

KIC 005617535

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})
005617535-01	OBS	No	1.739461	133.011420	77.9	3.567	10.2	10.1	2.31	6840	2.37	9499.05
005617535-02	OBS	No	1.210149	132.436598	71.9	5.431	10.1	9.3	2.31	6840	2.29	15409.23
005617535-03	OBS	No	132.979607	246.887132	1295.6	10.041	9.5	9.2	2.31	6840	15.43	29.28
005617535-04	OBS	No	30.629299	156.422118	416.3	16.665	8.4	8.0	2.31	6840	5.67	207.36
005617535-05	OBS	No	99.544831	160.895939	1068.8	8.182	9.2	9.2	2.31	6840	10.37	43.07
005617535-06	OBS	No	326.576571	376.652413	280.1	3.500	8.6	-1.0	2.31	6840	3.90	8.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005617535-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005617535-02	OBS	FP	0.00	1	0	0	0	LPP_DV
005617535-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT
005617535-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT
005617535-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
005617535-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—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.

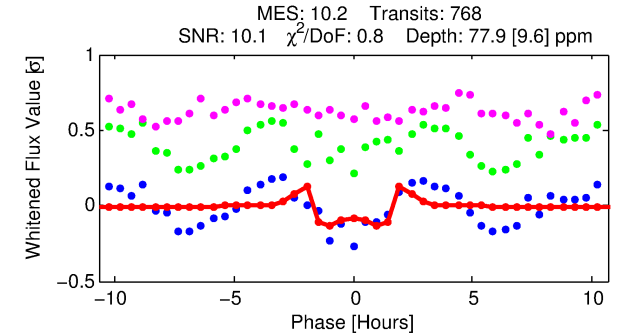
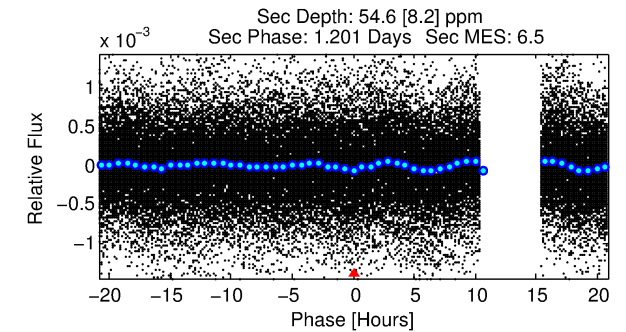
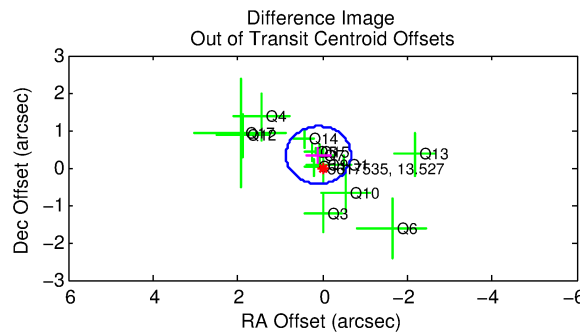
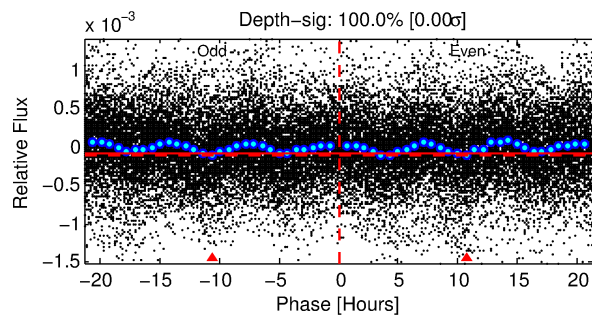
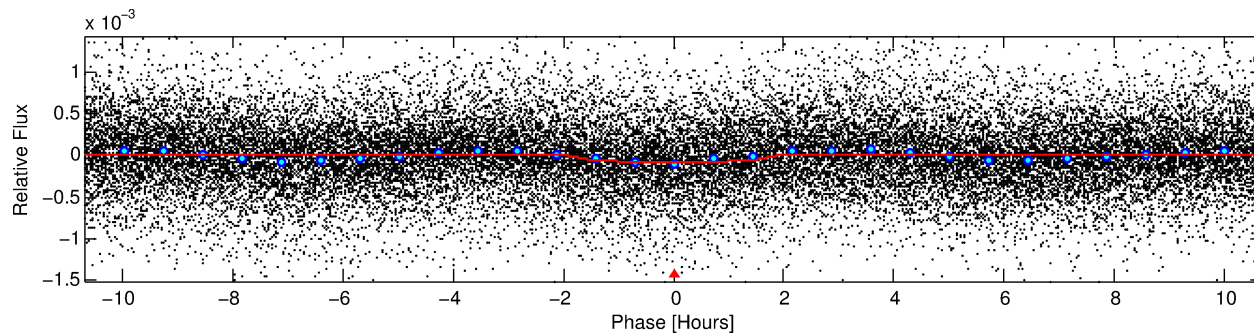
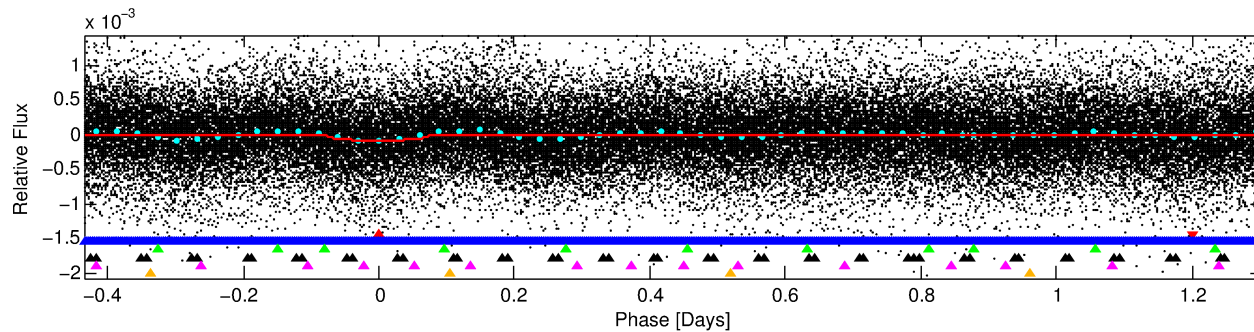
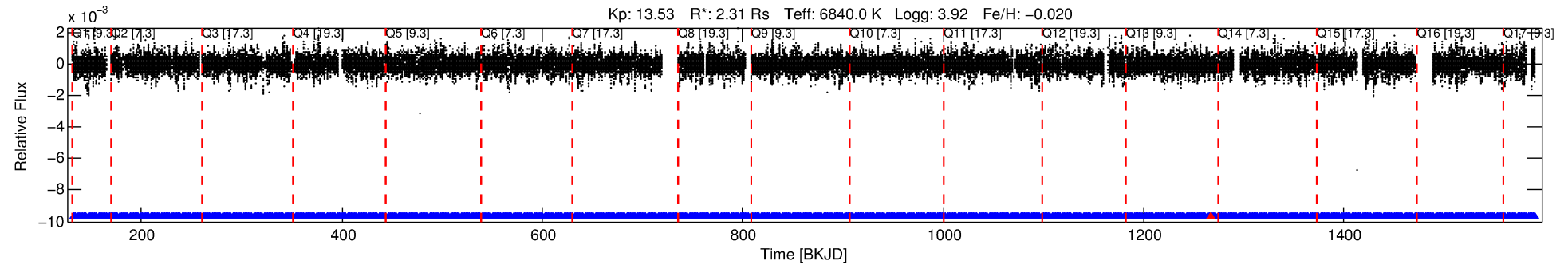
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005617535-01

No Significant Match Found

DV One-Page Summary

KIC: 5617535 Candidate: 1 of 6 Period: 1.739 d



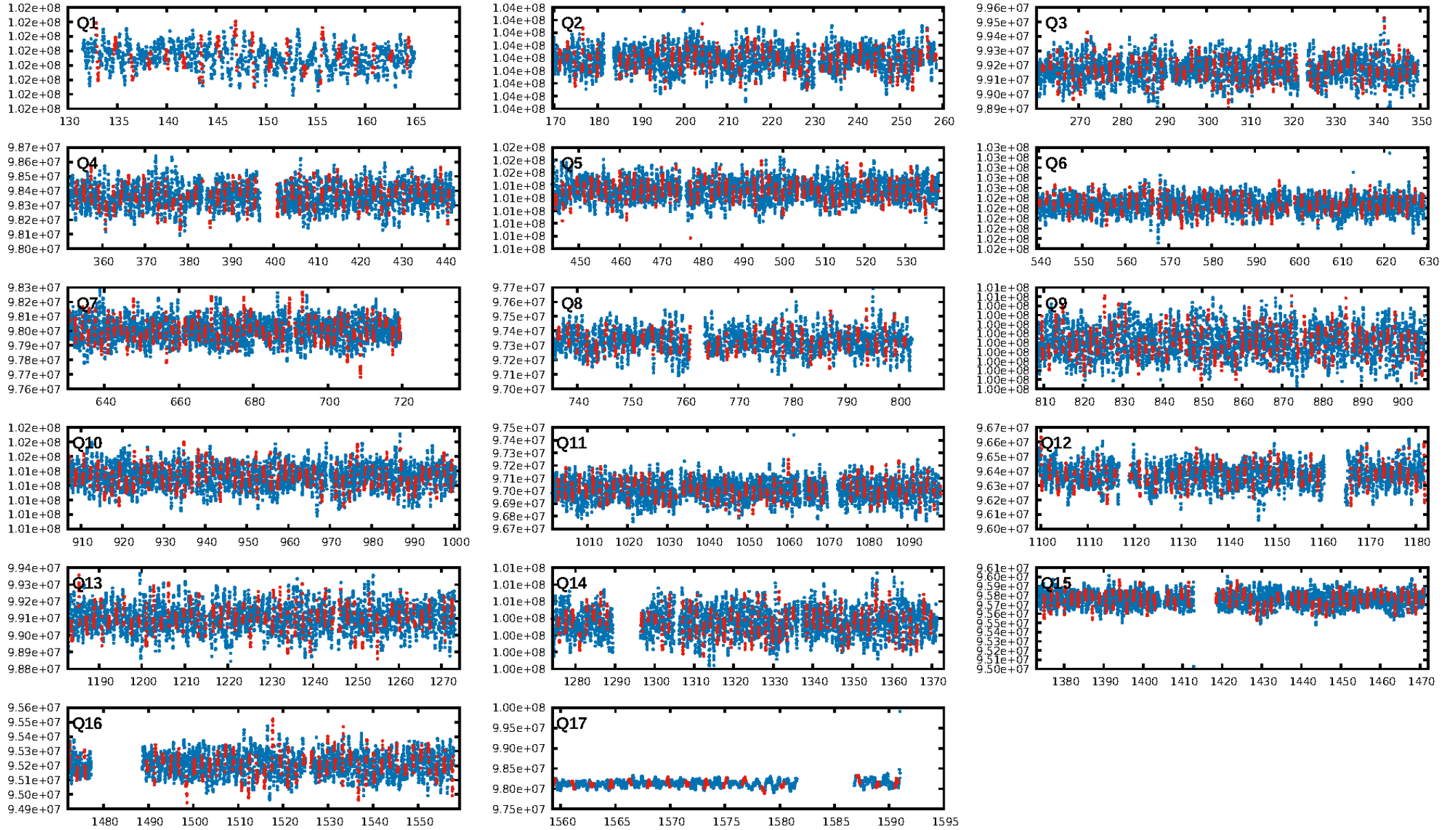
DV Fit Results:

Period = 1.73946 [0.00001] d
Epoch = 133.0114 [0.0017] BKJD
Rp/R* = 0.0094 [0.0016]
a/R* = 1.93 [1.31]
b = 0.90 [0.19]
Seff = 9499.04 [3145.91]
Teff = 2517 [208] K
Rp = 2.37 [0.70] Re
a = 0.0331 [0.0071] AU
Ag = 5.86 [2.92] [1.66 σ]
Teffp = 6055 [573] K [5.80 σ]

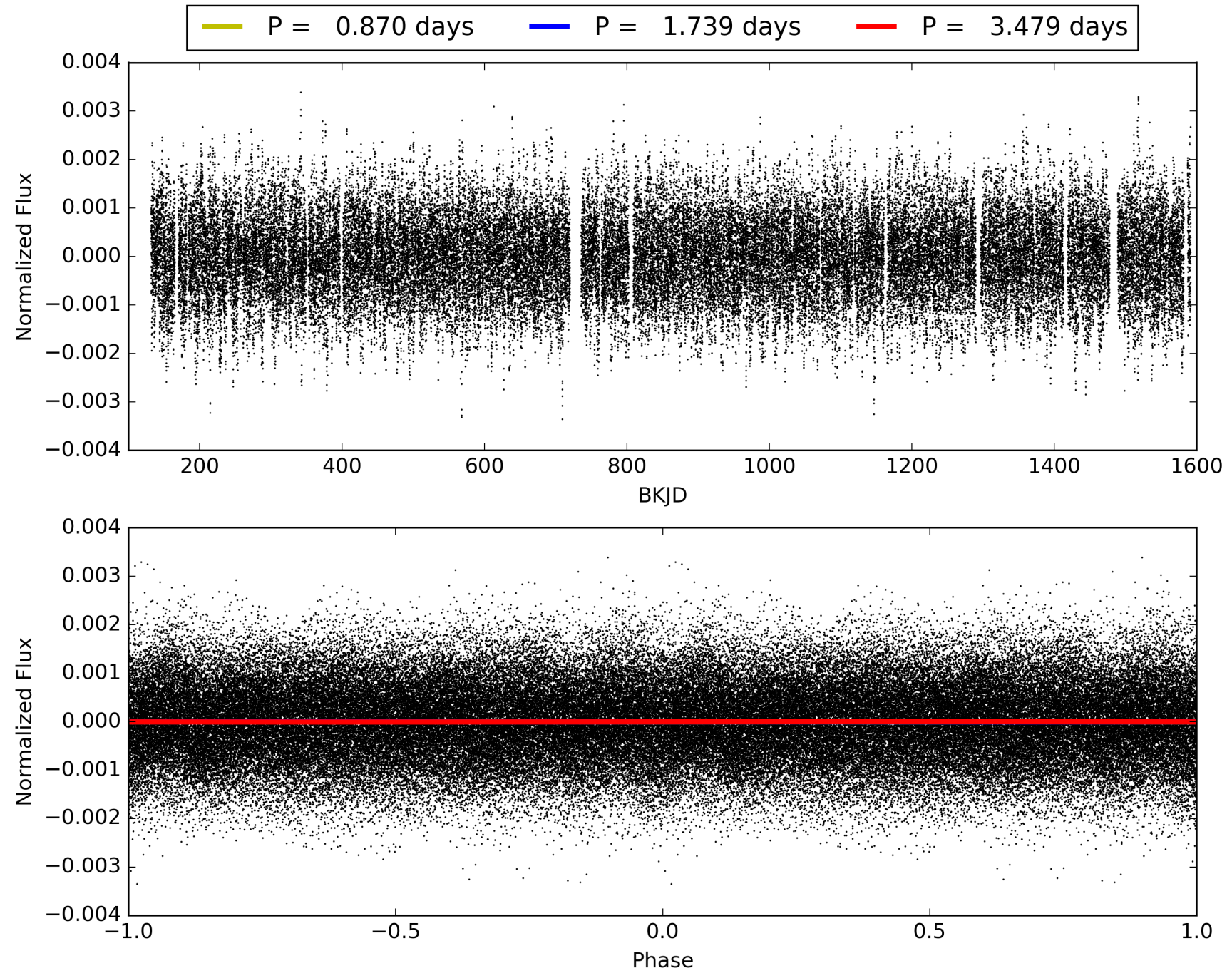
DV Diagnostic Results:

ShortPeriod-sig: 94.9% [1.96 σ]
LongPeriod-sig: 100.0% [40.68 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [732/733]
GhostDiagnostic-chr: 3.361
Centroid-sig: 44.9%
Centroid-so: 0.167 arcsec [0.52 σ]
OotOffset-rm: 0.351 arcsec [1.37 σ]
KicOffset-rm: 0.335 arcsec [1.42 σ]
OotOffset-st: 3/4/2/5 [14]
KicOffset-st: 3/4/2/5 [14]
DiffImageQuality-fgm: 0.21 [3/14]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005617535-01, PDC Light Curves

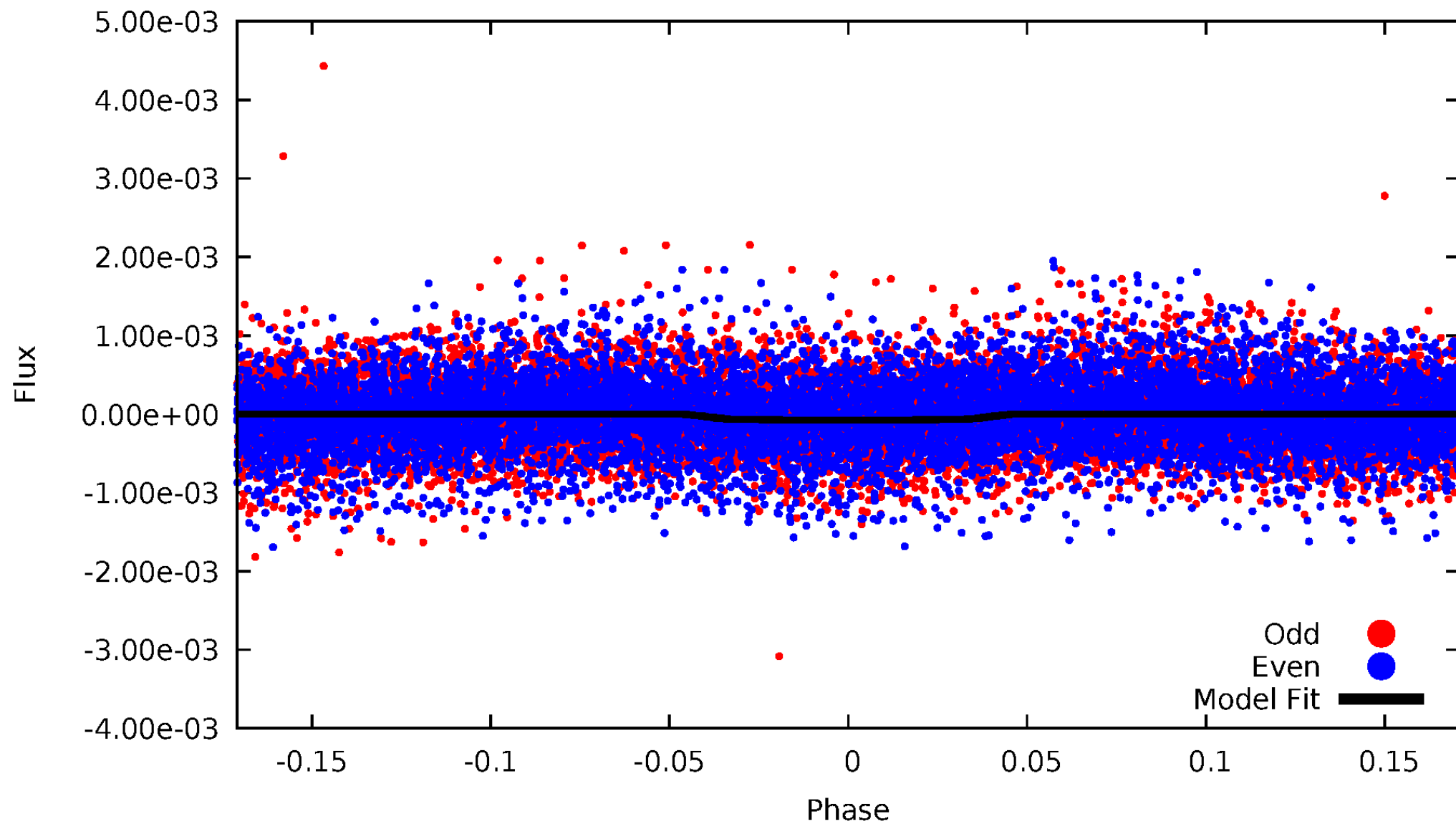


TCE 005617535-01



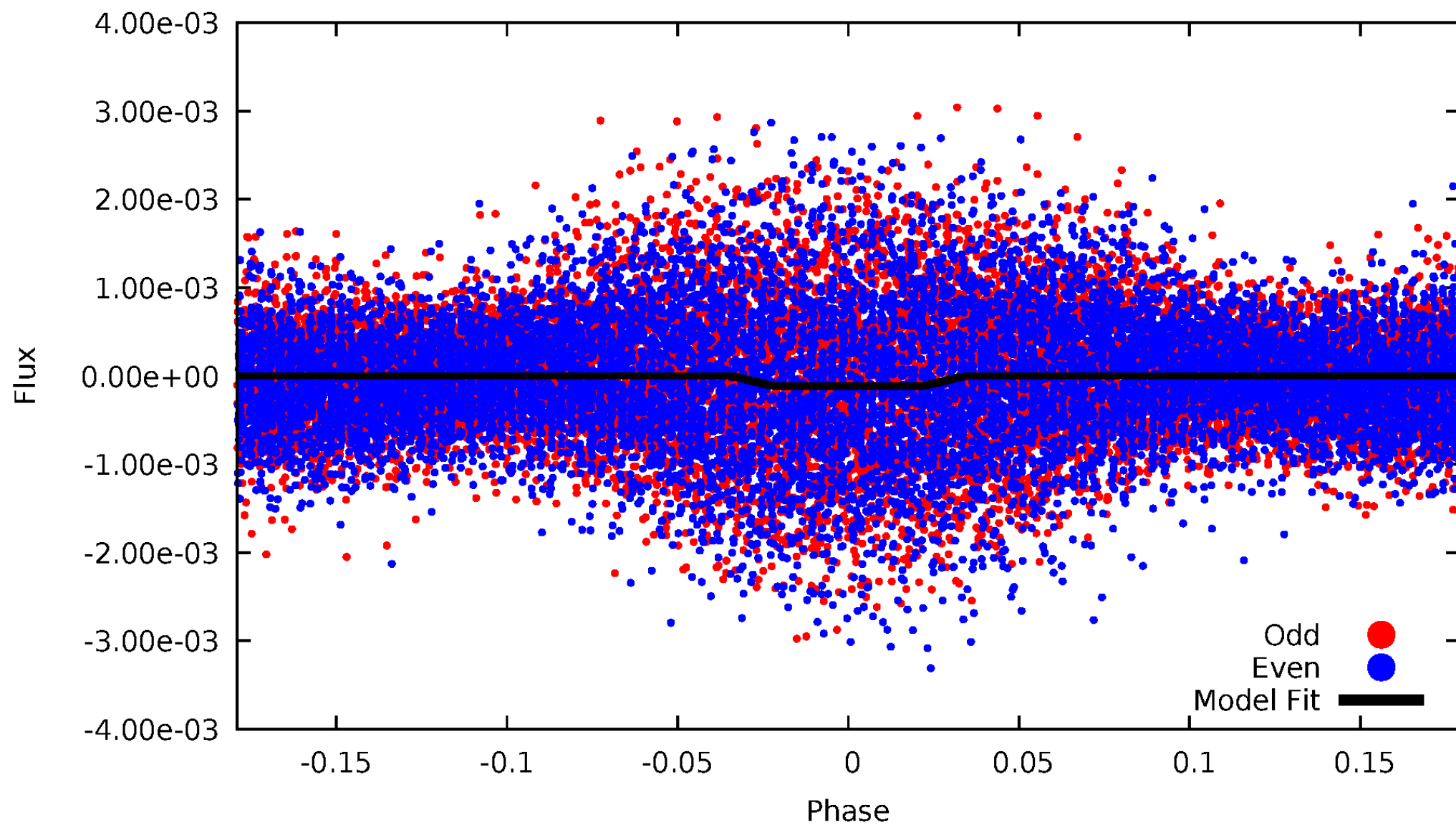
DV Odd/Even

TCE 005617535-01



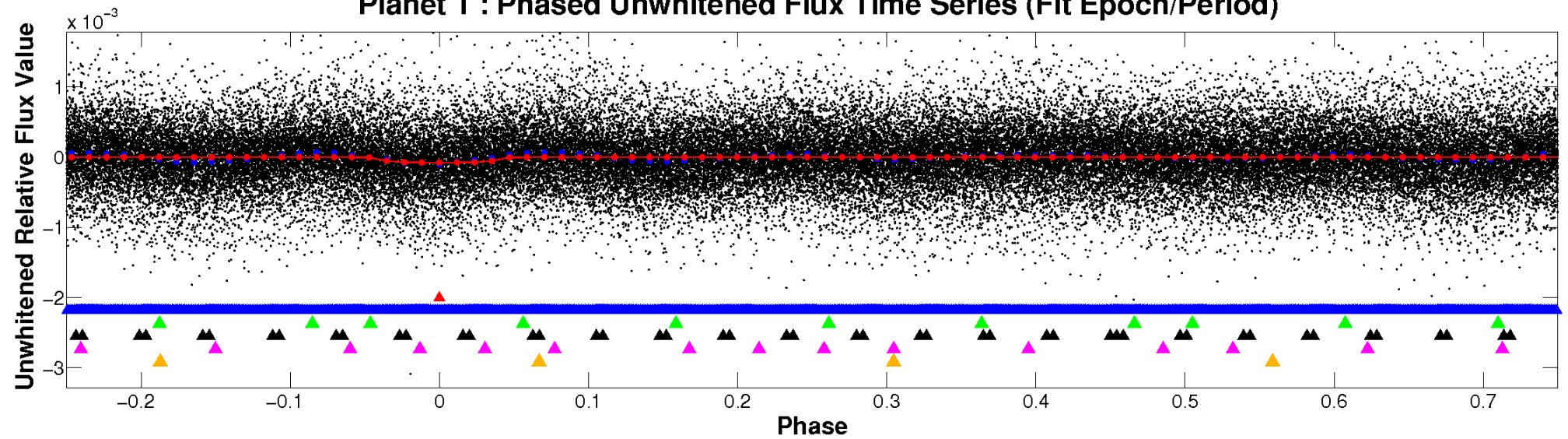
ALT Odd/Even

TCE 005617535-01

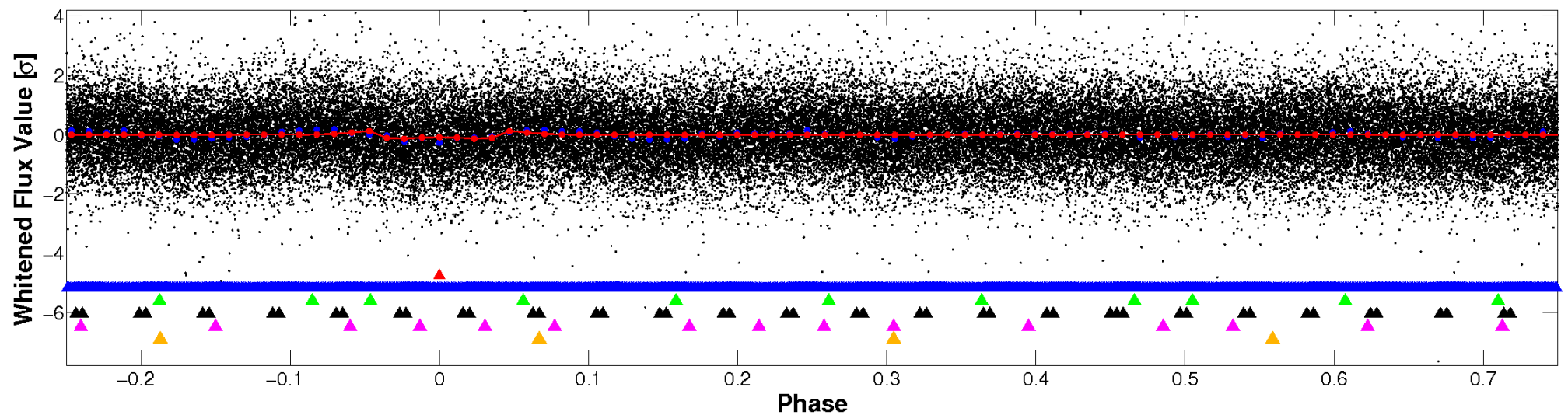


Non-Whitened Vs. Whitened Light Curve

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

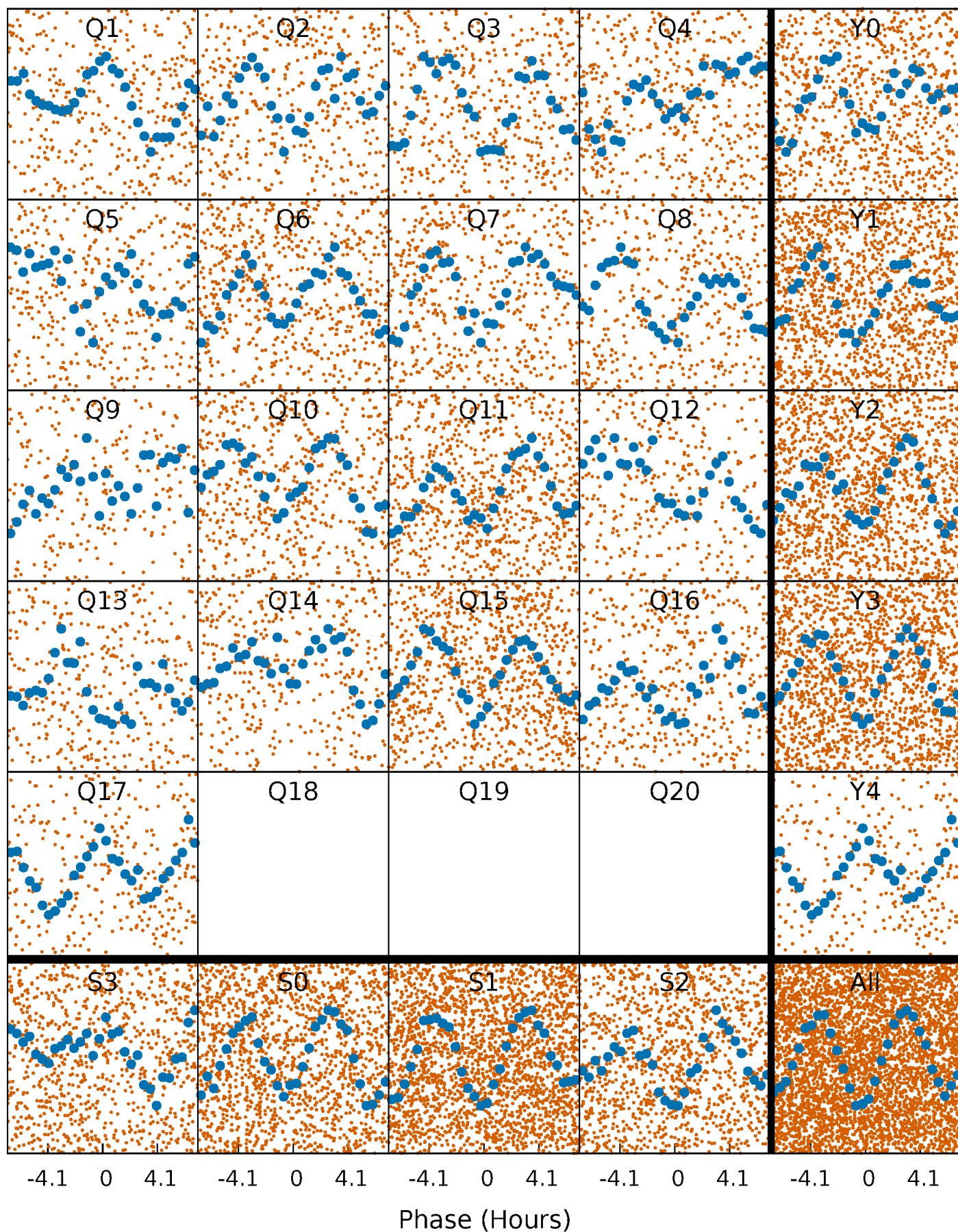


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



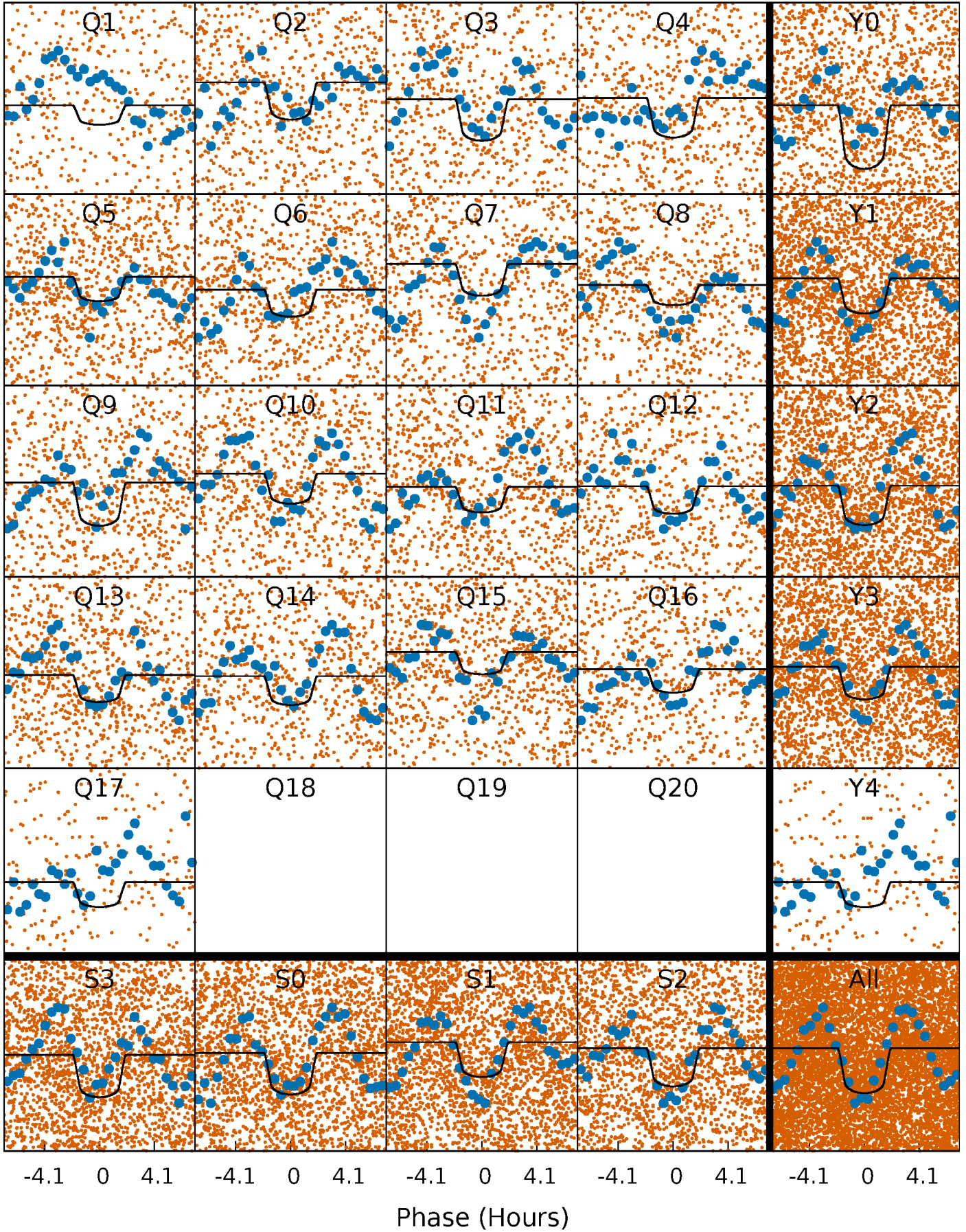
PDC Quarter-Phased Transit Curves

TCE 005617535-01 P= 1.739461 Days $T_0=133.011420$ (BKJD)



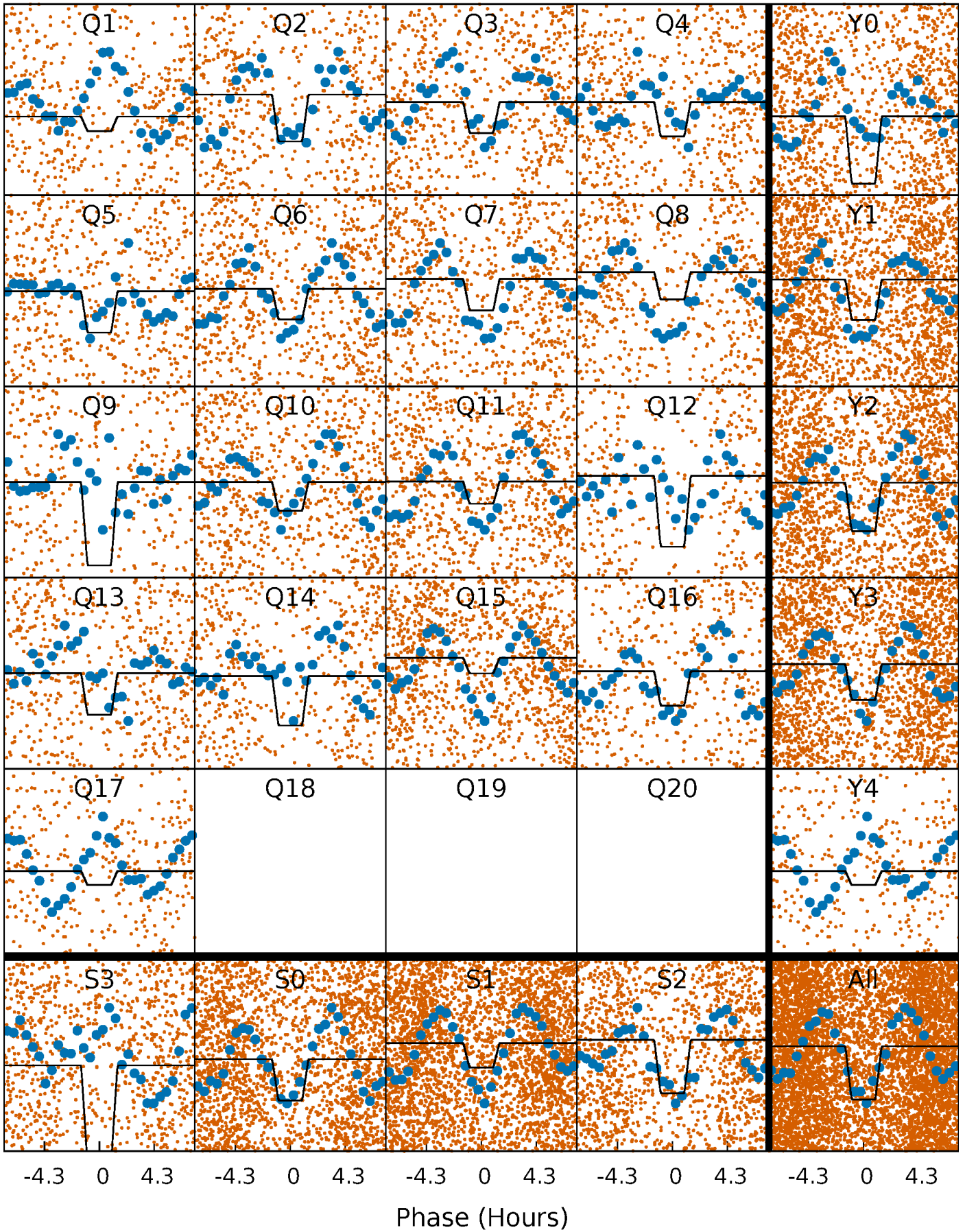
DV Quarter-Phased Transit Curves

TCE 005617535-01 P= 1.739461 Days $T_0=133.011420$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

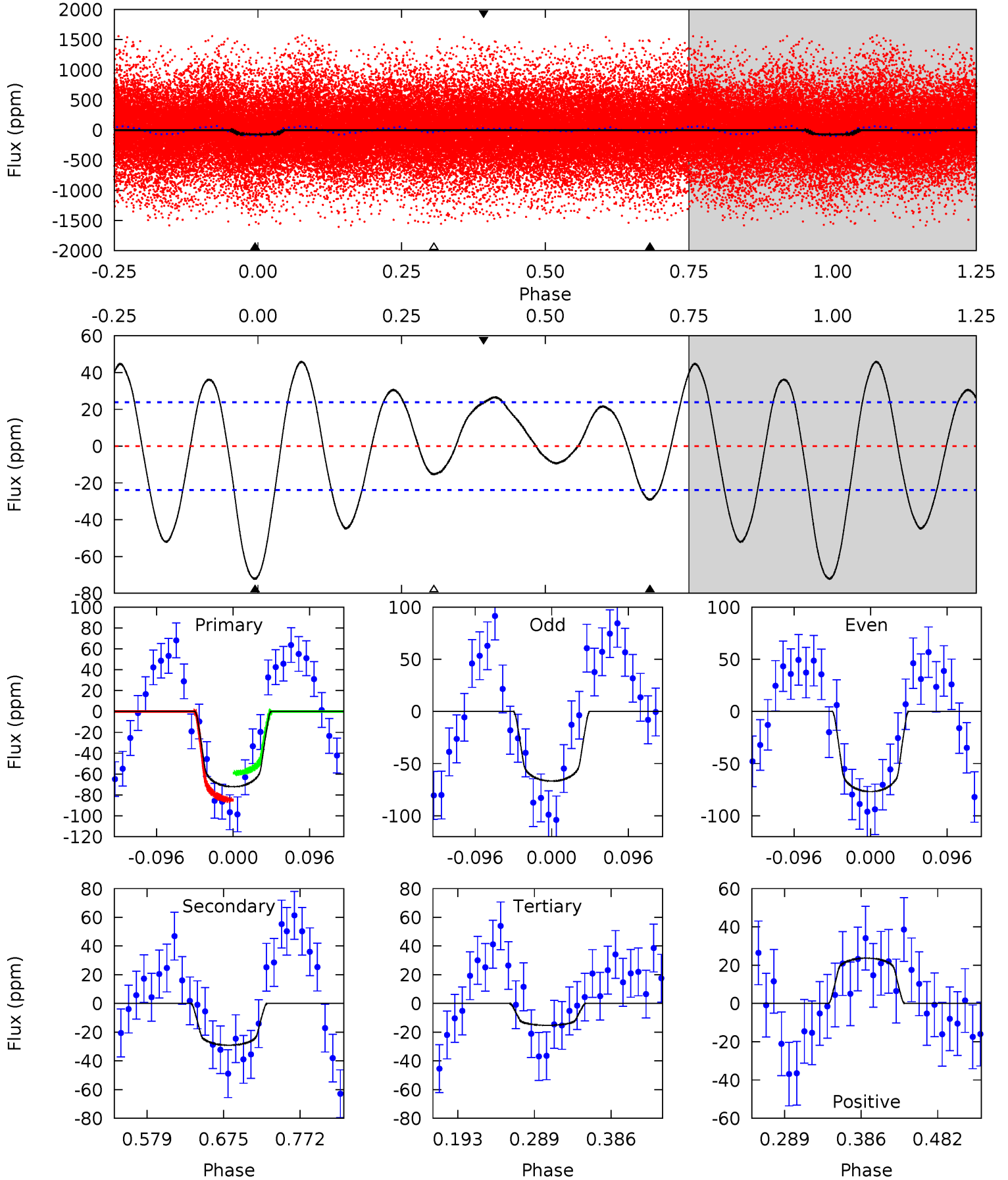
TCE 005617535-01 P= 1.739457 Days $T_0=132.999836$ (BKJD)



DV Model-Shift Uniqueness Test

005617535-01, P = 1.739461 Days, E = 131.271959 Days

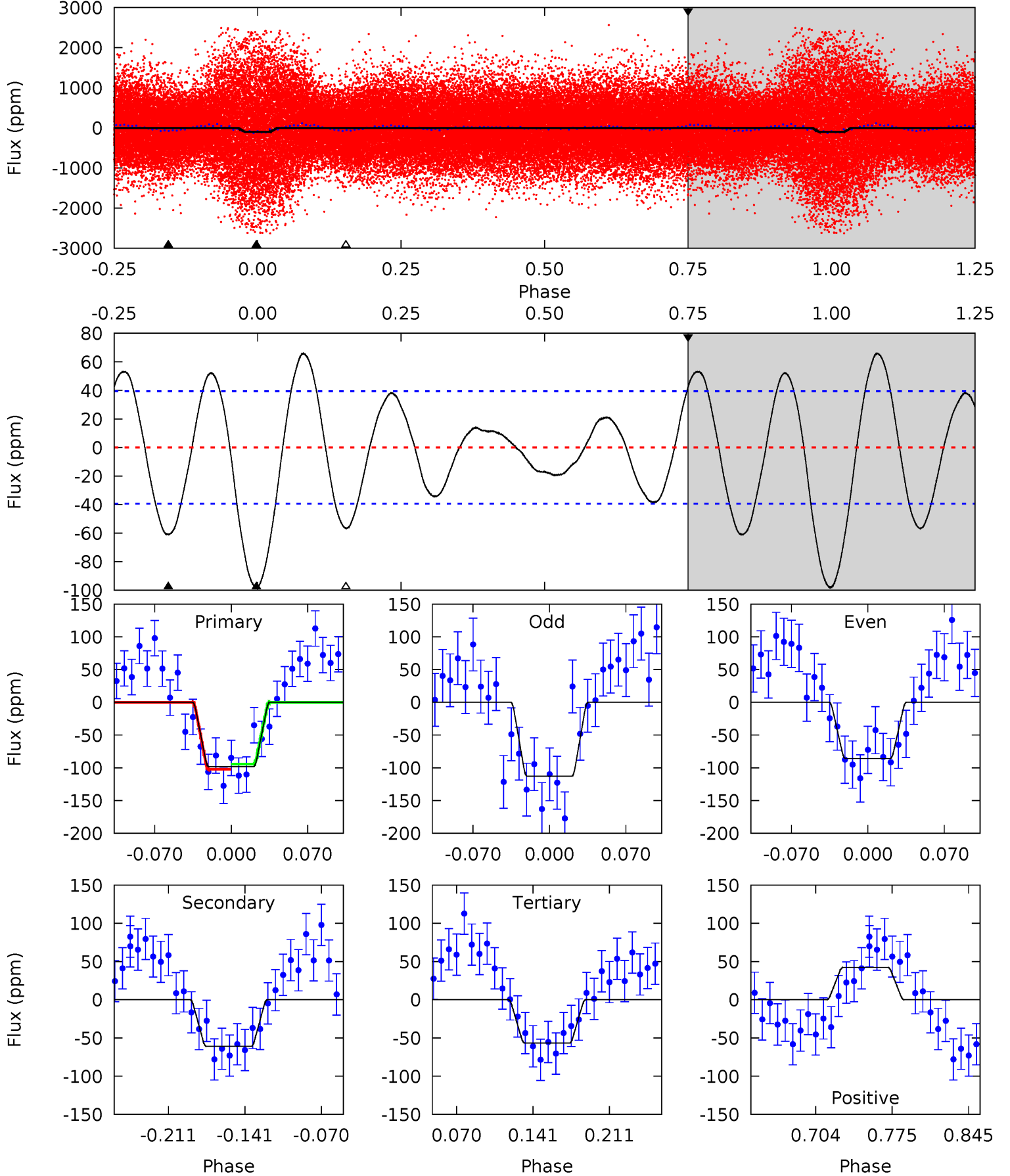
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	5.57	2.92	4.53	4.57	1.66	4.32	10.9	9.28	2.65	1.04	0.96	0.93	0.39	2.47



Alt Model-Shift Uniqueness Test

005617535-01, P = 1.739457 Days, E = 131.260379 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	7.17	6.66	4.97	4.64	1.81	3.31	4.88	6.57	0.51	2.20	1.58	0.99	0.40	0.46



Stellar Parameters For KIC 005617535

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6840^{+71}_{-82}	$3.917^{+0.186}_{-0.108}$	$-0.020^{+0.150}_{-0.150}$	$2.305^{+0.404}_{-0.556}$	$1.601^{+0.133}_{-0.192}$	$0.184^{+0.187}_{-0.070}$
	+1%/-1%	+5%/-3%	+750%/-750%	+18%/-24%	+8%/-12%	+102%/-38%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 005617535-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-29 ± 5	$2.32^{+0.49}_{-0.45}$	3507^{+160}_{-193}	5057^{+562}_{-389}	$3.156^{+1.929}_{-1.047}$
Alt.	-61 ± 9	$2.61^{+0.53}_{-0.48}$	3495^{+180}_{-212}	5745^{+550}_{-437}	$5.271^{+2.865}_{-1.616}$

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

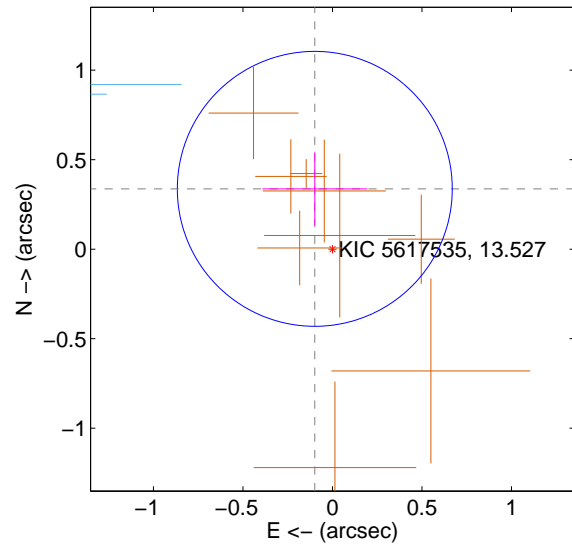
Supplemental centroid analysis for 005617535-01. Kepler magnitude: 13.53. Transit SNR 10.08

There are 3 quarters with good PRF difference image offsets

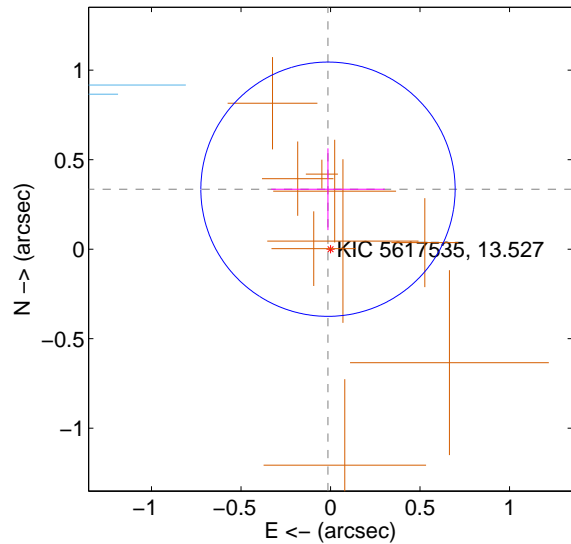
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.351 ± 0.256	1.37	0.099 ± 0.293	0.337 ± 0.205
PRF-fit source offset from KIC position	0.335 ± 0.237	1.42	0.014 ± 0.317	0.335 ± 0.228
photometric centroid source offset	0.17 ± 0.32	0.52	0.04 ± 0.34	0.16 ± 0.32

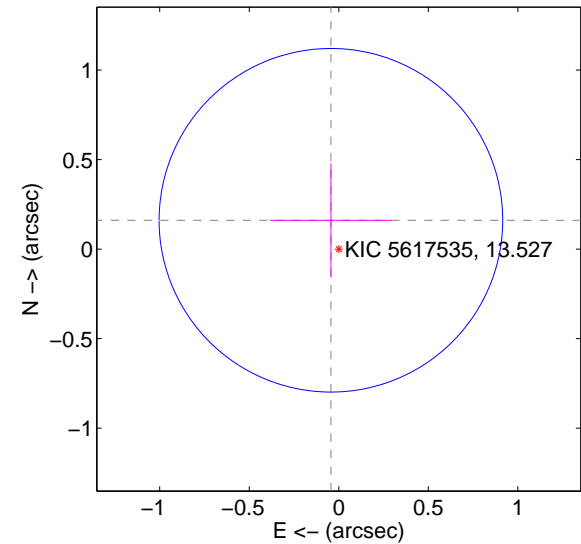
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

