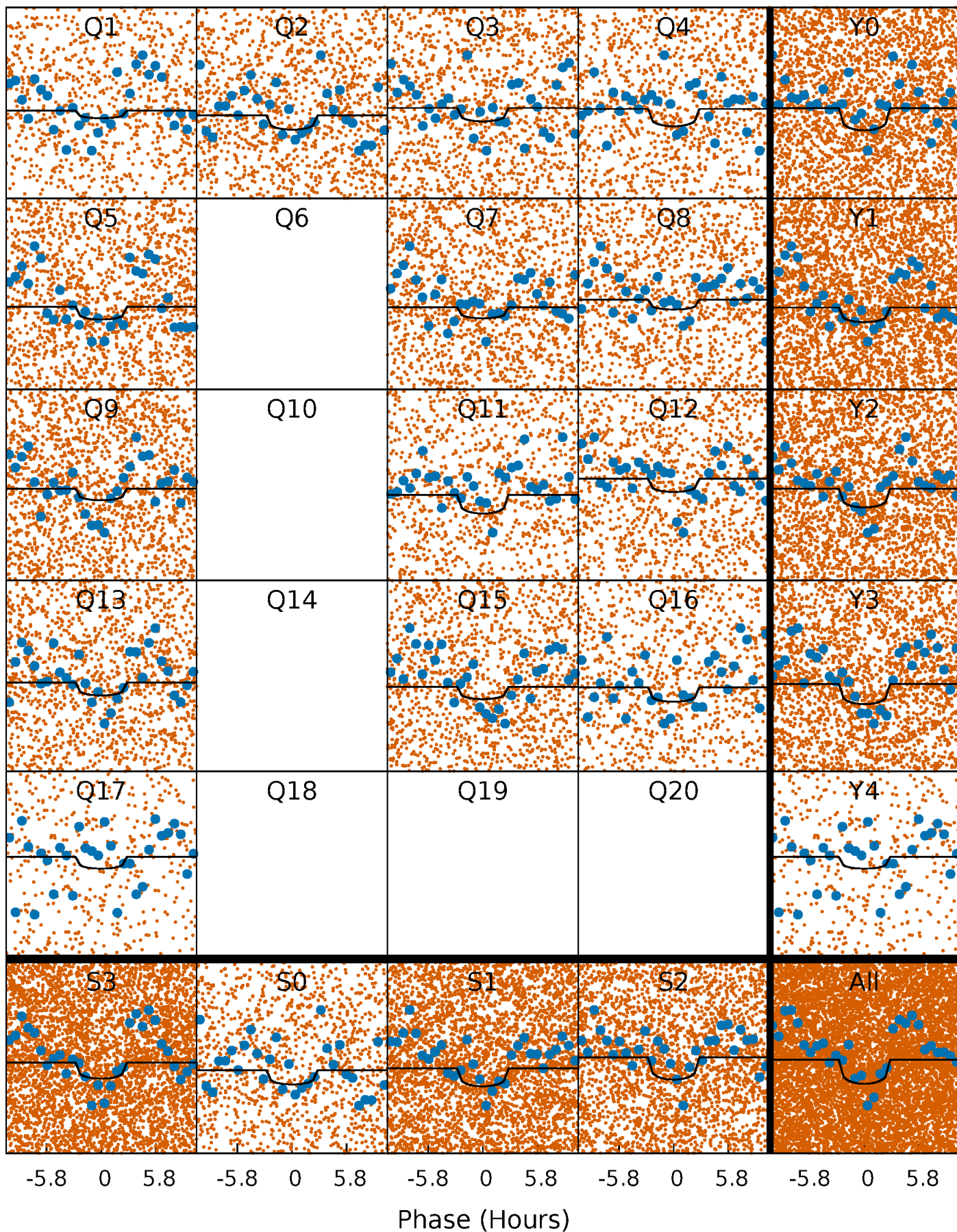
PDC Quarter-Phased Transit Curves

TCE 005374537-01 P= 1.094593 Days $T_0=131.710974$ (BKJD)



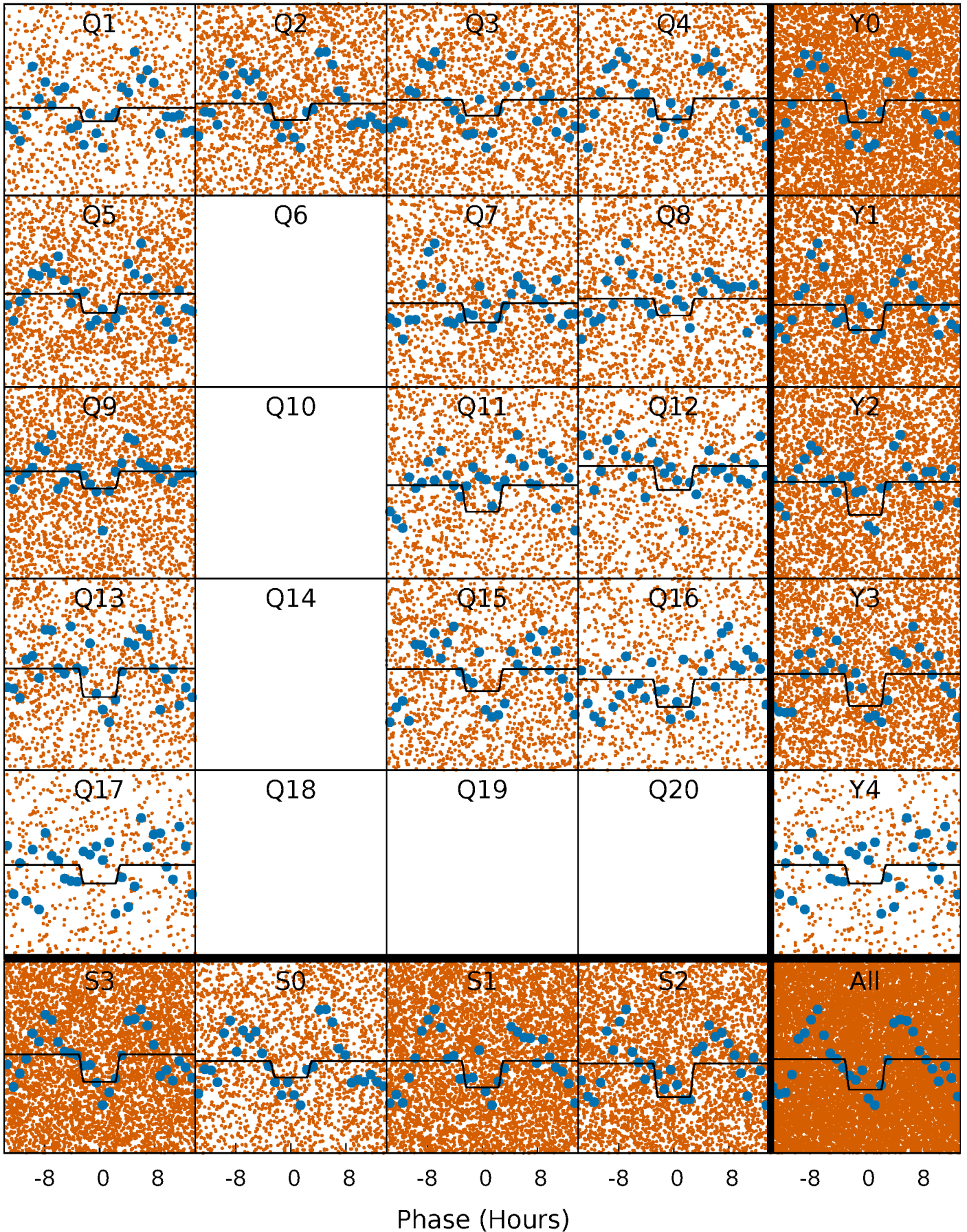
DV Quarter-Phased Transit Curves

TCE 005374537-01 P= 1.094593 Days $T_0=131.710974$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

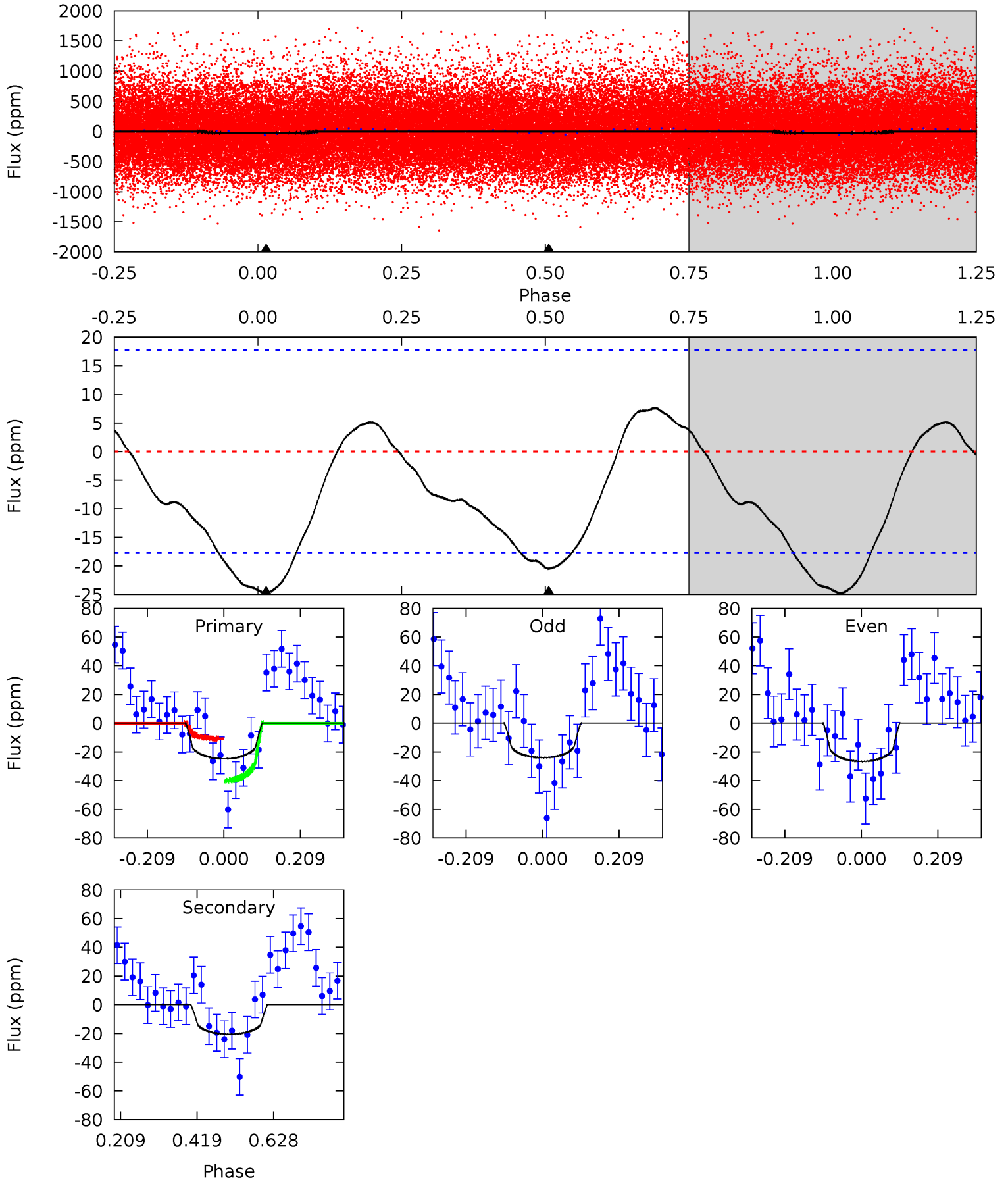
TCE 005374537-01 P= 1.094616 Days $T_0=131.664029$ (BKJD)



DV Model-Shift Uniqueness Test

005374537-01, P = 1.094593 Days, E = 130.616381 Days

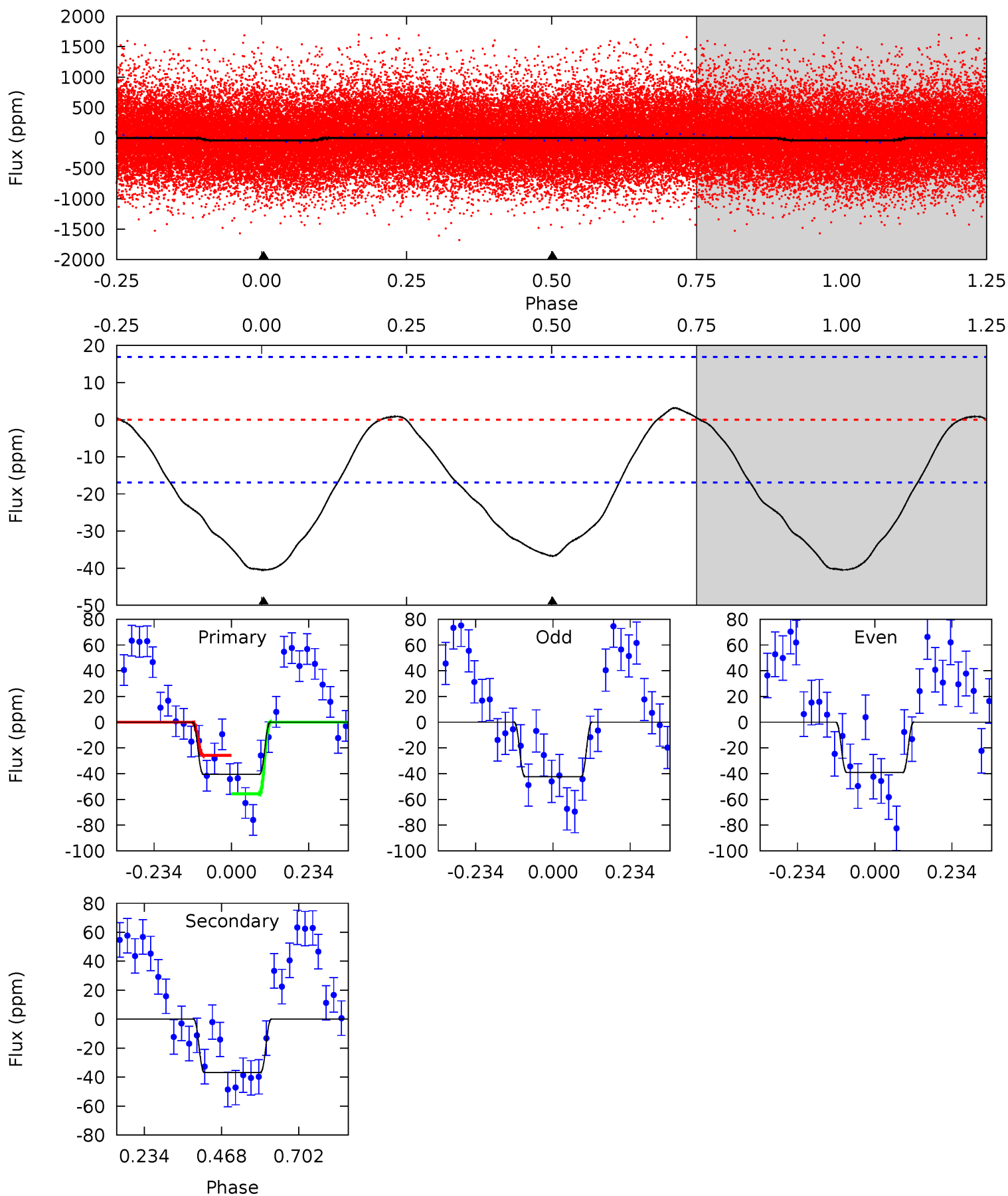
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.16	5.09	0	0	4.41	1.26	0.86	6.16	6.16	5.09	5.09	0.33	0.89	0.23	3.67



Alt Model-Shift Uniqueness Test

005374537-01, P = 1.094616 Days, E = 130.569413 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	9.52	0	0	4.38	1.19	0.48	10.5	10.5	9.52	9.52	0.42	0.96	0.07	3.94



Stellar Parameters For KIC 005374537

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5822^{+174}_{-174}	$4.346^{+0.180}_{-0.180}$	$-0.240^{+0.300}_{-0.300}$	$1.049^{+0.293}_{-0.195}$	$0.890^{+0.132}_{-0.081}$	$1.087^{+0.845}_{-0.552}$
	+3%/-3%	+4%/-4%	+125%/-125%	+28%/-19%	+15%/-9%	+78%/-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 005374537-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-20 ± 4	$0.76^{+0.63}_{-0.49}$	2593^{+203}_{-156}	4843^{+3463}_{-1063}	$7.706^{+51.771}_{-5.506}$
Alt.	-37 ± 4	$0.84^{+0.67}_{-0.53}$	2599^{+198}_{-168}	5280^{+3857}_{-1125}	11^{+70}_{-8}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

