

KIC 005270698

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})
005270698-01	OBS	1543.01	3.964332	132.065425	25928.7	4.722	1801.7	1671.7	2.32	5758	37.26	1887.25
005270698-02	OBS	No	1.982155	132.068550	677.3	4.827	49.8	49.5	2.32	5758	7.16	4755.61
005270698-03	OBS	No	328.993212	290.343542	1679.5	5.495	24.6	8.7	2.32	5758	9.68	5.21
005270698-04	OBS	No	394.449608	522.149689	1145.6	4.918	7.2	6.9	2.32	5758	8.74	4.09
005270698-05	OBS	No	357.297482	389.706419	1202.5	11.818	7.3	5.4	2.32	5758	9.33	4.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005270698-01	OBS	FP	0.19	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
005270698-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
005270698-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005270698-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—SAME_NTL_PERIOD—CENT_FEW_DIFFS
005270698-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

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

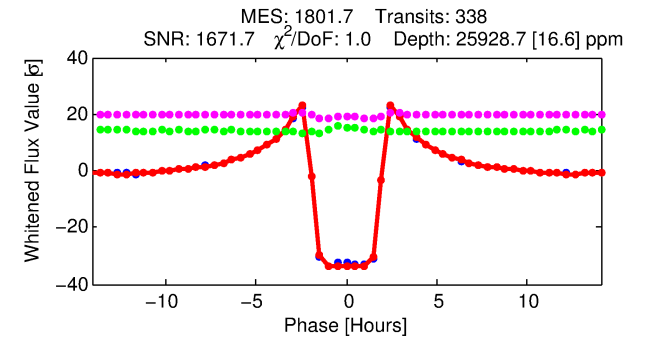
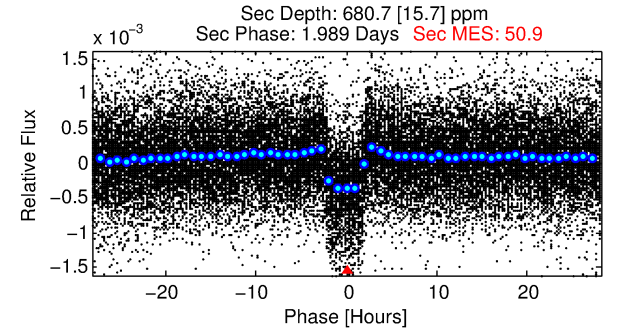
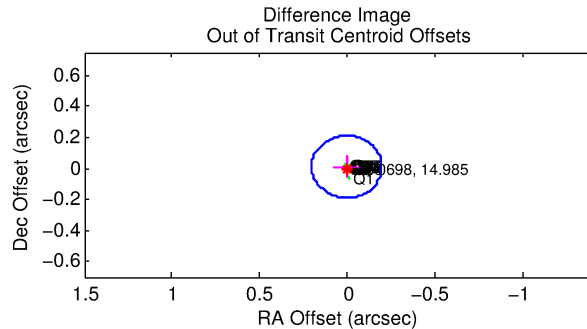
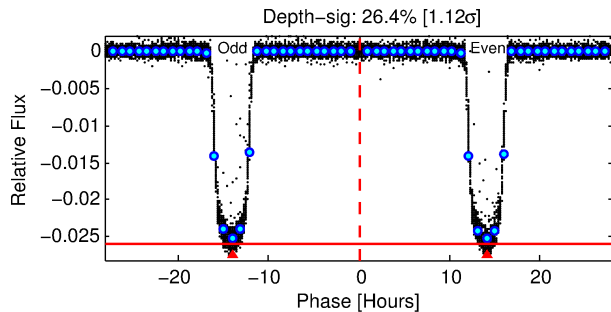
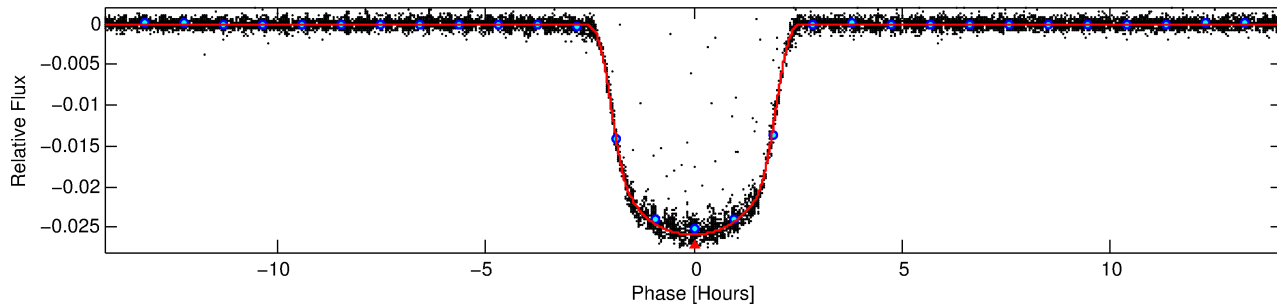
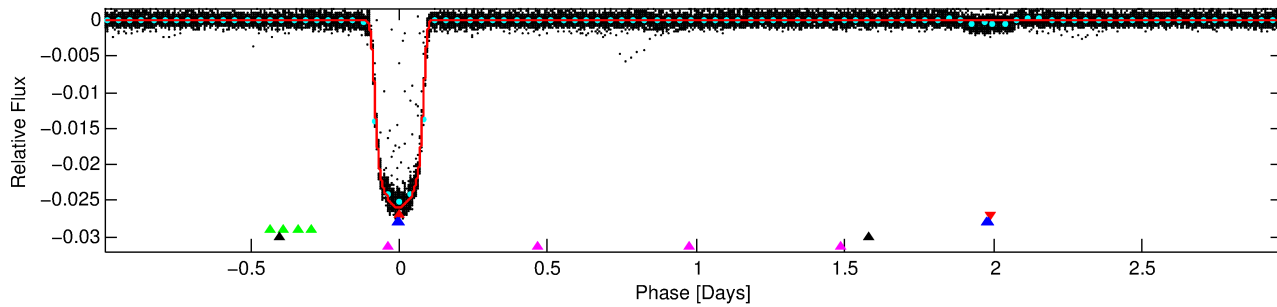
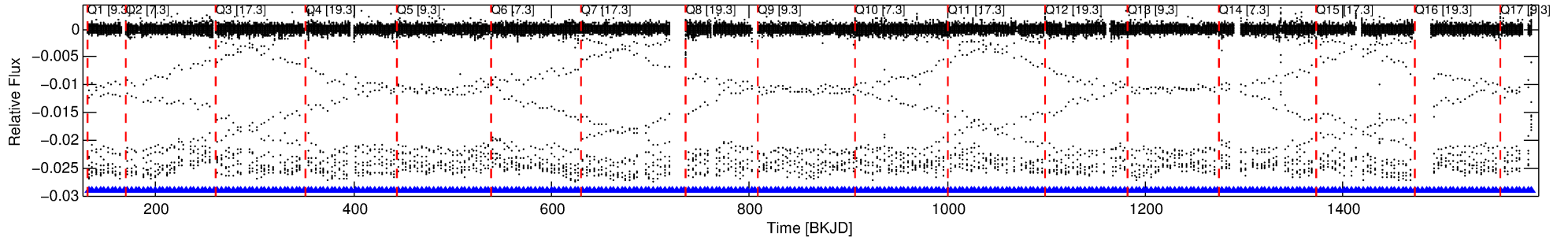
Ephemeris Match Information For 005270698-01

No Significant Match Found

DV One-Page Summary

KIC: 5270698 Candidate: 1 of 5 Period: 3.964 d
KOI: K01543.01 Corr: 0.997

Kp: 14.98 R*: 2.32 Rs Teff: 5758.0 K Logg: 3.81 Fe/H: -0.060



DV Fit Results:

Period = 3.96433 [0.00000] d
Epoch = 132.0654 [0.0000] BKJD
Rp/R* = 0.1473 [0.0001]
a/R* = 7.24 [0.02]
b = 0.23 [0.01]
Seff = 1887.25 [782.74]
Teq = 1681 [174] K
Rp = 37.26 [11.35] Re
a = 0.0530 [0.0143] AU
Ag = 0.76 [0.31] [-0.78σ]
Teffp = 2423 [35] K [4.18σ]

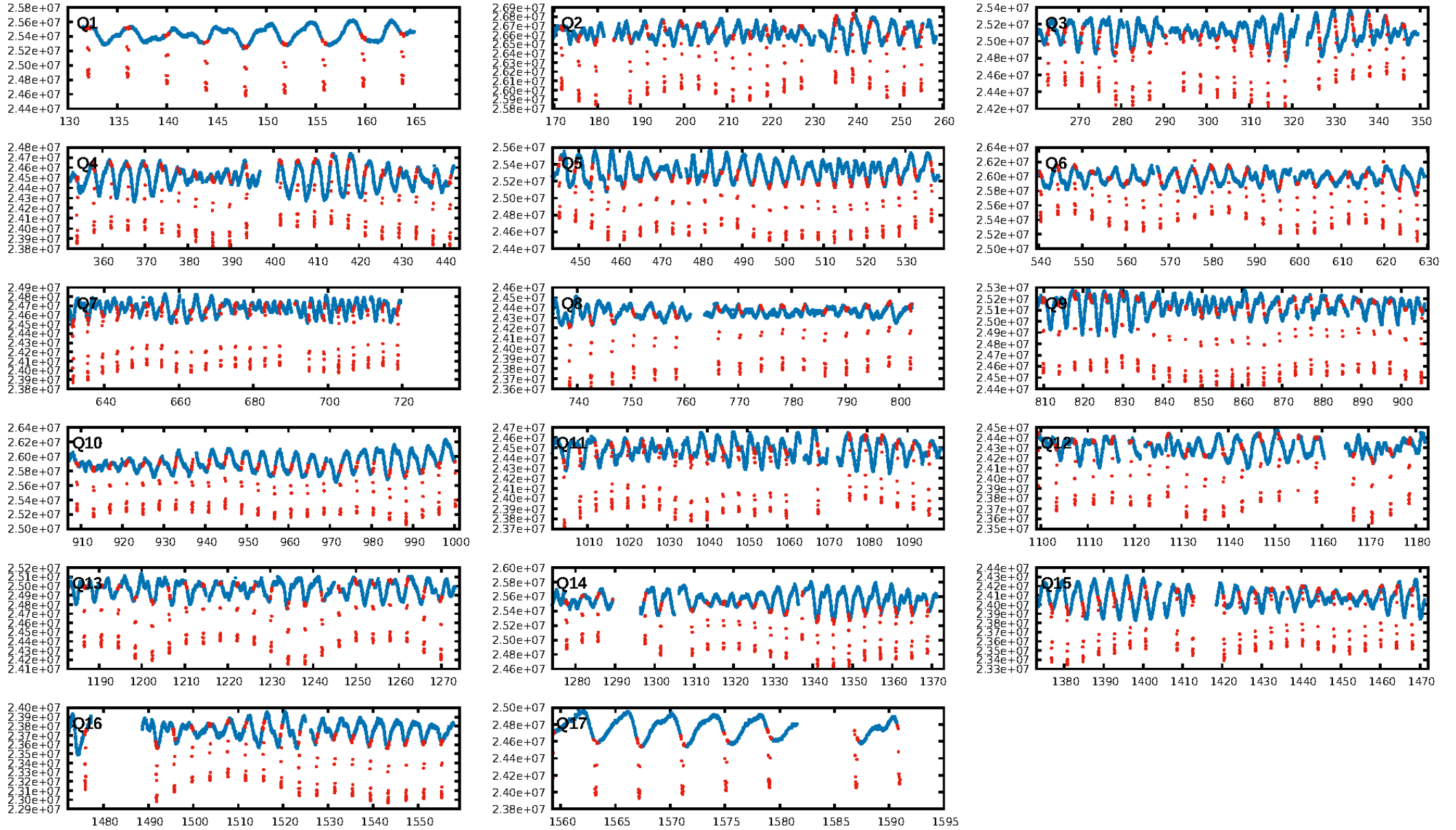
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [7.05σ]
LongPeriod-sig: 100.0% [1076.69σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [321/321]
GhostDiagnostic-chr: 3.123
Centroid-sig: 0.0%
Centroid-so: 0.223 arcsec [40.67σ]
OotOffset-rm: 0.012 arcsec [0.19σ]
KicOffset-rm: 0.142 arcsec [2.10σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

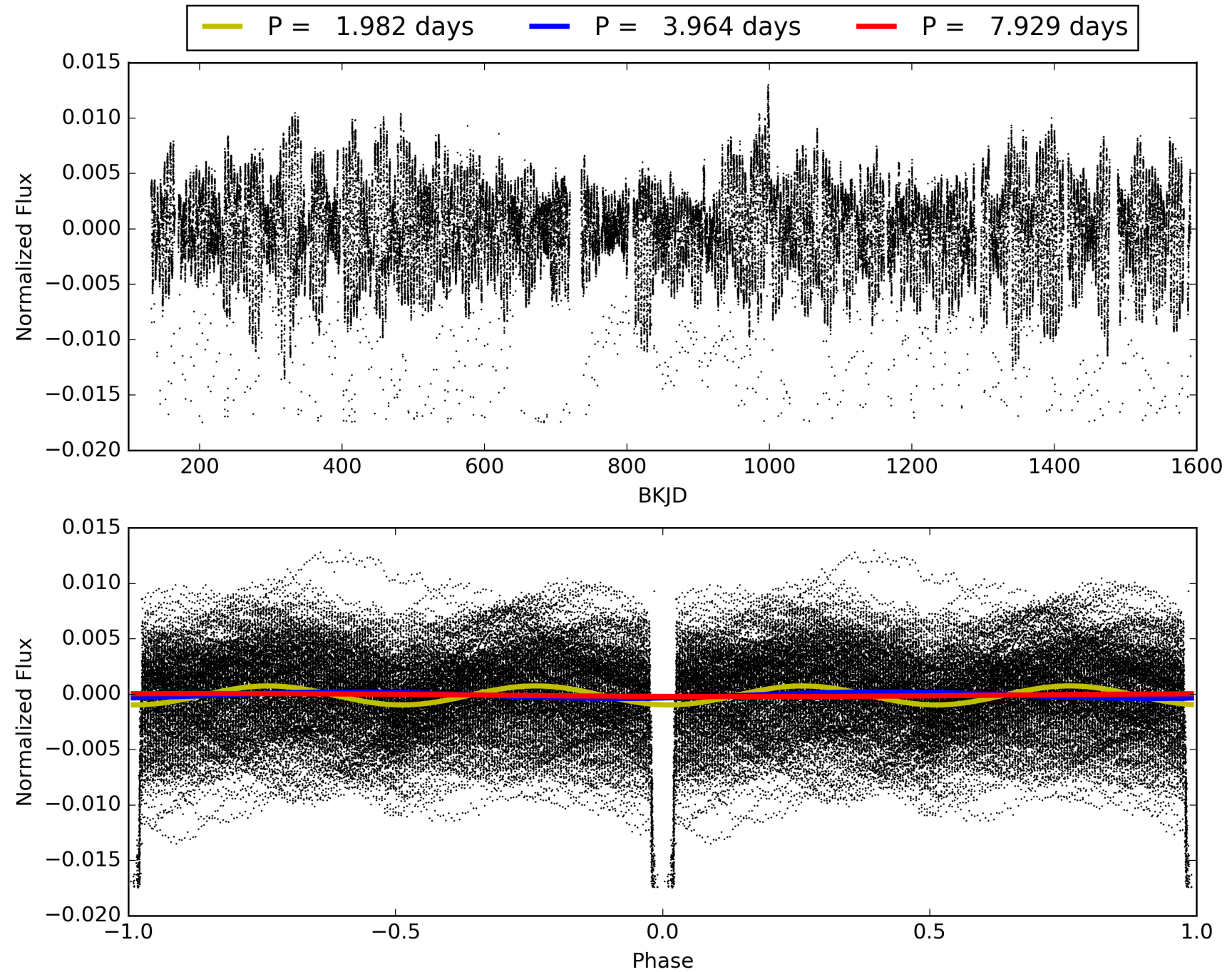
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:53:47 Z

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

TCE 005270698-01, PDC Light Curves

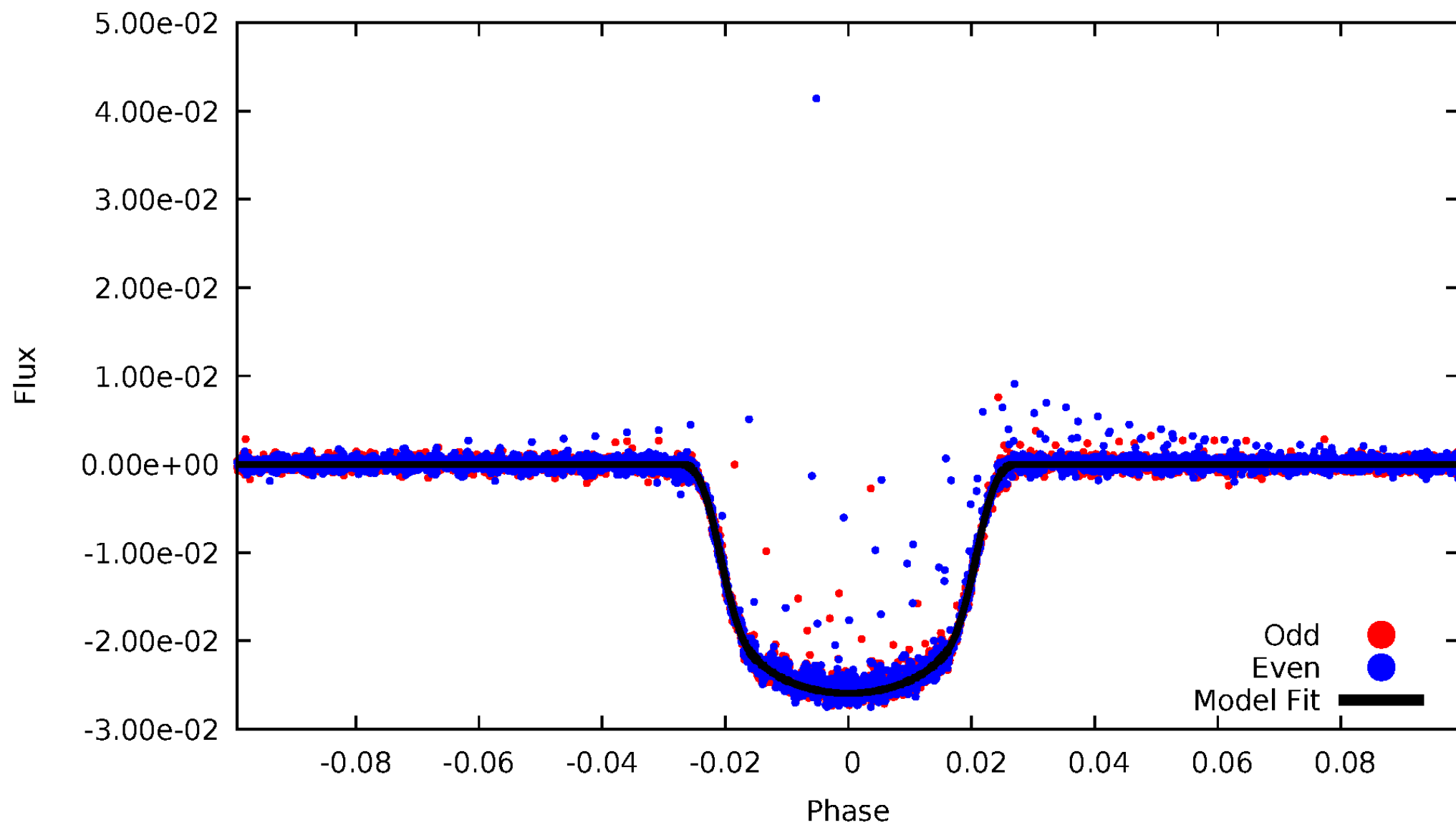


TCE 005270698-01



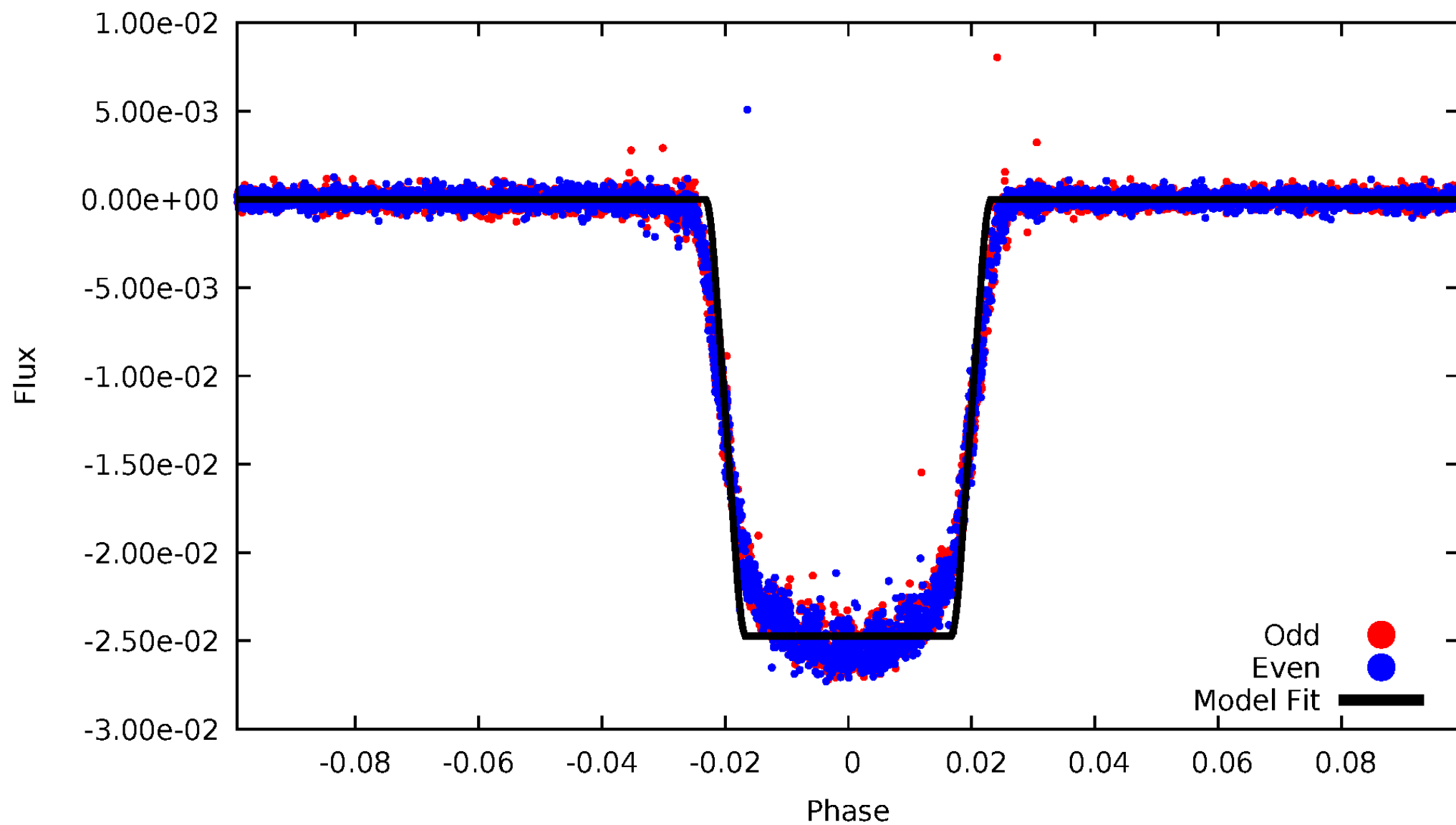
DV Odd/Even

TCE 005270698-01



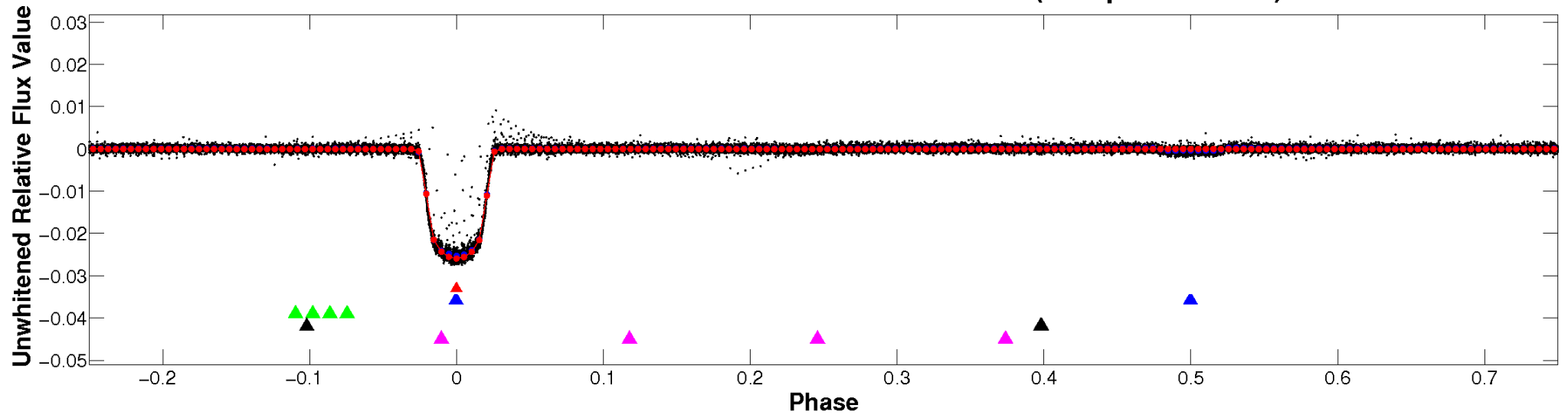
ALT Odd/Even

TCE 005270698-01

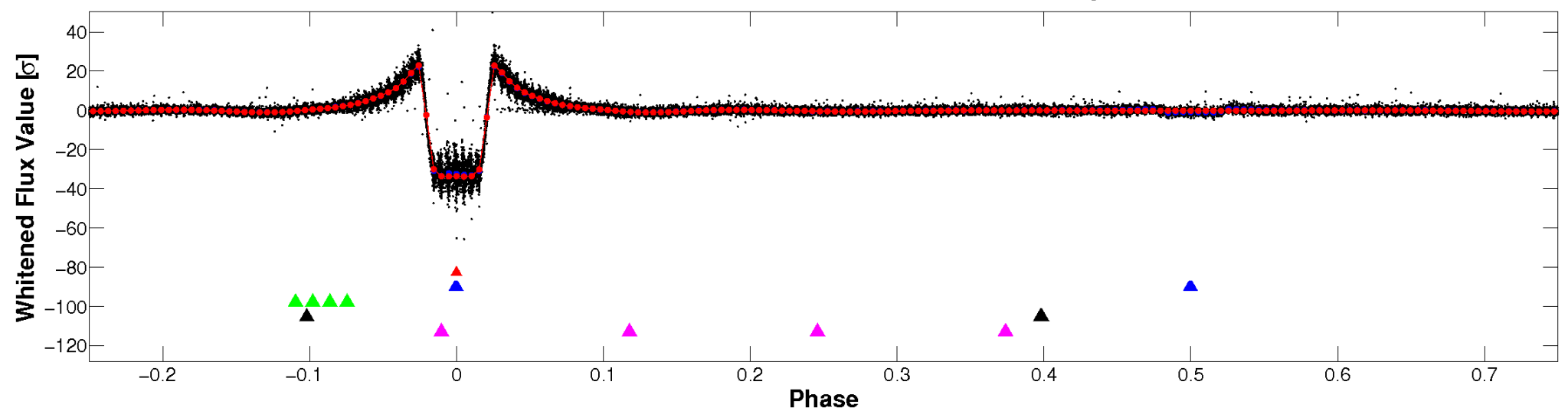


Non-Whitened Vs. Whitened Light Curve

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

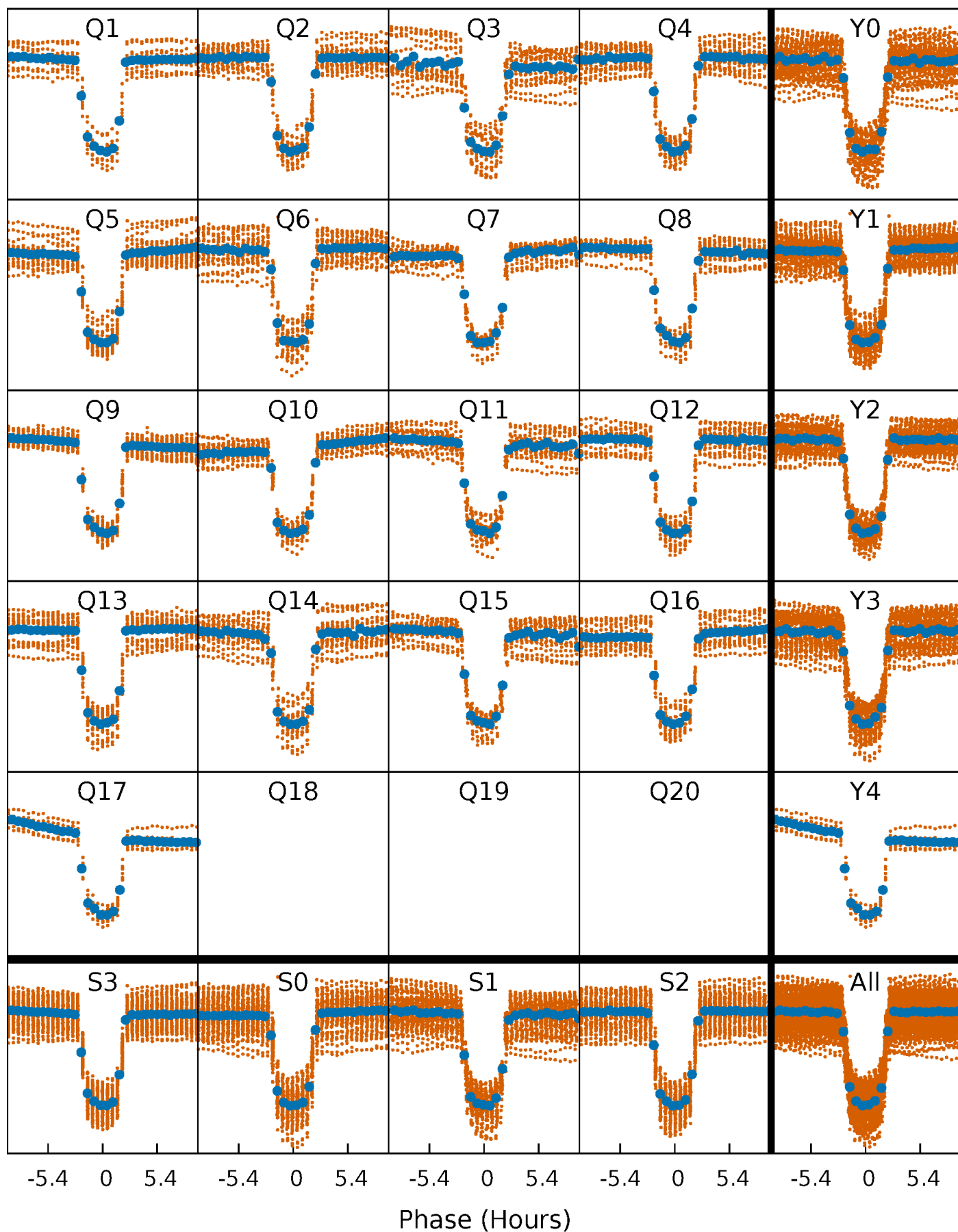


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



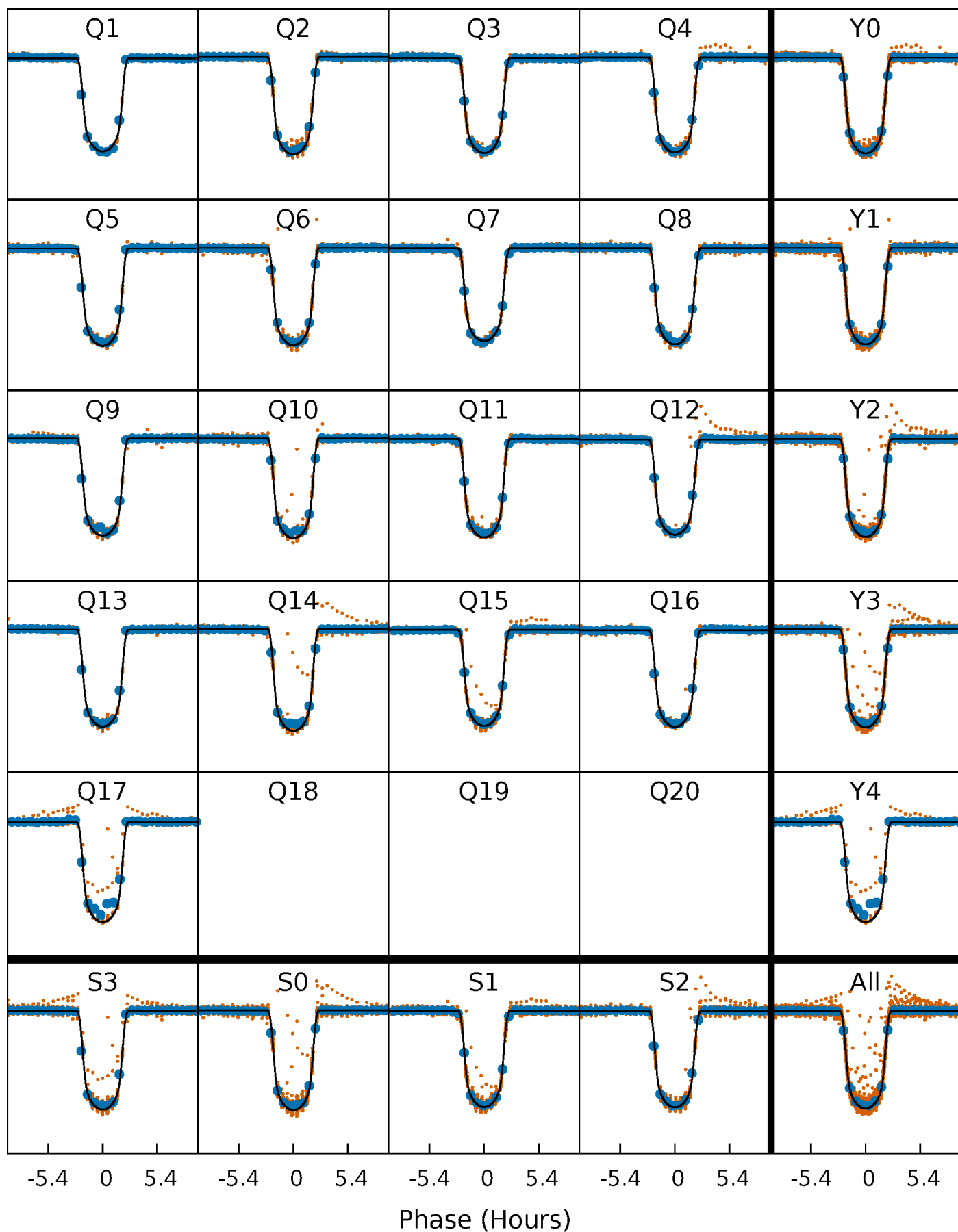
PDC Quarter-Phased Transit Curves

TCE 005270698-01 P= 3.964332 Days $T_0=132.065425$ (BKJD)