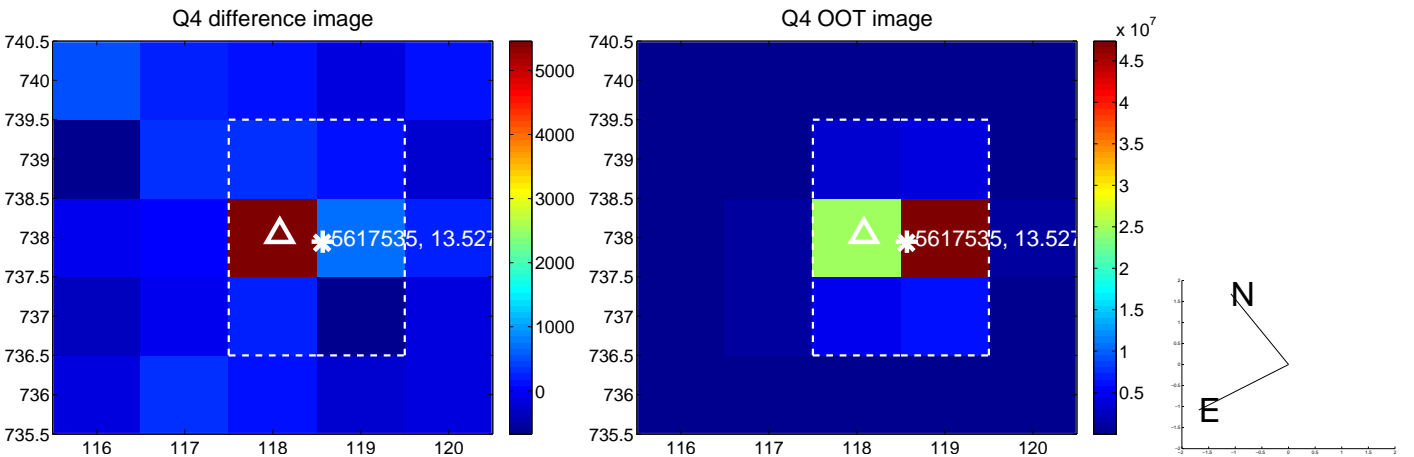
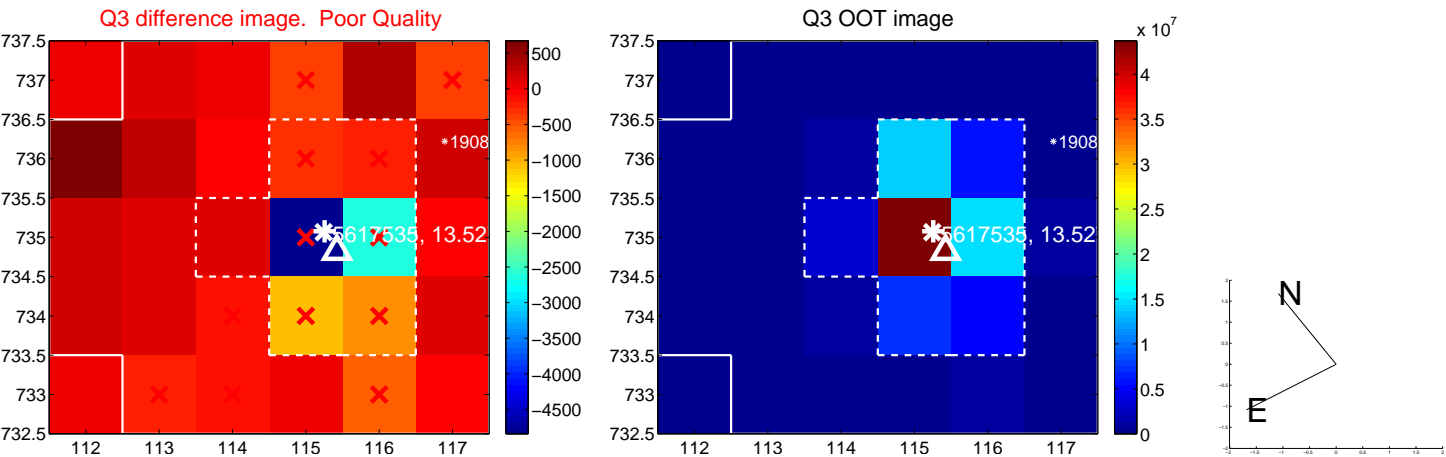
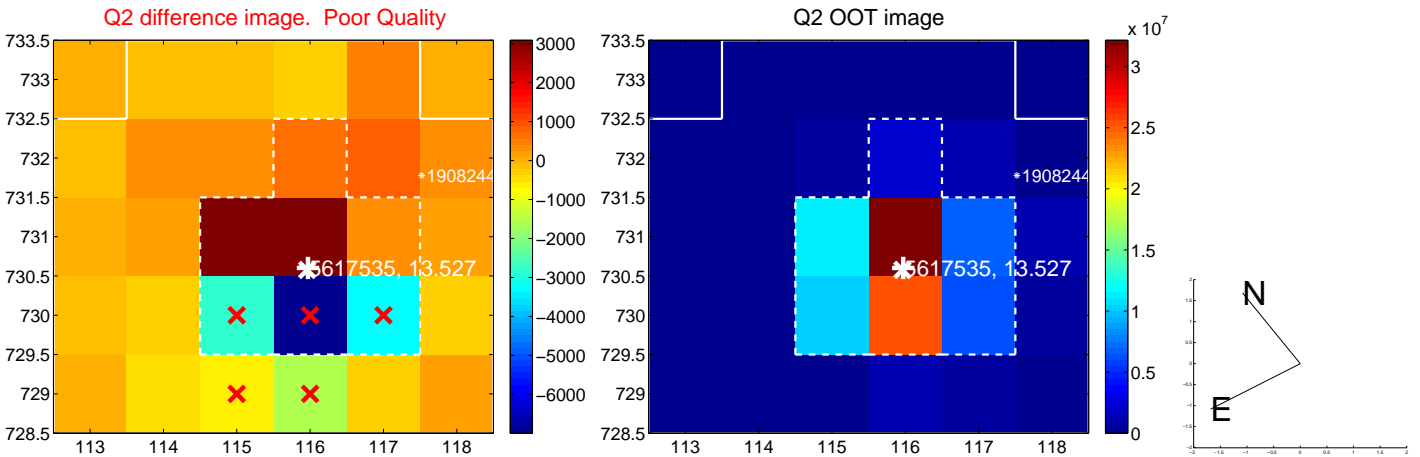
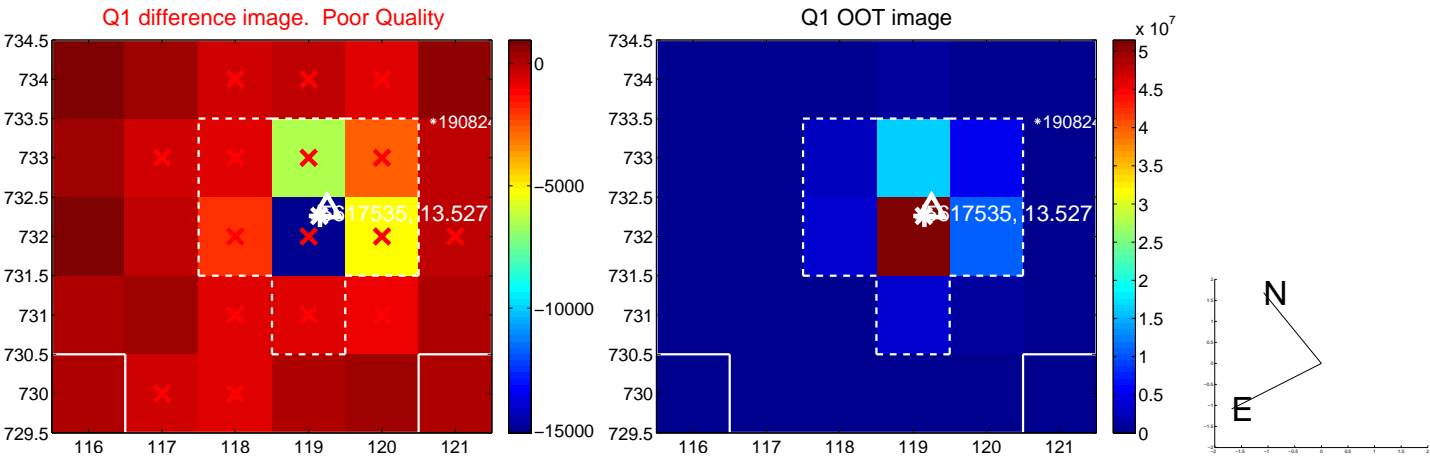


offset from photometric centroids

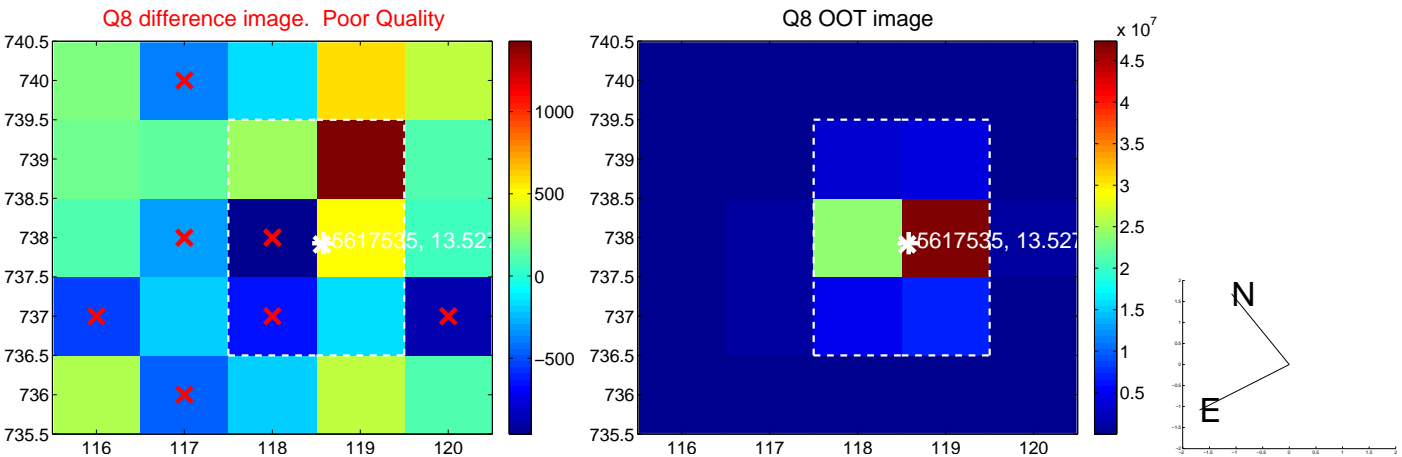
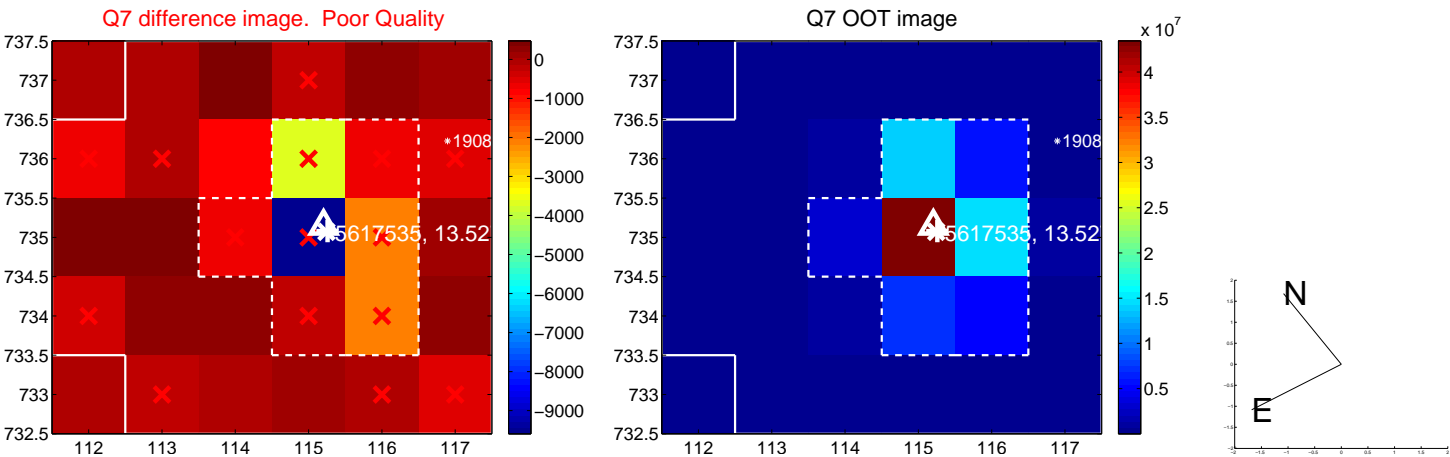
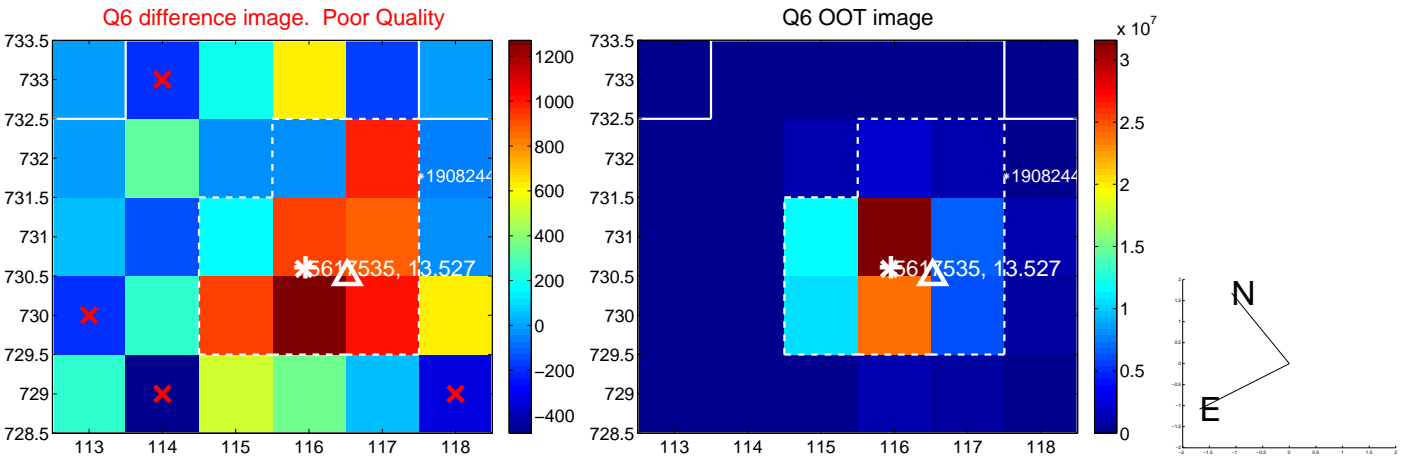
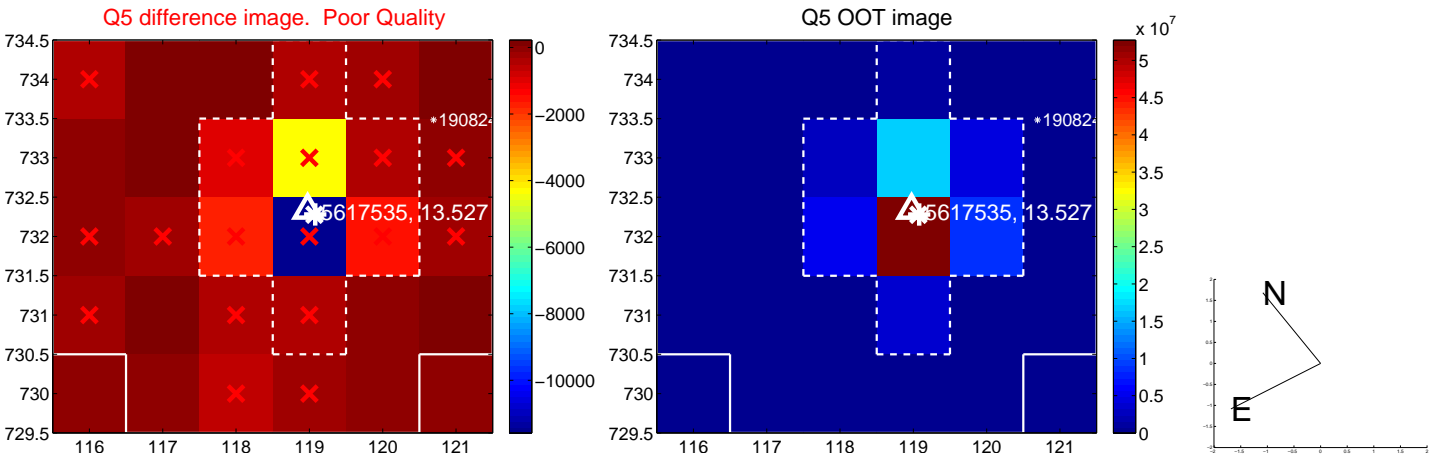


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

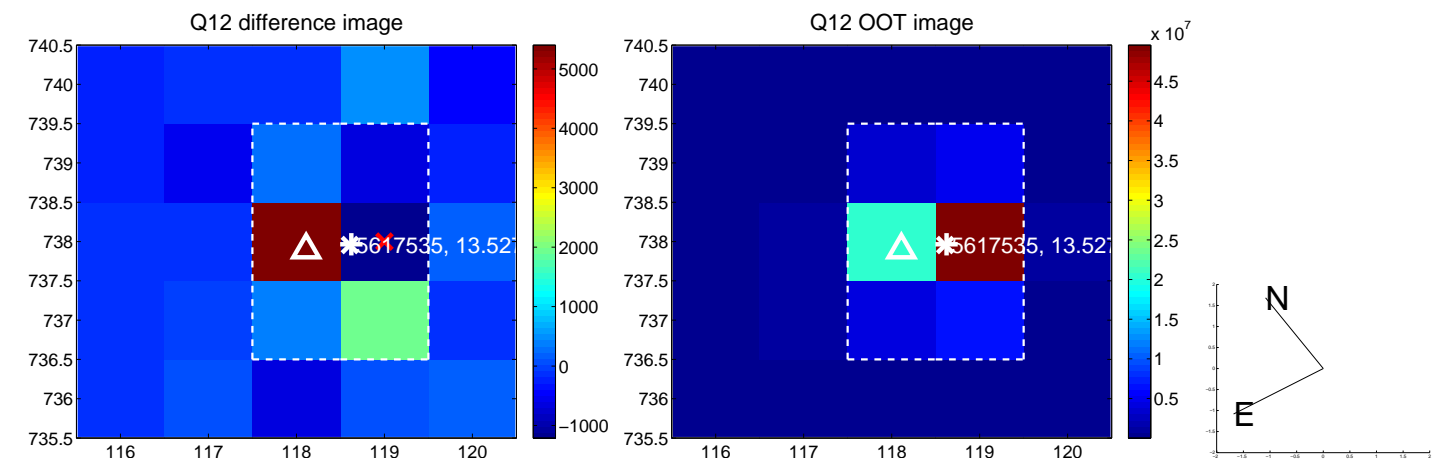
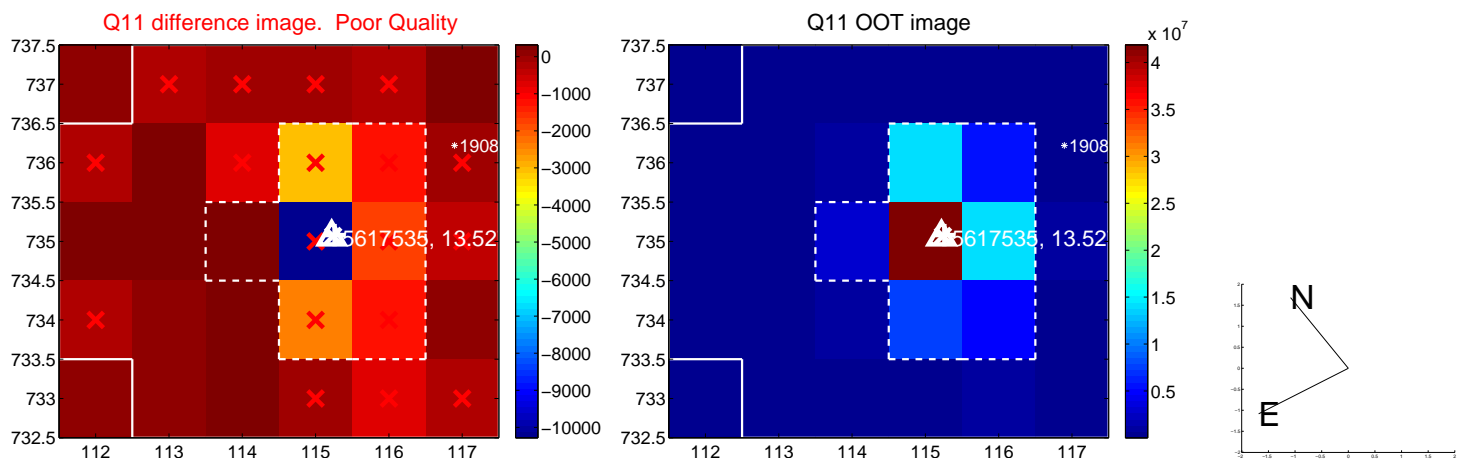
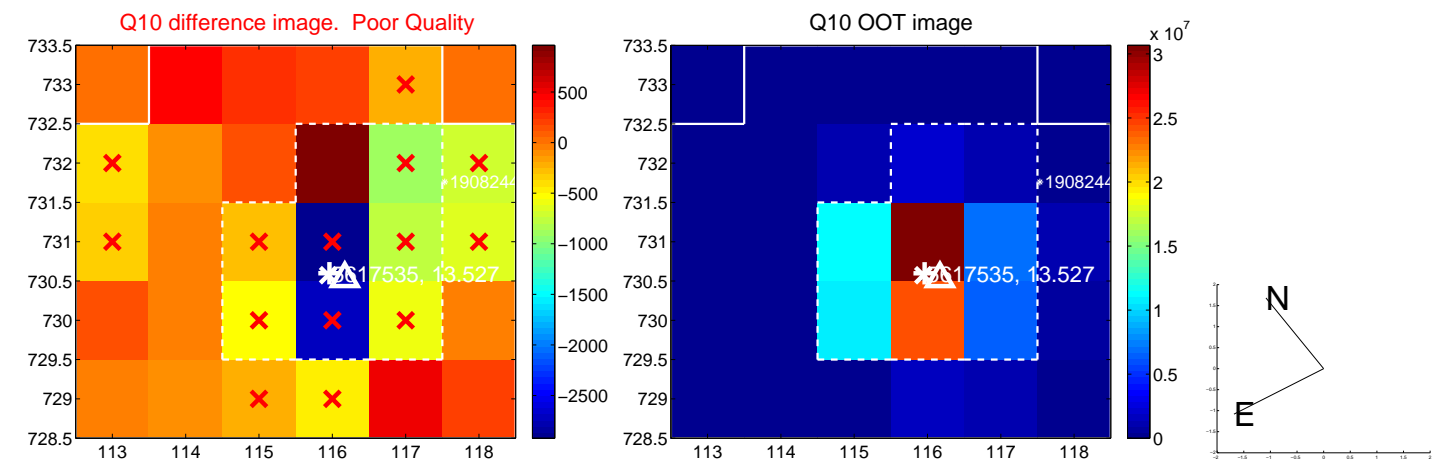
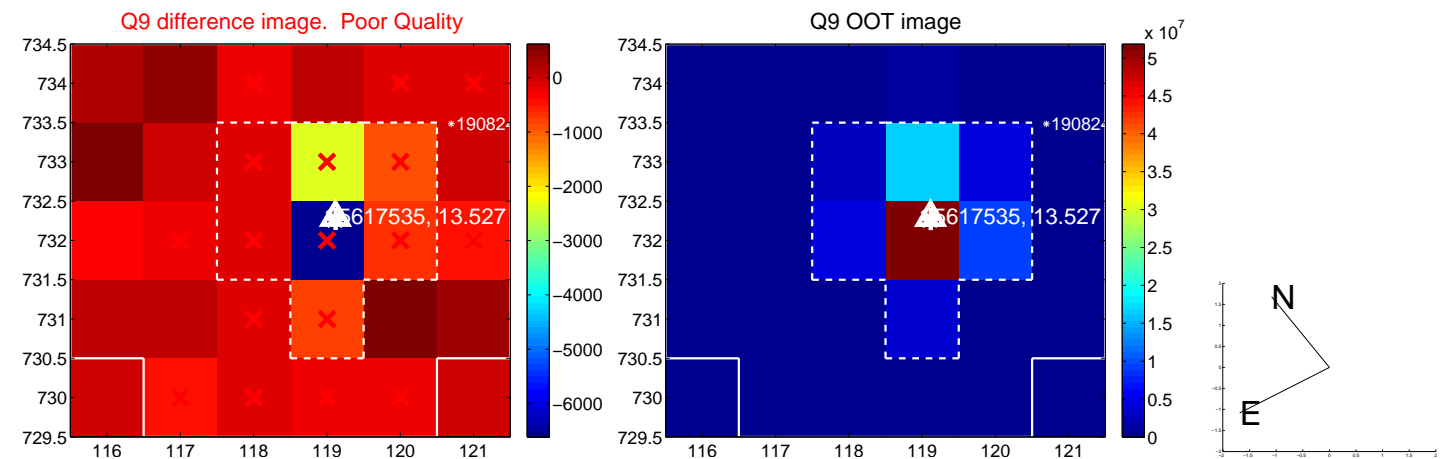
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



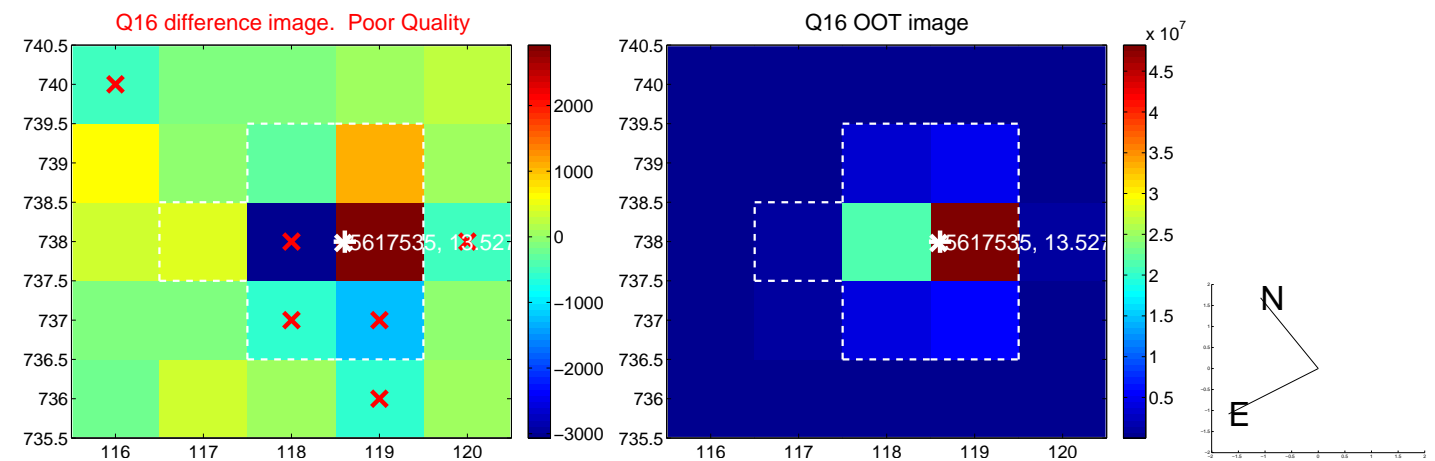
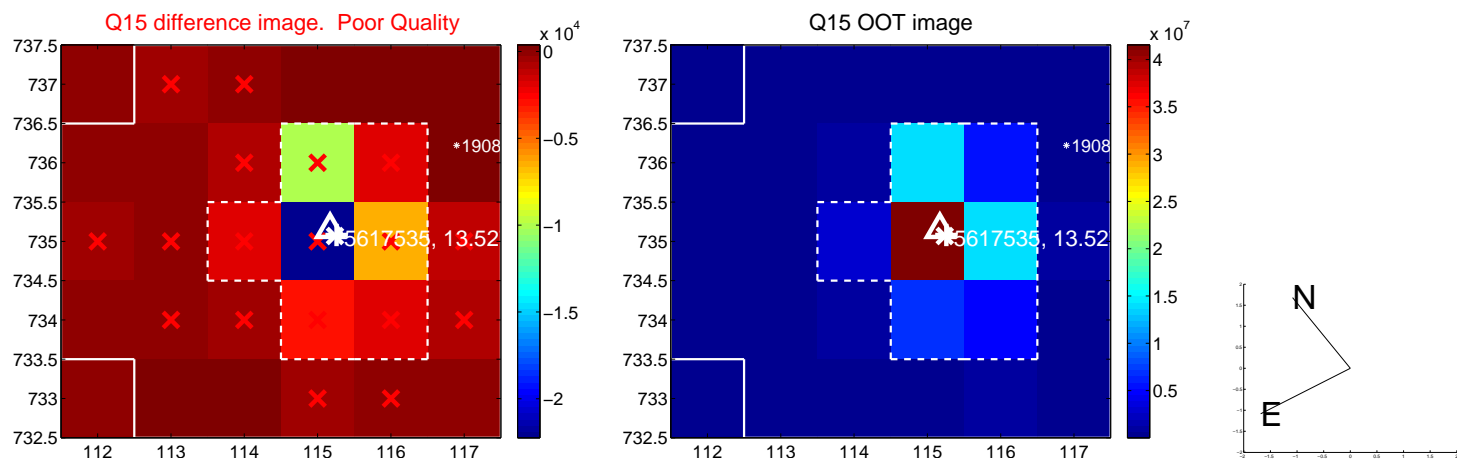
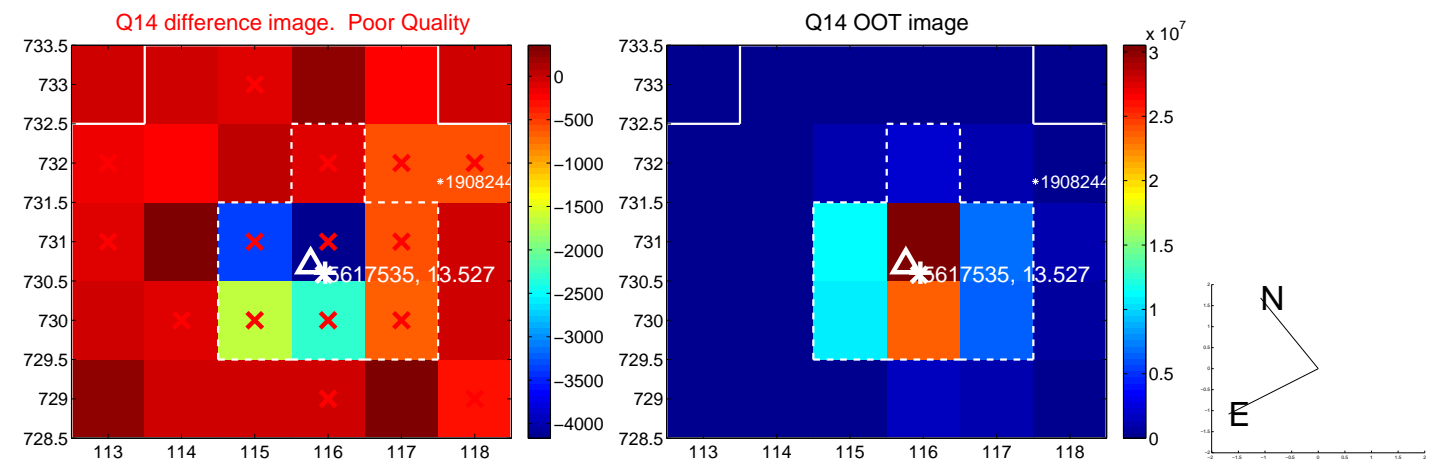
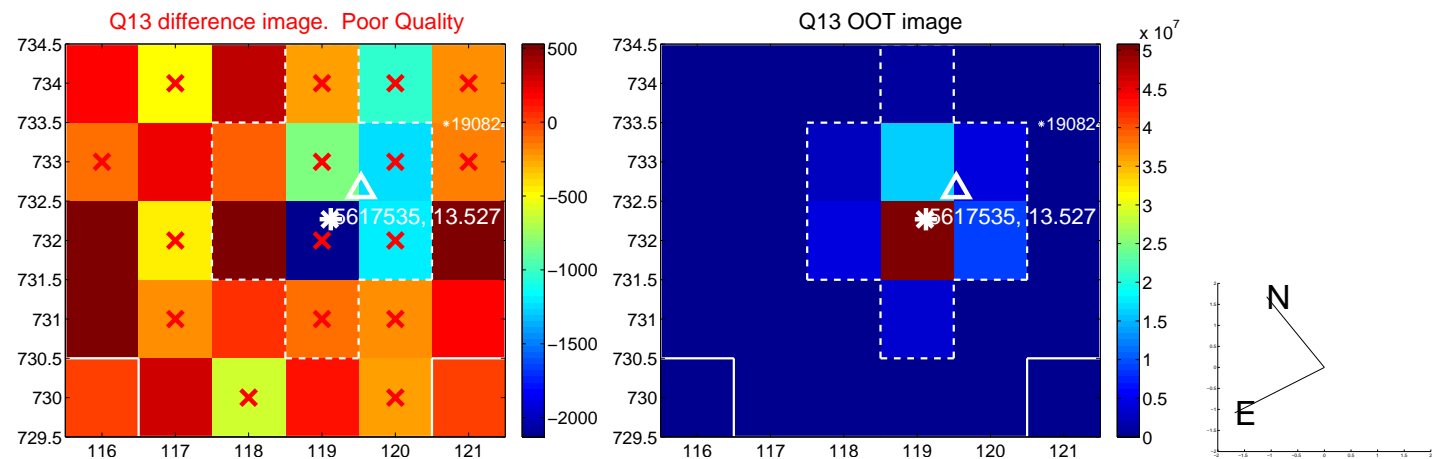
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image



KIC 005617535

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})
005617535-01	OBS	No	1.739461	133.011420	77.9	3.567	10.2	10.1	2.31	6840	2.37	9499.05
005617535-02	OBS	No	1.210149	132.436598	71.9	5.431	10.1	9.3	2.31	6840	2.29	15409.23
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005617535-05	OBS	No	99.544831	160.895939	1068.8	8.182	9.2	9.2	2.31	6840	10.37	43.07
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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005617535-02	OBS	FP	0.00	1	0	0	0	LPP_DV
005617535-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT
005617535-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT
005617535-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
005617535-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—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.

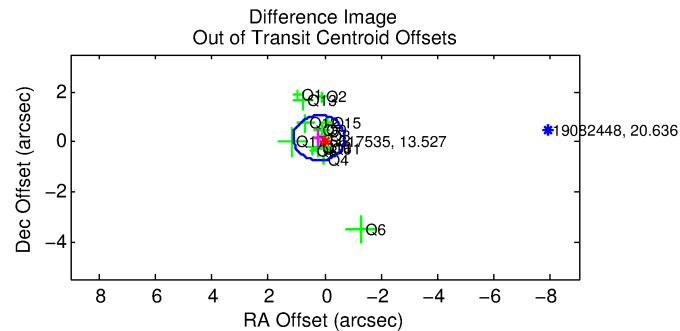
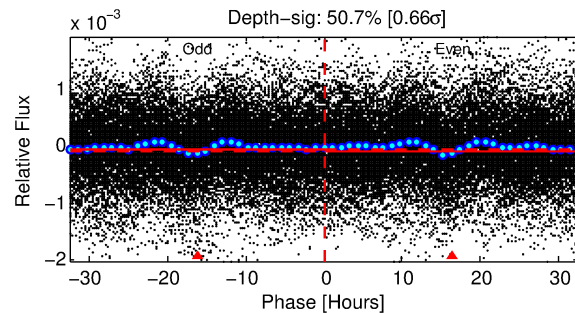
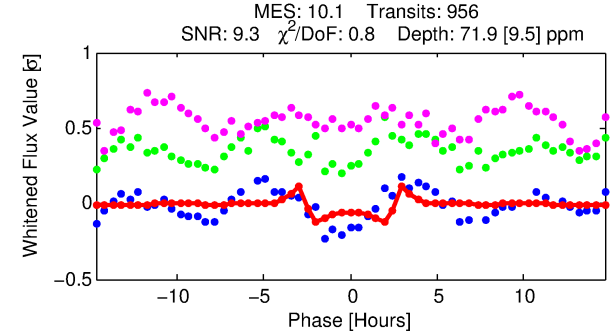
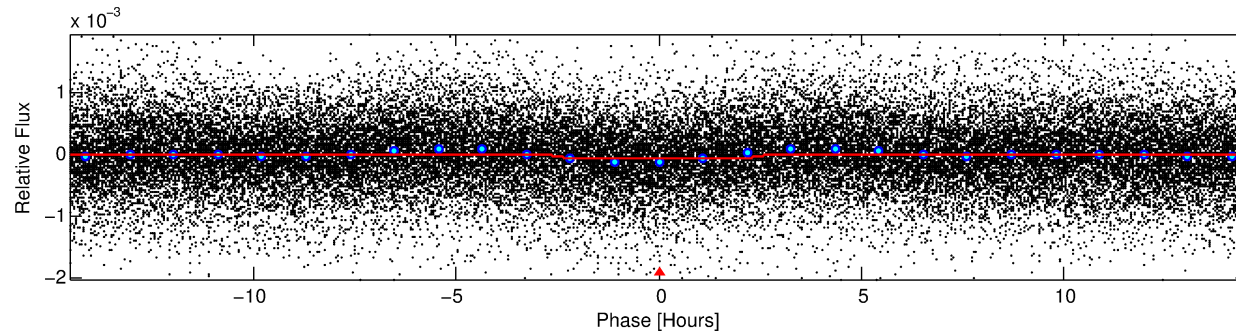
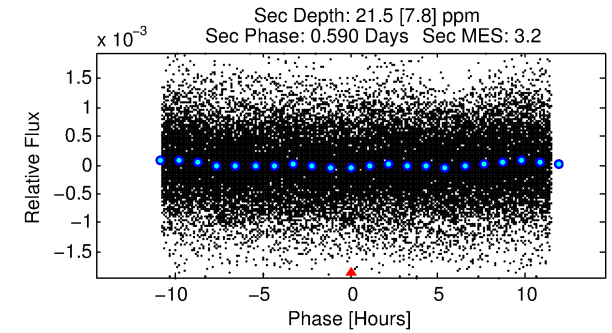
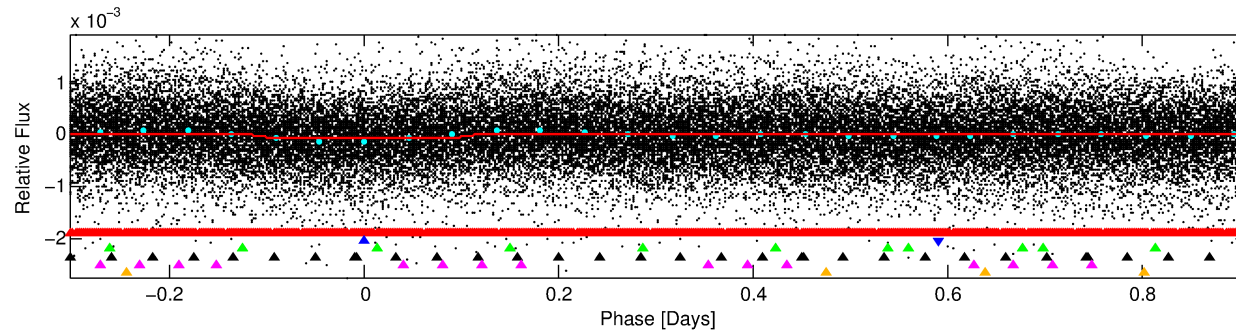
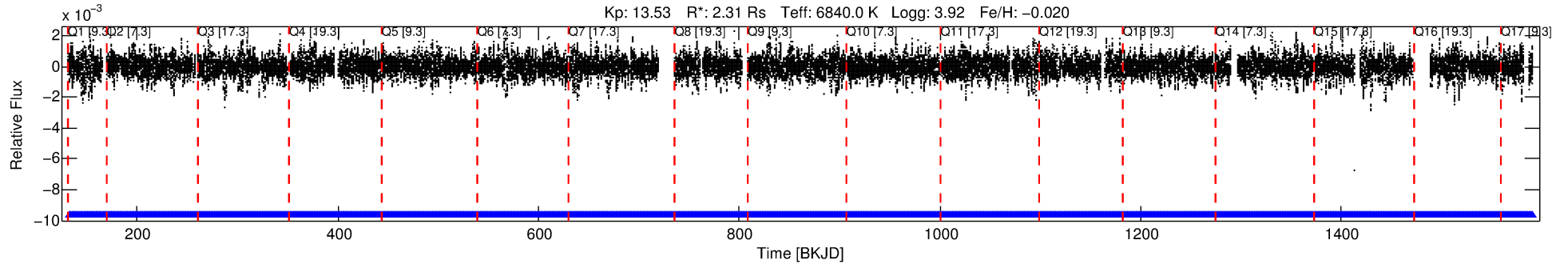
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005617535-02

No Significant Match Found

DV One-Page Summary

KIC: 5617535 Candidate: 2 of 6 Period: 1.210 d



DV Fit Results:

Period = 1.21015 [0.00001] d
Epoch = 132.4366 [0.0020] BKJD
Rp/R* = 0.0091 [0.0012]
a/R* = 1.20 [0.24]
b = 0.91 [0.12]
Seff = 15409.23 [5103.25]
Teq = 2841 [235] K
Rp = 2.29 [0.63] Re
a = 0.0260 [0.0056] AU
Ag = 1.52 [0.85] [0.62σ]
Teffp = 4879 [551] K [3.40σ]

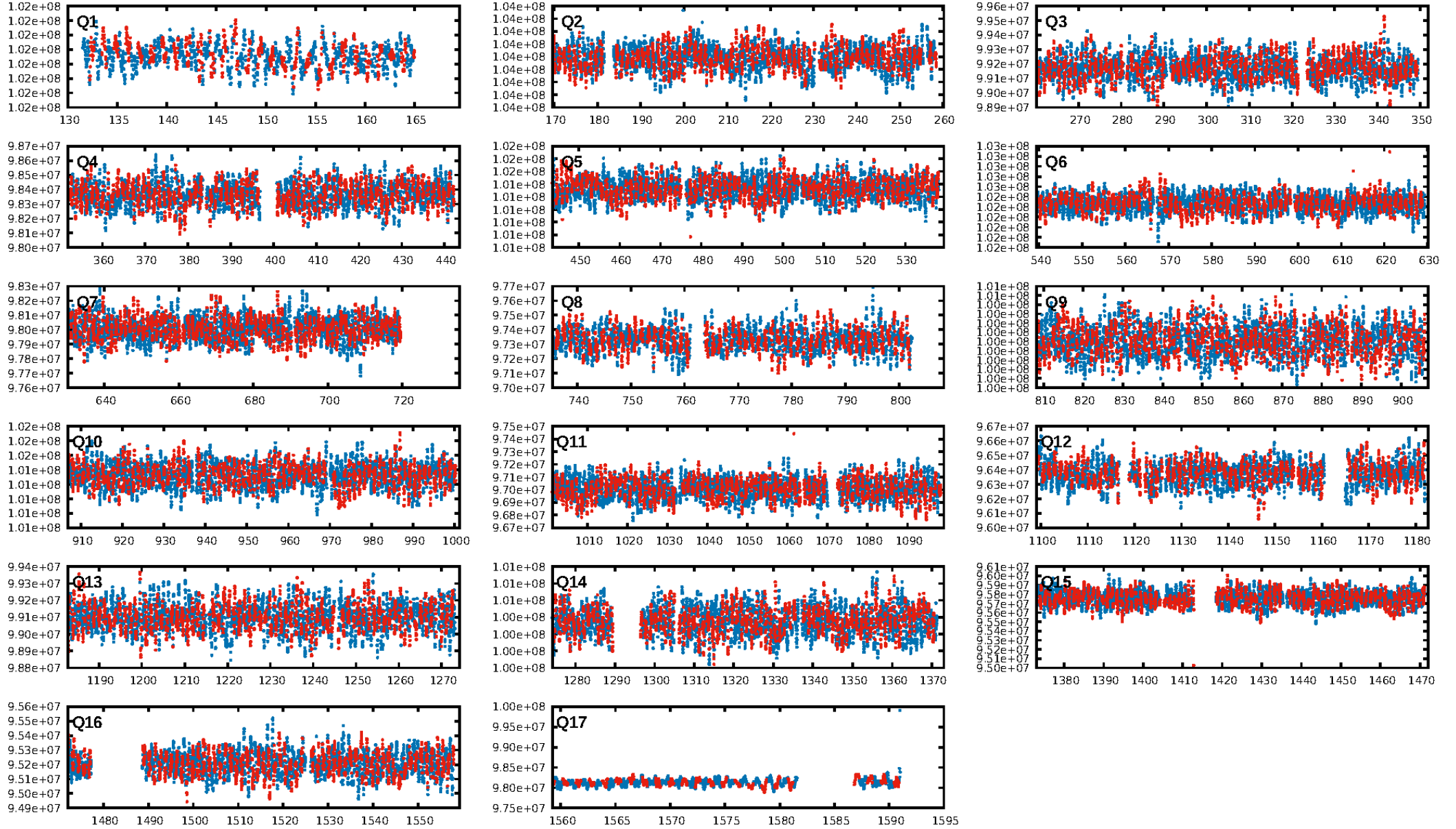
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 94.9% [1.96σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [916/916]
GhostDiagnostic-chr: 5.733
Centroid-sig: 0.3%
Centroid-so: 0.404 arcsec [1.69σ]
OotOffset-rm: 0.257 arcsec [0.85σ]
KicOffset-rm: 0.198 arcsec [0.64σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.80 [12/15]
DiffImageOverlap-fno: 1.00 [17/17]

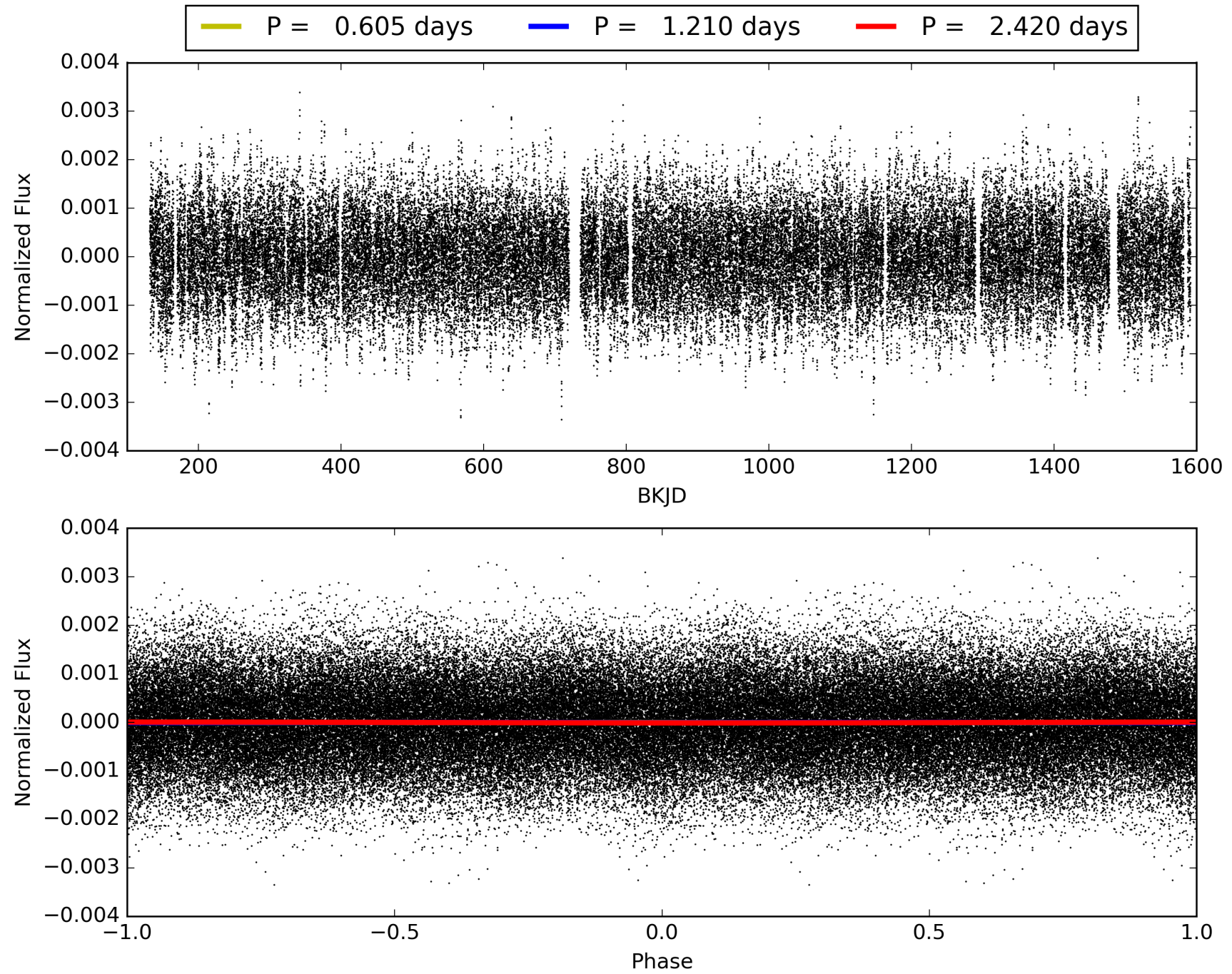
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:12:56 Z

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

TCE 005617535-02, PDC Light Curves

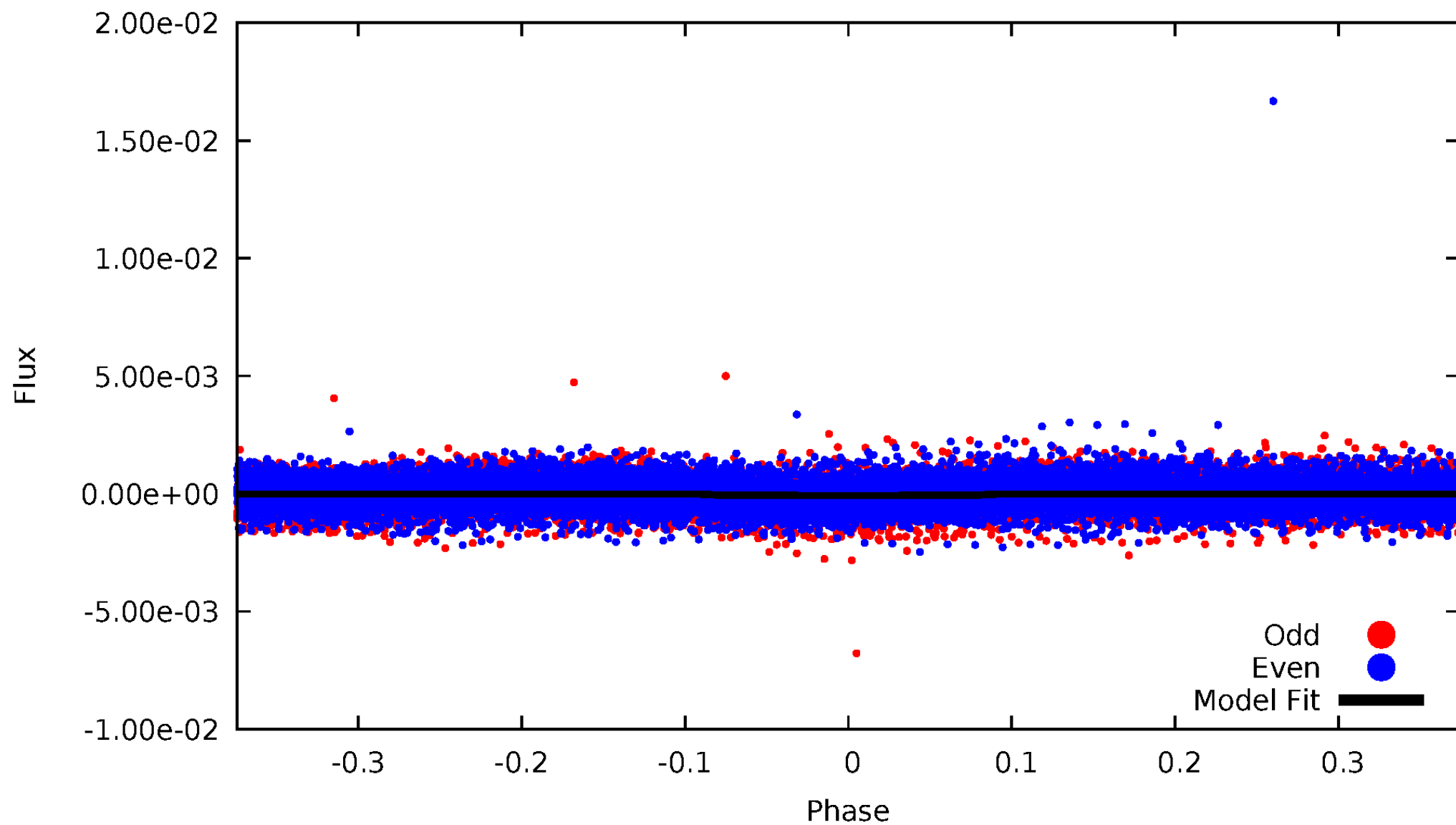


TCE 005617535-02



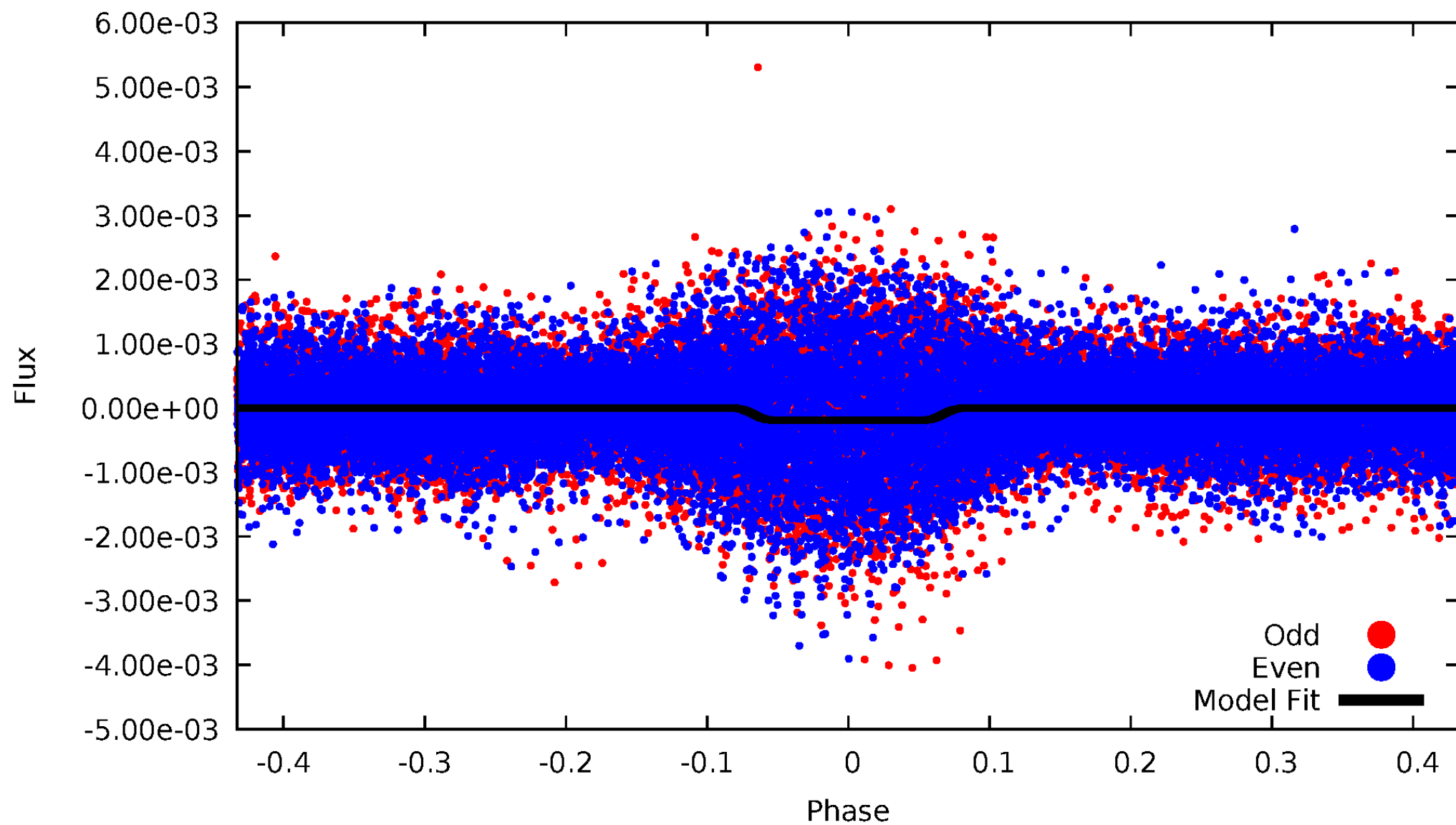
DV Odd/Even

TCE 005617535-02



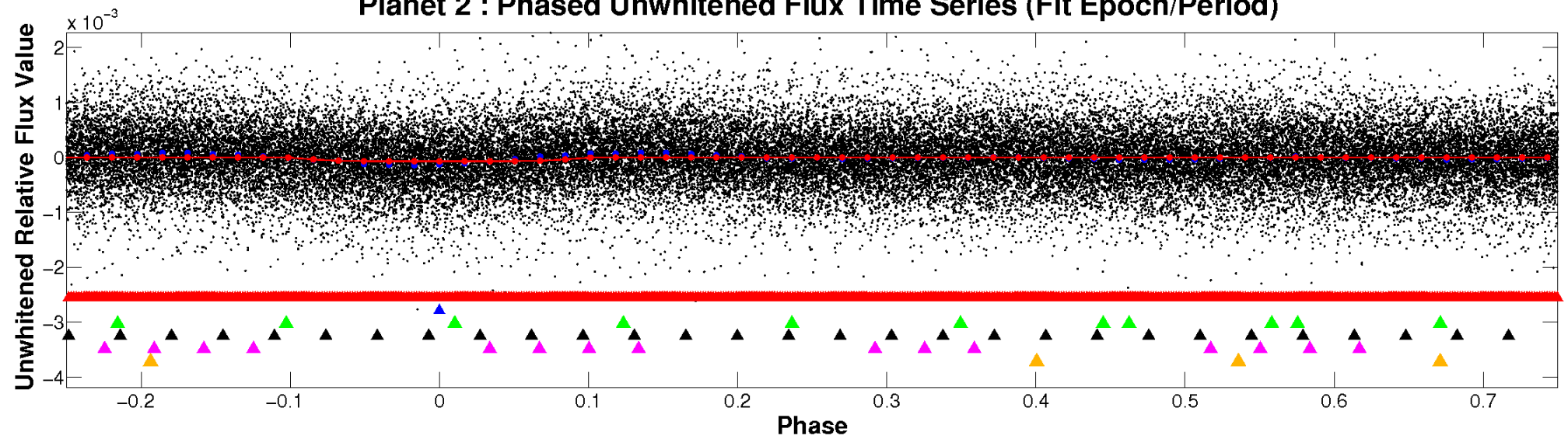
ALT Odd/Even

TCE 005617535-02

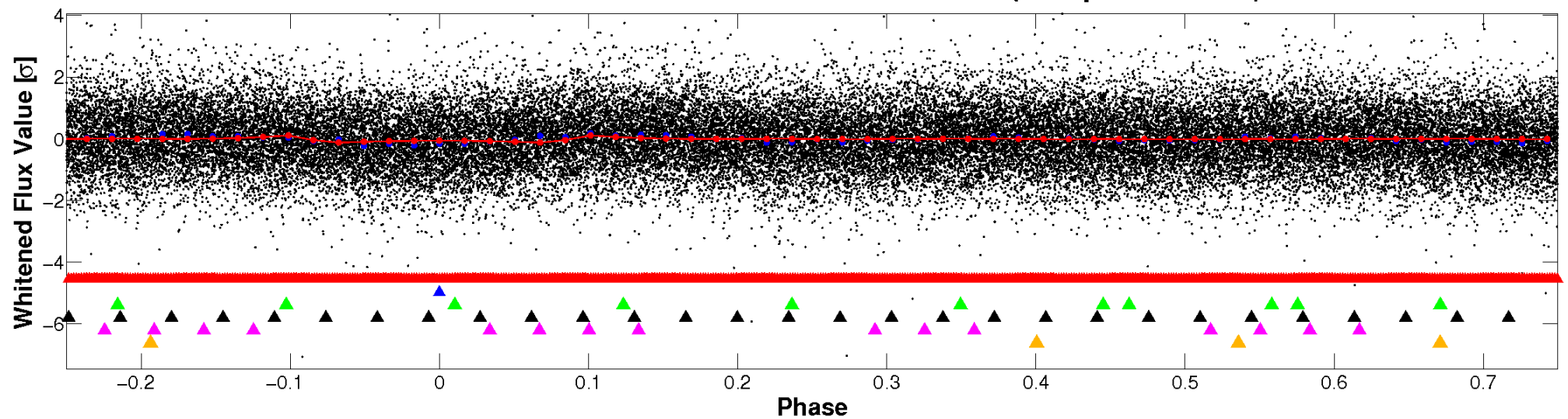


Non-Whitened Vs. Whitened Light Curve

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

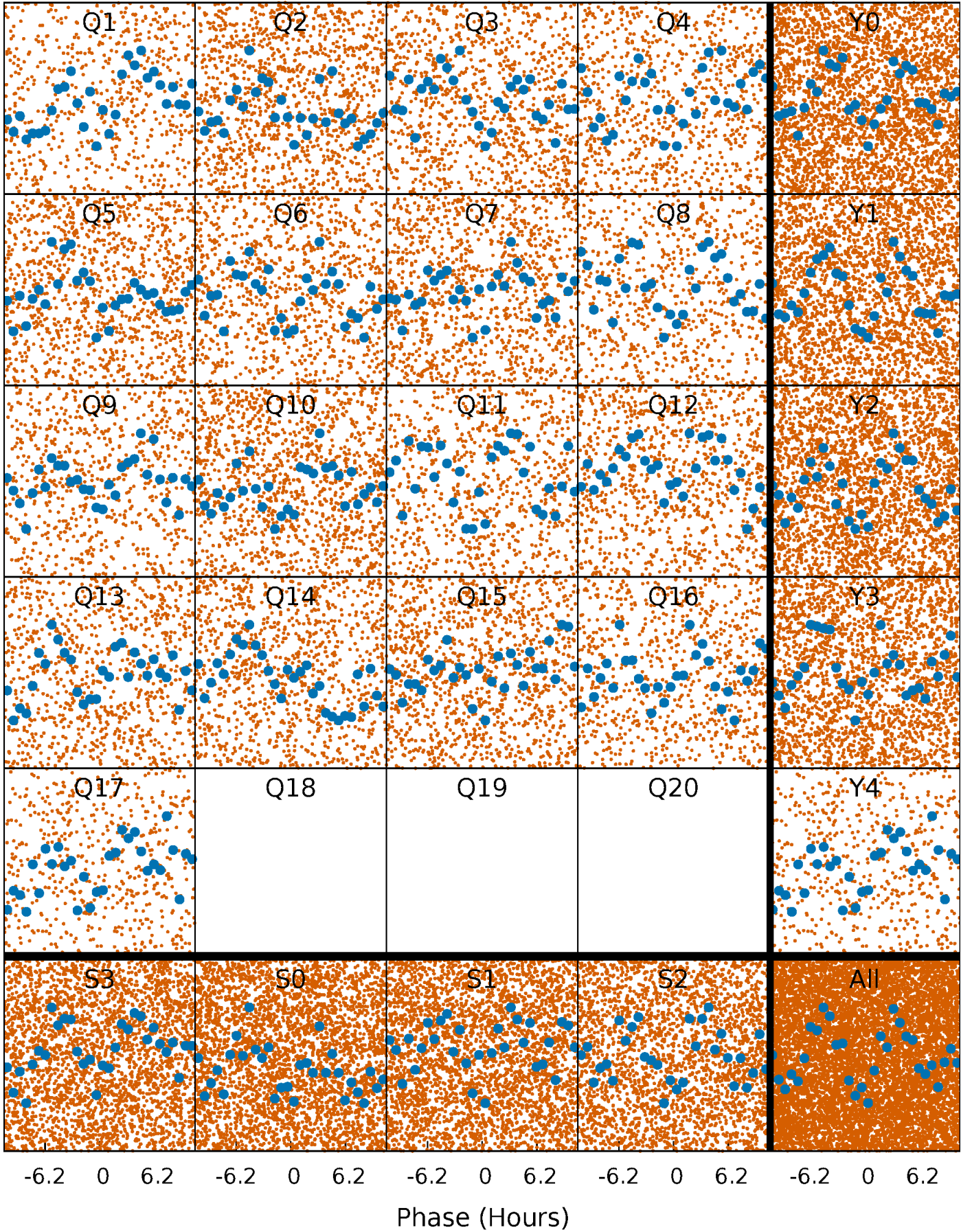


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



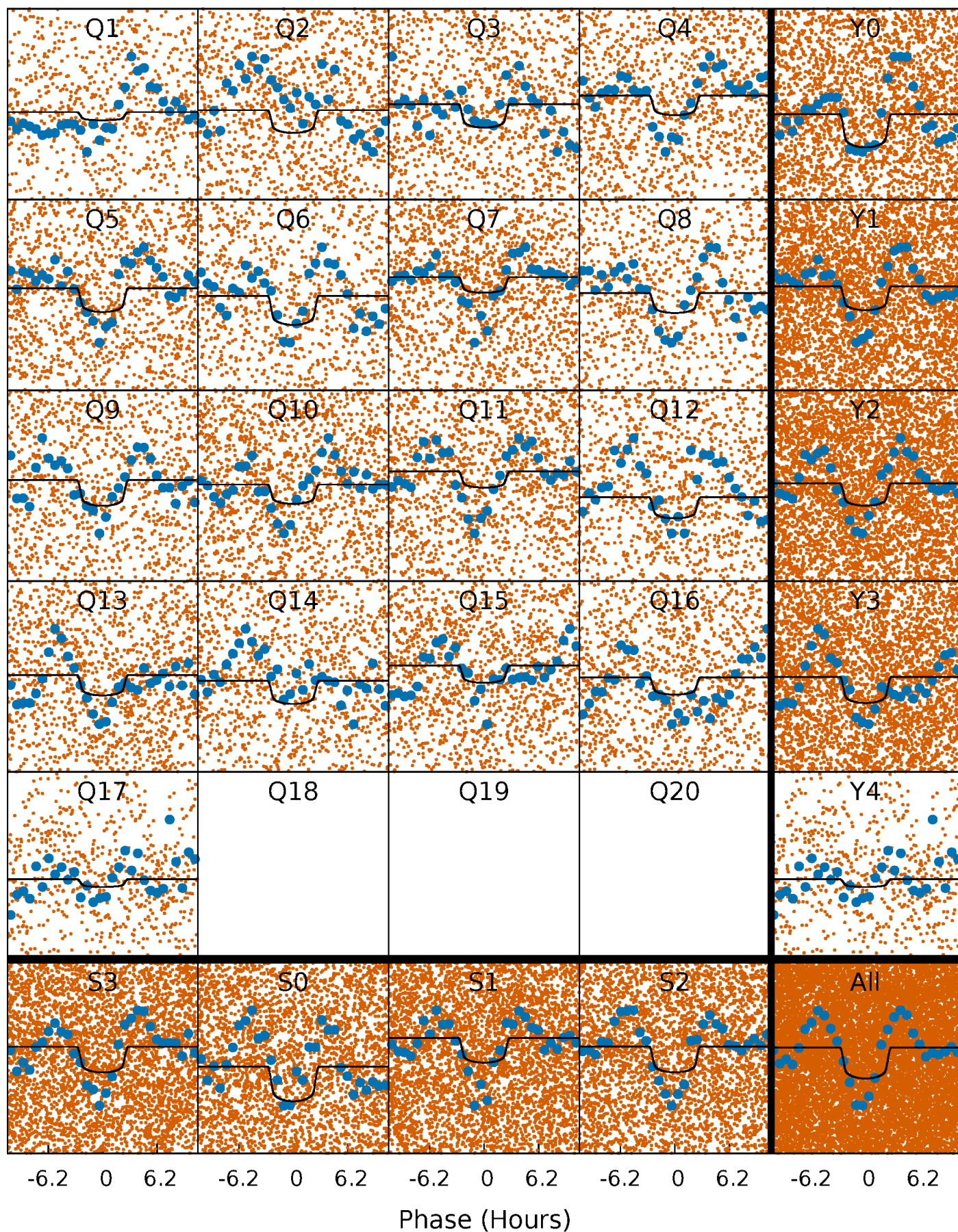
PDC Quarter-Phased Transit Curves

TCE 005617535-02 P= 1.210149 Days $T_0=132.436598$ (BKJD)