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

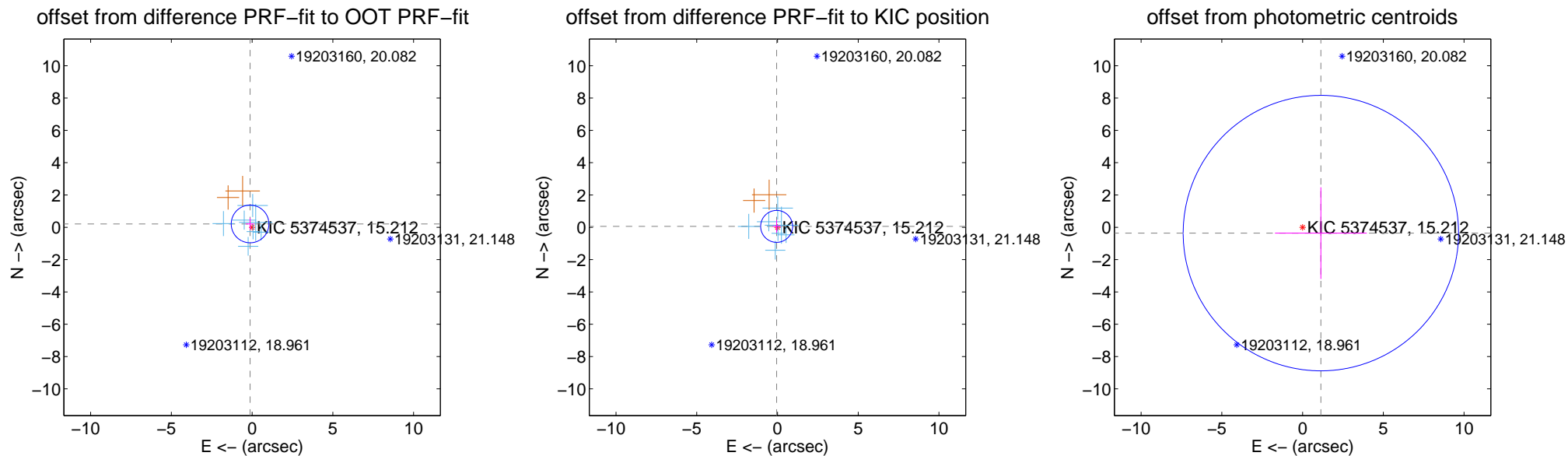
DV Centroid Data

Supplemental centroid analysis for 005374537-01. Kepler magnitude: 15.21. Transit SNR 5.64

There are 7 quarters with good PRF difference image offsets

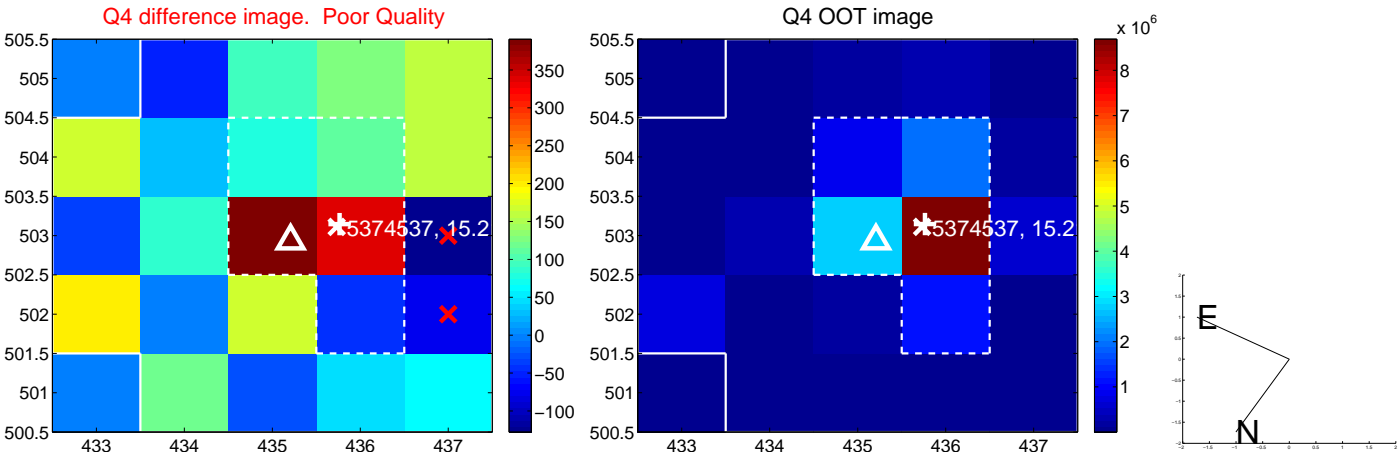
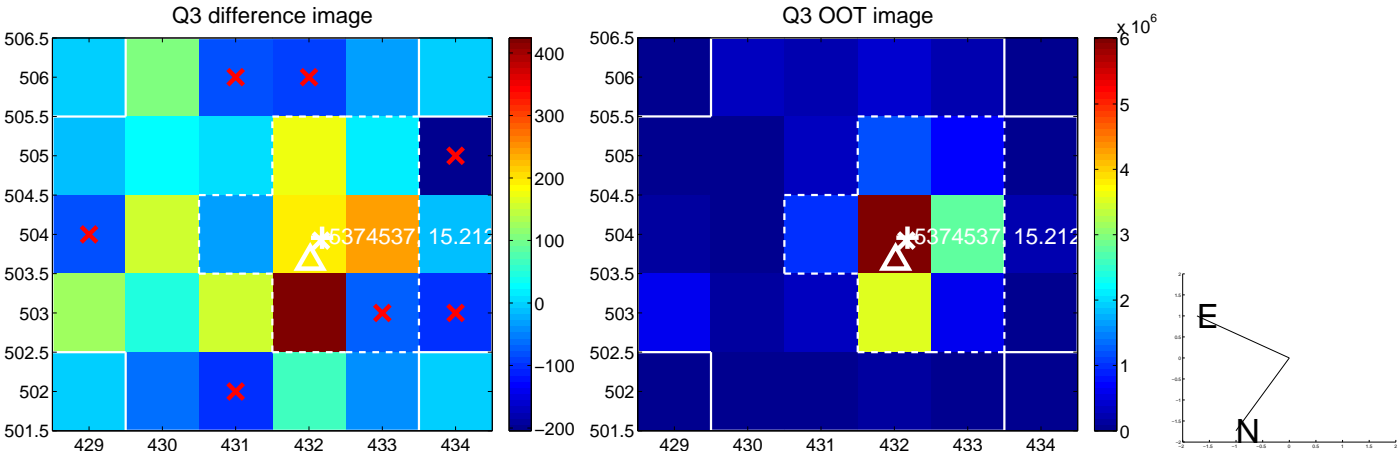
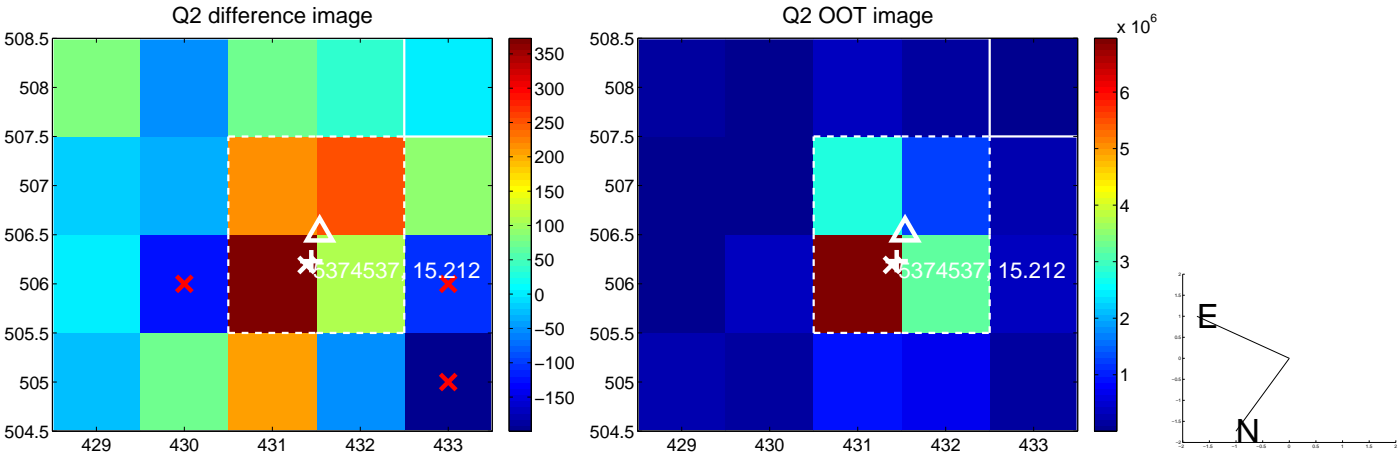
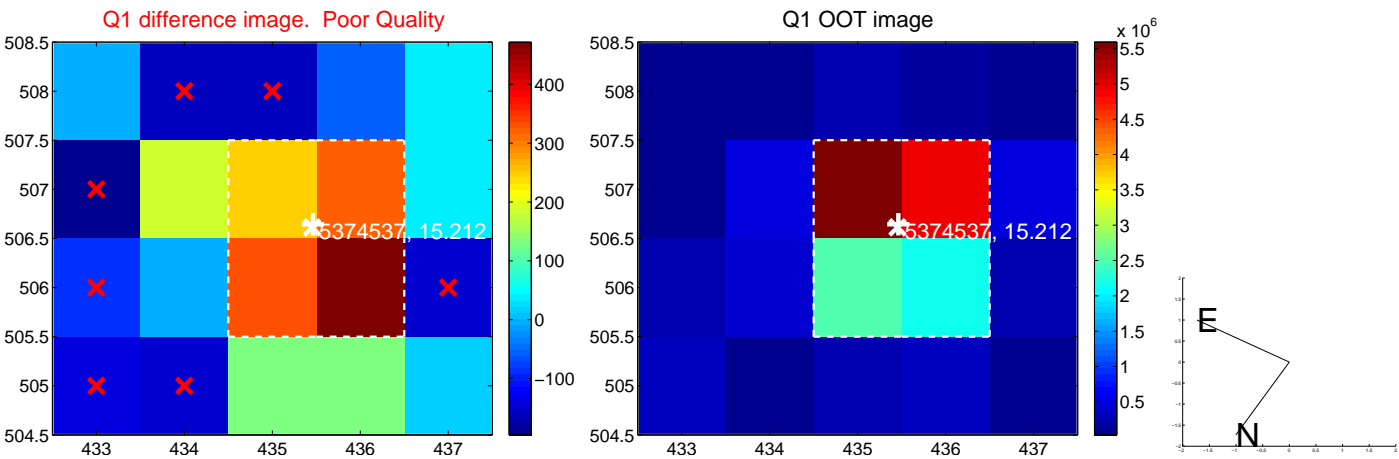
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.243 ± 0.389	0.62	0.126 ± 0.258	0.207 ± 0.358
PRF-fit source offset from KIC position	0.078 ± 0.330	0.24	0.053 ± 0.241	0.057 ± 0.390
photometric centroid source offset	1.19 ± 2.84	0.42	-1.13 ± 2.84	-0.36 ± 2.84

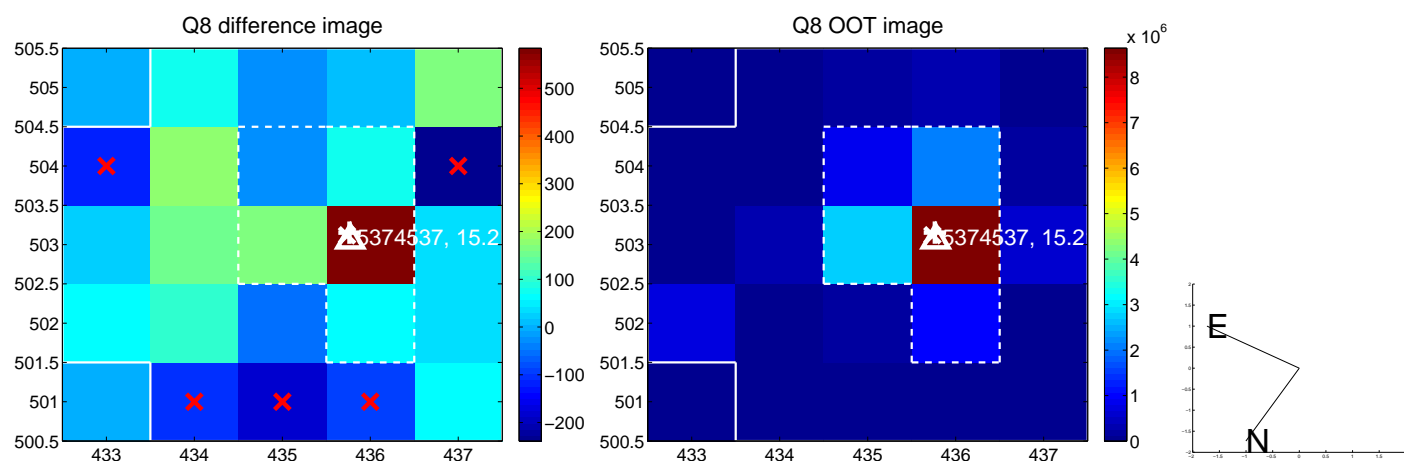
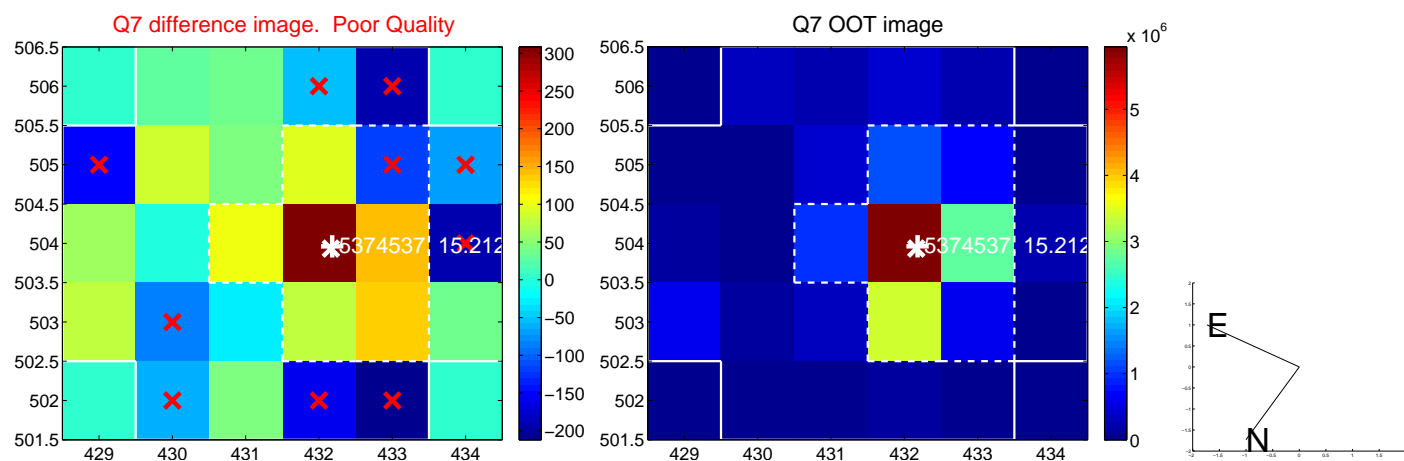
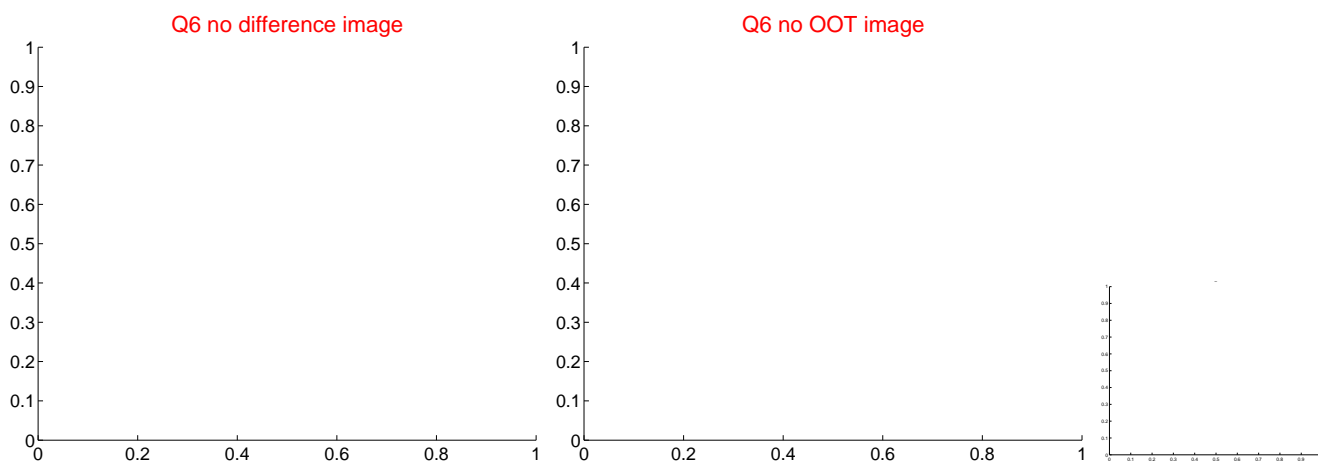
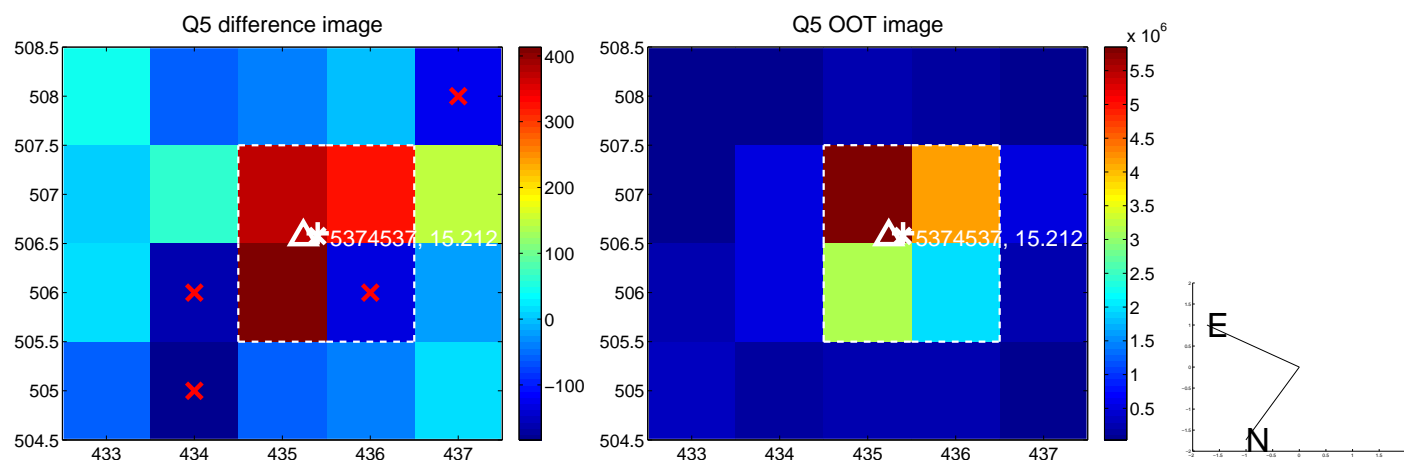