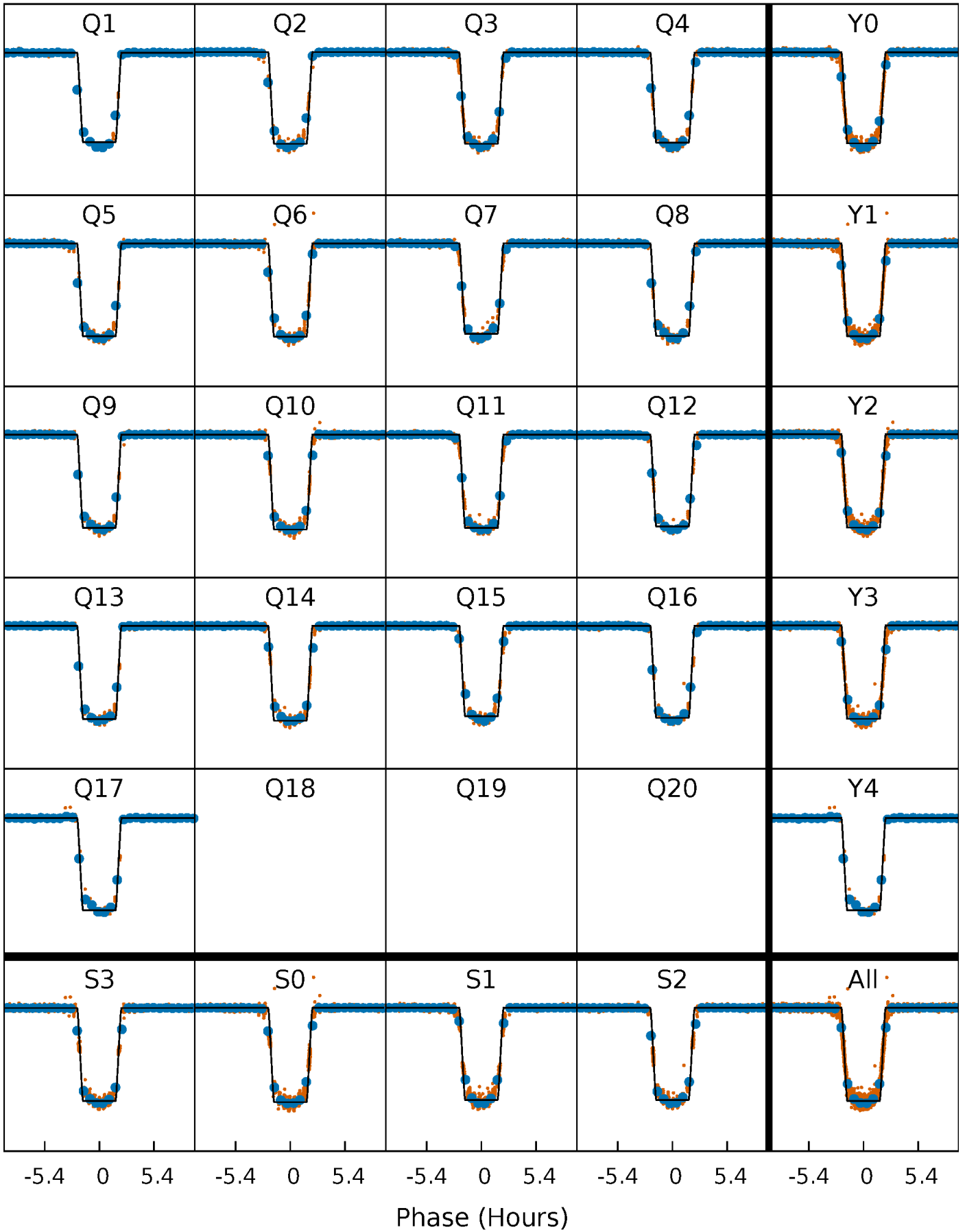
DV Quarter-Phased Transit Curves

TCE 005270698-01 P= 3.964332 Days $T_0=132.065425$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

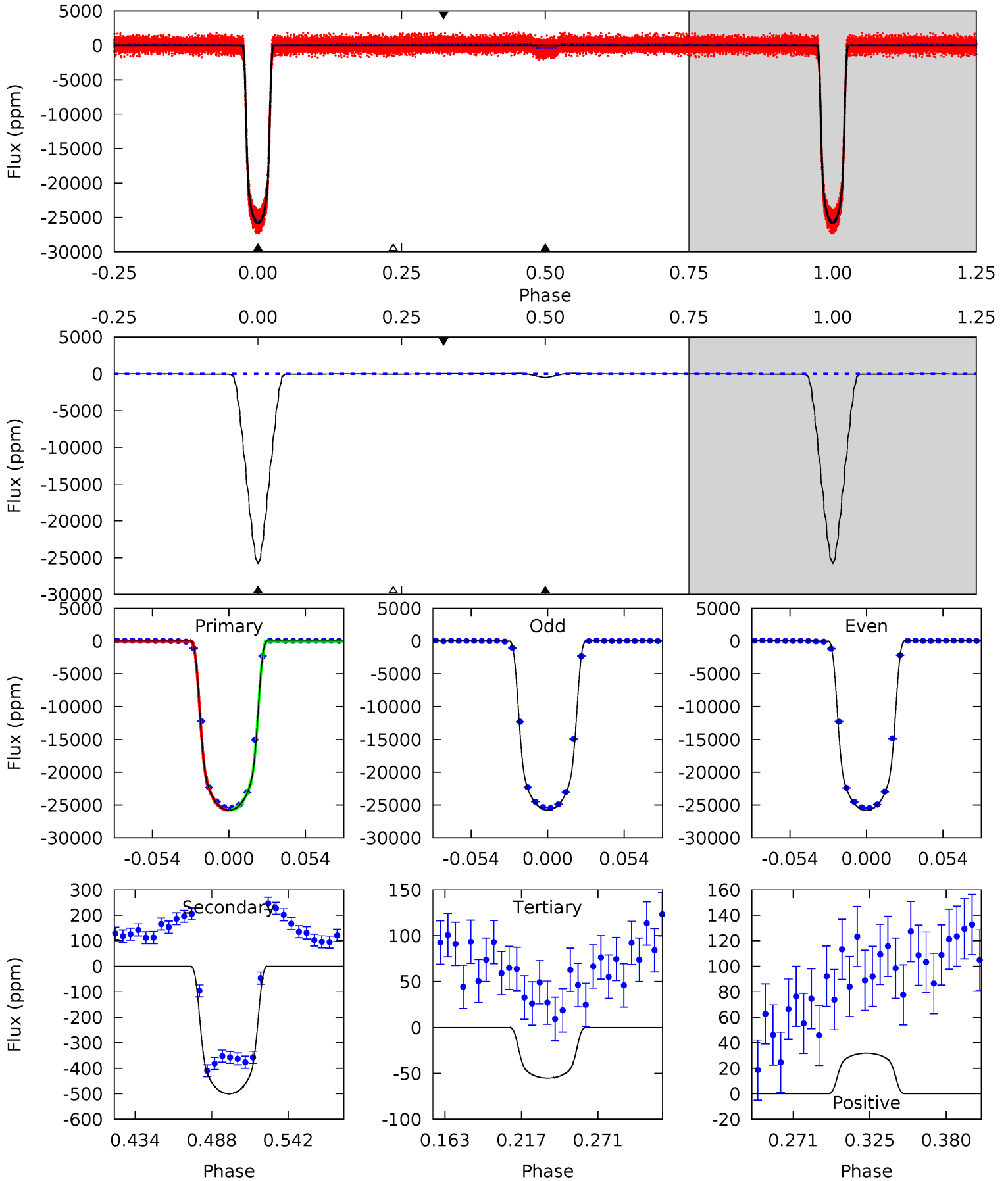
TCE 005270698-01 P= 3.964317 Days $T_0=132.068069$ (BKJD)



DV Model-Shift Uniqueness Test

005270698-01, P = 3.964332 Days, E = 128.101093 Days

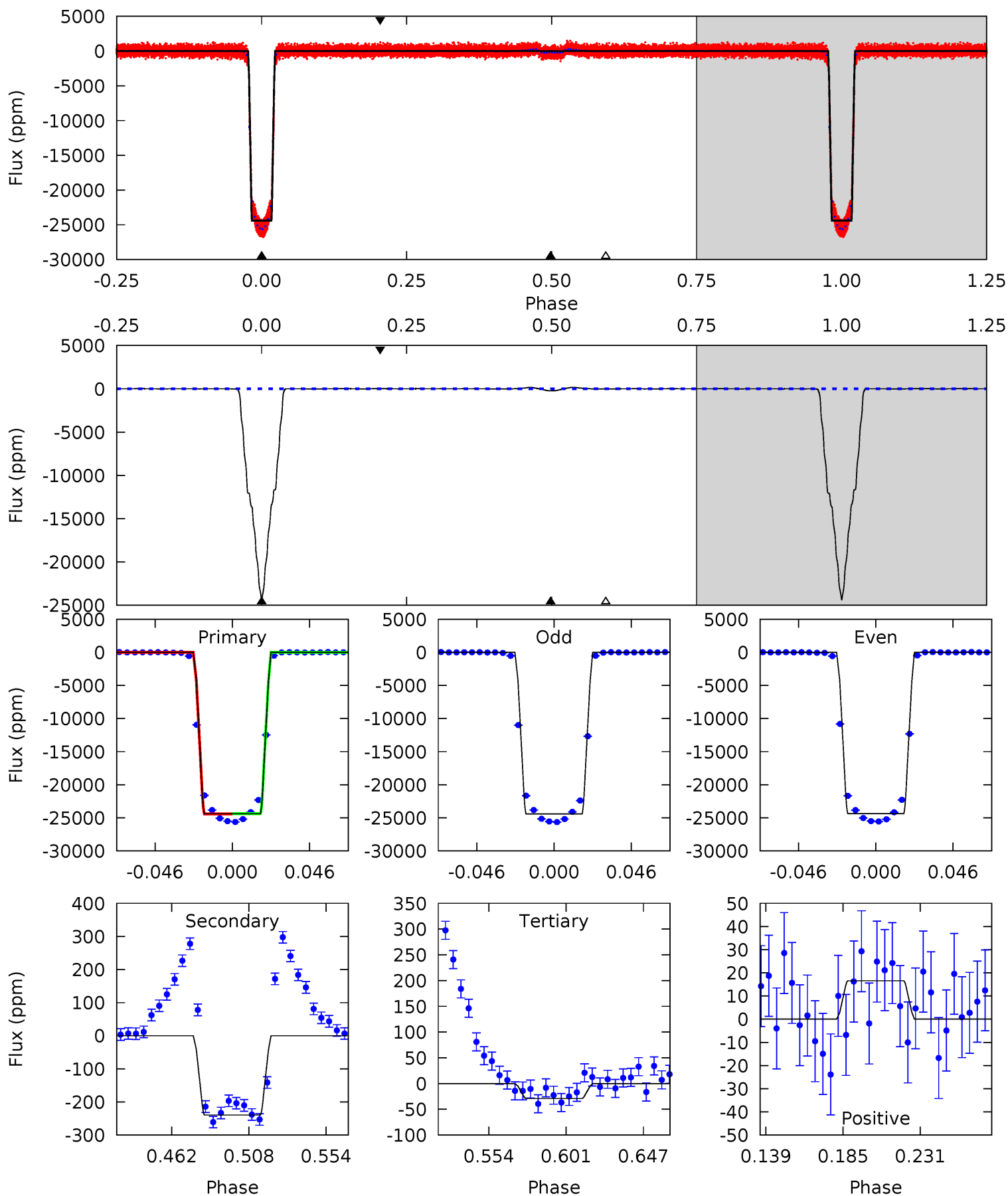
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3438	66.7	7.36	4.24	4.69	1.93	4.00	3431	3434	59.3	62.4	2.19	0.98	0.00	1.09



Alt Model-Shift Uniqueness Test

005270698-01, P = 3.964317 Days, E = 128.103752 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3841	37.7	4.56	2.61	4.72	1.99	2.24	3836	3838	33.2	35.1	4.01	1.00	0.01	3.69



Stellar Parameters For KIC 005270698

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5758^{+77}_{-77}	$3.808^{+0.233}_{-0.093}$	$-0.060^{+0.150}_{-0.150}$	$2.318^{+0.380}_{-0.706}$	$1.258^{+0.106}_{-0.248}$	$0.142^{+0.192}_{-0.043}$
	+1%/-1%	+6%/-2%	+250%/-250%	+16%/-30%	+8%/-20%	+135%/-30%
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 005270698-01 / KOI 1543.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-500 ± 8	$36.69^{+3.69}_{-6.11}$	2328^{+116}_{-184}	2663^{+89}_{-87}	$0.573^{+0.209}_{-0.096}$
Alt.	-240 ± 6	$39.11^{+3.73}_{-6.15}$	2322^{+109}_{-167}	-2210^{+4218}_{-181}	$0.242^{+0.090}_{-0.040}$

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 $A_{obs} \gg 1.0$

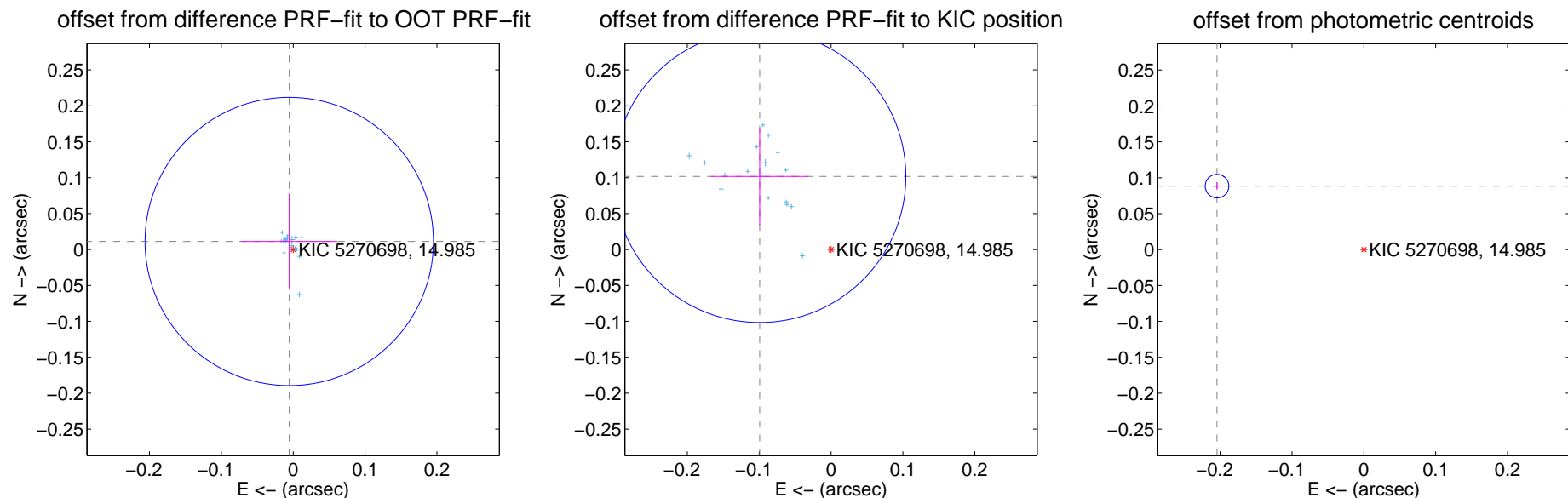
DV Centroid Data

Supplemental centroid analysis for 005270698-01. Kepler magnitude: 14.98. Transit SNR 1671.68

There are 17 quarters with good PRF difference image offsets

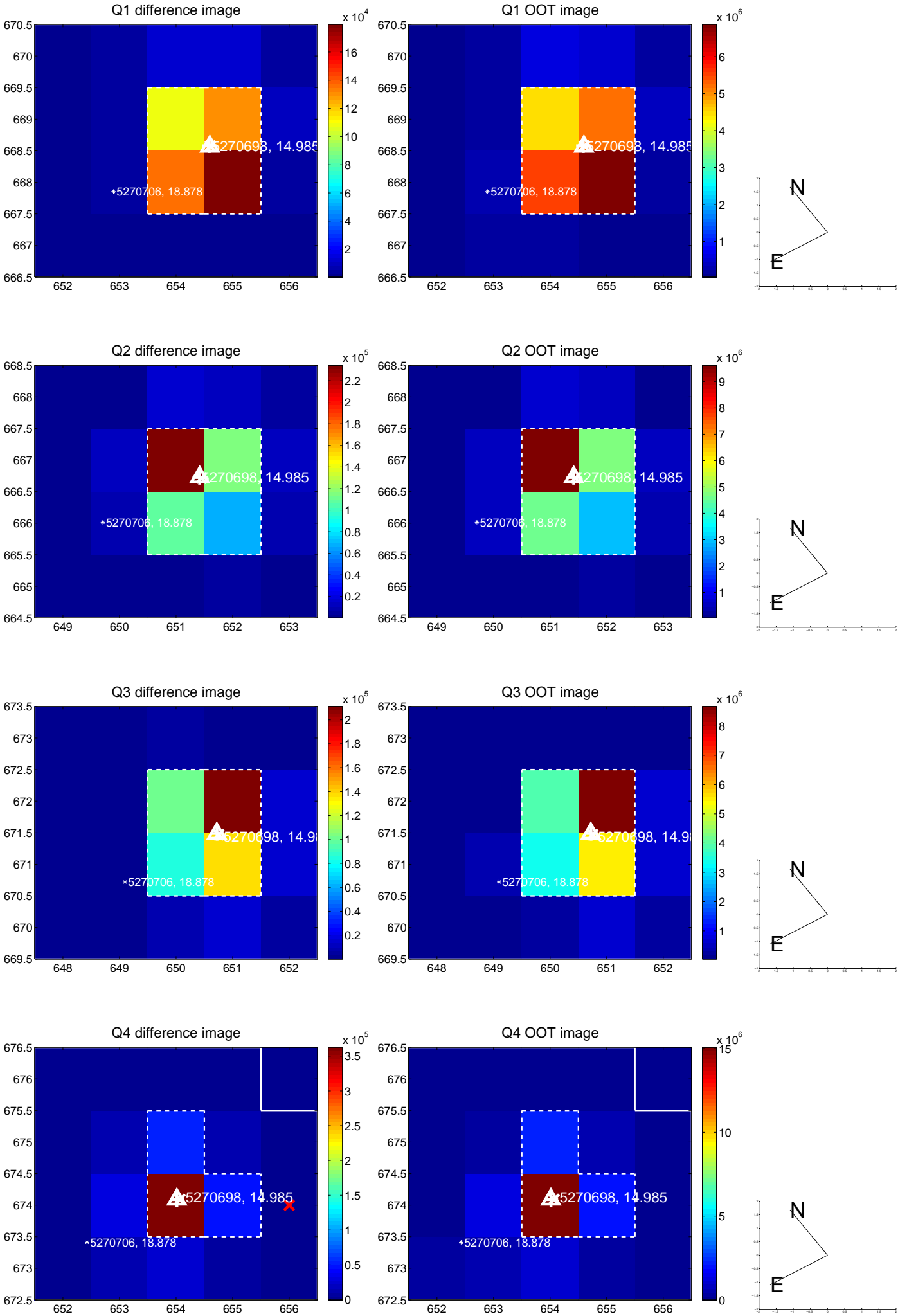
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.012 ± 0.067	0.19	0.005 ± 0.067	0.011 ± 0.067
PRF-fit source offset from KIC position	0.142 ± 0.068	2.10	0.099 ± 0.067	0.102 ± 0.067
photometric centroid source offset	0.22 ± 0.01	40.67	0.20 ± 0.01	0.09 ± 0.01

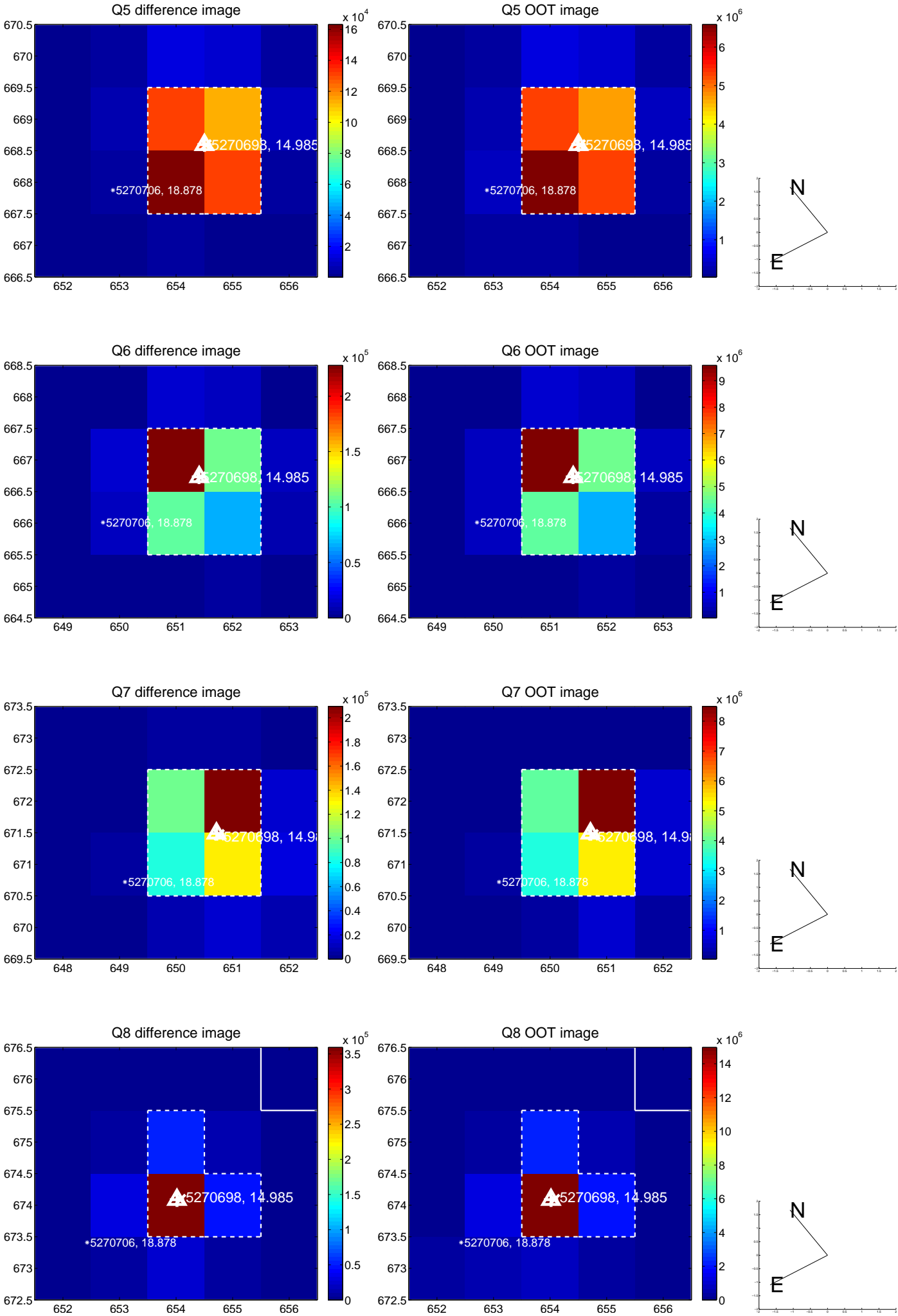


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

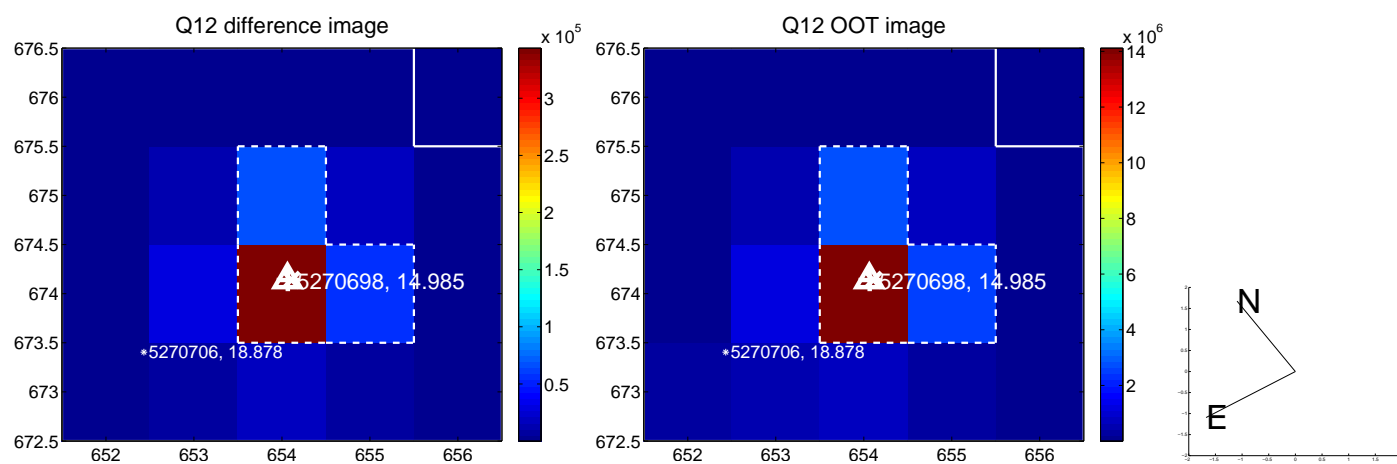
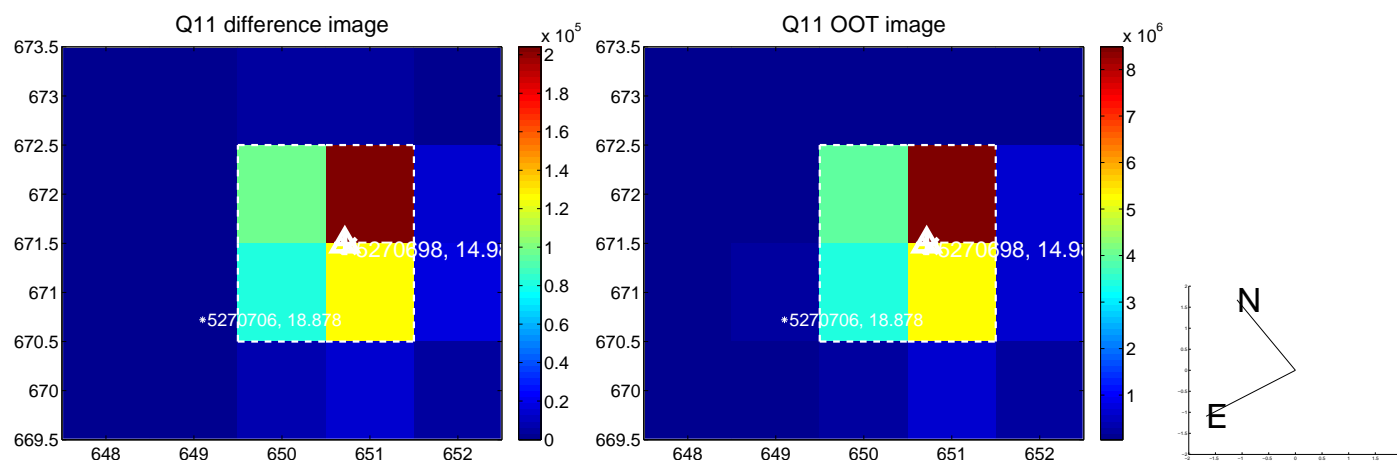
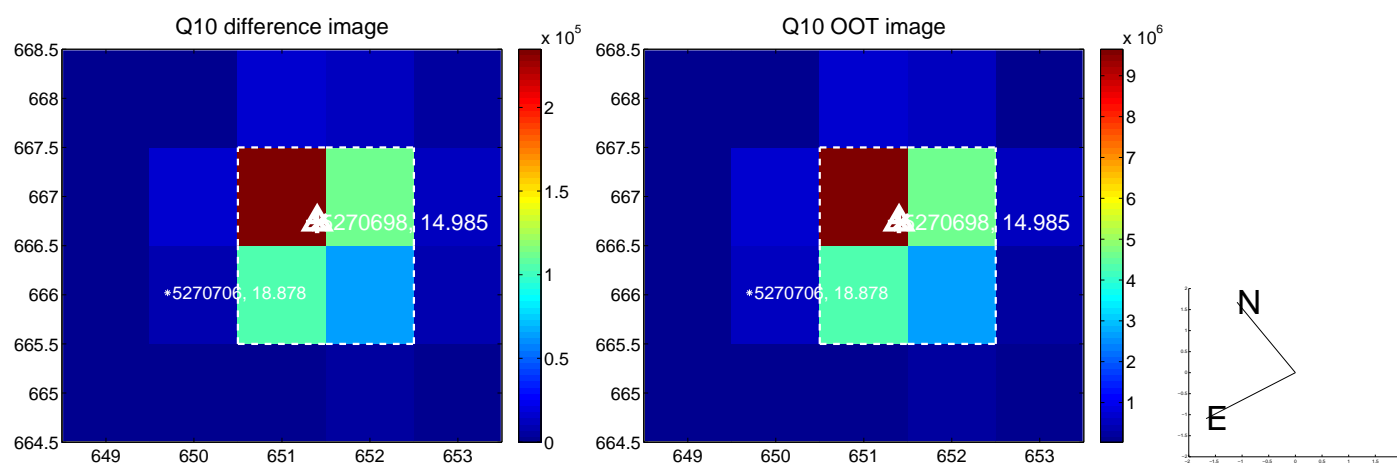
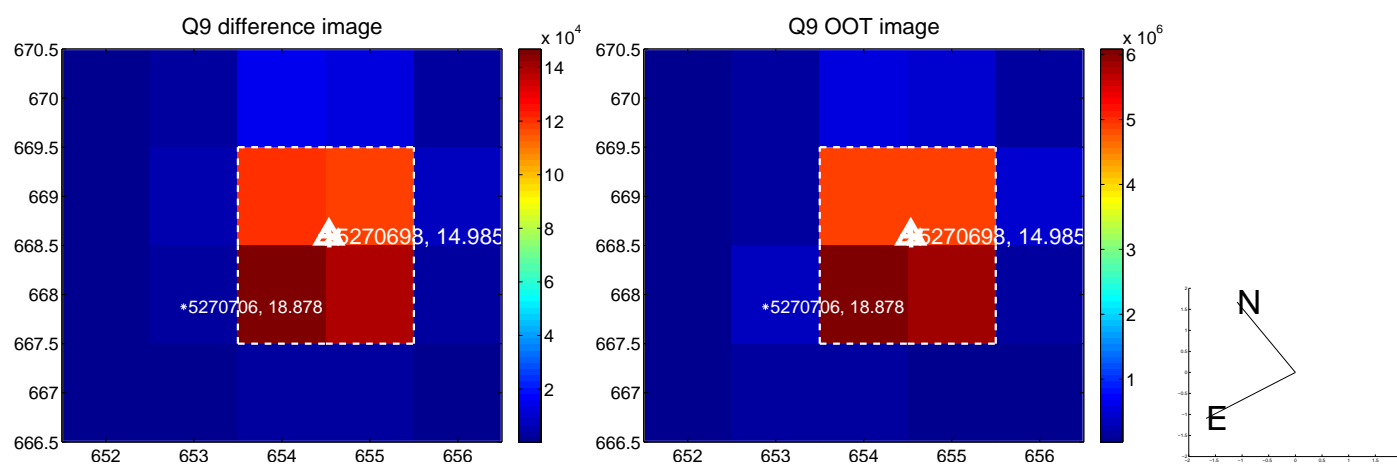
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