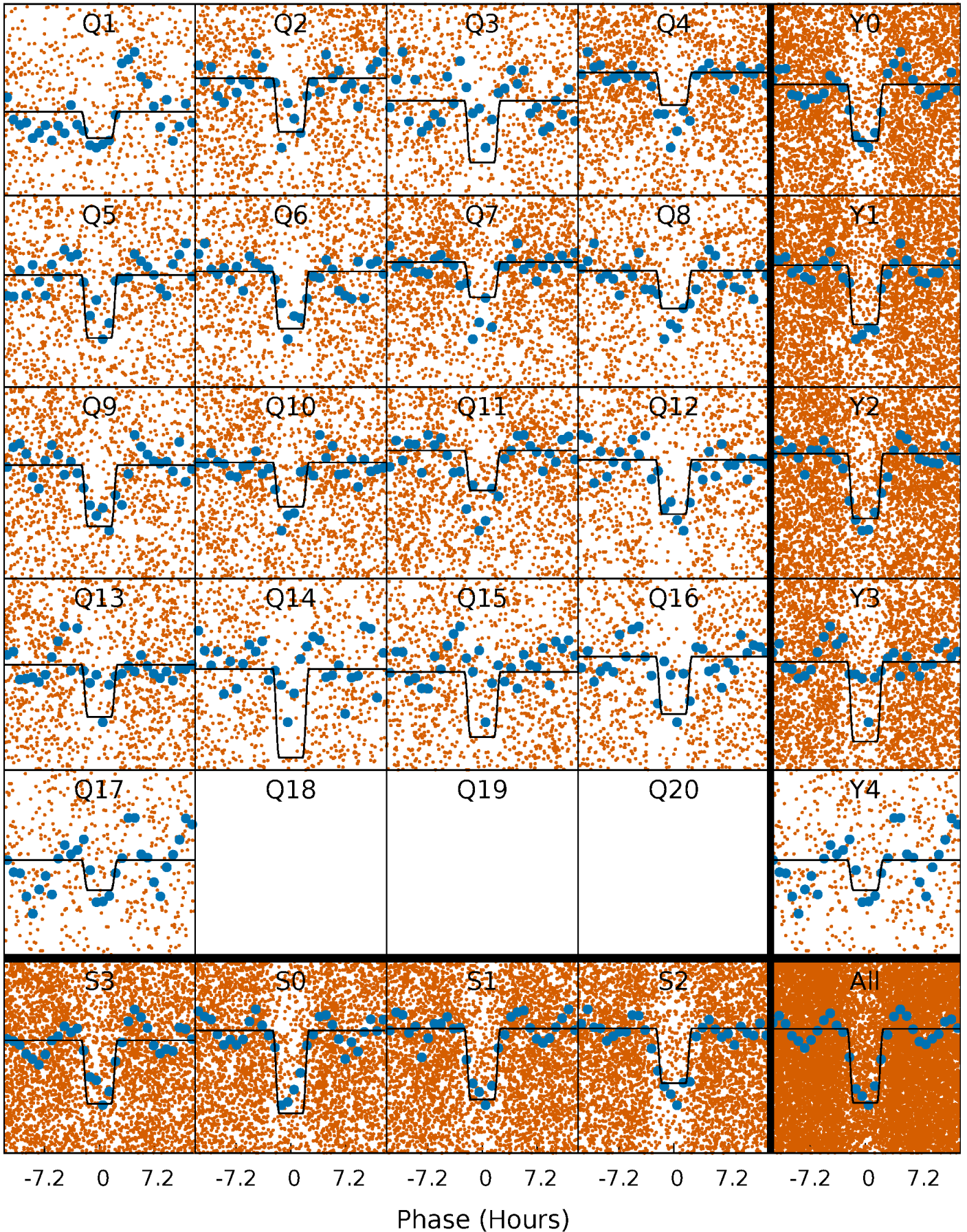
DV Quarter-Phased Transit Curves

TCE 005617535-02 P= 1.210149 Days $T_0=132.436598$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

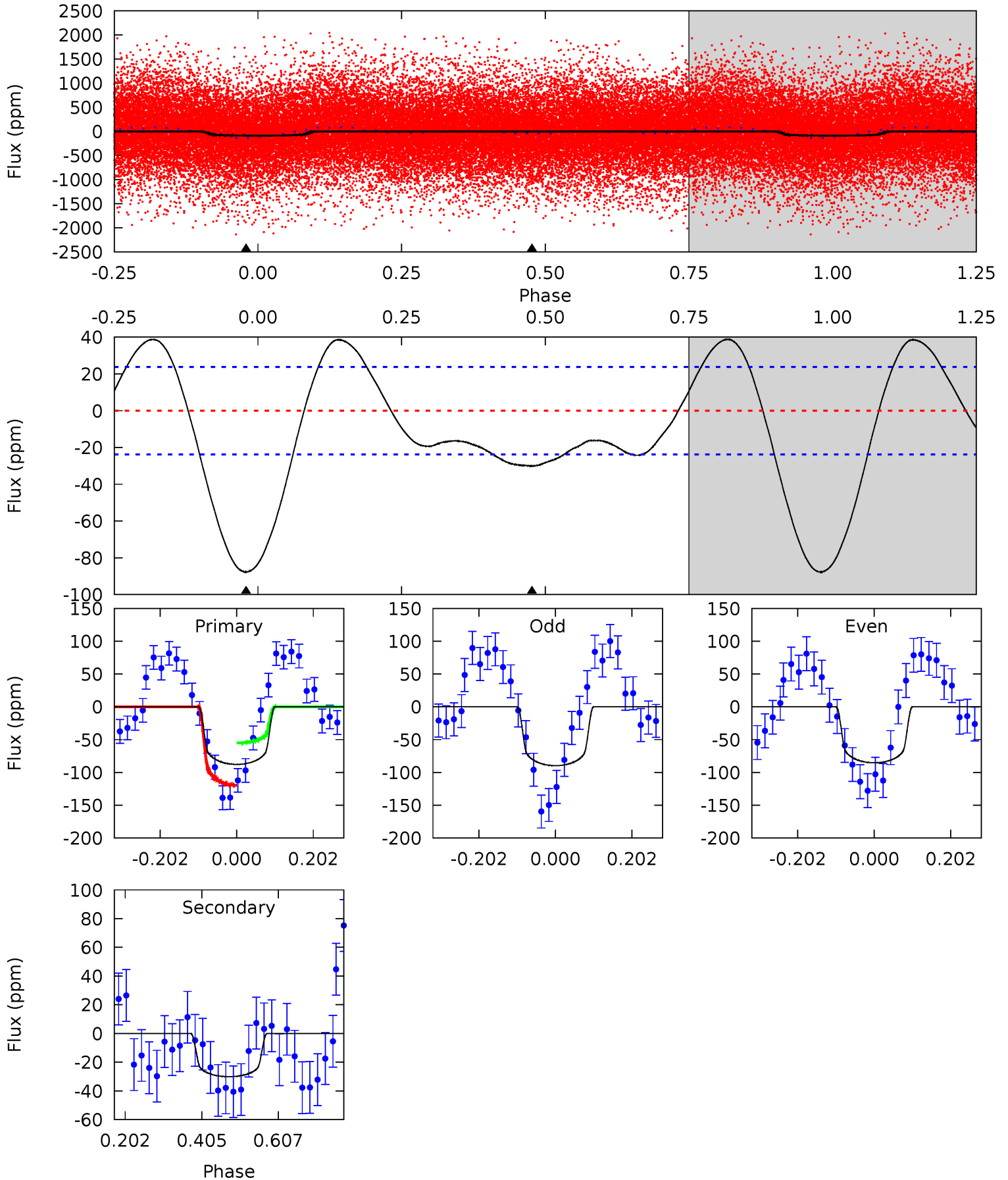
TCE 005617535-02 P= 1.210107 Days $T_0=132.440509$ (BKJD)



DV Model-Shift Uniqueness Test

005617535-02, P = 1.210149 Days, E = 131.226449 Days

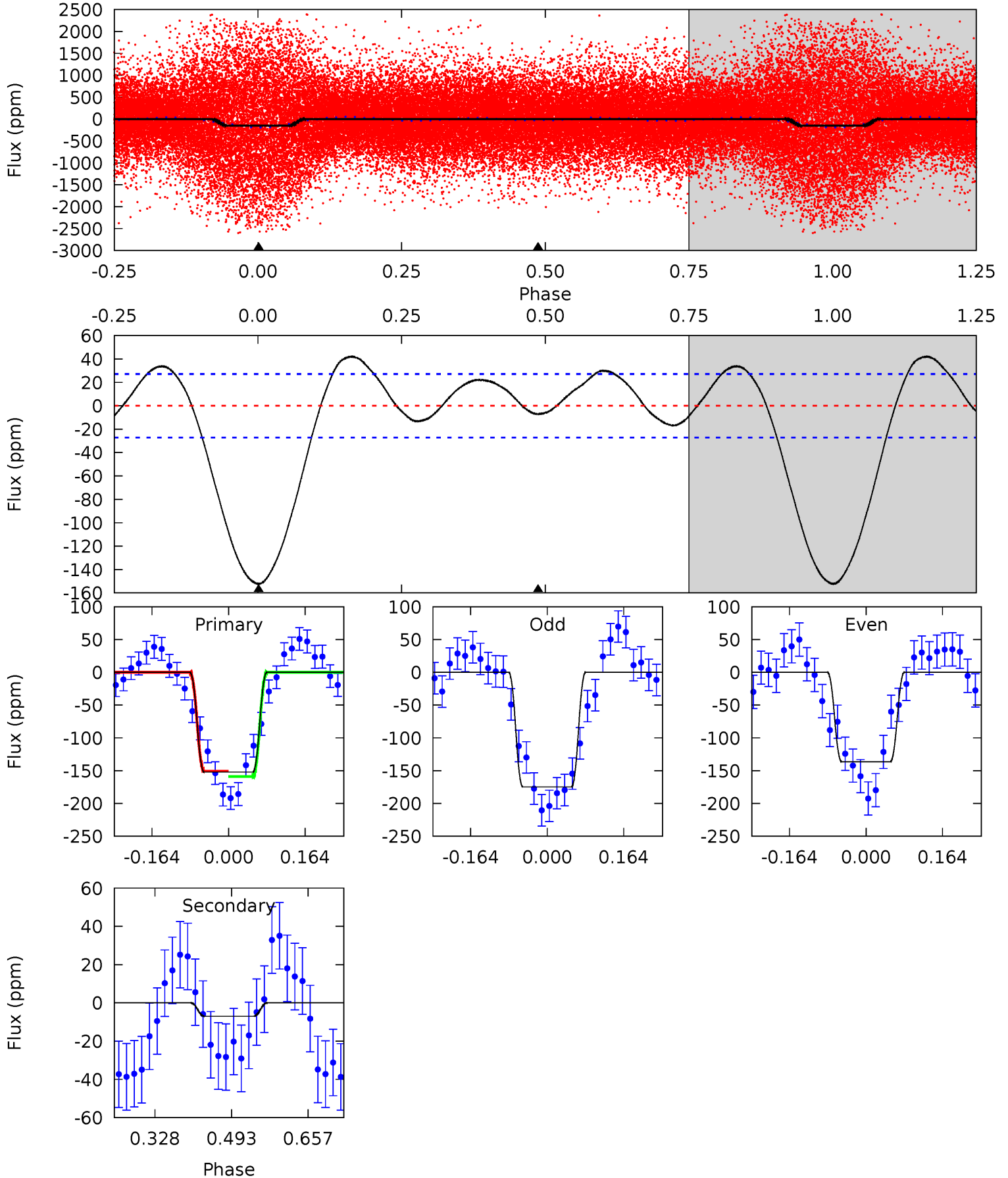
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.3	5.59	0	0	4.41	1.27	2.65	16.3	16.3	5.59	5.59	0.41	1.12	0.31	5.97



Alt Model-Shift Uniqueness Test

005617535-02, P = 1.210107 Days, E = 131.230402 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.0	1.15	0	0	4.46	1.39	2.95	25.0	25.0	1.15	1.15	3.16	0.76	0.22	0.67



Stellar Parameters For KIC 005617535

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6840^{+71}_{-82}	$3.917^{+0.186}_{-0.108}$	$-0.020^{+0.150}_{-0.150}$	$2.305^{+0.404}_{-0.556}$	$1.601^{+0.133}_{-0.192}$	$0.184^{+0.187}_{-0.070}$
	+1%/-1%	+5%/-3%	+750%/-750%	+18%/-24%	+8%/-12%	+102%/-38%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 005617535-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-30 ± 5	$2.23^{+0.39}_{-0.37}$	3947^{+187}_{-229}	5147^{+434}_{-376}	$2.220^{+1.123}_{-0.700}$
Alt.	-7 ± 6	$3.38^{+0.51}_{-0.49}$	3945^{+189}_{-231}	-3016^{+6224}_{-602}	$0.216^{+0.229}_{-0.189}$

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 $A_{obs} \gg 1.0$

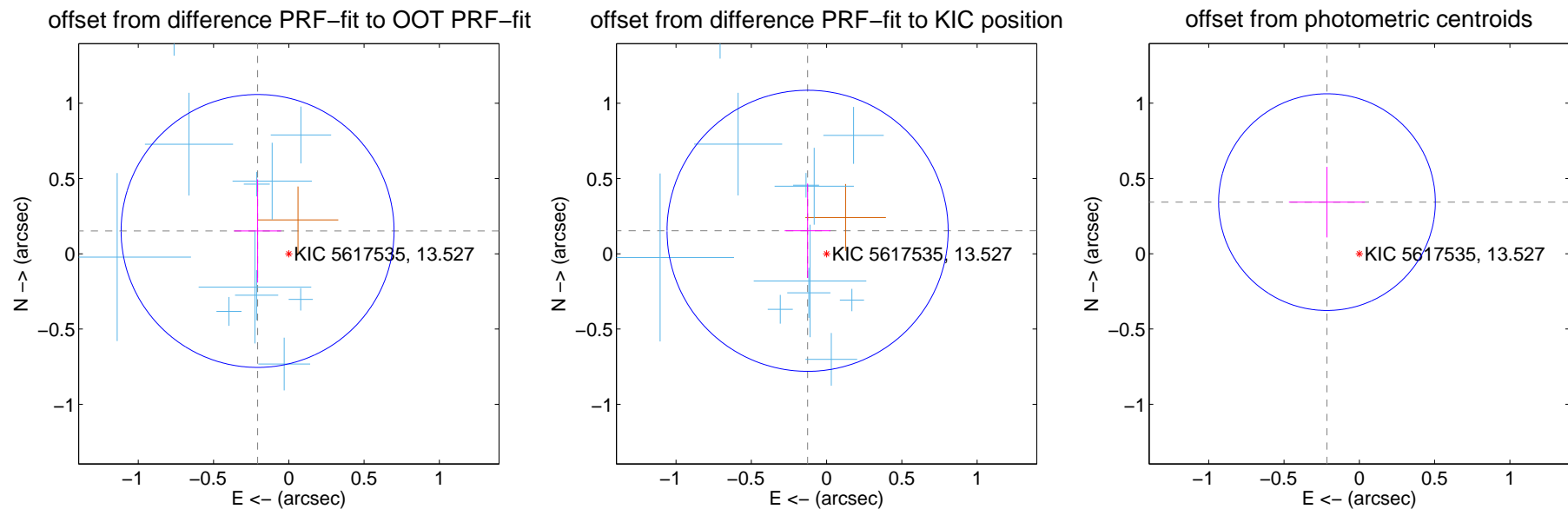
DV Centroid Data

Supplemental centroid analysis for 005617535-02. Kepler magnitude: 13.53. Transit SNR 9.35

There are 12 quarters with good PRF difference image offsets

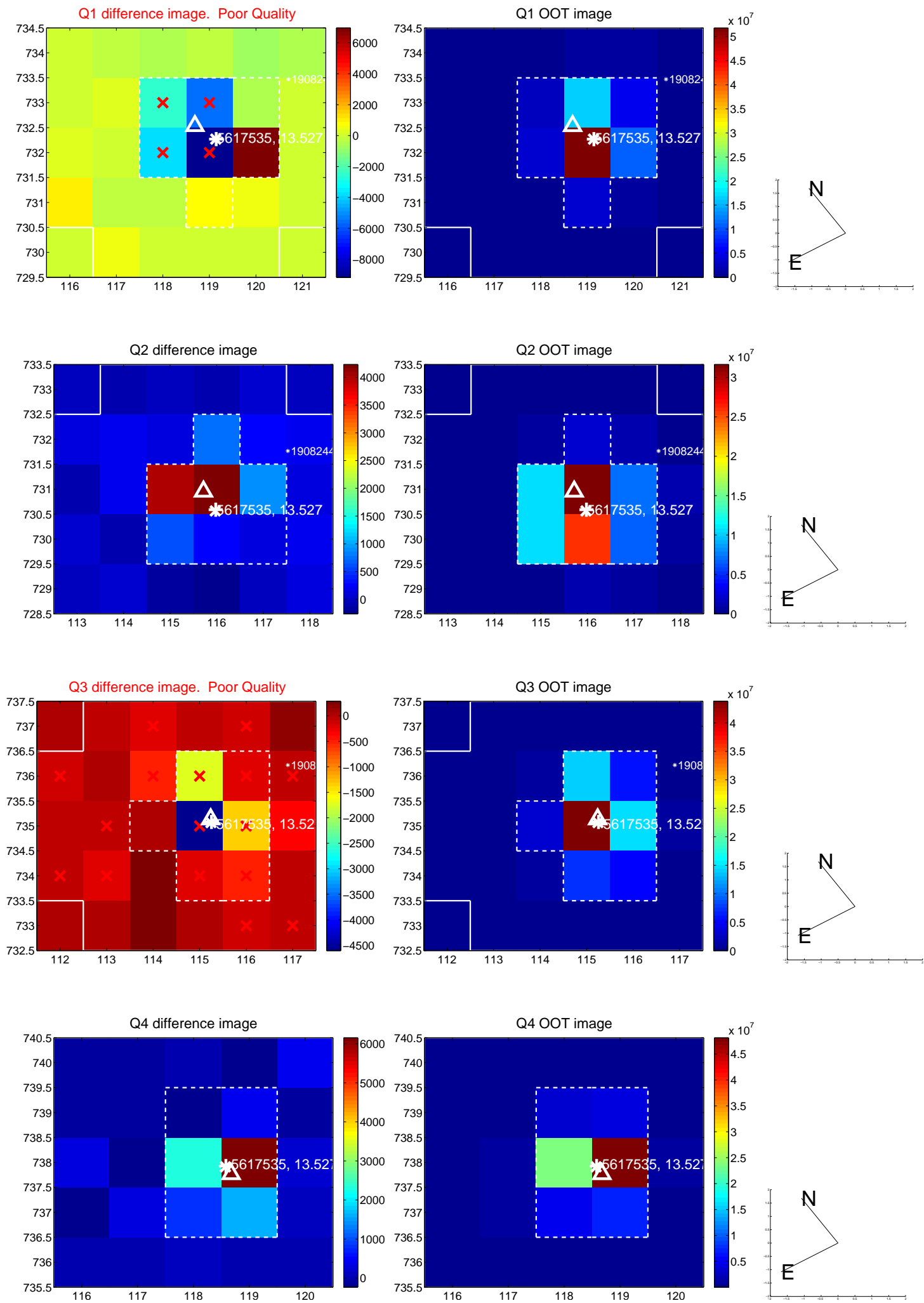
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.257 ± 0.302	0.85	0.207 ± 0.156	0.152 ± 0.343
PRF-fit source offset from KIC position	0.198 ± 0.311	0.64	0.126 ± 0.152	0.153 ± 0.314
photometric centroid source offset	0.40 ± 0.24	1.69	0.21 ± 0.25	0.34 ± 0.23

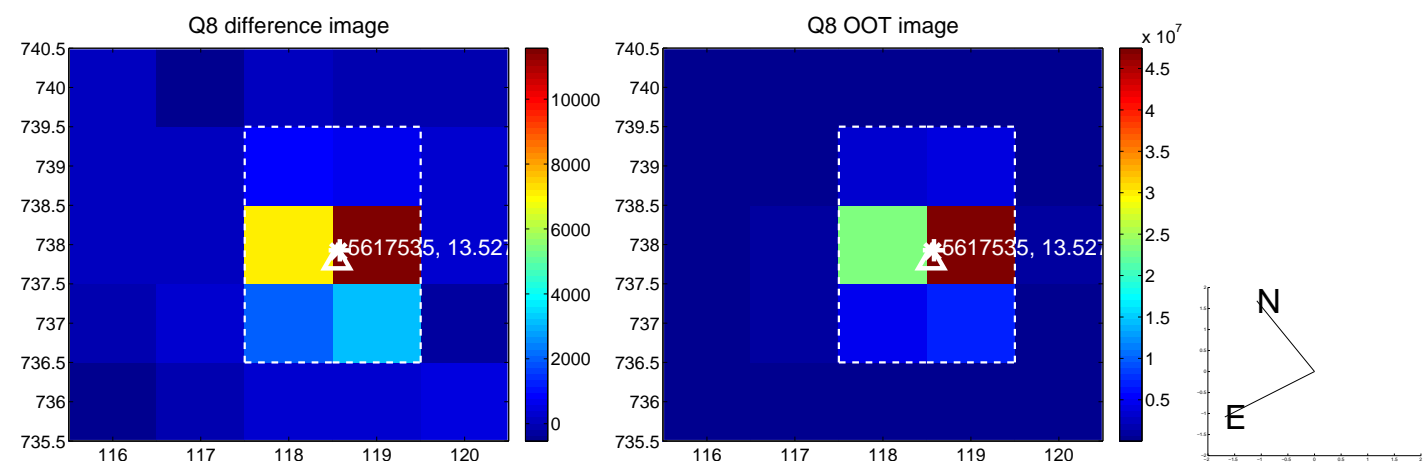
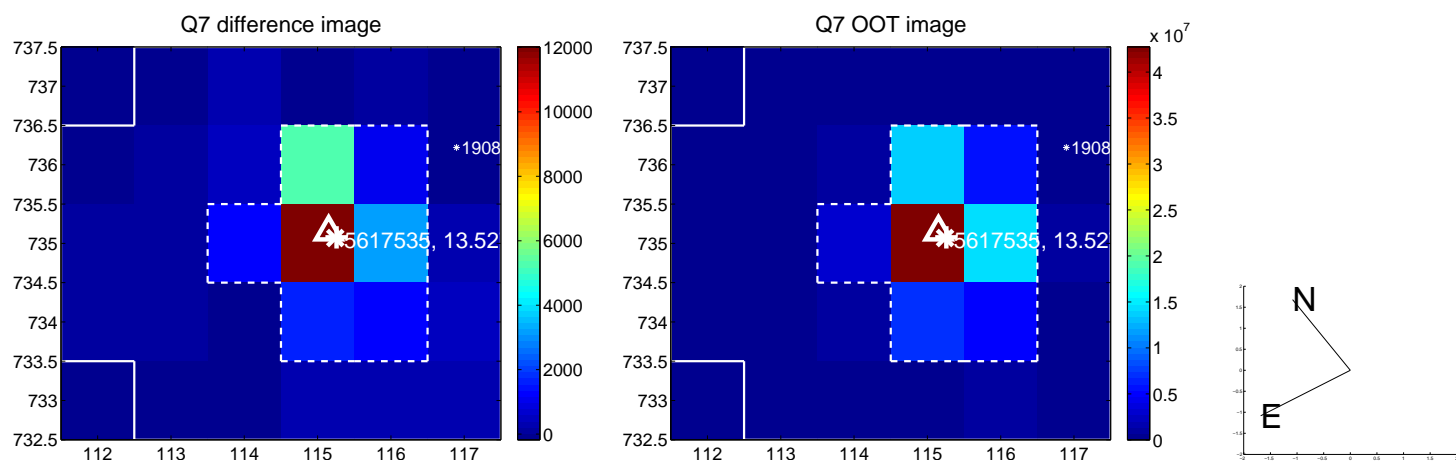
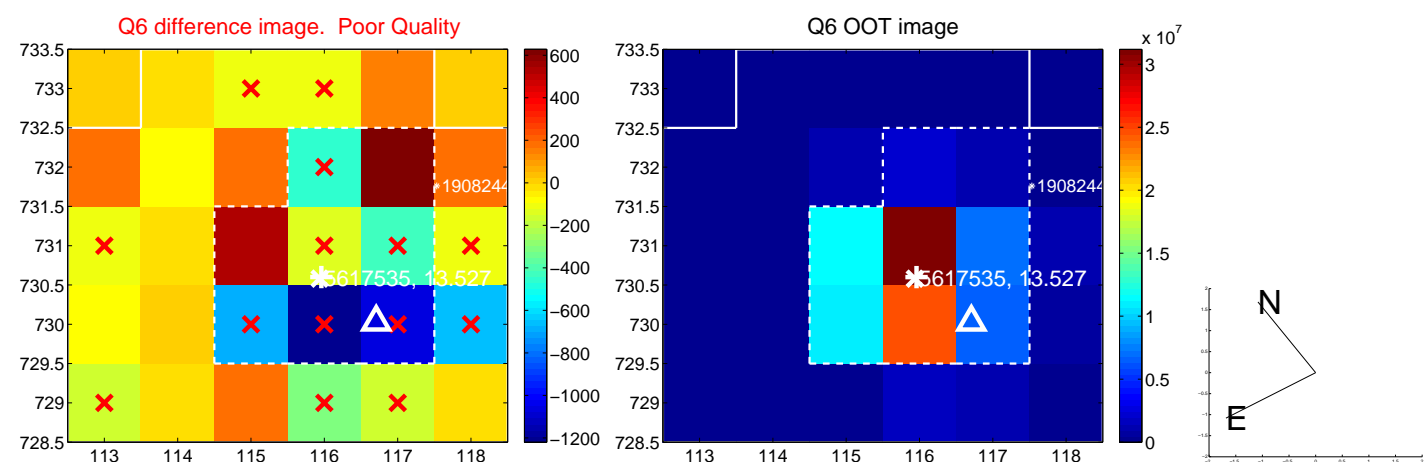
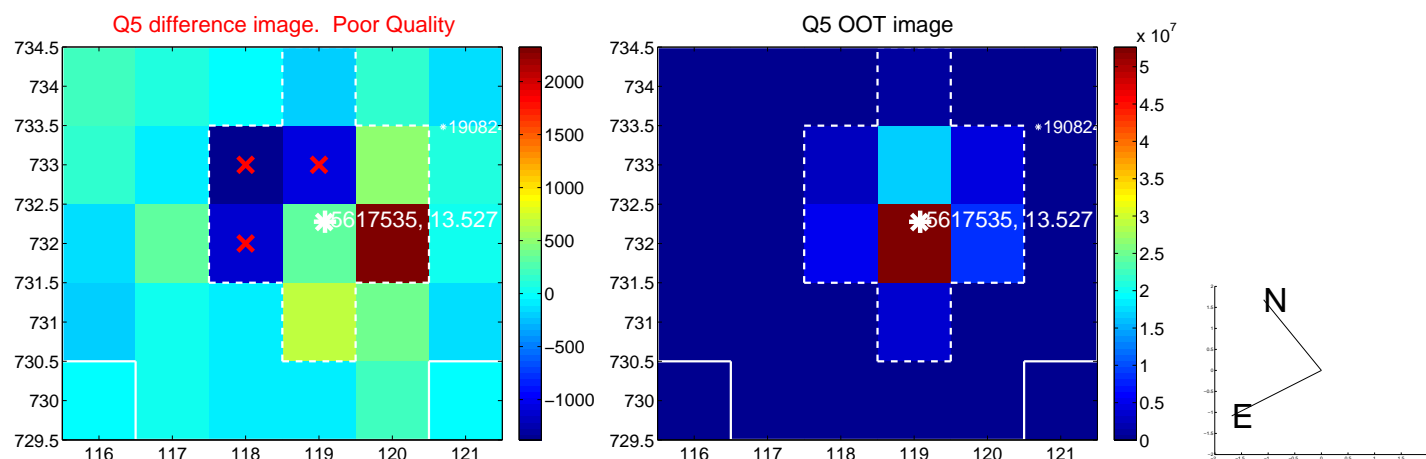


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

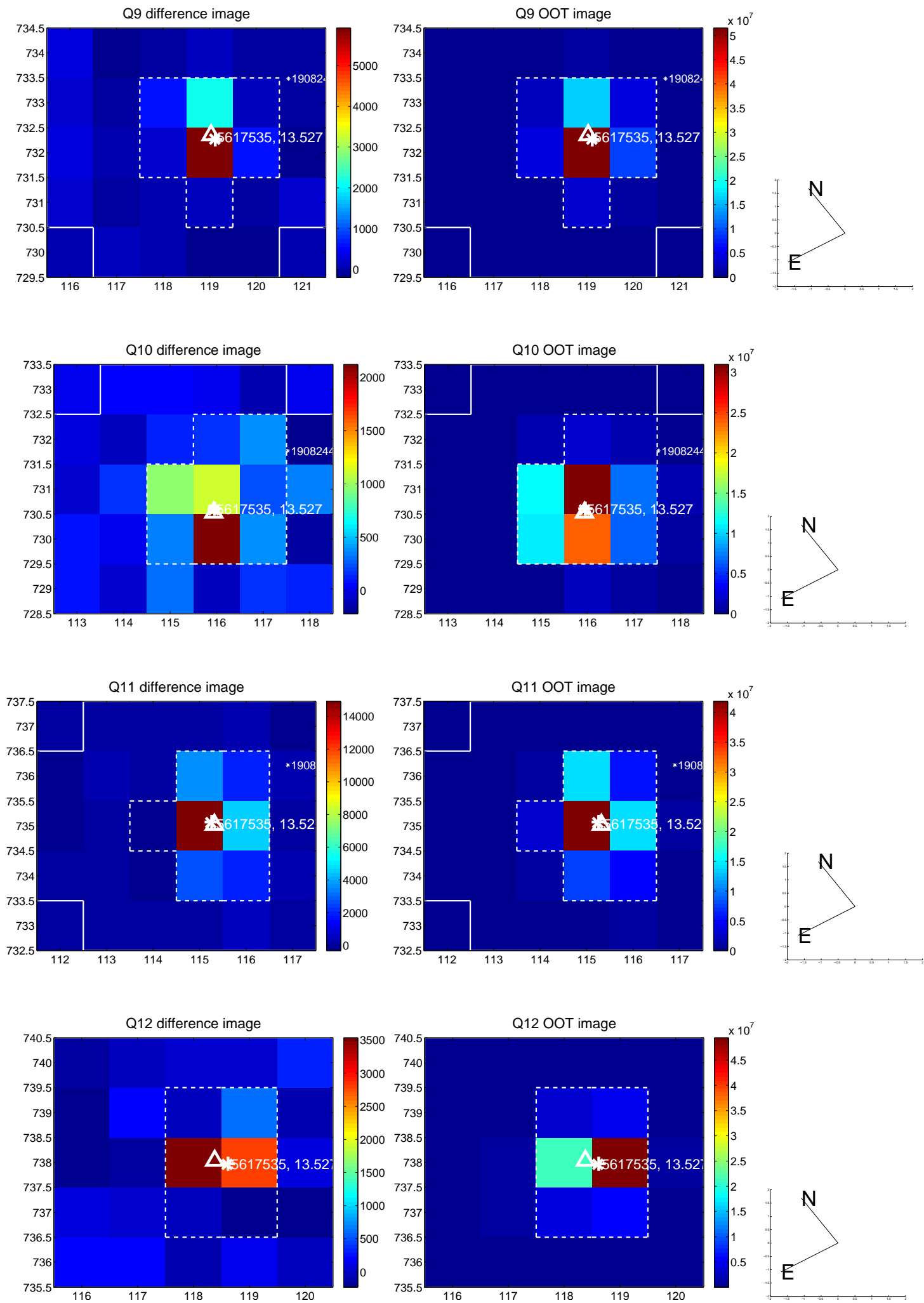
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



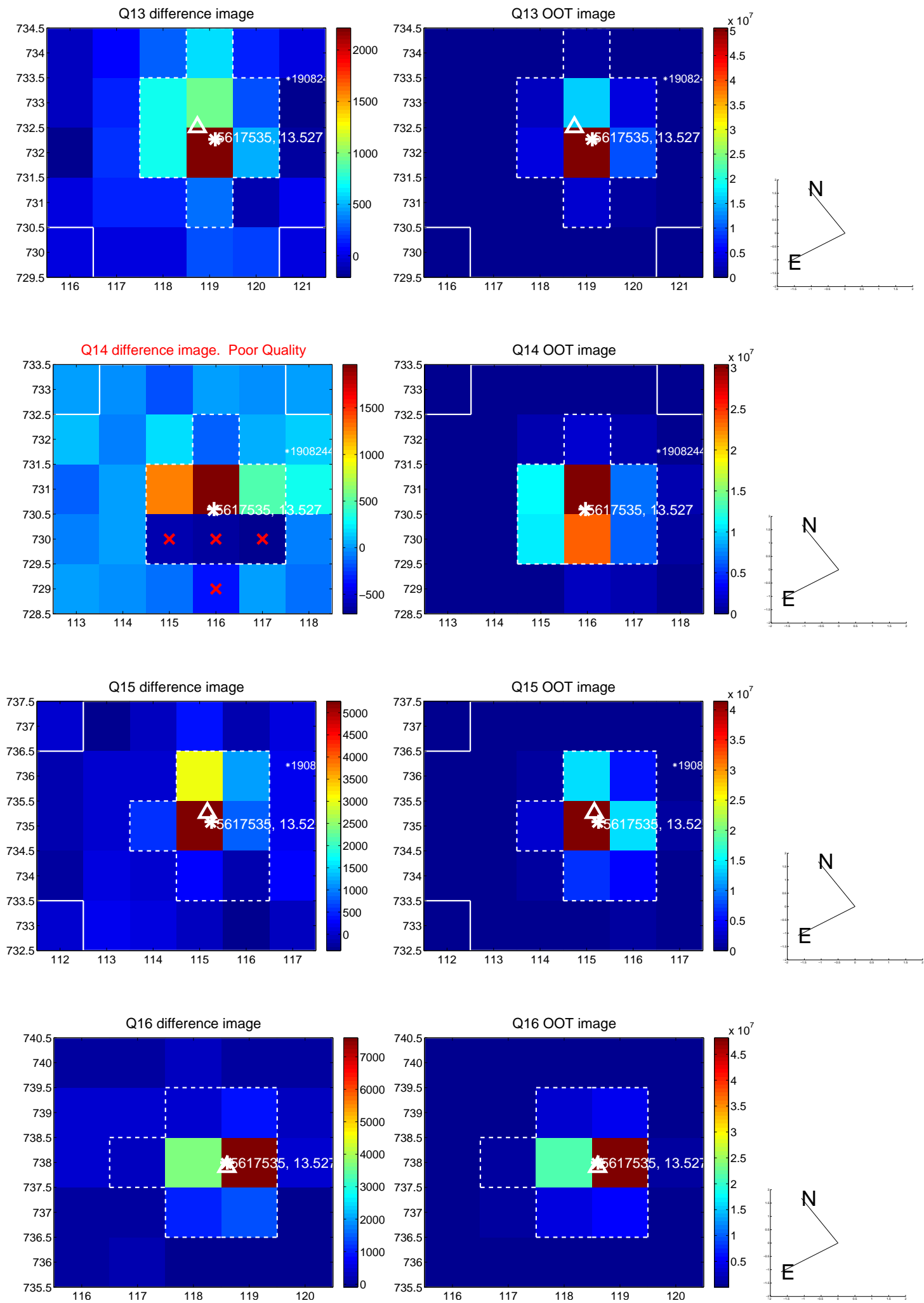
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



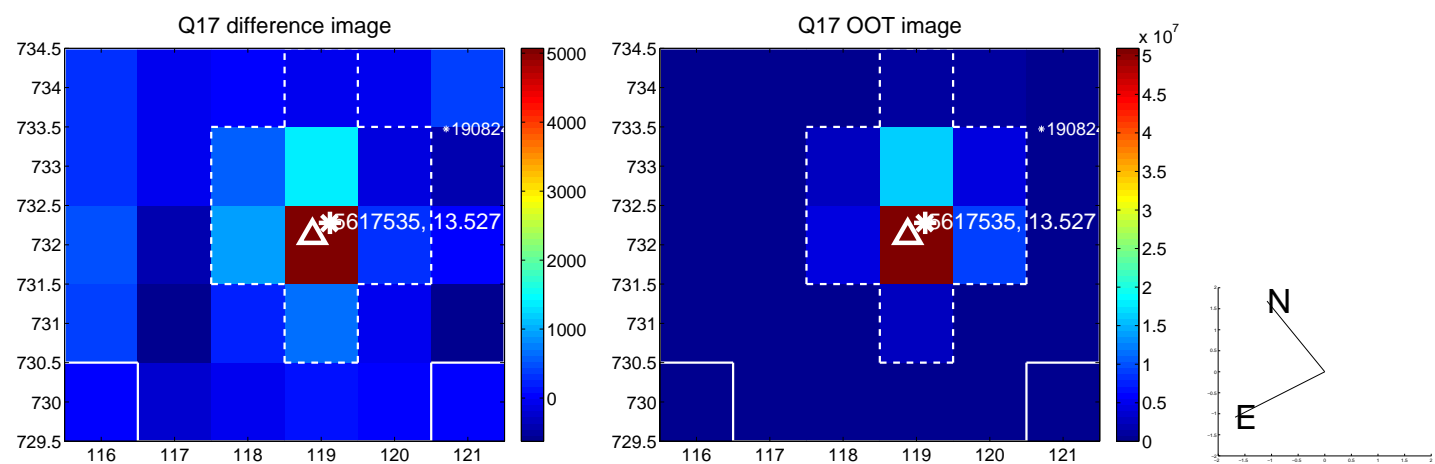
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



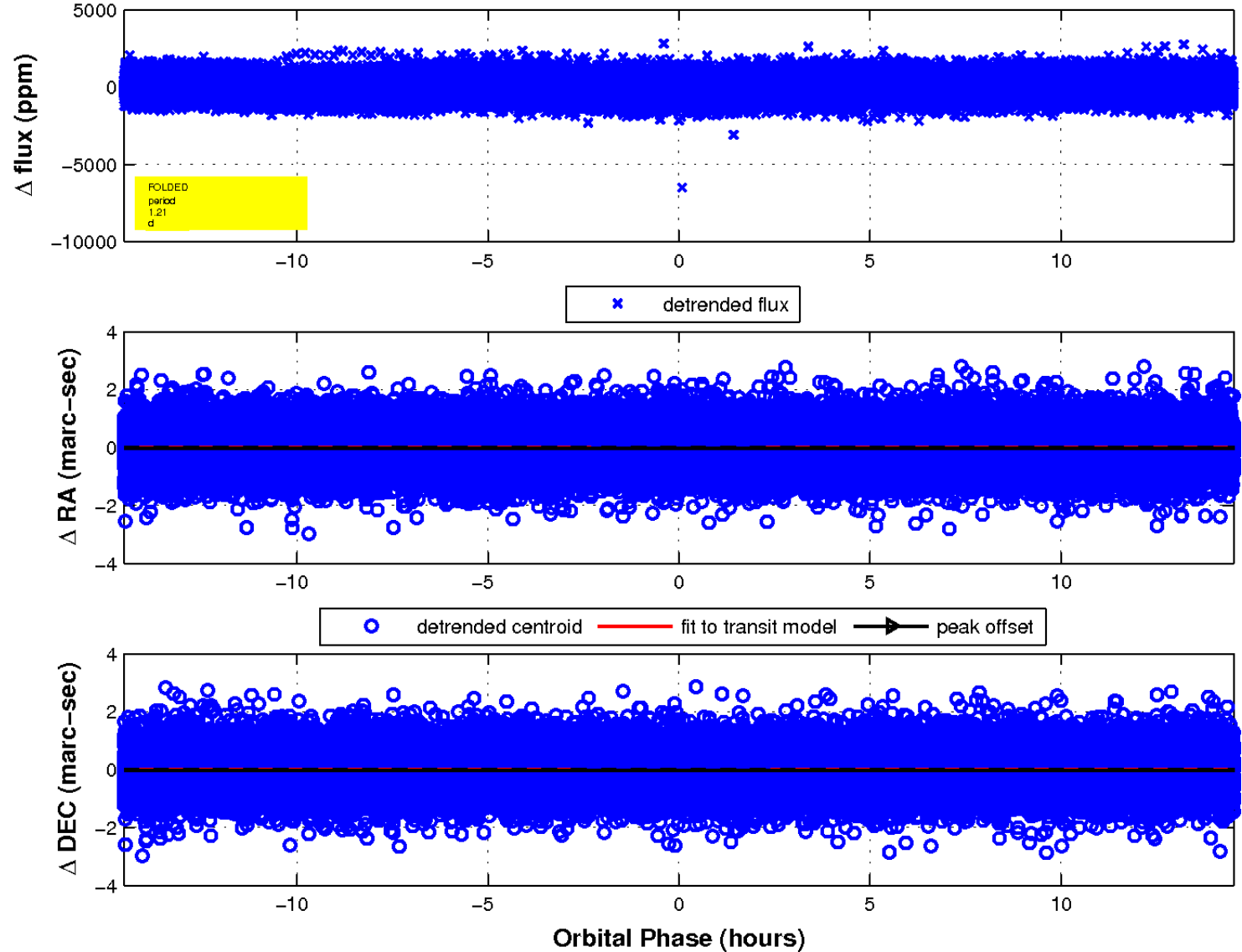
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

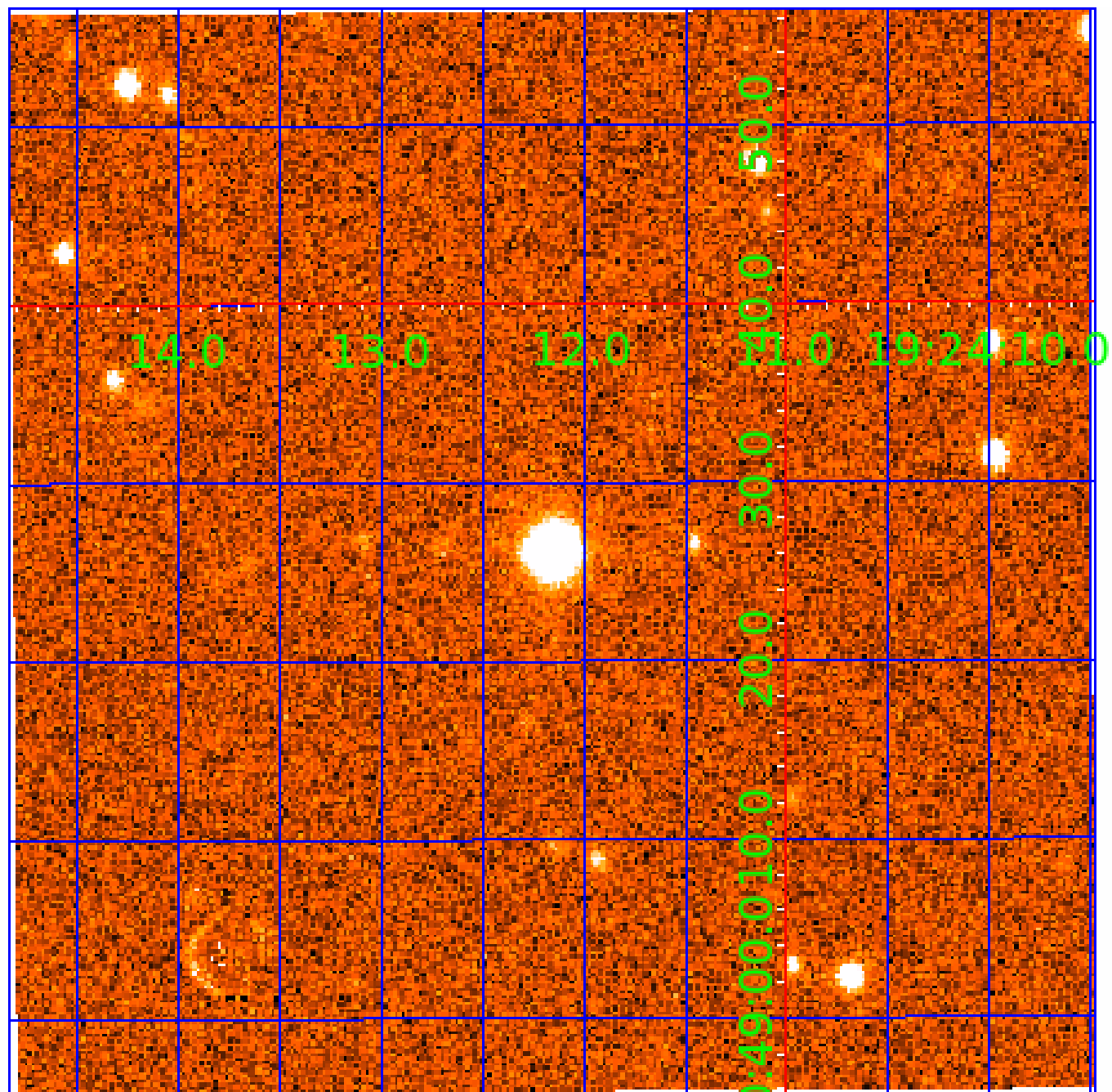


fluxWeightedCentroids, Planet 2 of 6



UKIRT Image

Declination



KIC 005617535

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})
005617535-01	OBS	No	1.739461	133.011420	77.9	3.567	10.2	10.1	2.31	6840	2.37	9499.05
005617535-02	OBS	No	1.210149	132.436598	71.9	5.431	10.1	9.3	2.31	6840	2.29	15409.23
005617535-03	OBS	No	132.979607	246.887132	1295.6	10.041	9.5	9.2	2.31	6840	15.43	29.28
005617535-04	OBS	No	30.629299	156.422118	416.3	16.665	8.4	8.0	2.31	6840	5.67	207.36
005617535-05	OBS	No	99.544831	160.895939	1068.8	8.182	9.2	9.2	2.31	6840	10.37	43.07
005617535-06	OBS	No	326.576571	376.652413	280.1	3.500	8.6	-1.0	2.31	6840	3.90	8.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005617535-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005617535-02	OBS	FP	0.00	1	0	0	0	LPP_DV
005617535-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT
005617535-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT
005617535-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
005617535-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—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.

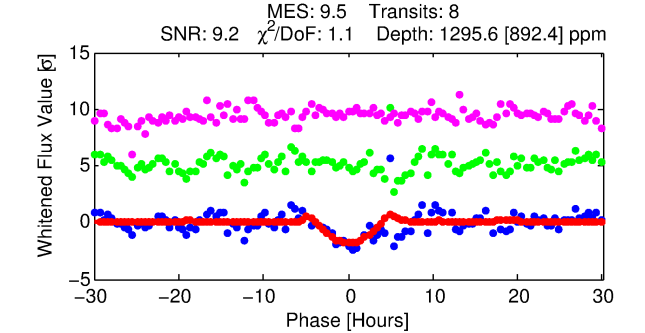
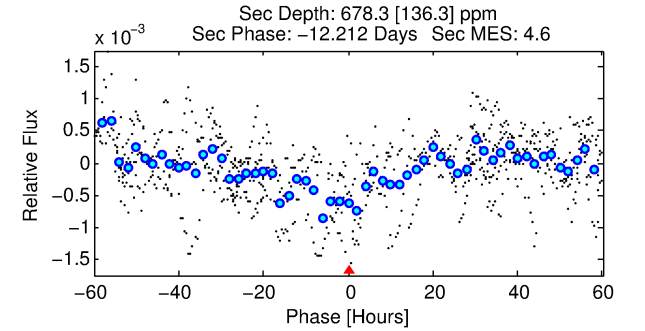
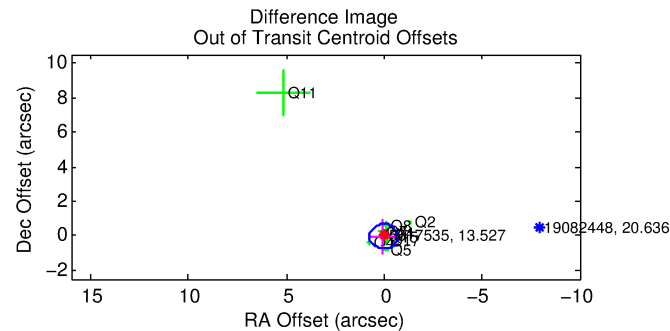
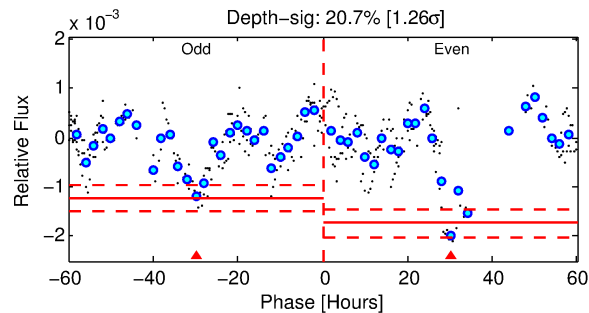
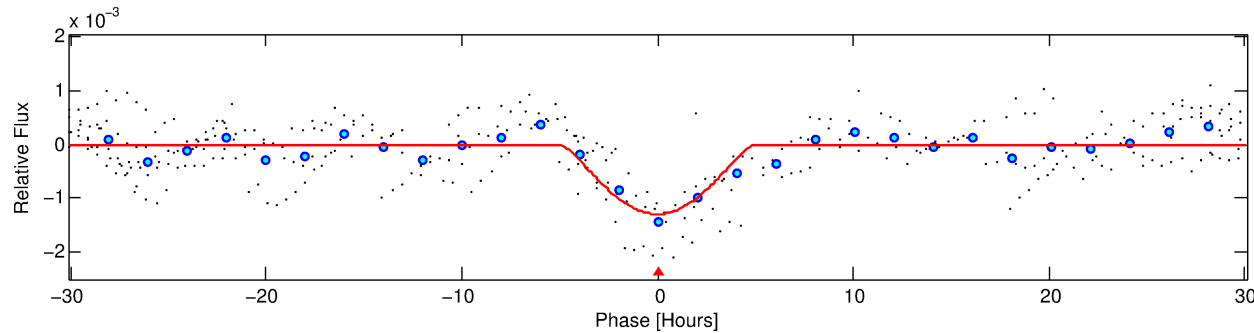
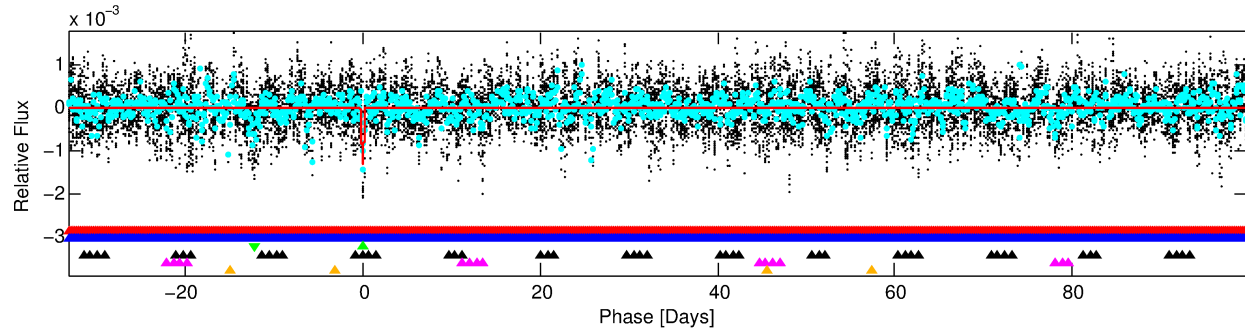
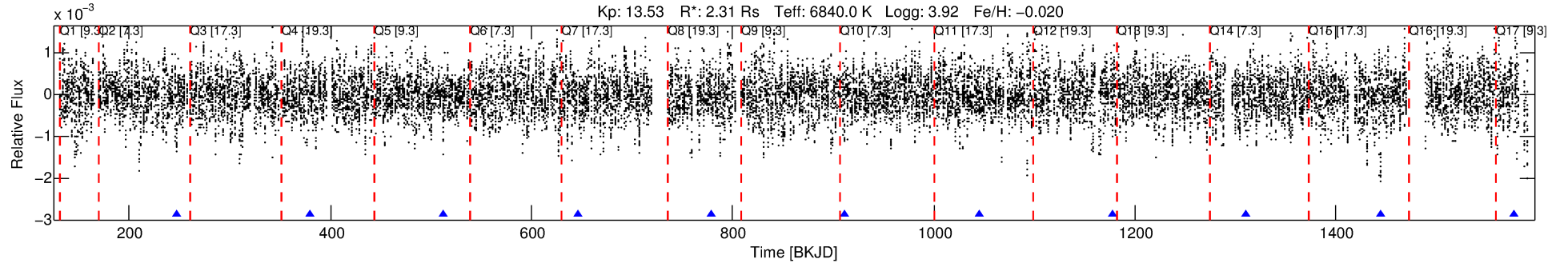
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005617535-03

No Significant Match Found

DV One-Page Summary

KIC: 5617535 Candidate: 3 of 6 Period: 132.980 d



DV Fit Results:

Period = 132.97961 [0.00296] d
Epoch = 246.8871 [0.0155] BKJD
Rp/R* = 0.0613 [0.1170]
a/R* = 36.00 [15.82]
b = 1.00 [0.14]
Seff = 29.28 [9.70]
Teq = 593 [49] K
Rp = 15.43 [29.67] Re
a = 0.5966 [0.1283] AU
Ag = 557.84 [2139.21] [0.26 σ]
Teffp = 4457 [4257] K [0.91 σ]

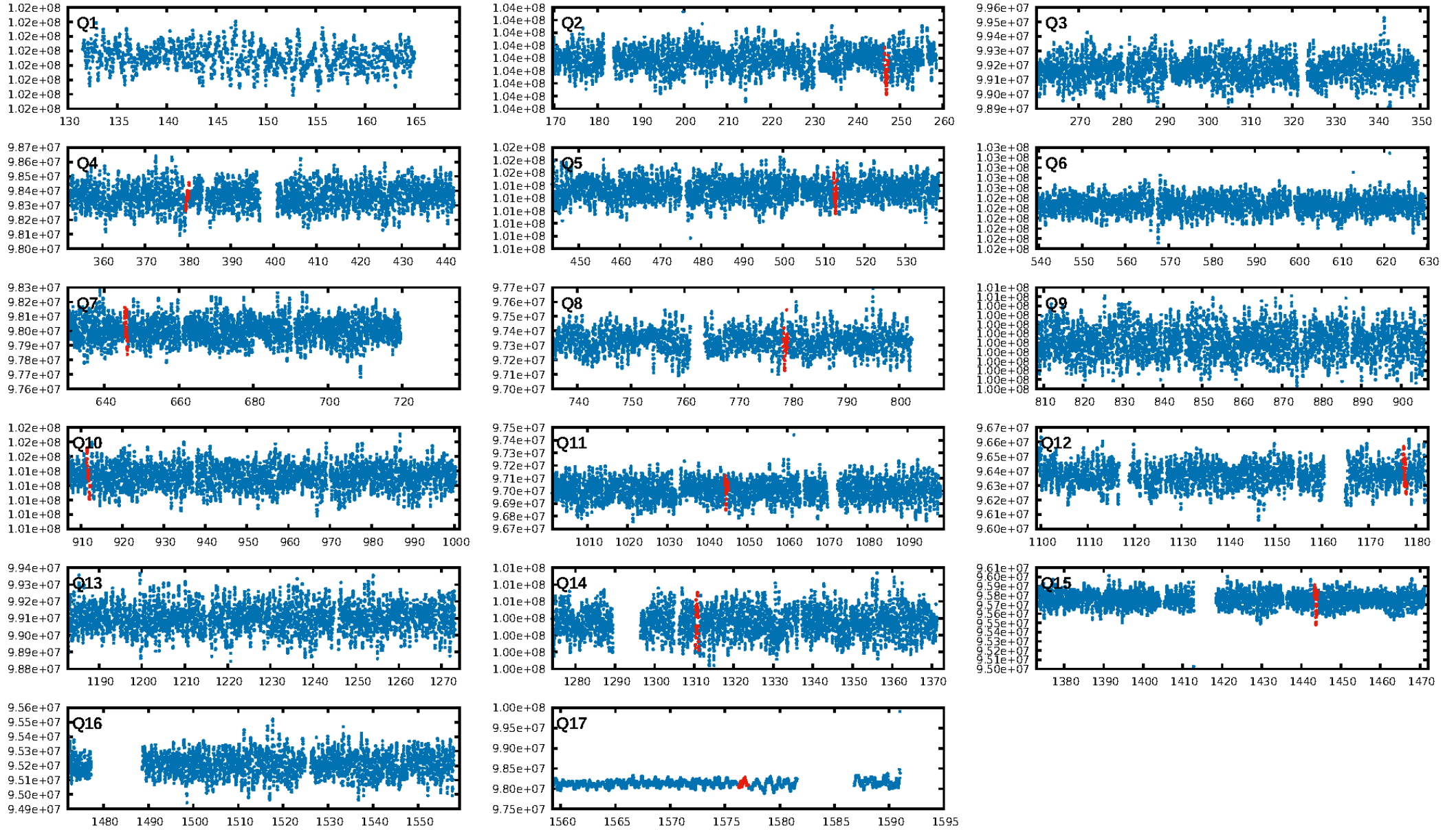
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [61.95 σ]
LongPeriod-sig: 100.0% [436.97 σ]
ModelChiSquare2-sig: 10.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 3.978
Centroid-sig: 0.8%
Centroid-so: 0.241 arcsec [1.77 σ]
OotOffset-rm: 0.056 arcsec [0.23 σ]
KicOffset-rm: 0.061 arcsec [0.07 σ]
OotOffset-st: 2/3/2/2 [9]
KicOffset-st: 2/3/2/2 [9]
DiffImageQuality-fgm: 0.44 [4/9]
DiffImageOverlap-fno: 0.00 [0/10]