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

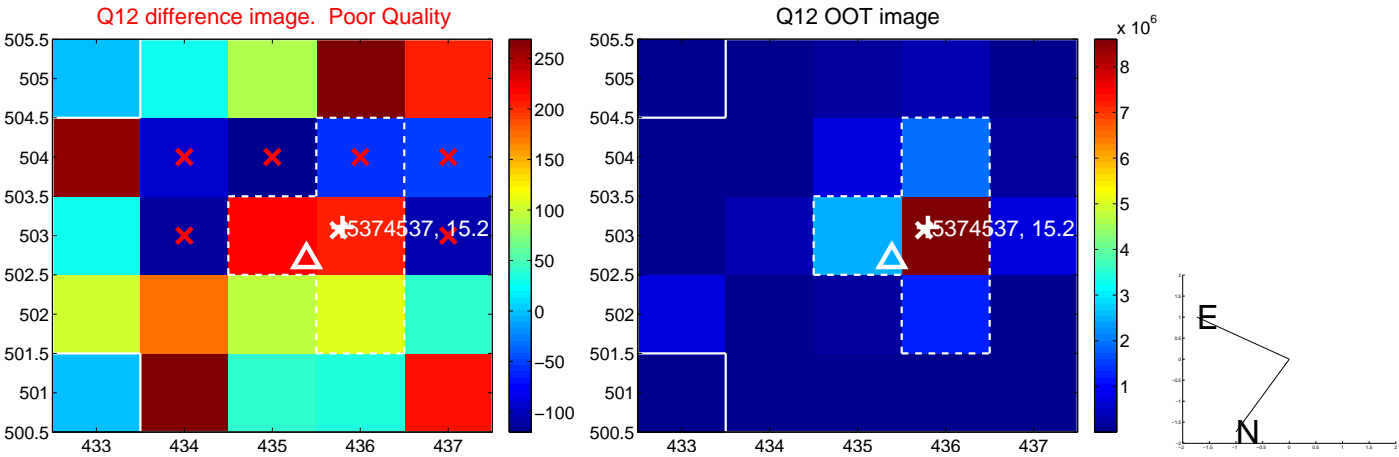
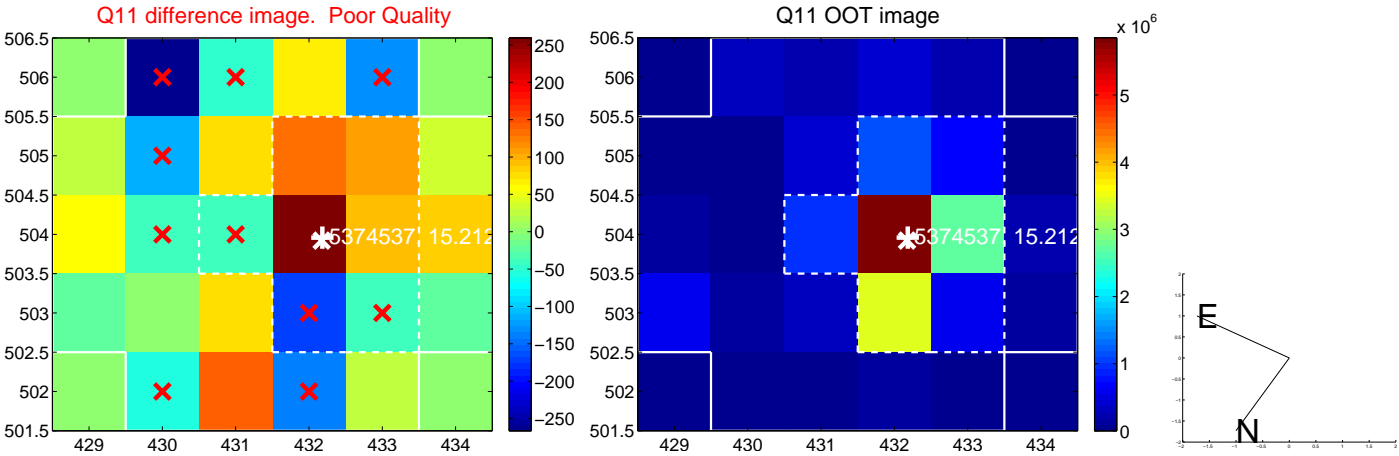
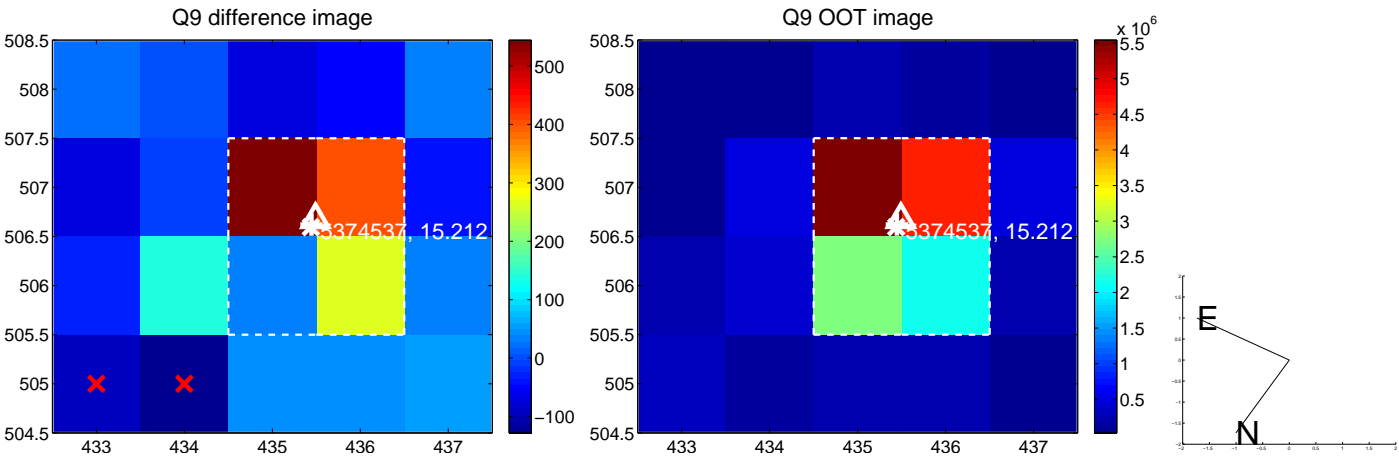
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



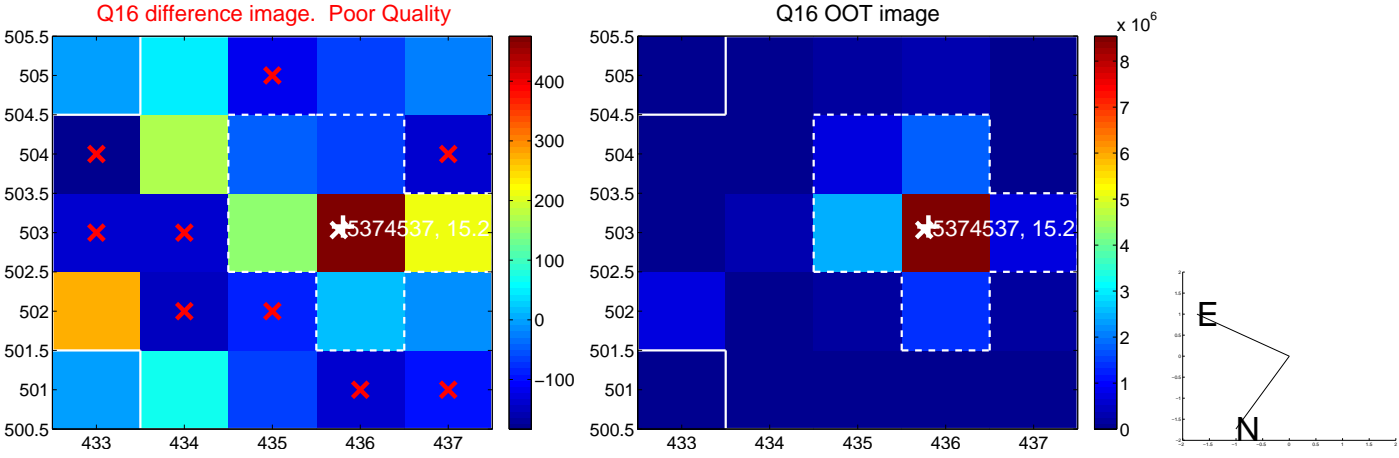
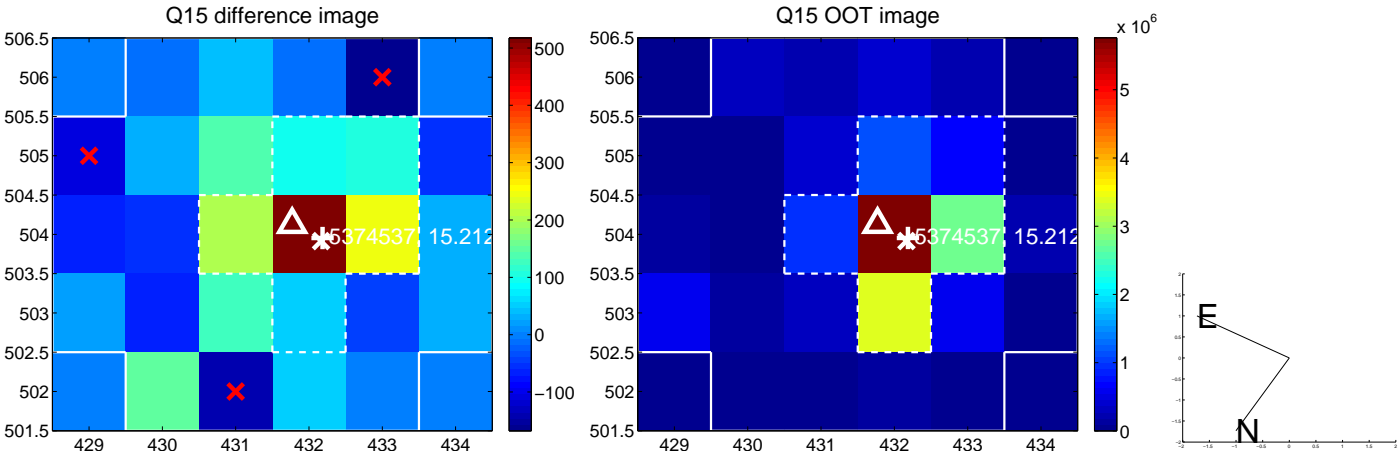
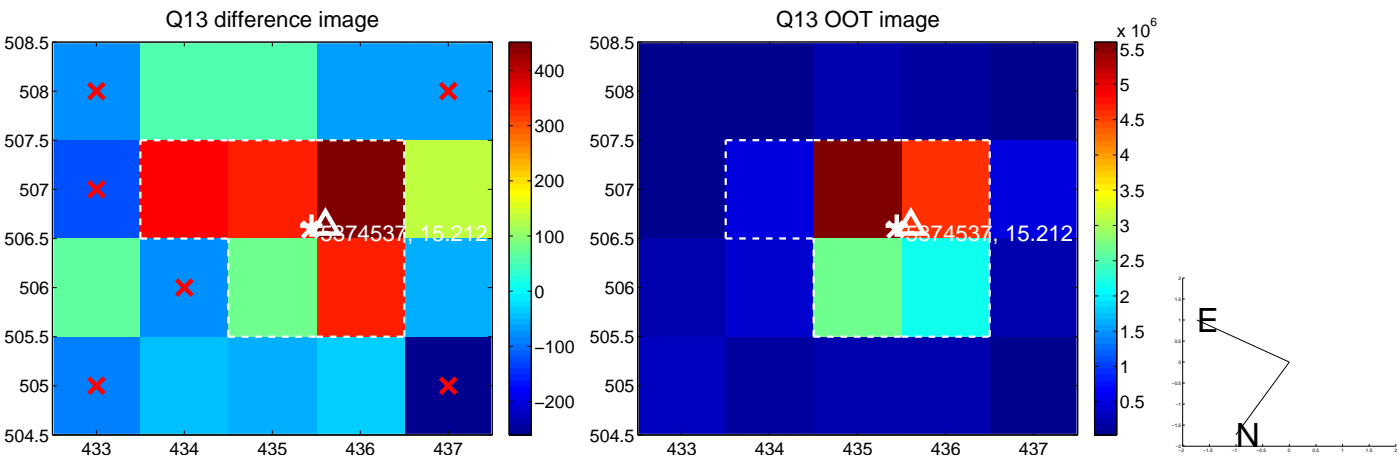
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



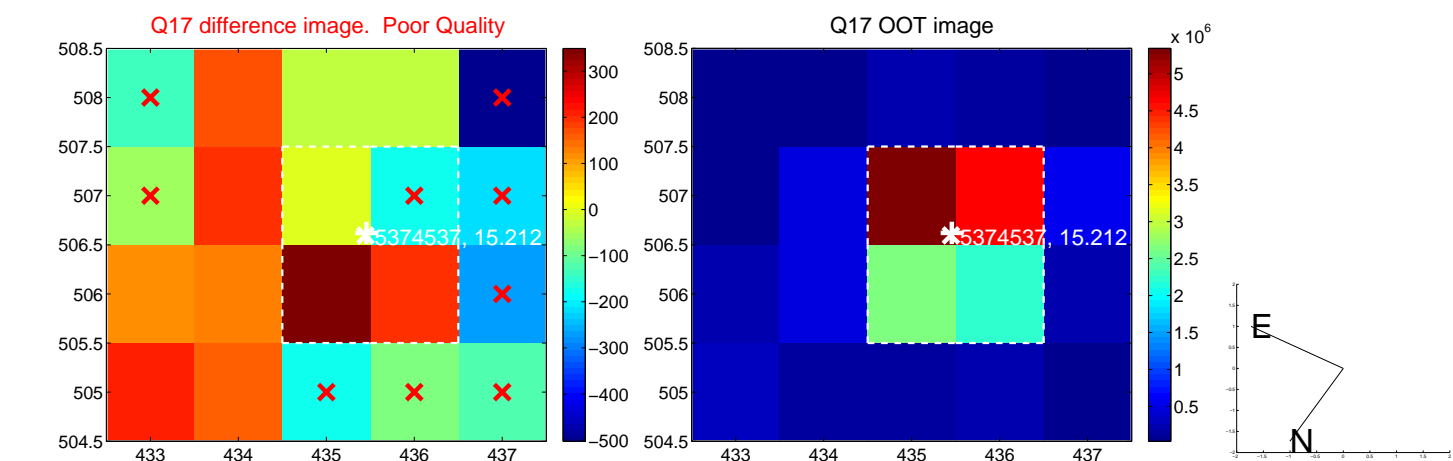
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