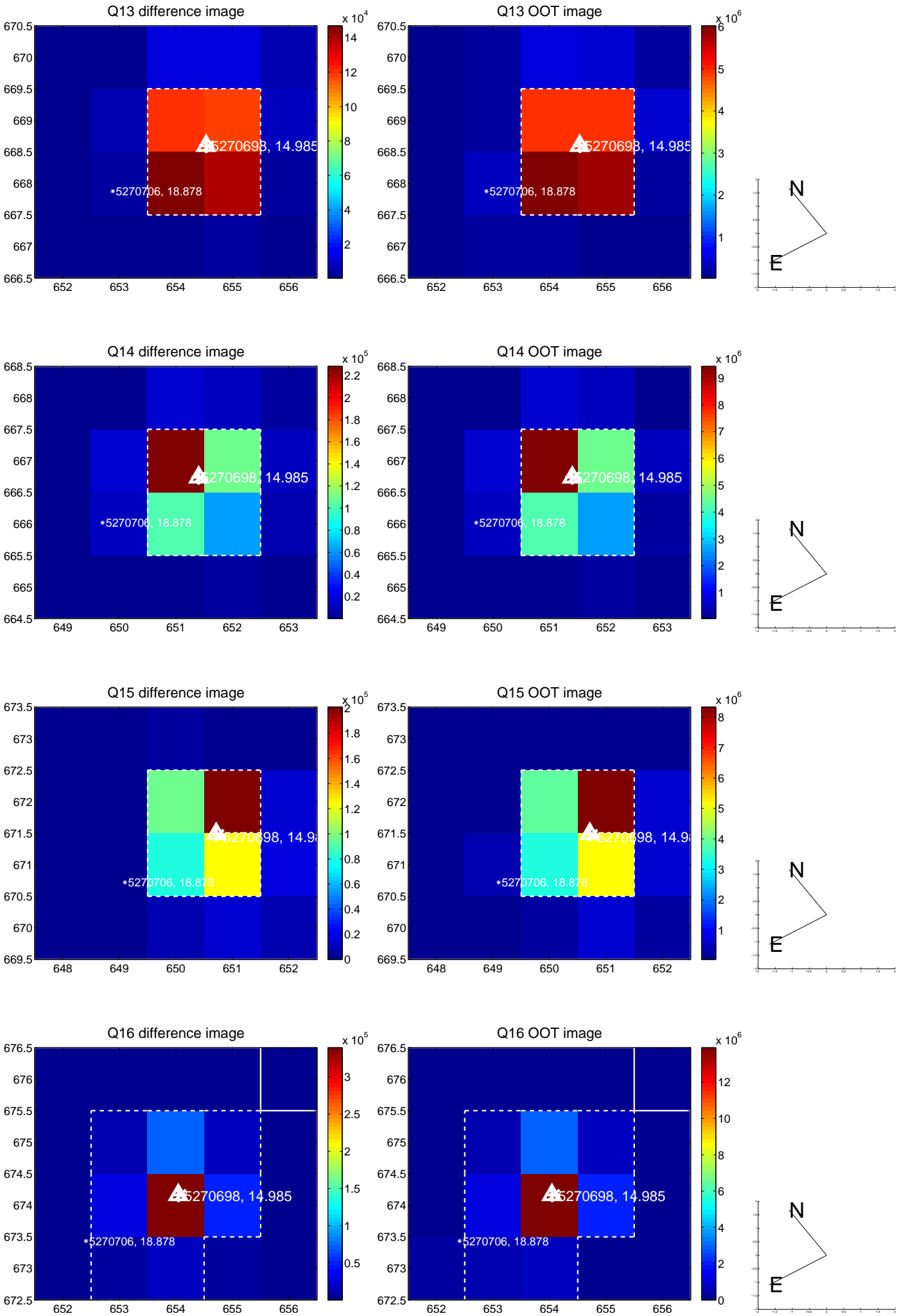
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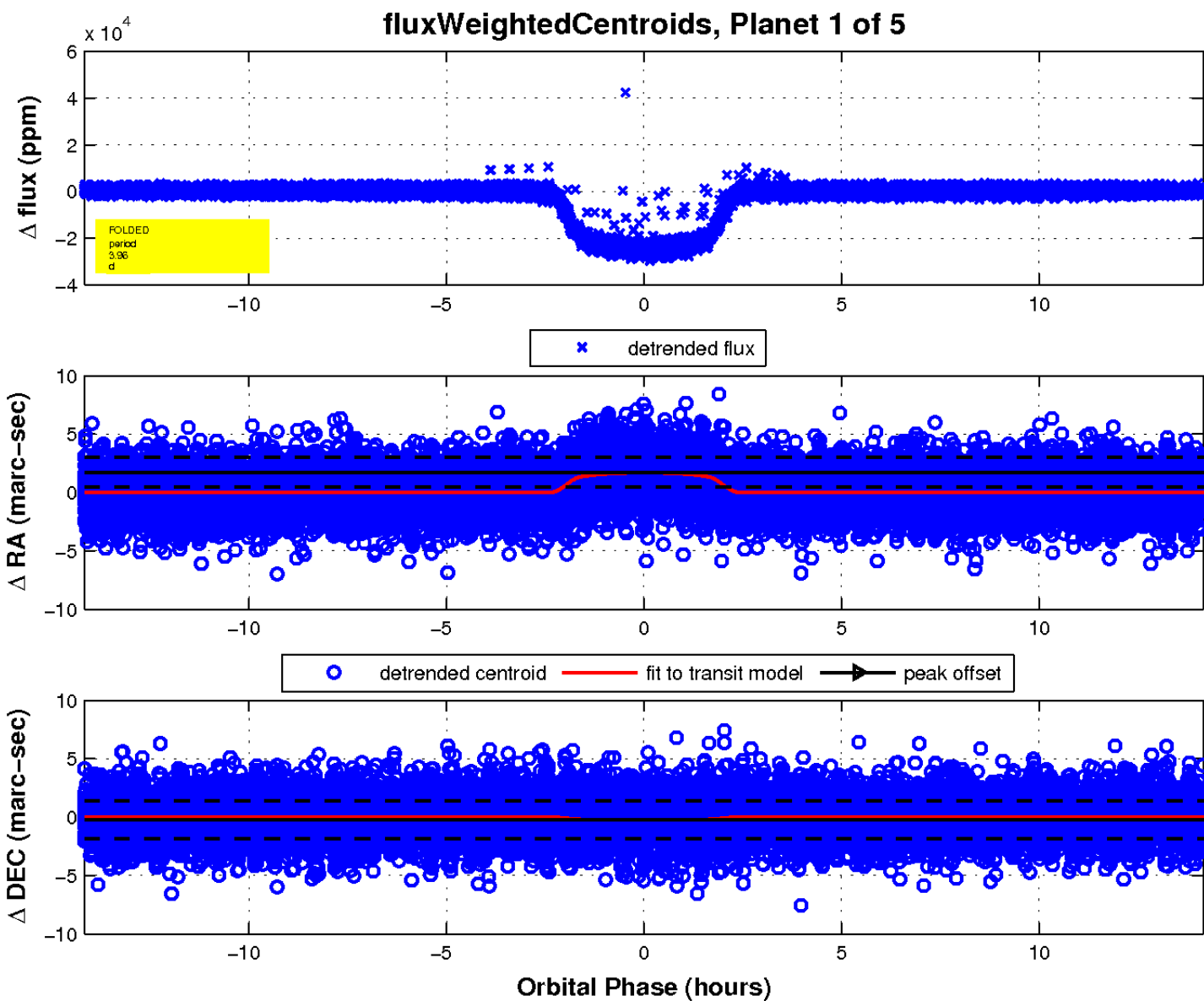
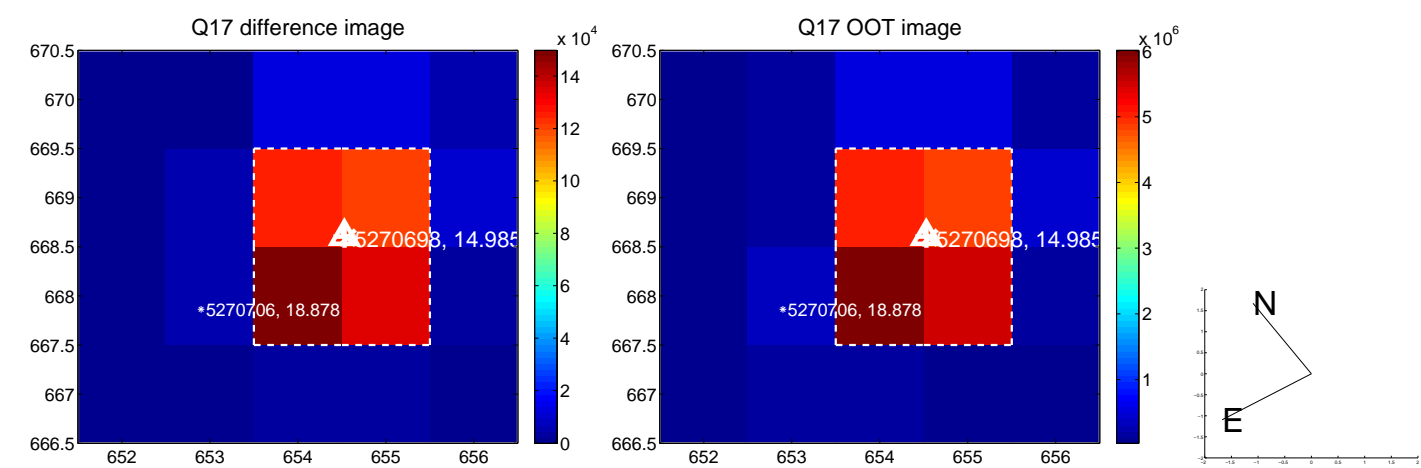
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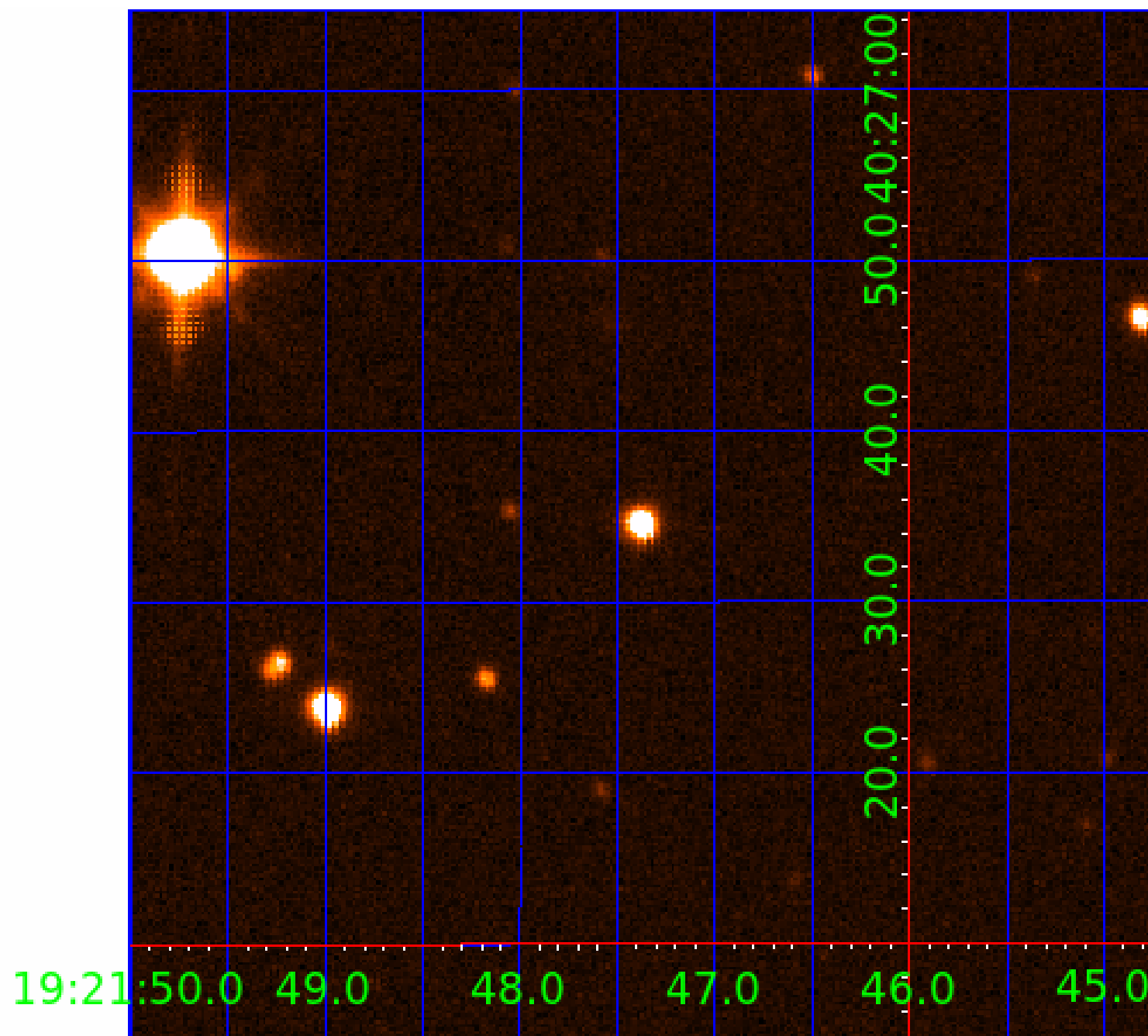


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UKIRT Image

Declination



KIC 005270698

Q1-17 DR25 TCE Parameters

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005270698-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
005270698-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
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005270698-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

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

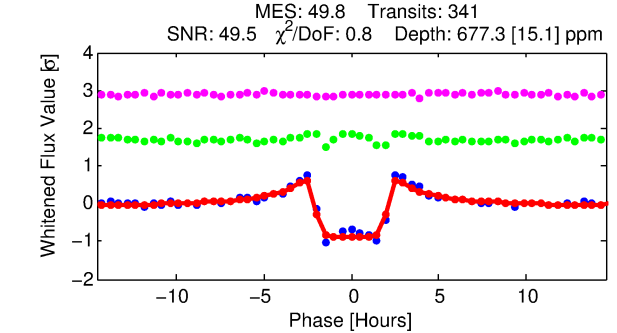
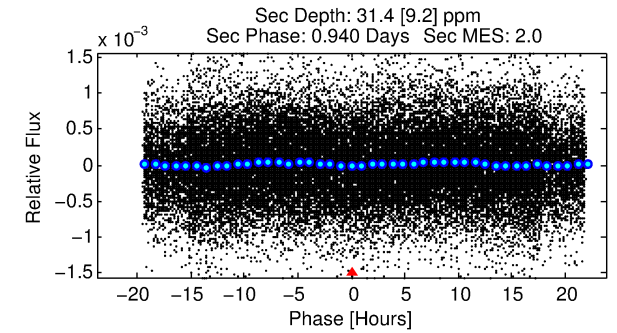
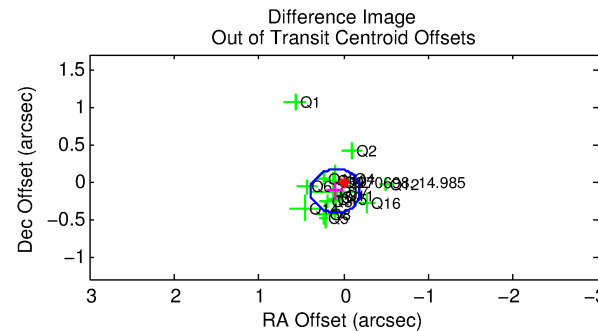
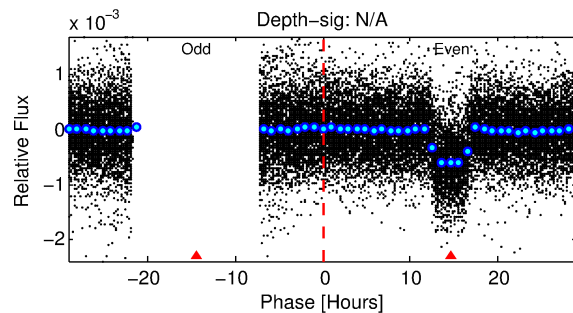
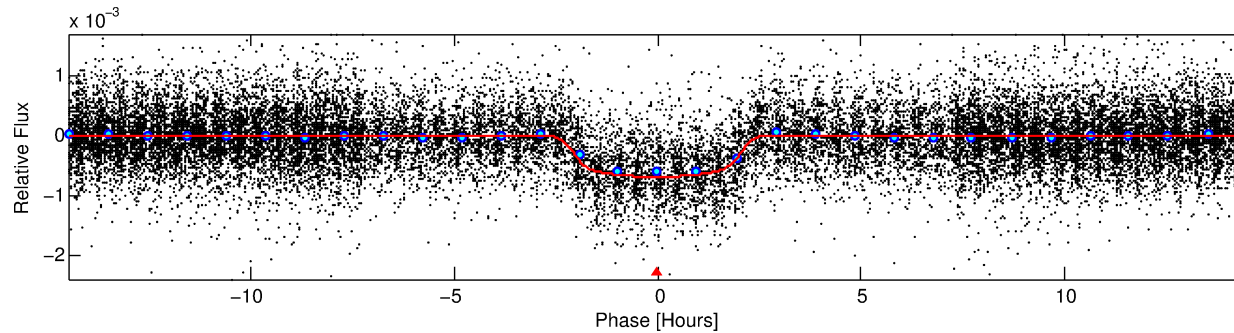
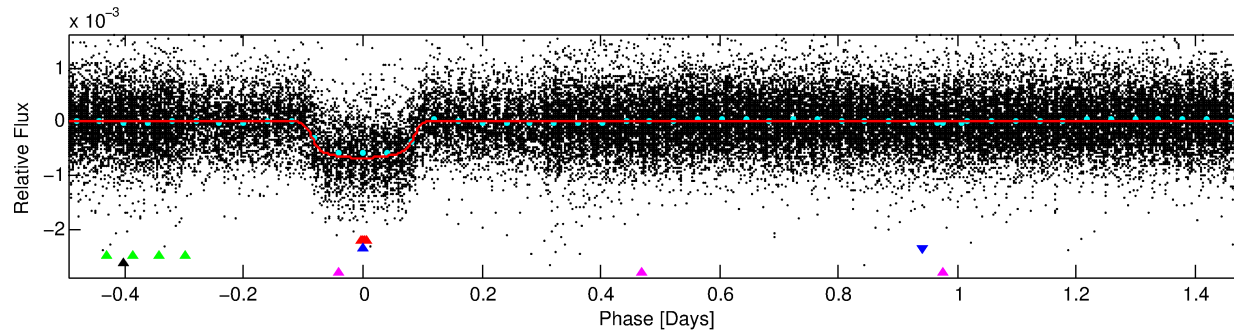
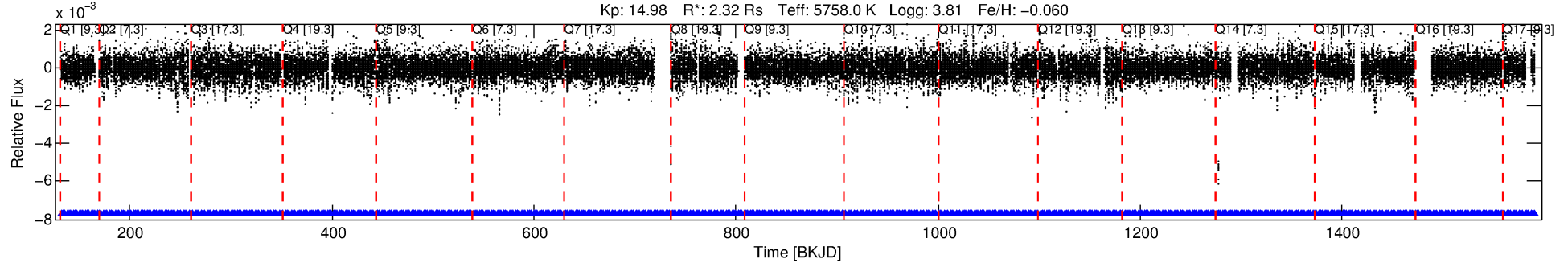
Ephemeris Match Information For 005270698-02

No Significant Match Found

DV One-Page Summary

KIC: 5270698 Candidate: 2 of 5 Period: 1.982 d
KOI: K01543 Corr: No Ephemeris Match

Kp: 14.98 R*: 2.32 Rs Teff: 5758.0 K Logg: 3.81 Fe/H: -0.060



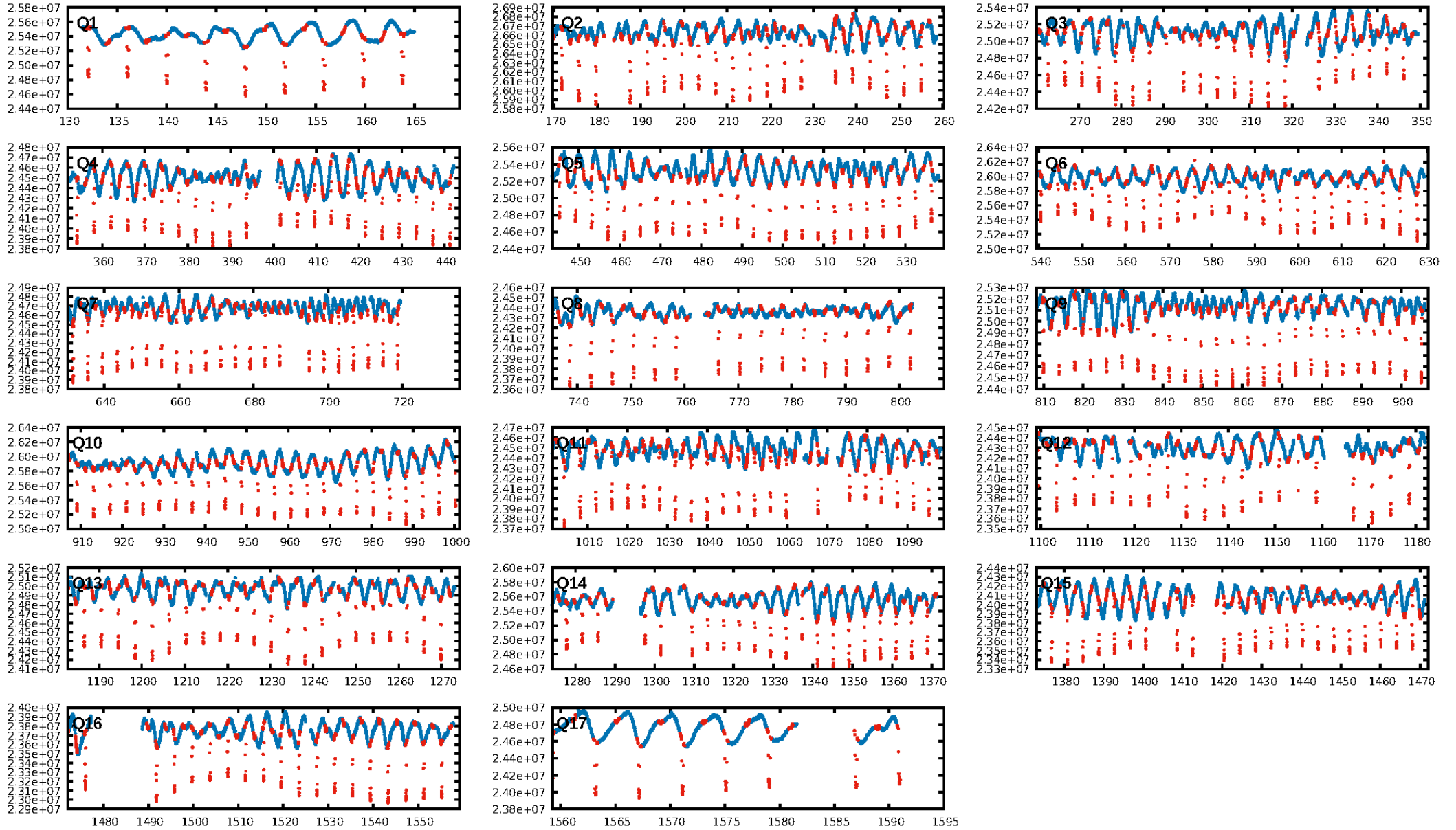
DV Fit Results:

Period = 1.98215 [0.00000] d
Epoch = 132.0686 [0.0007] BKJD
Rp/R* = 0.0283 [0.0006]
a/R* = 1.83 [0.10]
b = 0.90 [0.02]
Seff = 4755.61 [1972.38]
Teq = 2118 [220] K
Rp = 7.16 [2.19] Re
a = 0.0334 [0.0090] AU
Ag = 0.37 [0.19] [-3.29σ]
Teffp = 2561 [193] K [1.52σ]

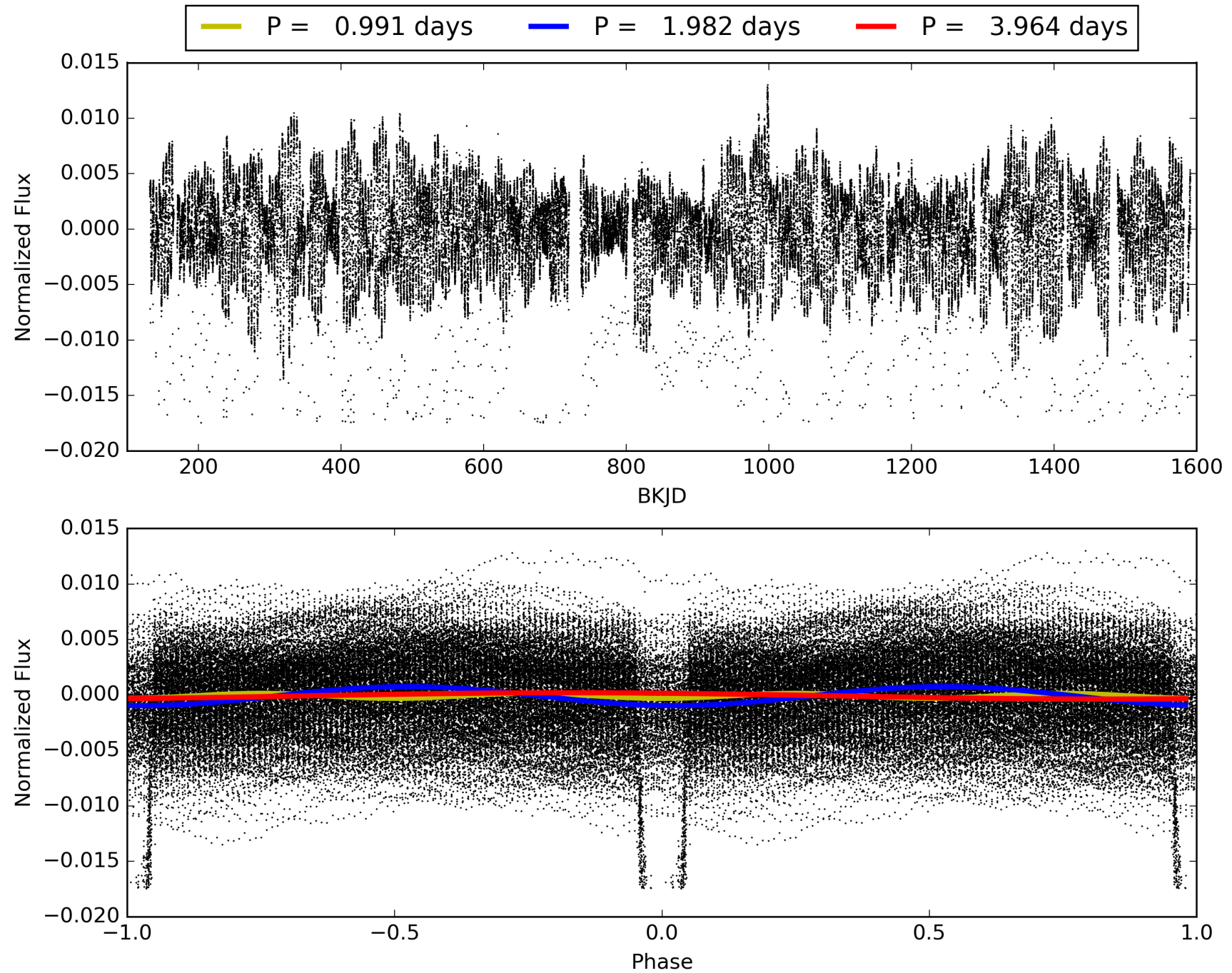
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [7.05σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [326/326]
GhostDiagnostic-chr: 1.781
Centroid-sig: 33.5%
Centroid-so: 0.257 arcsec [1.80σ]
OotOffset-rm: 0.156 arcsec [1.61σ]
KicOffset-rm: 0.186 arcsec [2.06σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005270698-02, PDC Light Curves