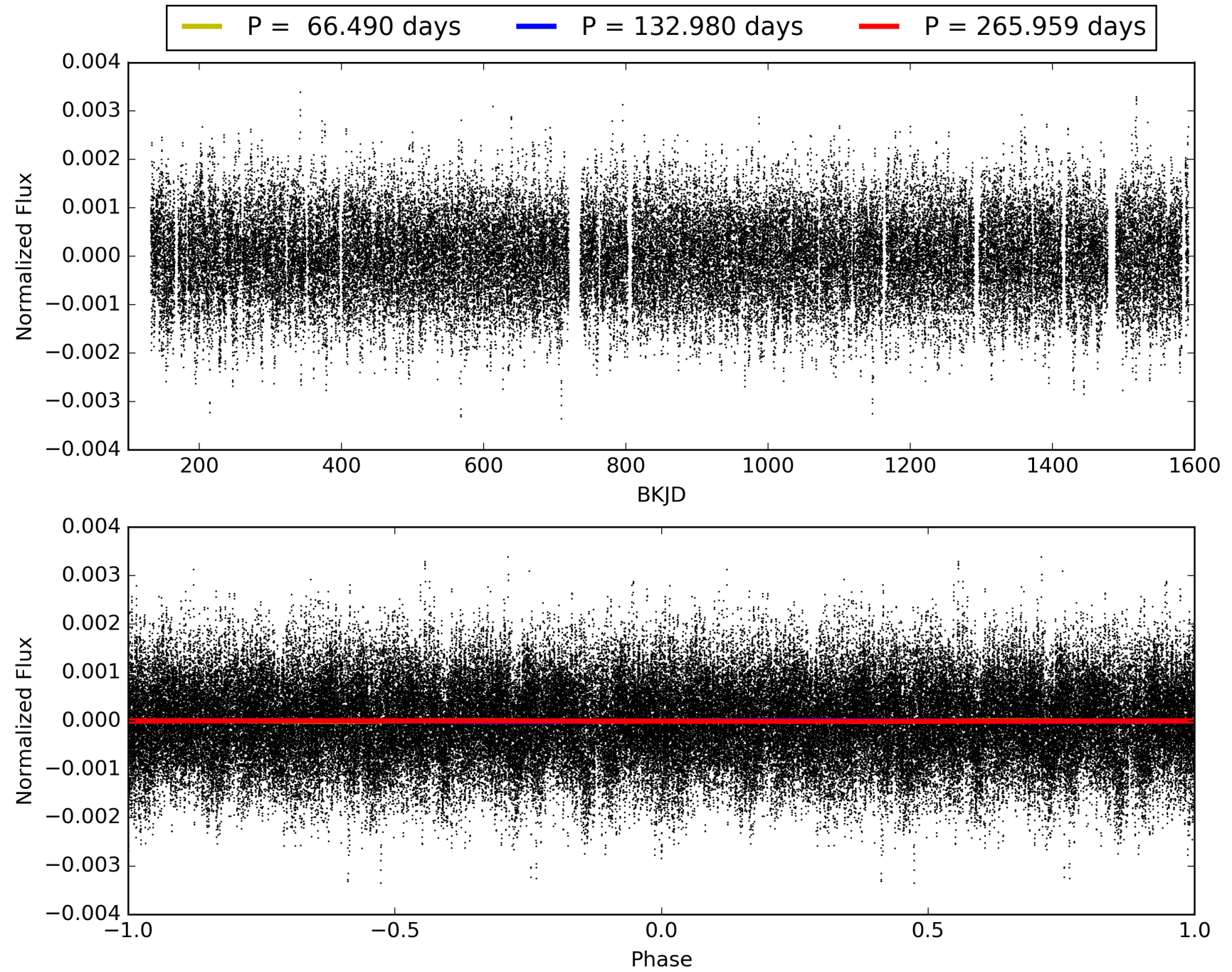
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:13:05 Z

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TCE 005617535-03, PDC Light Curves

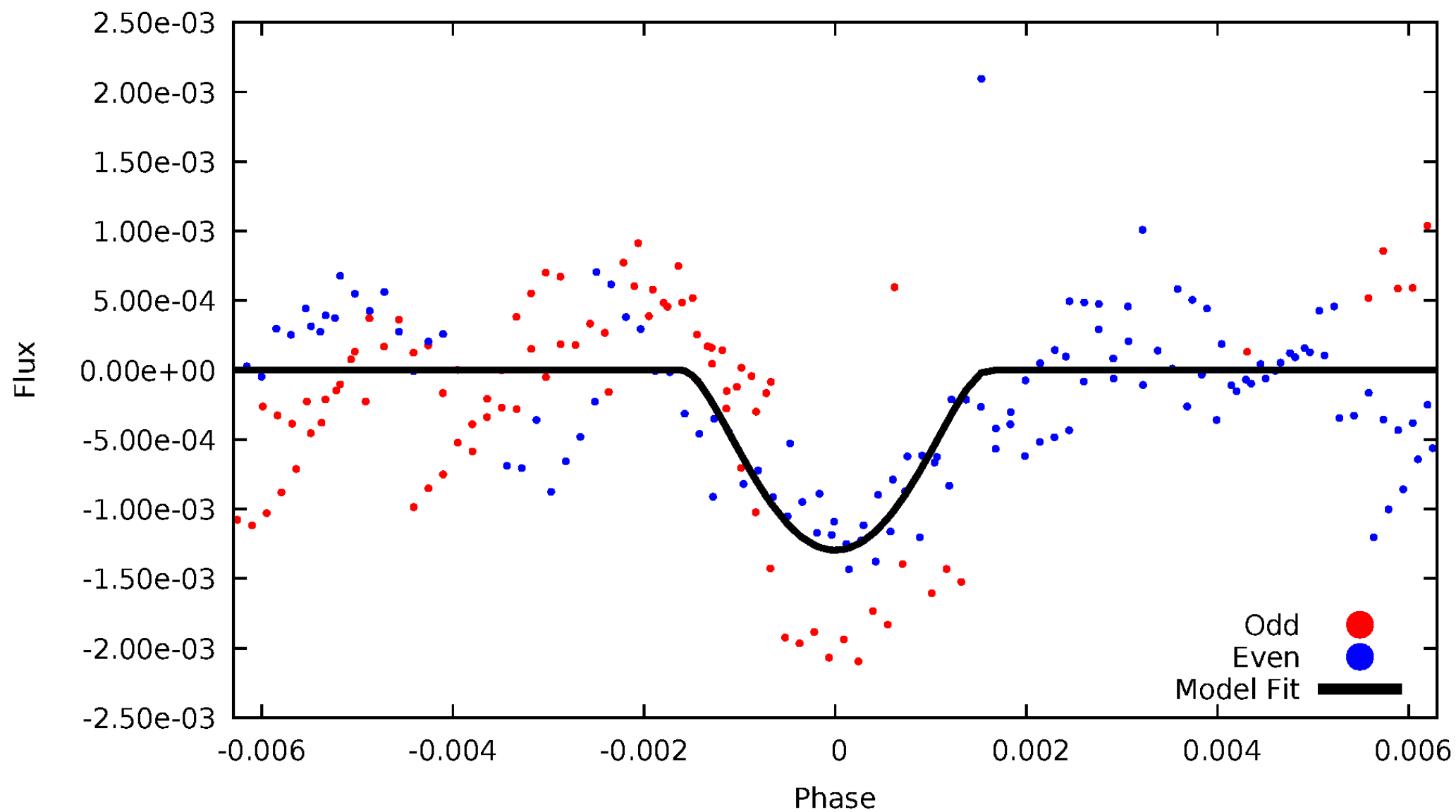


TCE 005617535-03



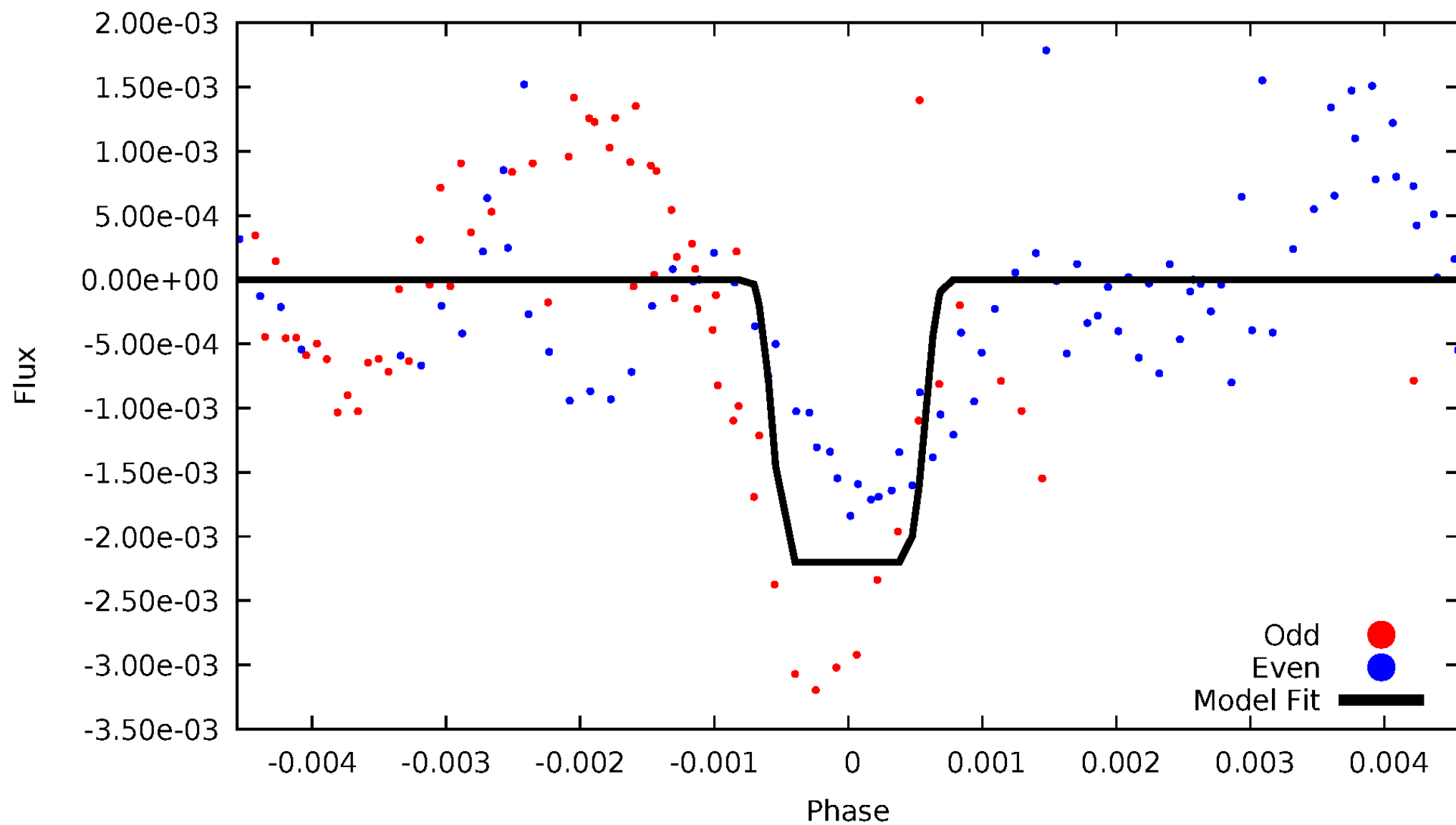
DV Odd/Even

TCE 005617535-03



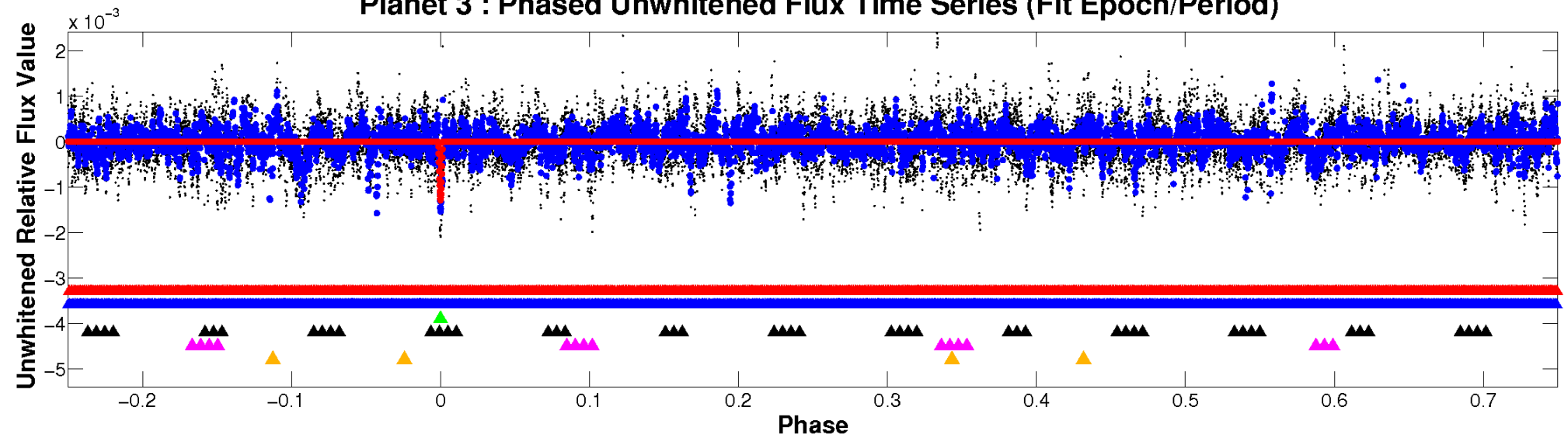
ALT Odd/Even

TCE 005617535-03

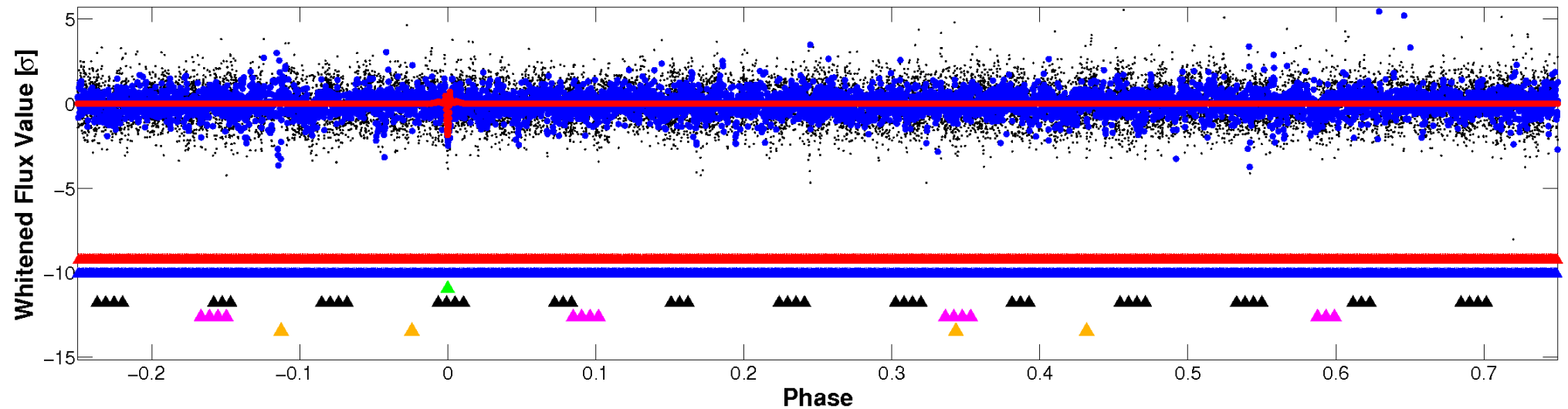


Non-Whitened Vs. Whitened Light Curve

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

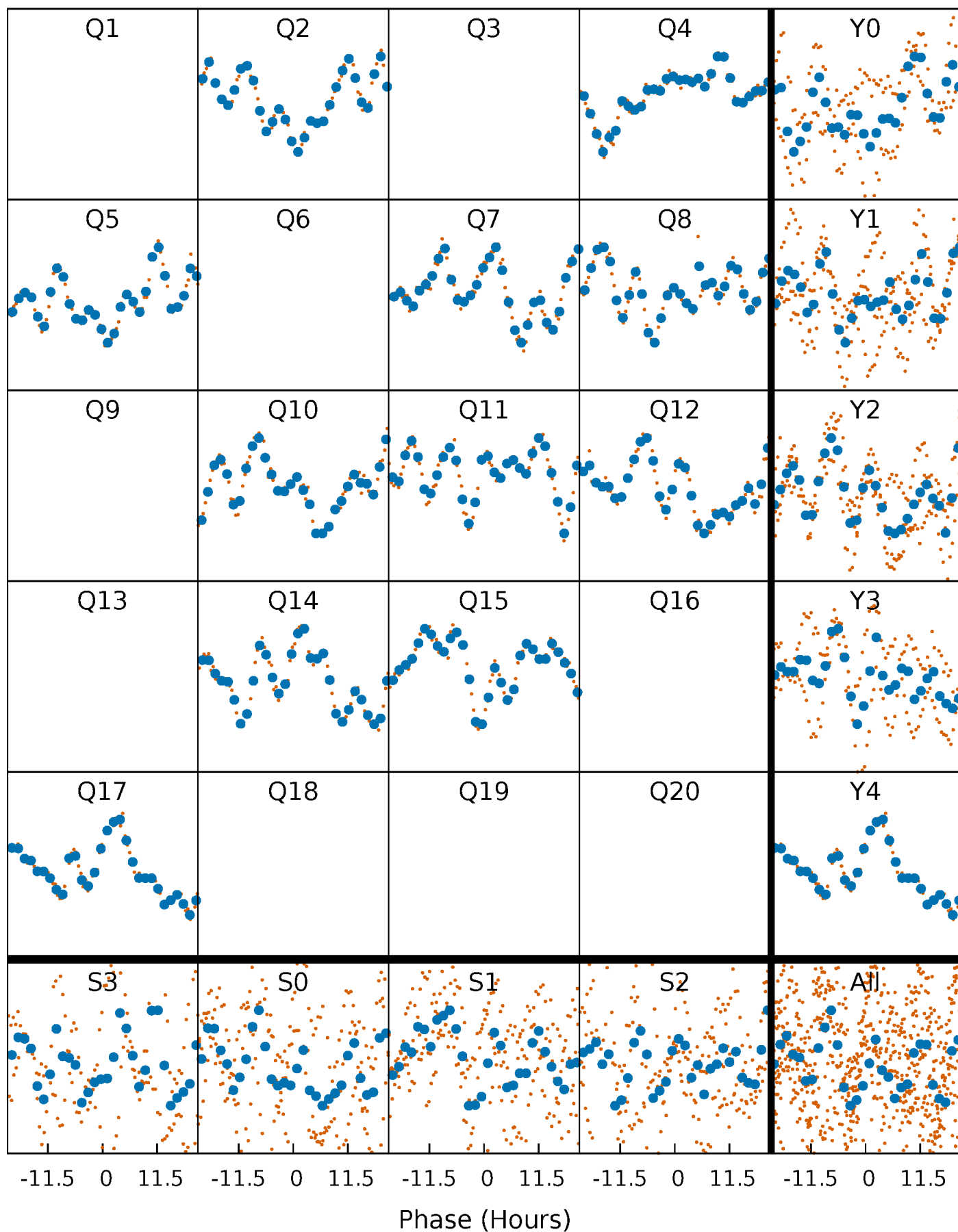


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



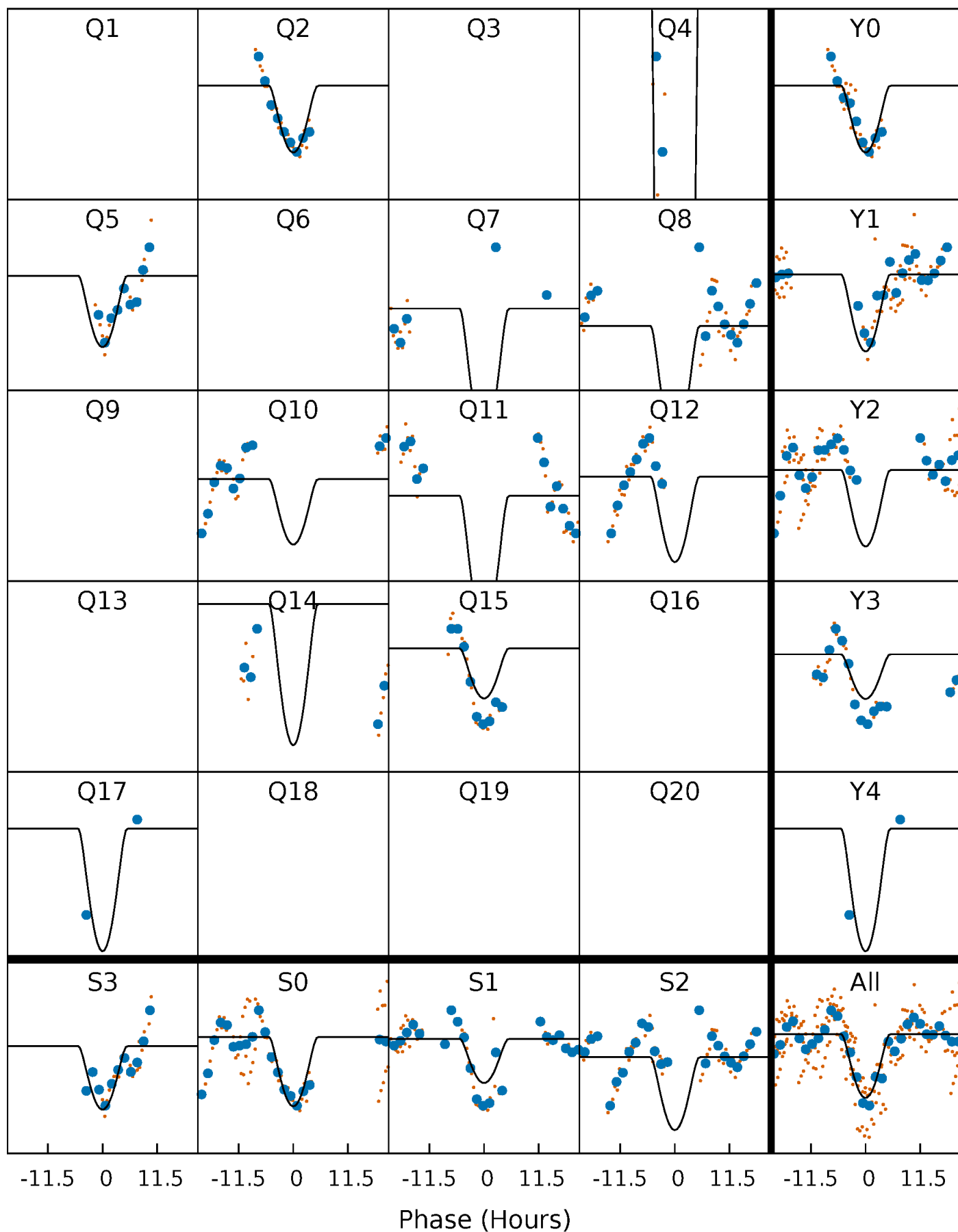
PDC Quarter-Phased Transit Curves

TCE 005617535-03 P=132.979607 Days $T_0=246.887132$ (BKJD)



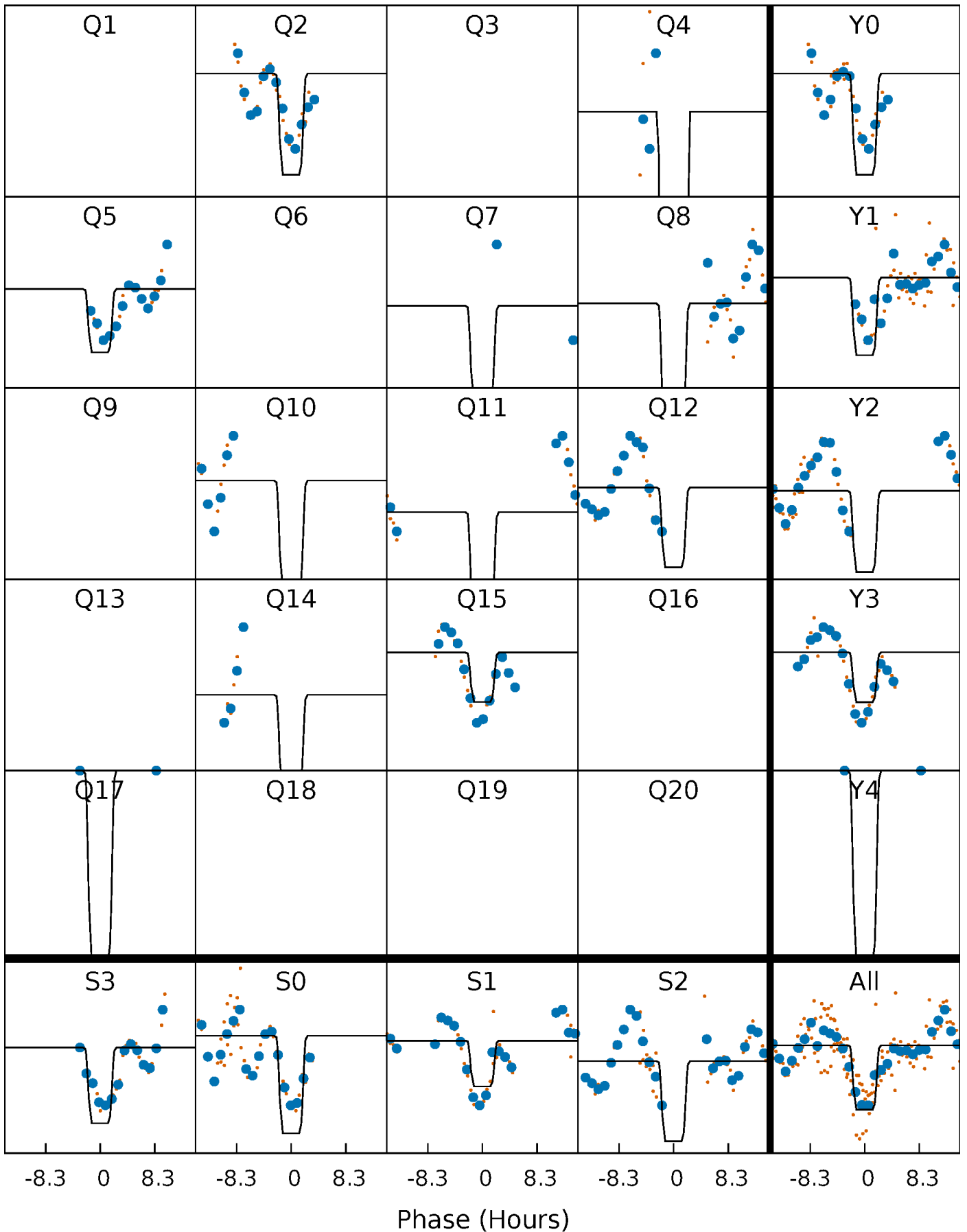
DV Quarter-Phased Transit Curves

TCE 005617535-03 P=132.979607 Days $T_0=246.887132$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

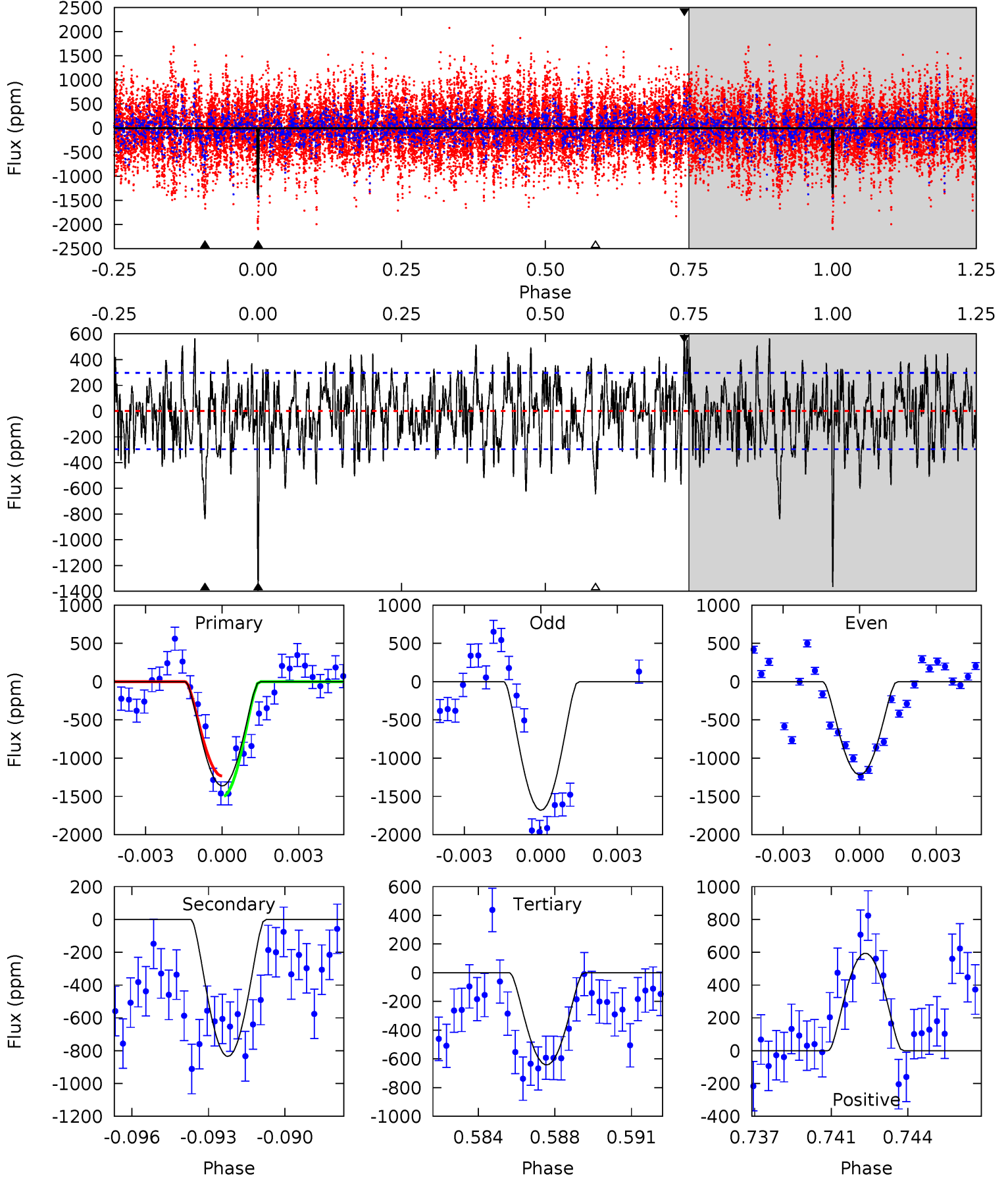
TCE 005617535-03 P=132.974797 Days $T_0=246.913456$ (BKJD)



DV Model-Shift Uniqueness Test

005617535-03, P = 132.979607 Days, E = 113.907525 Days

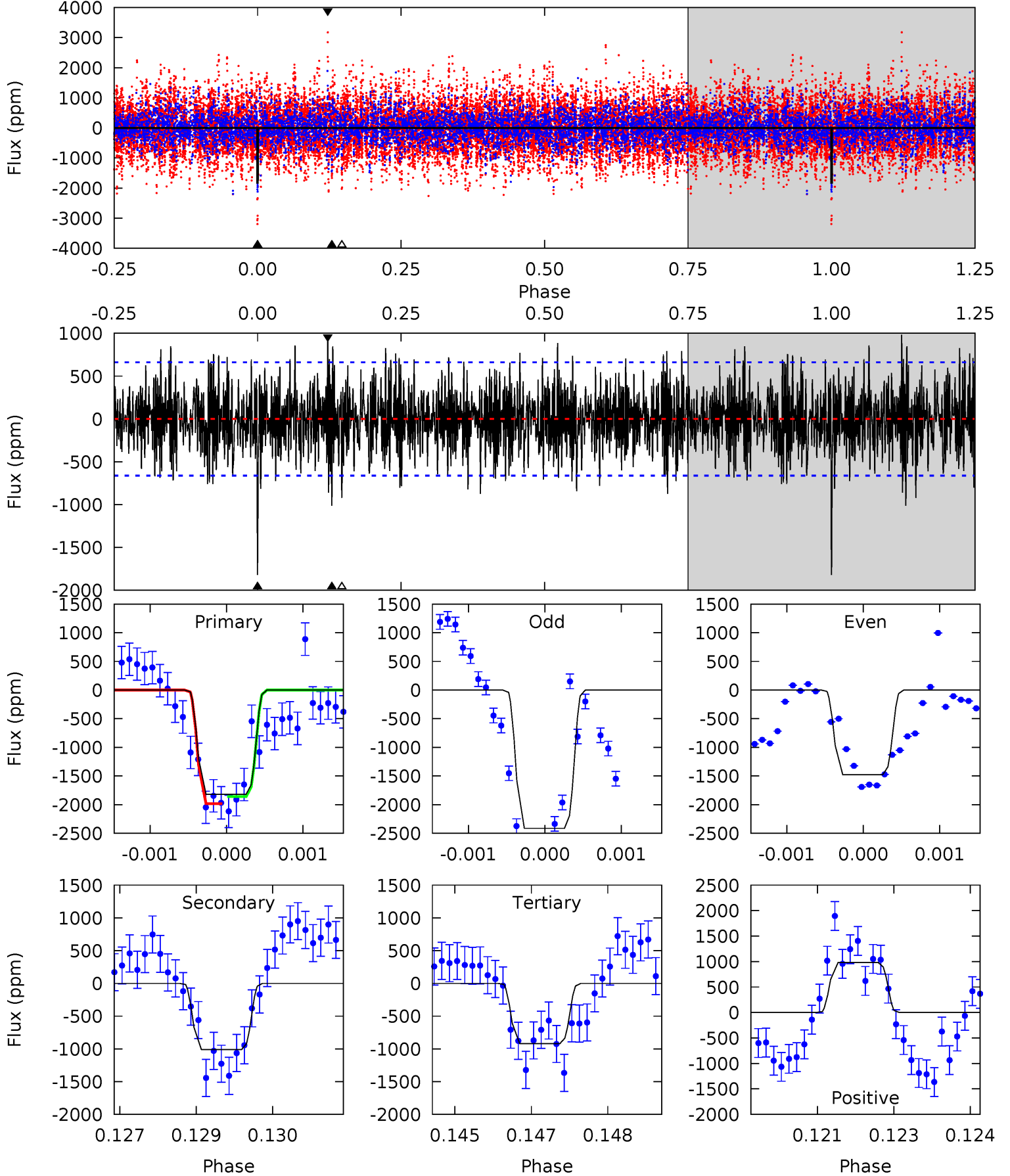
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.0	14.7	11.3	10.5	5.23	2.94	3.59	12.7	13.5	3.41	4.25	4.06	0.90	0.30	2.29



Alt Model-Shift Uniqueness Test

005617535-03, P = 132.974797 Days, E = 113.938659 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.8	8.21	7.48	7.98	5.38	3.18	2.31	7.30	6.79	0.74	0.23	3.71	1.19	0.35	0.50



Stellar Parameters For KIC 005617535

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6840^{+71}_{-82}	$3.917^{+0.186}_{-0.108}$	$-0.020^{+0.150}_{-0.150}$	$2.305^{+0.404}_{-0.556}$	$1.601^{+0.133}_{-0.192}$	$0.184^{+0.187}_{-0.070}$
	+1%/-1%	+5%/-3%	+750%/-750%	+18%/-24%	+8%/-12%	+102%/-38%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 005617535-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-835 ± 57	$24.68^{+24.46}_{-15.75}$	825^{+37}_{-52}	3968^{+2033}_{-781}	262^{+1751}_{-194}
Alt.	-1011 ± 123	$24.02^{+22.48}_{-16.90}$	823^{+39}_{-50}	4159^{+3180}_{-823}	344^{+3691}_{-250}

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 $A_{obs} \gg 1.0$

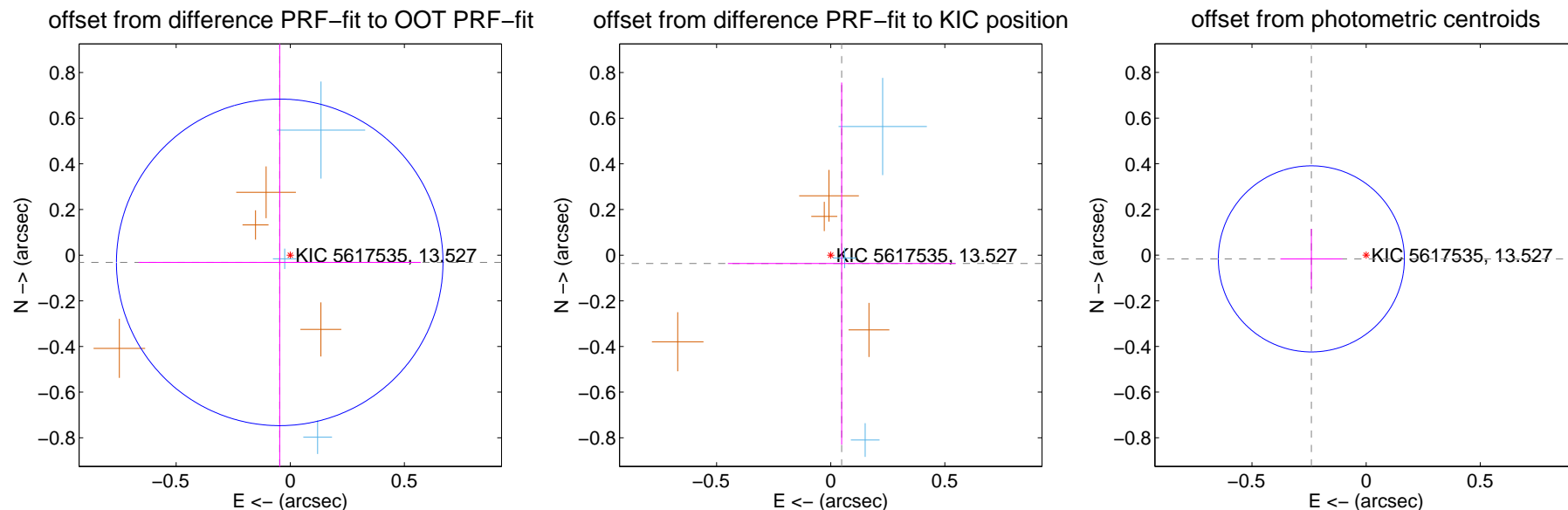
DV Centroid Data

Supplemental centroid analysis for 005617535-03. Kepler magnitude: 13.53. Transit SNR 9.17

There are 4 quarters with good PRF difference image offsets

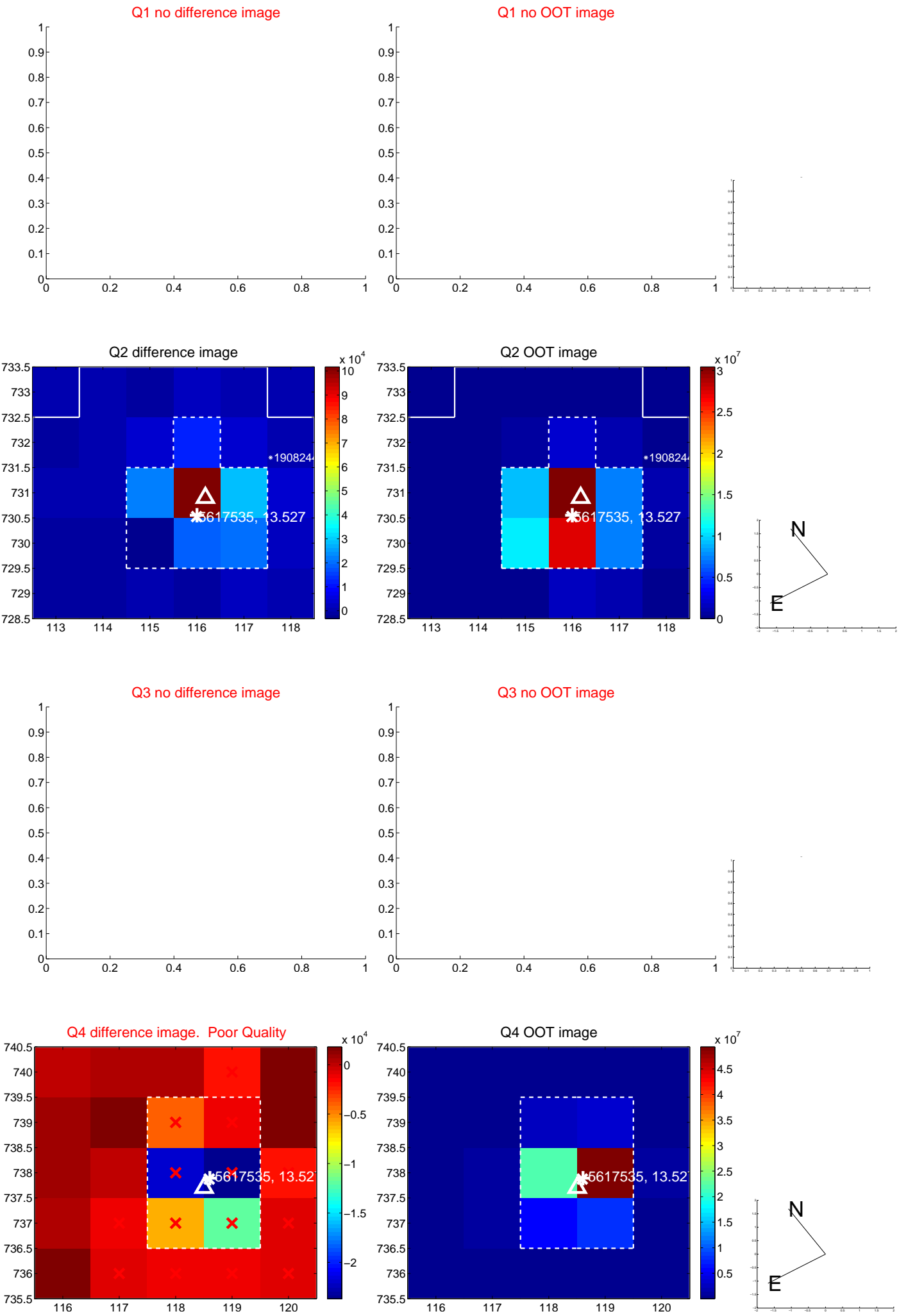
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.056 ± 0.238	0.23	0.046 ± 0.619	-0.032 ± 0.959
PRF-fit source offset from KIC position	0.061 ± 0.843	0.07	-0.048 ± 0.499	-0.037 ± 0.793
photometric centroid source offset	0.24 ± 0.14	1.77	0.24 ± 0.14	-0.02 ± 0.13

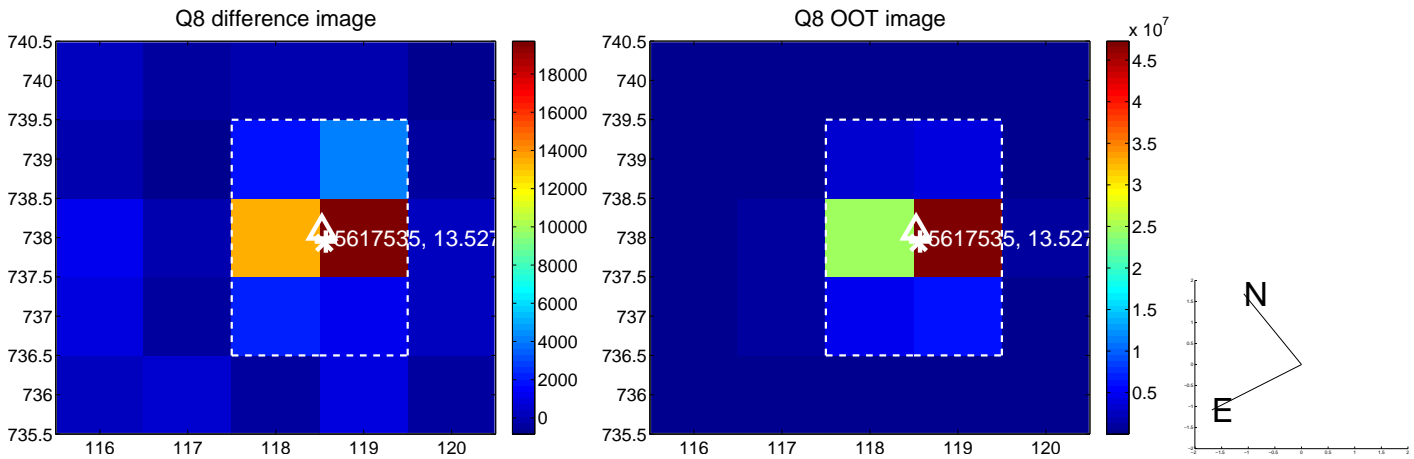
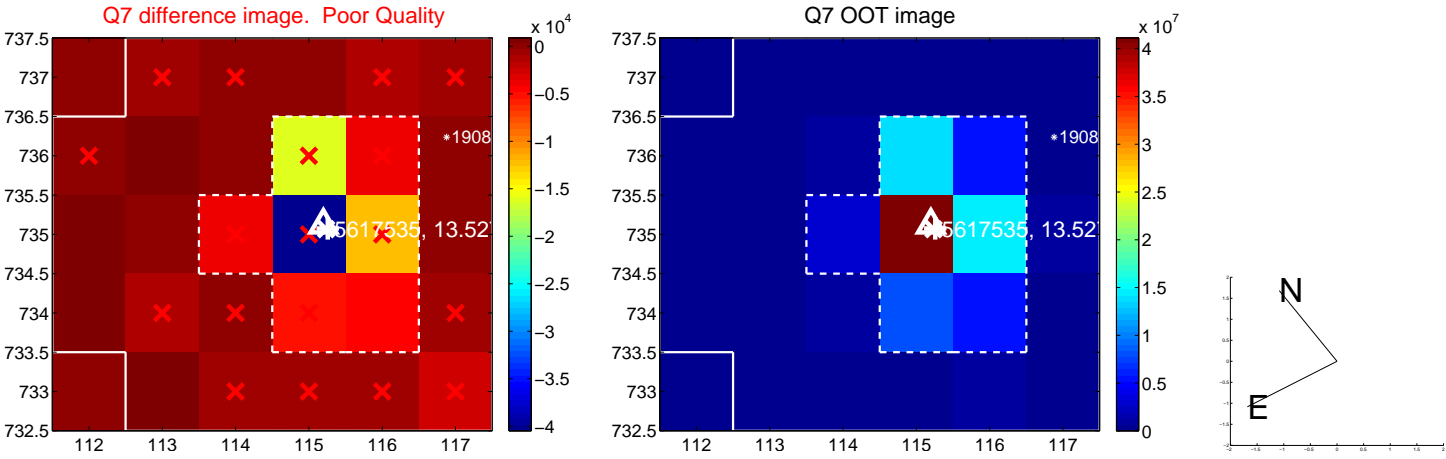
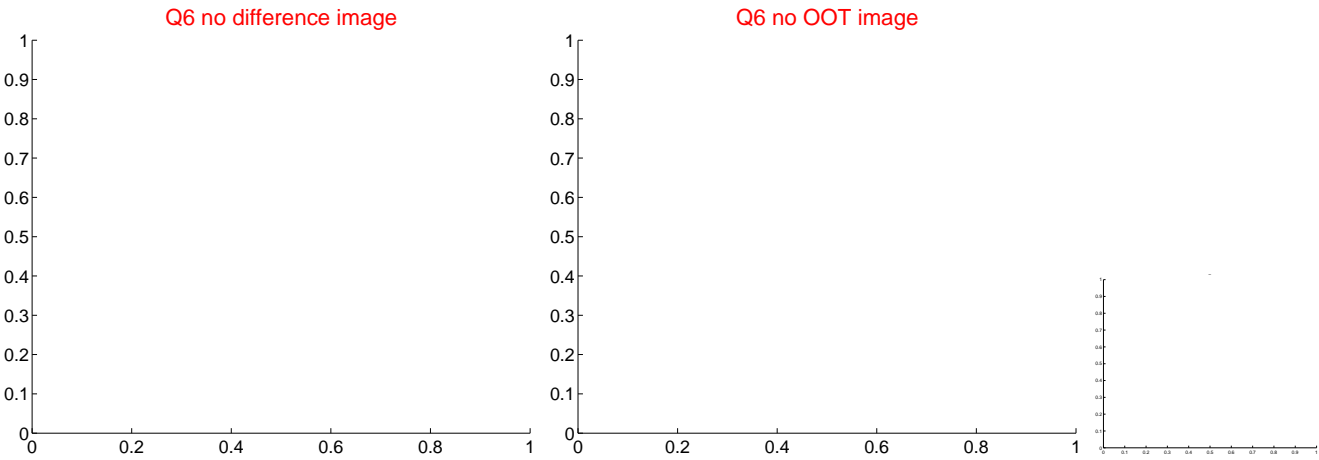
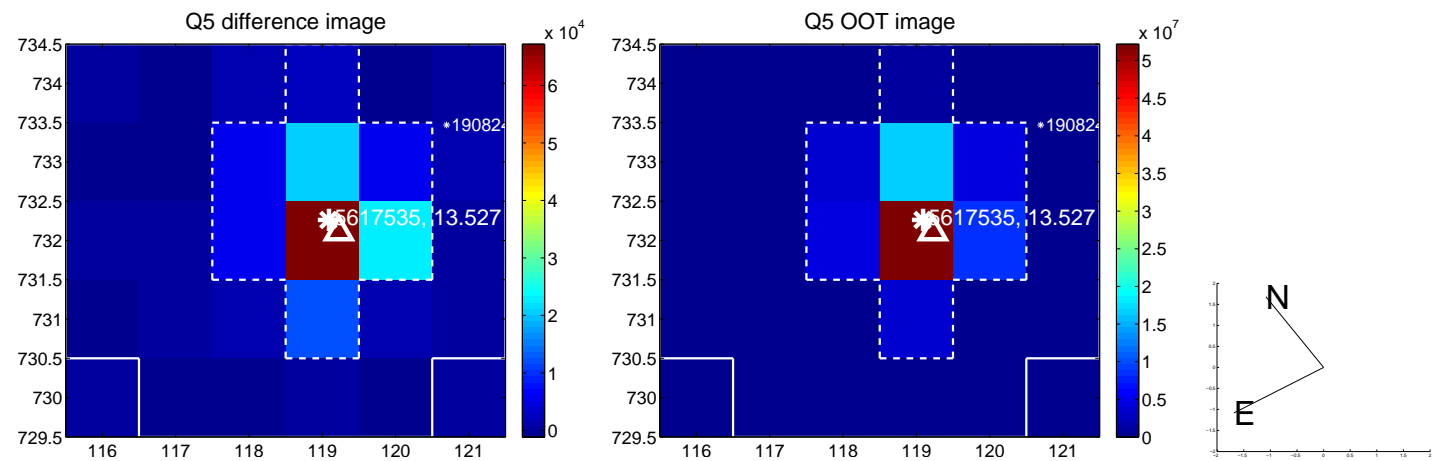


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

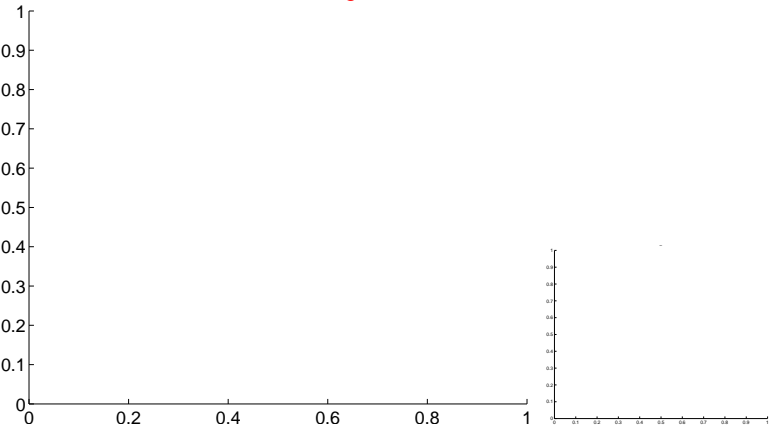


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

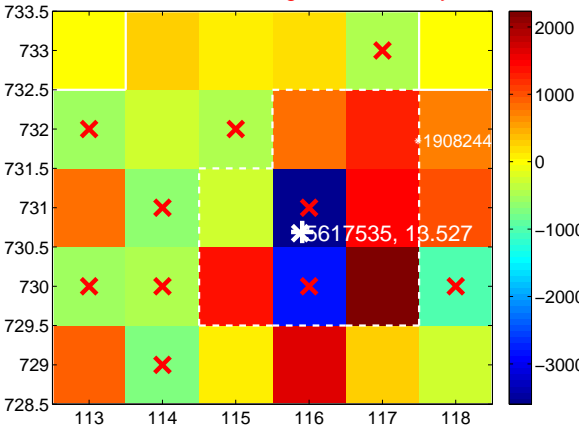
Q9 no difference image



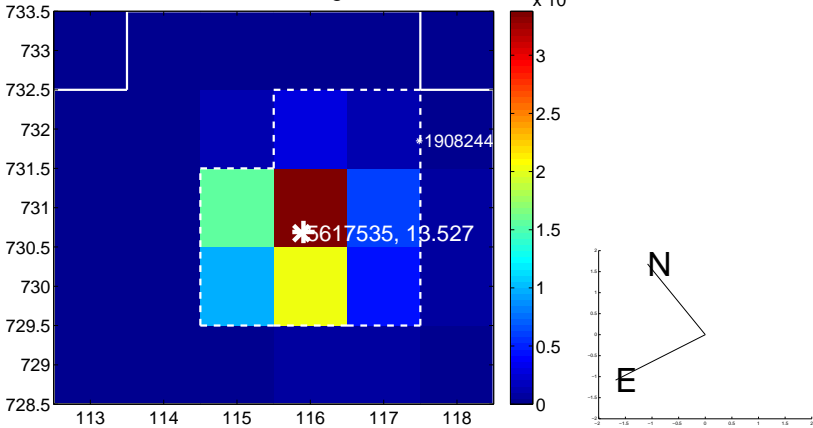
Q9 no OOT image



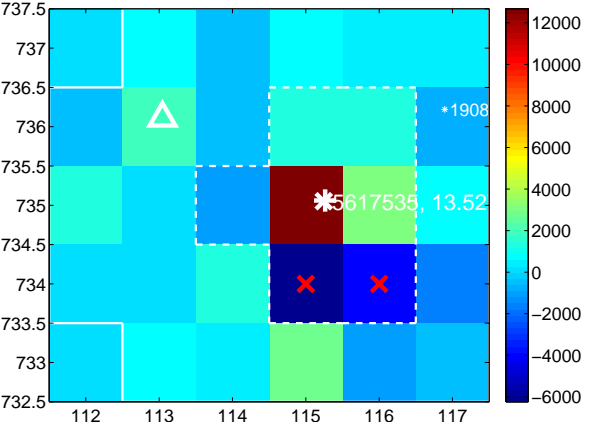
Q10 difference image. Poor Quality



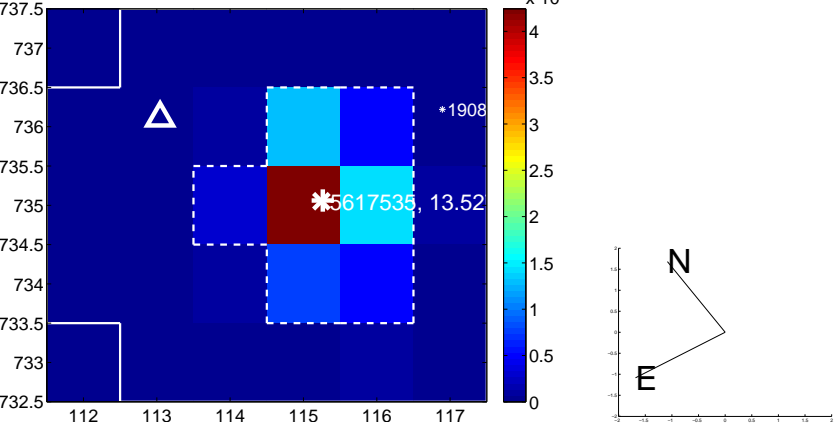
Q10 OOT image



Q11 difference image. Poor Quality



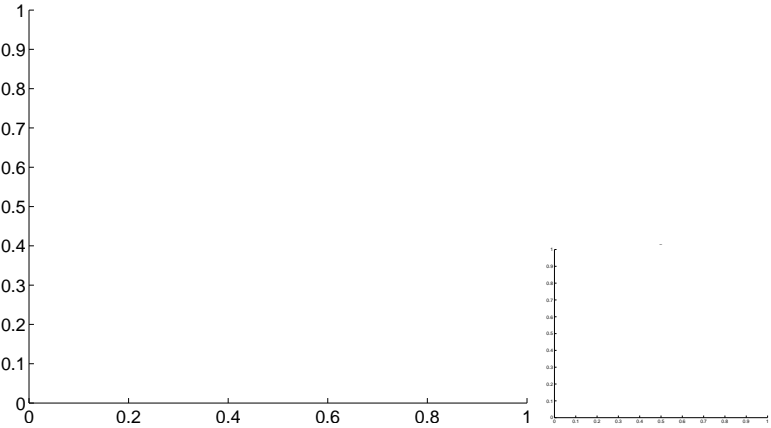
Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