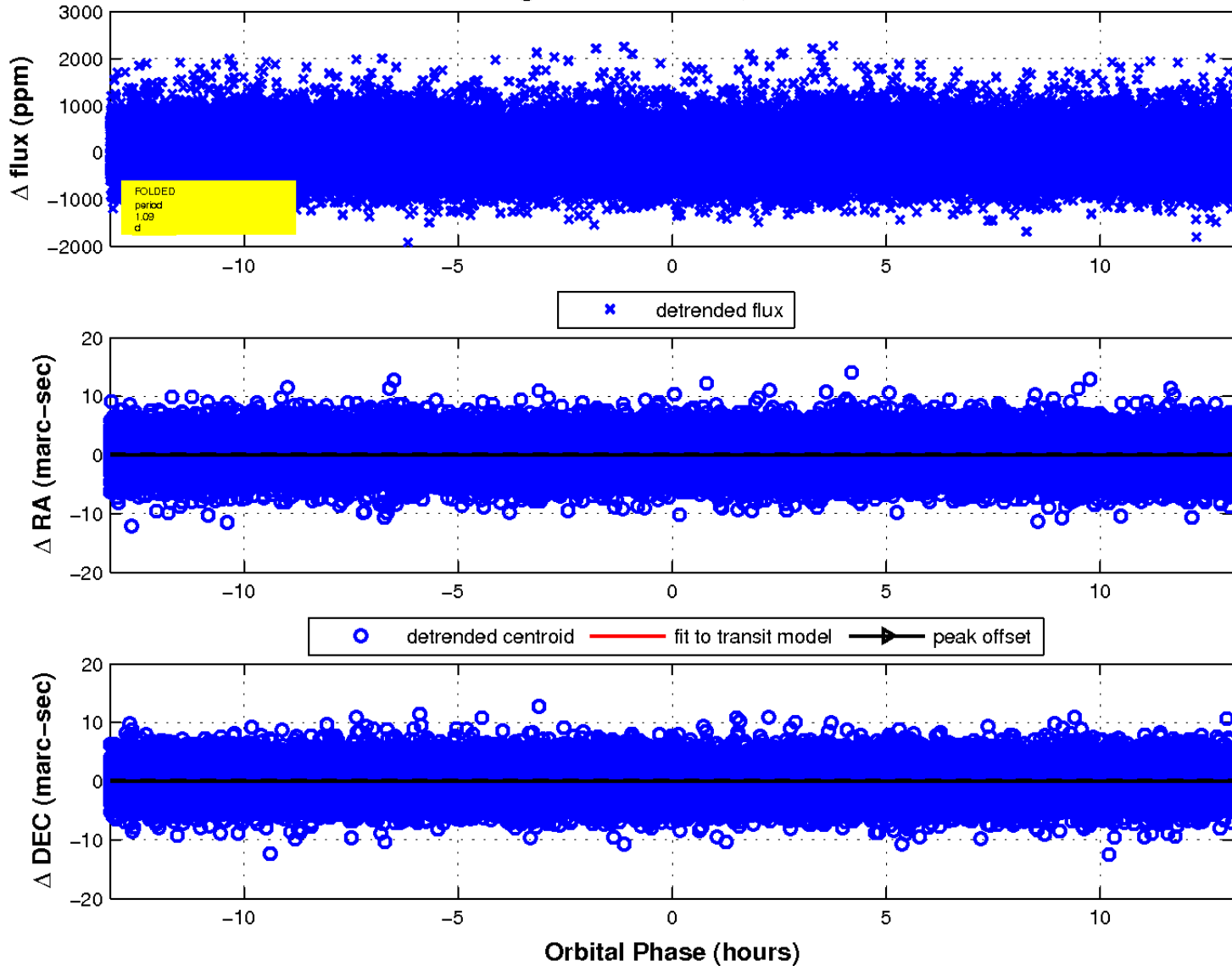
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

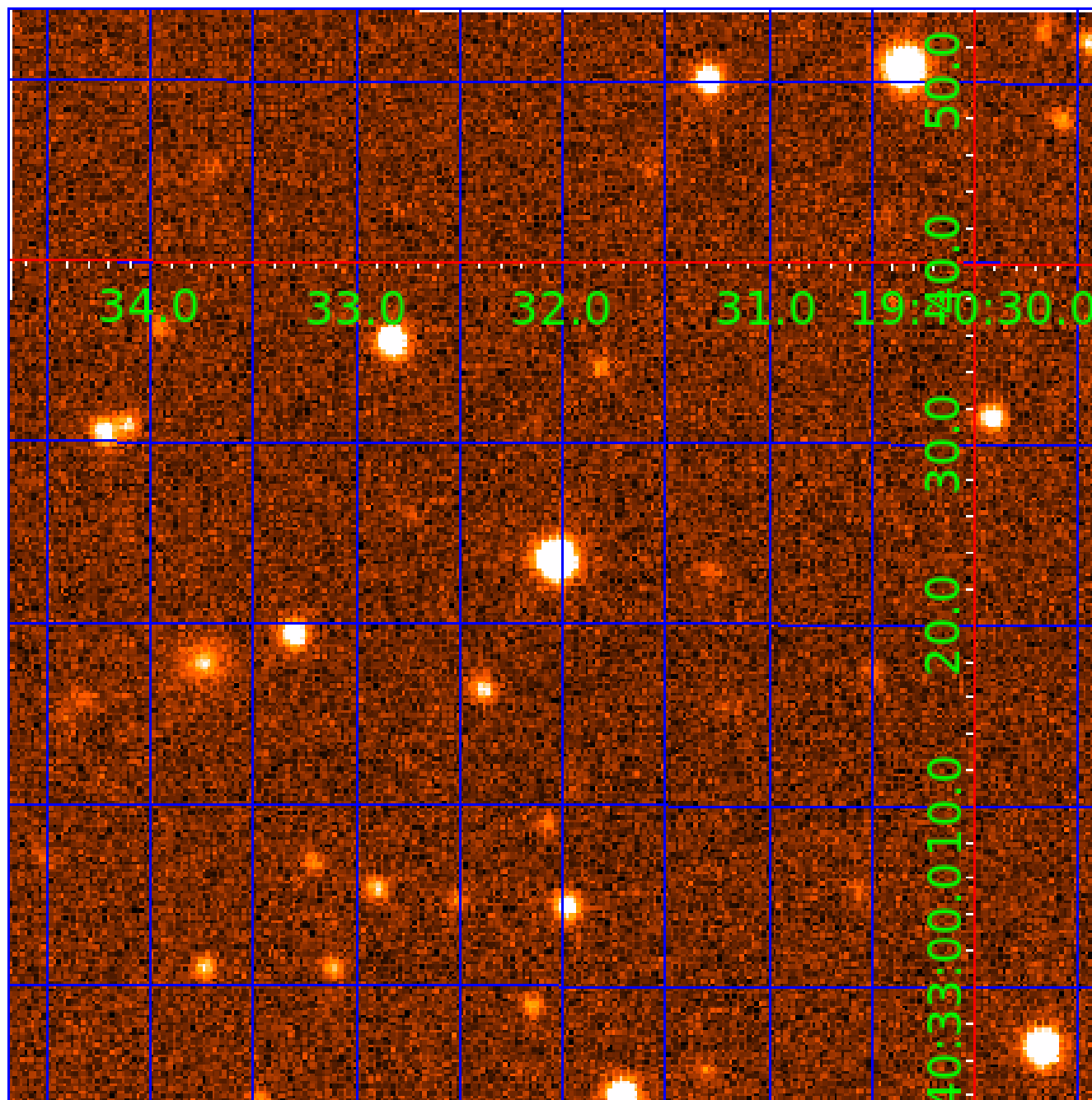


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005374537

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})
005374537-01	OBS	No	1.094593	131.710975	27.4	5.060	7.7	5.6	1.05	5822	0.58	2831.59
005374537-02	OBS	No	77.068335	172.992793	451.9	3.256	7.1	7.0	1.05	5822	2.58	9.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005374537-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
005374537-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

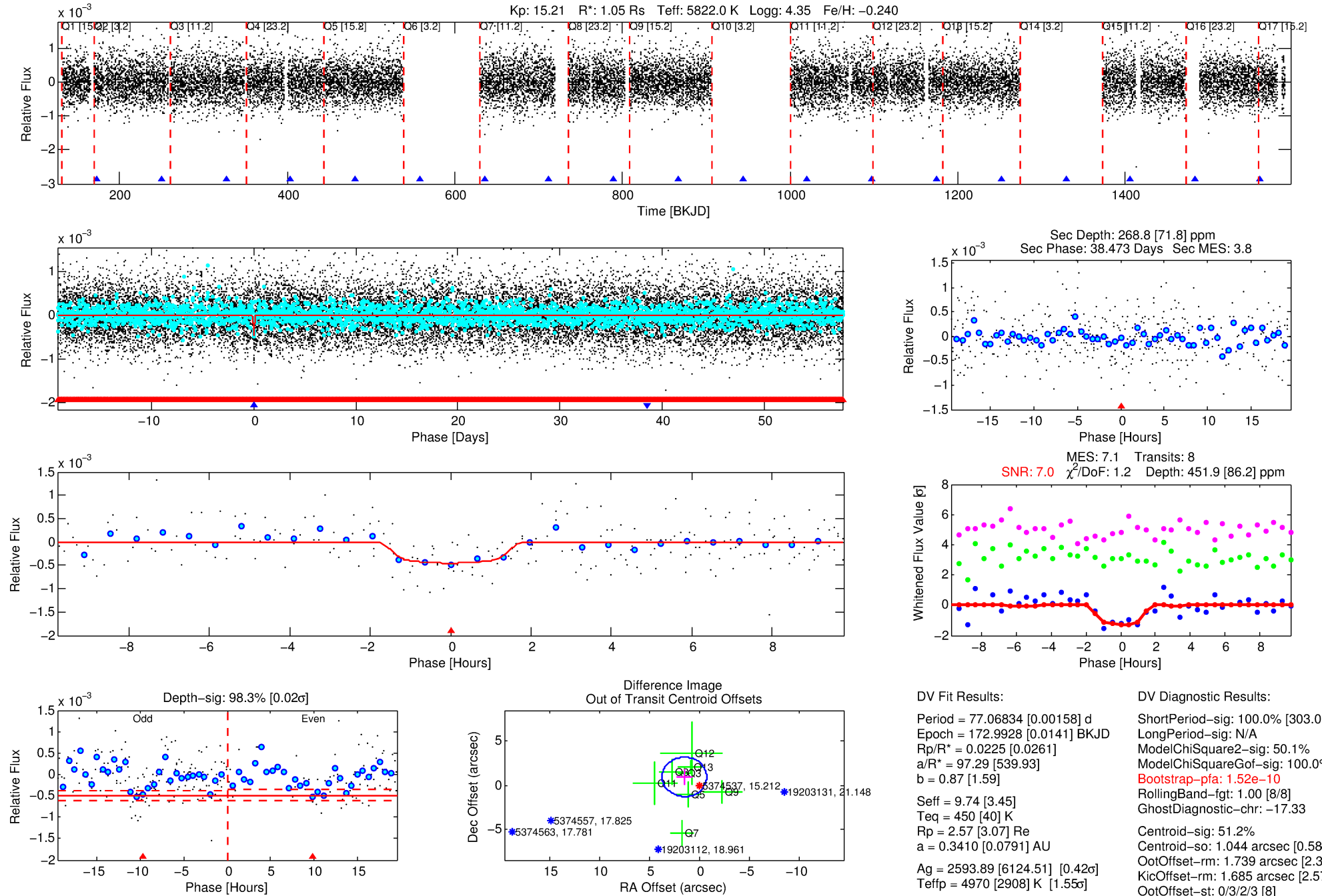
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005374537-02

No Significant Match Found

DV One-Page Summary

KIC: 5374537 Candidate: 2 of 2 Period: 77.068 d



DV Fit Results:

Period = 77.06834 [0.00158] d
Epoch = 172.9928 [0.0141] BKJD
Rp/R* = 0.0225 [0.0261]
a/R* = 97.29 [539.93]
b = 0.87 [1.59]
Seff = 9.74 [3.45]
Teq = 450 [40] K
Rp = 2.57 [3.07] Re
a = 0.3410 [0.0791] AU
Ag = 2593.89 [6124.51] [0.42 σ]
Teff = 4970 [2908] K [1.55 σ]

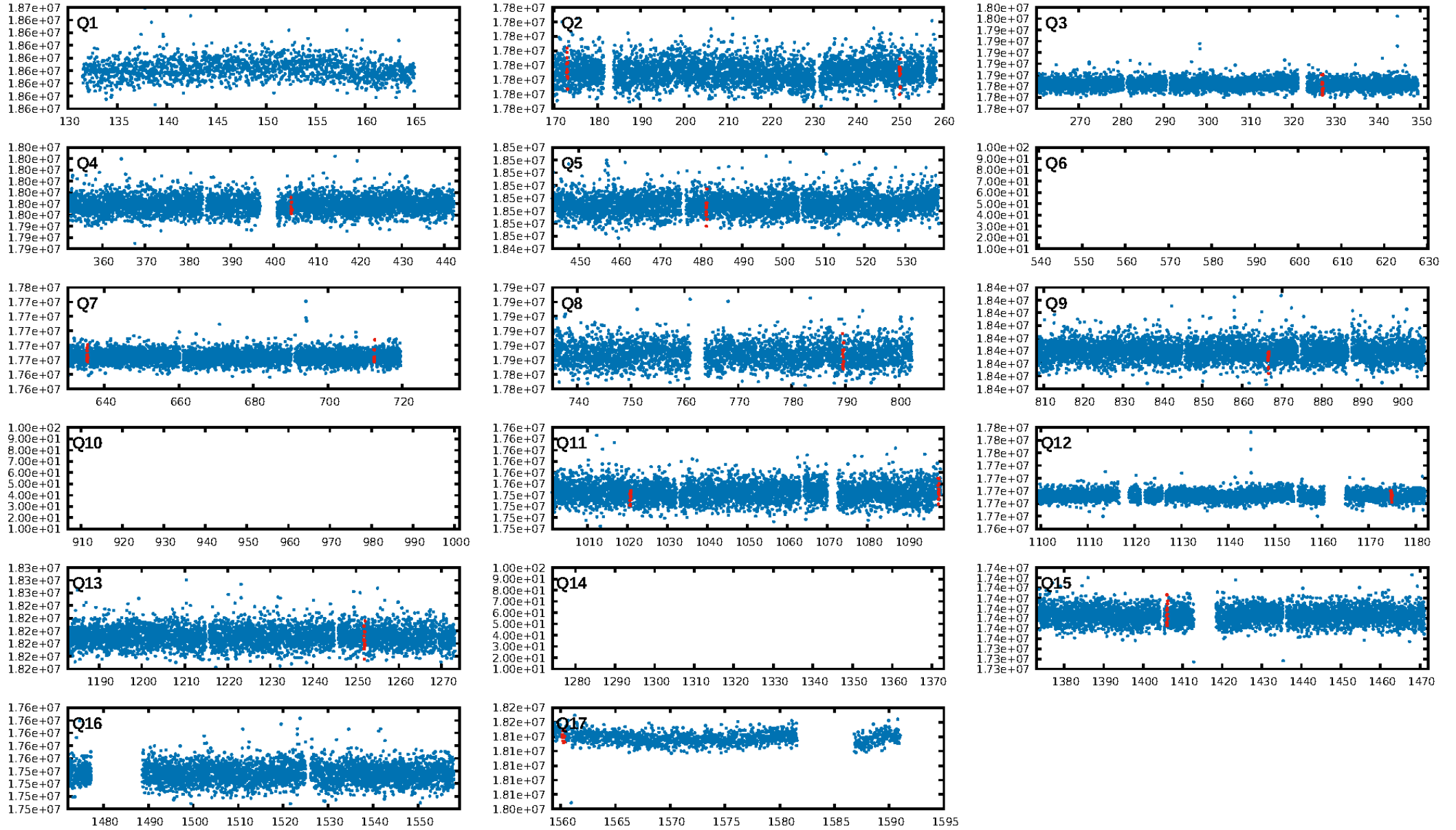
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [303.02 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 50.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.52e-10
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: -17.33
Centroid-sig: 51.2%
Centroid-so: 1.044 arcsec [0.58 σ]
OotOffset-rm: 1.739 arcsec [2.33 σ]
OotOffset-st: 0/3/2/3 [8]
KicOffset-rm: 1.685 arcsec [2.57 σ]
KicOffset-st: 0/3/2/3 [8]
DiffImageQuality-fgm: 0.38 [3/8]
DiffImageOverlap-fno: 0.30 [3/10]