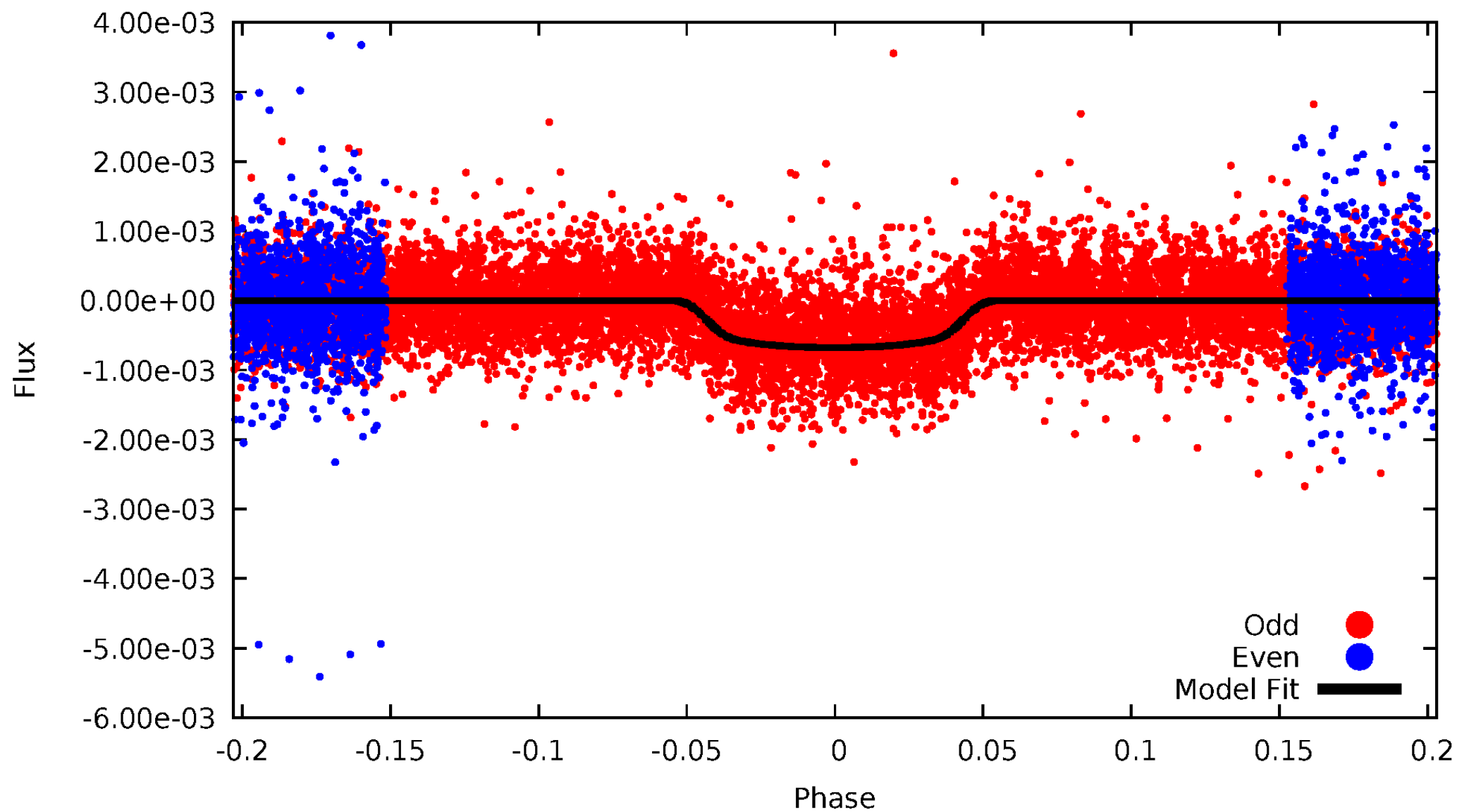


TCE 005270698-02



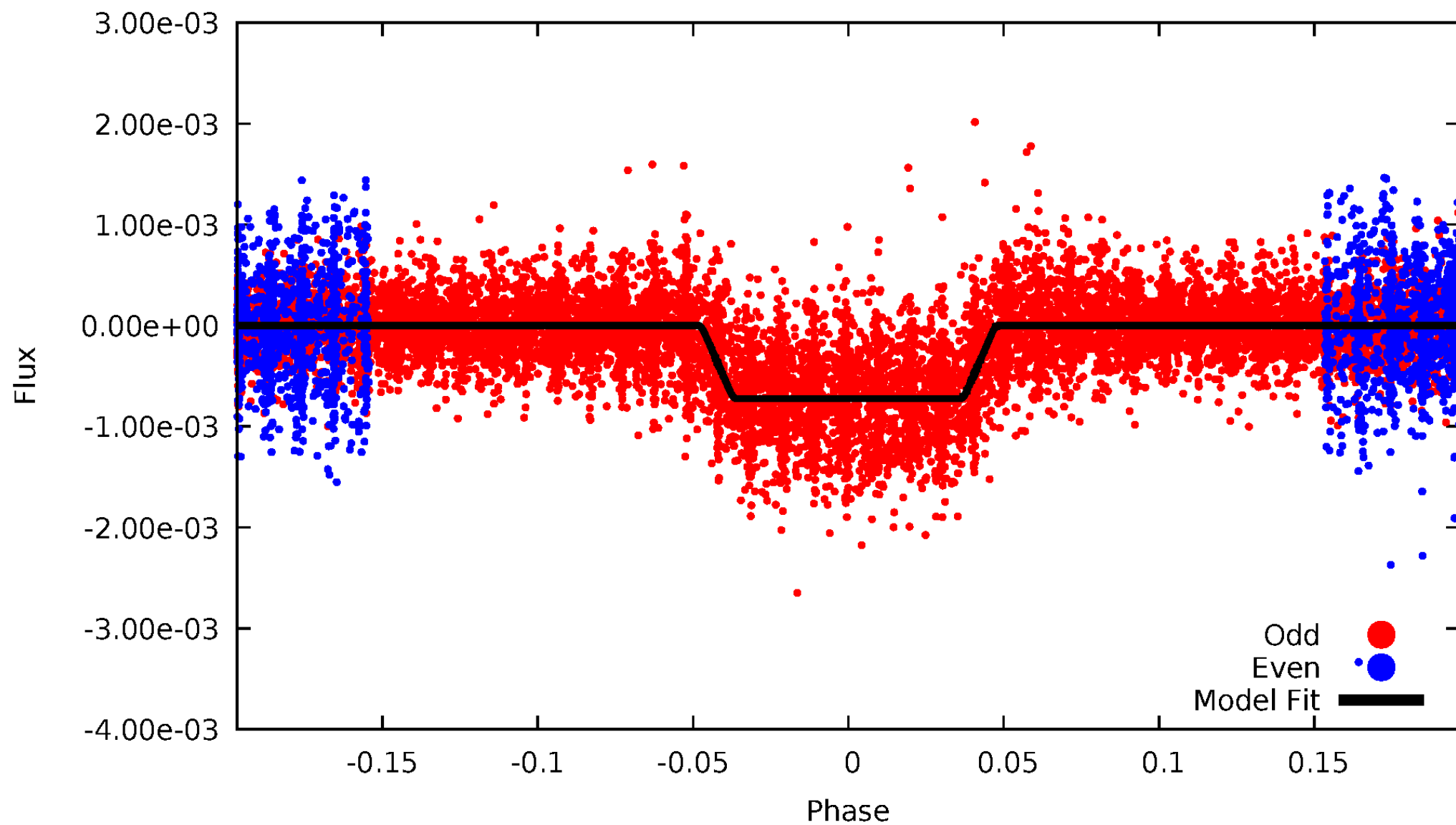
DV Odd/Even

TCE 005270698-02



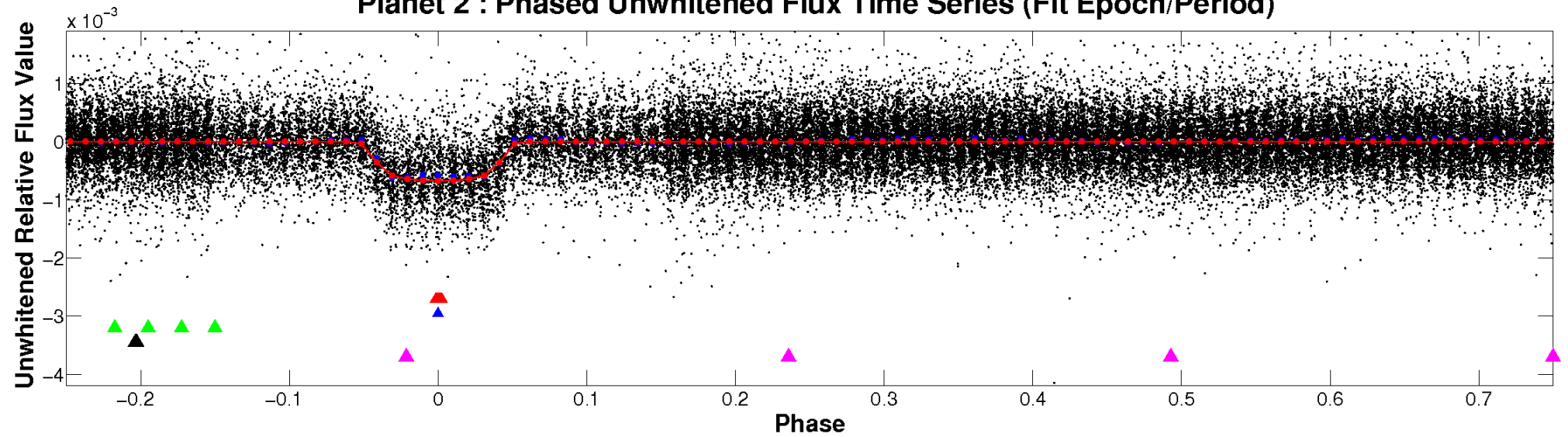
ALT Odd/Even

TCE 005270698-02

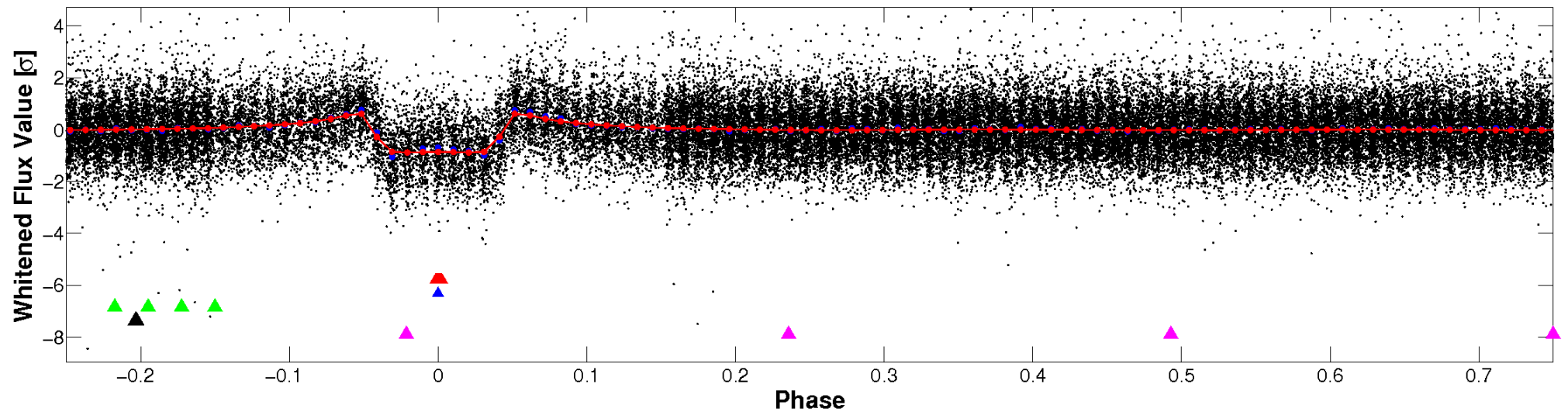


Non-Whitened Vs. Whitened Light Curve

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

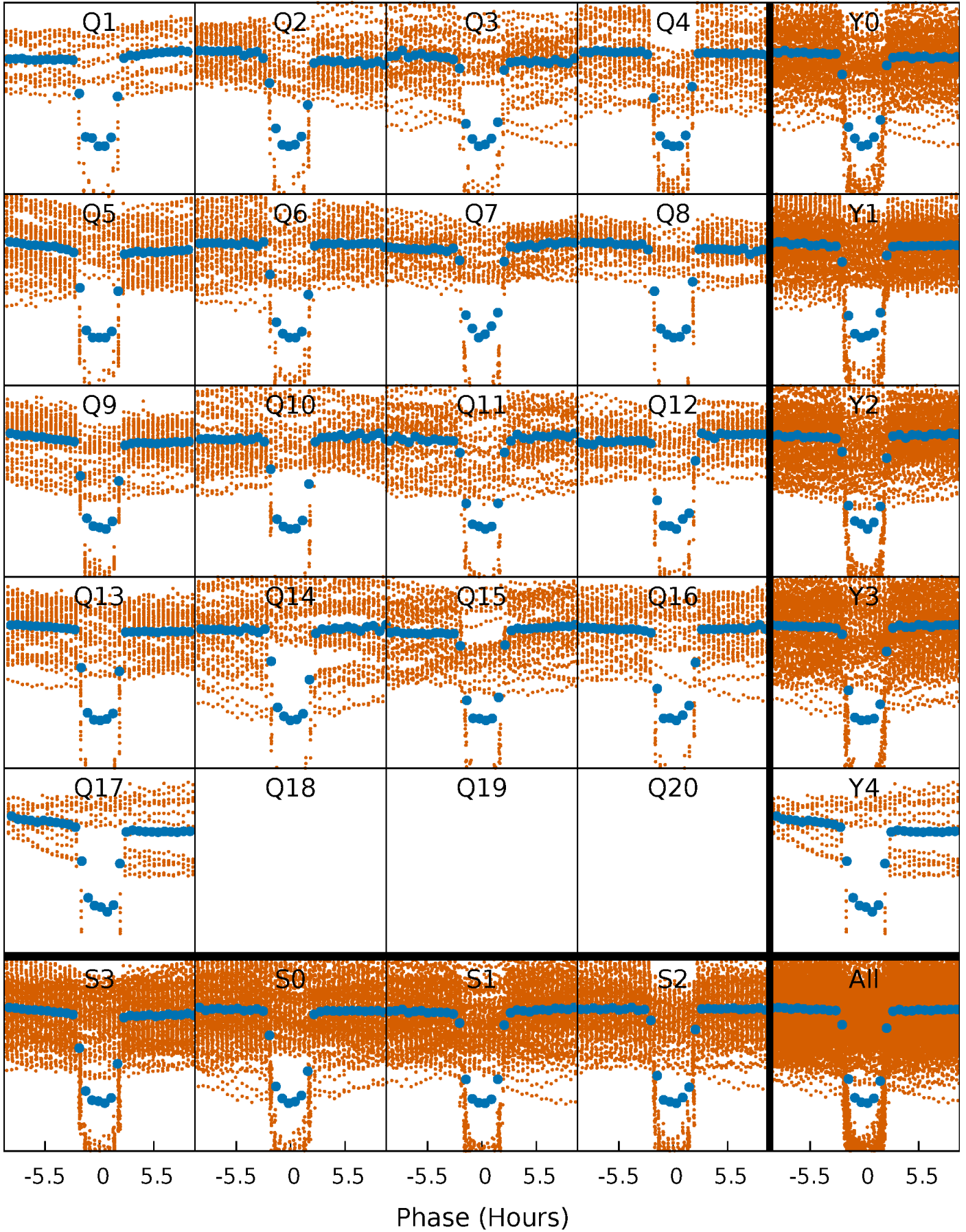


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



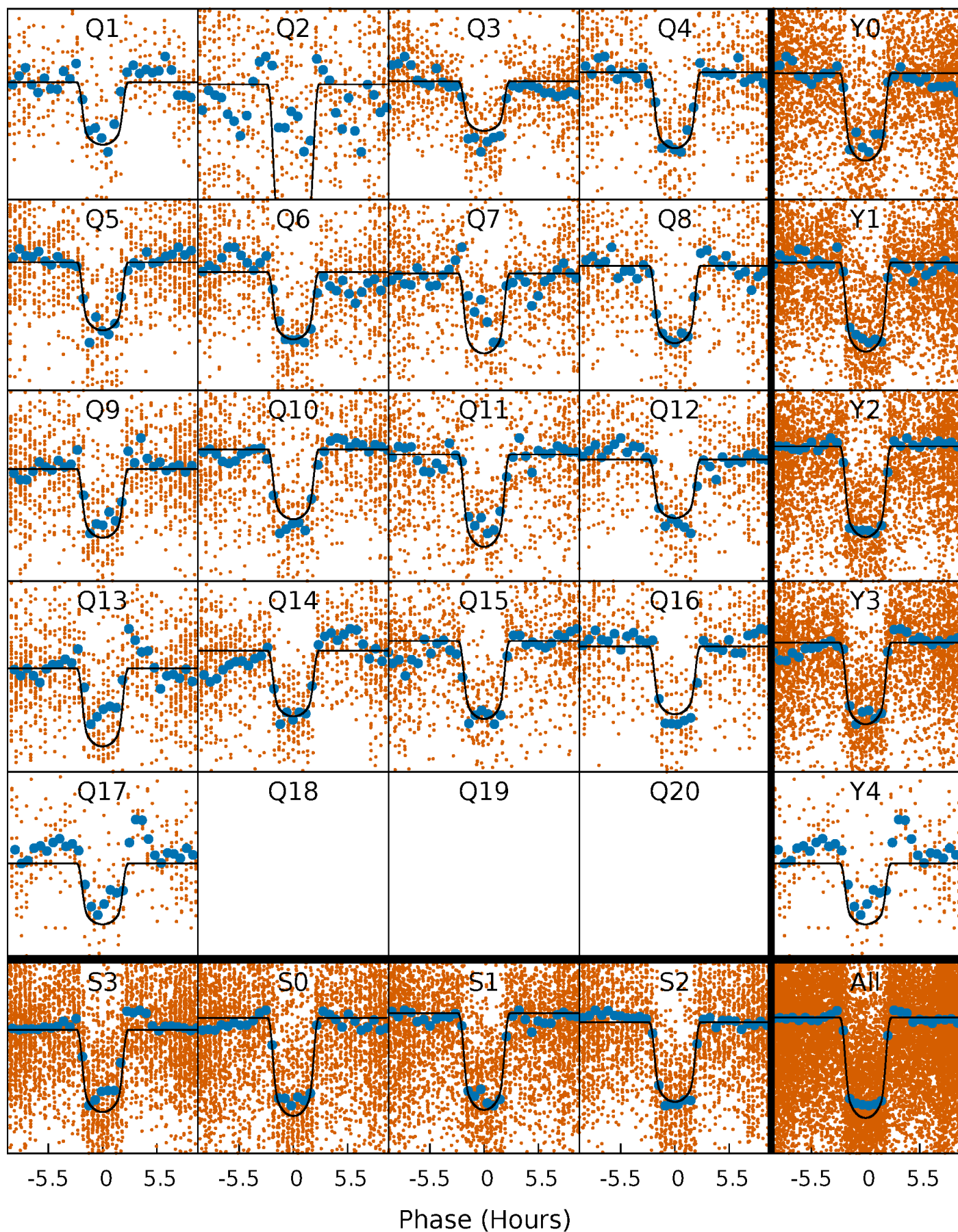
PDC Quarter-Phased Transit Curves

TCE 005270698-02 P= 1.982155 Days $T_0=132.068550$ (BKJD)



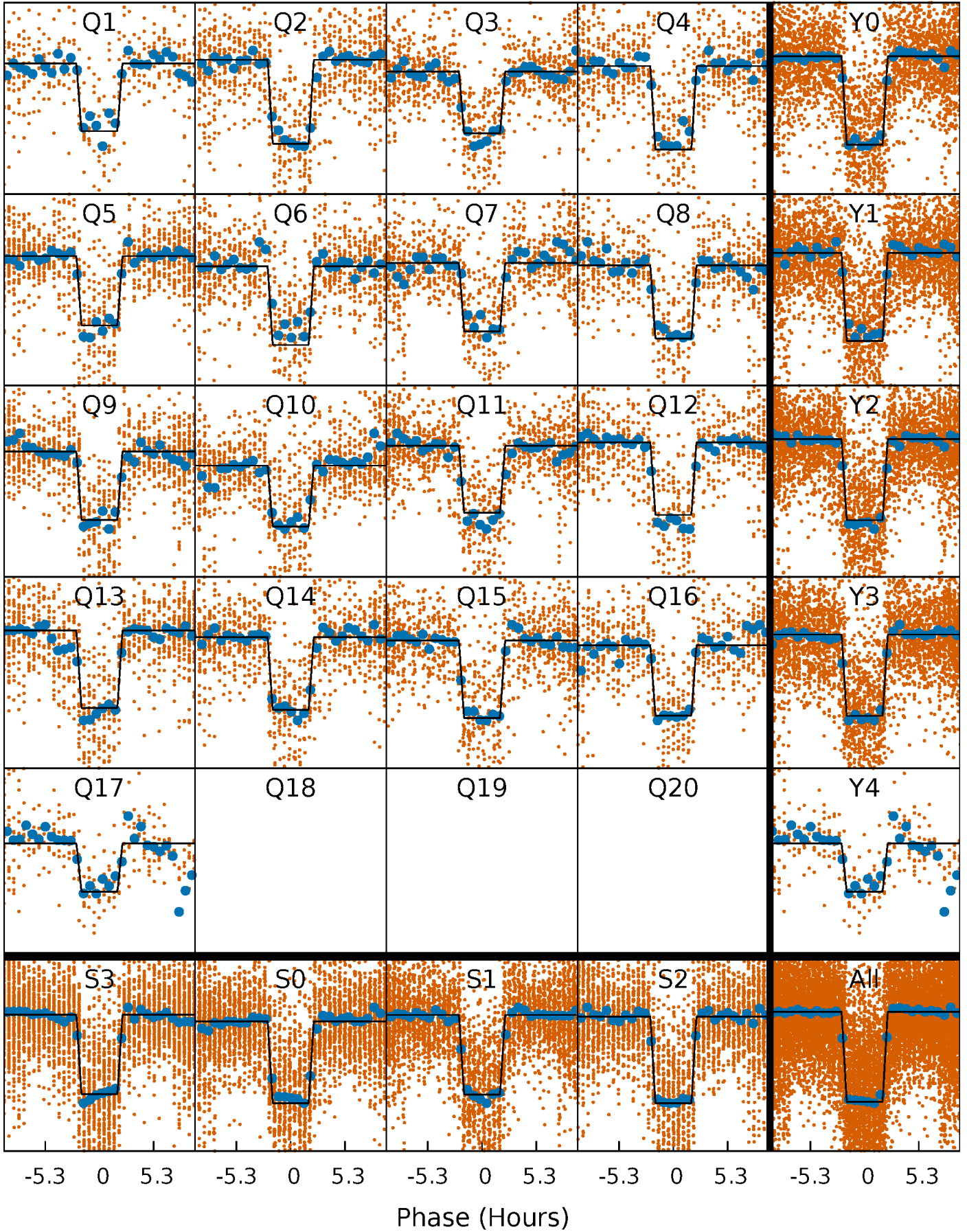
DV Quarter-Phased Transit Curves

TCE 005270698-02 P= 1.982155 Days $T_0=132.068550$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

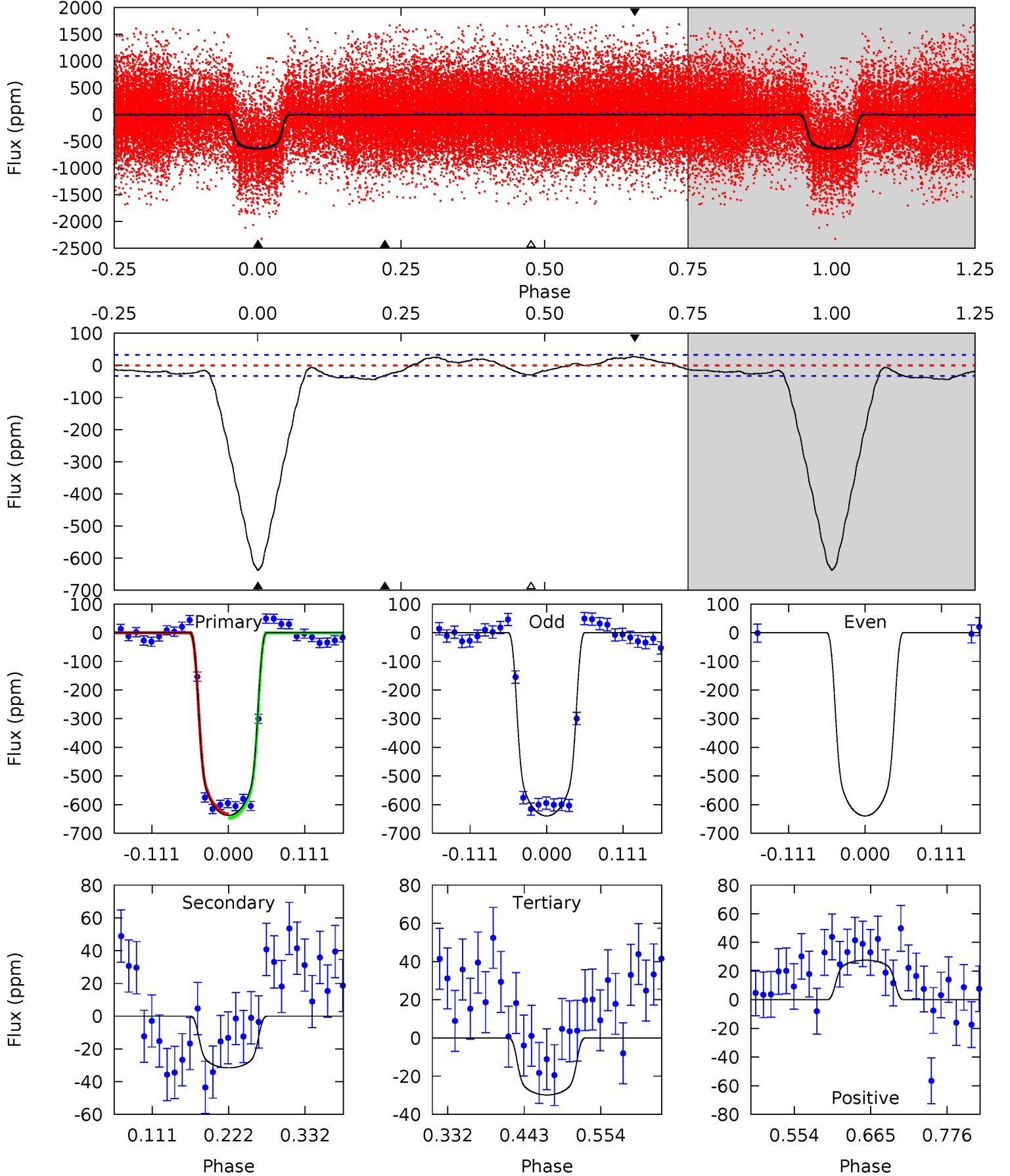
TCE 005270698-02 P= 1.982169 Days $T_0=132.065385$ (BKJD)



DV Model-Shift Uniqueness Test

005270698-02, P = 1.982155 Days, E = 130.086395 Days

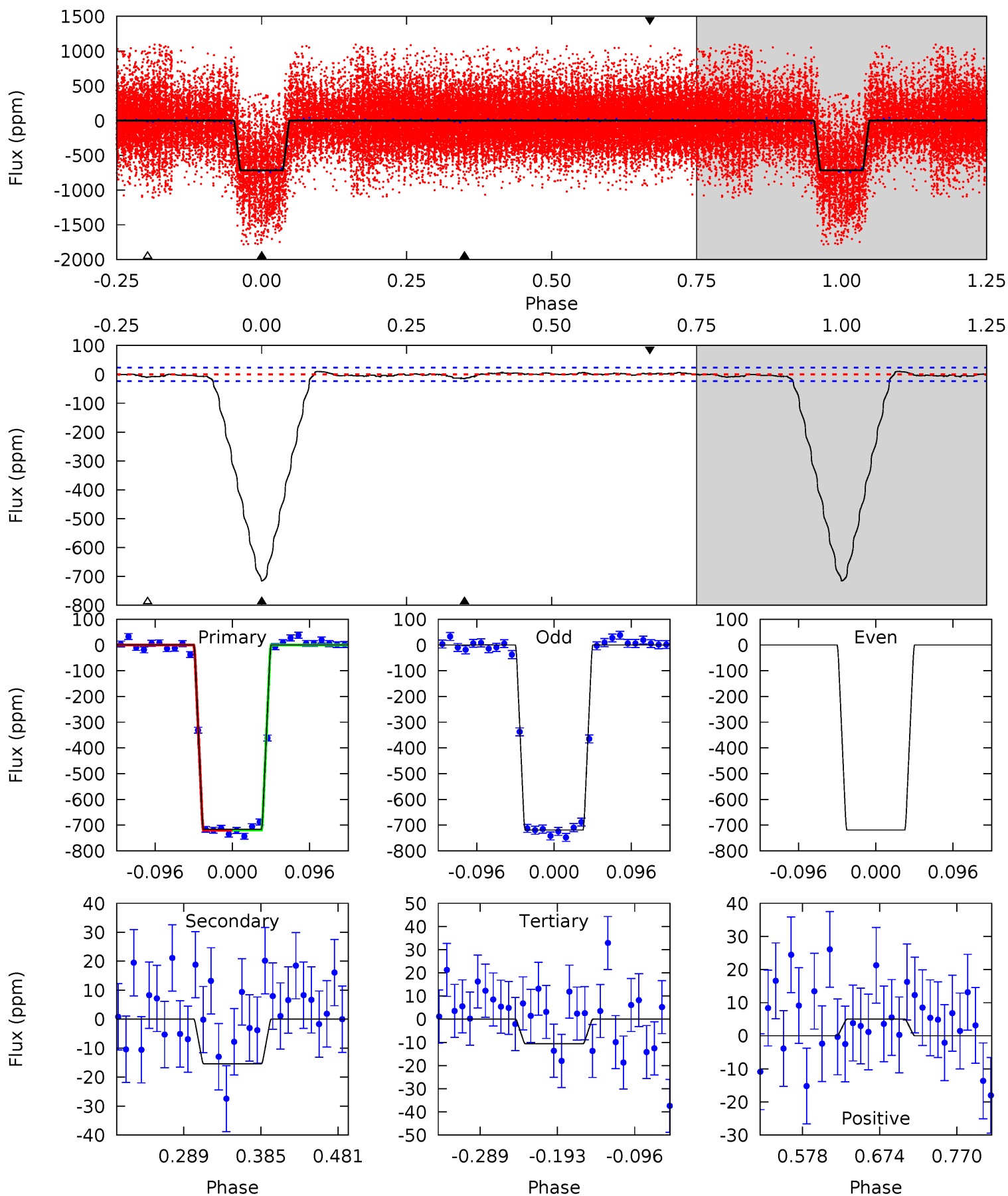
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
88.3	4.37	4.13	3.83	4.54	1.59	2.30	84.2	84.5	0.24	0.55	0	0.96	0.04	0.96



Alt Model-Shift Uniqueness Test

005270698-02, P = 1.982169 Days, E = 130.083216 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
140.4	3.02	2.07	0.98	4.57	1.66	0.77	138.4	139.4	0.95	2.04	0	1.00	0.01	0.07



Stellar Parameters For KIC 005270698

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5758^{+77}_{-77}	$3.808^{+0.233}_{-0.093}$	$-0.060^{+0.150}_{-0.150}$	$2.318^{+0.380}_{-0.706}$	$1.258^{+0.106}_{-0.248}$	$0.142^{+0.192}_{-0.043}$
	+1%/-1%	+6%/-2%	+250%/-250%	+16%/-30%	+8%/-20%	+135%/-30%
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 005270698-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-32 ± 7	$7.02^{+0.70}_{-1.10}$	2930^{+142}_{-217}	2620^{+289}_{-4829}	$0.397^{+0.173}_{-0.117}$
Alt.	-15 ± 5	$6.70^{+0.66}_{-1.14}$	2936^{+128}_{-219}	-2572^{+4703}_{-266}	$0.218^{+0.102}_{-0.079}$