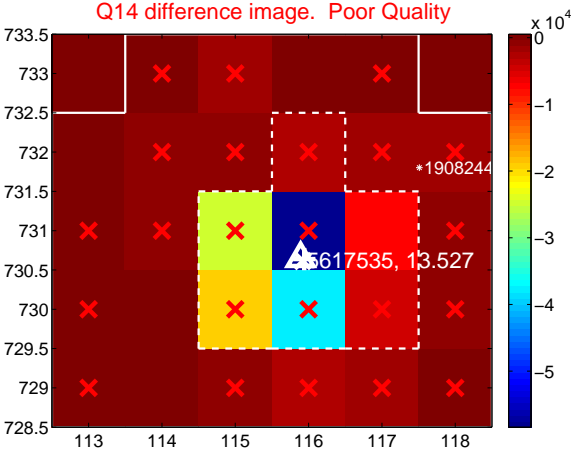
Q13 no difference image



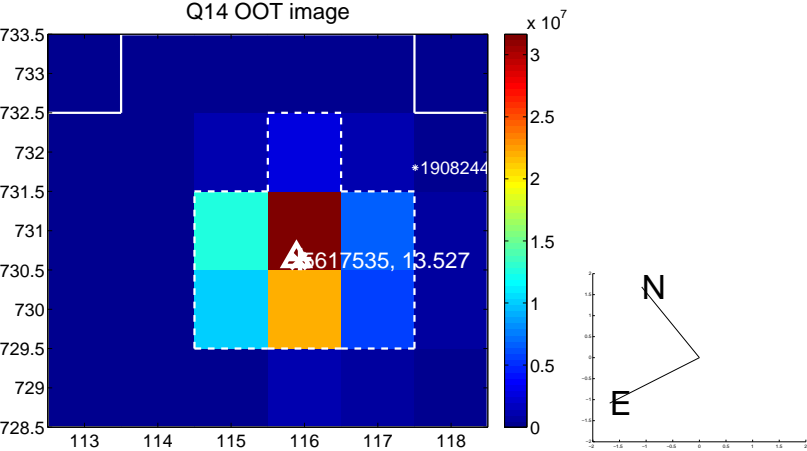
Q13 no OOT image



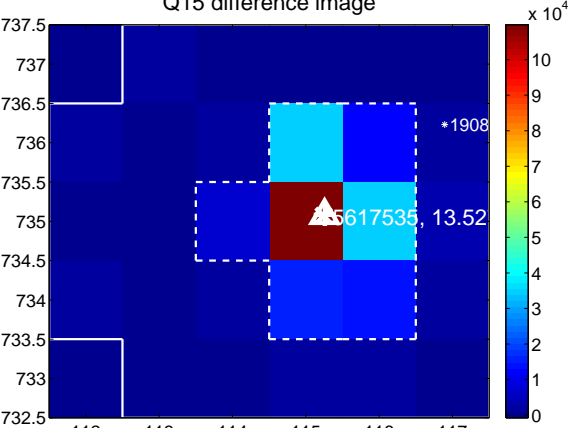
Q14 difference image. Poor Quality



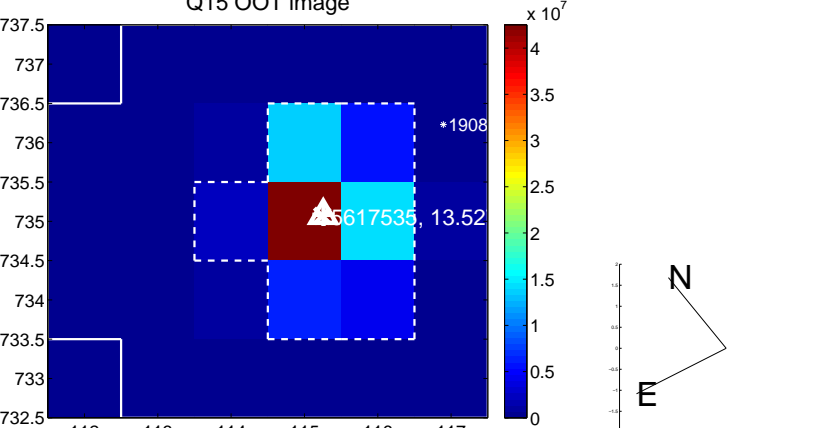
Q14 OOT image



Q15 difference image



Q15 OOT image



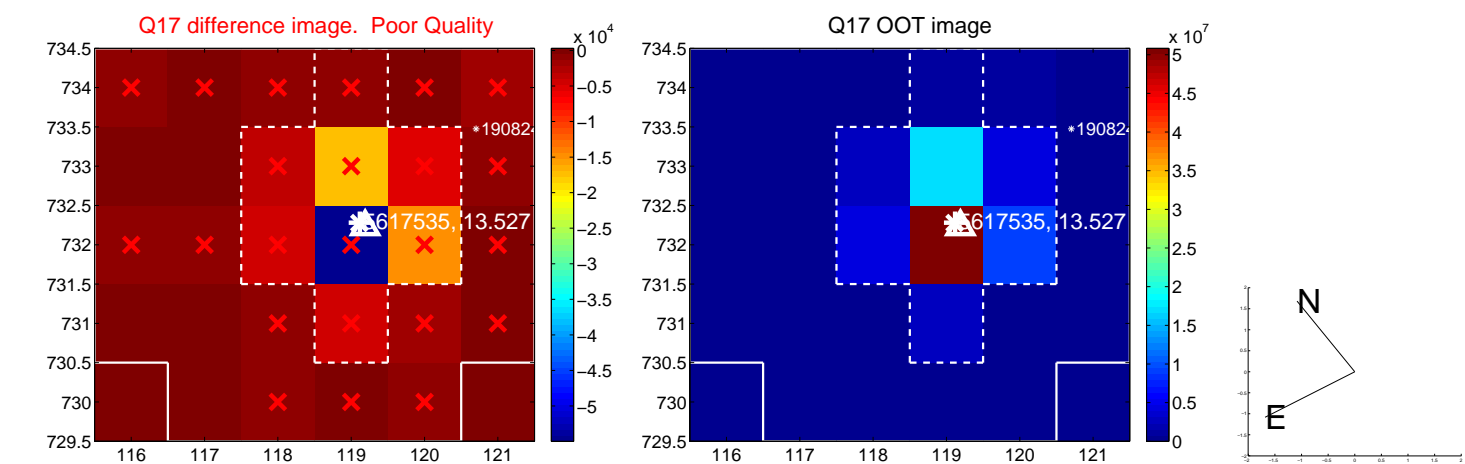
Q16 no difference image



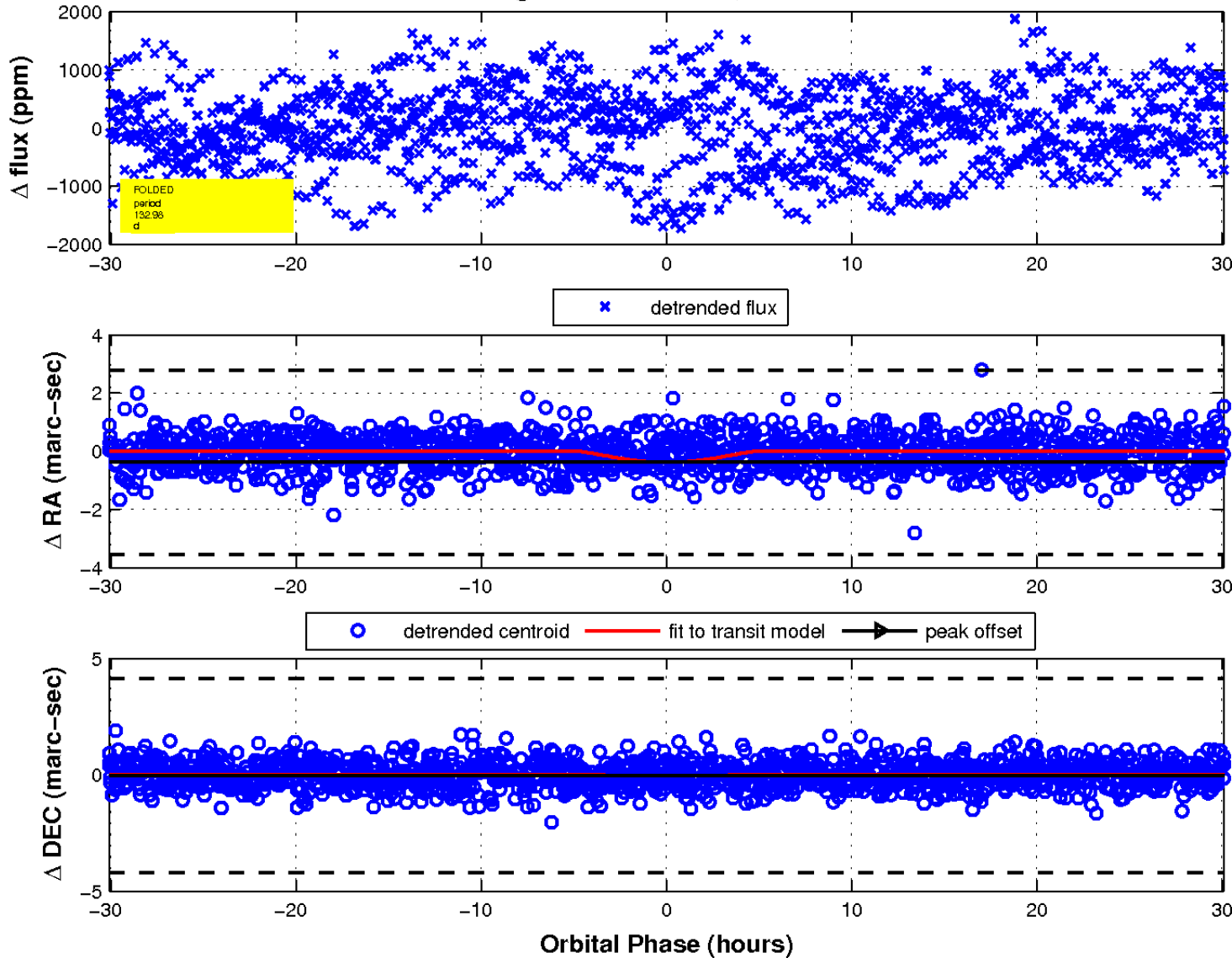
Q16 no OOT image



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

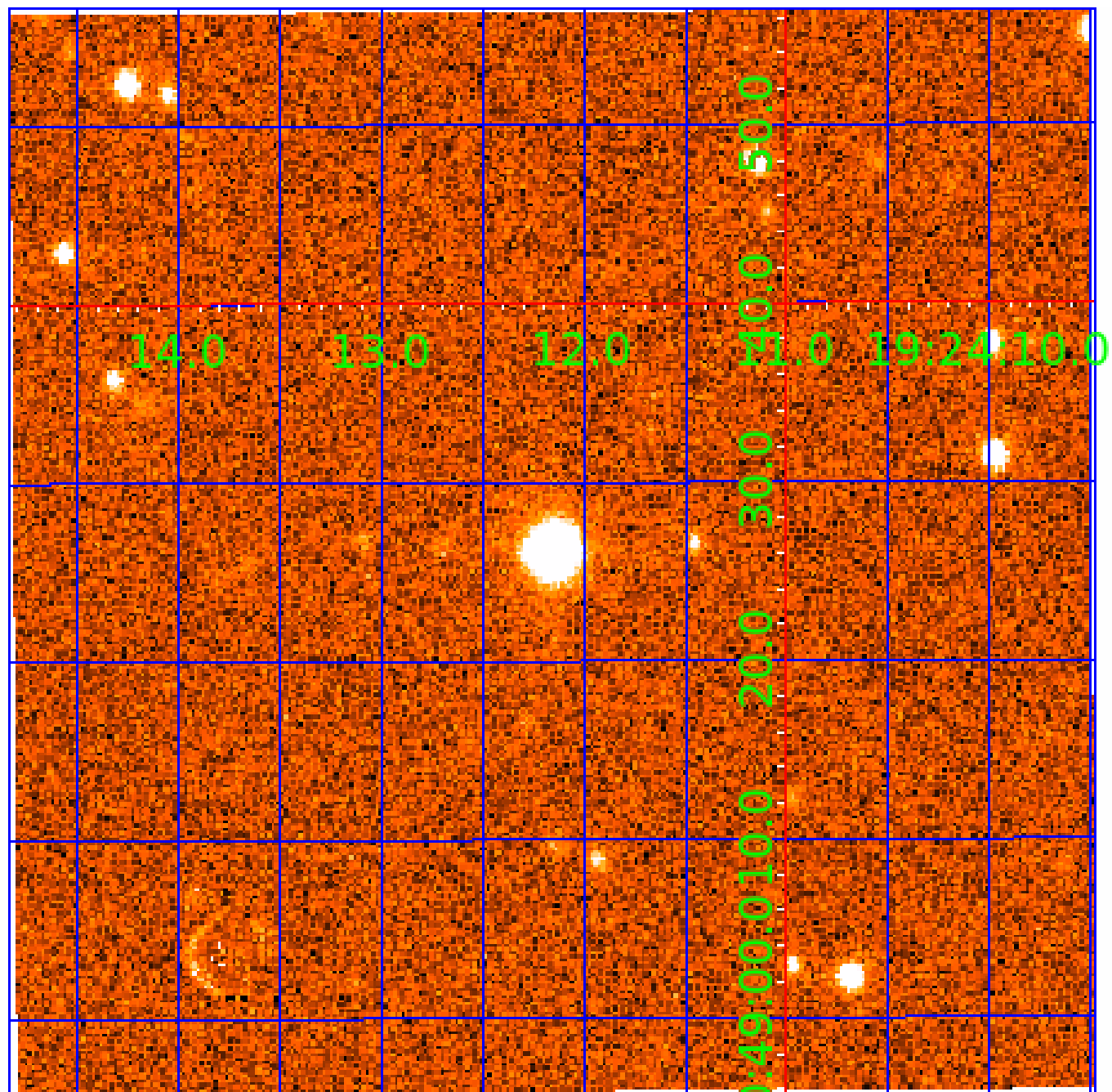


fluxWeightedCentroids, Planet 3 of 6



UKIRT Image

Declination



KIC 005617535

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})
005617535-01	OBS	No	1.739461	133.011420	77.9	3.567	10.2	10.1	2.31	6840	2.37	9499.05
005617535-02	OBS	No	1.210149	132.436598	71.9	5.431	10.1	9.3	2.31	6840	2.29	15409.23
005617535-03	OBS	No	132.979607	246.887132	1295.6	10.041	9.5	9.2	2.31	6840	15.43	29.28
005617535-04	OBS	No	30.629299	156.422118	416.3	16.665	8.4	8.0	2.31	6840	5.67	207.36
005617535-05	OBS	No	99.544831	160.895939	1068.8	8.182	9.2	9.2	2.31	6840	10.37	43.07
005617535-06	OBS	No	326.576571	376.652413	280.1	3.500	8.6	-1.0	2.31	6840	3.90	8.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005617535-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005617535-02	OBS	FP	0.00	1	0	0	0	LPP_DV
005617535-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT
005617535-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT
005617535-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
005617535-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—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.

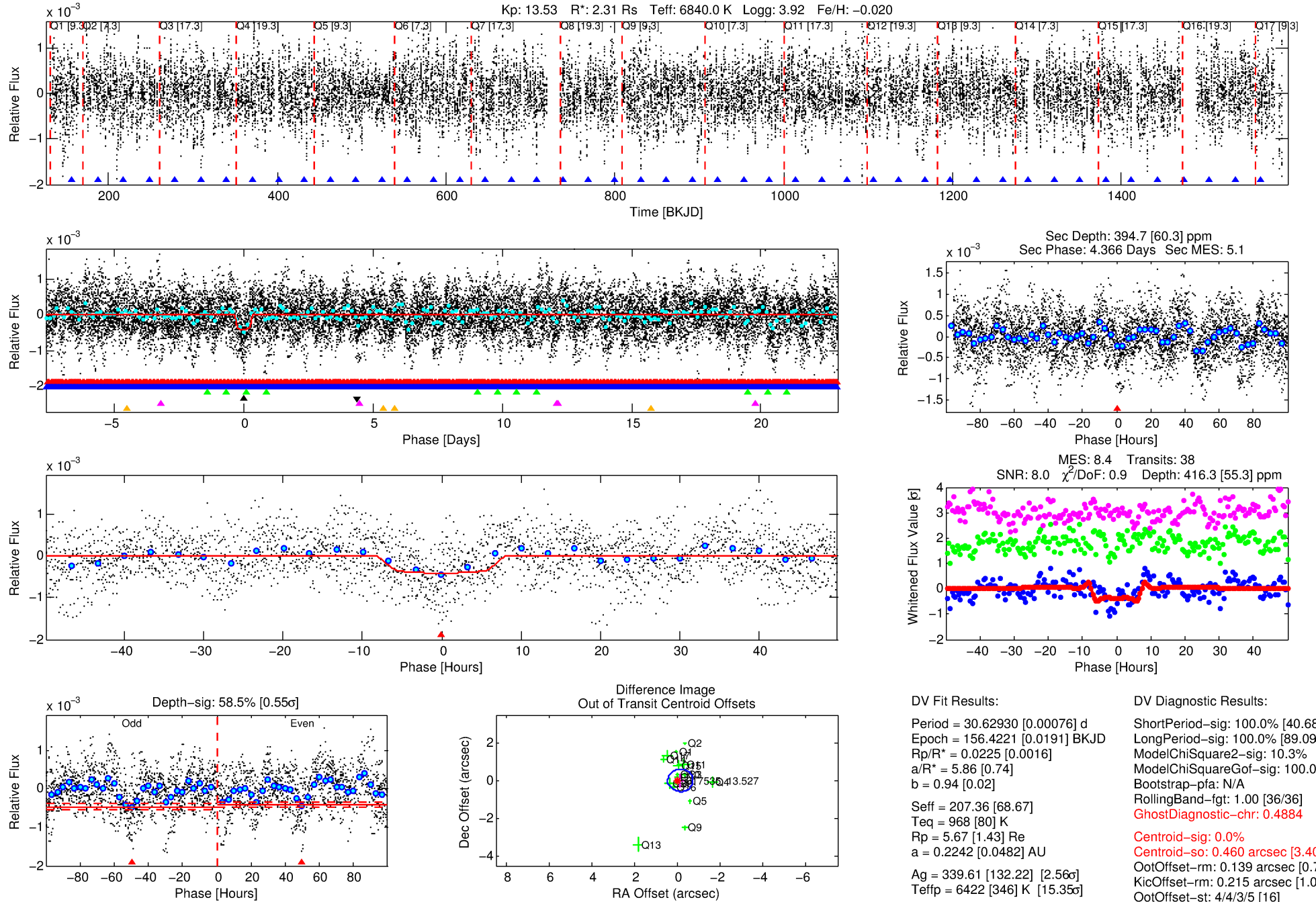
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005617535-04

No Significant Match Found

DV One-Page Summary

KIC: 5617535 Candidate: 4 of 6 Period: 30.629 d



DV Fit Results:

Period = 30.62930 [0.00076] d
Epoch = 156.4221 [0.0191] BKJD
Rp/R* = 0.0225 [0.0016]
a/R* = 5.86 [0.74]
b = 0.94 [0.02]
Seff = 207.36 [68.67]
Teq = 968 [80] K
Rp = 5.67 [1.43] Re
a = 0.2242 [0.0482] AU
Ag = 339.61 [132.22] [2.56σ]
Teffp = 6422 [346] K [15.35σ]

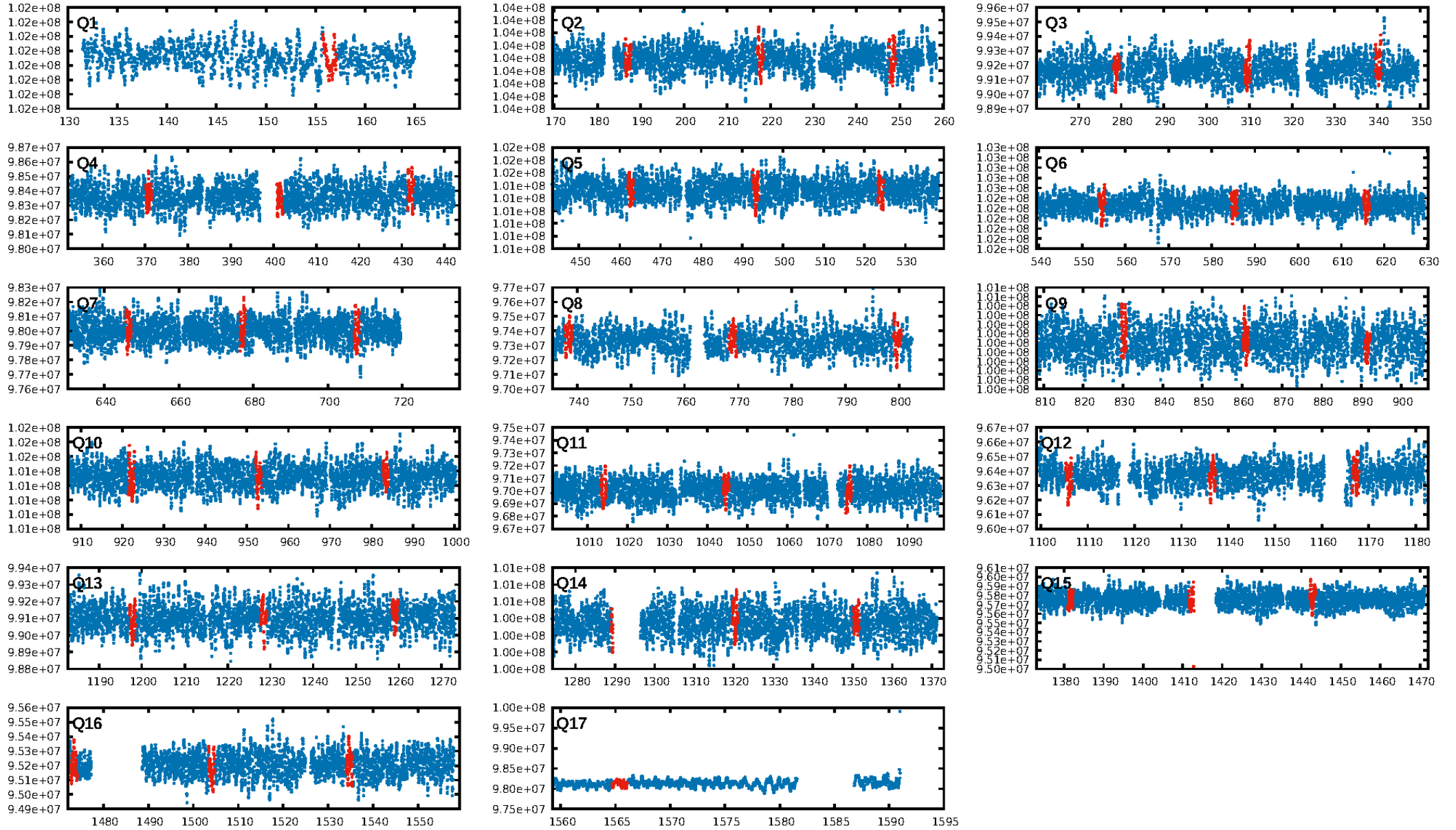
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [40.68σ]
LongPeriod-sig: 100.0% [89.09σ]
ModelChiSquare2-sig: 10.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [36/36]
GhostDiagnostic-chr: 0.4884
Centroid-sig: 0.0%
Centroid-so: 0.460 arcsec [3.40σ]
OotOffset-rm: 0.139 arcsec [0.70σ]
KicOffset-rm: 0.215 arcsec [1.06σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 0.00 [0/17]

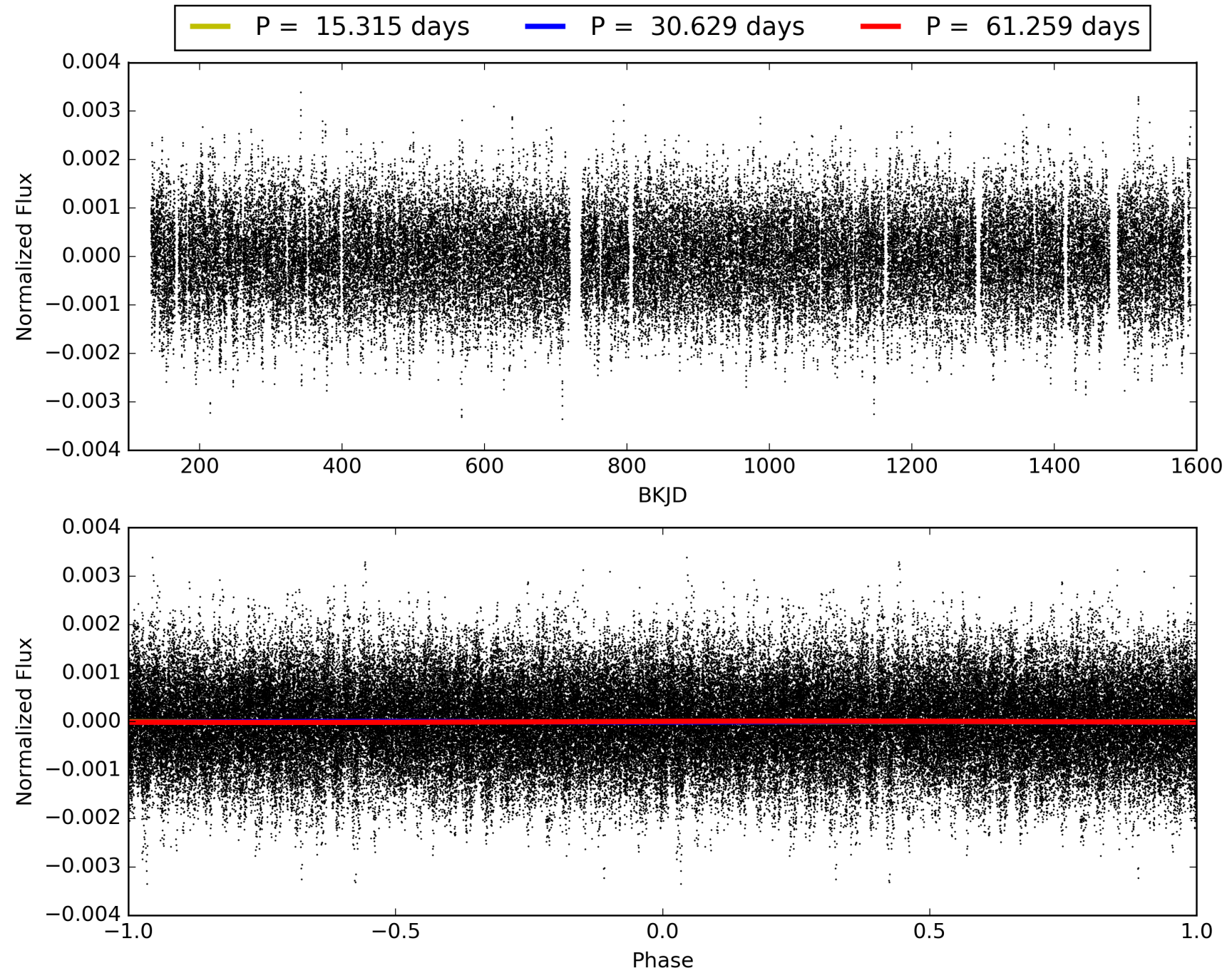
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:13:10 Z

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

TCE 005617535-04, PDC Light Curves

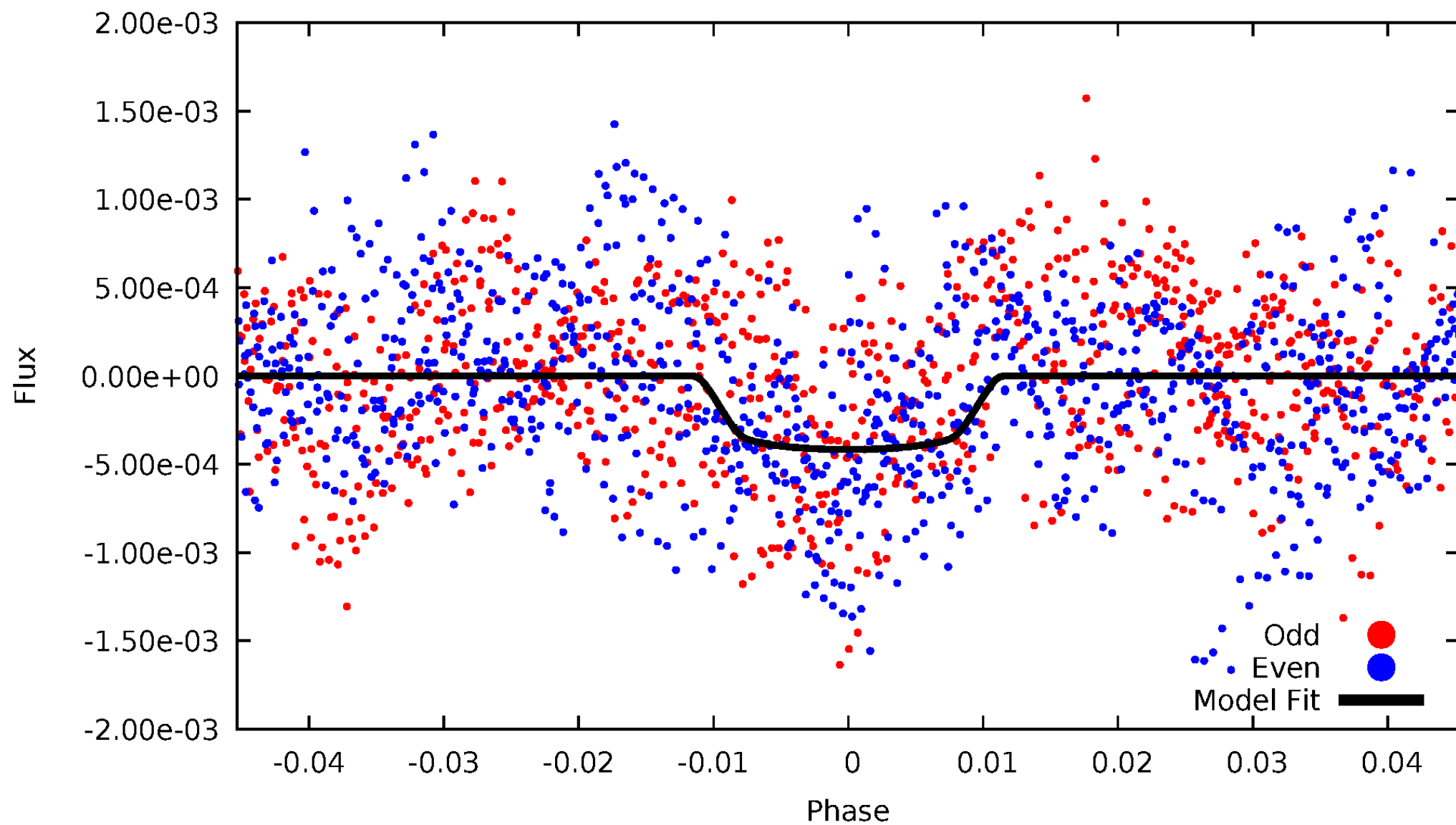


TCE 005617535-04



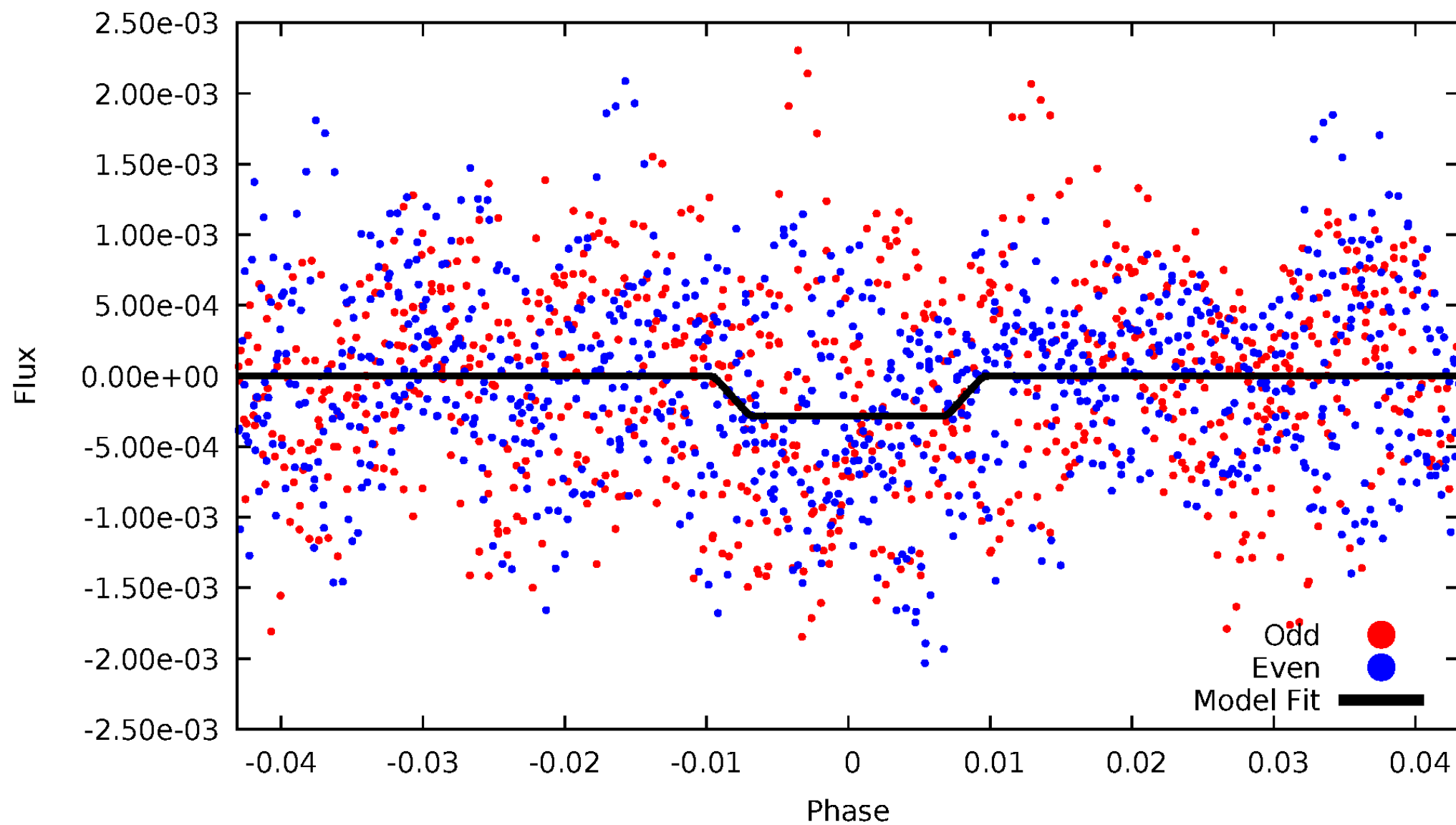
DV Odd/Even

TCE 005617535-04



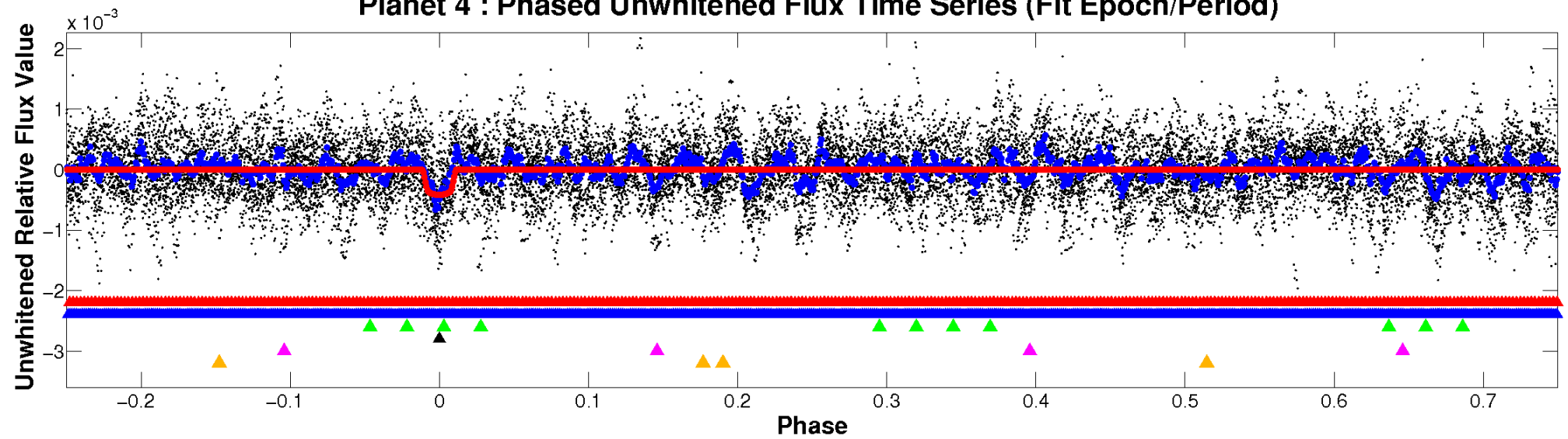
ALT Odd/Even

TCE 005617535-04

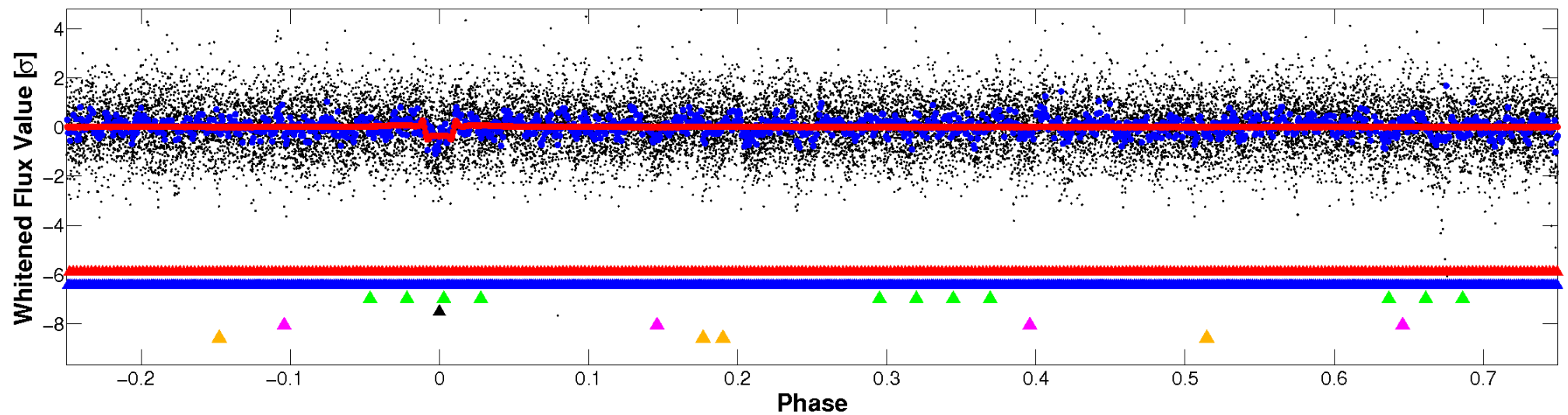


Non-Whitened Vs. Whitened Light Curve

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

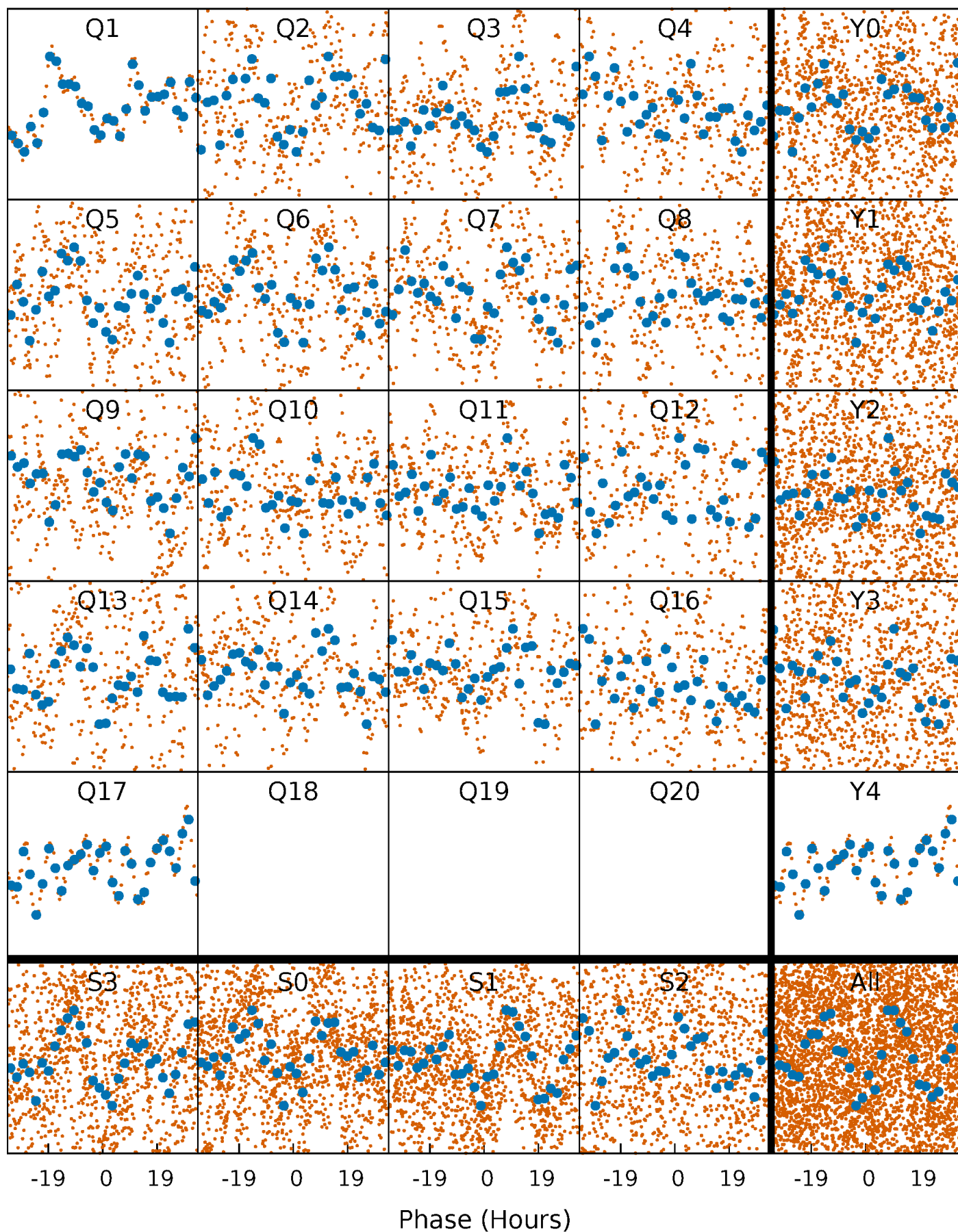


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



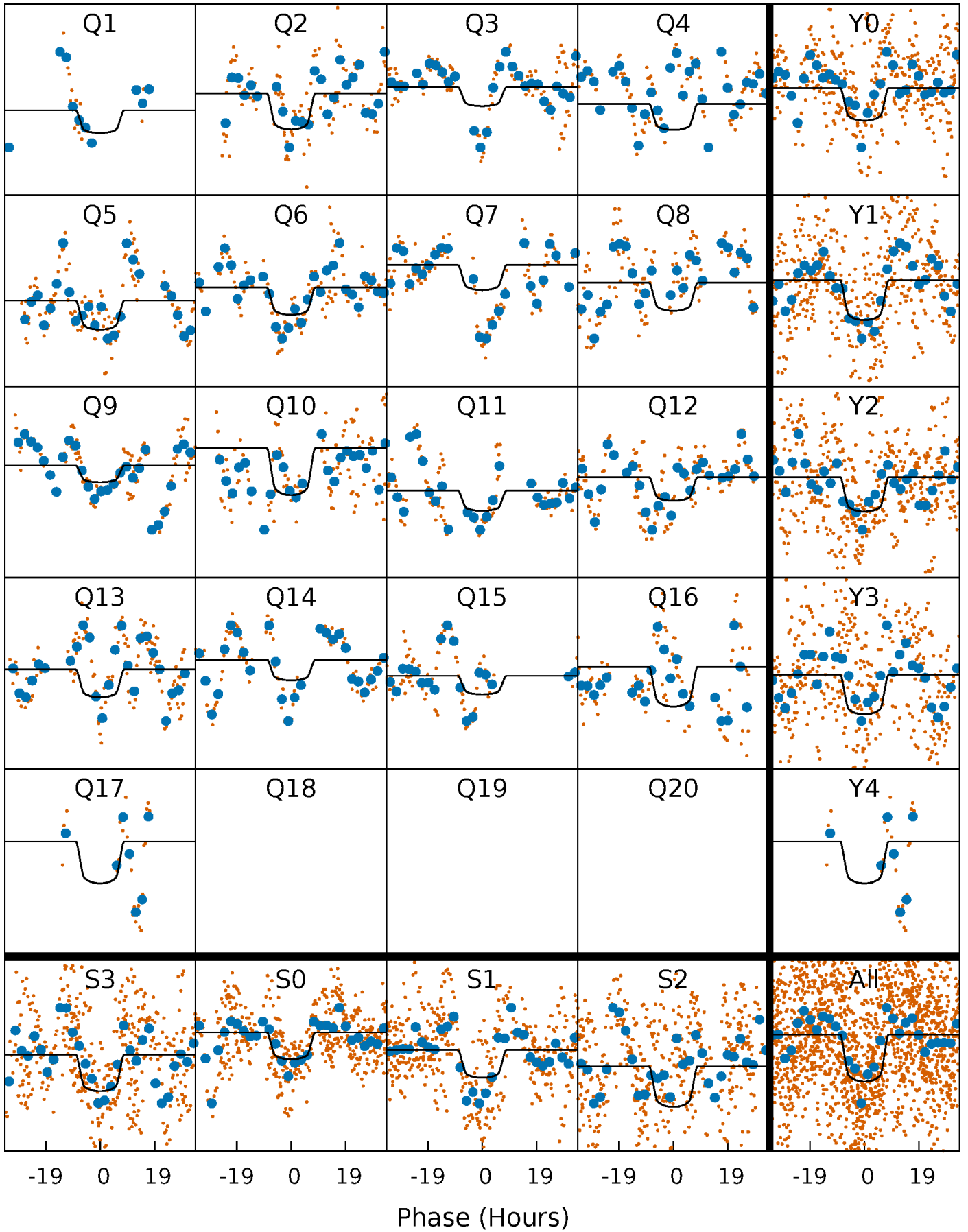
PDC Quarter-Phased Transit Curves

TCE 005617535-04 P= 30.629299 Days $T_0=156.422118$ (BKJD)



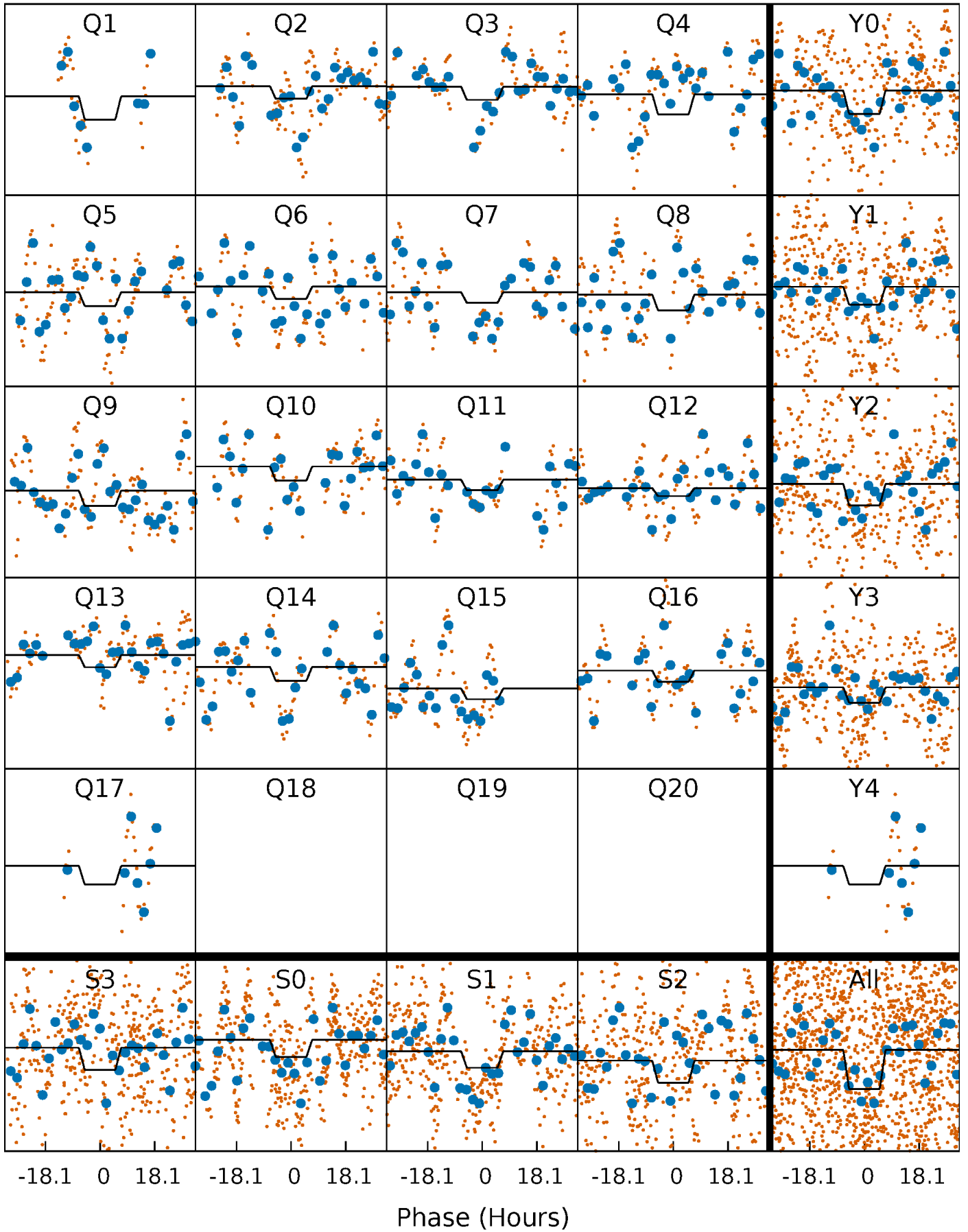
DV Quarter-Phased Transit Curves

TCE 005617535-04 P= 30.629299 Days $T_0=156.422118$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

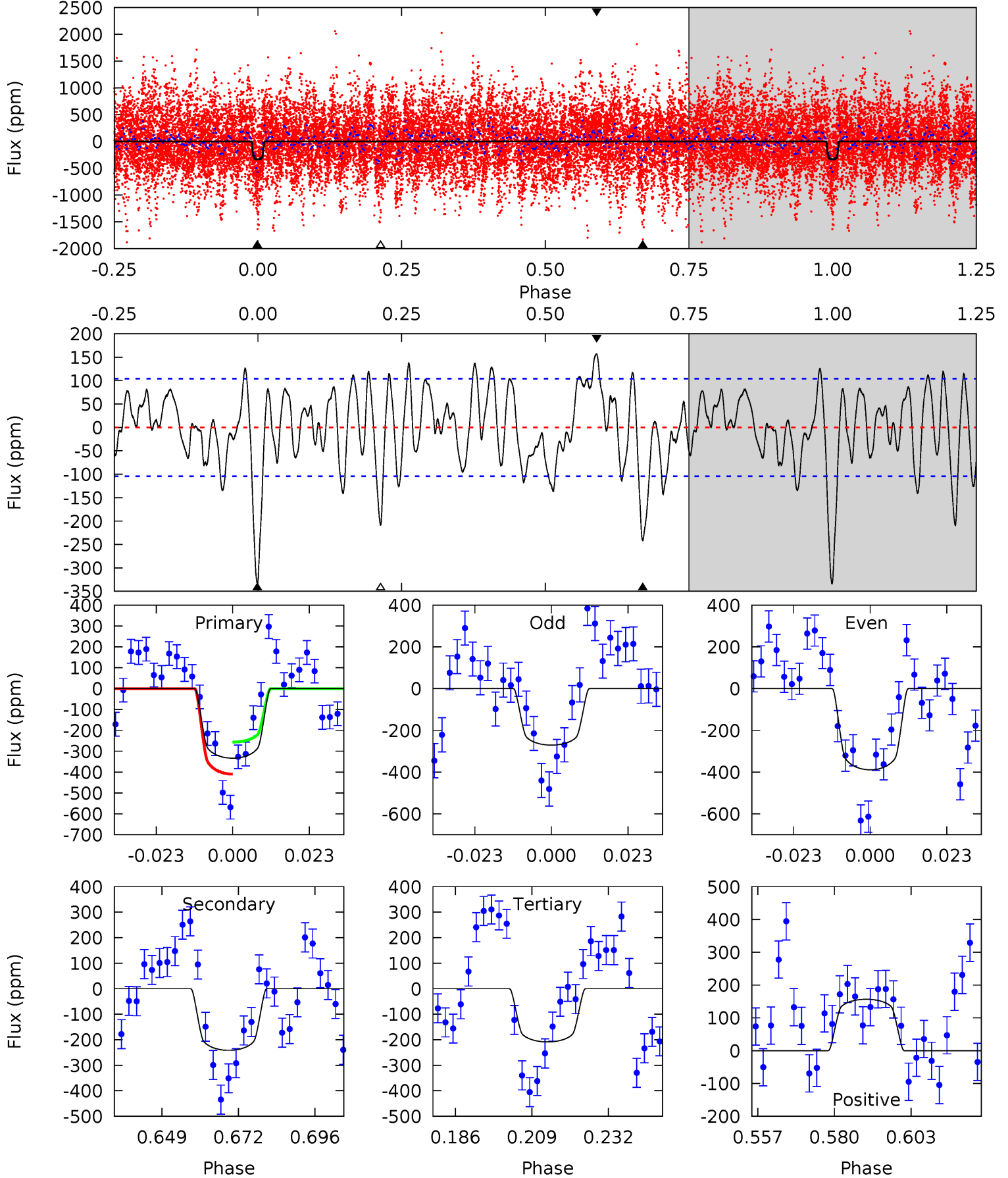
TCE 005617535-04 P= 30.627650 Days $T_0=156.446483$ (BKJD)



DV Model-Shift Uniqueness Test

005617535-04, P = 30.629299 Days, E = 125.792819 Days

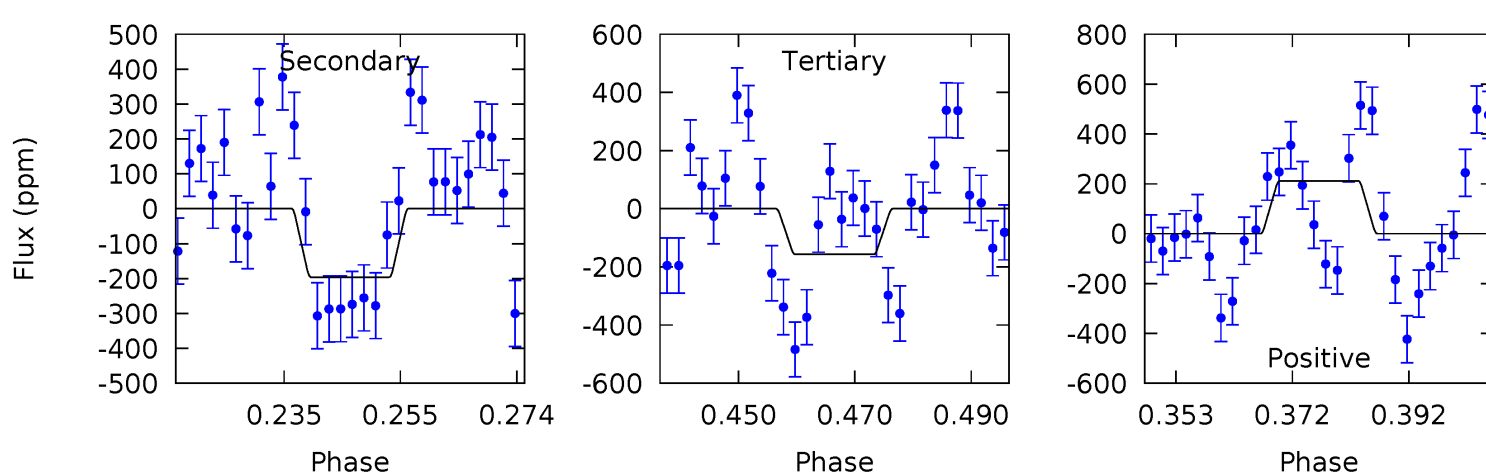
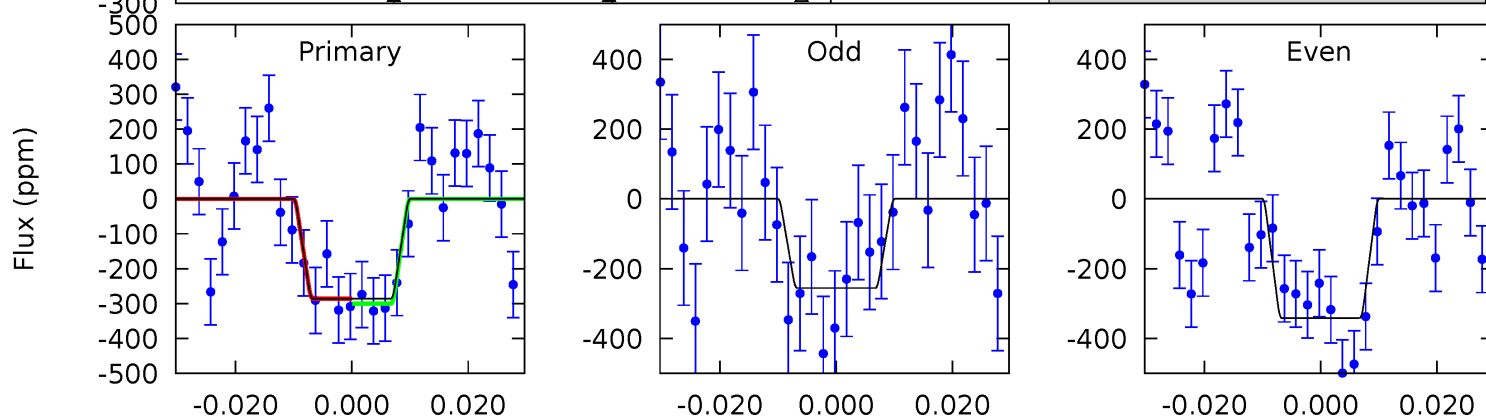
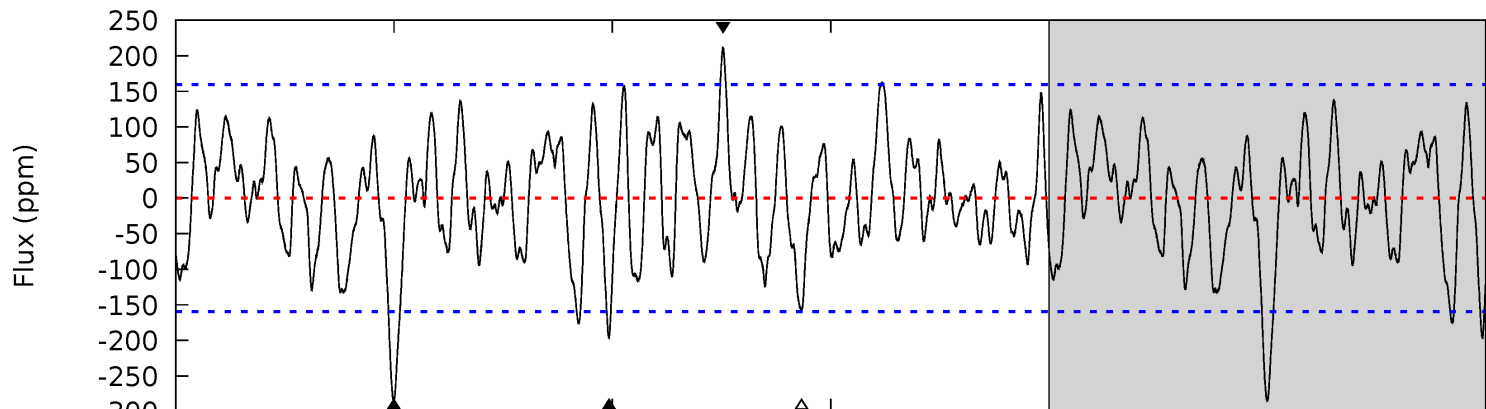
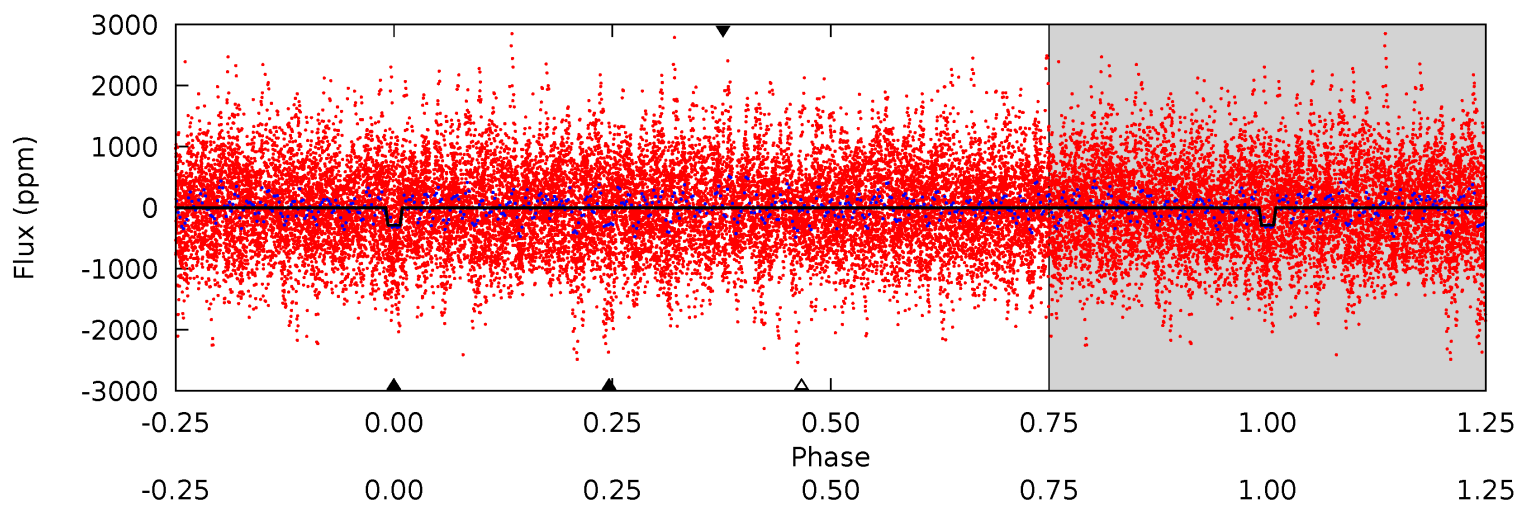
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	11.3	9.73	7.31	4.86	2.27	3.16	5.82	8.24	1.54	3.96	2.76	-0.03	0.32	3.58



Alt Model-Shift Uniqueness Test

005617535-04, P = 30.627650 Days, E = 125.818833 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.76	6.01	4.81	6.49	4.90	2.33	2.10	3.95	2.27	1.20	-0.48	1.30	-0.23	0.43	0.21