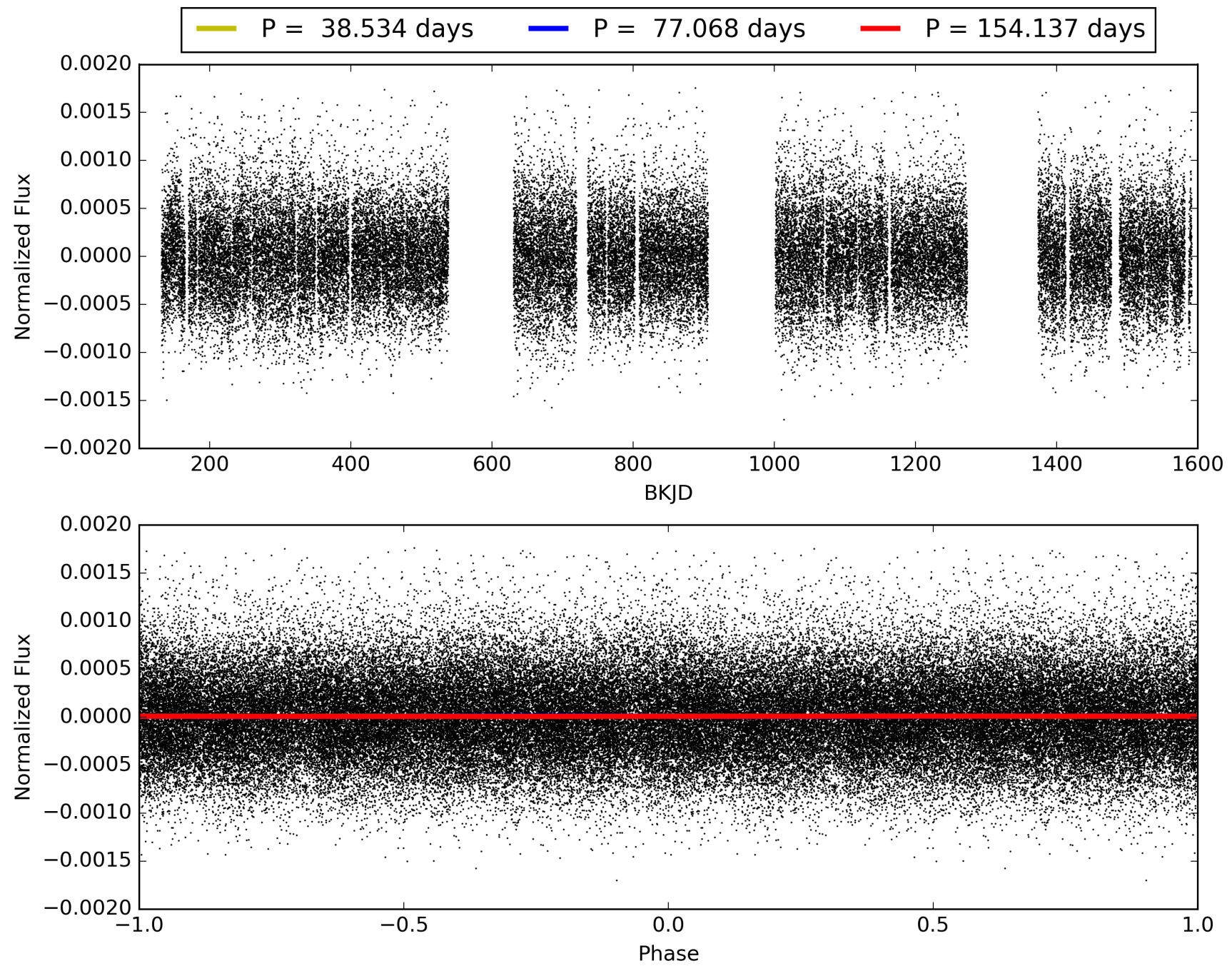
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 02:03:13 Z