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

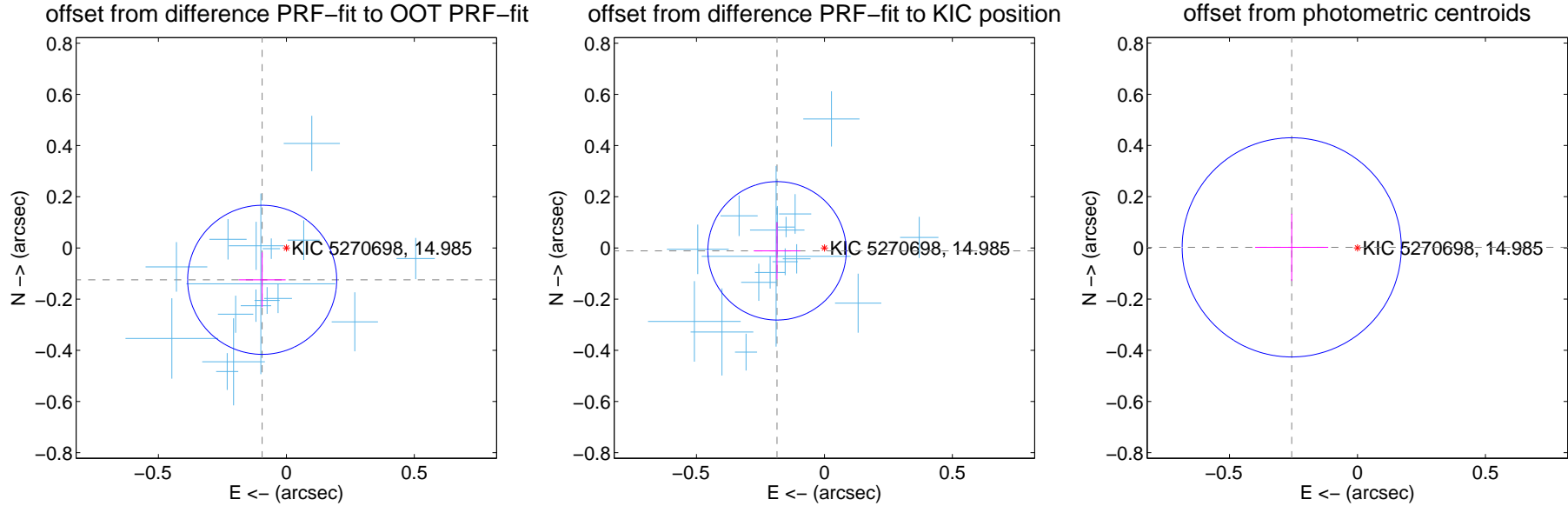
DV Centroid Data

Supplemental centroid analysis for 005270698-02. Kepler magnitude: 14.98. Transit SNR 49.49

There are 17 quarters with good PRF difference image offsets

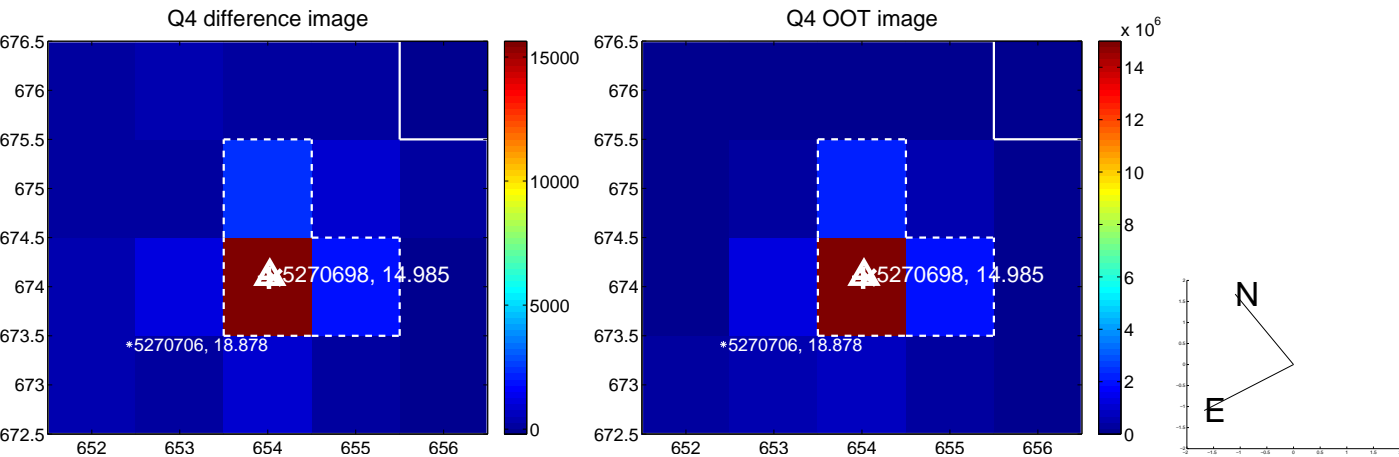
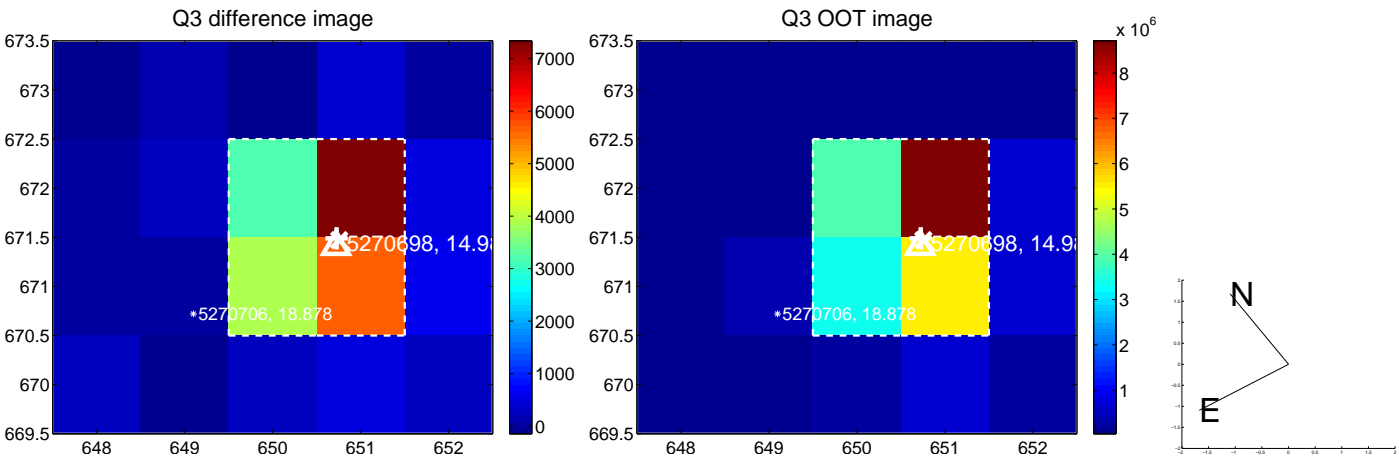
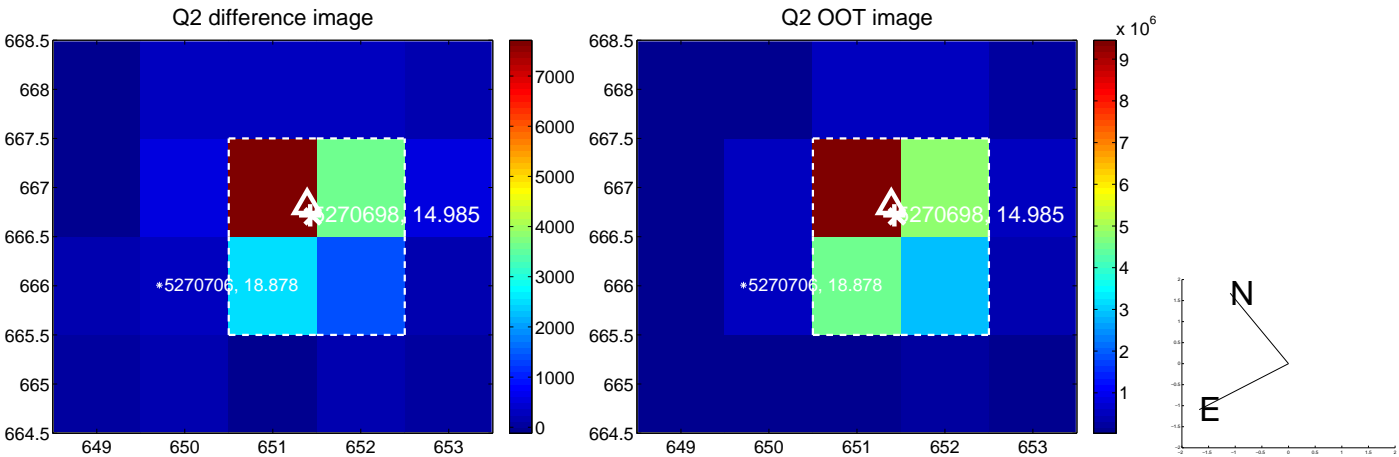
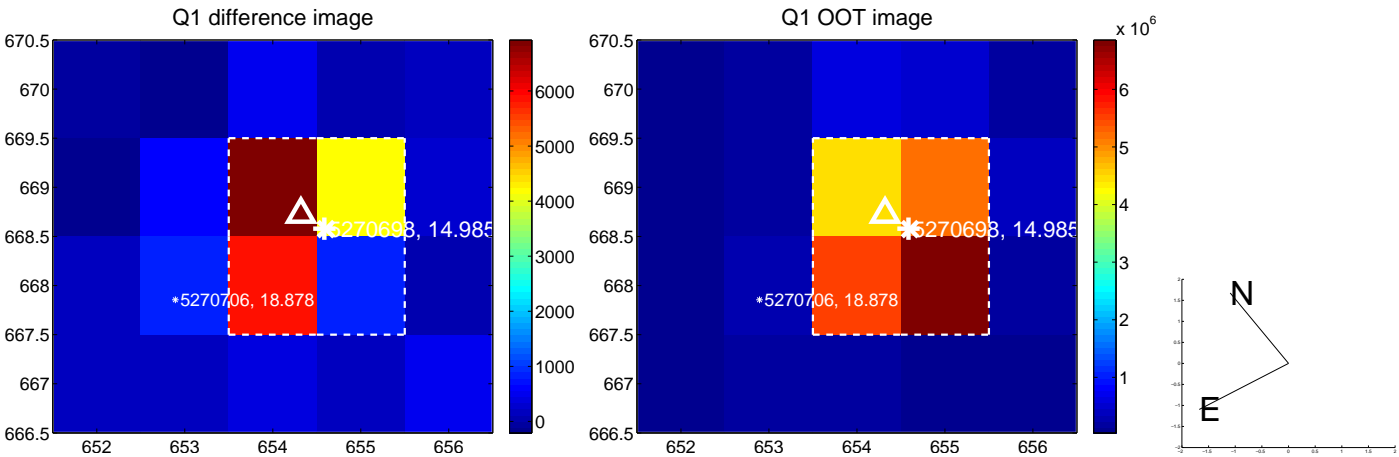
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.156 ± 0.097	1.61	0.095 ± 0.092	-0.125 ± 0.107
PRF-fit source offset from KIC position	0.186 ± 0.090	2.06	0.185 ± 0.091	-0.011 ± 0.111
photometric centroid source offset	0.26 ± 0.14	1.80	0.26 ± 0.14	0.00 ± 0.13

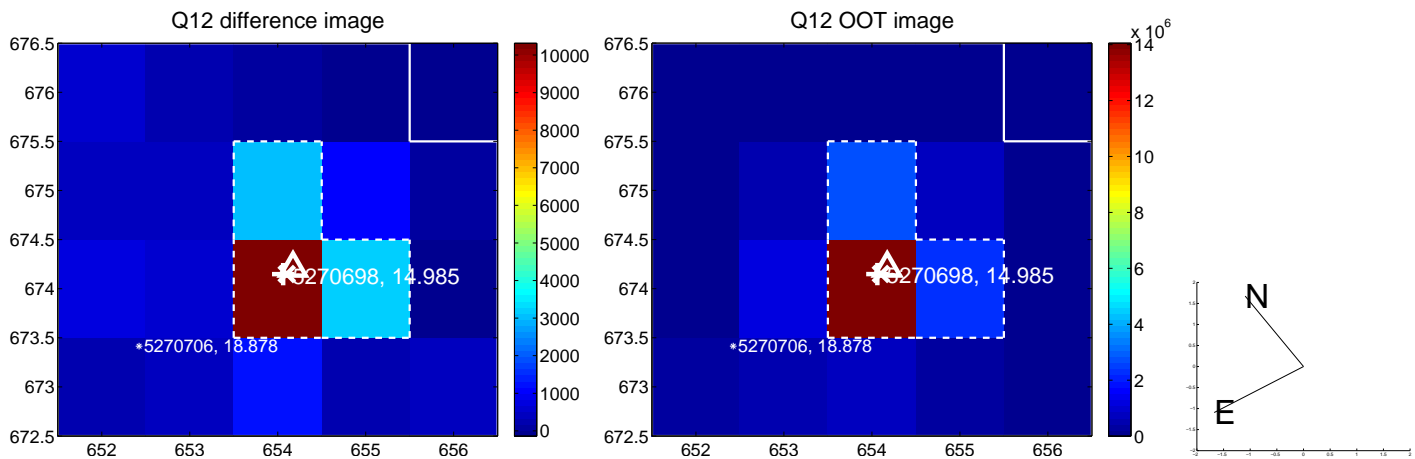
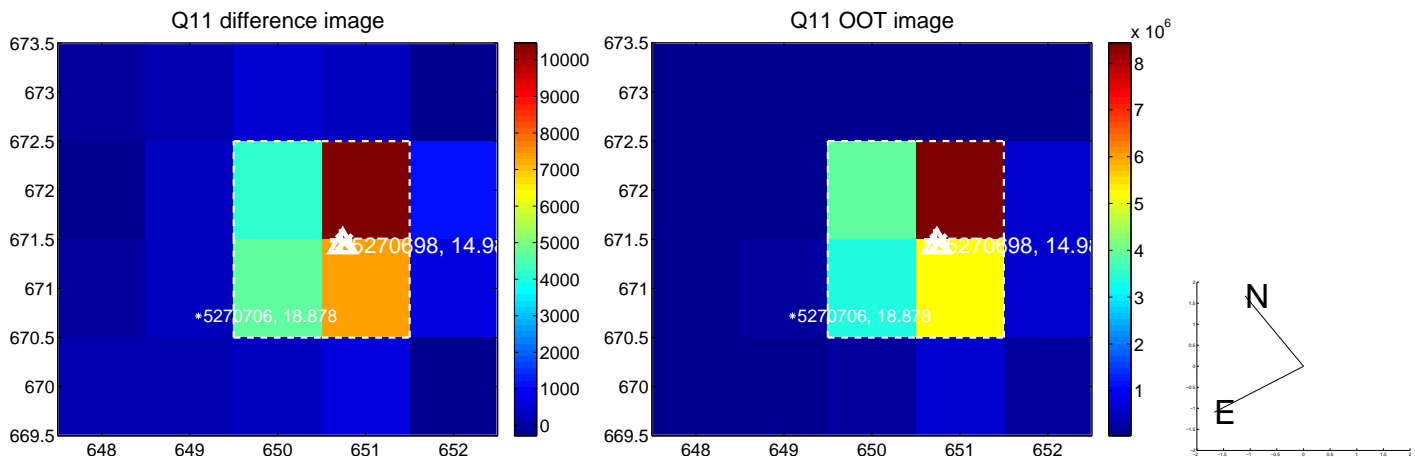
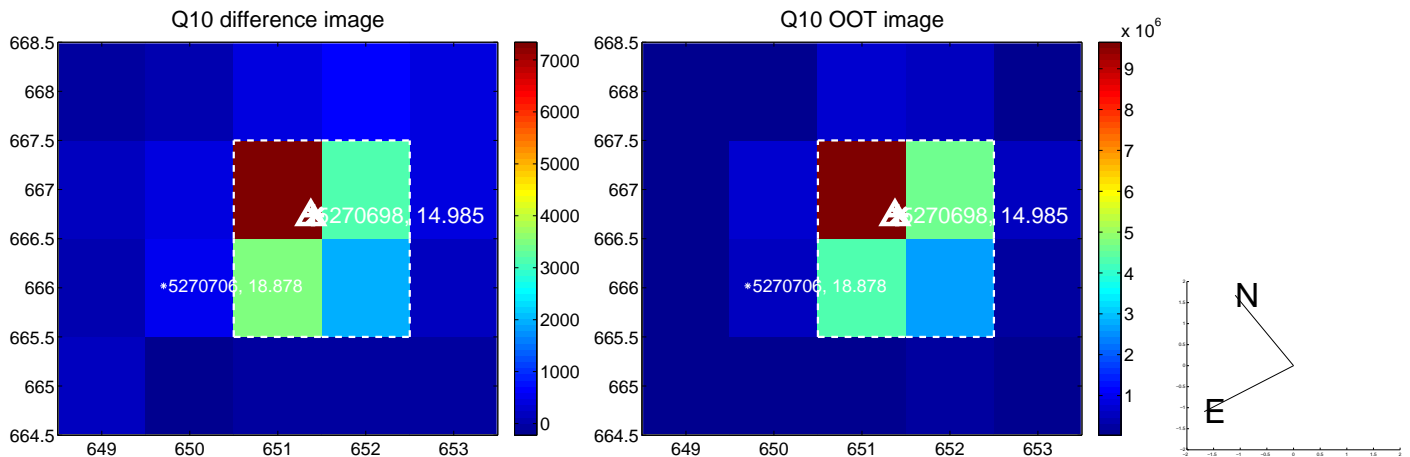
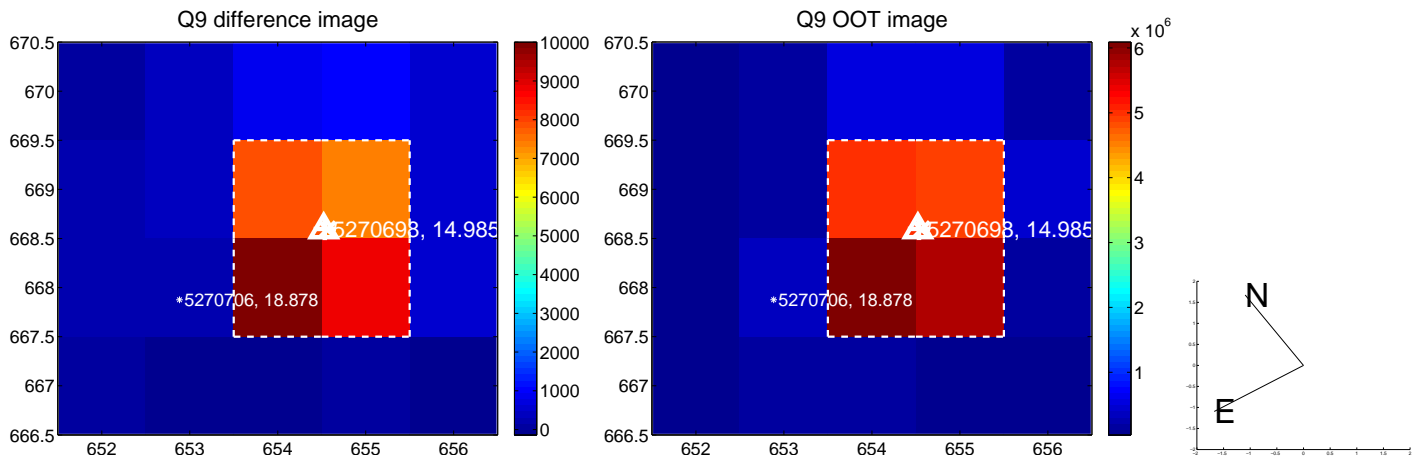


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

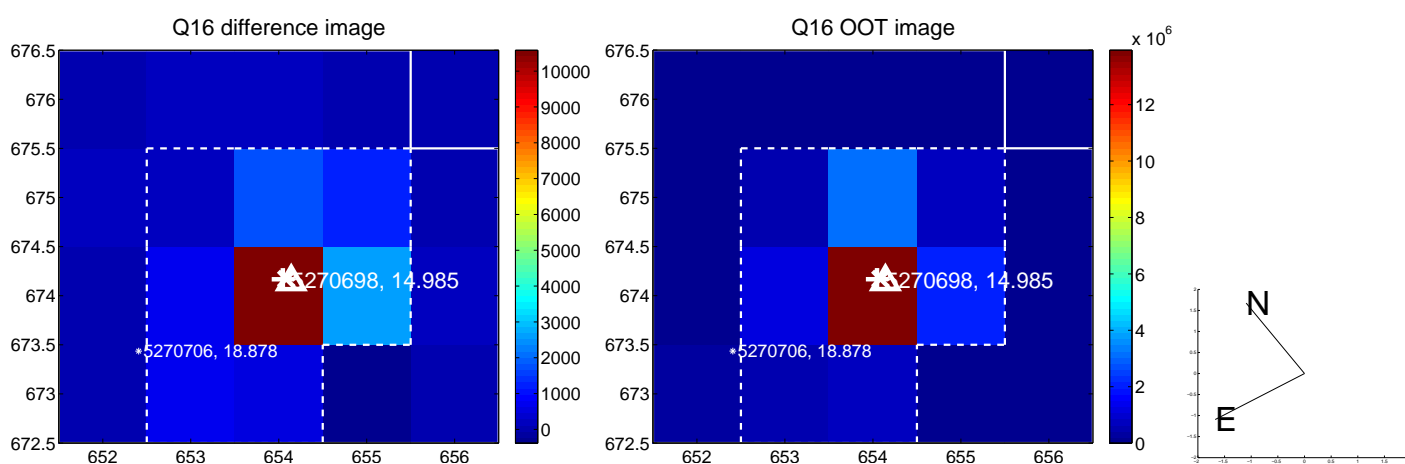
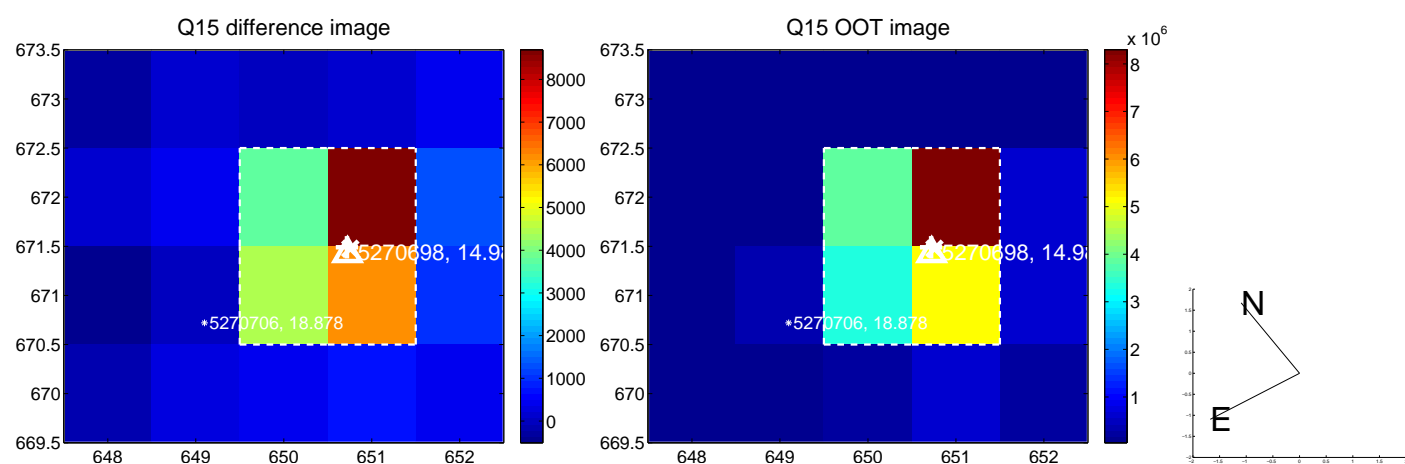
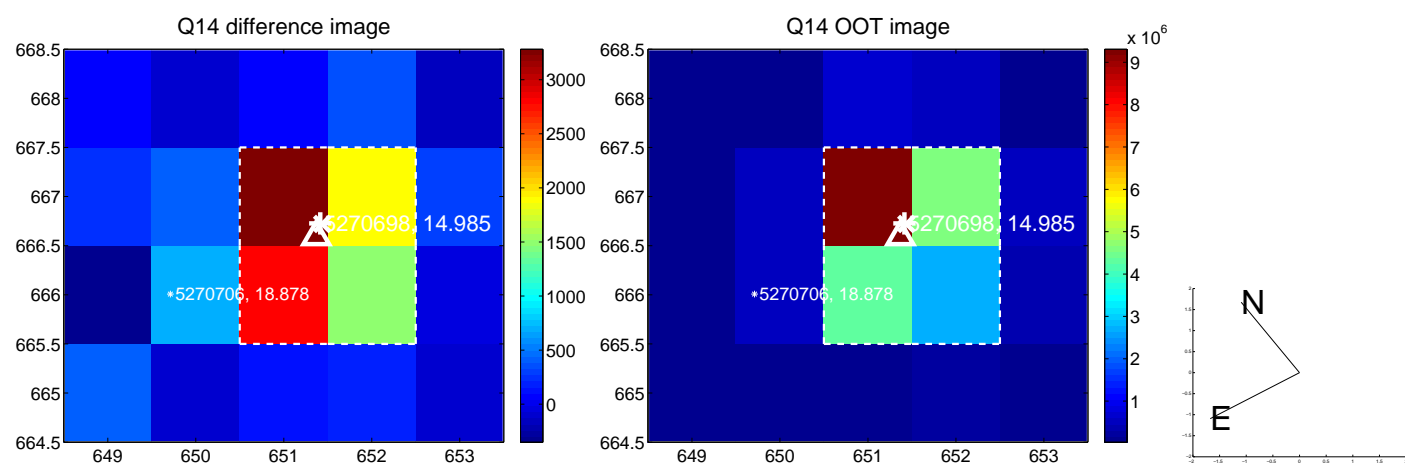
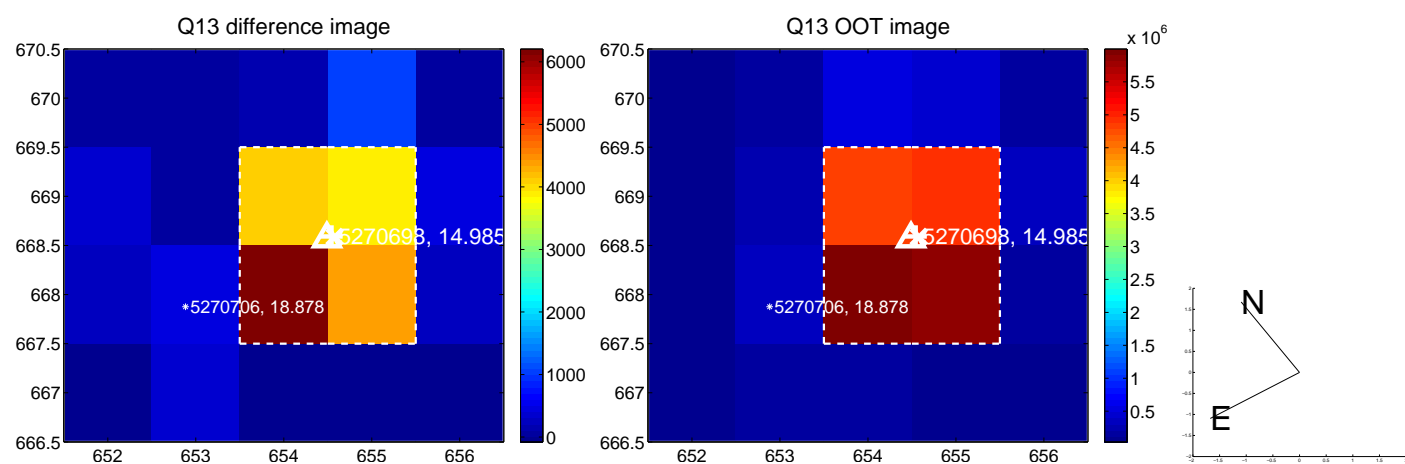
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



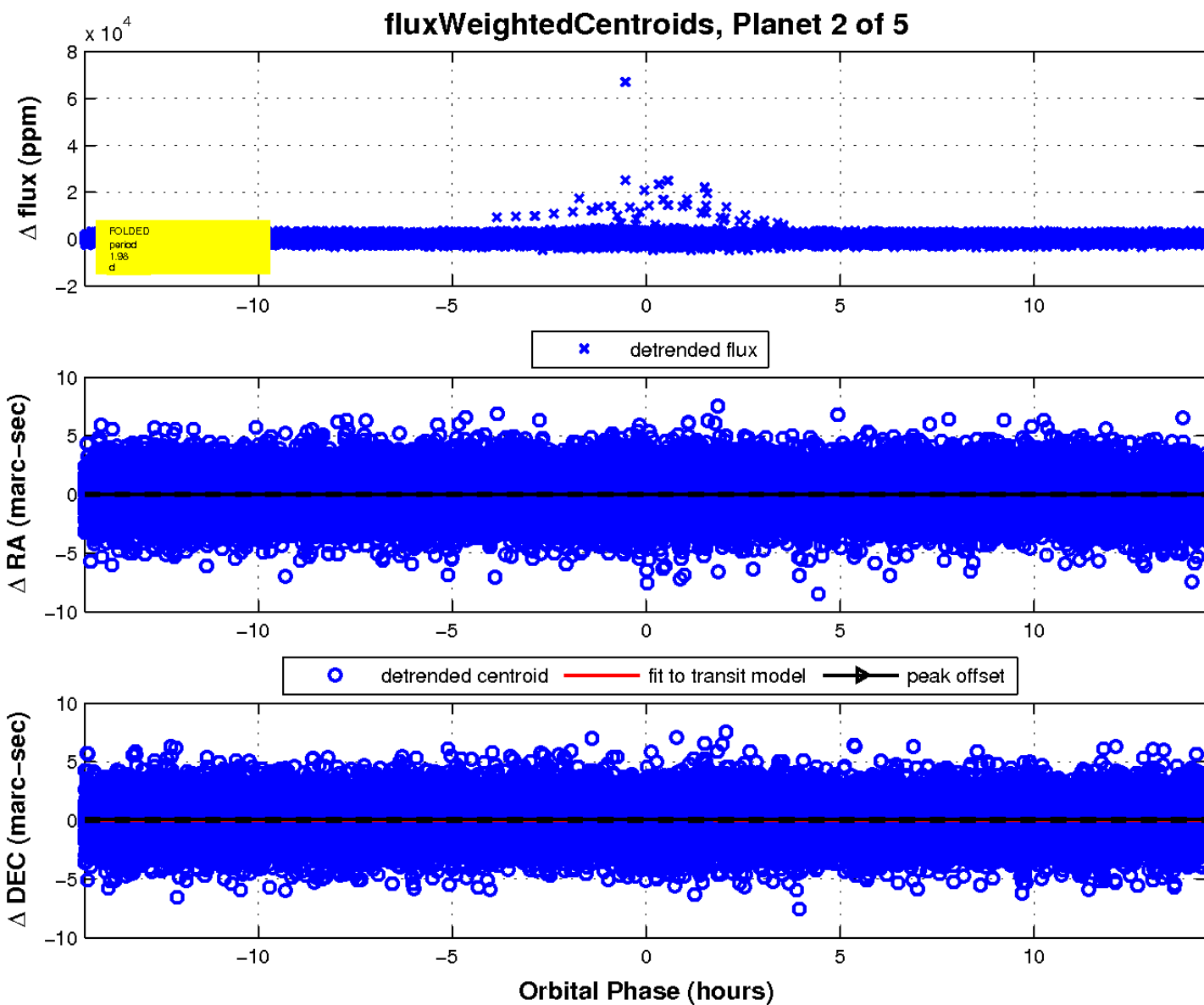
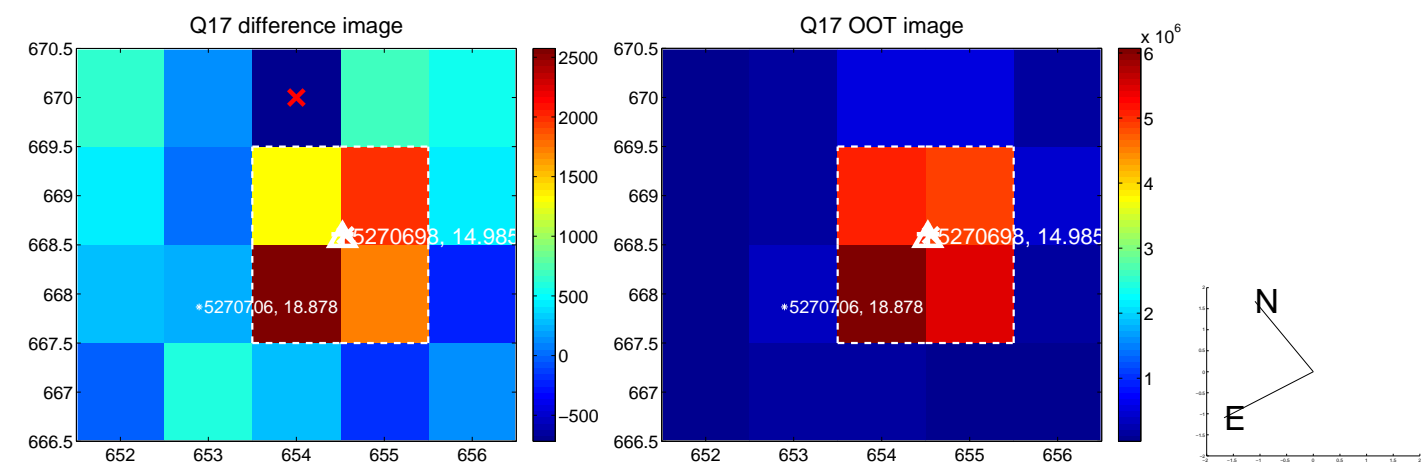
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