Stellar Parameters For KIC 005617535

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6840^{+71}_{-82}	$3.917^{+0.186}_{-0.108}$	$-0.020^{+0.150}_{-0.150}$	$2.305^{+0.404}_{-0.556}$	$1.601^{+0.133}_{-0.192}$	$0.184^{+0.187}_{-0.070}$
	+1%/-1%	+5%/-3%	+750%/-750%	+18%/-24%	+8%/-12%	+102%/-38%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 005617535-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-242 ± 21	$5.54^{+0.76}_{-0.77}$	1344^{+69}_{-75}	5674^{+240}_{-220}	215^{+75}_{-51}
Alt.	-196 ± 33	$4.14^{+0.60}_{-0.60}$	1338^{+65}_{-70}	6209^{+433}_{-379}	316^{+123}_{-84}

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 $A_{obs} \gg 1.0$

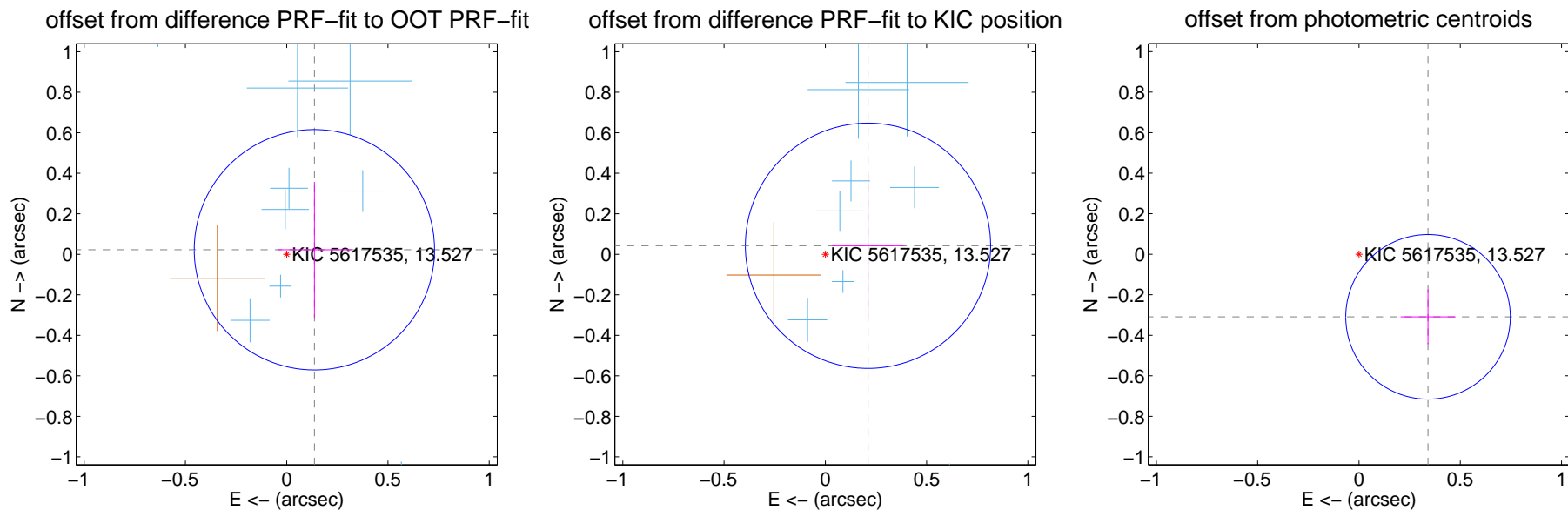
DV Centroid Data

Supplemental centroid analysis for 005617535-04. Kepler magnitude: 13.53. Transit SNR 7.97

There are 12 quarters with good PRF difference image offsets

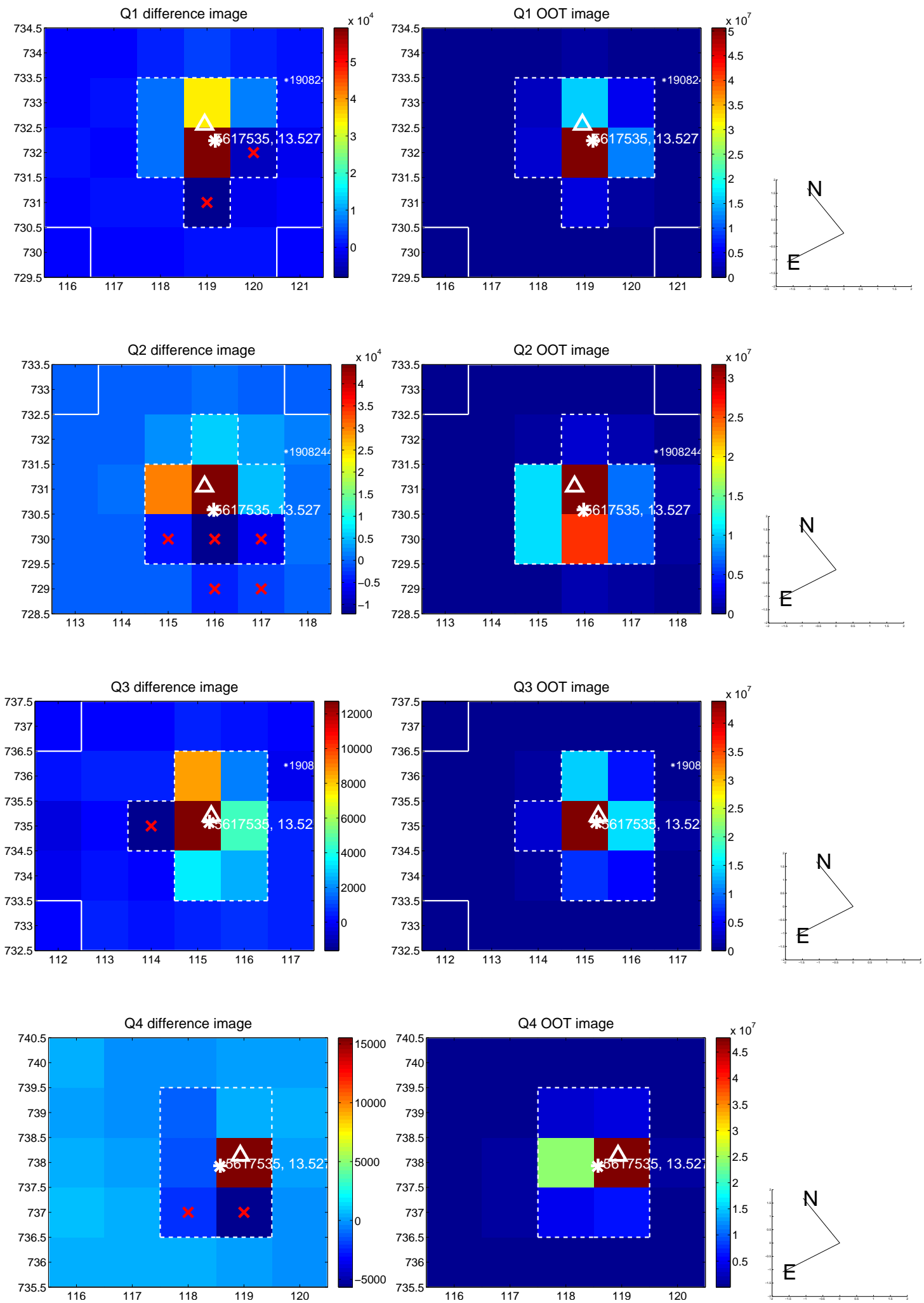
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.139 ± 0.198	0.70	-0.137 ± 0.183	0.022 ± 0.335
PRF-fit source offset from KIC position	0.215 ± 0.202	1.06	-0.211 ± 0.176	0.042 ± 0.350
photometric centroid source offset	0.46 ± 0.14	3.40	-0.34 ± 0.14	-0.31 ± 0.14

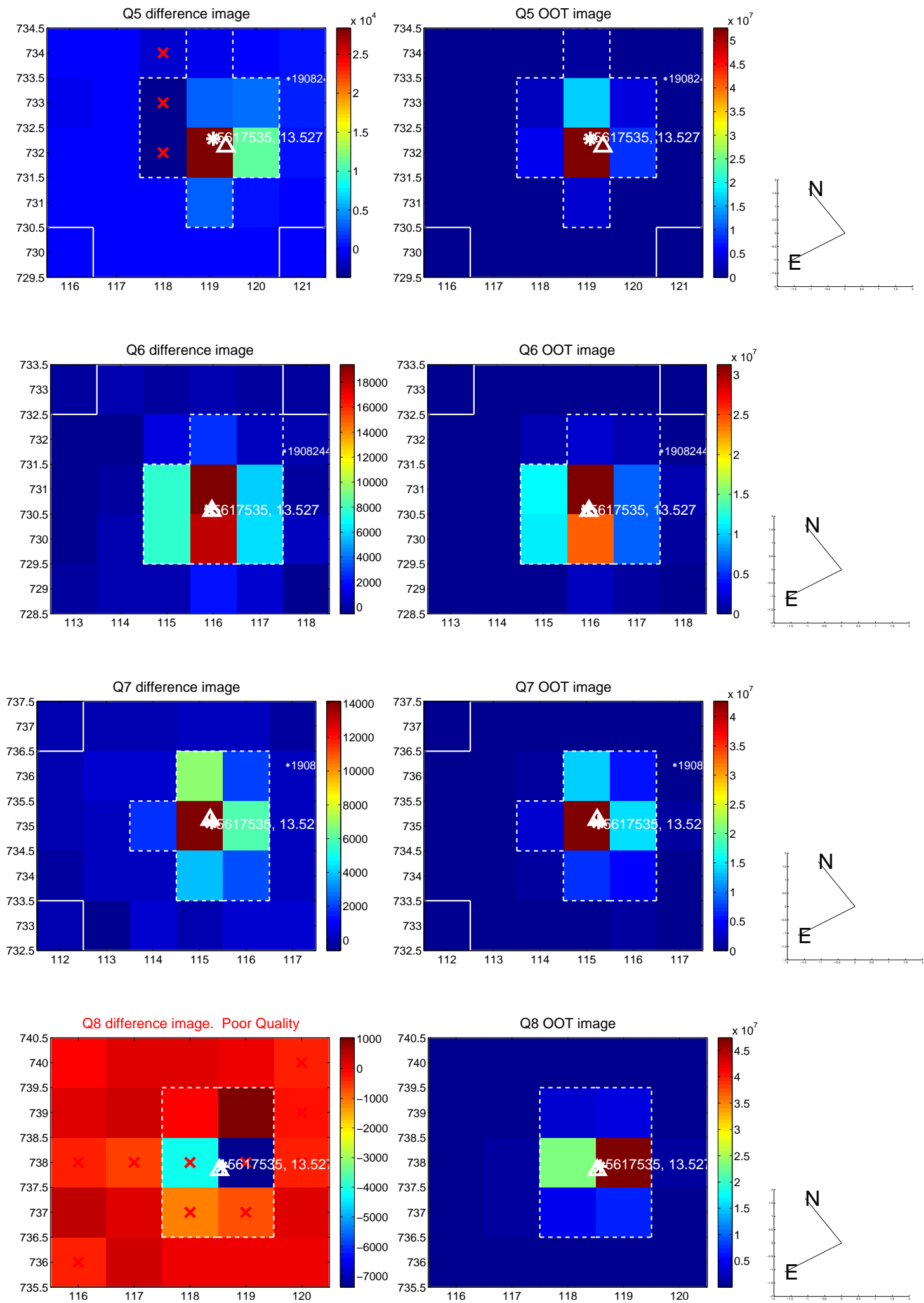


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

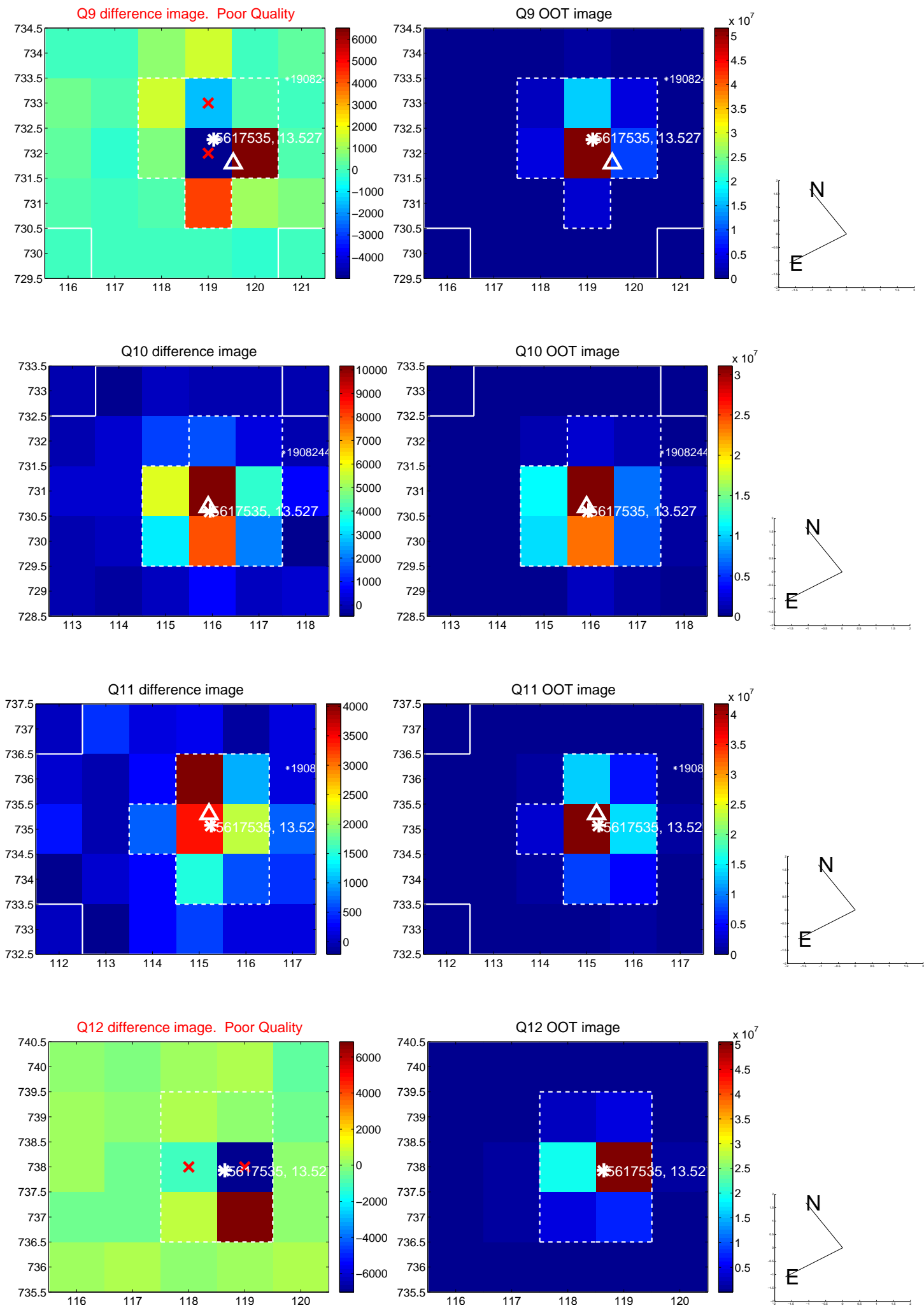
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



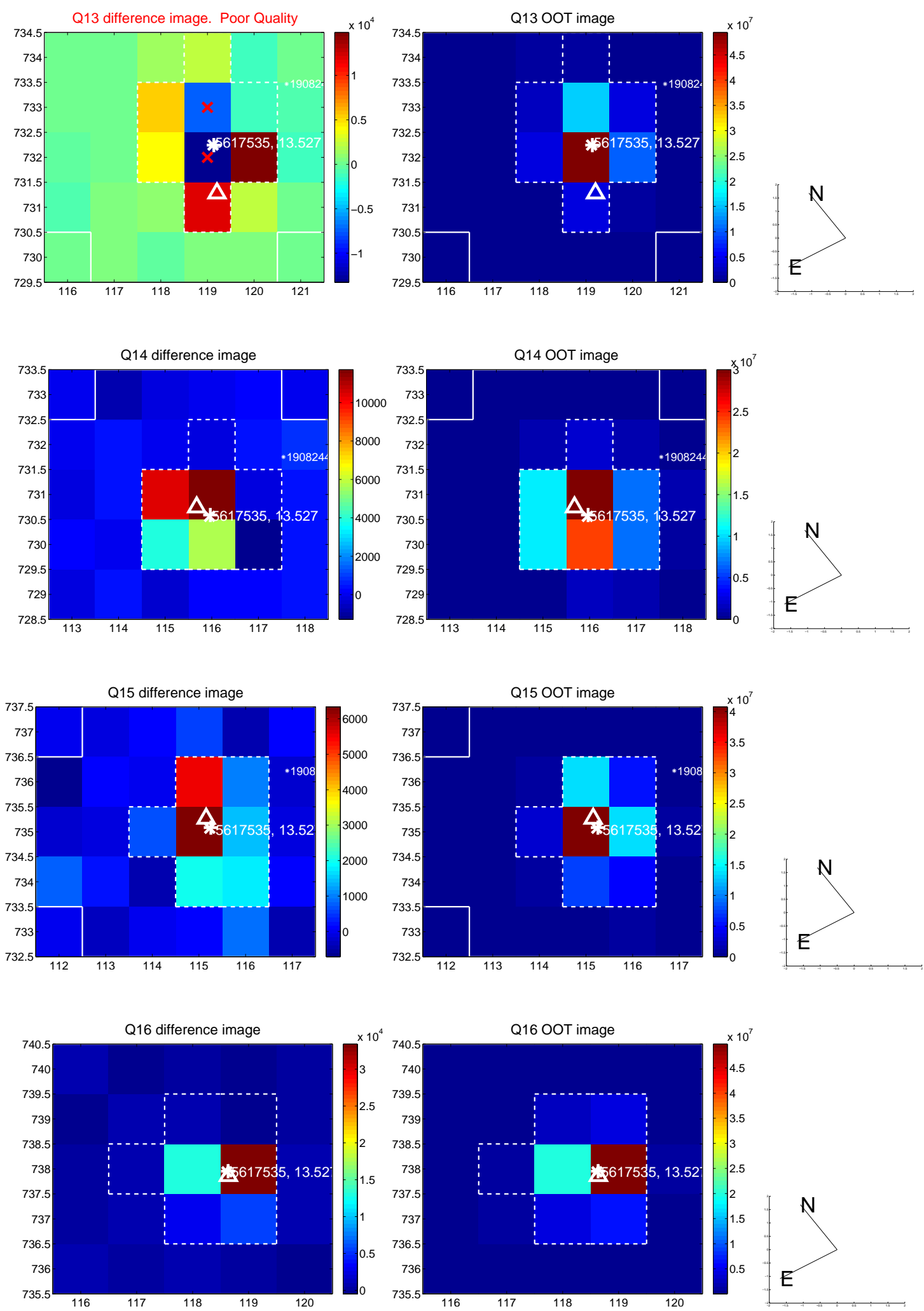
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



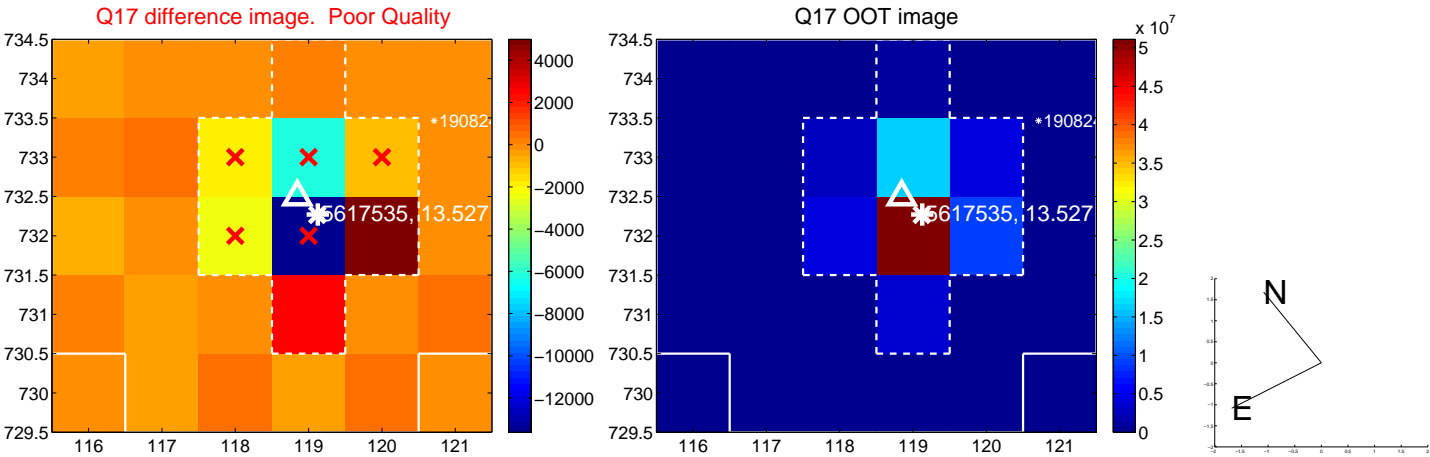
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



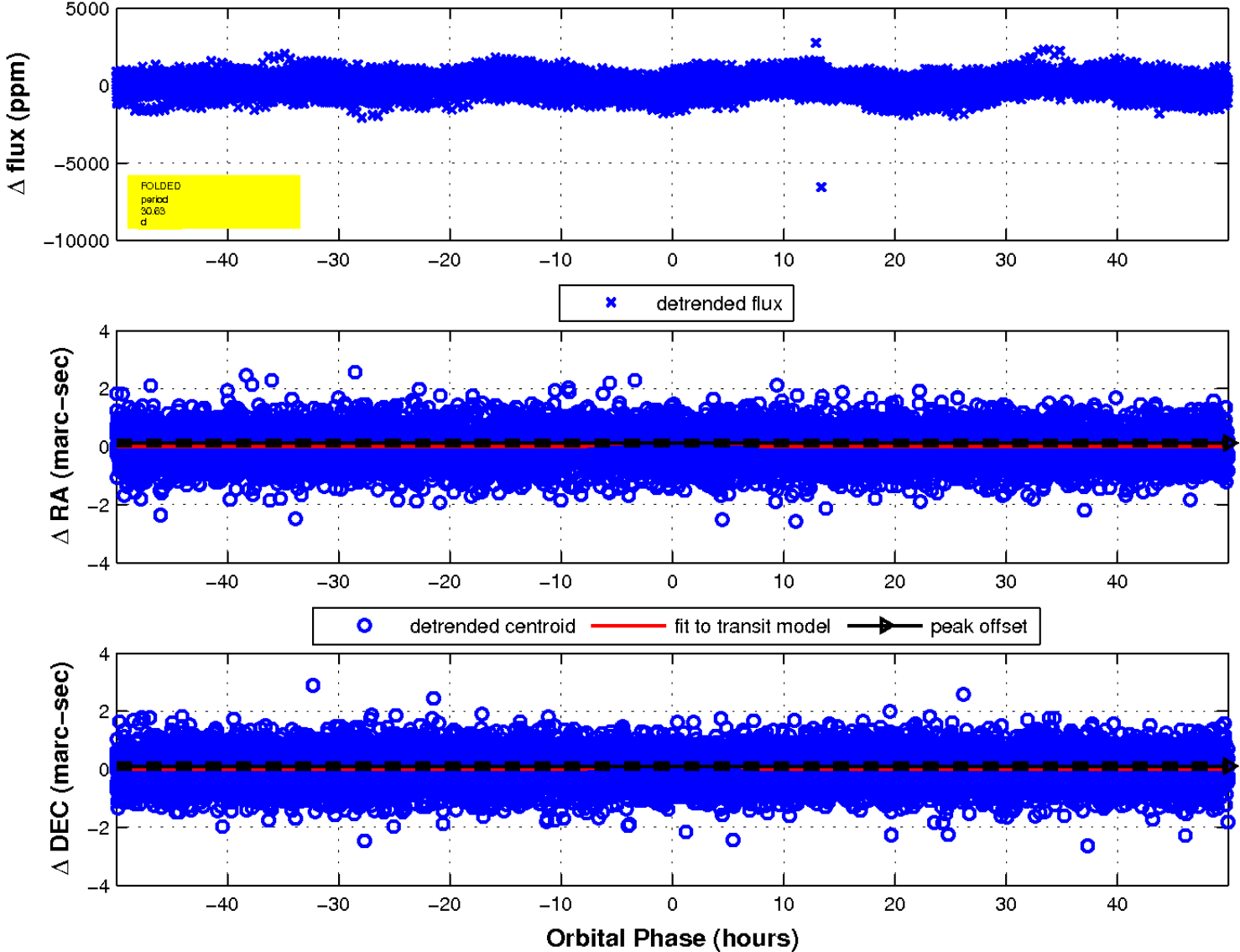
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

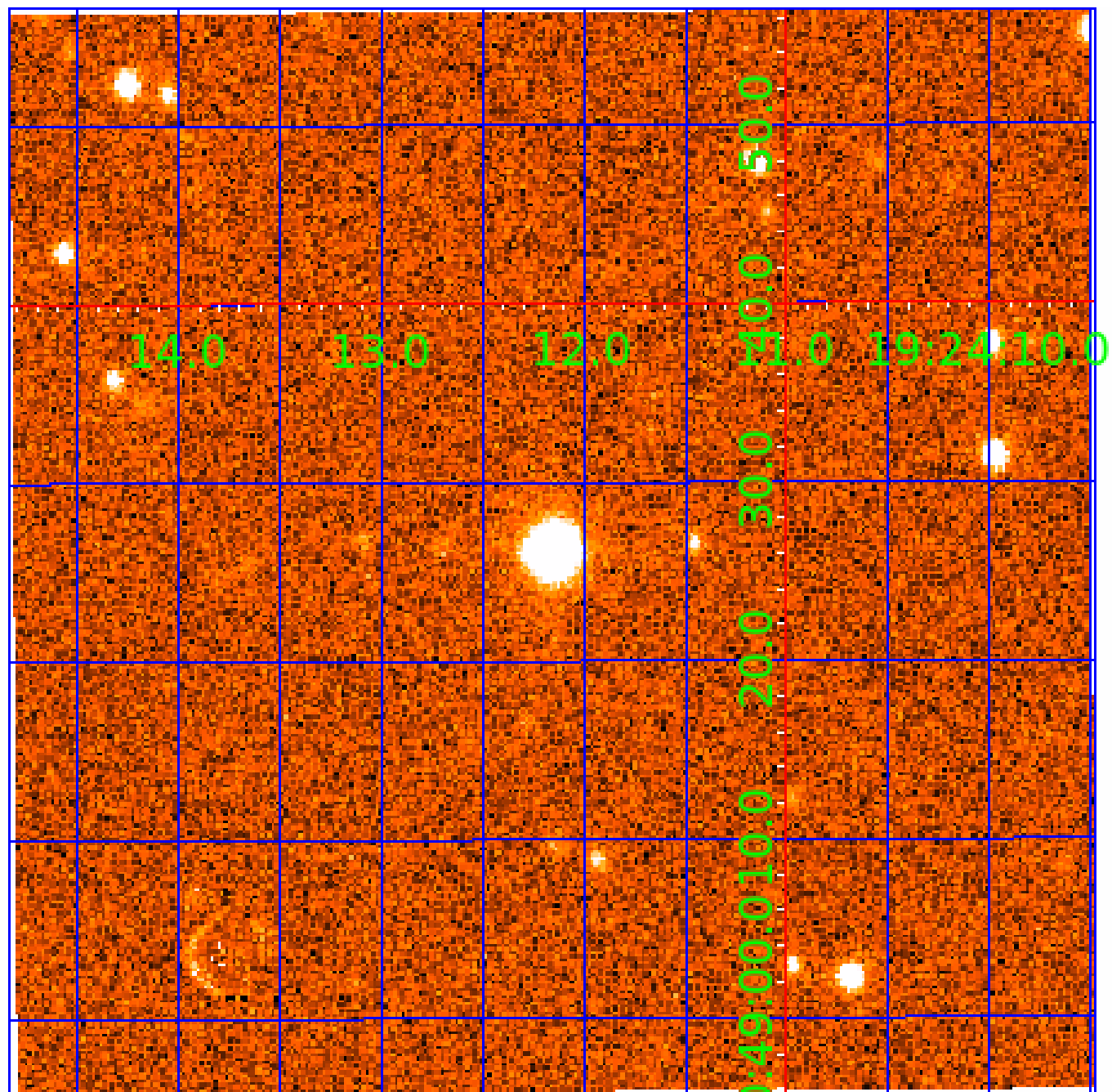


fluxWeightedCentroids, Planet 4 of 6



UKIRT Image

Declination



KIC 005617535

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})
005617535-01	OBS	No	1.739461	133.011420	77.9	3.567	10.2	10.1	2.31	6840	2.37	9499.05
005617535-02	OBS	No	1.210149	132.436598	71.9	5.431	10.1	9.3	2.31	6840	2.29	15409.23
005617535-03	OBS	No	132.979607	246.887132	1295.6	10.041	9.5	9.2	2.31	6840	15.43	29.28
005617535-04	OBS	No	30.629299	156.422118	416.3	16.665	8.4	8.0	2.31	6840	5.67	207.36
005617535-05	OBS	No	99.544831	160.895939	1068.8	8.182	9.2	9.2	2.31	6840	10.37	43.07
005617535-06	OBS	No	326.576571	376.652413	280.1	3.500	8.6	-1.0	2.31	6840	3.90	8.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005617535-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005617535-02	OBS	FP	0.00	1	0	0	0	LPP_DV
005617535-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT
005617535-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT
005617535-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
005617535-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—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.

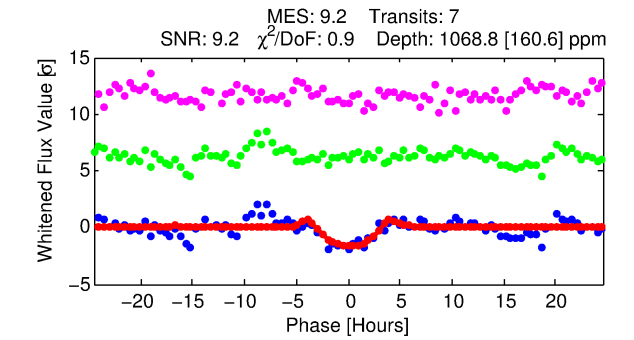
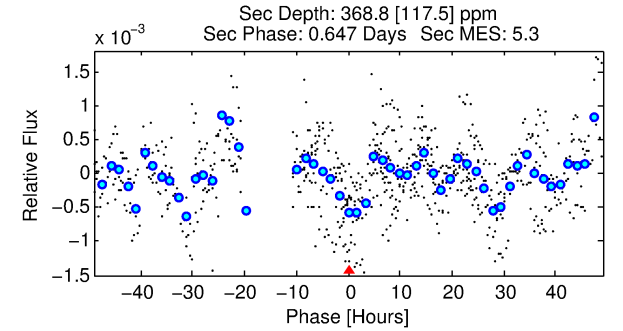
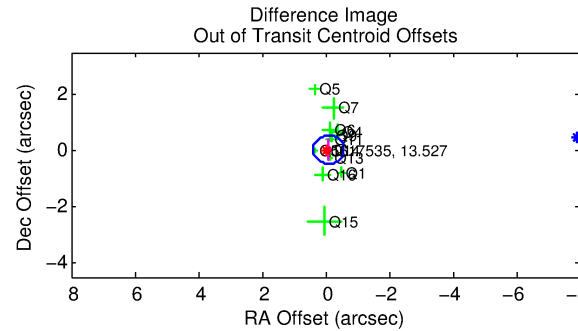
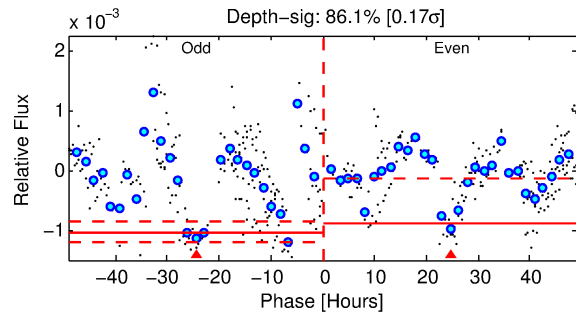
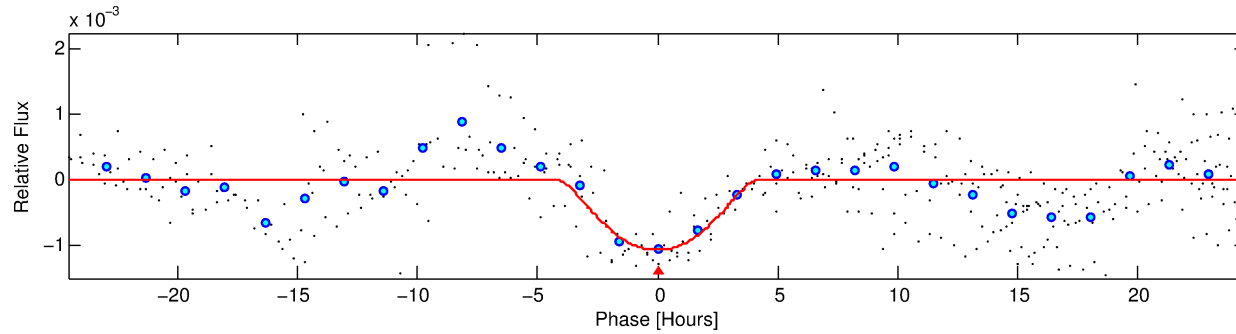
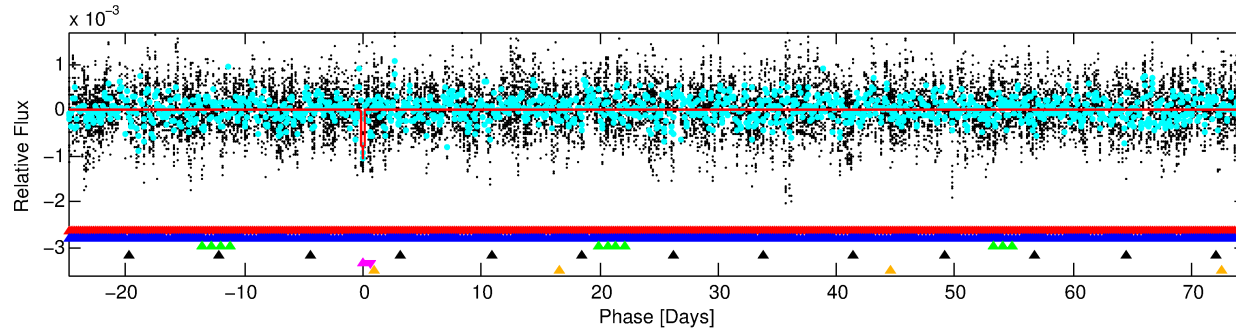
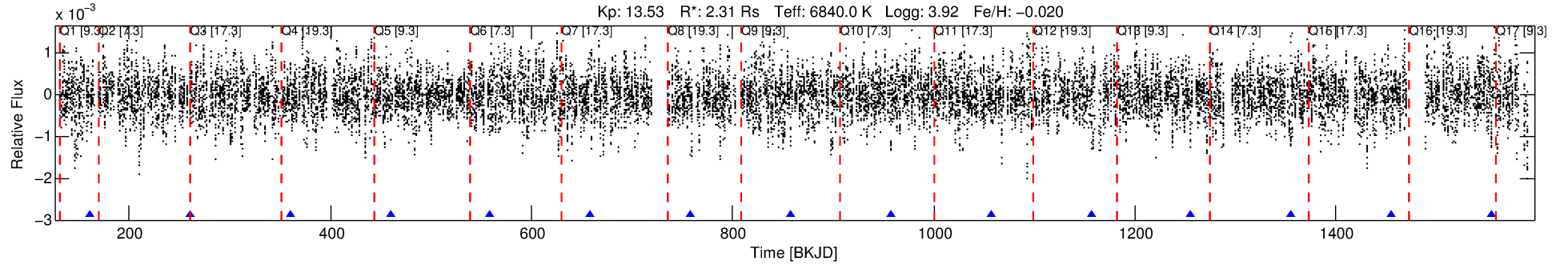
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005617535-05

No Significant Match Found

DV One-Page Summary

KIC: 5617535 Candidate: 5 of 6 Period: 99.545 d



DV Fit Results:

Period = 99.54483 [0.00213] d
Epoch = 160.8959 [0.0174] BKJD
Rp/R* = 0.0412 [0.0149]
R* = 34.34 [6.45]
b = 0.97 [0.03]
Seff = 43.07 [14.27]
Teq = 653 [54] K
Rp = 10.37 [4.51] Re
a = 0.4918 [0.1058] AU
Ag = 456.40 [390.90] [1.16 σ]
Teffp = 4668 [925] K [4.33 σ]

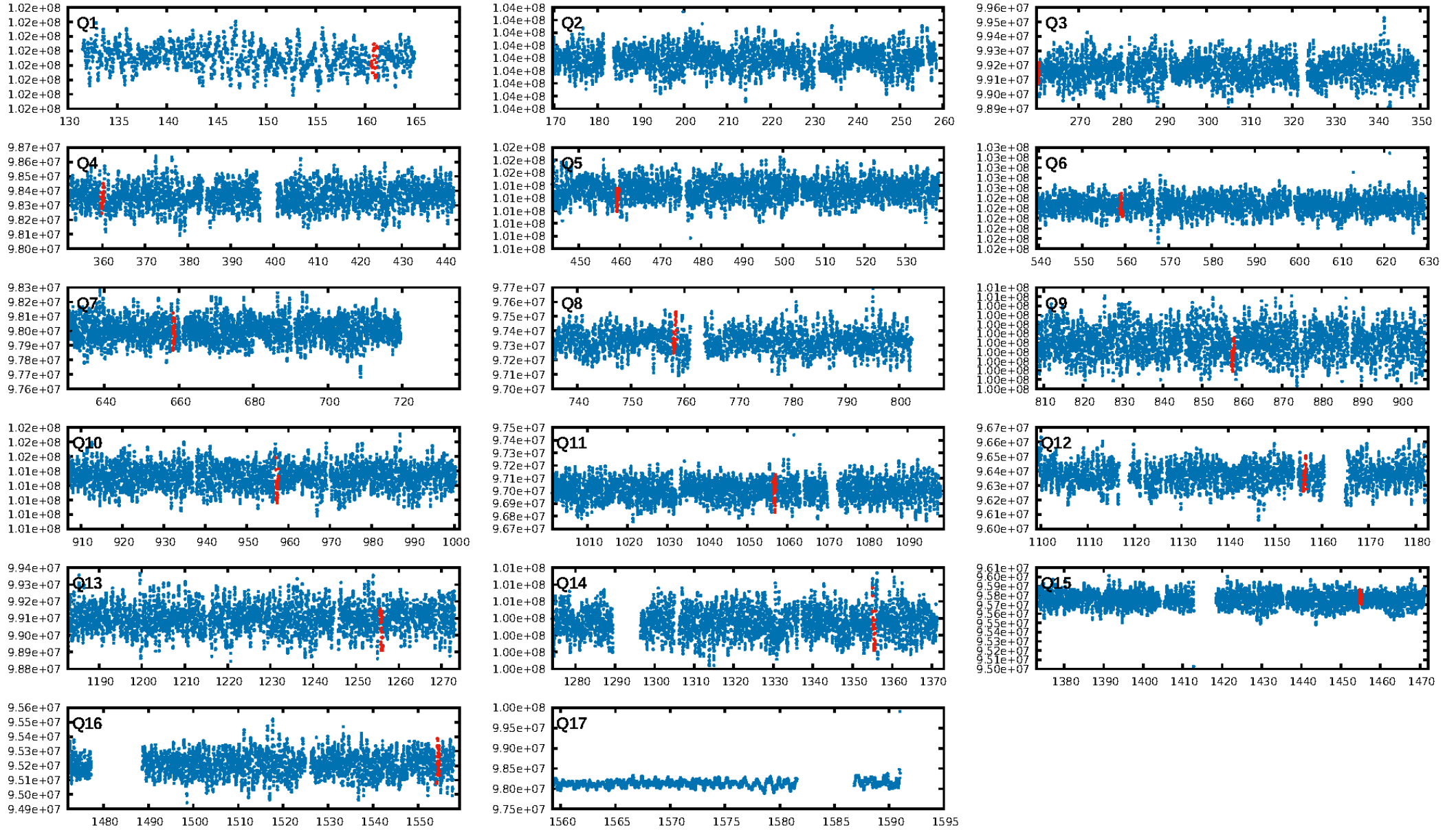
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [89.09 σ]
LongPeriod-sig: 100.0% [61.95 σ]
ModelChiSquare2-sig: 71.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -0.1385
Centroid-sig: 15.2%
Centroid-so: 0.165 arcsec [1.11 σ]
OotOffset-rm: 0.093 arcsec [0.57 σ]
OotOffset-st: 3/3/2/4 [12]
KicOffset-rm: 0.191 arcsec [1.14 σ]
KicOffset-st: 3/3/2/4 [12]
DiffImageQuality-fgm: 0.75 [9/12]
DiffImageOverlap-fno: 0.00 [0/13]

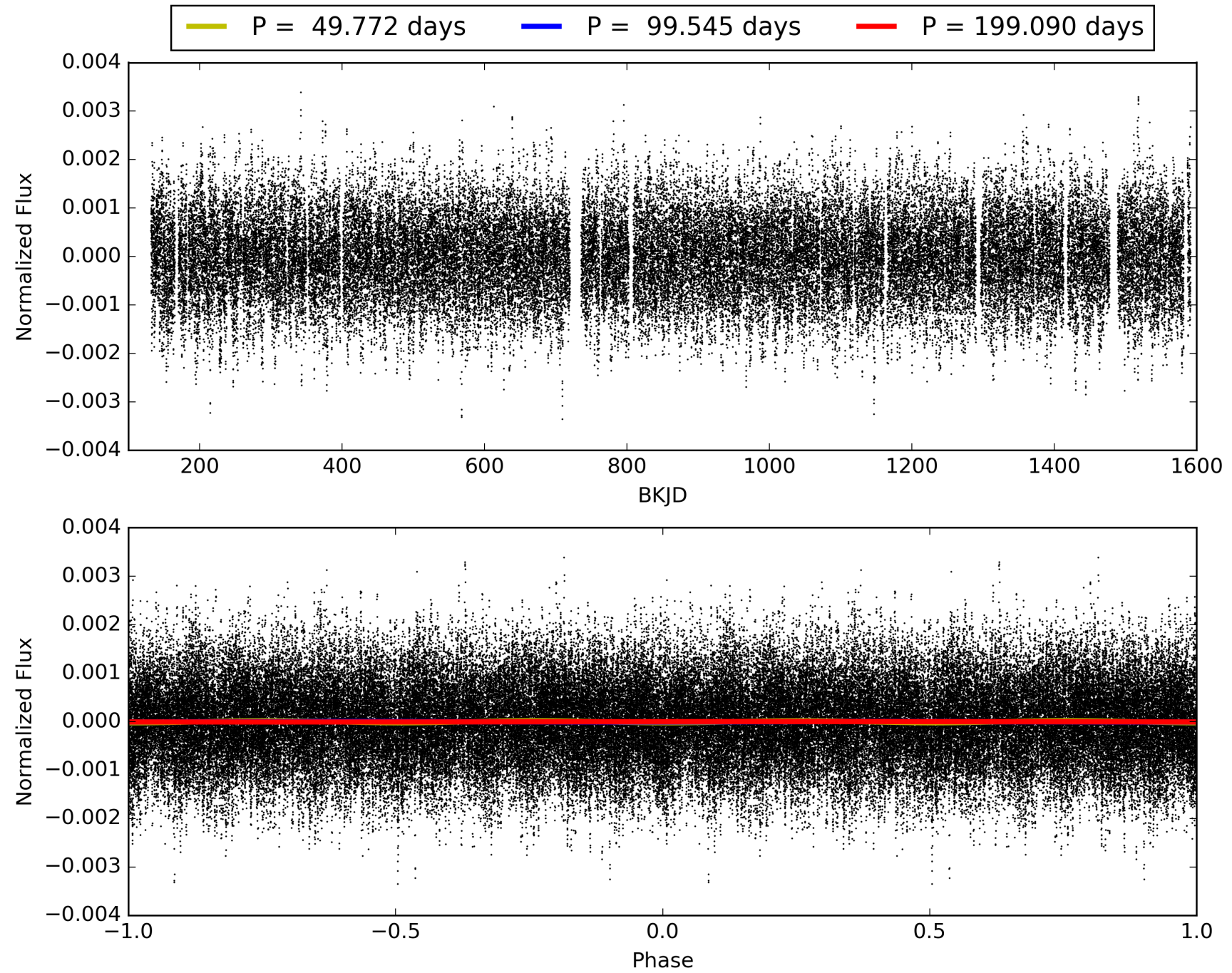
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:13:15 Z

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

TCE 005617535-05, PDC Light Curves

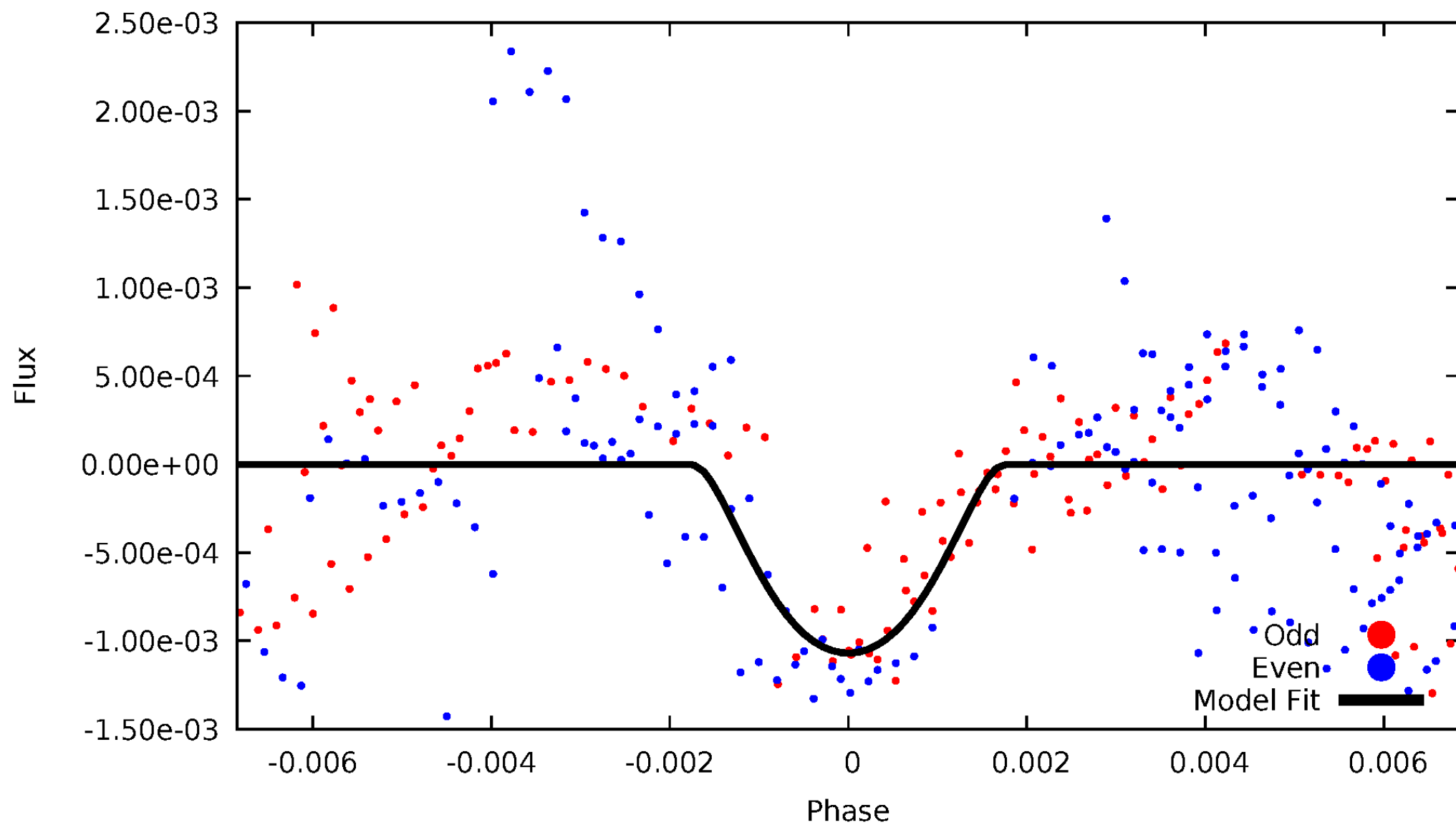


TCE 005617535-05



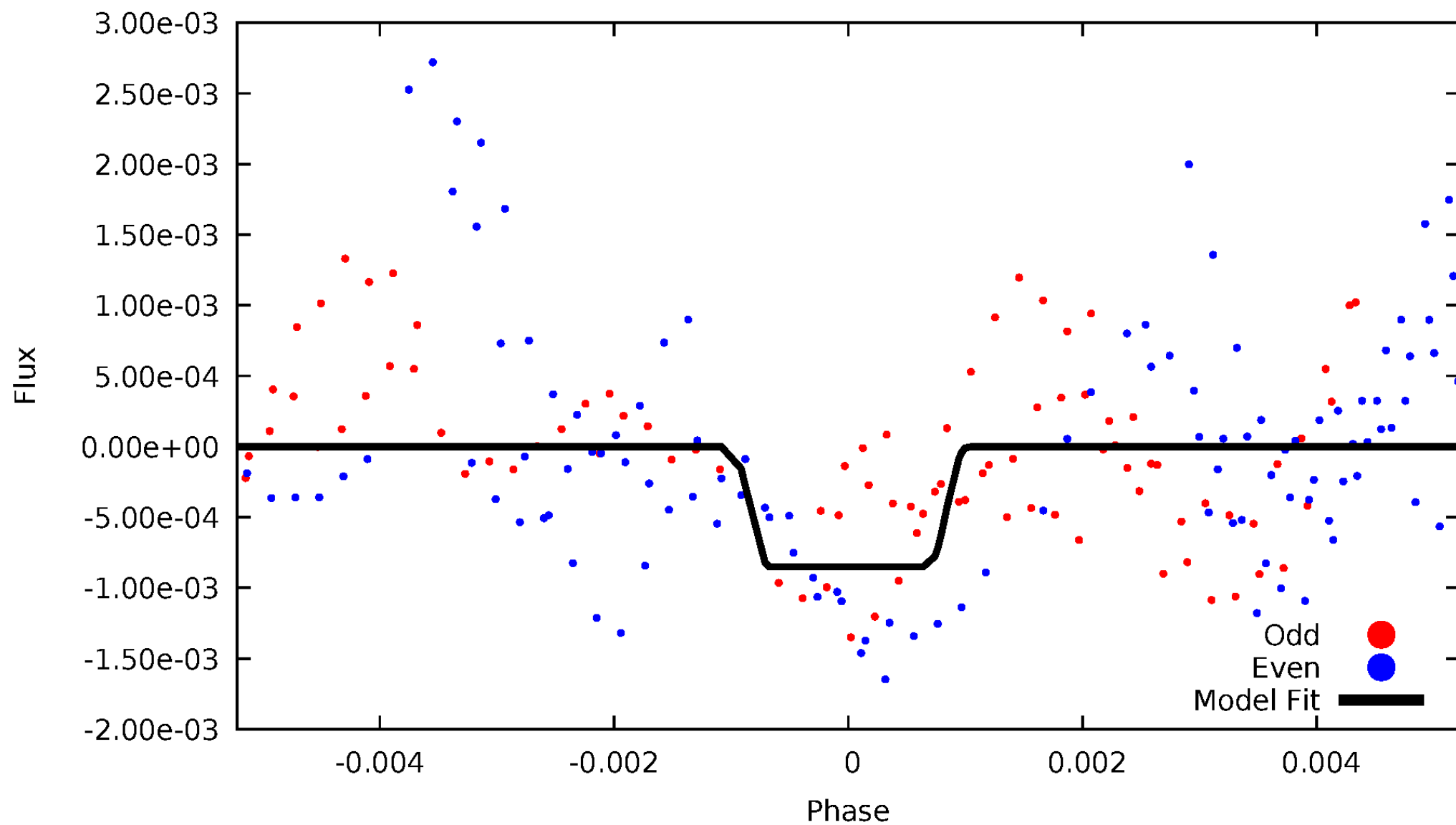
DV Odd/Even

TCE 005617535-05



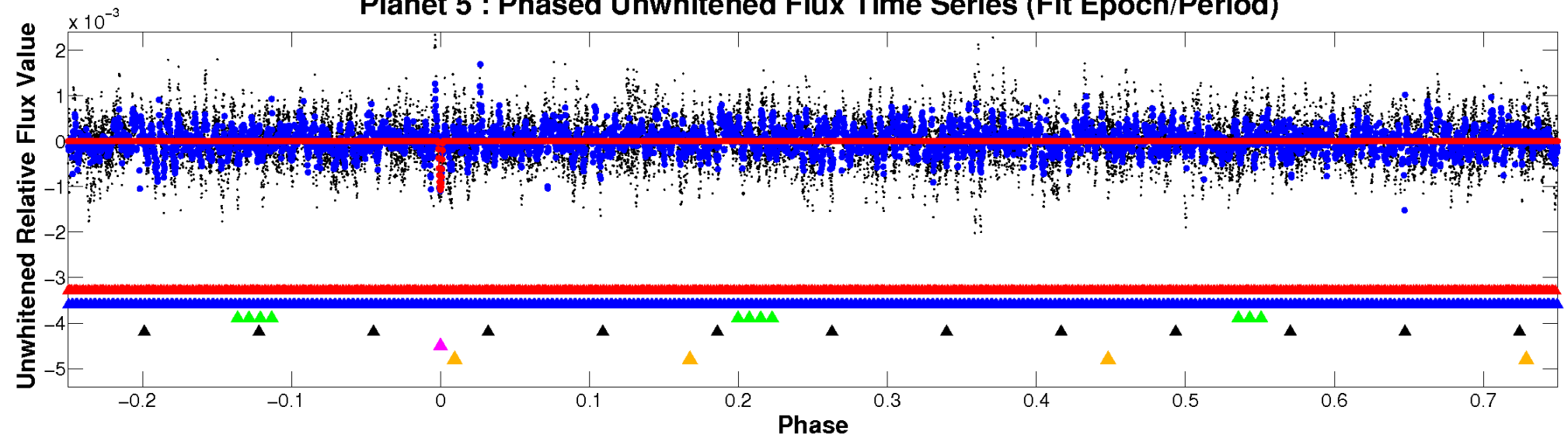
ALT Odd/Even

TCE 005617535-05

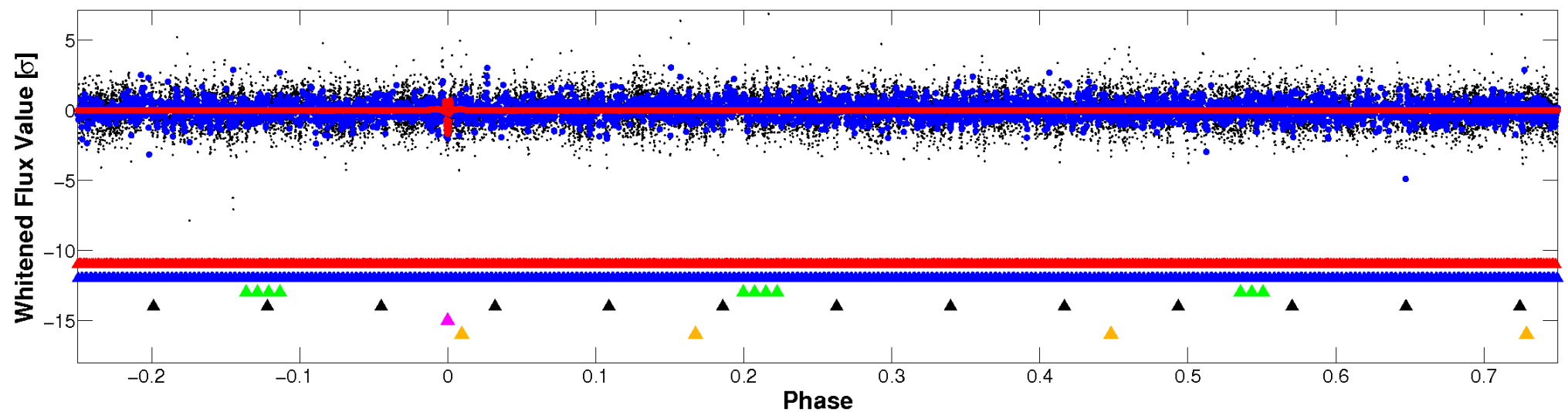


Non-Whitened Vs. Whitened Light Curve

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

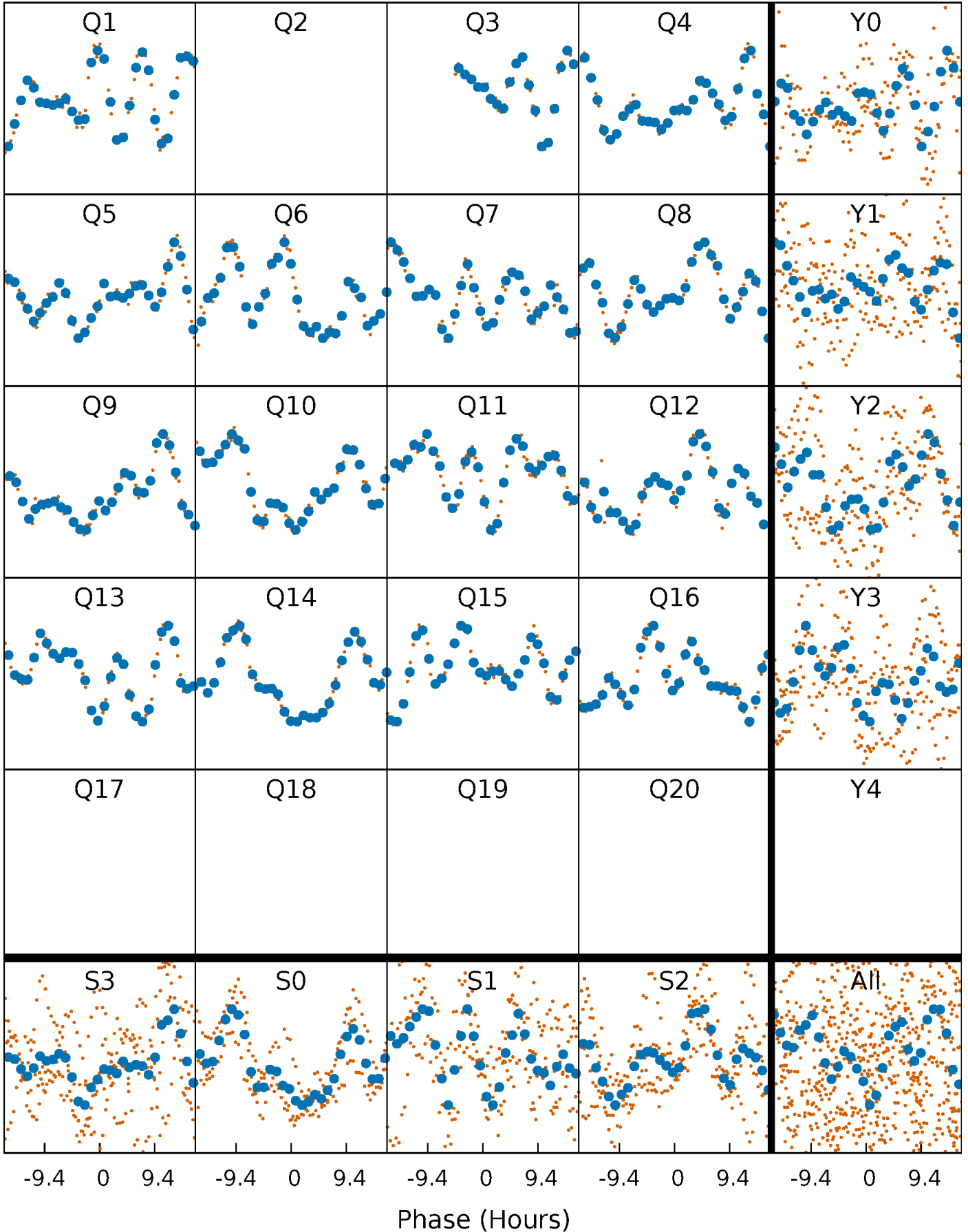


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



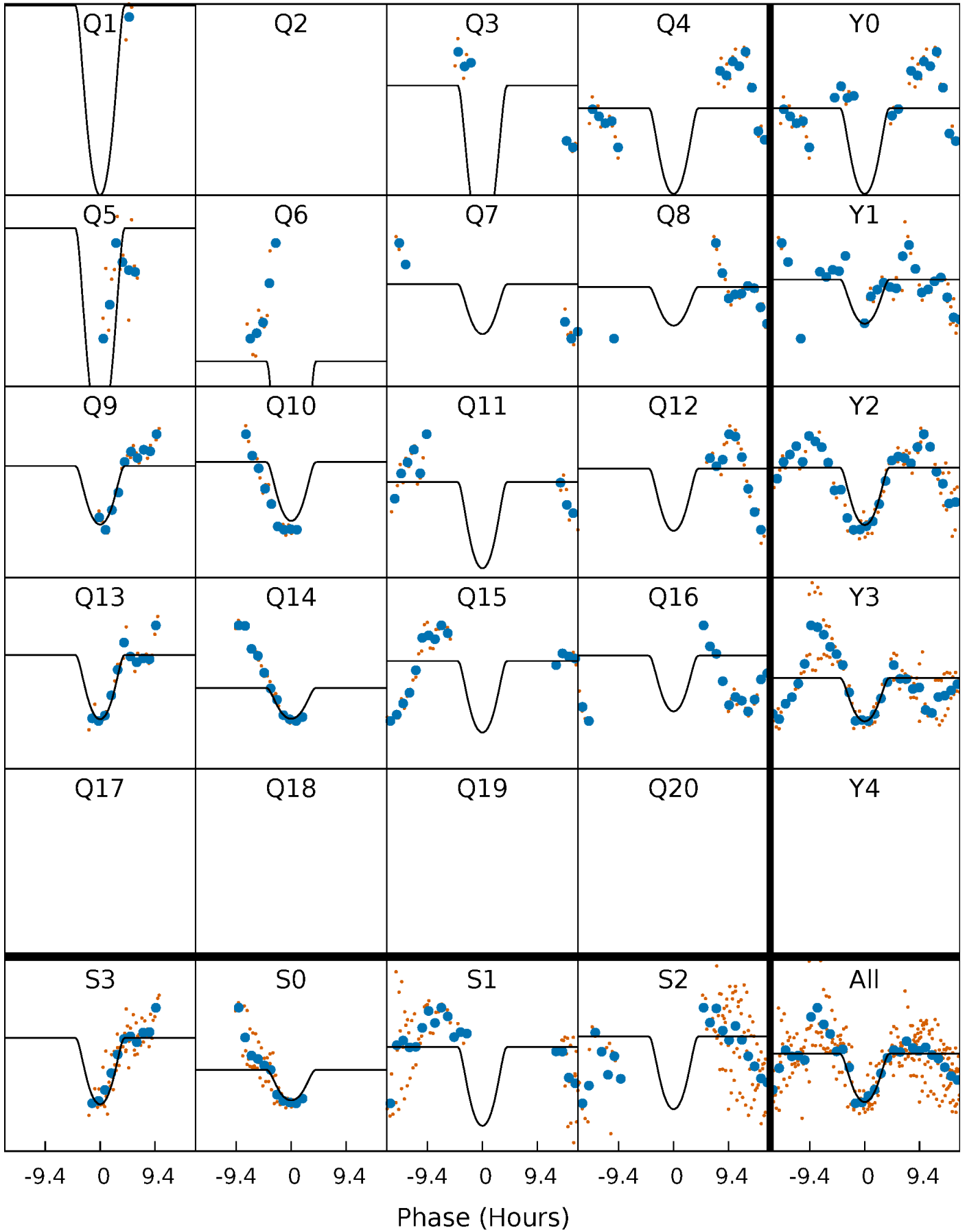
PDC Quarter-Phased Transit Curves

TCE 005617535-05 $P = 99.544831$ Days $T_0 = 160.895939$ (BKJD)