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

TCE 005374537-02, PDC Light Curves

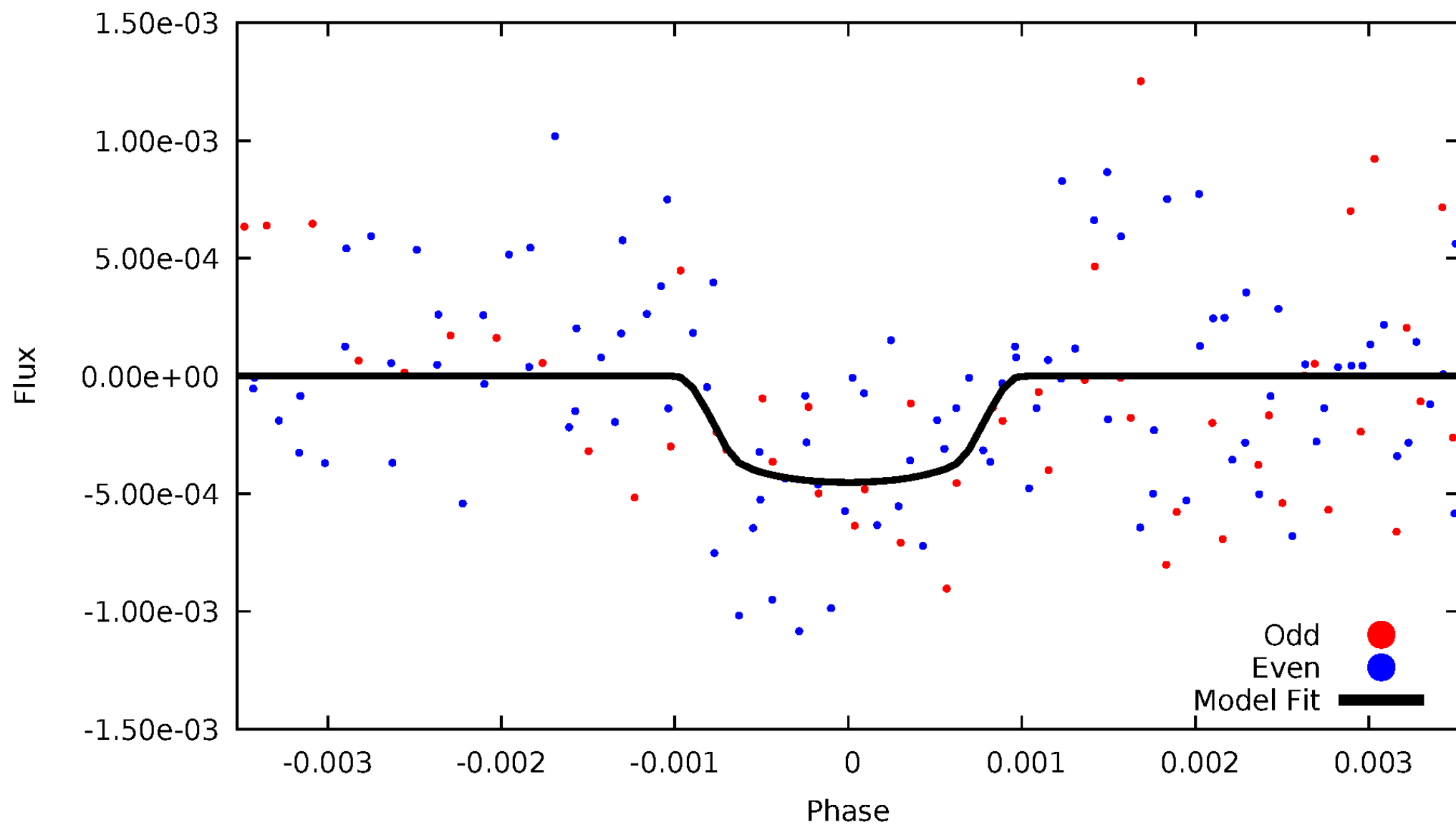


TCE 005374537-02



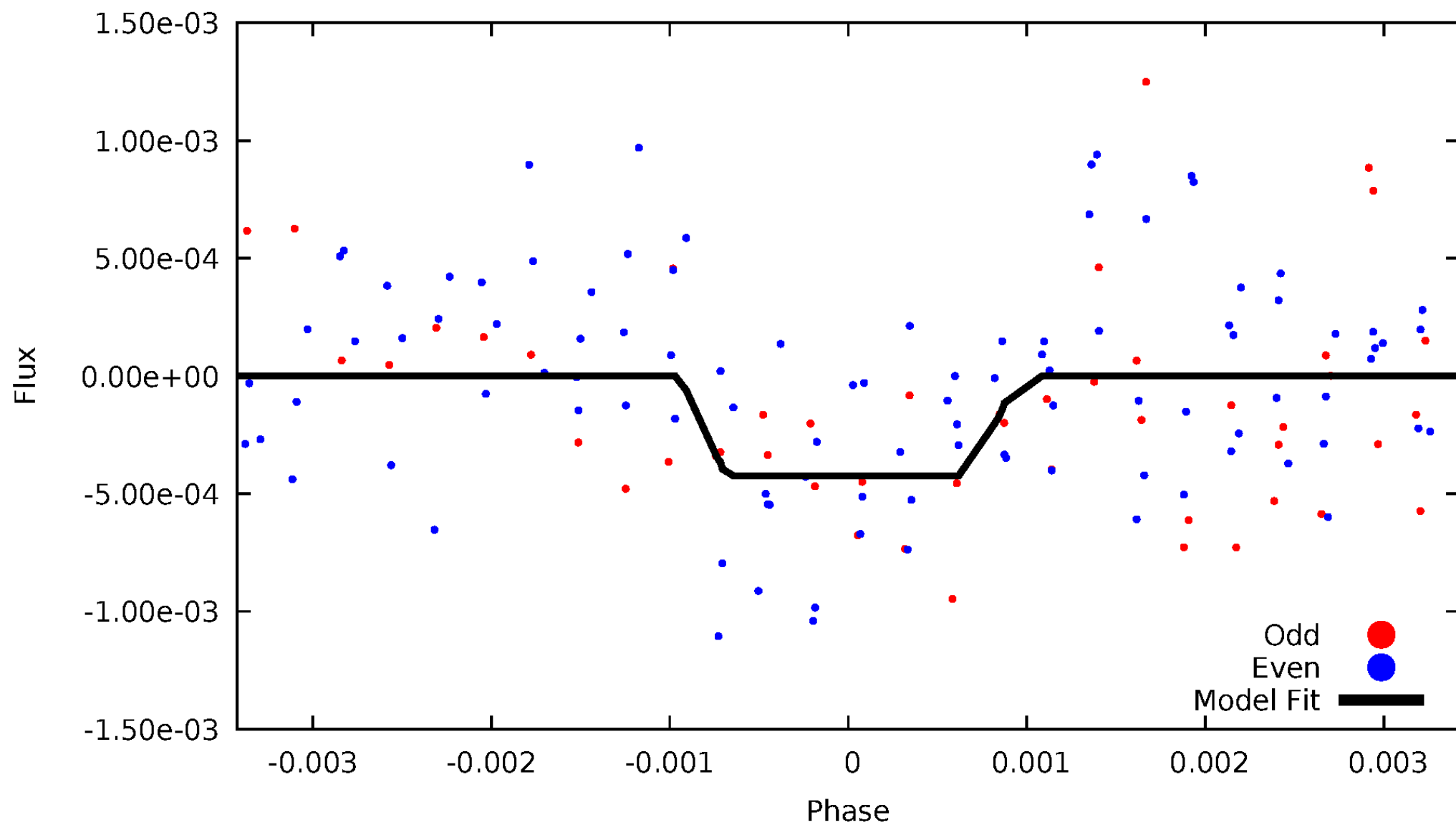
DV Odd/Even

TCE 005374537-02



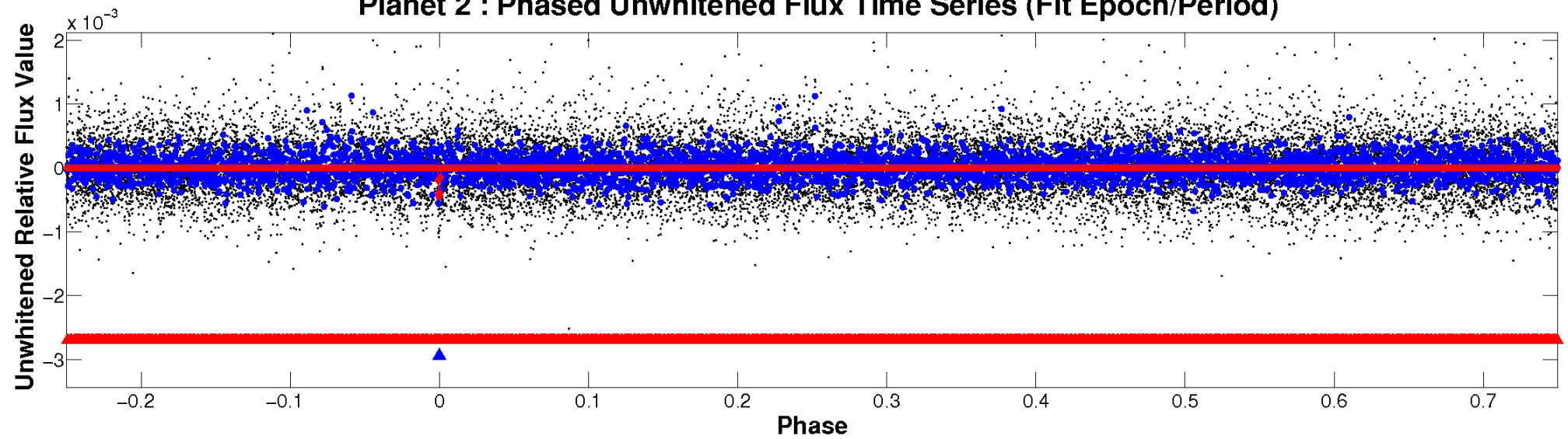
ALT Odd/Even

TCE 005374537-02

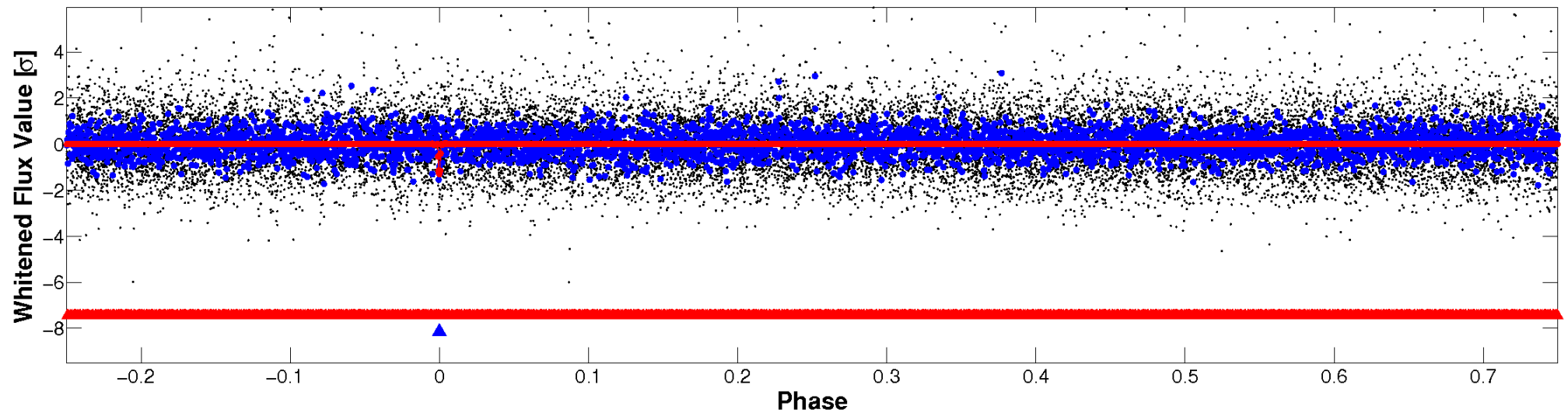


Non-Whitened Vs. Whitened Light Curve

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

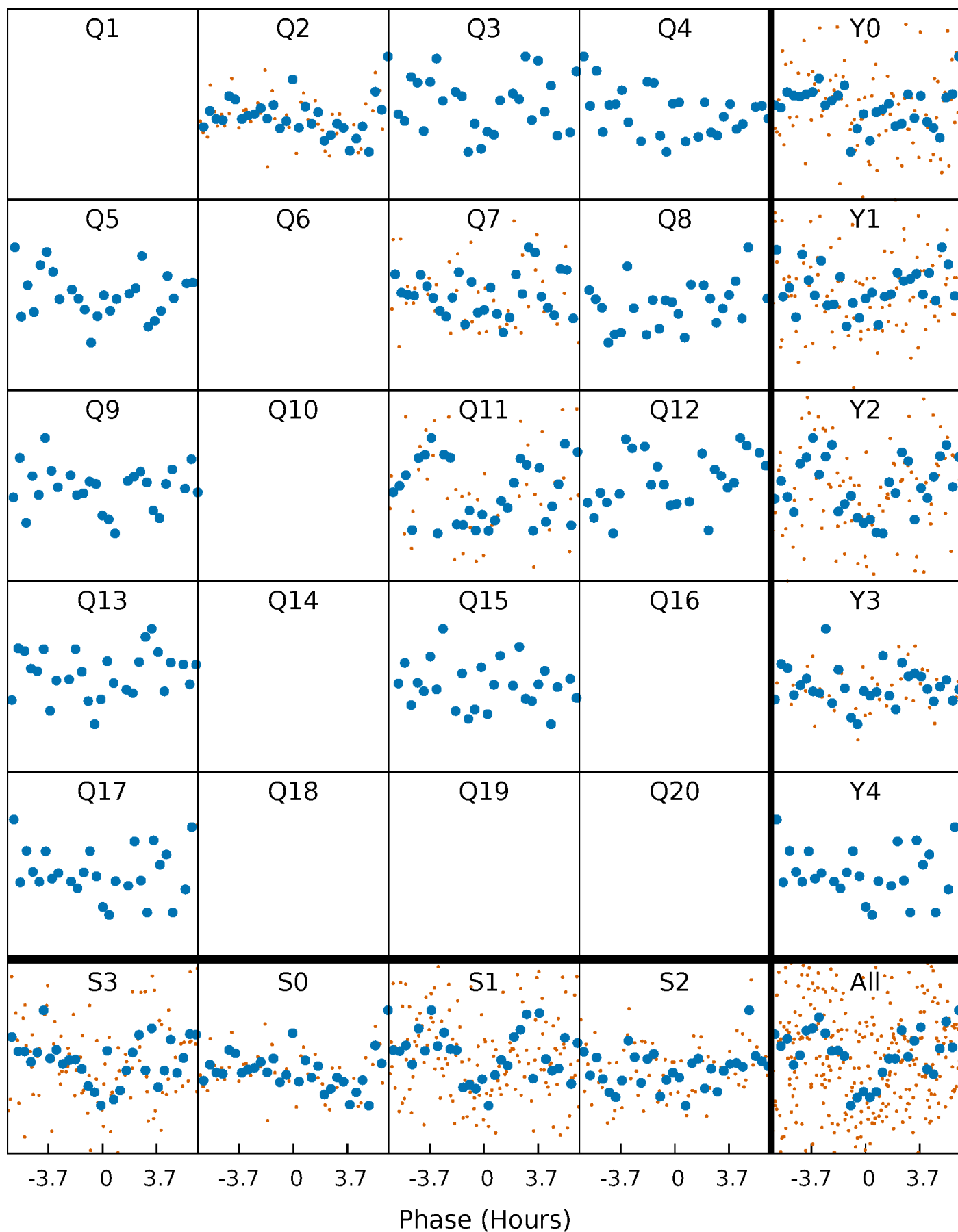


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



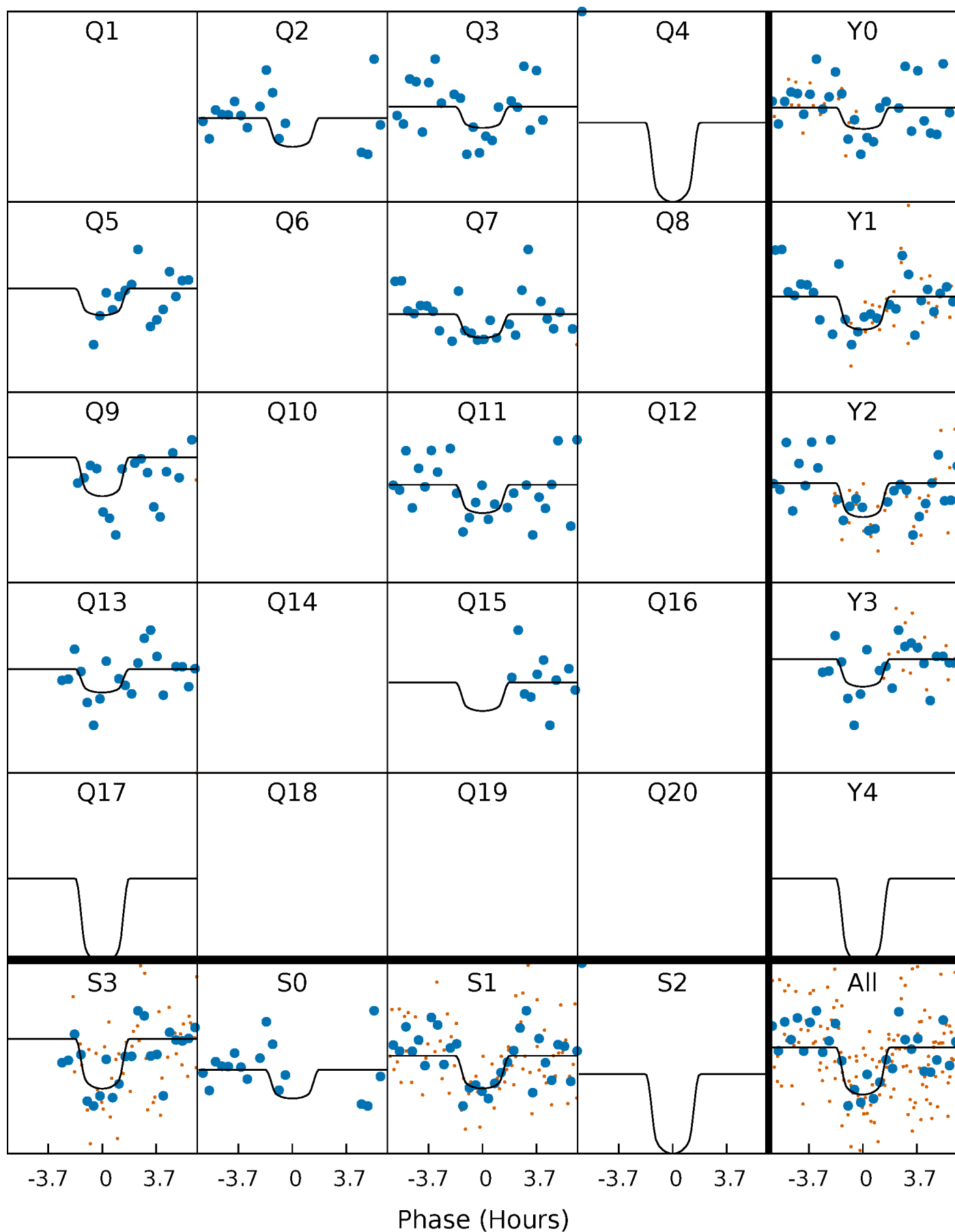
PDC Quarter-Phased Transit Curves

TCE 005374537-02 P= 77.068335 Days $T_0=172.992793$ (BKJD)



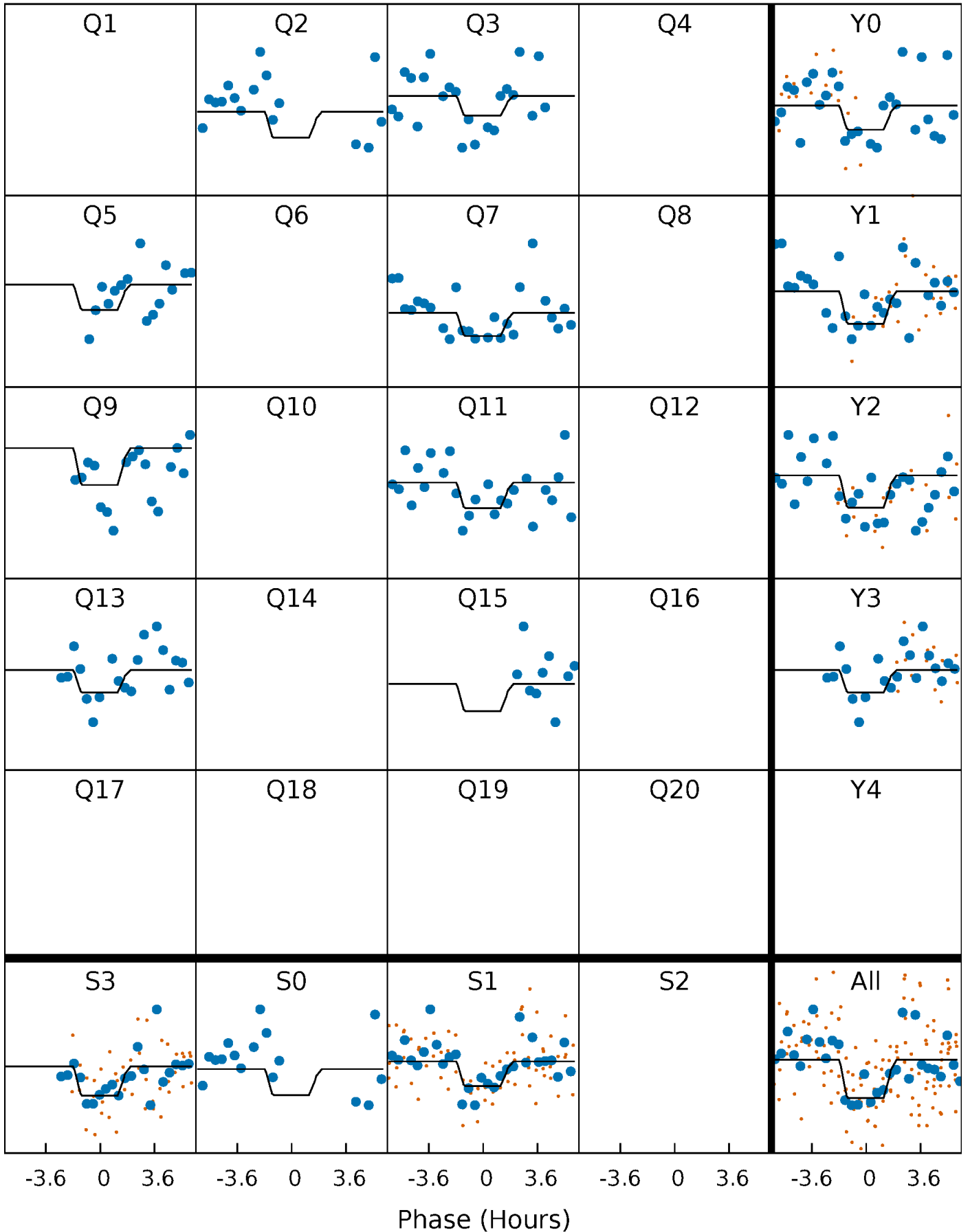
DV Quarter-Phased Transit Curves

TCE 005374537-02 P= 77.068335 Days $T_0=172.992793$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

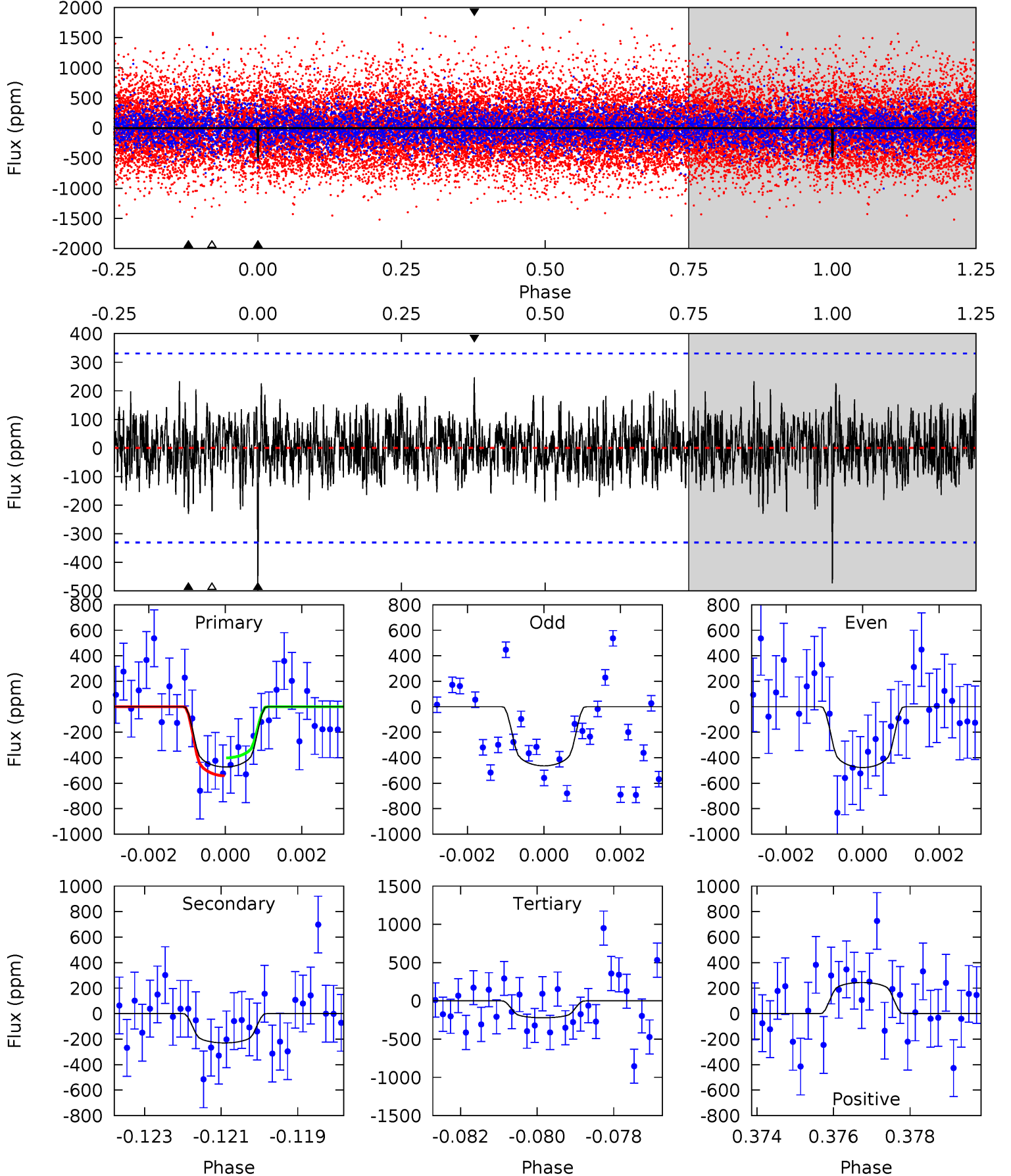
TCE 005374537-02 P= 77.067076 Days $T_0=173.002894$ (BKJD)



DV Model-Shift Uniqueness Test

005374537-02, P = 77.068335 Days, E = 95.924458 Days

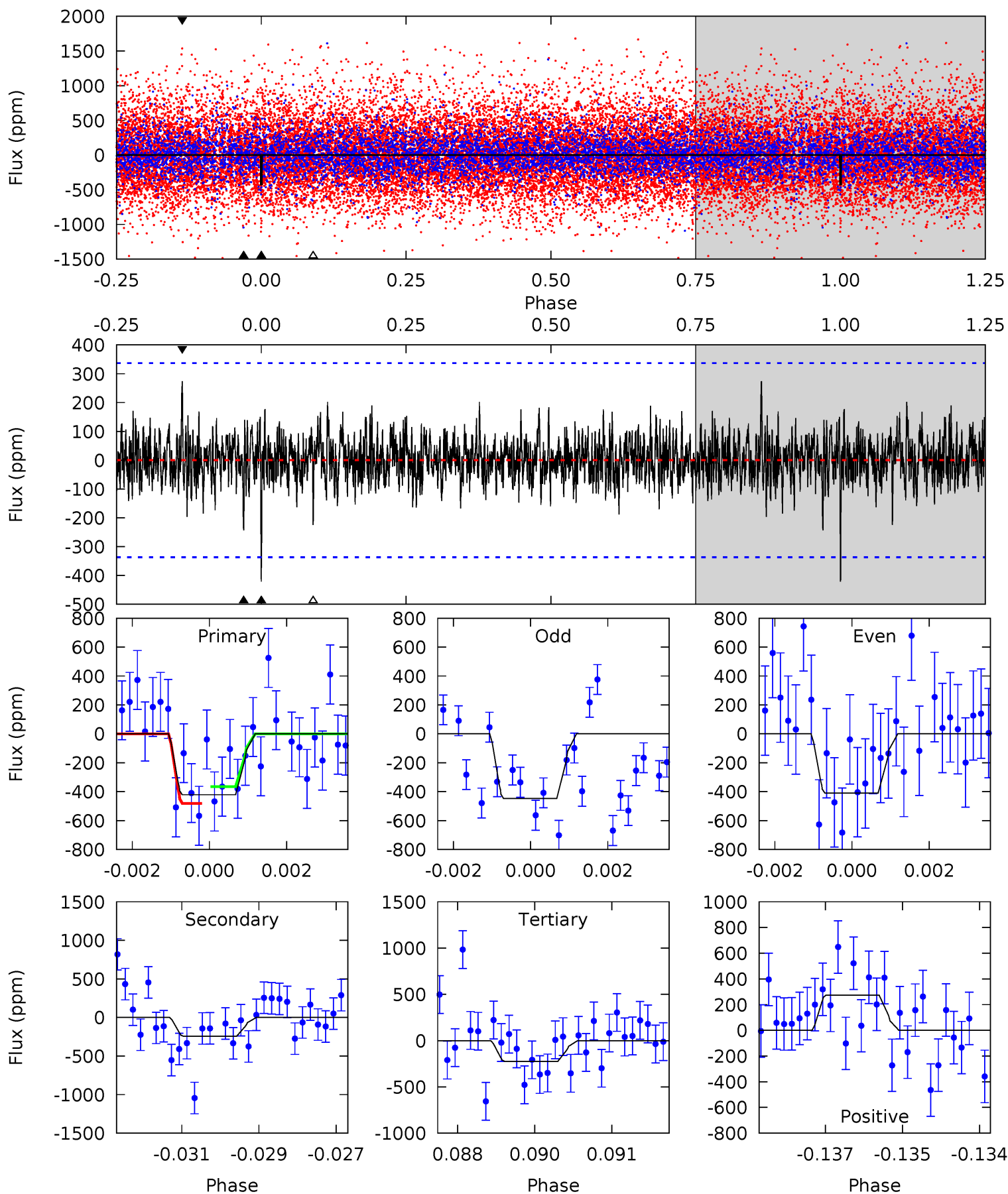
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.64	3.71	3.57	3.95	5.34	3.11	1.10	4.07	3.69	0.14	-0.24	0.10	1.04	0.34	1.14