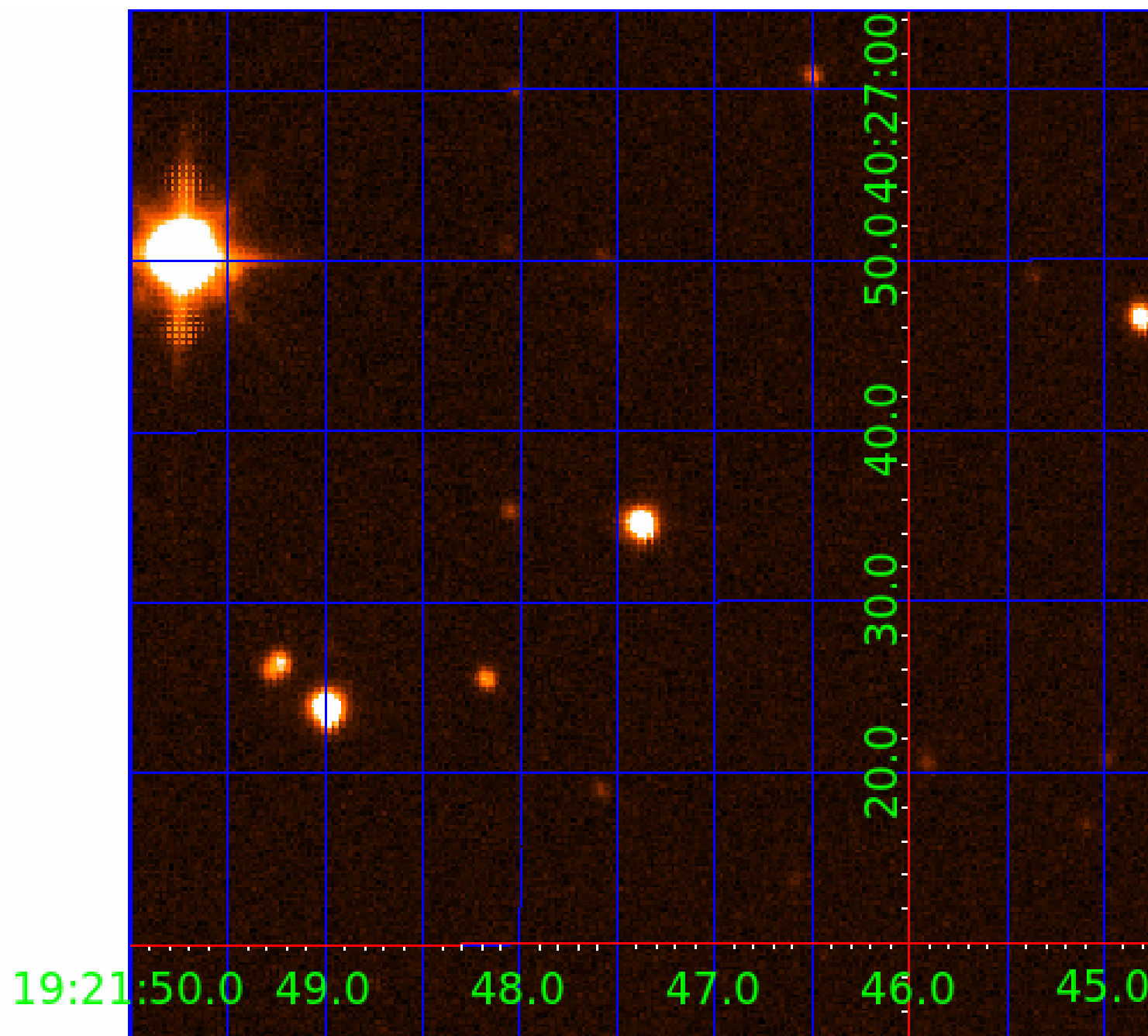


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005270698

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})
005270698-01	OBS	1543.01	3.964332	132.065425	25928.7	4.722	1801.7	1671.7	2.32	5758	37.26	1887.25
005270698-02	OBS	No	1.982155	132.068550	677.3	4.827	49.8	49.5	2.32	5758	7.16	4755.61
005270698-03	OBS	No	328.993212	290.343542	1679.5	5.495	24.6	8.7	2.32	5758	9.68	5.21
005270698-04	OBS	No	394.449608	522.149689	1145.6	4.918	7.2	6.9	2.32	5758	8.74	4.09
005270698-05	OBS	No	357.297482	389.706419	1202.5	11.818	7.3	5.4	2.32	5758	9.33	4.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005270698-01	OBS	FP	0.19	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
005270698-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
005270698-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005270698-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—SAME_NTL_PERIOD—CENT_FEW_DIFFS
005270698-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

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

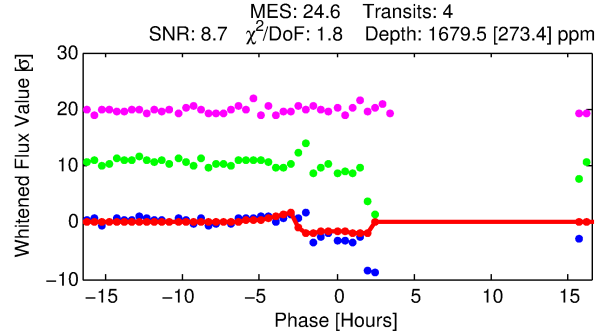
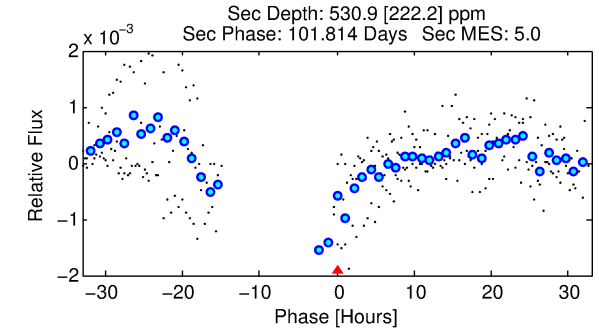
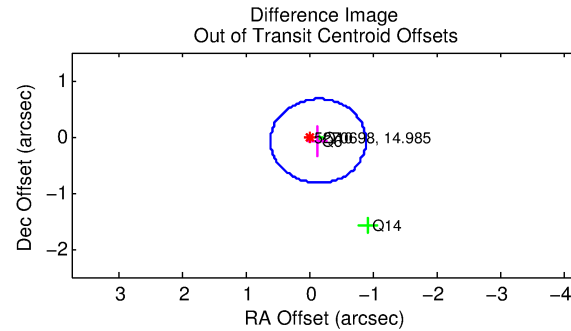
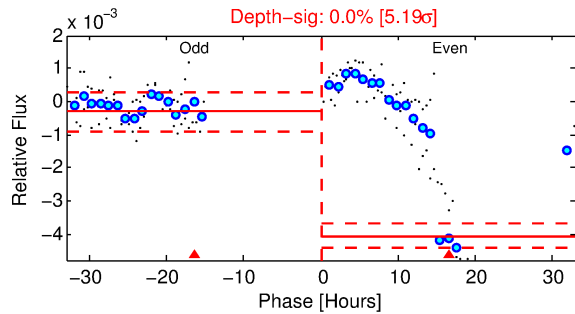
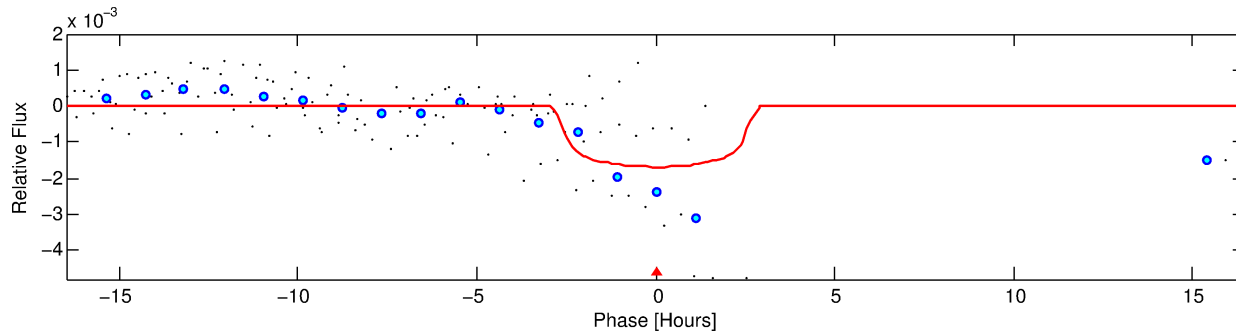
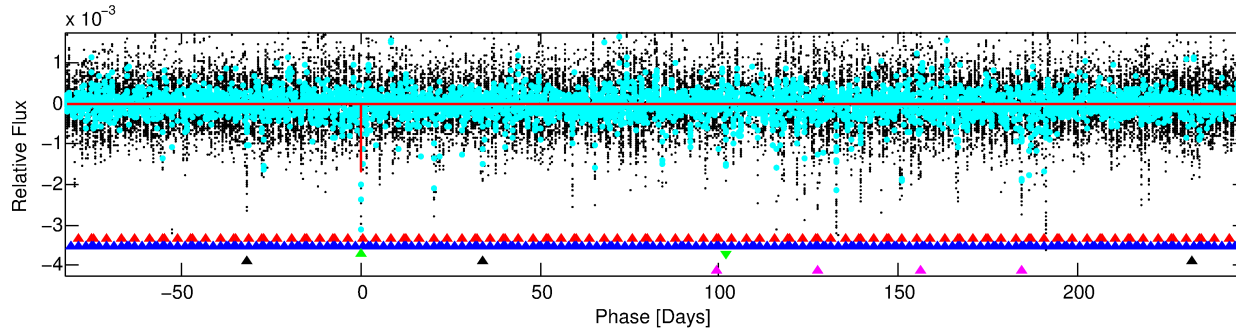
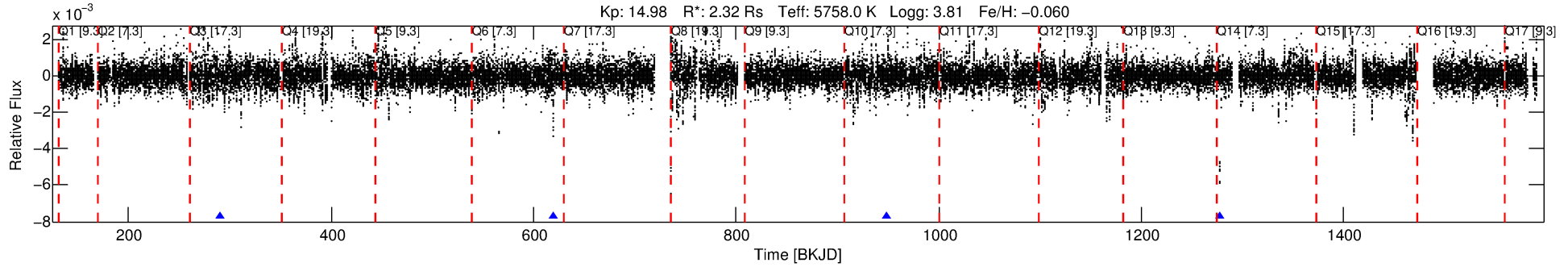
Ephemeris Match Information For 005270698-03

No Significant Match Found

DV One-Page Summary

KIC: 5270698 Candidate: 3 of 5 Period: 328.993 d
KOI: K01543 Corr: No Ephemeris Match

Kp: 14.98 R*: 2.32 Rs Teff: 5758.0 K Logg: 3.81 Fe/H: -0.060



DV Fit Results:

Period = 328.99321 [0.00476] d
Epoch = 290.3435 [0.0122] BKJD
Rp/R* = 0.0383 [0.0313]
a/R* = 422.95 [1497.31]
b = 0.47 [5.92]
Seff = 5.21 [2.16]
Teq = 385 [40] K
Rp = 9.68 [8.44] Re
a = 1.0075 [0.2726] AU
Ag = 3163.97 [5492.59] [0.58σ]
Teff = 4468 [1885] K [2.17σ]

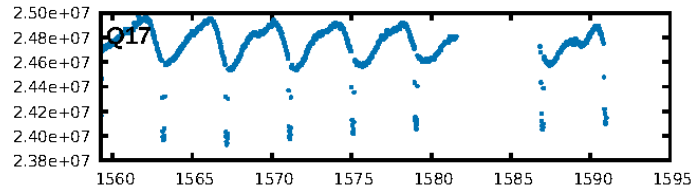
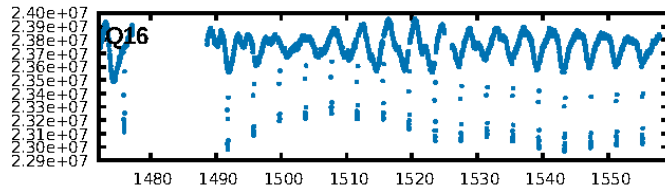
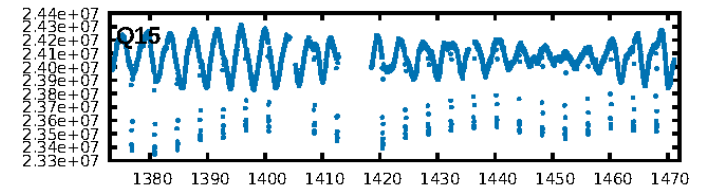
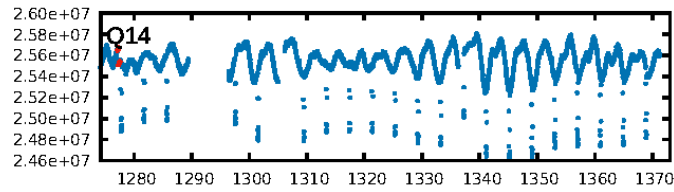
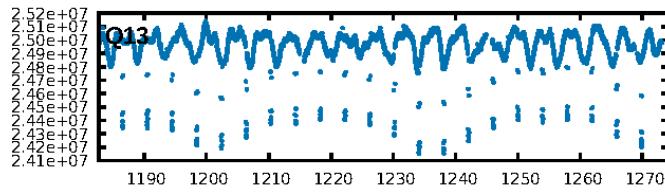
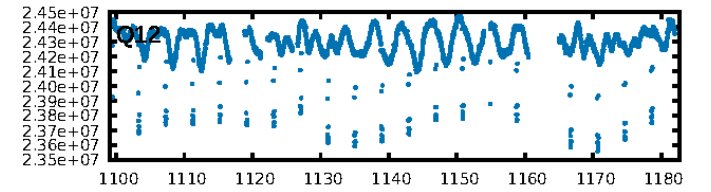
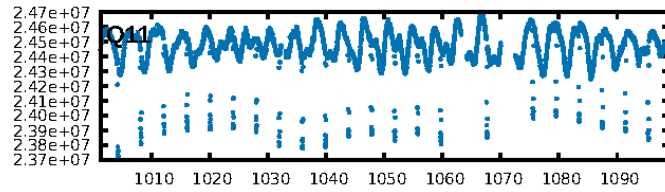
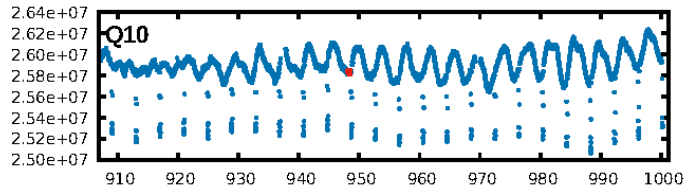
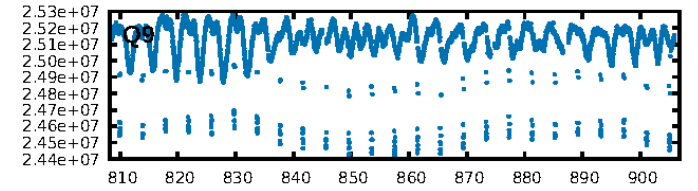
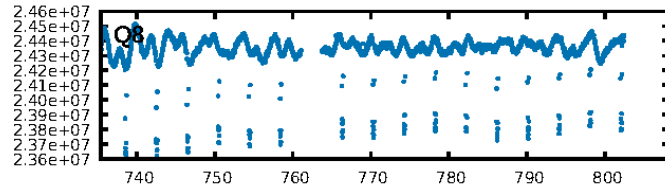
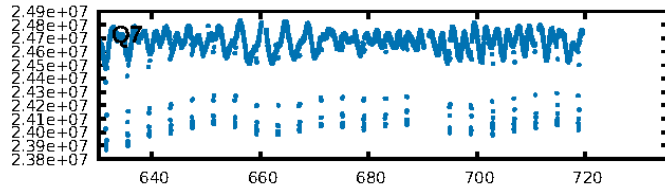
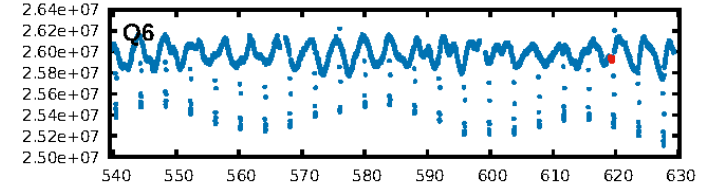
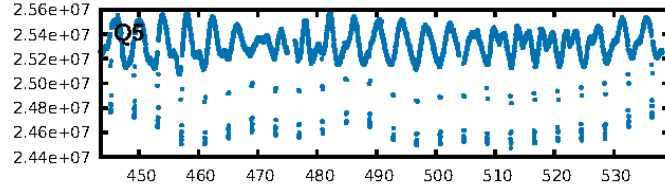
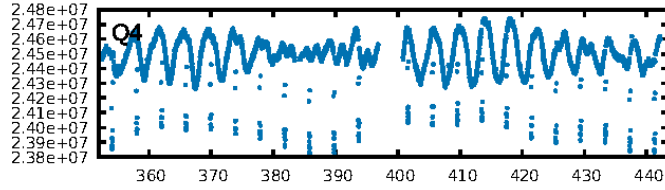
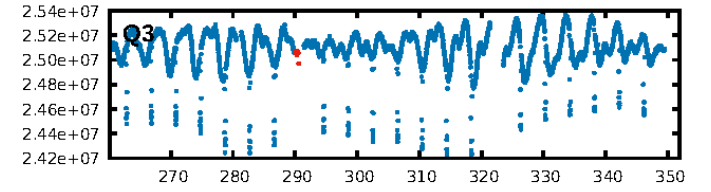
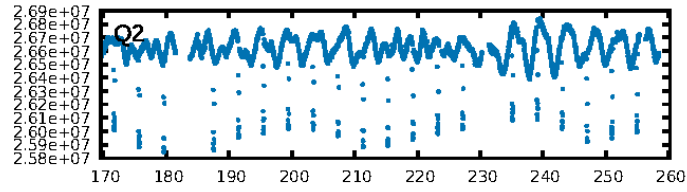
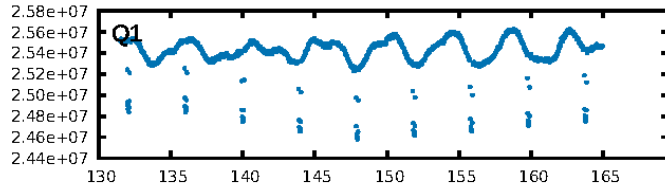
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1076.69σ]
LongPeriod-sig: 100.0% [52.12σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 55.3%
Bootstrap-pfa: 1.33e-41
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.5506
Centroid-sig: 0.0%
Centroid-so: 1.227 arcsec [2.65σ]
OotOffset-rm: 0.152 arcsec [0.61σ]
KicOffset-rm: 0.087 arcsec [0.46σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.00 [0/3]

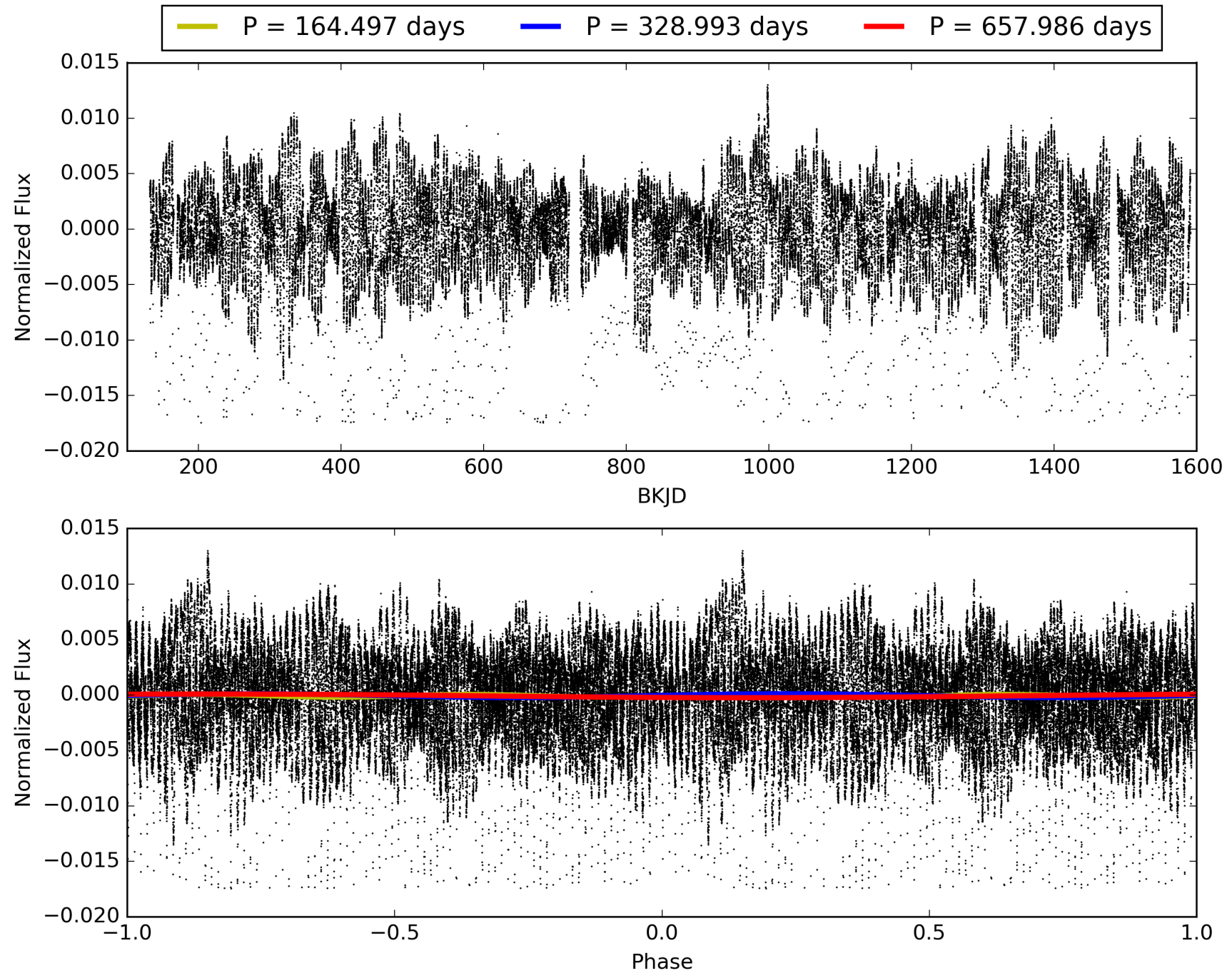
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:54:08 Z