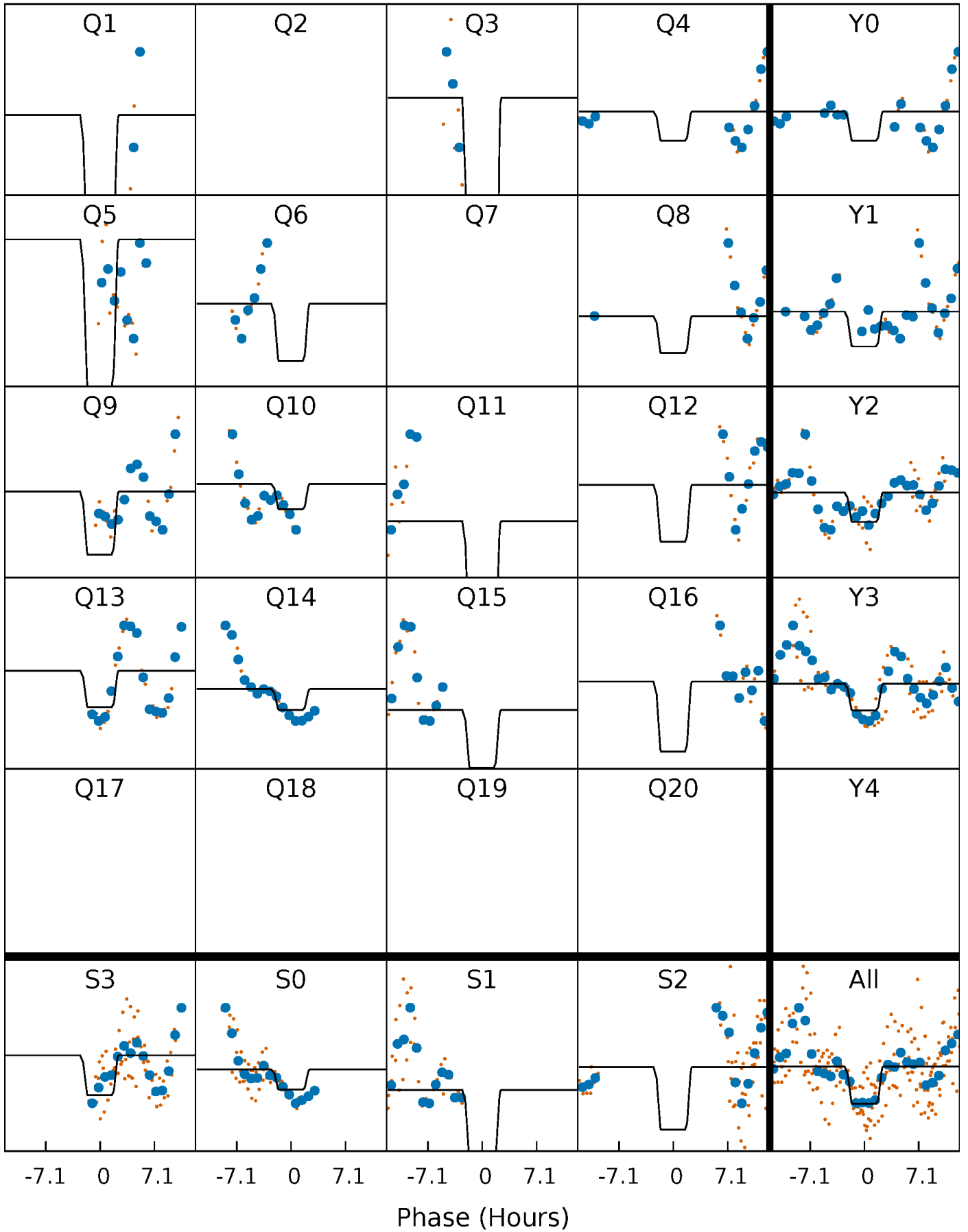
DV Quarter-Phased Transit Curves

TCE 005617535-05 P= 99.544831 Days $T_0=160.895939$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

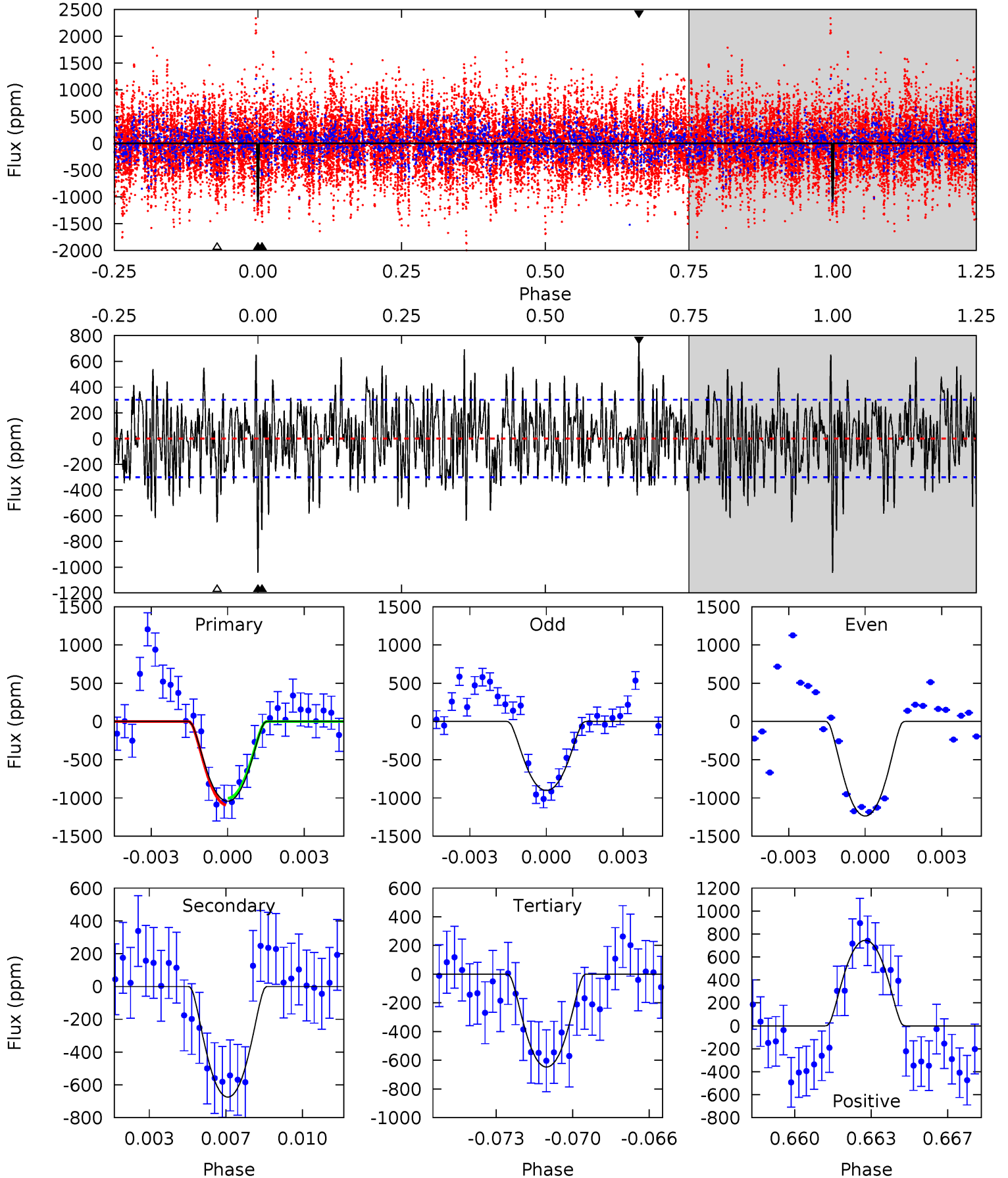
TCE 005617535-05 P= 99.541285 Days $T_0=160.915489$ (BKJD)



DV Model-Shift Uniqueness Test

005617535-05, P = 99.544831 Days, E = 61.351108 Days

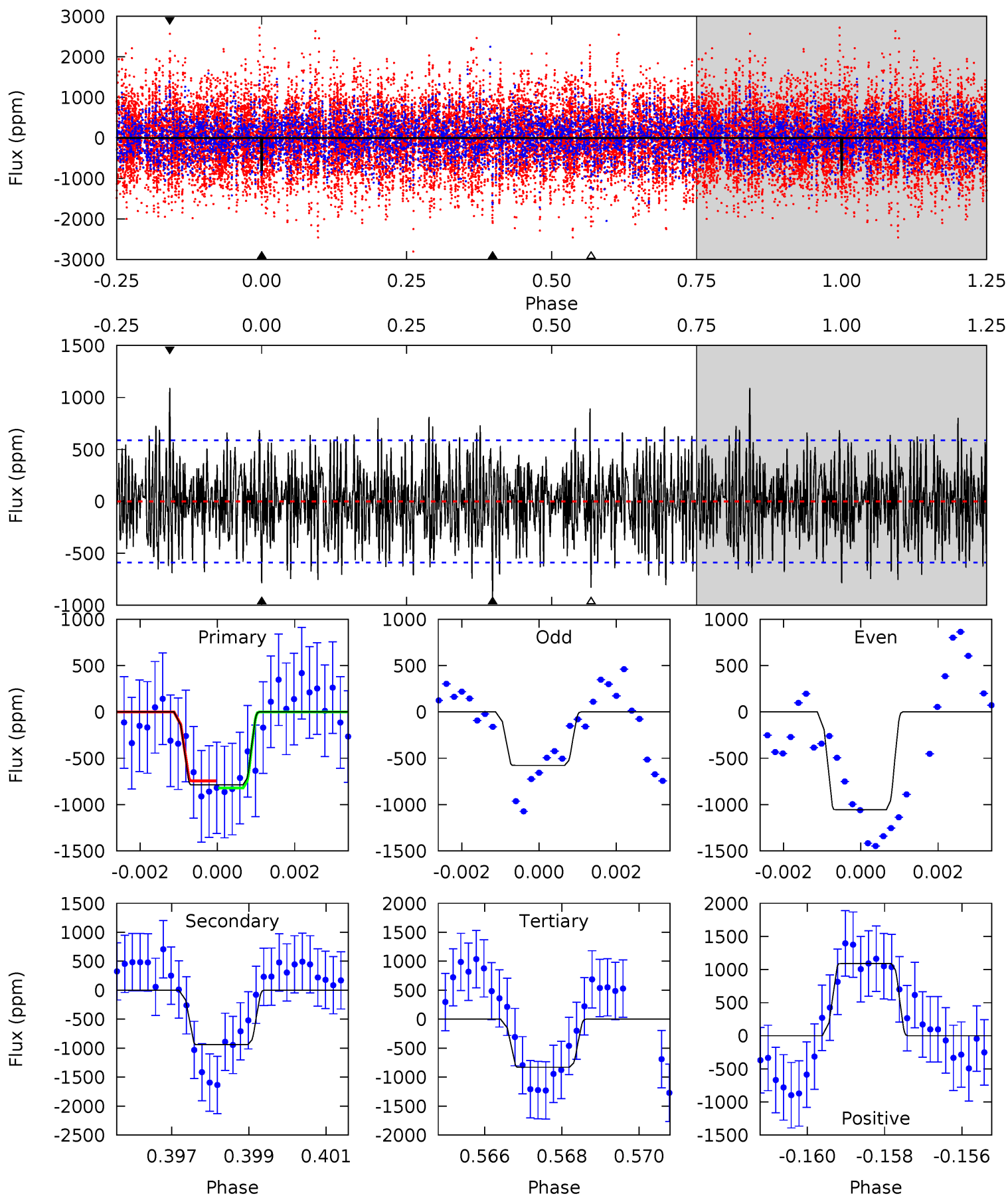
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.1	11.7	11.2	12.9	5.22	2.92	3.83	6.87	5.17	0.48	-1.22	2.89	0.33	0.42	0.77



Alt Model-Shift Uniqueness Test

005617535-05, P = 99.541285 Days, E = 61.374204 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.14	8.52	7.52	9.89	5.33	3.10	2.60	-0.39	-2.75	0.99	-1.37	2.14	0.77	0.54	0.34



Stellar Parameters For KIC 005617535

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6840^{+71}_{-82}	$3.917^{+0.186}_{-0.108}$	$-0.020^{+0.150}_{-0.150}$	$2.305^{+0.404}_{-0.556}$	$1.601^{+0.133}_{-0.192}$	$0.184^{+0.187}_{-0.070}$
	+1%/-1%	+5%/-3%	+750%/-750%	+18%/-24%	+8%/-12%	+102%/-38%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 005617535-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-675 ± 58	$10.17^{+3.89}_{-3.67}$	906^{+40}_{-54}	5402^{+1270}_{-648}	875^{+1269}_{-413}
Alt.	-939 ± 110	$7.02^{+4.26}_{-3.51}$	907^{+45}_{-59}	7159^{+3942}_{-1523}	2551^{+7752}_{-1561}

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 $A_{obs} \gg 1.0$

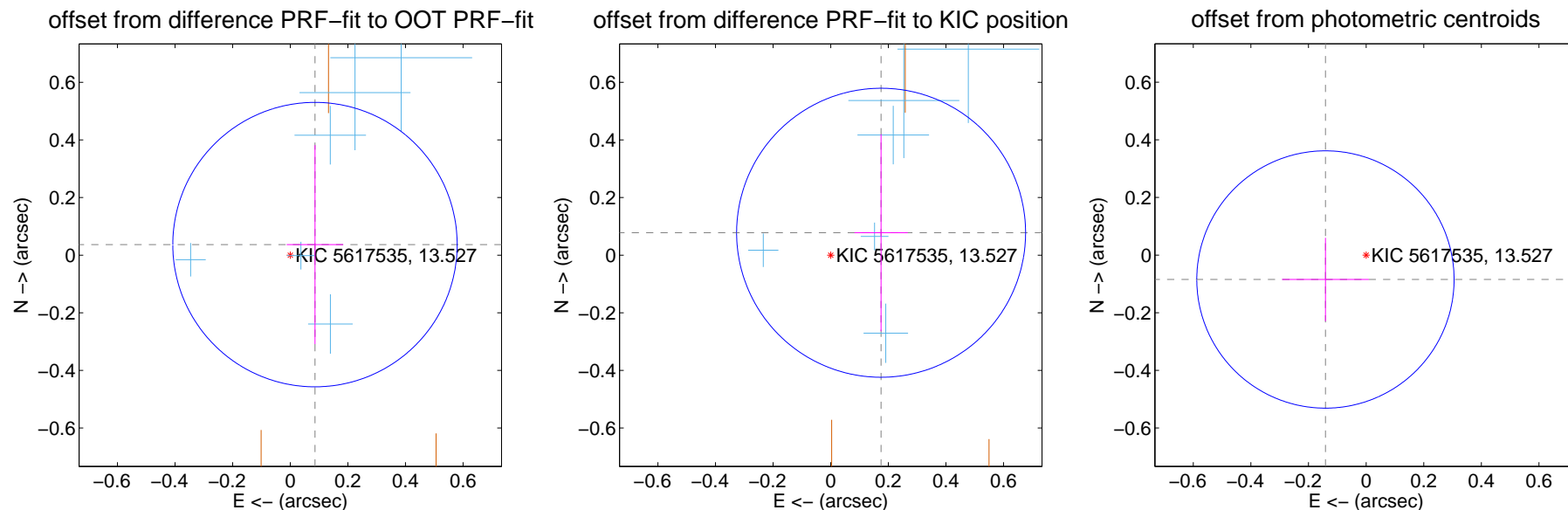
DV Centroid Data

Supplemental centroid analysis for 005617535-05. Kepler magnitude: 13.53. Transit SNR 9.18

There are 9 quarters with good PRF difference image offsets

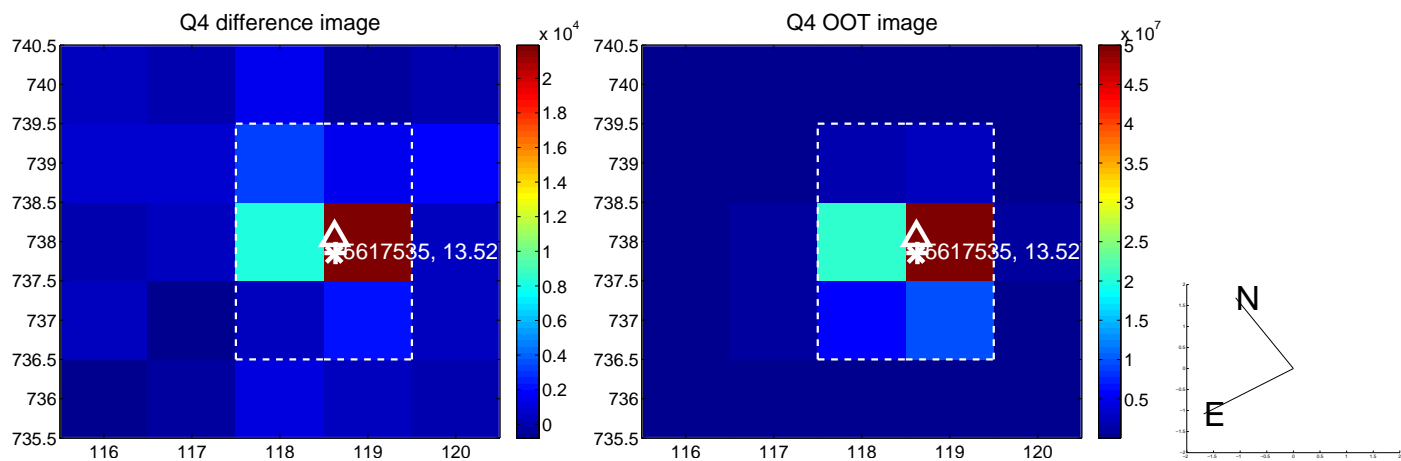
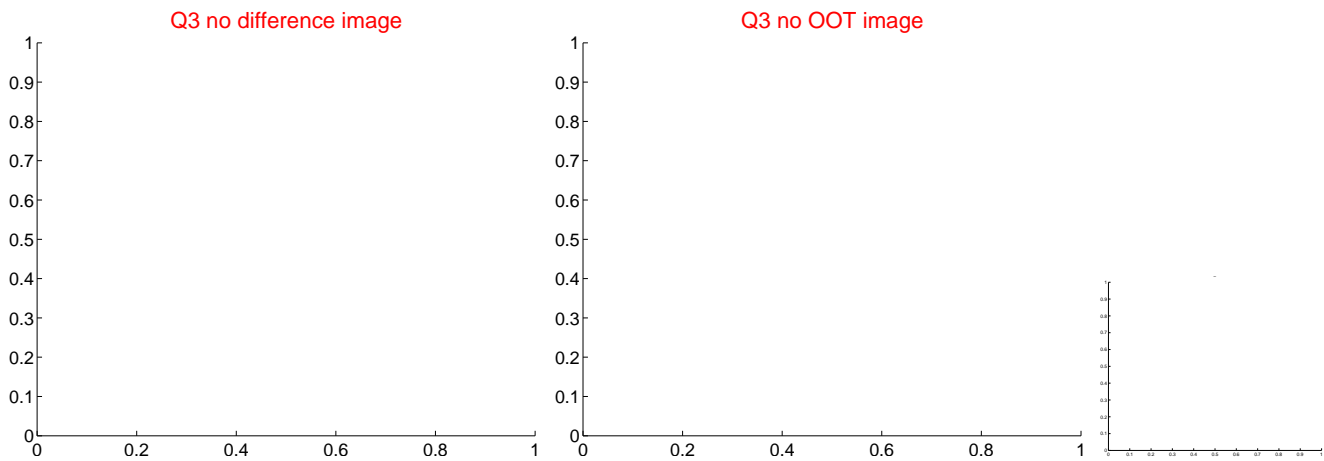
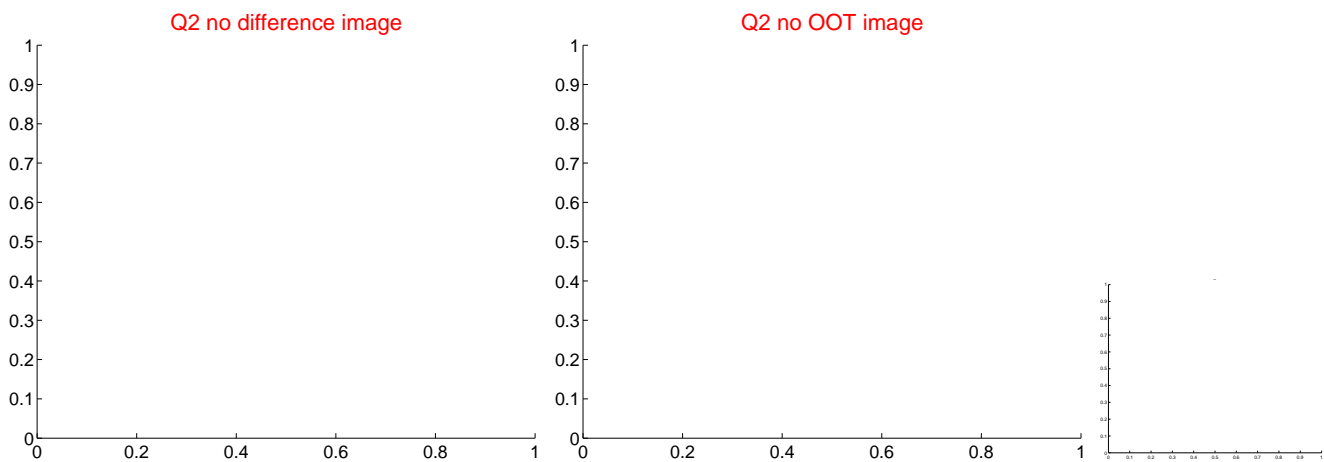
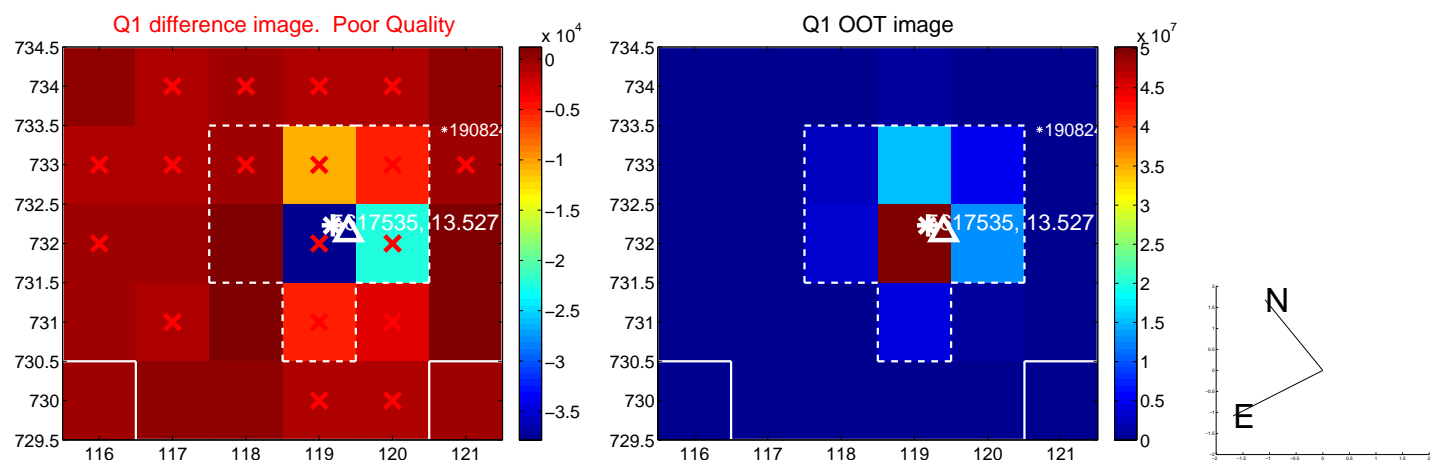
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.093 ± 0.165	0.57	-0.086 ± 0.098	0.037 ± 0.345
PRF-fit source offset from KIC position	0.191 ± 0.167	1.14	-0.175 ± 0.092	0.078 ± 0.342
photometric centroid source offset	0.16 ± 0.15	1.11	0.14 ± 0.15	-0.08 ± 0.14

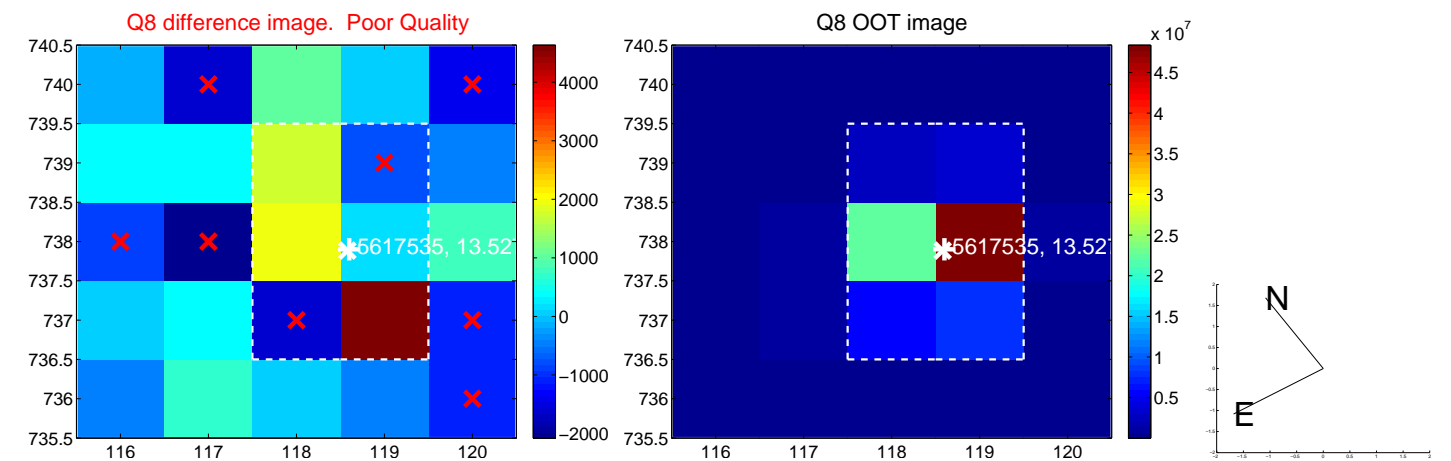
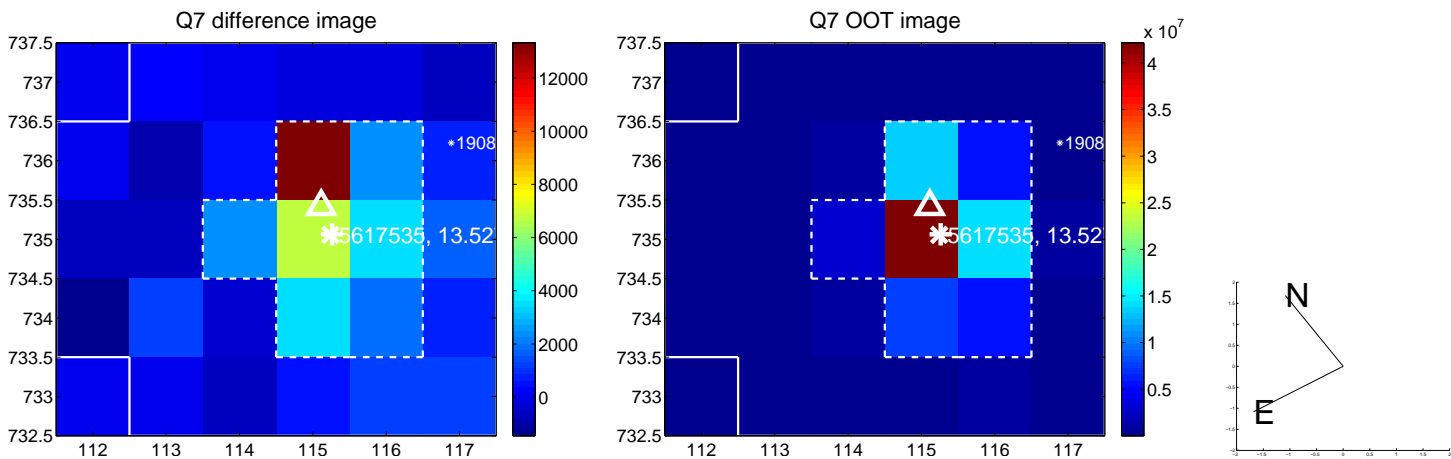
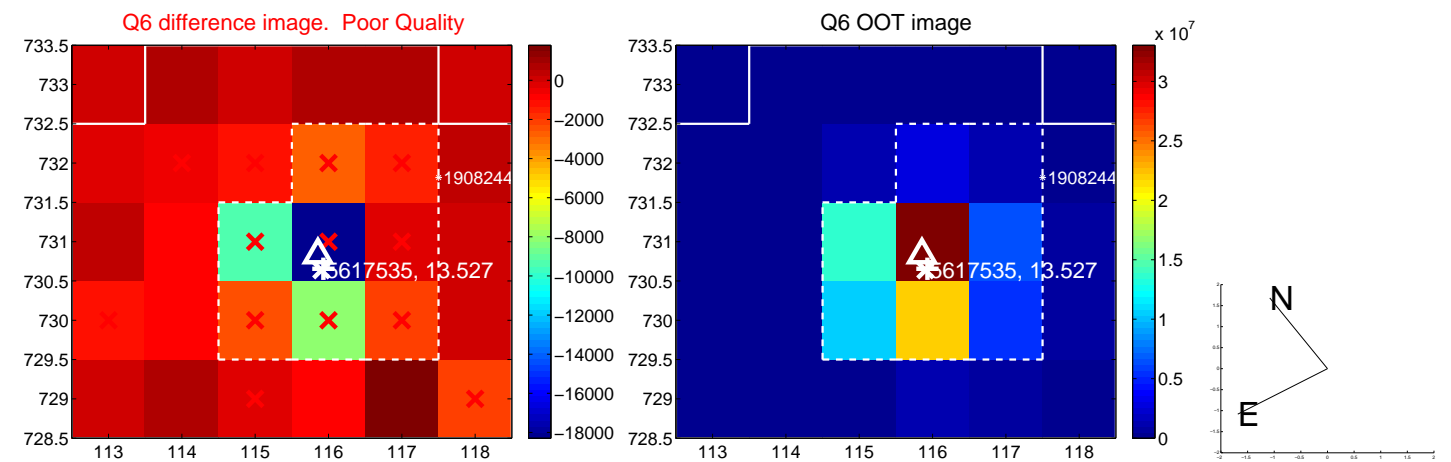
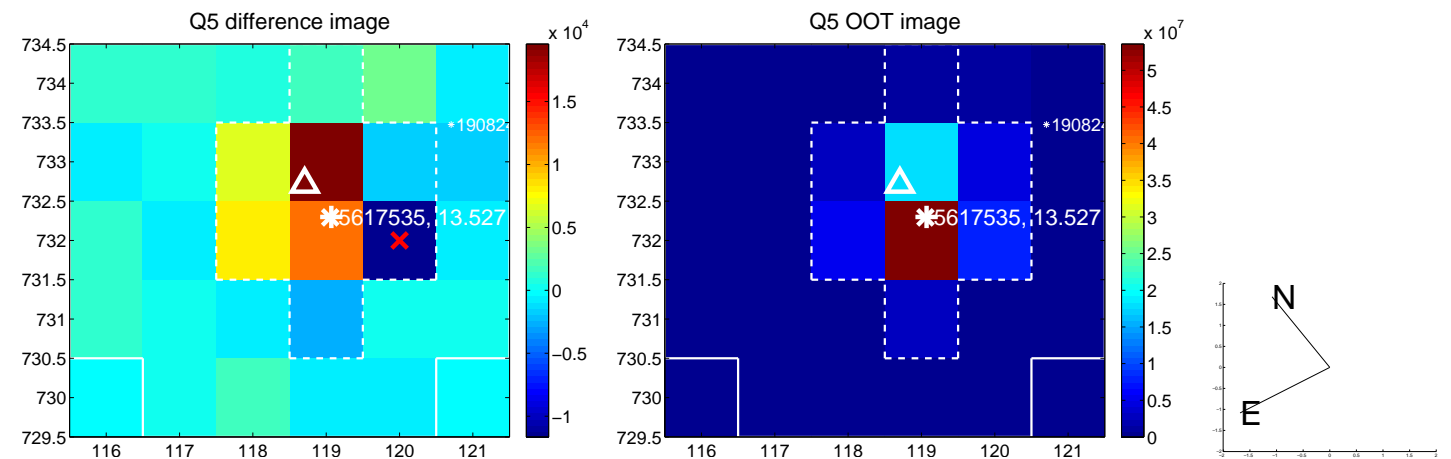


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

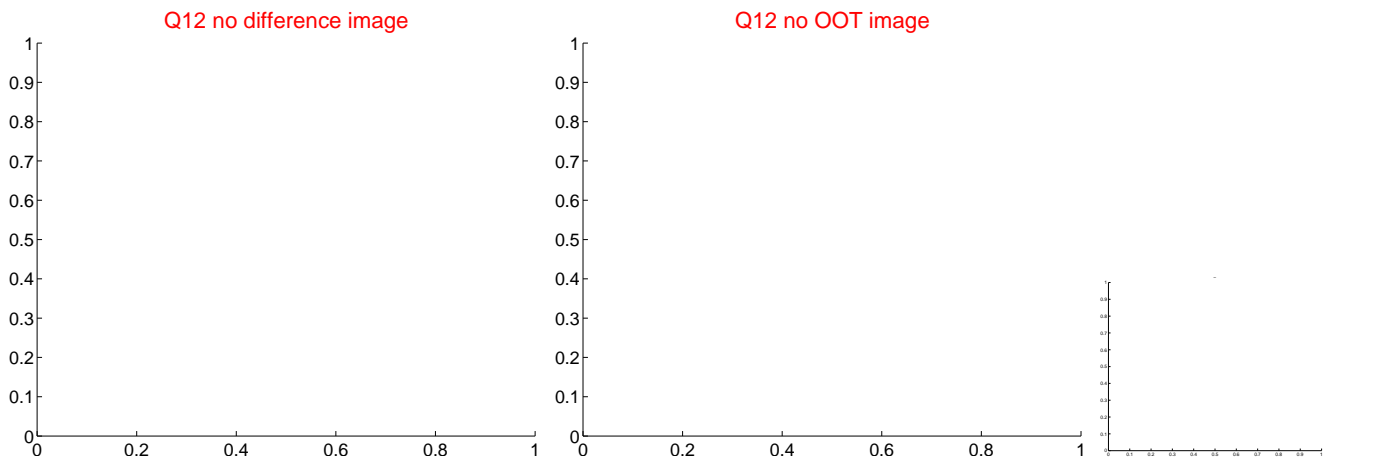
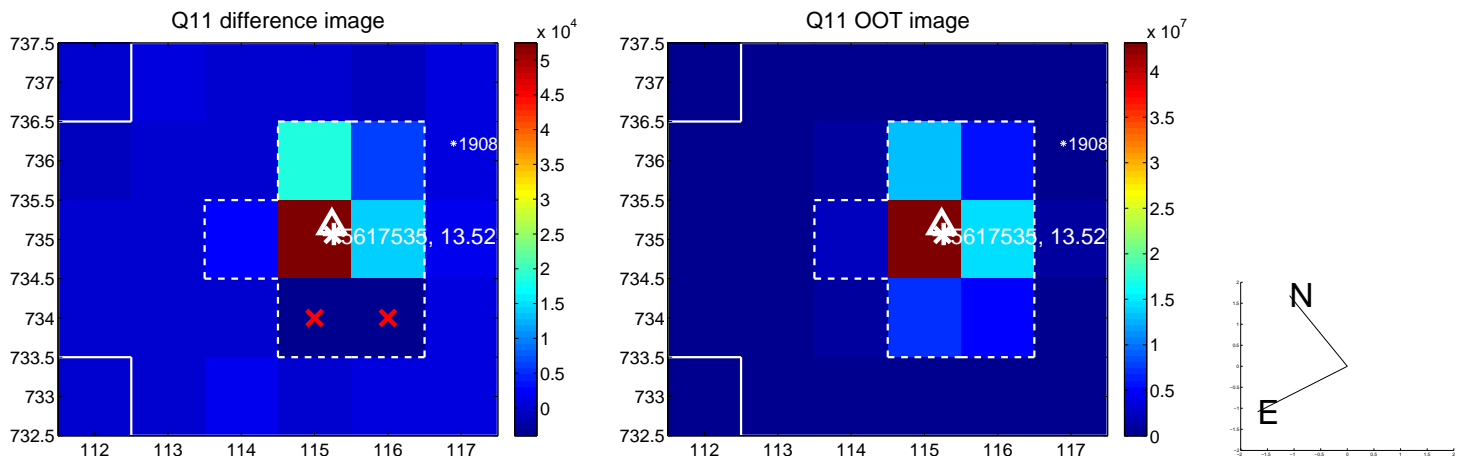
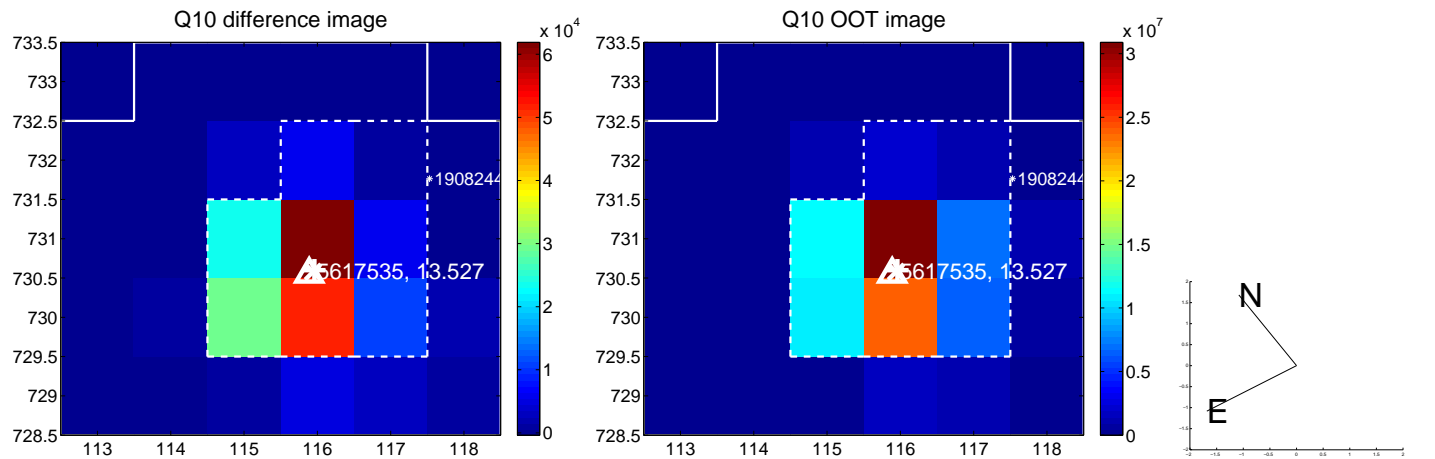
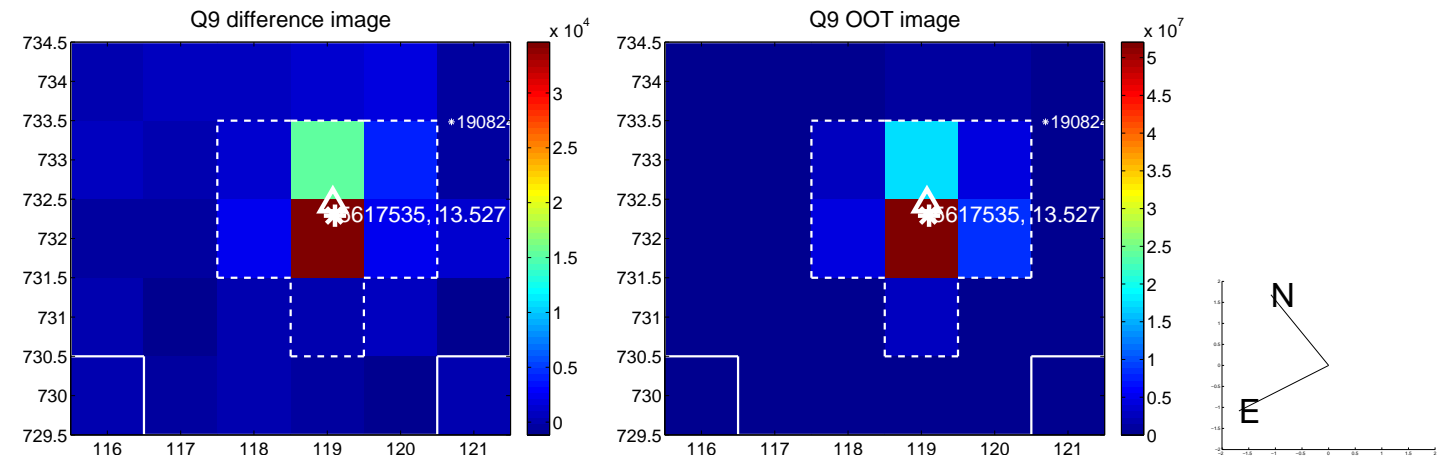
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



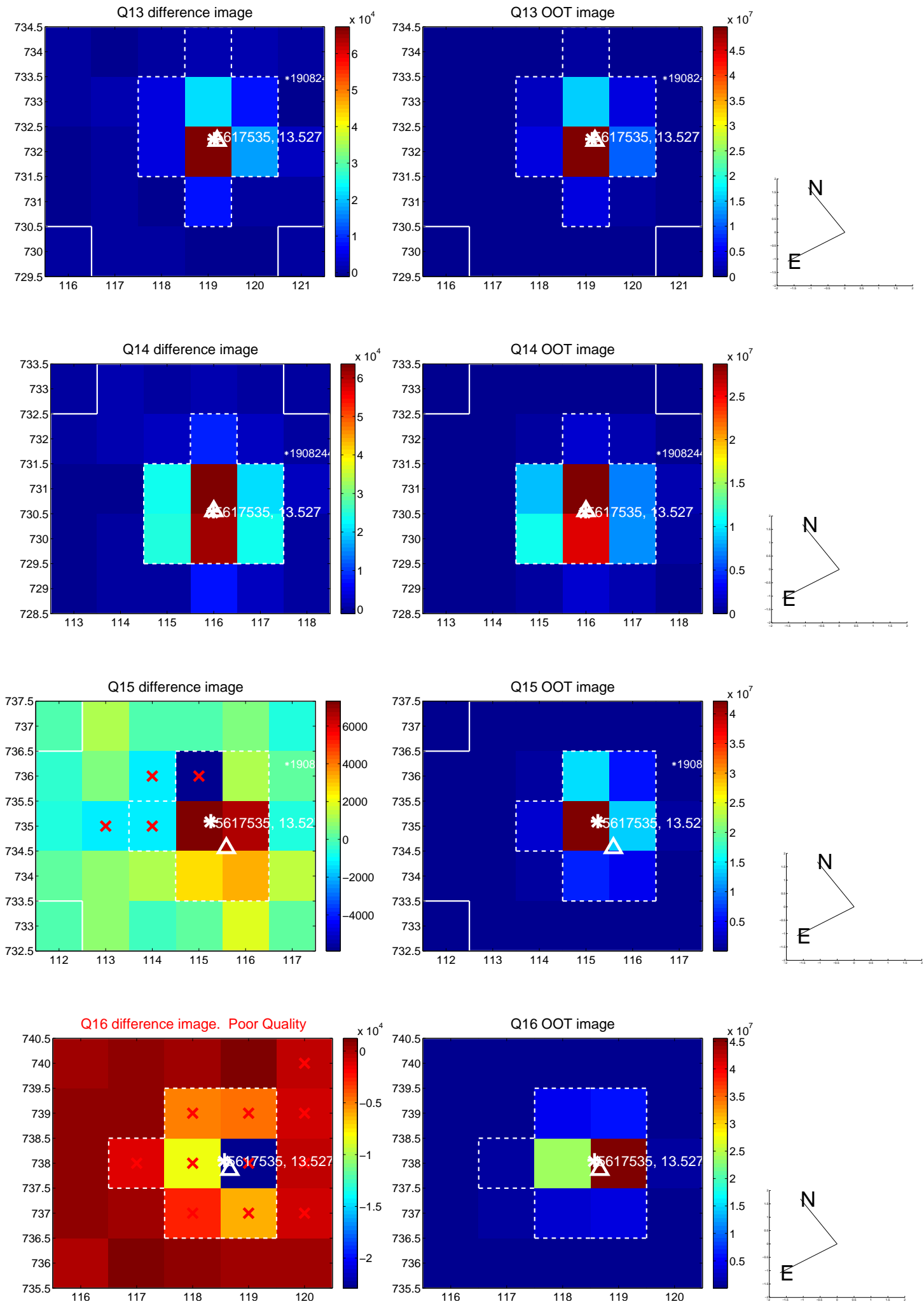
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



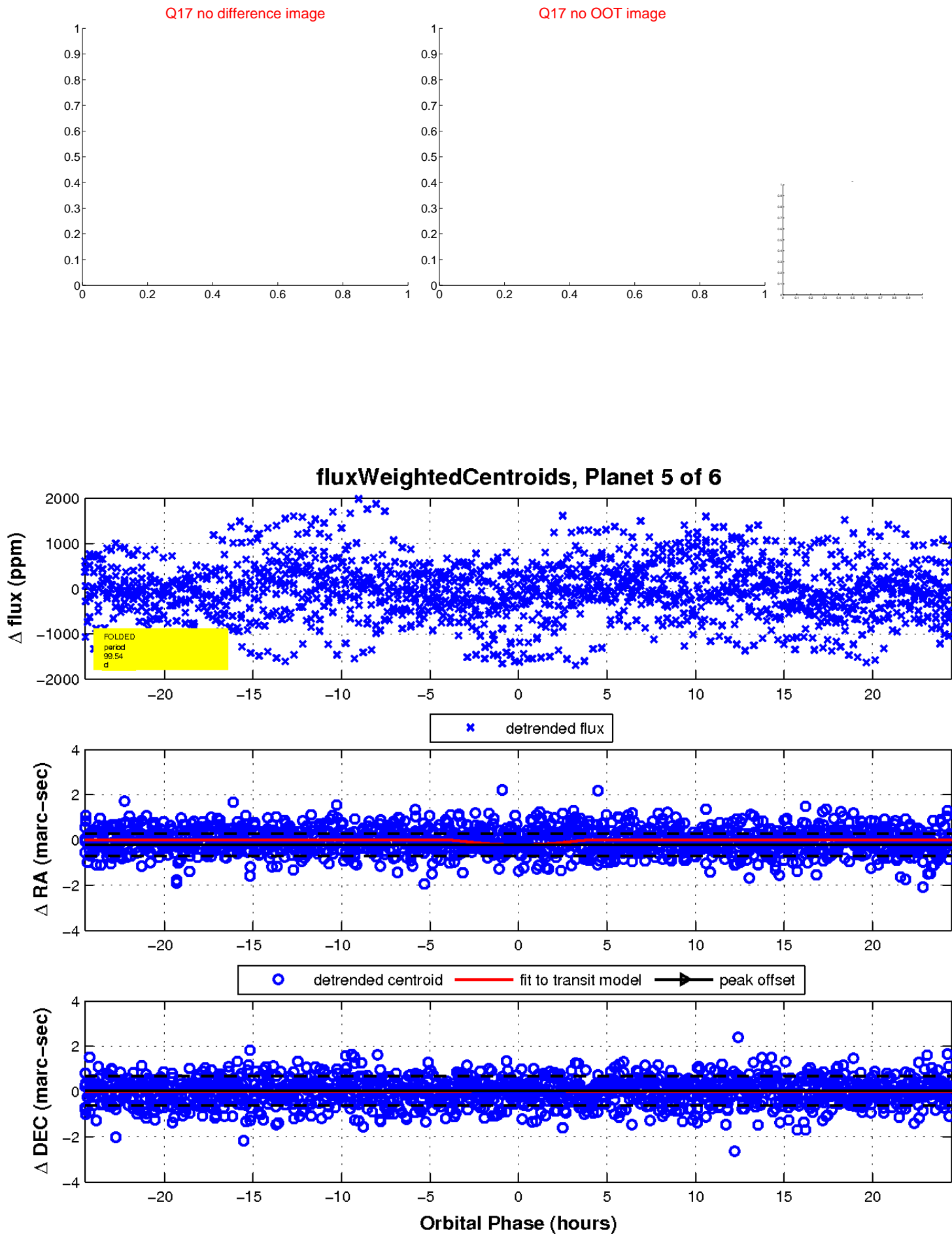
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

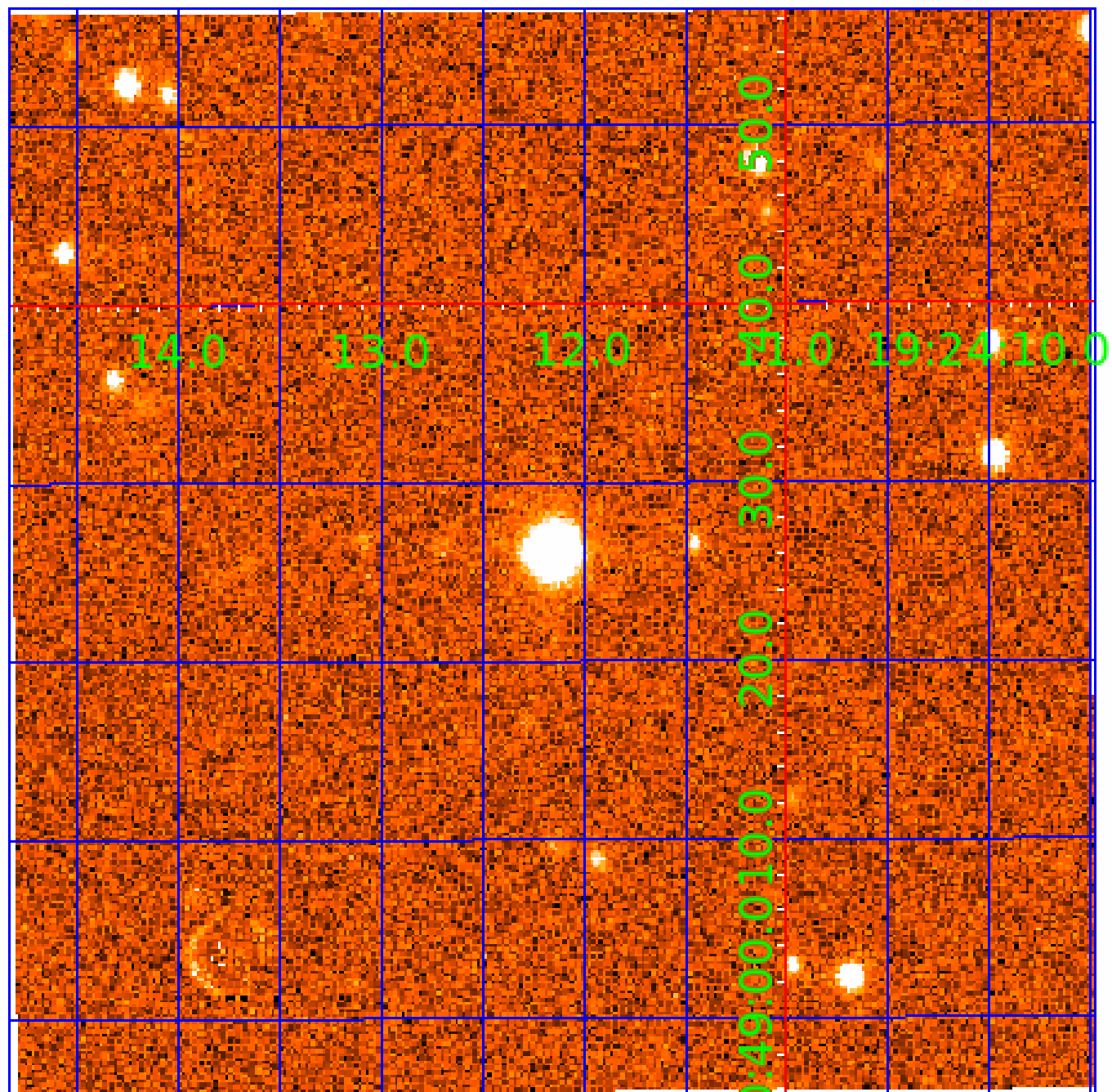


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005617535

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})
005617535-01	OBS	No	1.739461	133.011420	77.9	3.567	10.2	10.1	2.31	6840	2.37	9499.05
005617535-02	OBS	No	1.210149	132.436598	71.9	5.431	10.1	9.3	2.31	6840	2.29	15409.23
005617535-03	OBS	No	132.979607	246.887132	1295.6	10.041	9.5	9.2	2.31	6840	15.43	29.28
005617535-04	OBS	No	30.629299	156.422118	416.3	16.665	8.4	8.0	2.31	6840	5.67	207.36
005617535-05	OBS	No	99.544831	160.895939	1068.8	8.182	9.2	9.2	2.31	6840	10.37	43.07
005617535-06	OBS	No	326.576571	376.652413	280.1	3.500	8.6	-1.0	2.31	6840	3.90	8.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005617535-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005617535-02	OBS	FP	0.00	1	0	0	0	LPP_DV
005617535-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT
005617535-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT
005617535-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
005617535-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—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.