Alt Model-Shift Uniqueness Test

005374537-02, P = 77.067076 Days, E = 95.935818 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.68	3.86	3.55	4.34	5.34	3.12	0.97	3.12	2.34	0.31	-0.47	0.27	1.03	0.39	0.91



Stellar Parameters For KIC 005374537

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5822^{+174}_{-174}	$4.346^{+0.180}_{-0.180}$	$-0.240^{+0.300}_{-0.300}$	$1.049^{+0.293}_{-0.195}$	$0.890^{+0.132}_{-0.081}$	$1.087^{+0.845}_{-0.552}$
	+3%/-3%	+4%/-4%	+125%/-125%	+28%/-19%	+15%/-9%	+78%/-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 005374537-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-230 ± 62	$3.29^{+2.85}_{-2.32}$	628^{+46}_{-39}	4402^{+3464}_{-873}	1325^{+13773}_{-960}
Alt.	-244 ± 63	$3.32^{+2.54}_{-2.19}$	628^{+49}_{-40}	4487^{+2645}_{-864}	1484^{+9437}_{-1053}

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 $A_{obs} \gg 1.0$

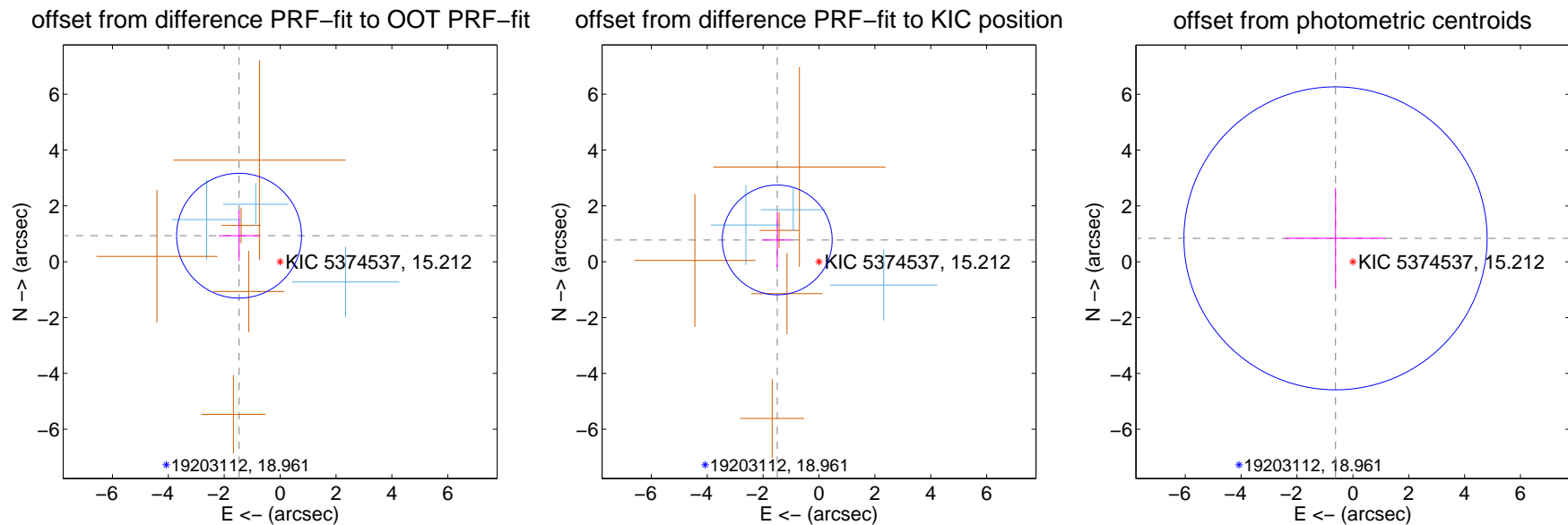
DV Centroid Data

Supplemental centroid analysis for 005374537-02. Kepler magnitude: 15.21. Transit SNR 6.98

There are 3 quarters with good PRF difference image offsets

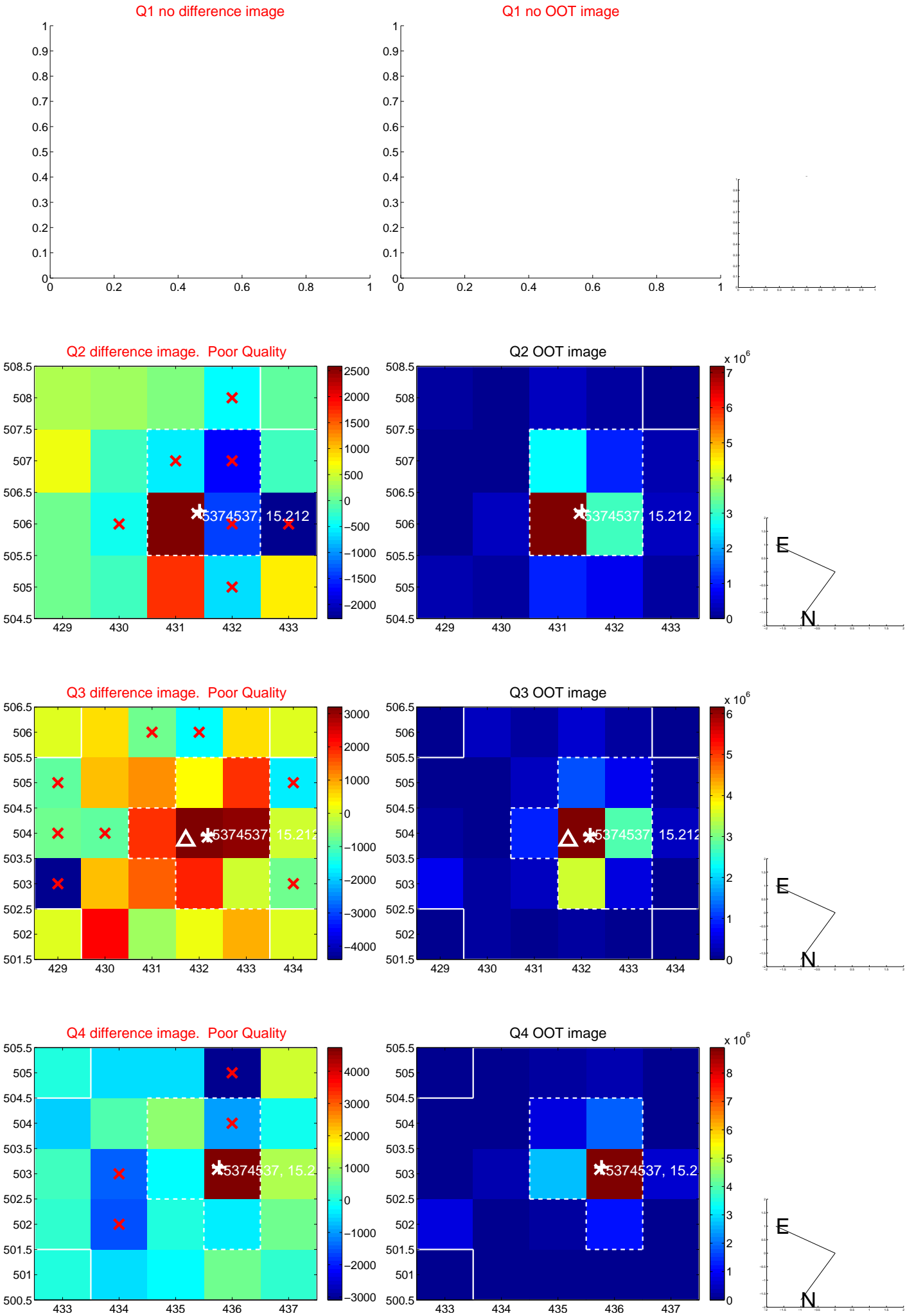
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.739 ± 0.745	2.33	1.469 ± 0.725	0.930 ± 0.900
PRF-fit source offset from KIC position	1.685 ± 0.655	2.57	1.494 ± 0.552	0.779 ± 0.985
photometric centroid source offset	1.04 ± 1.81	0.58	0.62 ± 1.81	0.84 ± 1.81

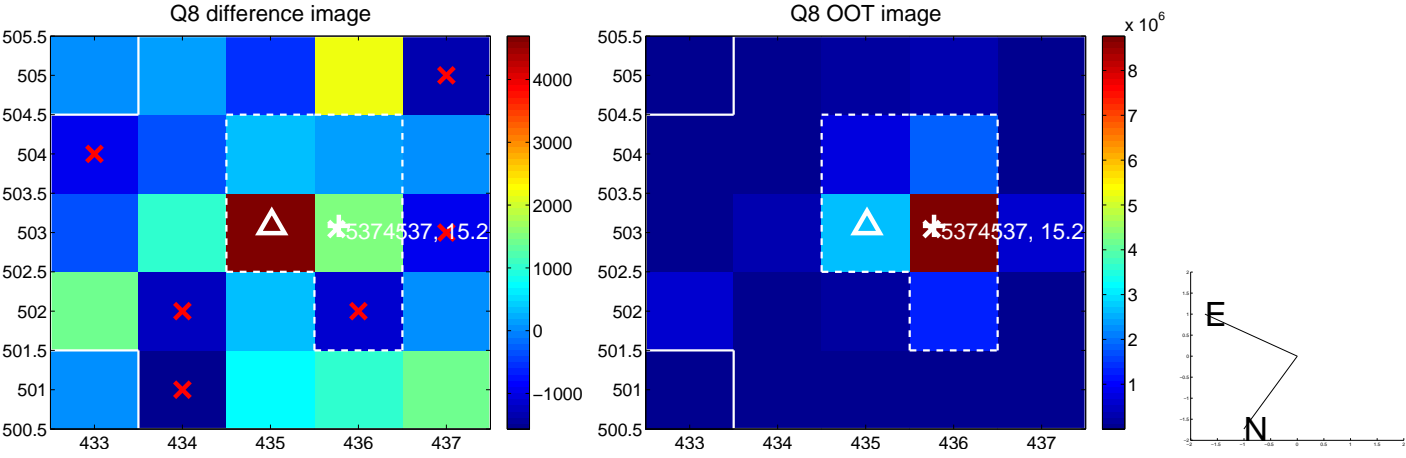
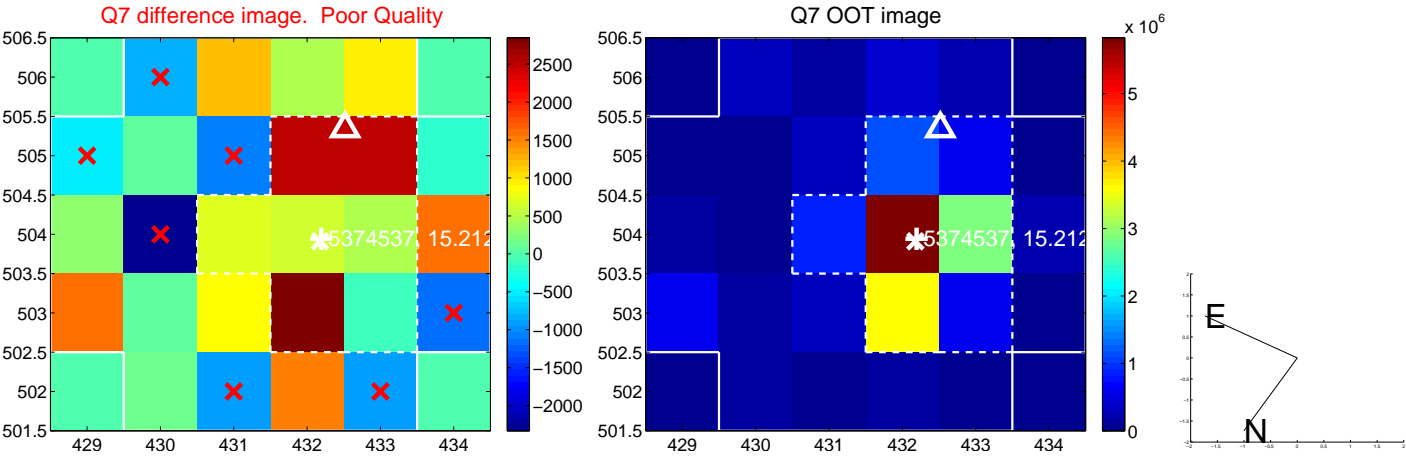
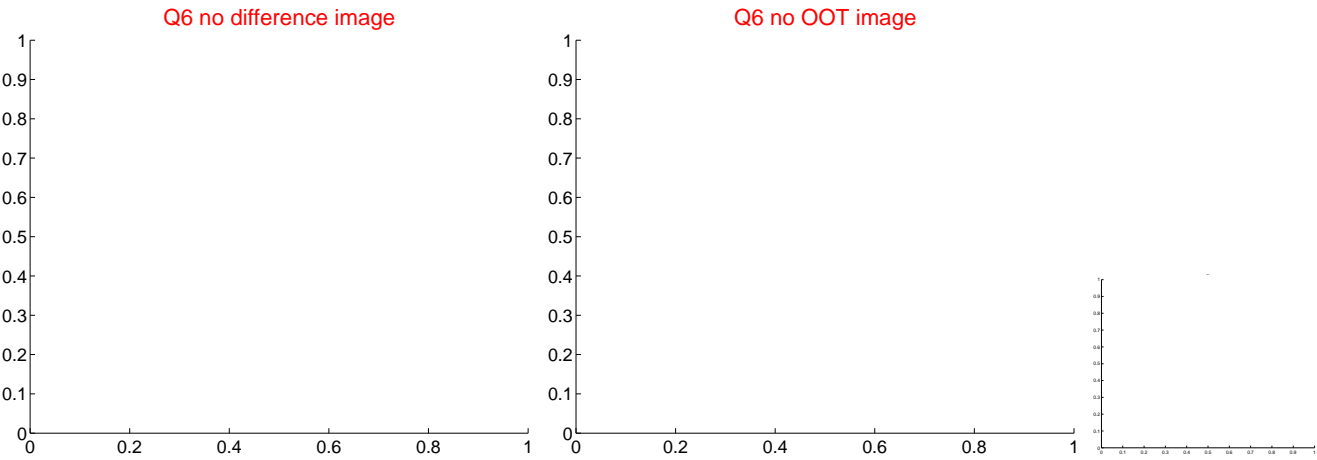
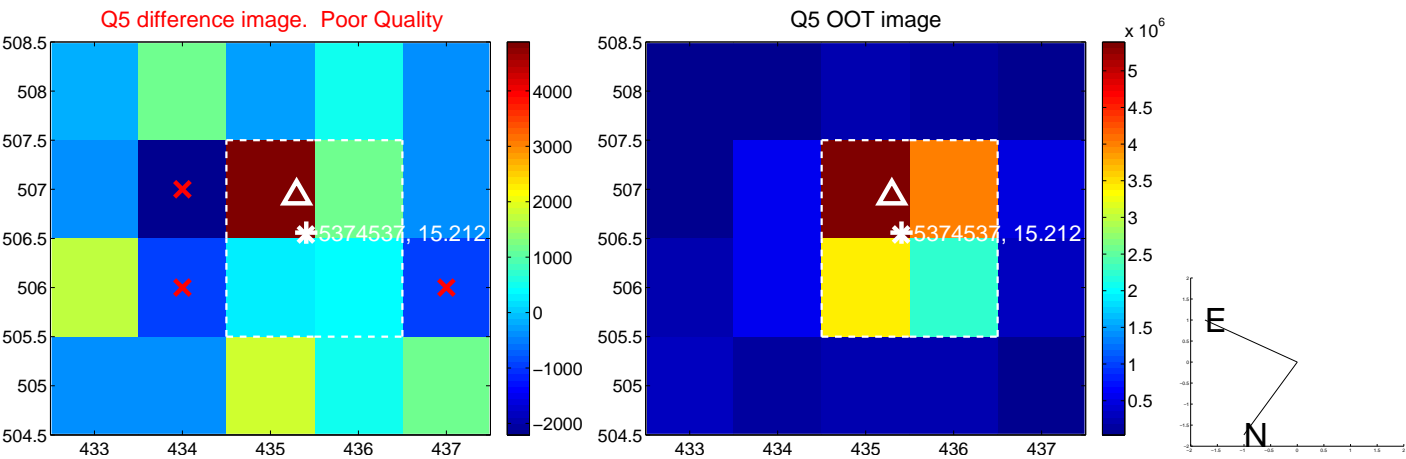