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

TCE 005270698-03, PDC Light Curves

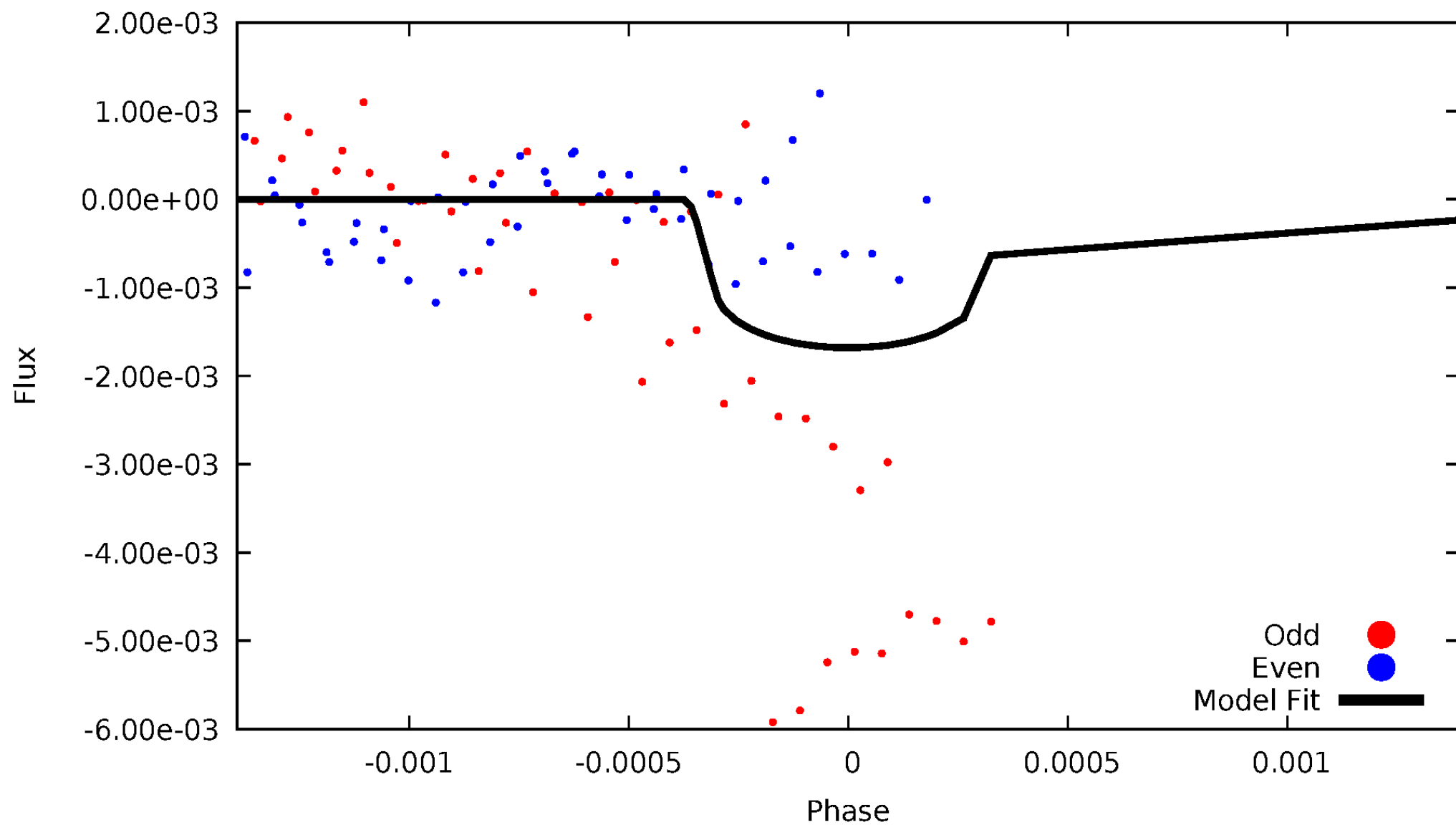


TCE 005270698-03



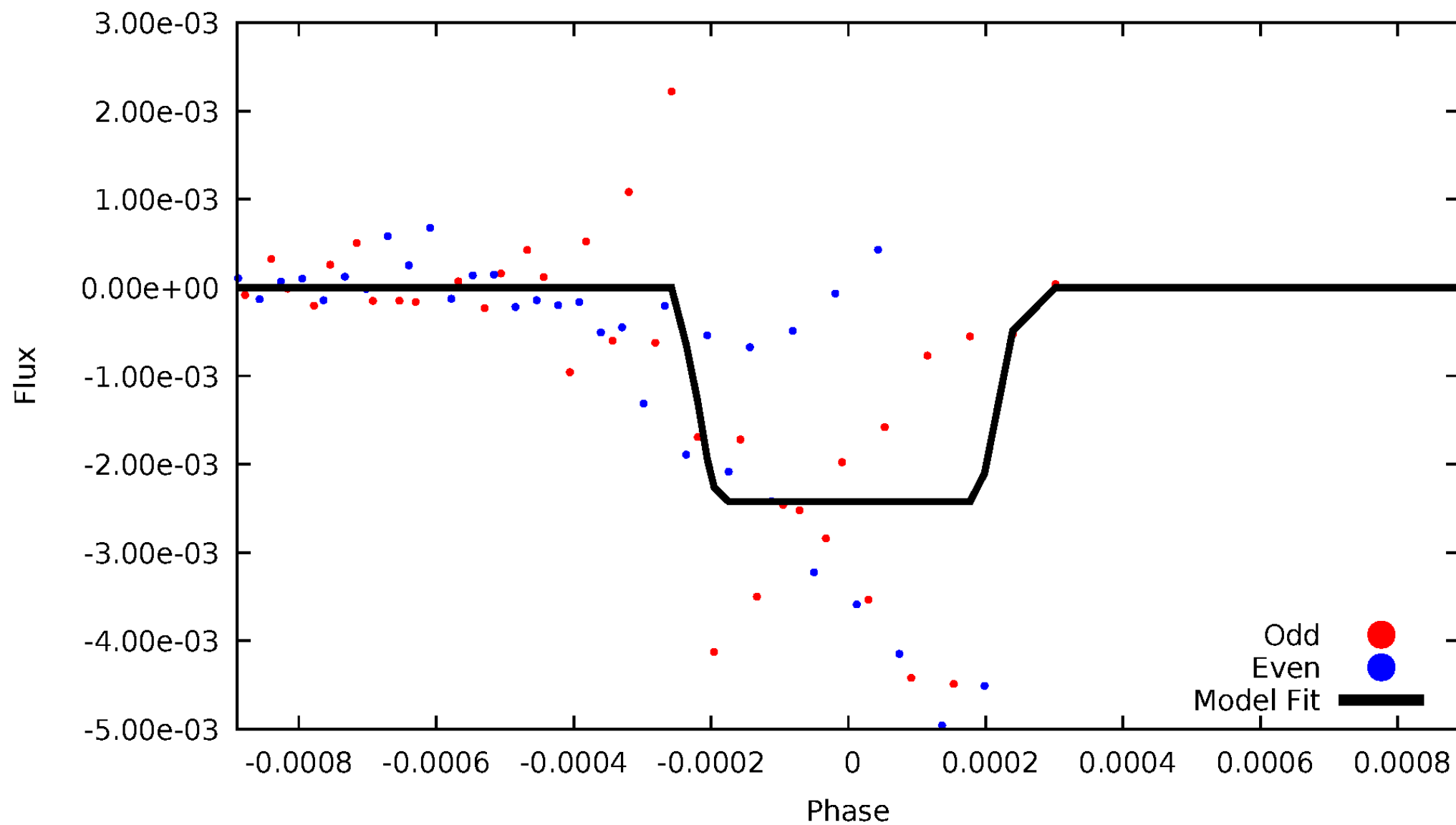
DV Odd/Even

TCE 005270698-03



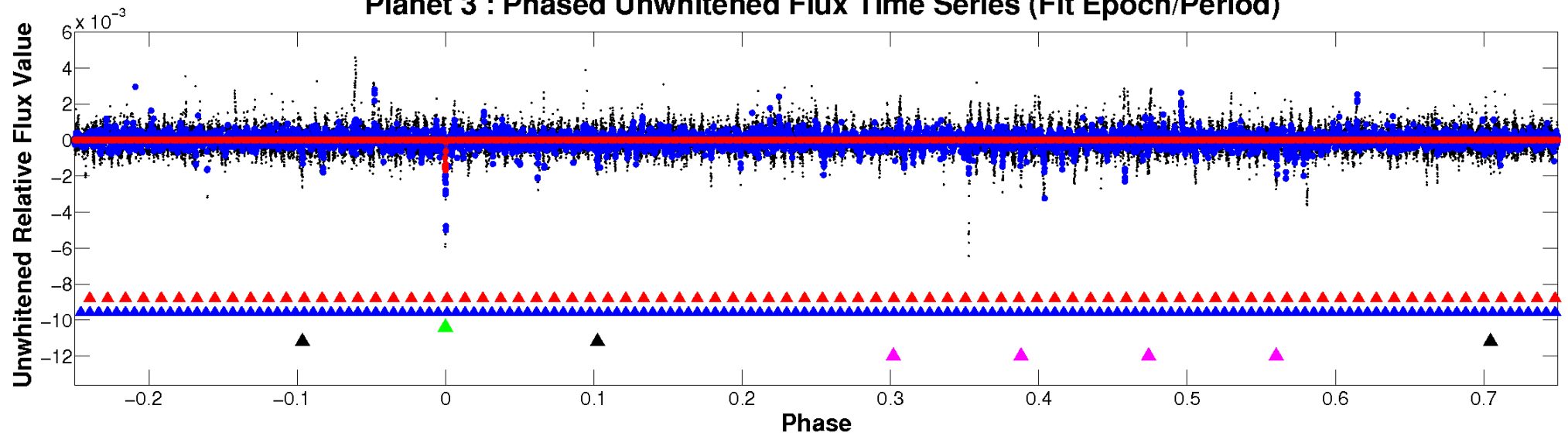
ALT Odd/Even

TCE 005270698-03

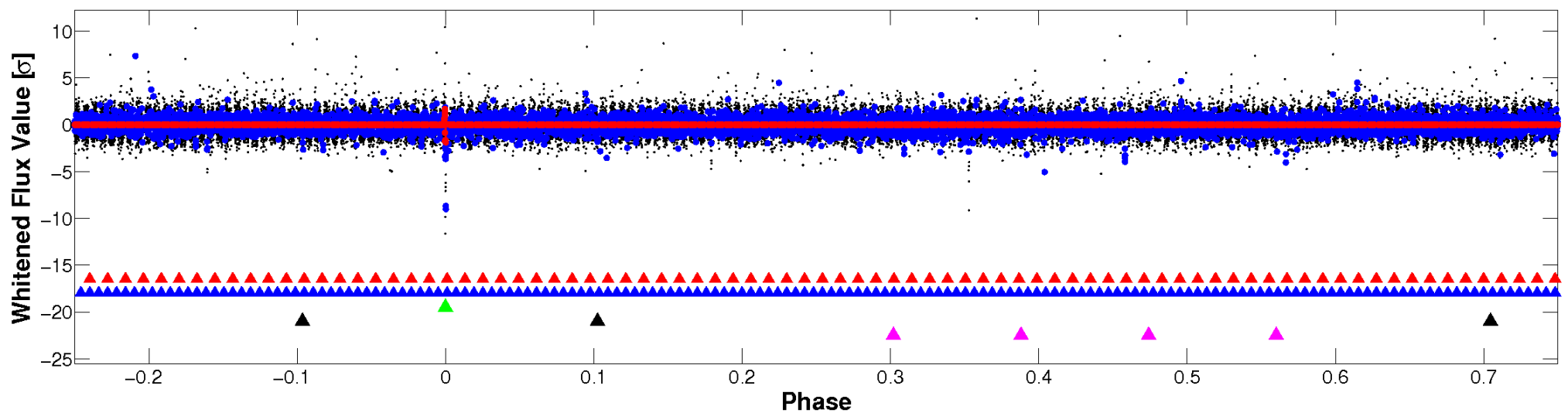


Non-Whitened Vs. Whitened Light Curve

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

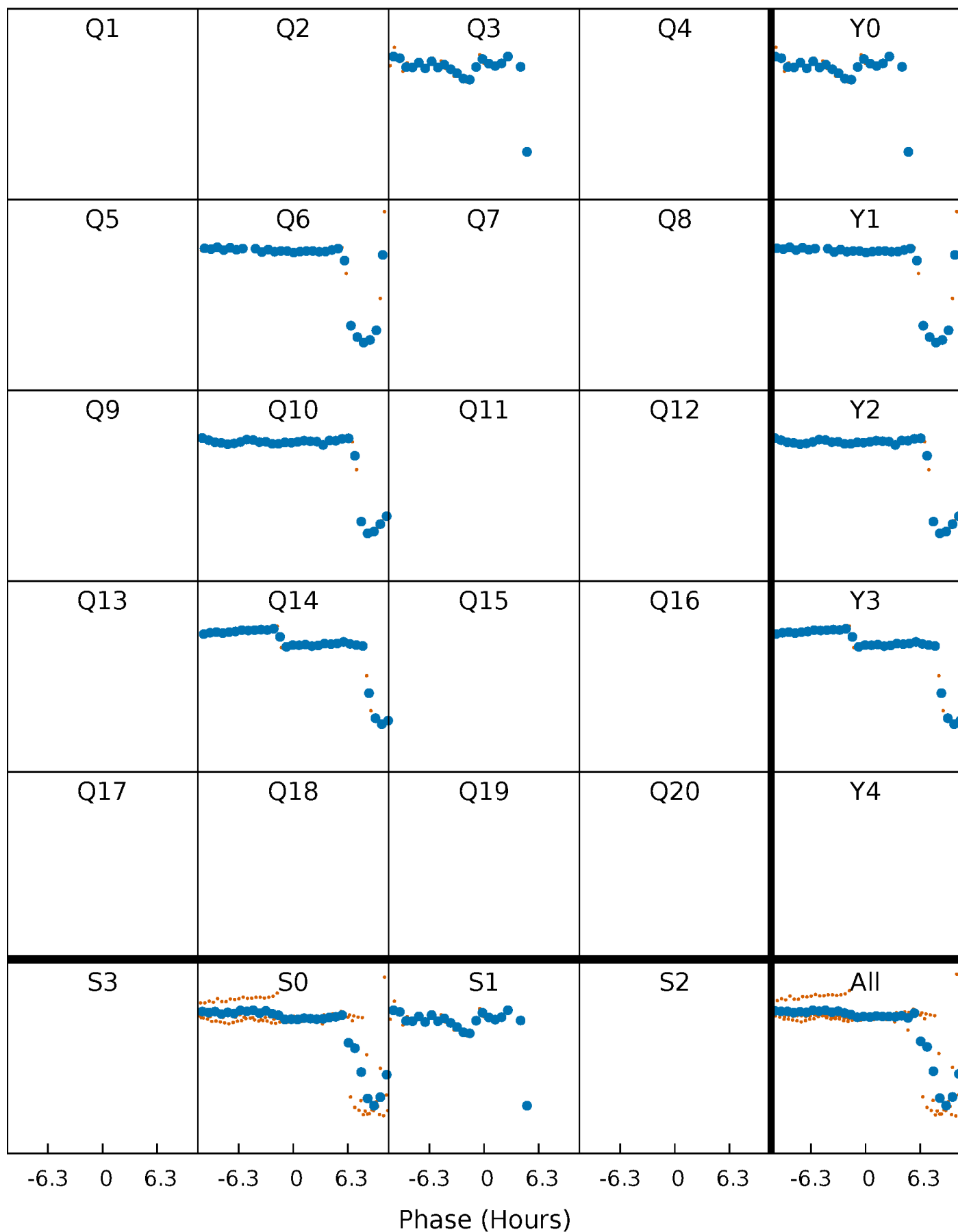


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



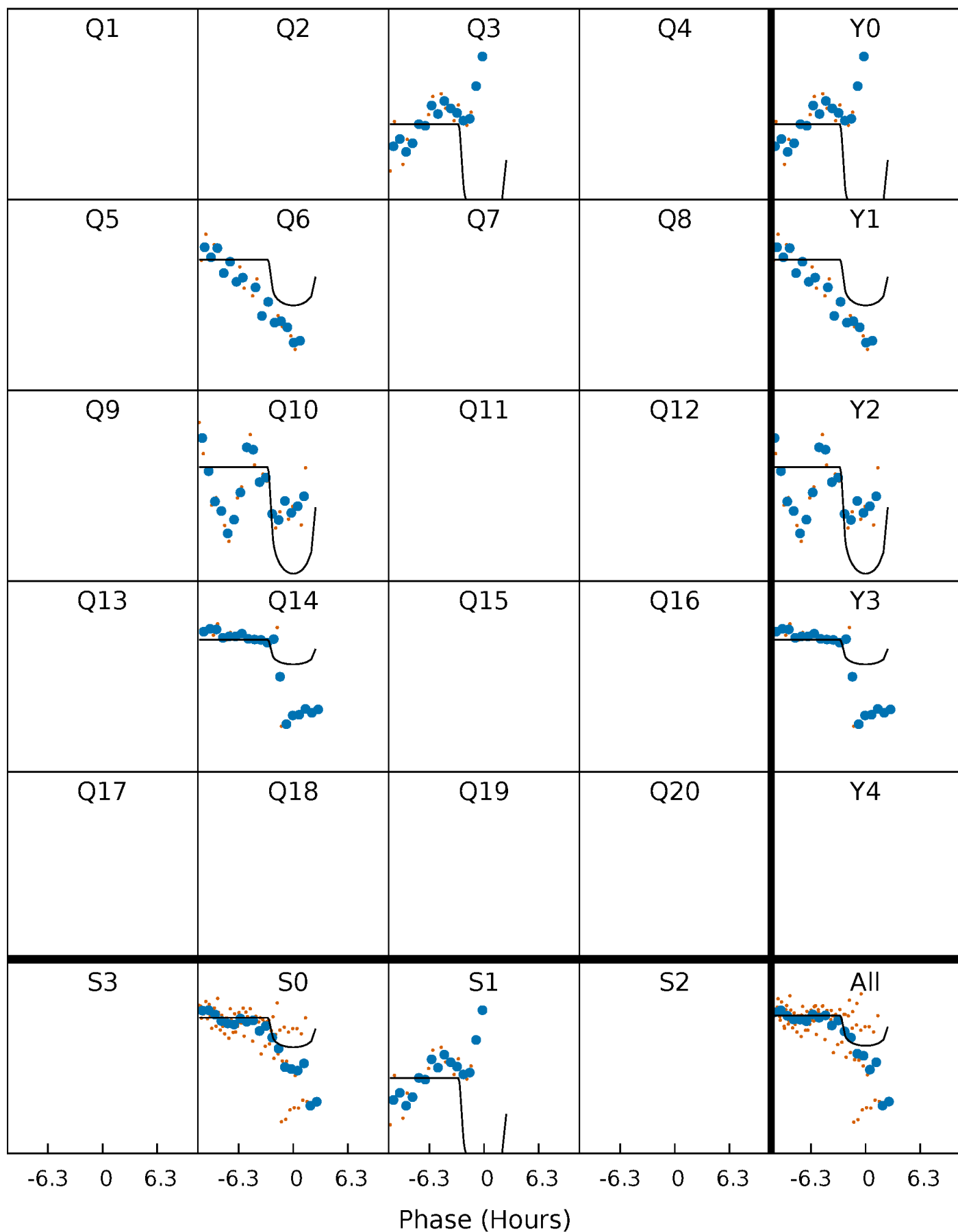
PDC Quarter-Phased Transit Curves

TCE 005270698-03 $P=328.993212$ Days $T_0=290.343542$ (BKJD)



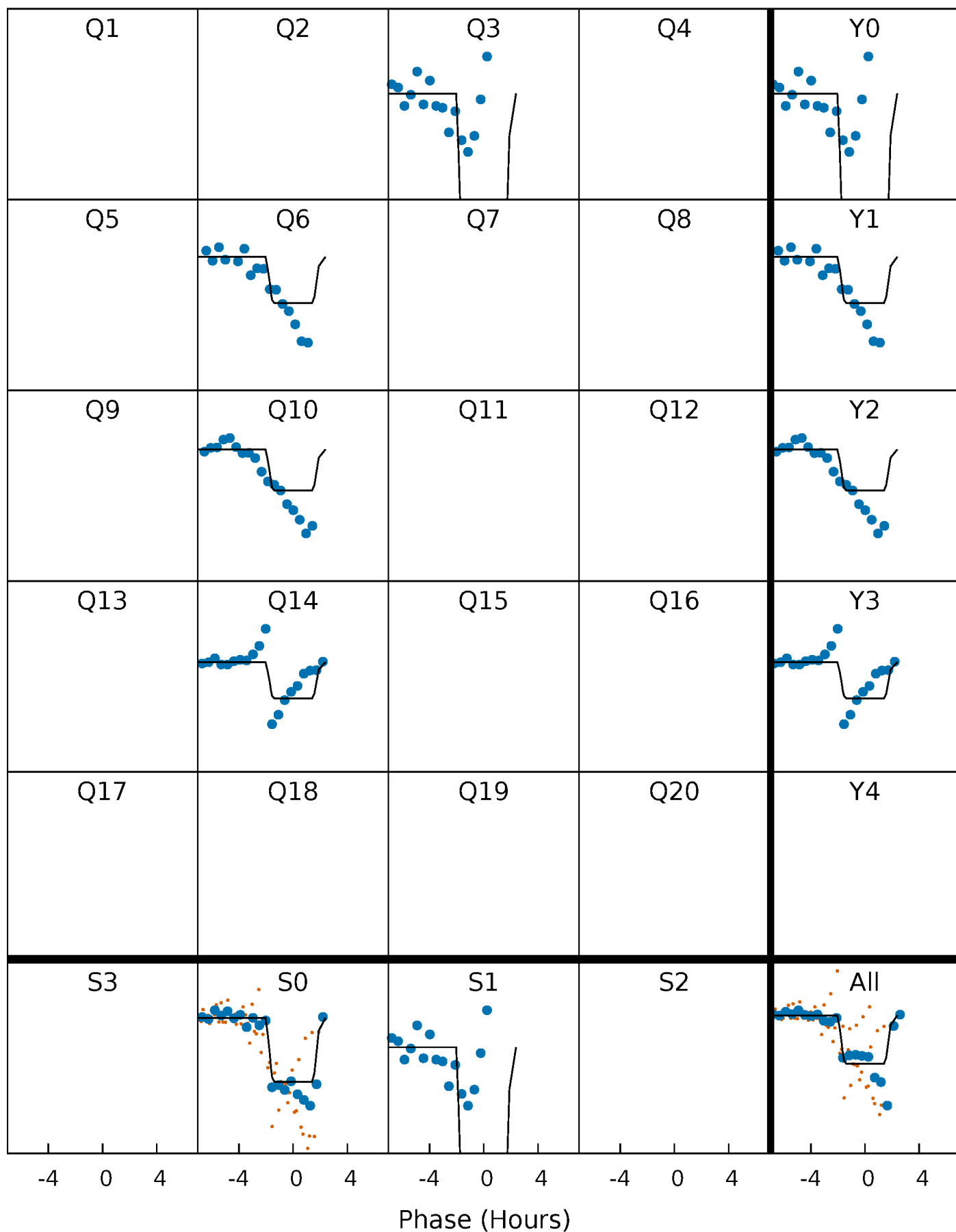
DV Quarter-Phased Transit Curves

TCE 005270698-03 P=328.993212 Days $T_0=290.343542$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

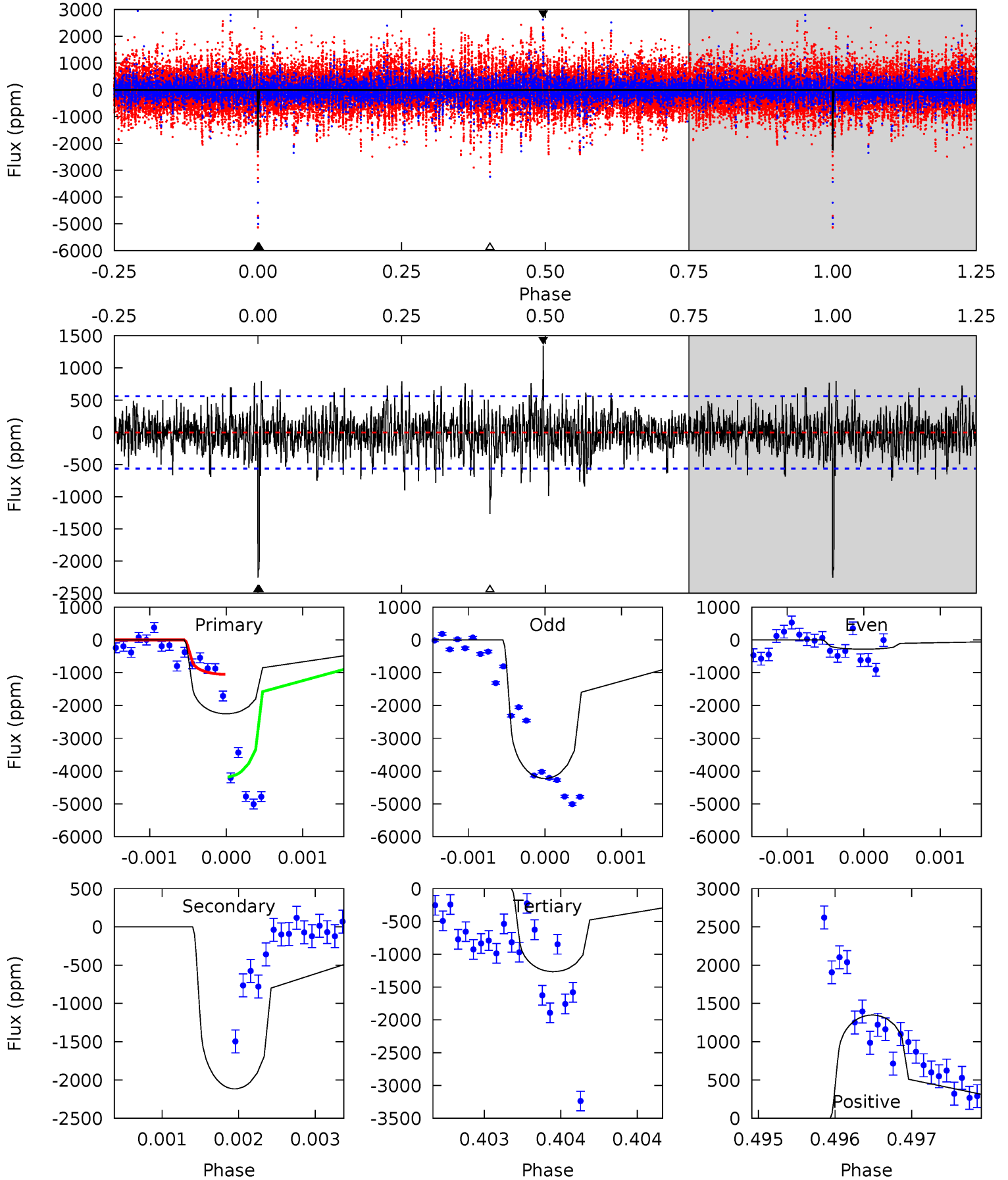
TCE 005270698-03 P=329.007561 Days $T_0=290.308145$ (BKJD)



DV Model-Shift Uniqueness Test

005270698-03, P = 328.993212 Days, E = 290.343542 Days

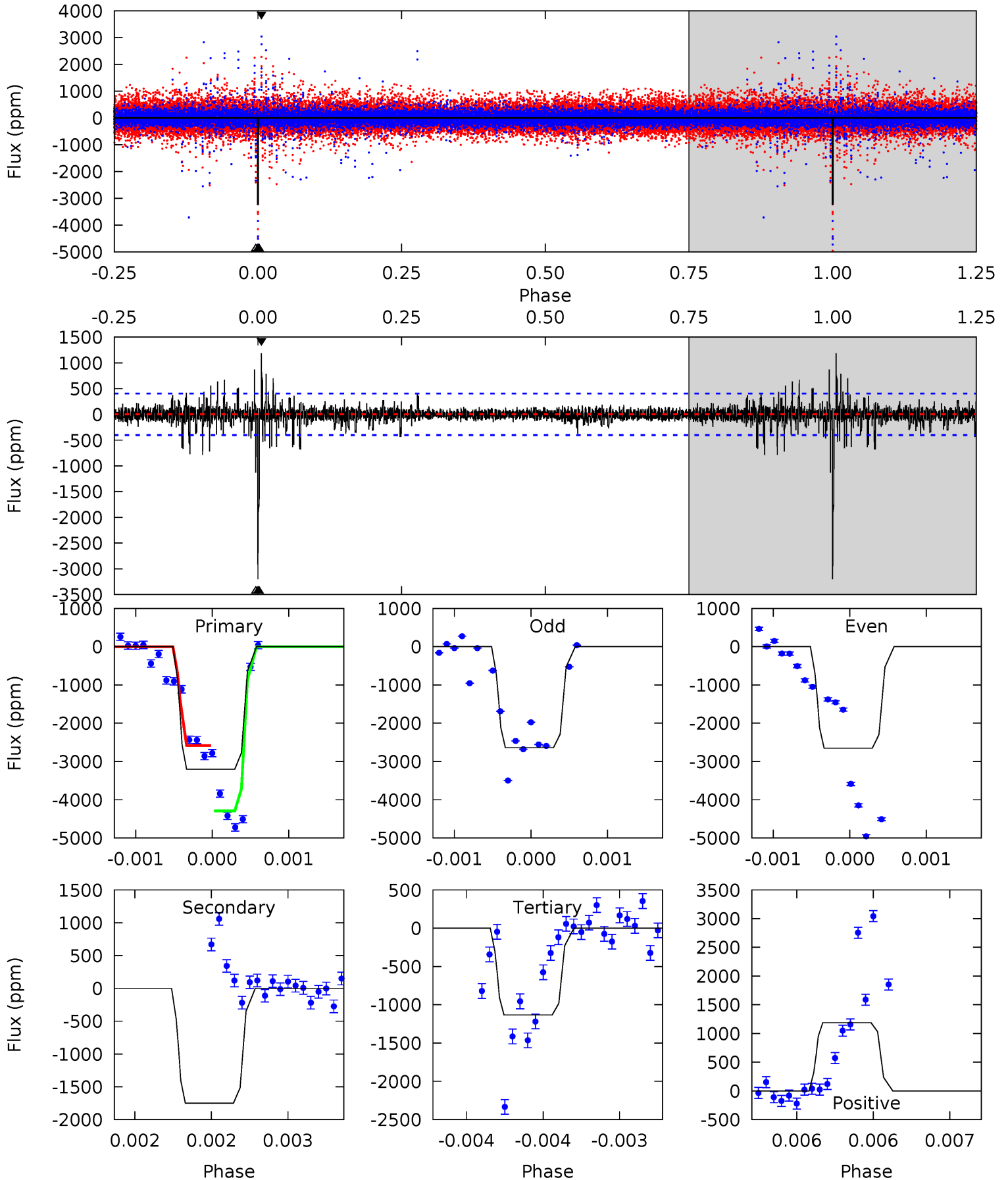
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.1	20.7	12.4	13.2	5.52	3.40	2.17	9.68	8.86	8.33	7.51	19.8	1.09	0.37	13.1



Alt Model-Shift Uniqueness Test

005270698-03, P = 329.007561 Days, E = 290.308145 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.2	24.1	15.6	16.4	5.57	3.47	1.13	28.6	27.8	8.50	7.73	0.10	0.86	0.27	11.5



Stellar Parameters For KIC 005270698

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5758^{+77}_{-77}	$3.808^{+0.233}_{-0.093}$	$-0.060^{+0.150}_{-0.150}$	$2.318^{+0.380}_{-0.706}$	$1.258^{+0.106}_{-0.248}$	$0.142^{+0.192}_{-0.043}$
	+1%/-1%	+6%/-2%	+250%/-250%	+16%/-30%	+8%/-20%	+135%/-30%
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 005270698-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2116 ± 102	$10.05^{+7.62}_{-6.48}$	532^{+26}_{-38}	5988^{+5192}_{-1291}	11492^{+78246}_{-7671}
Alt.	-1748 ± 72	$12.56^{+7.94}_{-6.71}$	533^{+27}_{-41}	5169^{+2420}_{-868}	6104^{+22767}_{-3822}

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

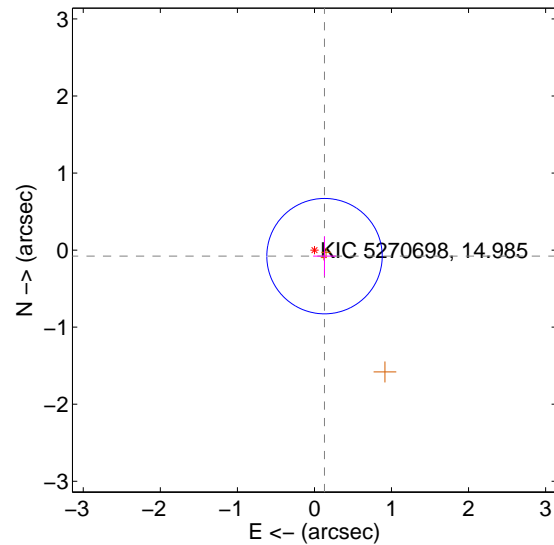
Supplemental centroid analysis for 005270698-03. Kepler magnitude: 14.98. Transit SNR 8.73

There are 0 quarters with good PRF difference image offsets

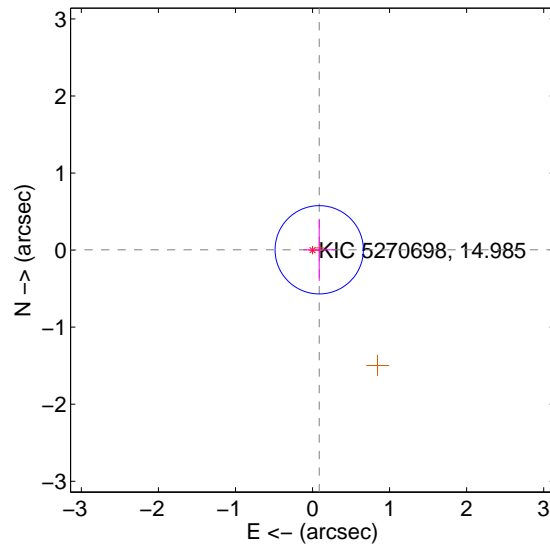
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.152 ± 0.250	0.61	-0.131 ± 0.148	-0.078 ± 0.257
PRF-fit source offset from KIC position	0.087 ± 0.191	0.46	-0.087 ± 0.208	0.004 ± 0.403
photometric centroid source offset	1.23 ± 0.46	2.65	0.21 ± 0.50	1.21 ± 0.46

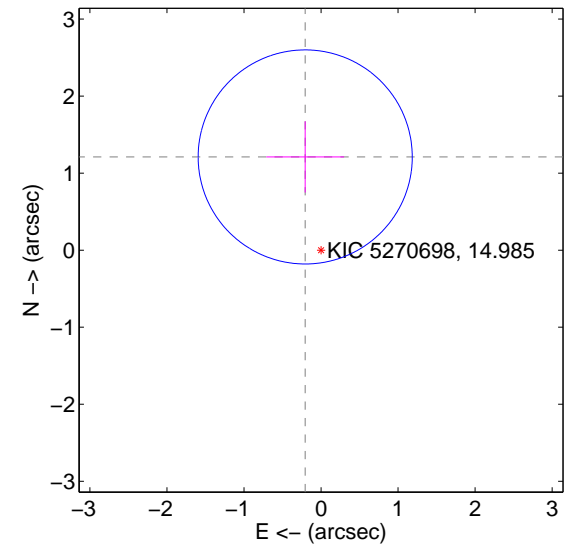
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

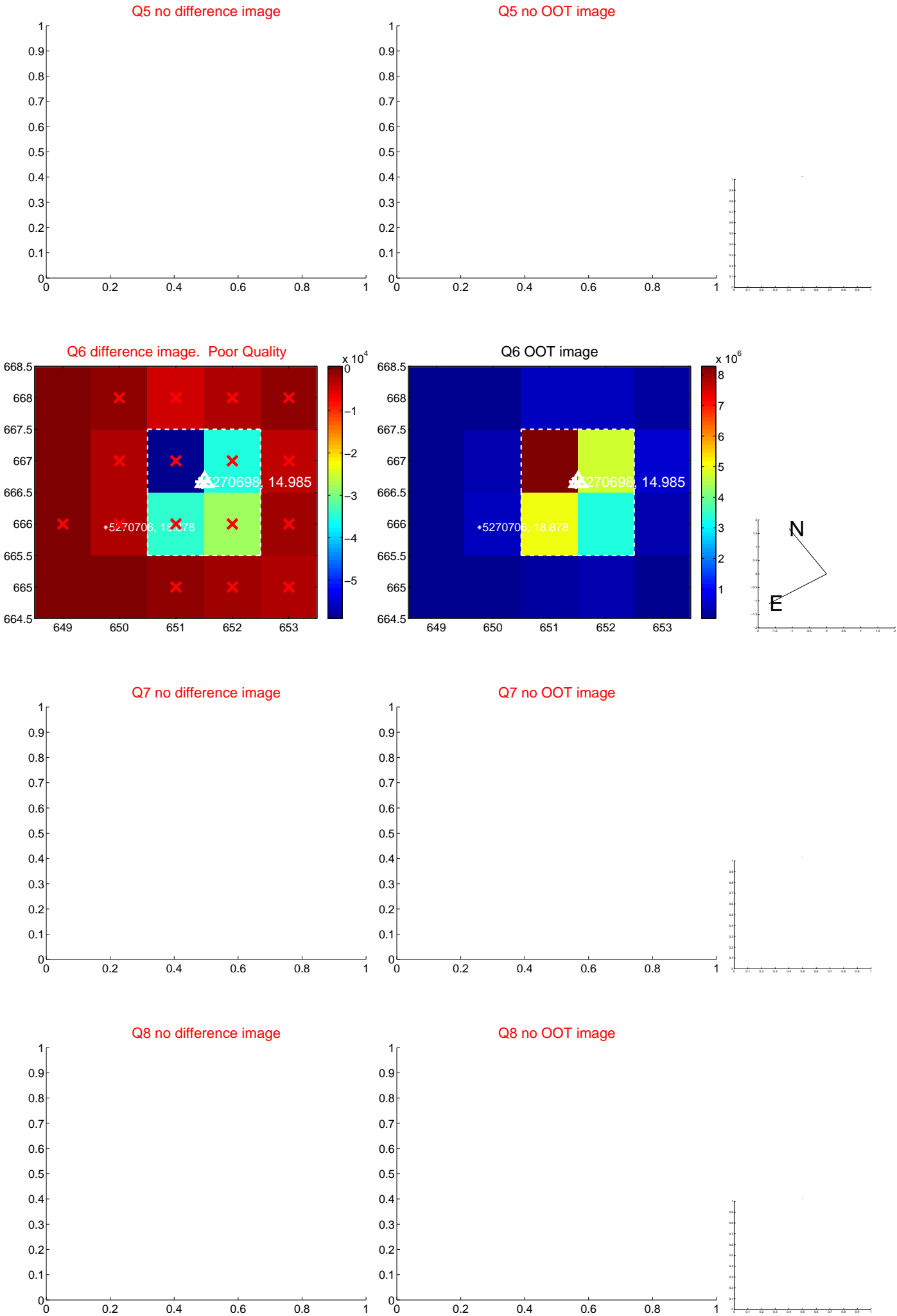


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

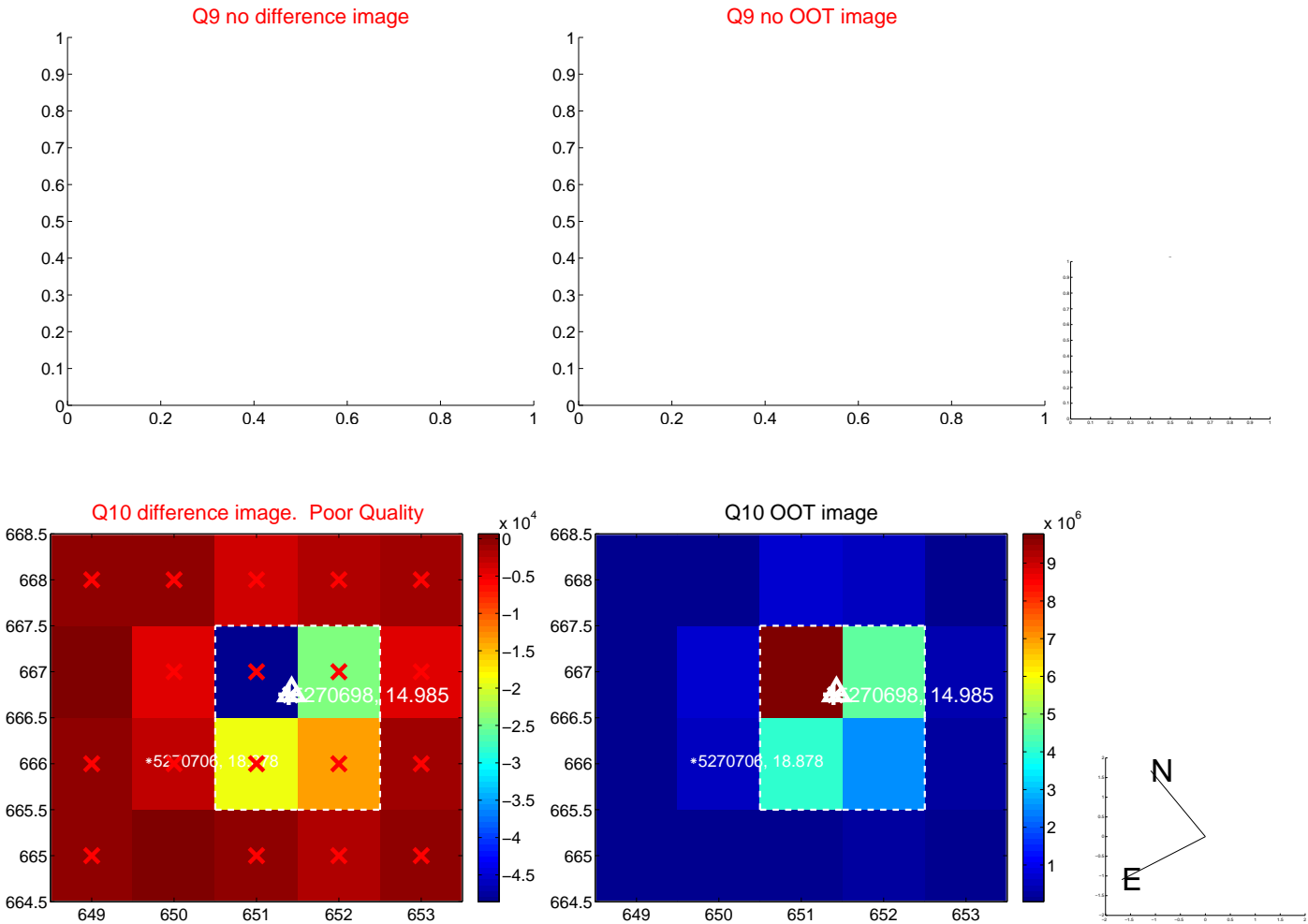
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