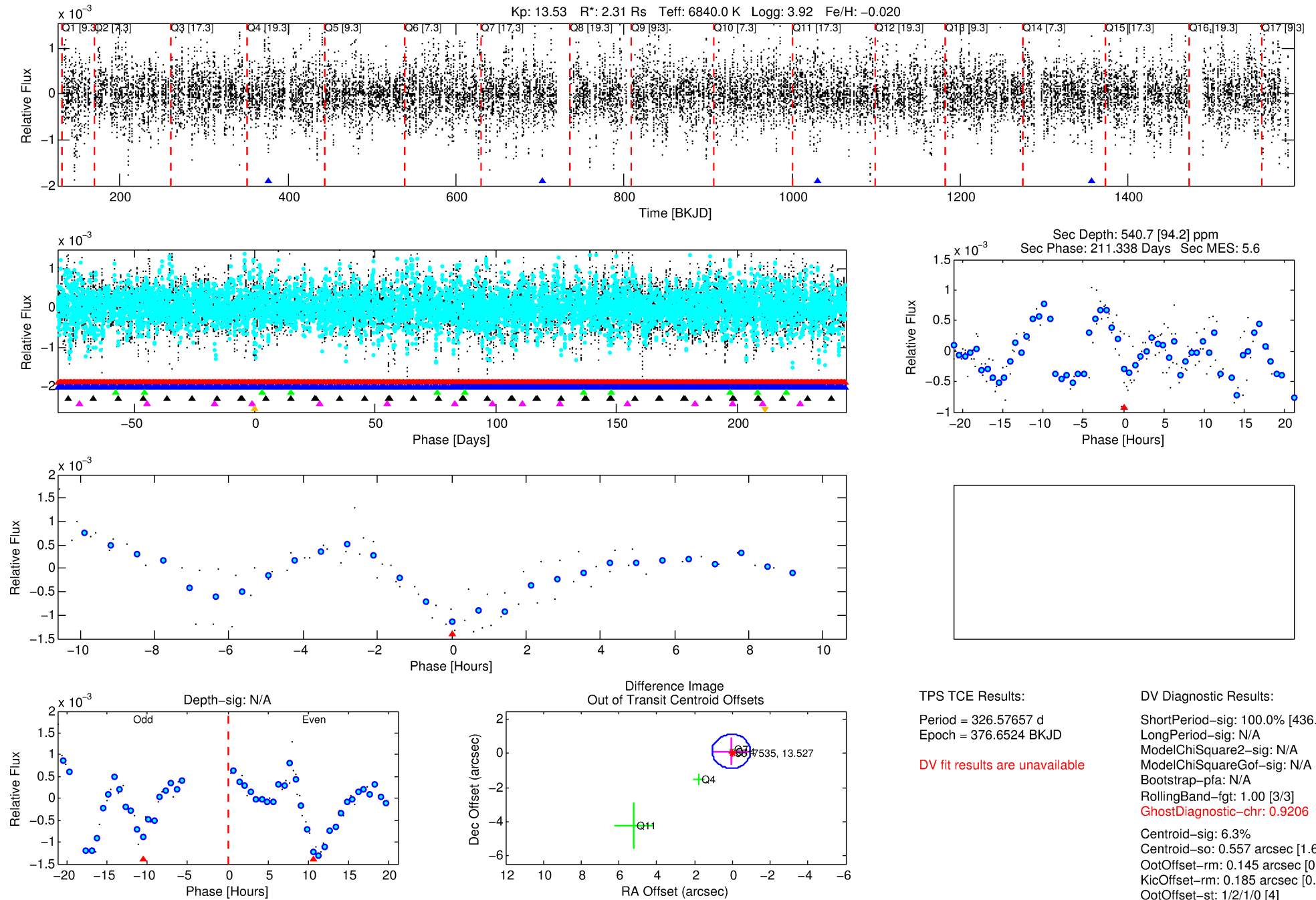
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005617535-06

No Significant Match Found

DV One-Page Summary

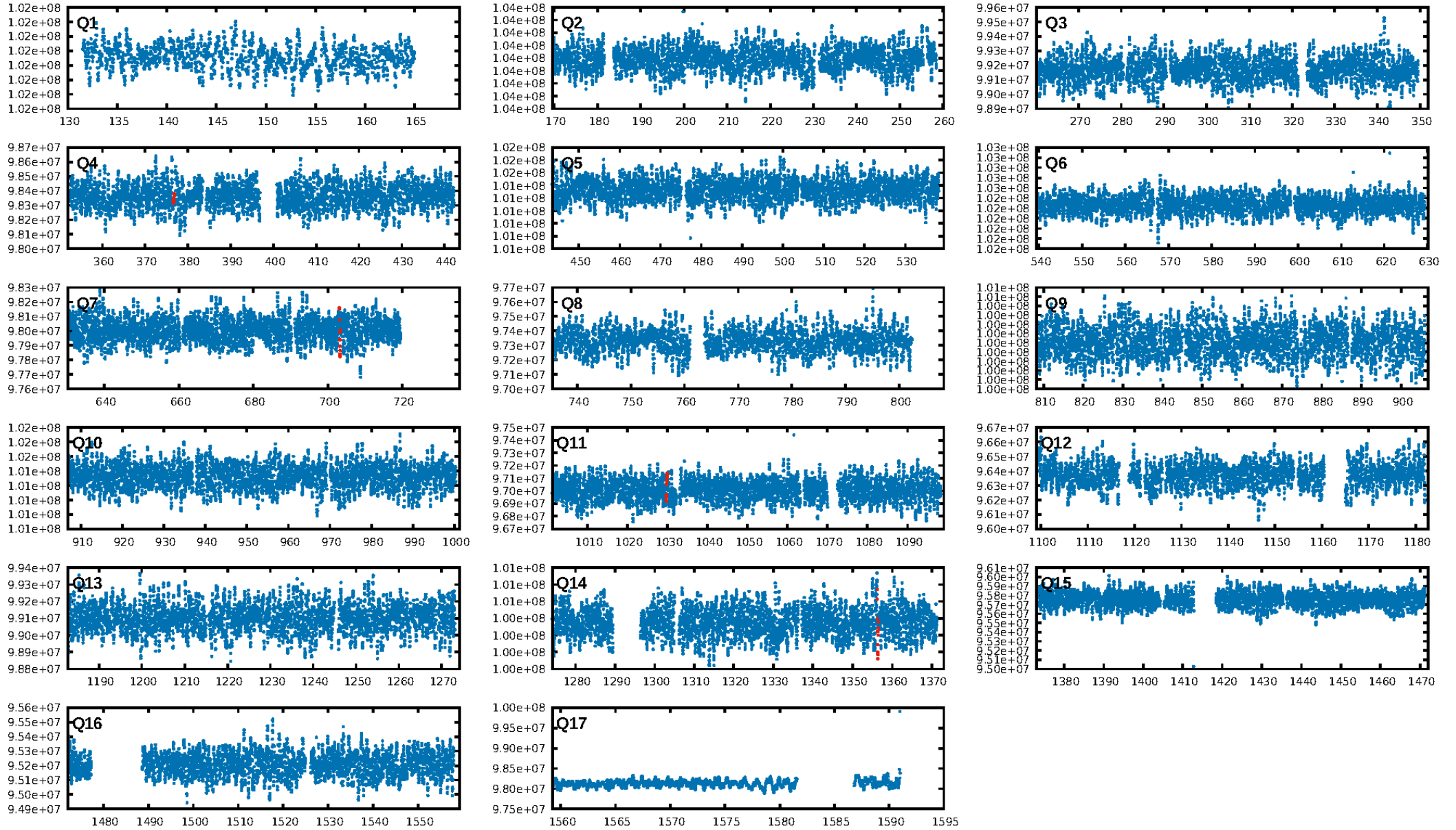
KIC: 5617535 Candidate: 6 of 6 Period: 326.577 d



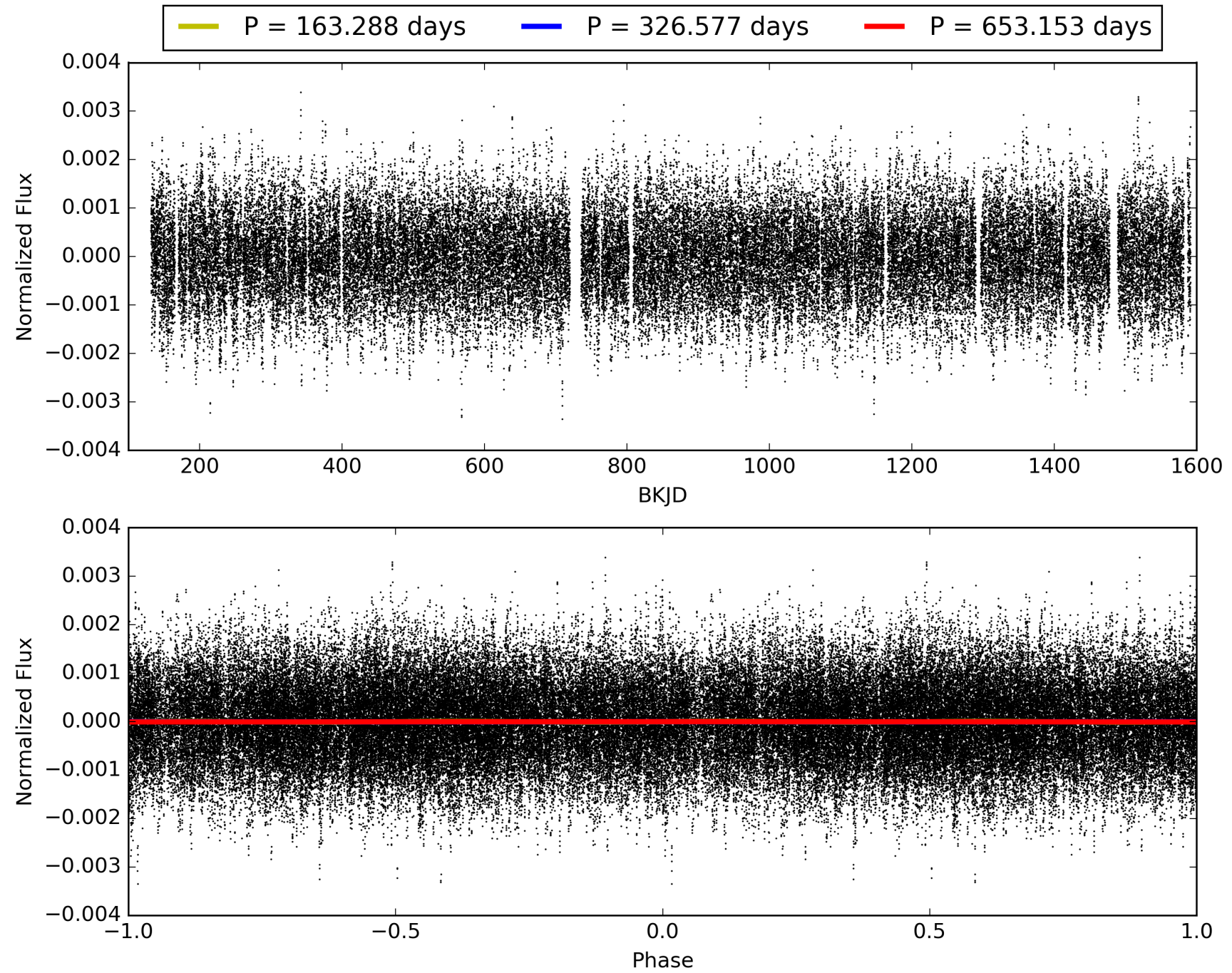
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:13:21 Z

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

TCE 005617535-06, PDC Light Curves

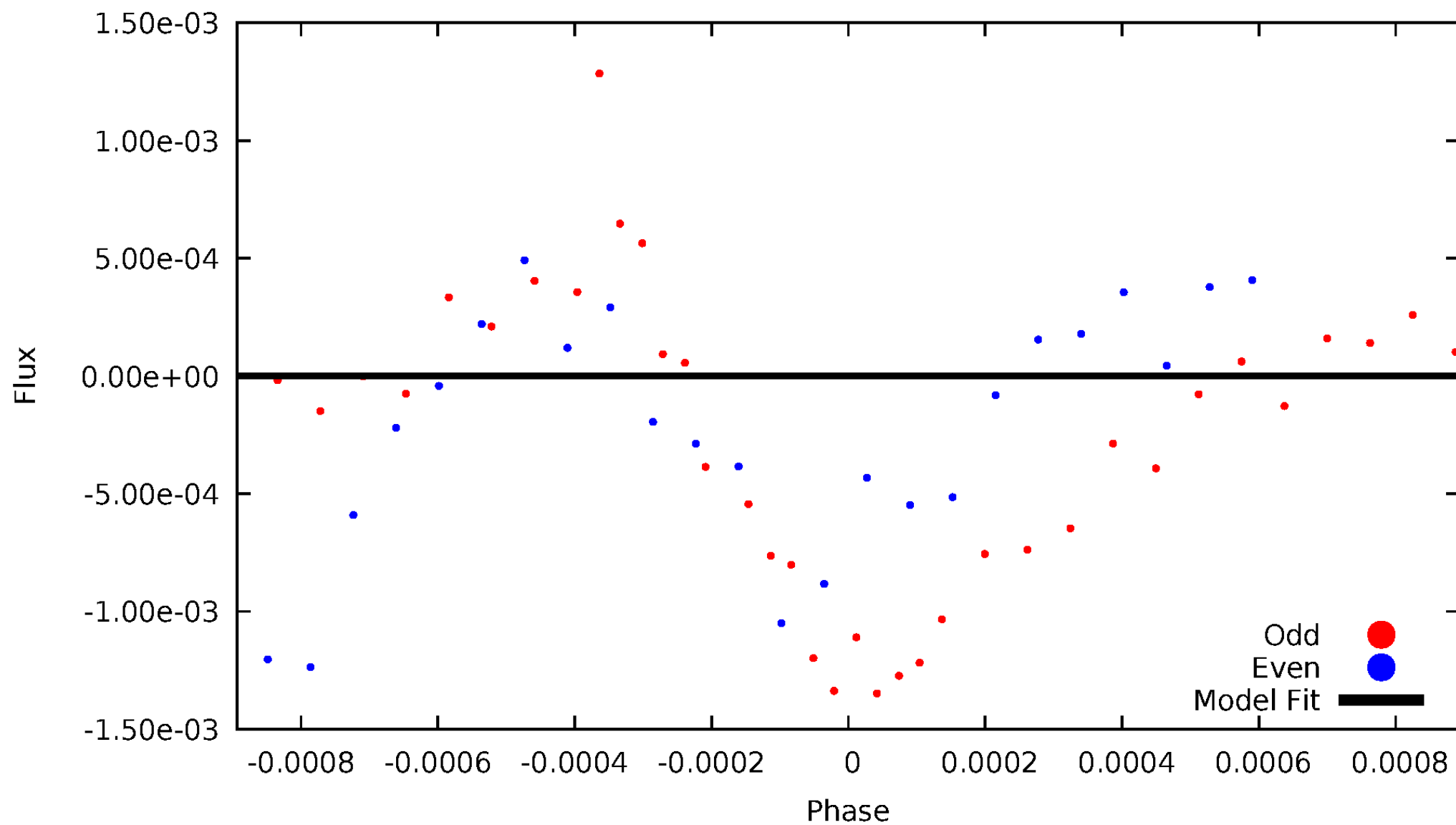


TCE 005617535-06



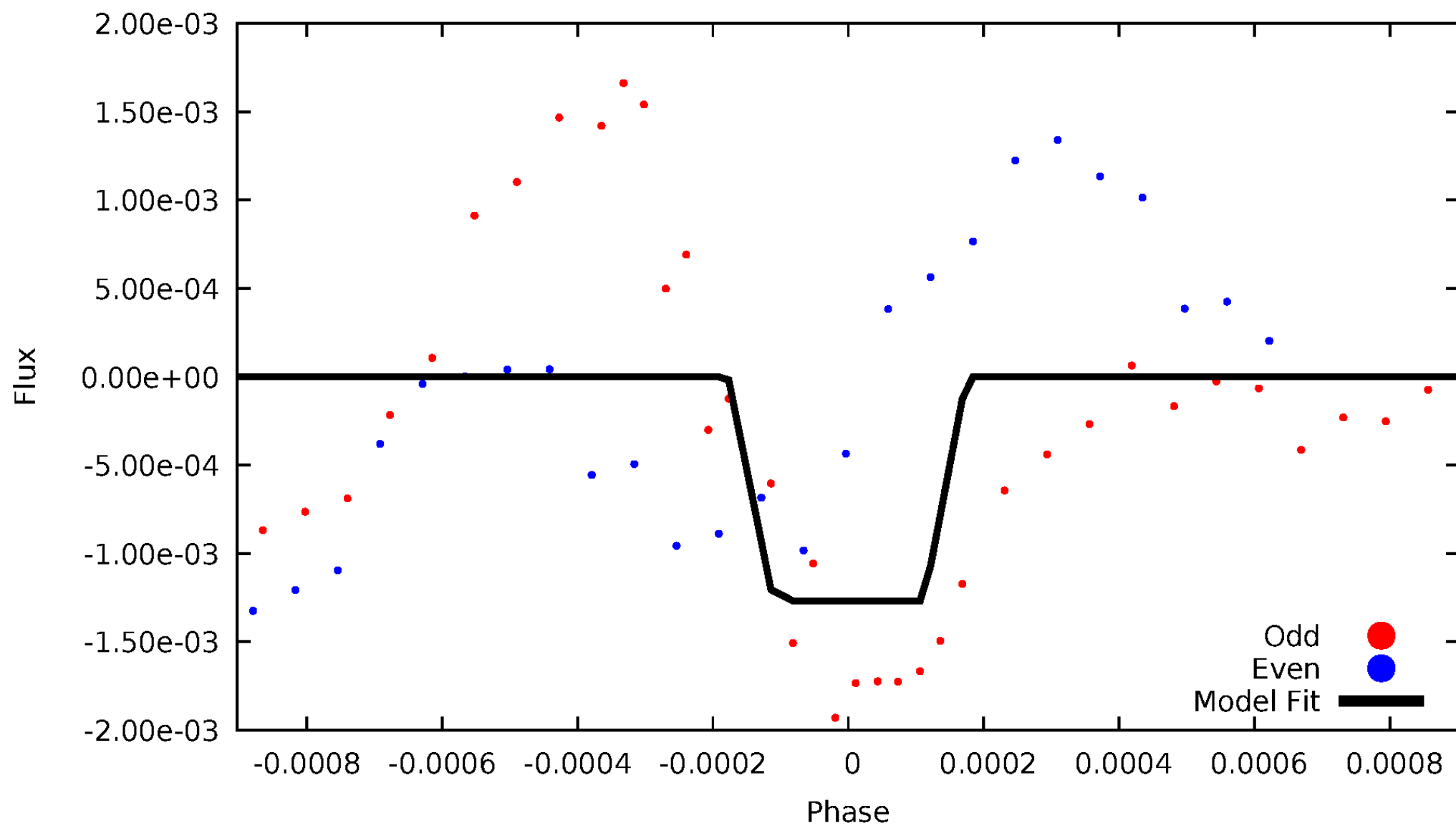
DV Odd/Even

TCE 005617535-06



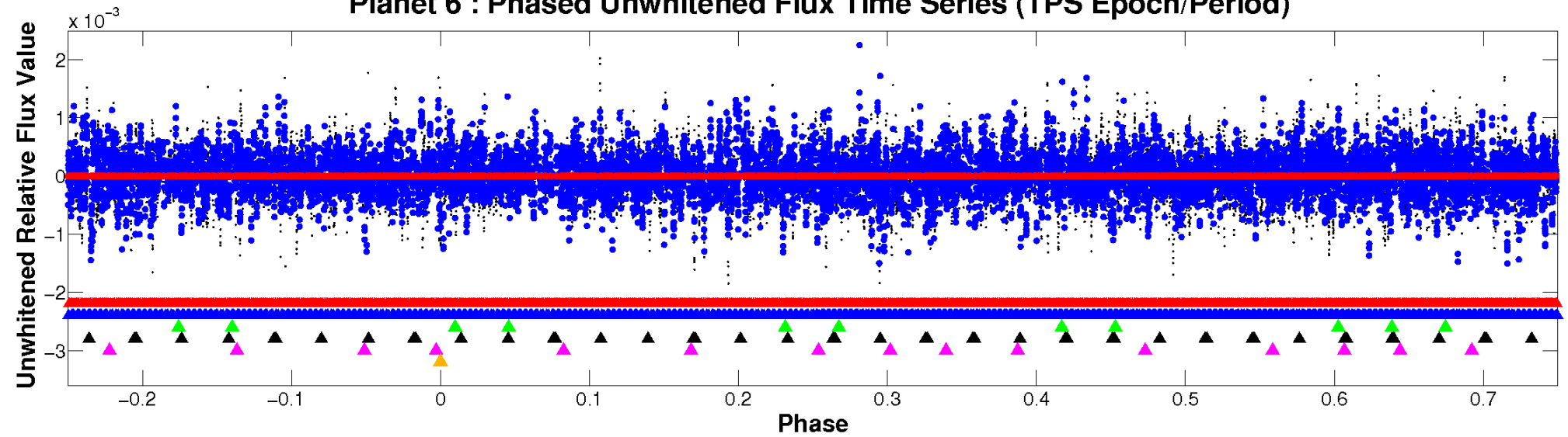
ALT Odd/Even

TCE 005617535-06

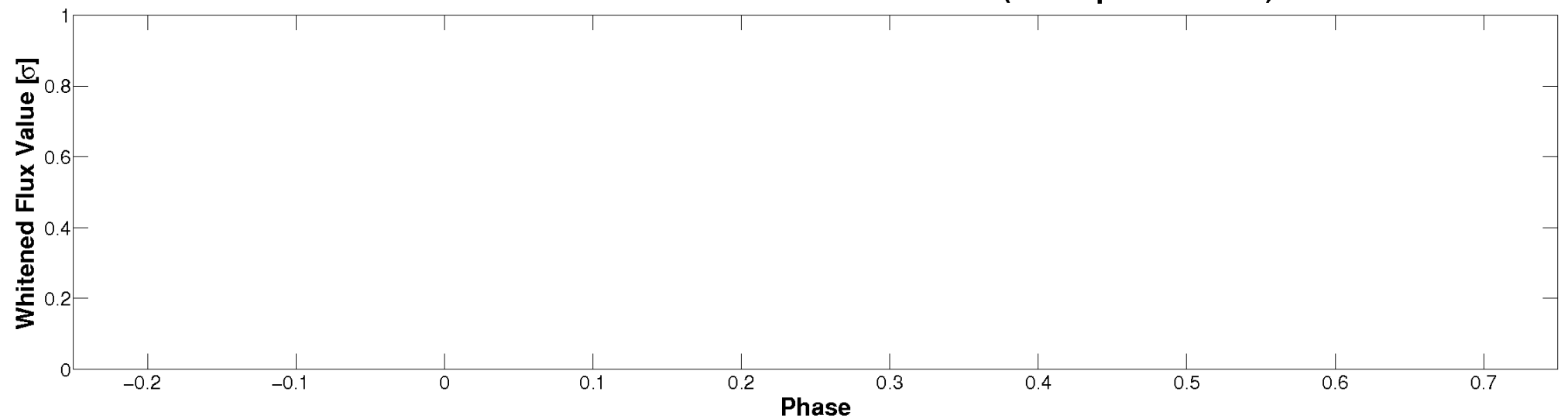


Non-Whitened Vs. Whitened Light Curve

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

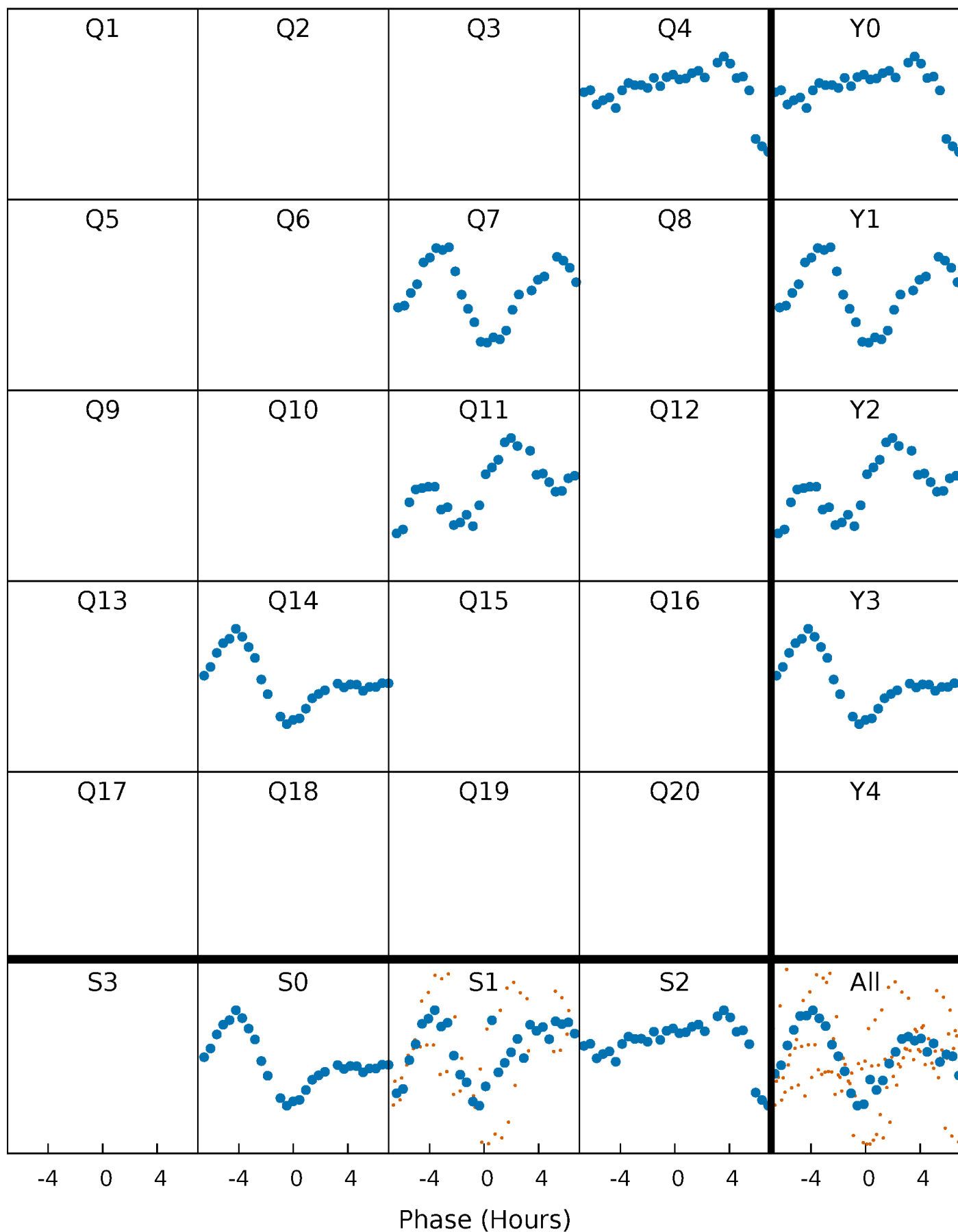


Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)



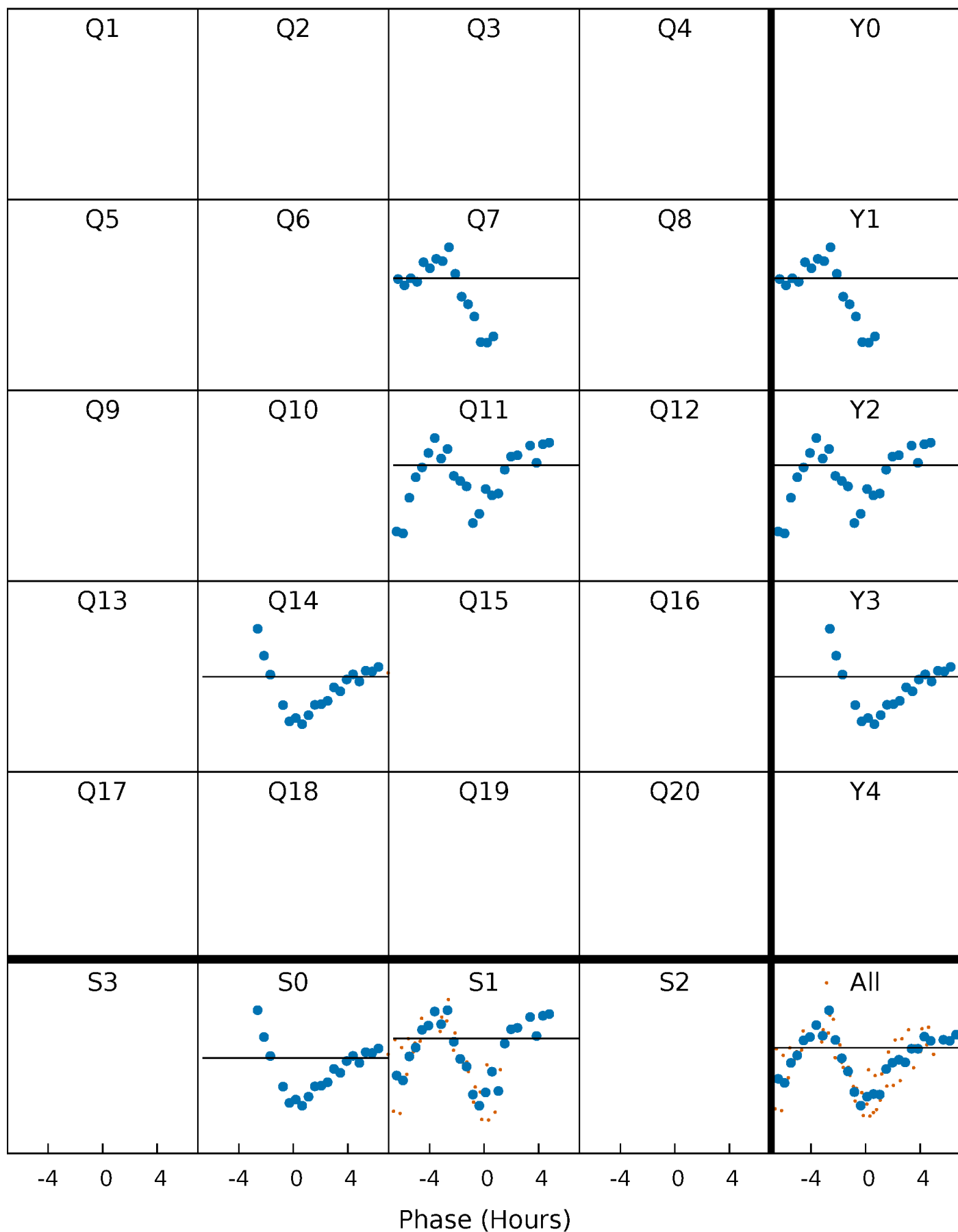
PDC Quarter-Phased Transit Curves

TCE 005617535-06 P=326.576571 Days $T_0=376.652413$ (BKJD)



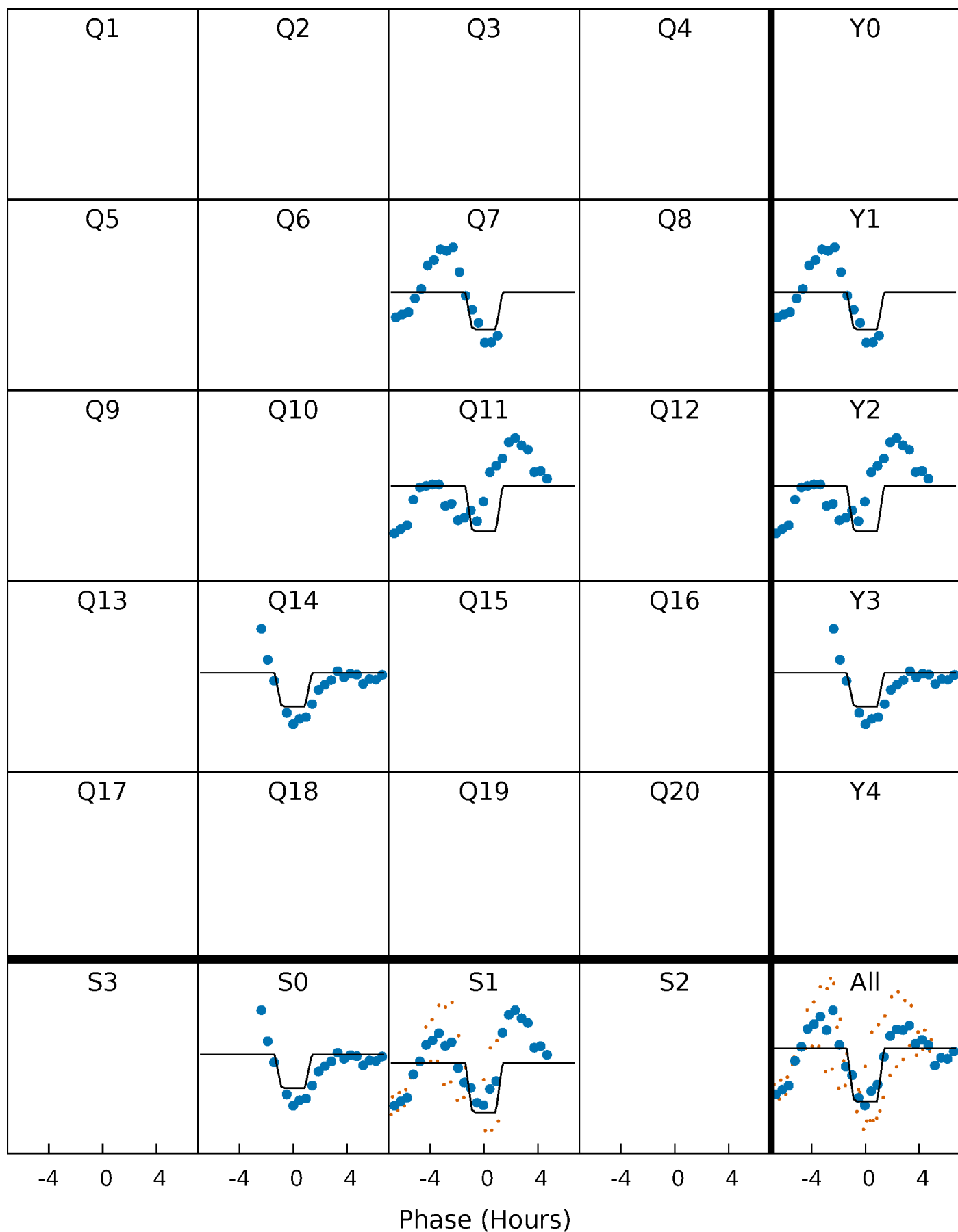
DV Quarter-Phased Transit Curves

TCE 005617535-06 P=326.576571 Days $T_0=376.652413$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

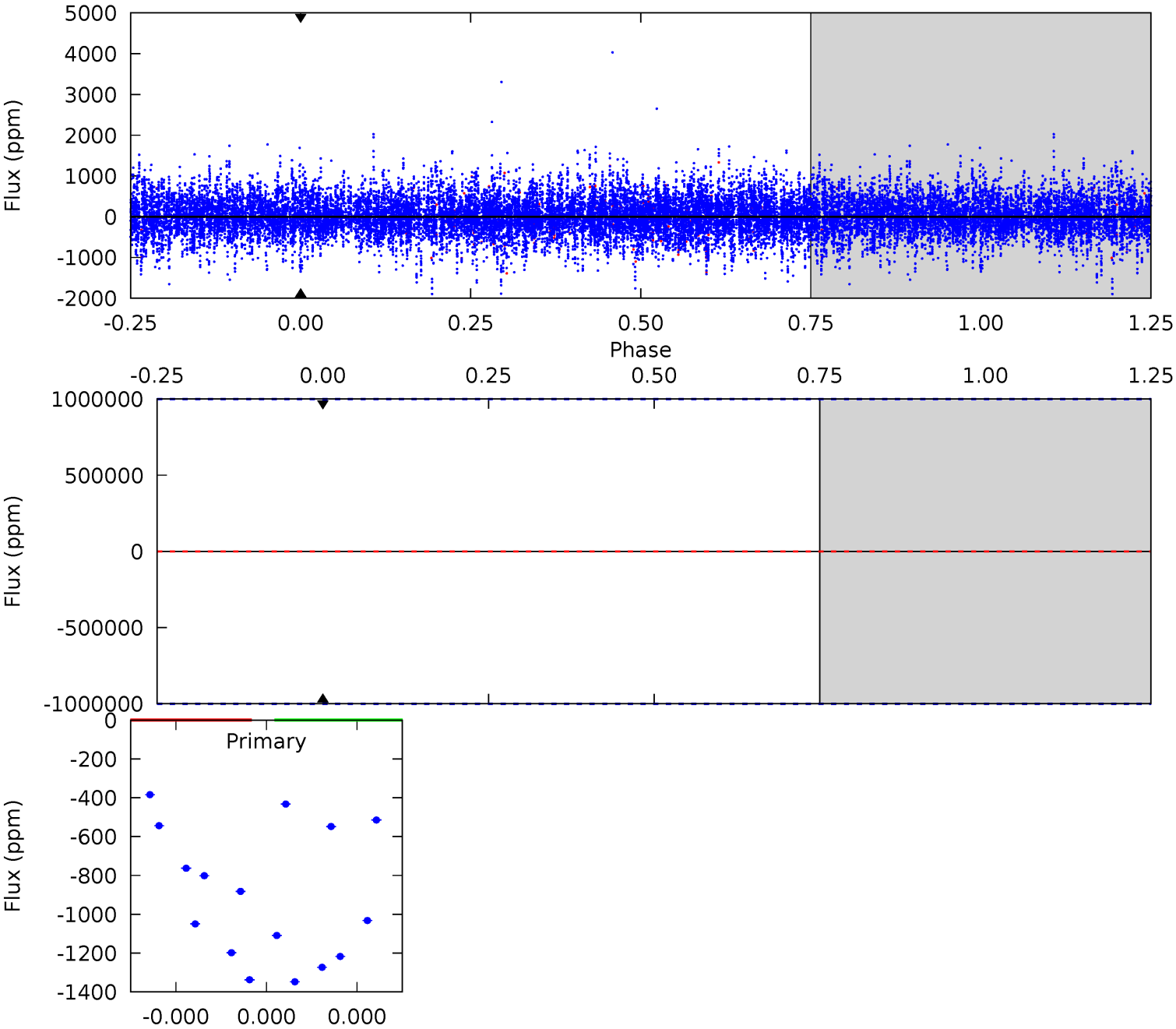
TCE 005617535-06 P=326.576571 Days $T_0=376.642070$ (BKJD)



DV Model-Shift Uniqueness Test

005617535-06, P = 326.576571 Days, E = 50.075842 Days

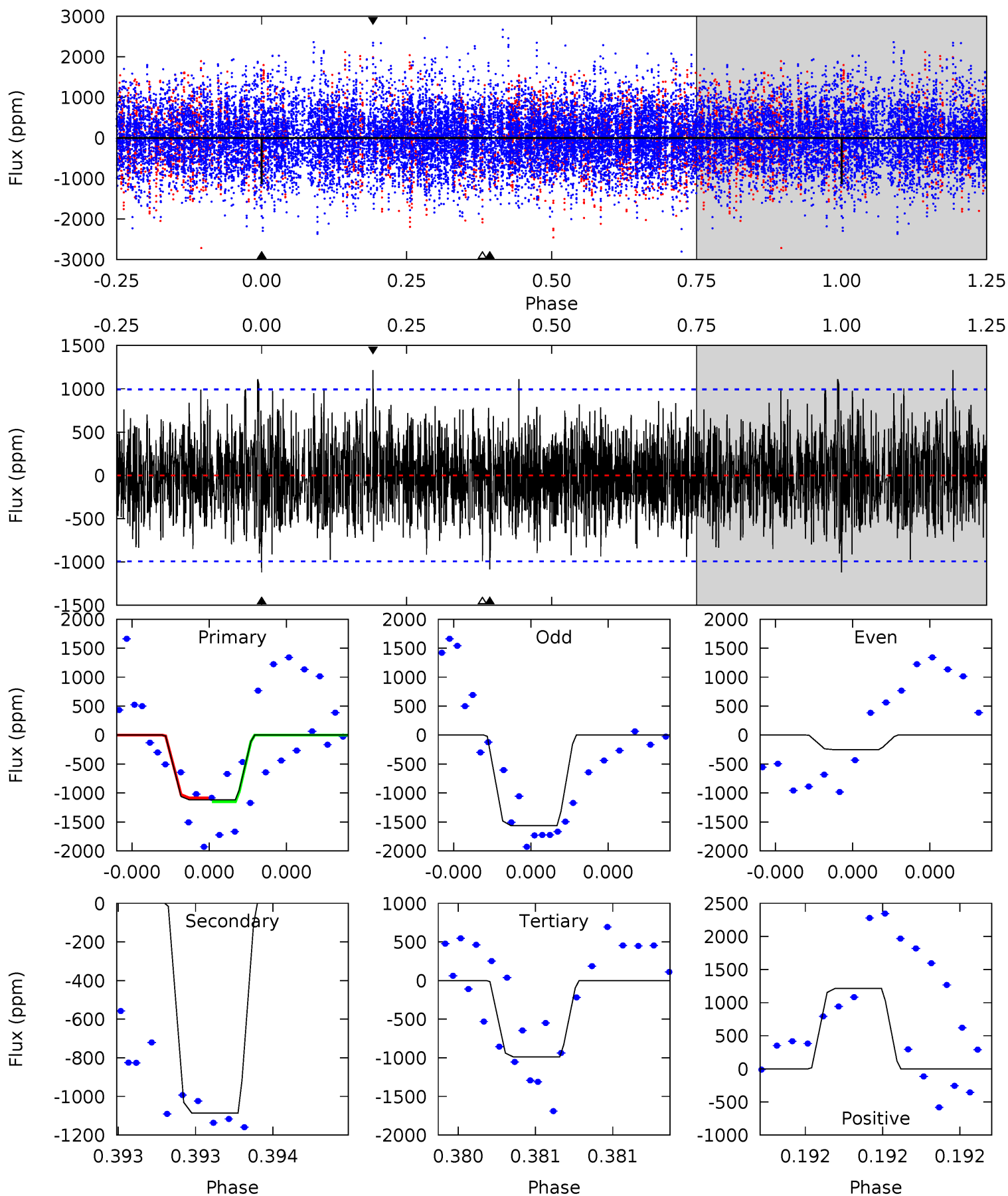
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005617535-06, P = 326.576571 Days, E = 50.065499 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.37	6.19	5.64	6.92	5.65	3.60	1.75	0.73	-0.55	0.55	-0.73	3.38	0.80	0.52	0.19



Stellar Parameters For KIC 005617535

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6840^{+71}_{-82}	$3.917^{+0.186}_{-0.108}$	$-0.020^{+0.150}_{-0.150}$	$2.305^{+0.404}_{-0.556}$	$1.601^{+0.133}_{-0.192}$	$0.184^{+0.187}_{-0.070}$
	+1%/-1%	+5%/-3%	+750%/-750%	+18%/-24%	+8%/-12%	+102%/-38%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 005617535-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$18.42^{+19.76}_{-12.65}$	612^{+29}_{-39}	4684^{+26377}_{-40455}	$2188^{+327335}_{-426449}$
Alt.	-1086 ± 175	$20.15^{+19.53}_{-13.30}$	610^{+30}_{-36}	4447^{+3021}_{-936}	1705^{+13112}_{-1261}

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

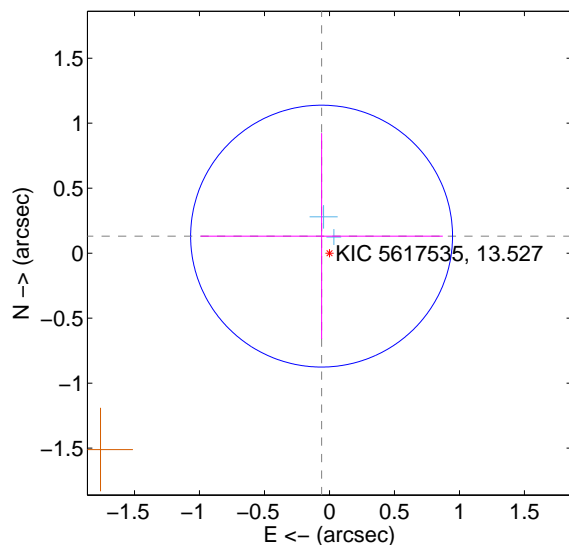
Supplemental centroid analysis for 005617535-06. Kepler magnitude: 13.53. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

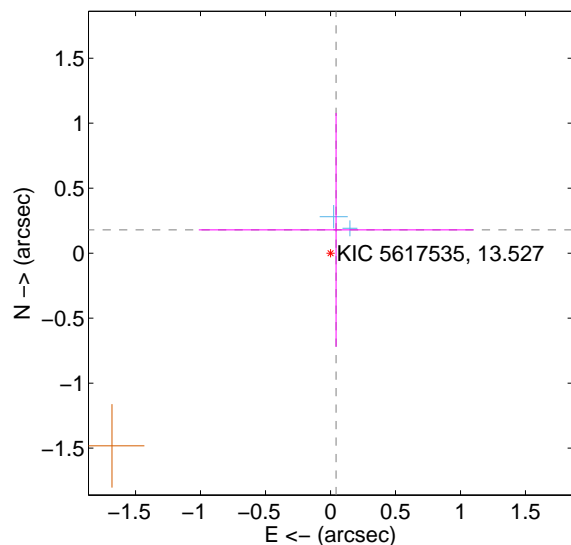
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.145 ± 0.336	0.43	0.061 ± 0.932	0.131 ± 0.792
PRF-fit source offset from KIC position	0.185 ± 1.120	0.16	-0.043 ± 1.057	0.180 ± 0.899
photometric centroid source offset	0.56 ± 0.33	1.68	-0.55 ± 0.33	-0.07 ± 0.31

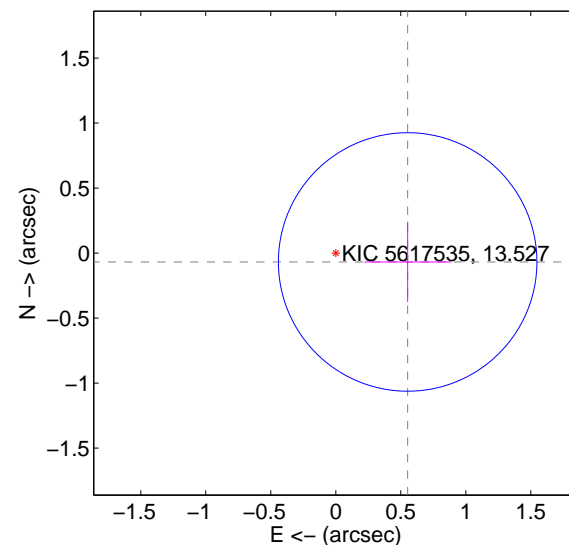
offset from difference PRF-fit to OOT PRF-fit



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



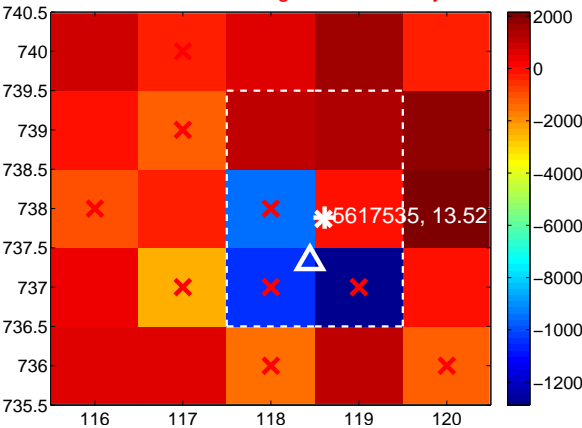
Q3 no difference image



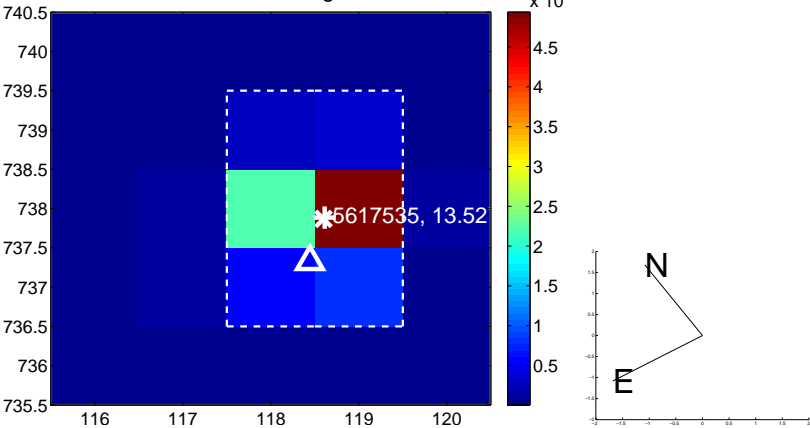
Q3 no OOT image



Q4 difference image. Poor Quality



Q4 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



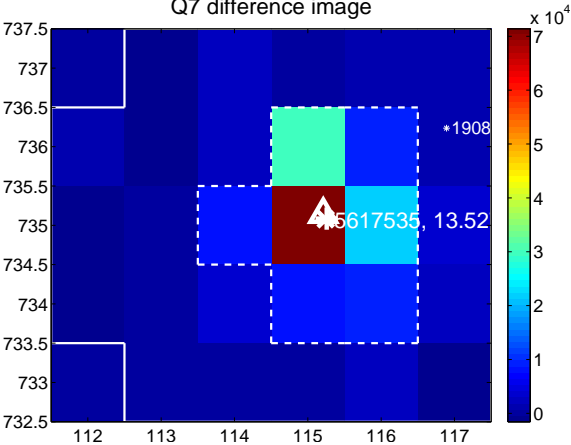
Q6 no difference image



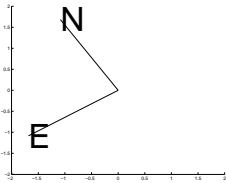
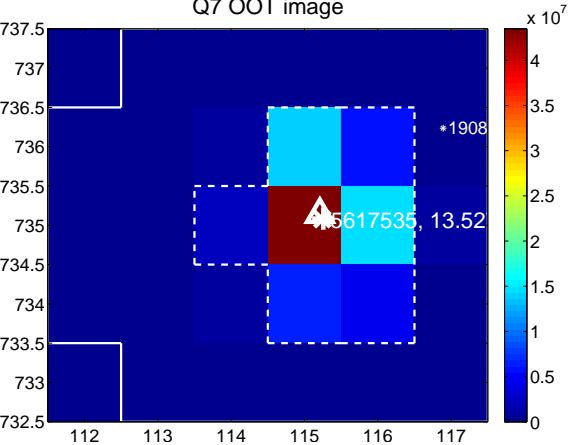
Q6 no OOT image



Q7 difference image



Q7 OOT image



Q8 no difference image



Q8 no OOT image



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

Q9 no difference image



Q9 no OOT image



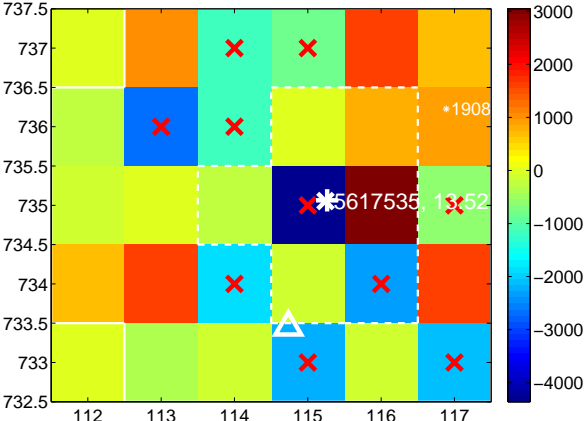
Q10 no difference image



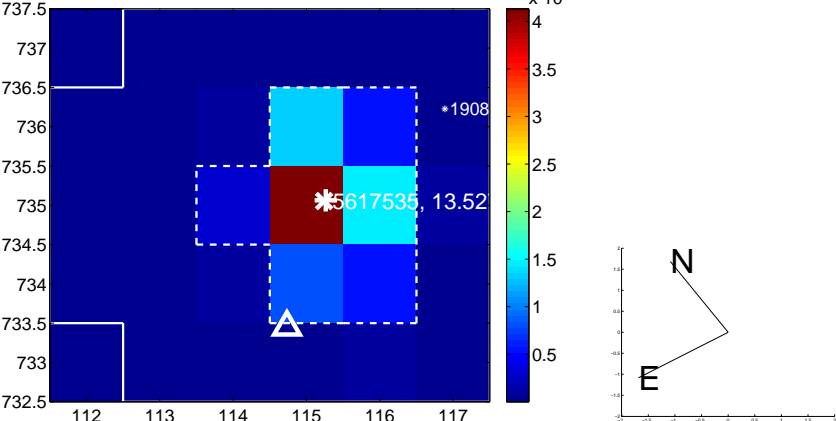
Q10 no OOT image



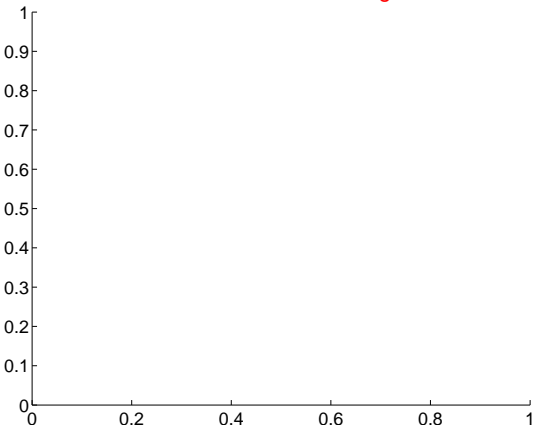
Q11 difference image. Poor Quality



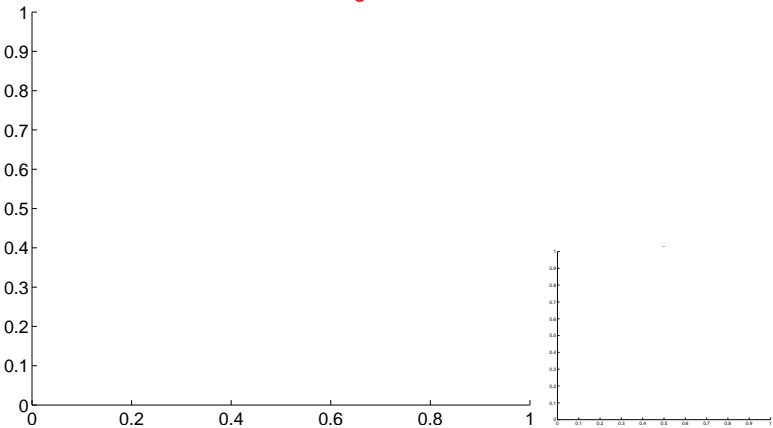
Q11 OOT image



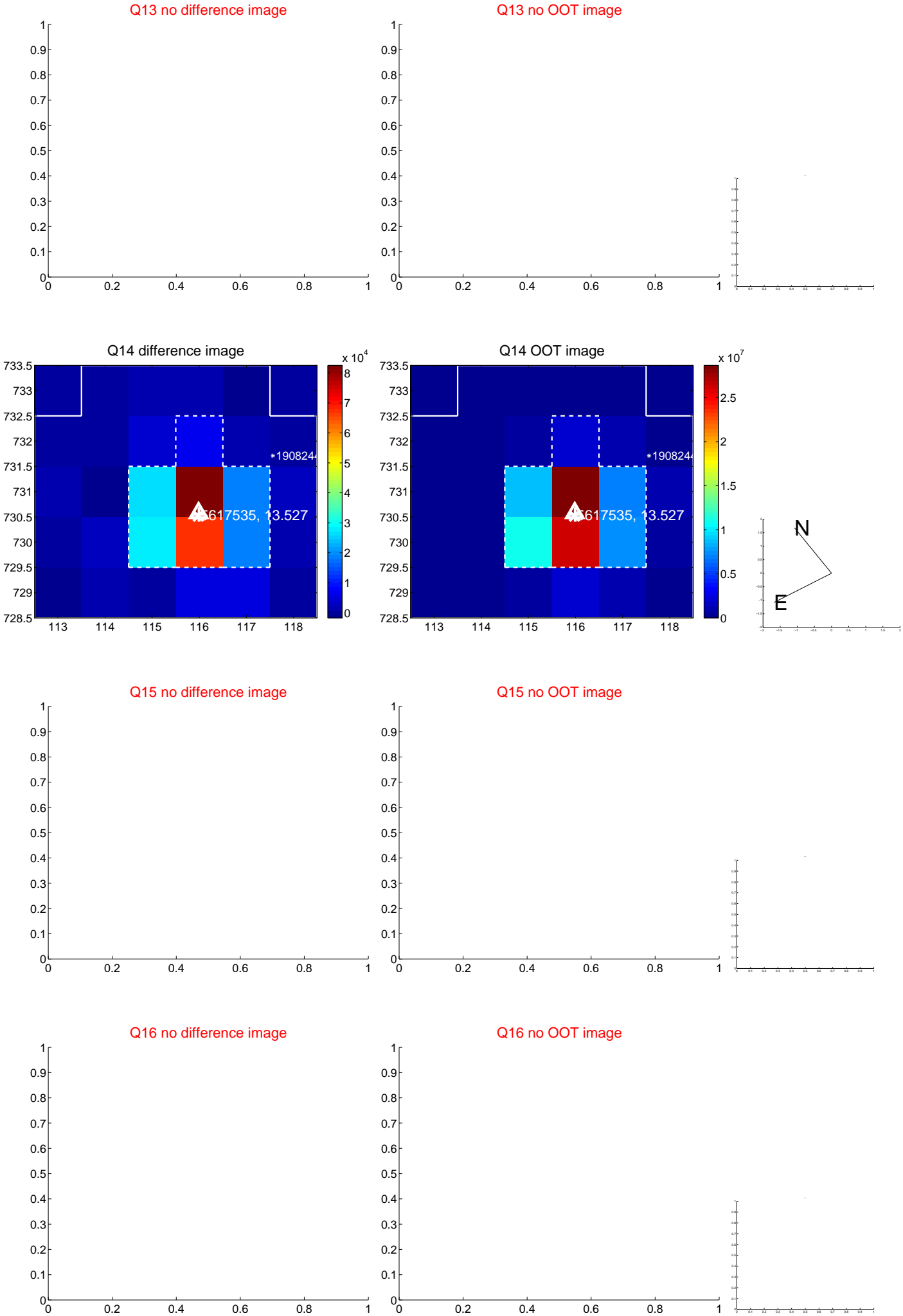
Q12 no difference image

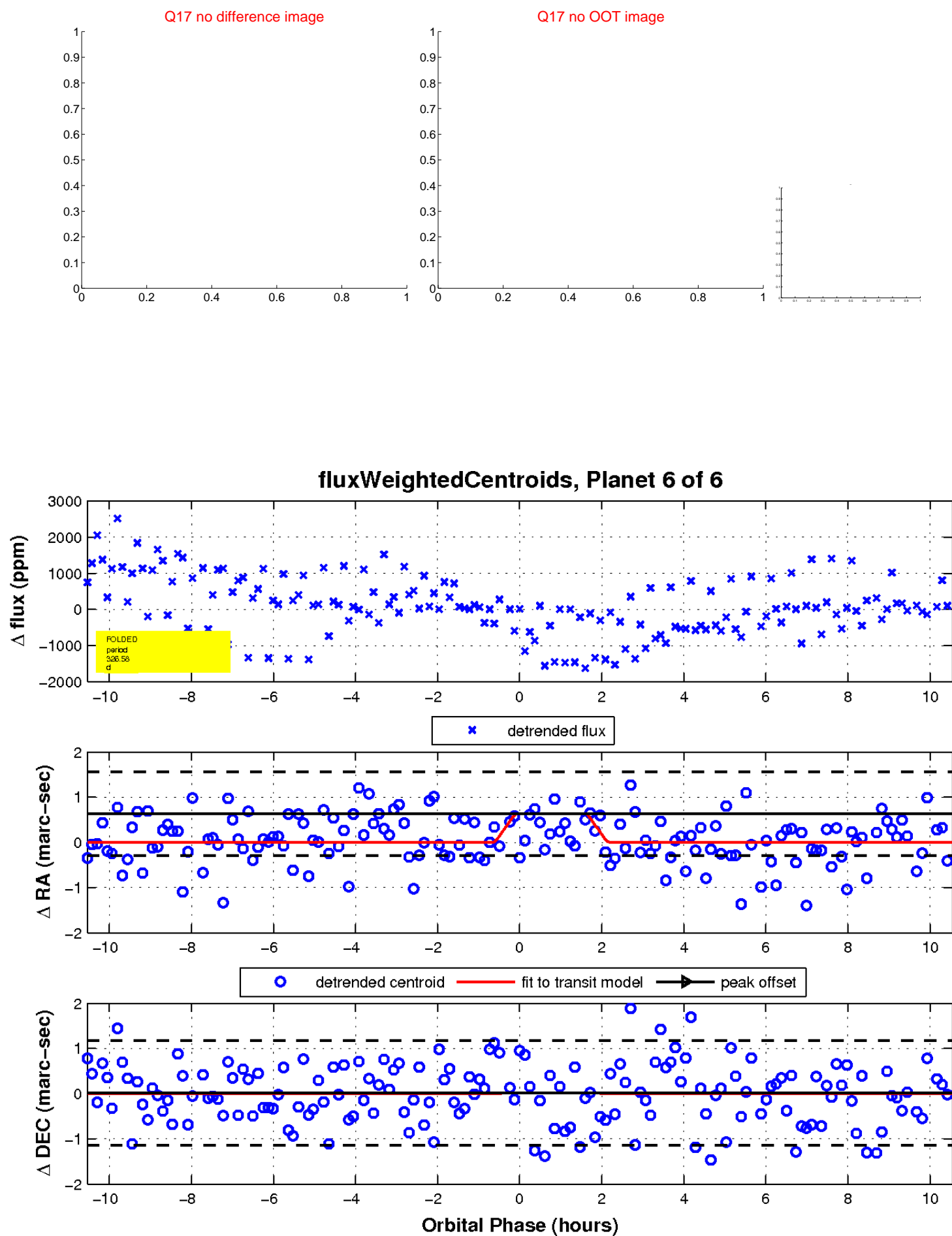


Q12 no OOT image



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





UKIRT Image

Declination