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

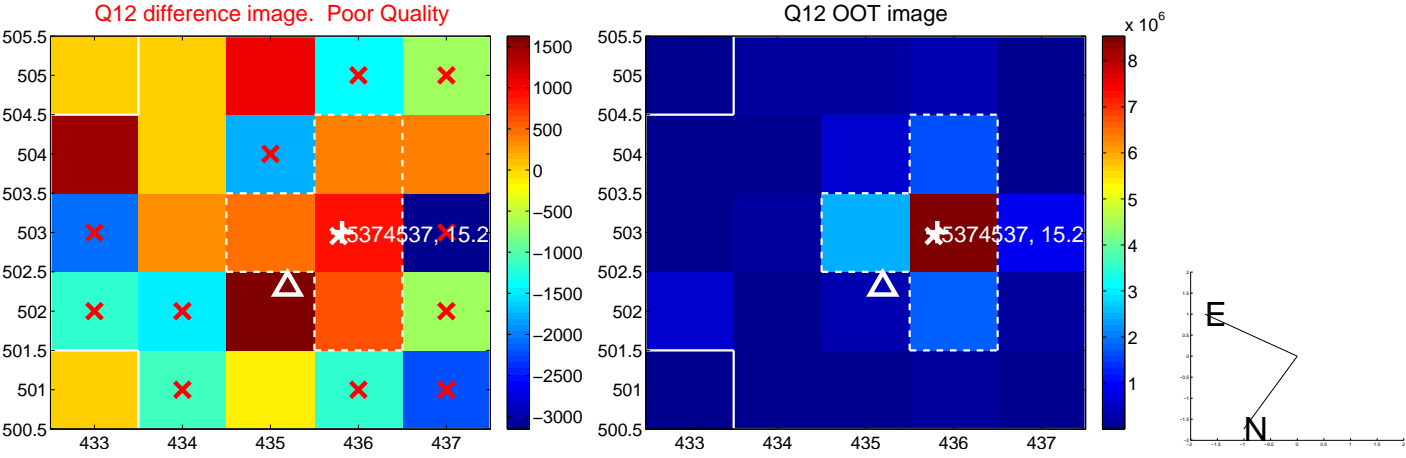
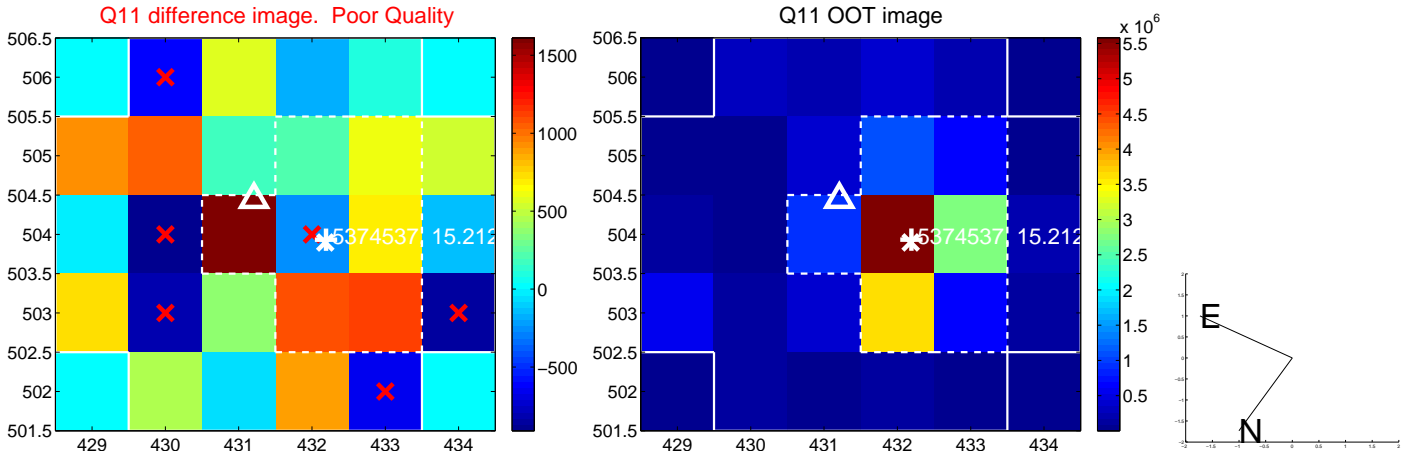
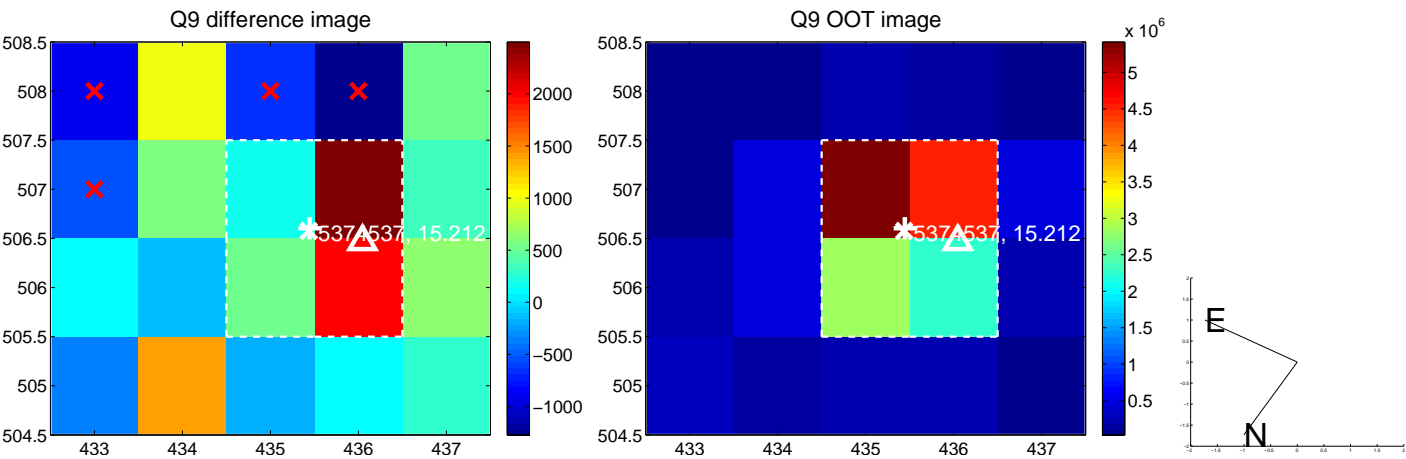
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



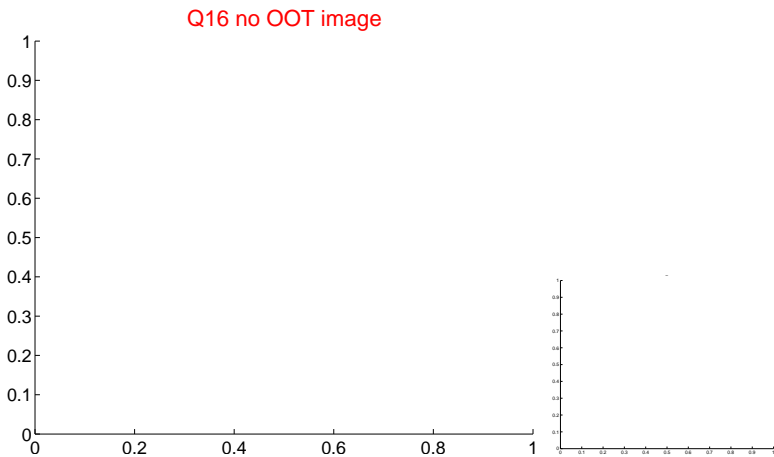
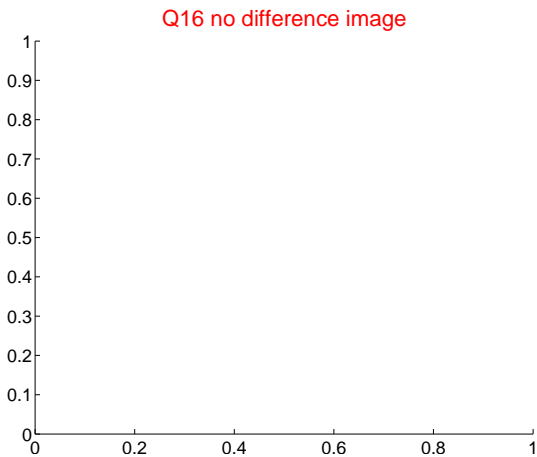
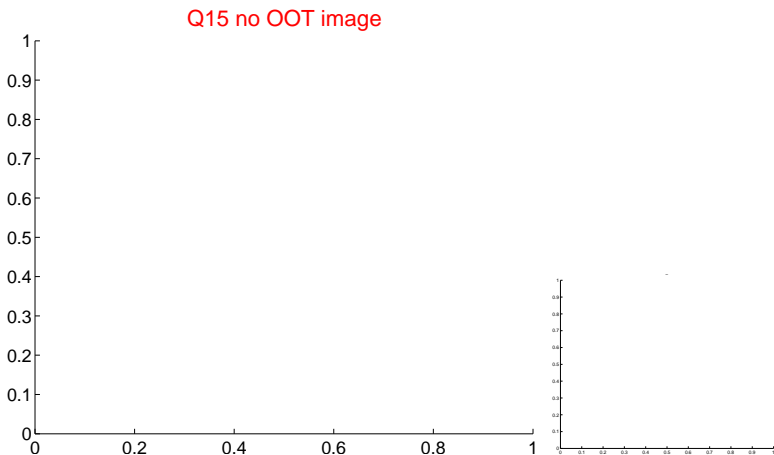
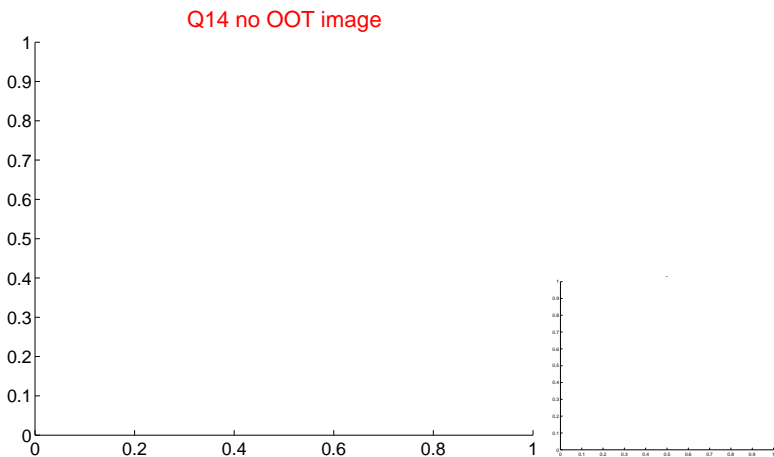
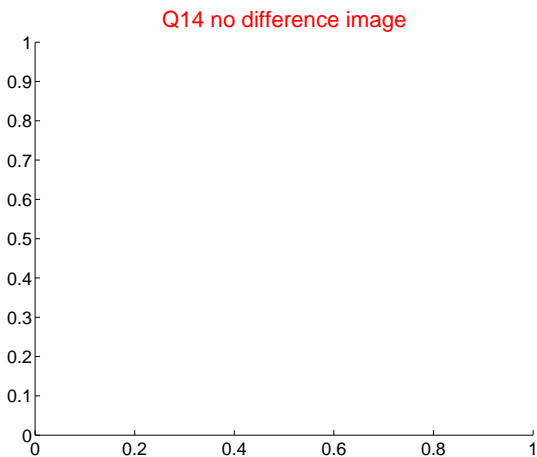
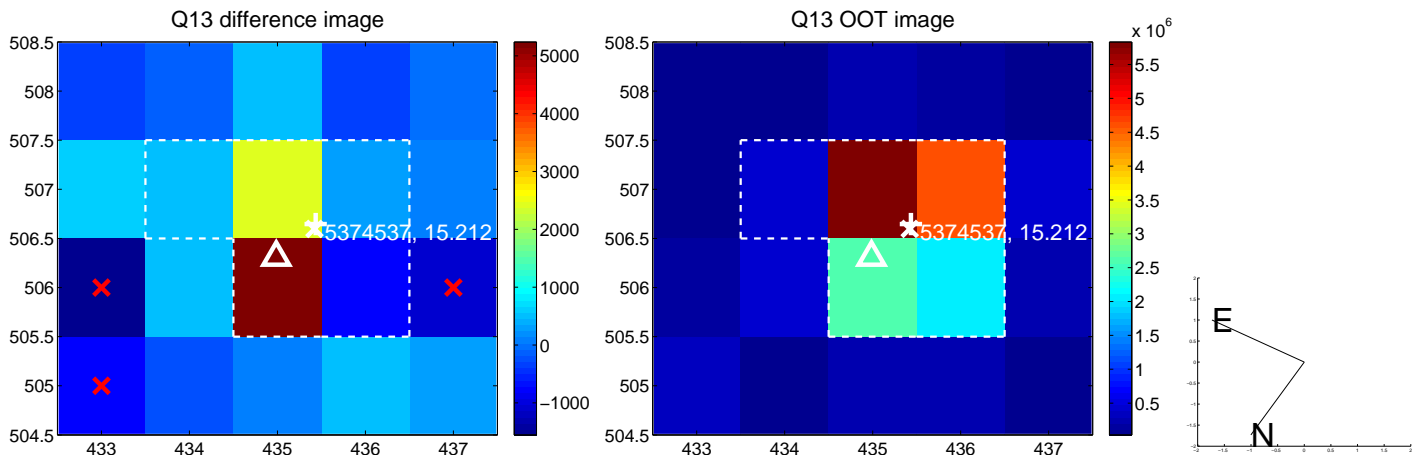
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



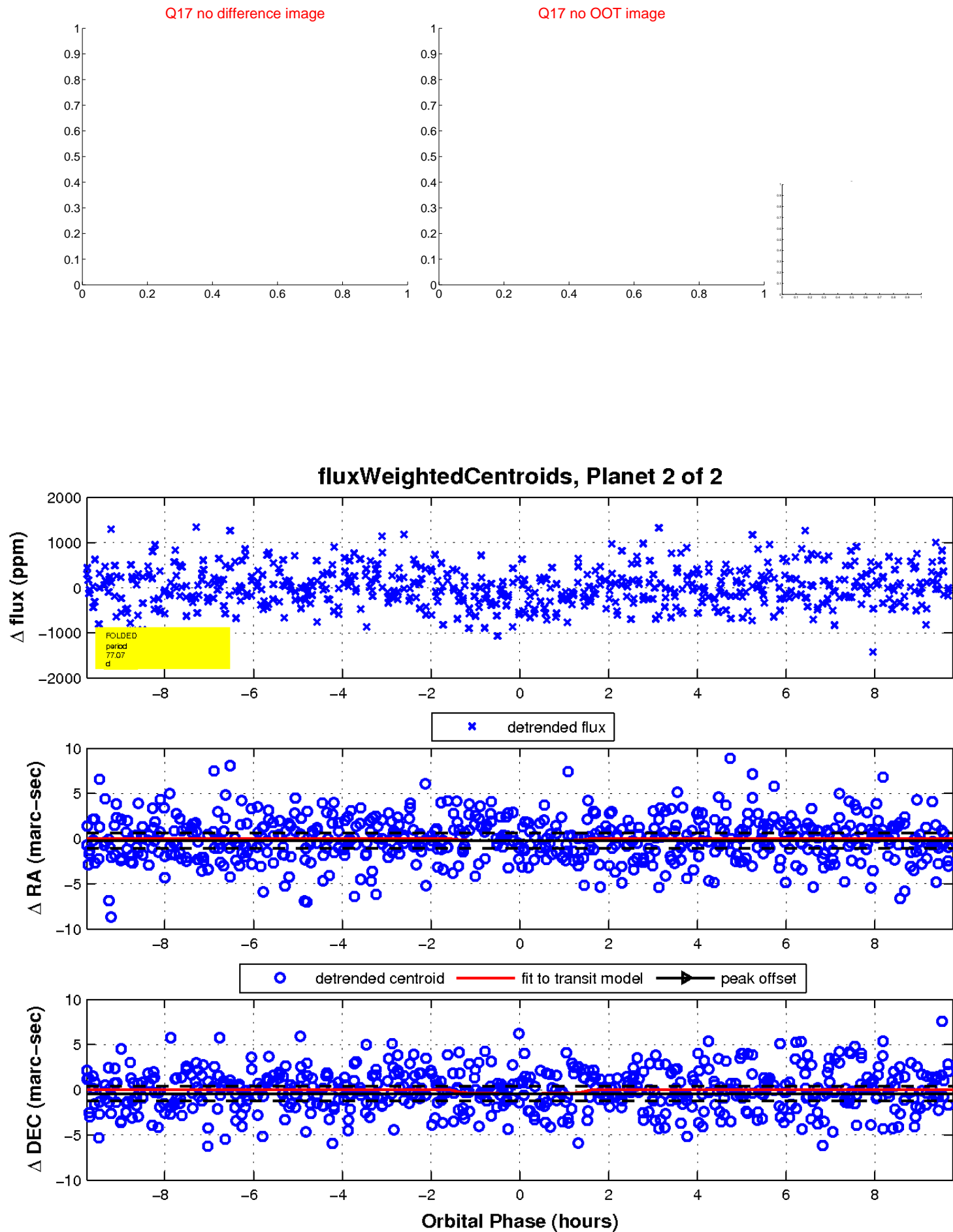
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