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

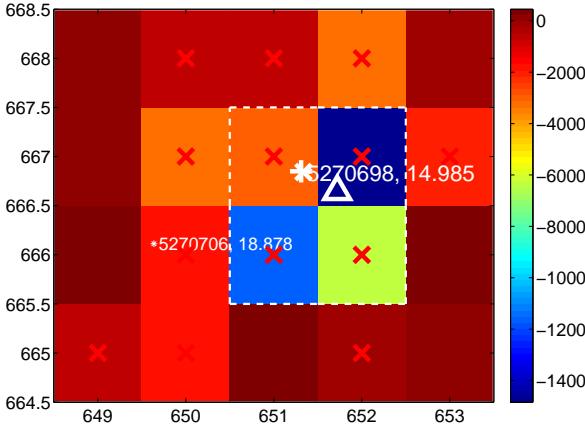
Q13 no difference image



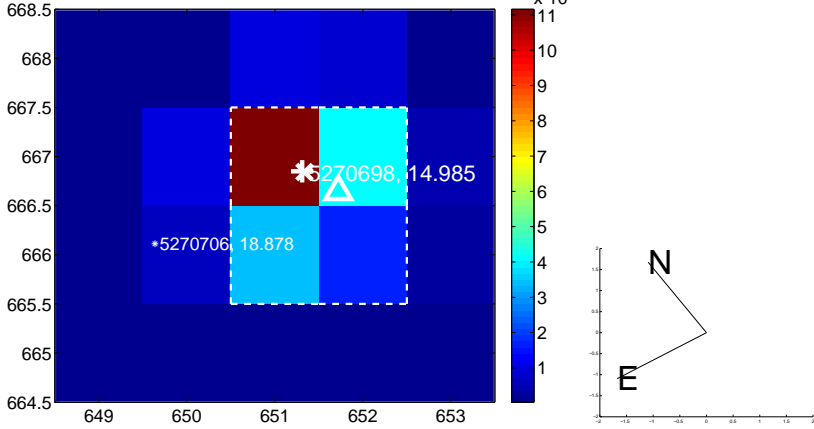
Q13 no OOT image



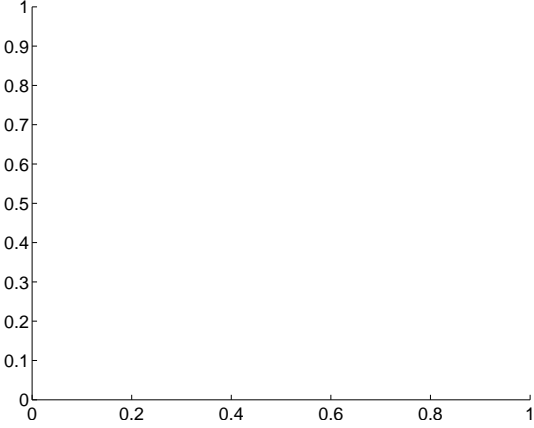
Q14 difference image. Poor Quality



Q14 OOT image



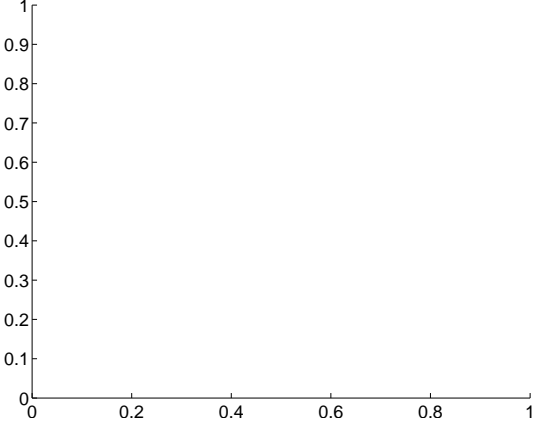
Q15 no difference image



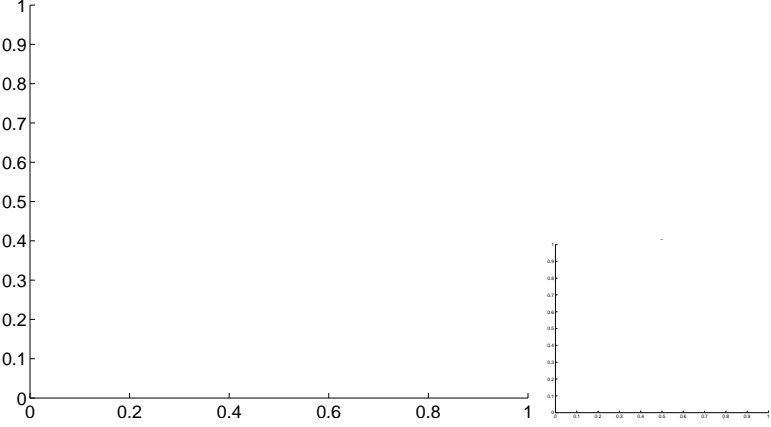
Q15 no OOT image



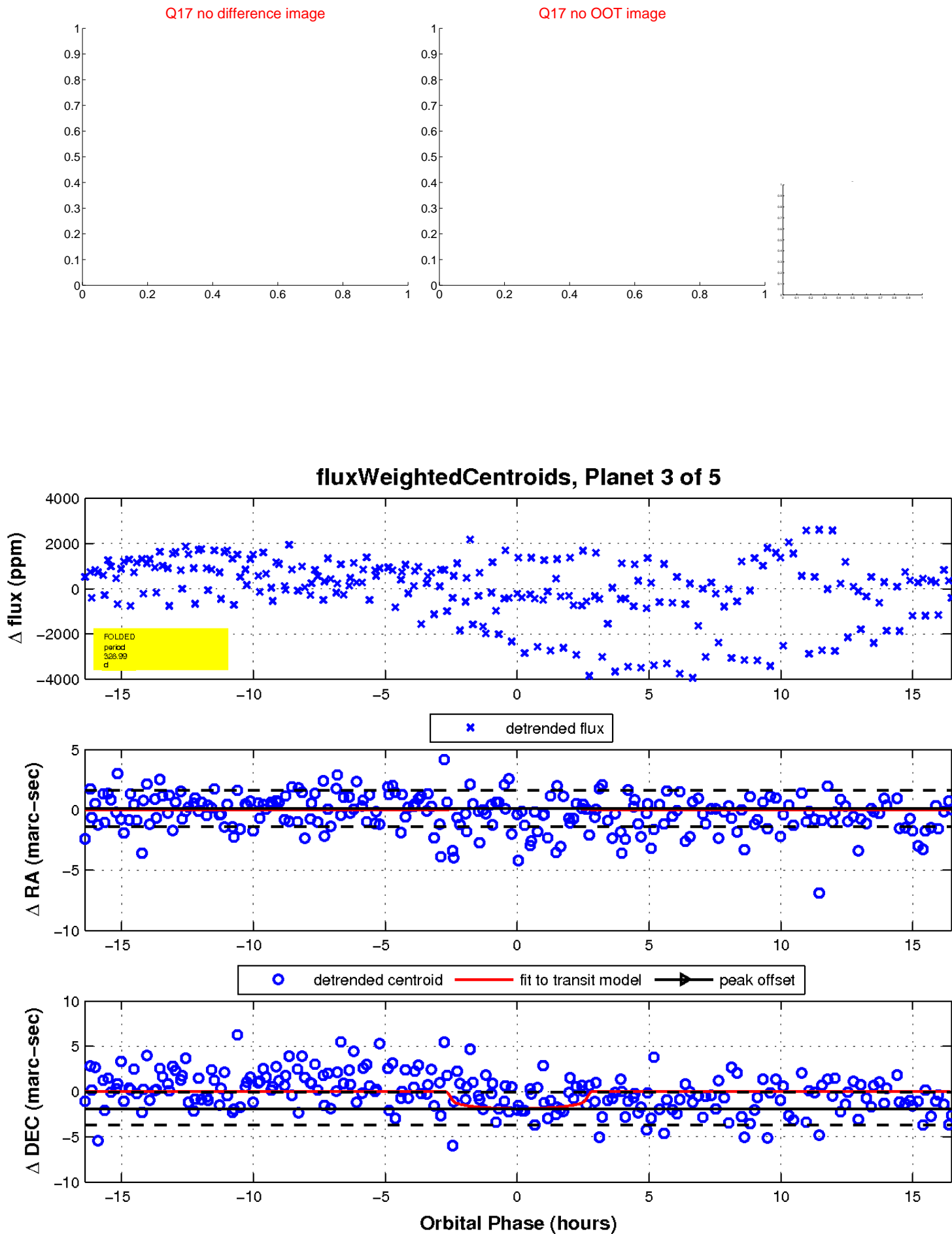
Q16 no difference image



Q16 no OOT image

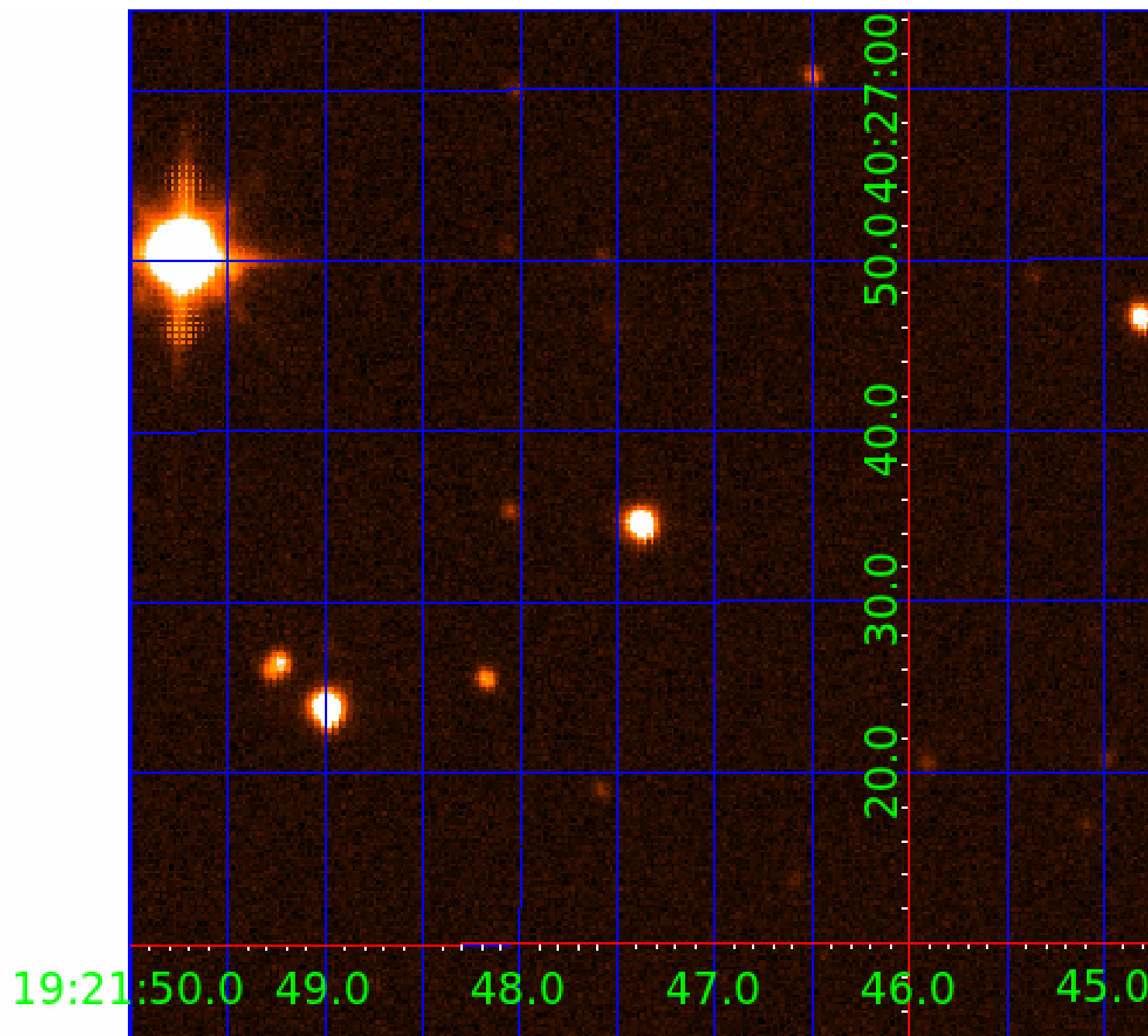


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005270698

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})
005270698-01	OBS	1543.01	3.964332	132.065425	25928.7	4.722	1801.7	1671.7	2.32	5758	37.26	1887.25
005270698-02	OBS	No	1.982155	132.068550	677.3	4.827	49.8	49.5	2.32	5758	7.16	4755.61
005270698-03	OBS	No	328.993212	290.343542	1679.5	5.495	24.6	8.7	2.32	5758	9.68	5.21
005270698-04	OBS	No	394.449608	522.149689	1145.6	4.918	7.2	6.9	2.32	5758	8.74	4.09
005270698-05	OBS	No	357.297482	389.706419	1202.5	11.818	7.3	5.4	2.32	5758	9.33	4.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005270698-01	OBS	FP	0.19	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
005270698-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
005270698-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005270698-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—SAME_NTL_PERIOD—CENT_FEW_DIFFS
005270698-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

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

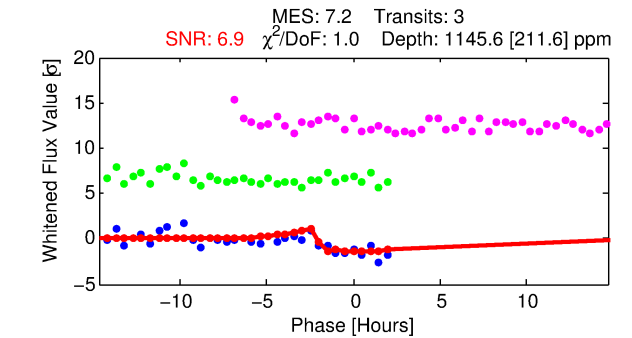
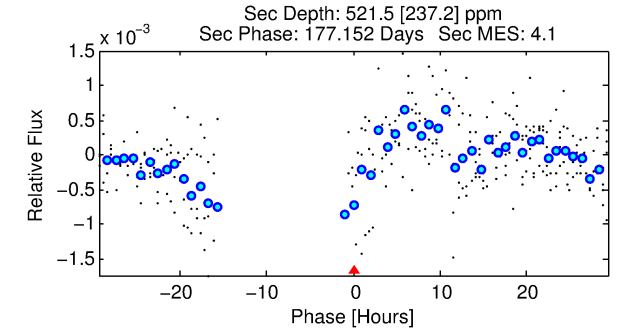
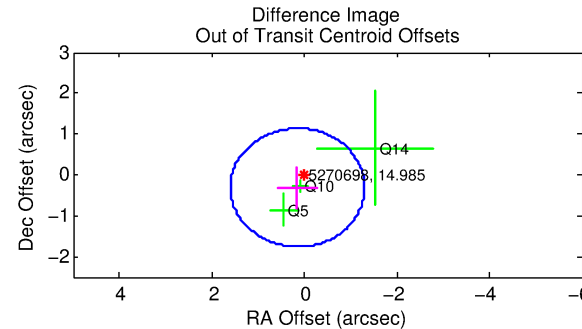
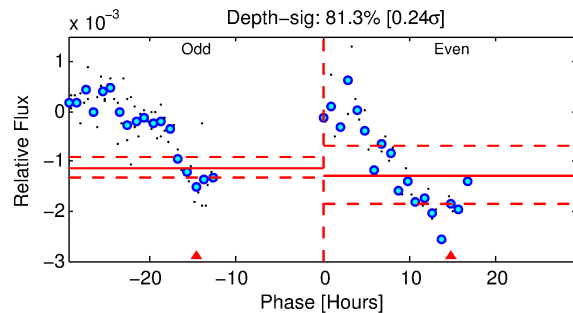
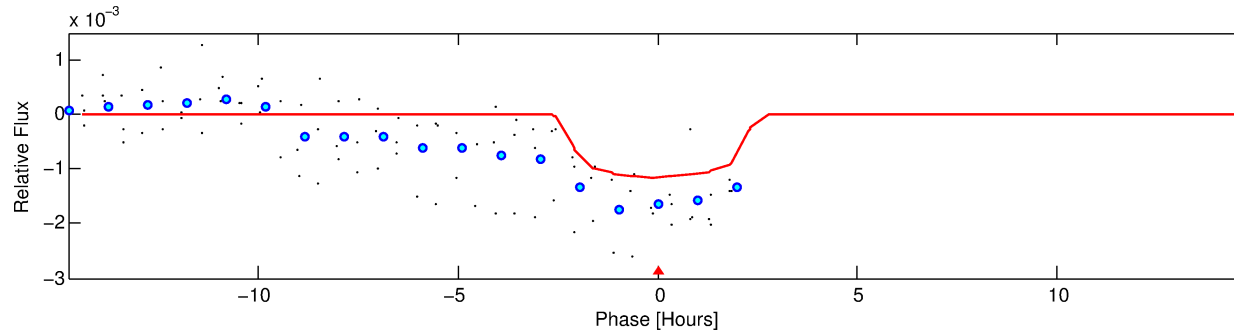
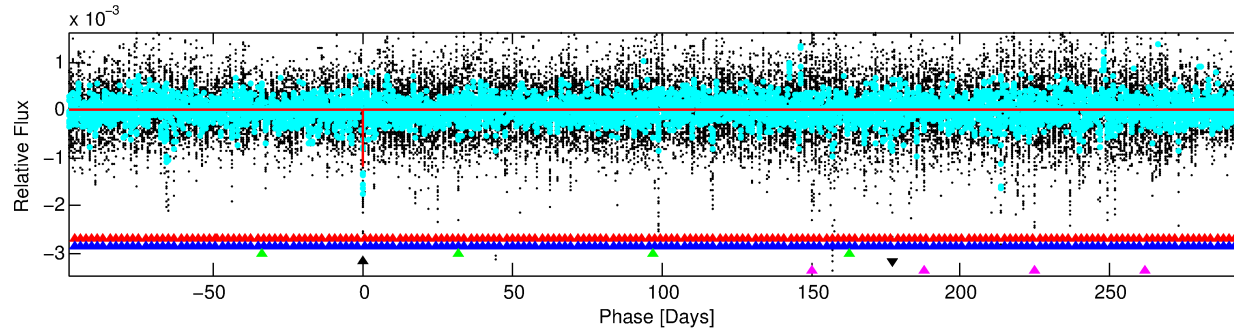
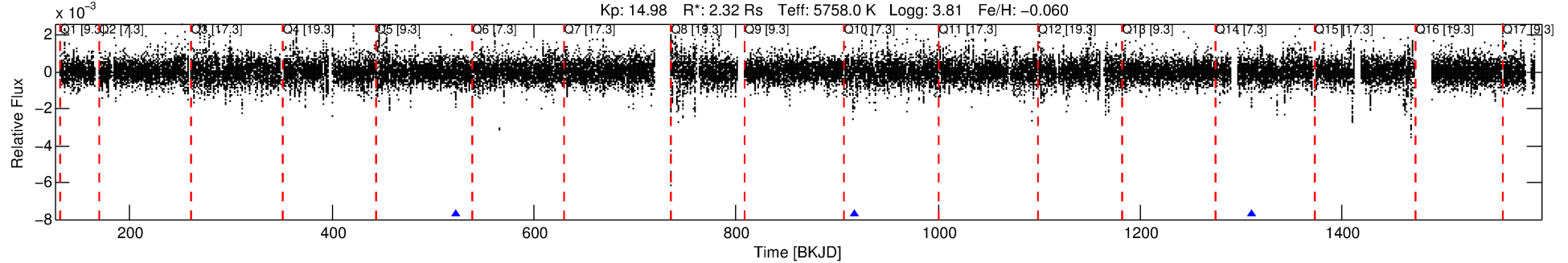
Ephemeris Match Information For 005270698-04

No Significant Match Found

DV One-Page Summary

KIC: 5270698 Candidate: 4 of 5 Period: 394.450 d
KOI: K01543 Corr: No Ephemeris Match

Kp: 14.98 R*: 2.32 Rs Teff: 5758.0 K Logg: 3.81 Fe/H: -0.060



DV Fit Results:

Period = 394.44961 [0.00676] d
Epoch = 522.1497 [0.0157] BKJD
Rp/R* = 0.0345 [0.0163]
a/R* = 396.96 [801.13]
b = 0.81 [0.86]
Seff = 4.09 [1.70]
Teq = 363 [38] K
Rp = 8.74 [4.90] Re
a = 1.1370 [0.3076] AU
Ag = 4856.90 [5454.18] [0.89σ]
Teffp = 4681 [1225] K [3.53σ]

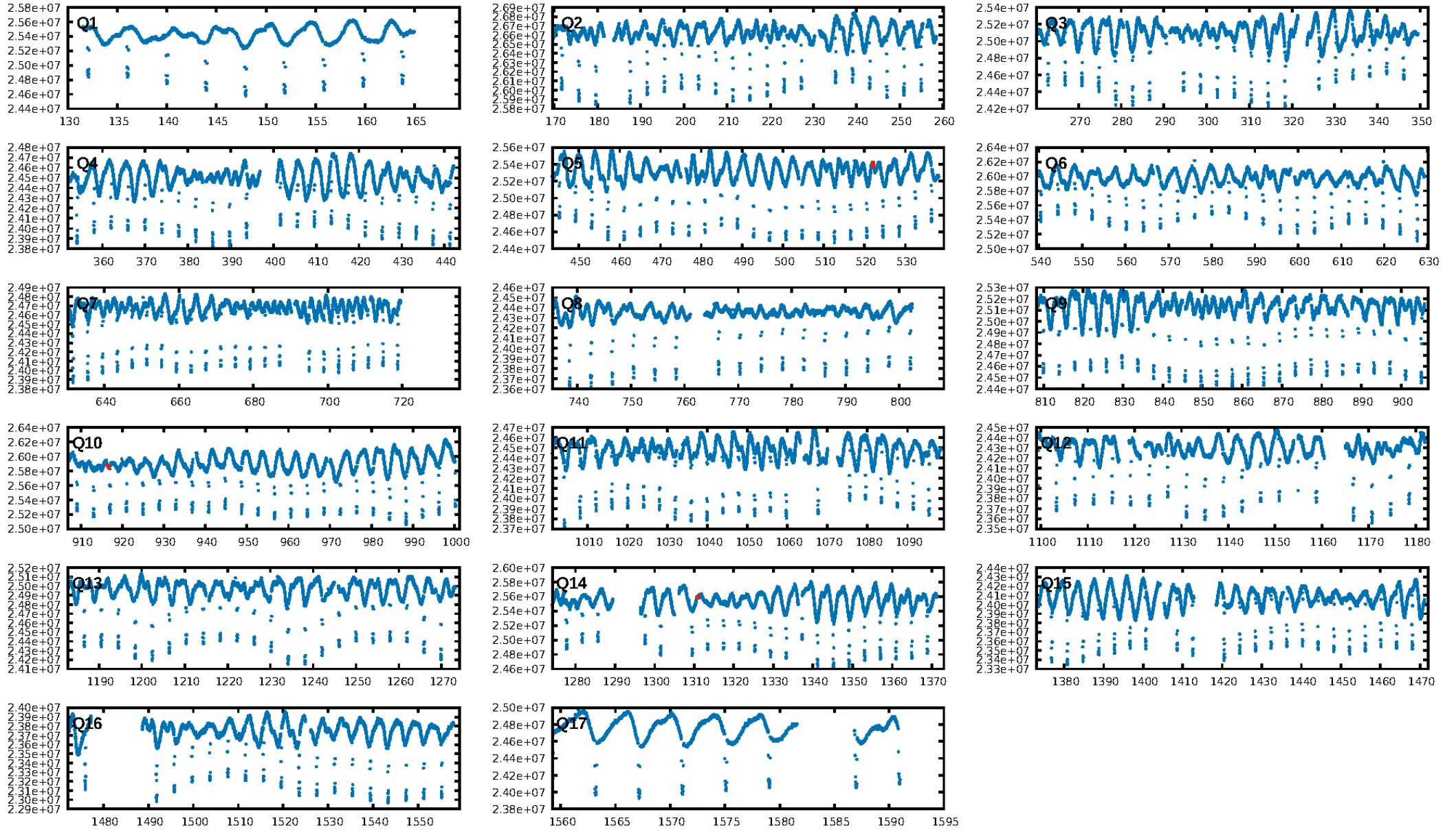
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [69.66σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 91.7%
ModelChiSquareGof-sig: 99.2%
Bootstrap-pfa: 4.95e-07
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -4.07
Centroid-sig: 56.3%
Centroid-so: 0.550 arcsec [0.67σ]
OotOffset-rm: 0.348 arcsec [0.72σ]
KicOffset-rm: 0.332 arcsec [0.71σ]
OotOffset-st: 2/0/0/1 [3]
KicOffset-st: 2/0/0/1 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.00 [0/3]

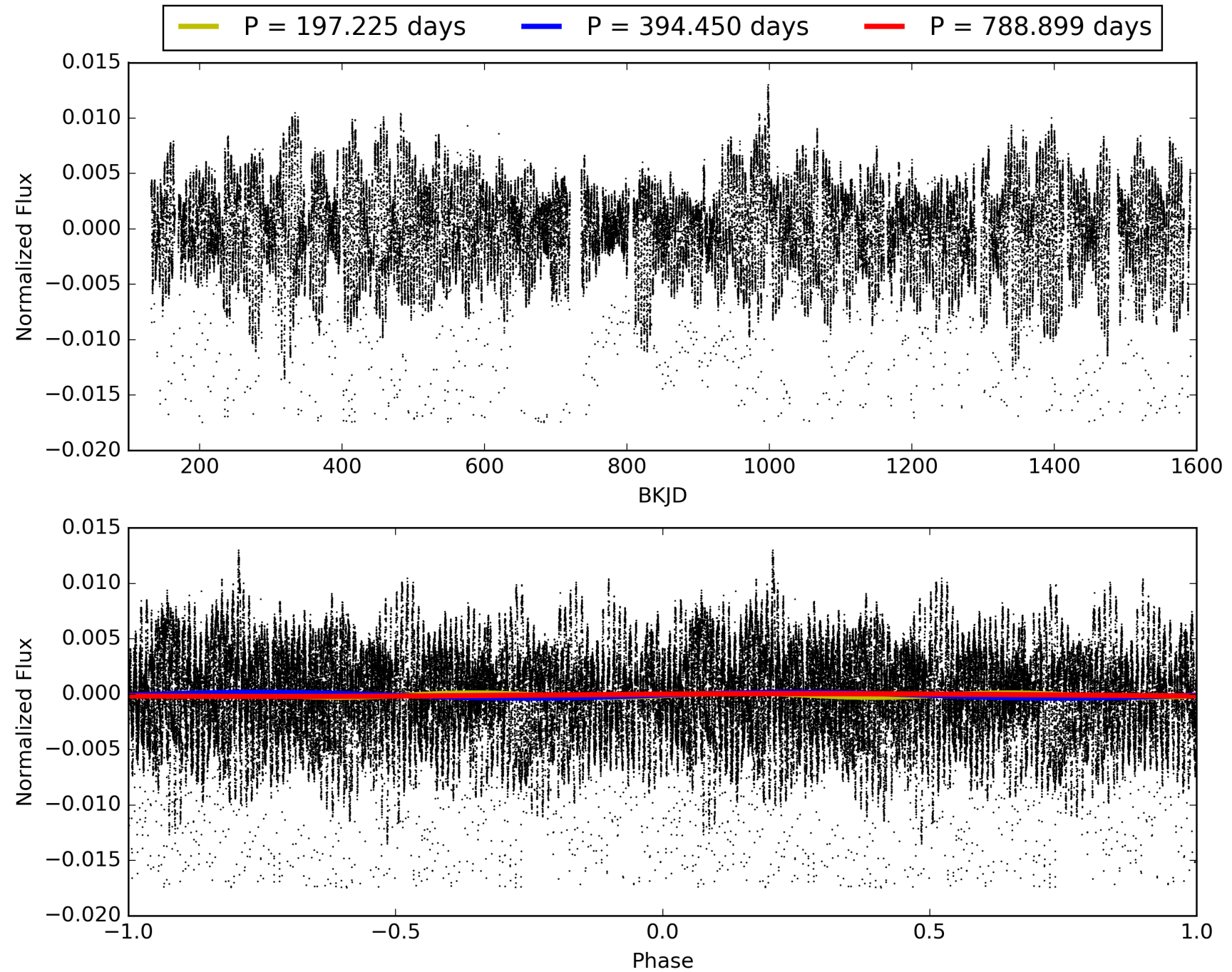
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:54:18 Z

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

TCE 005270698-04, PDC Light Curves

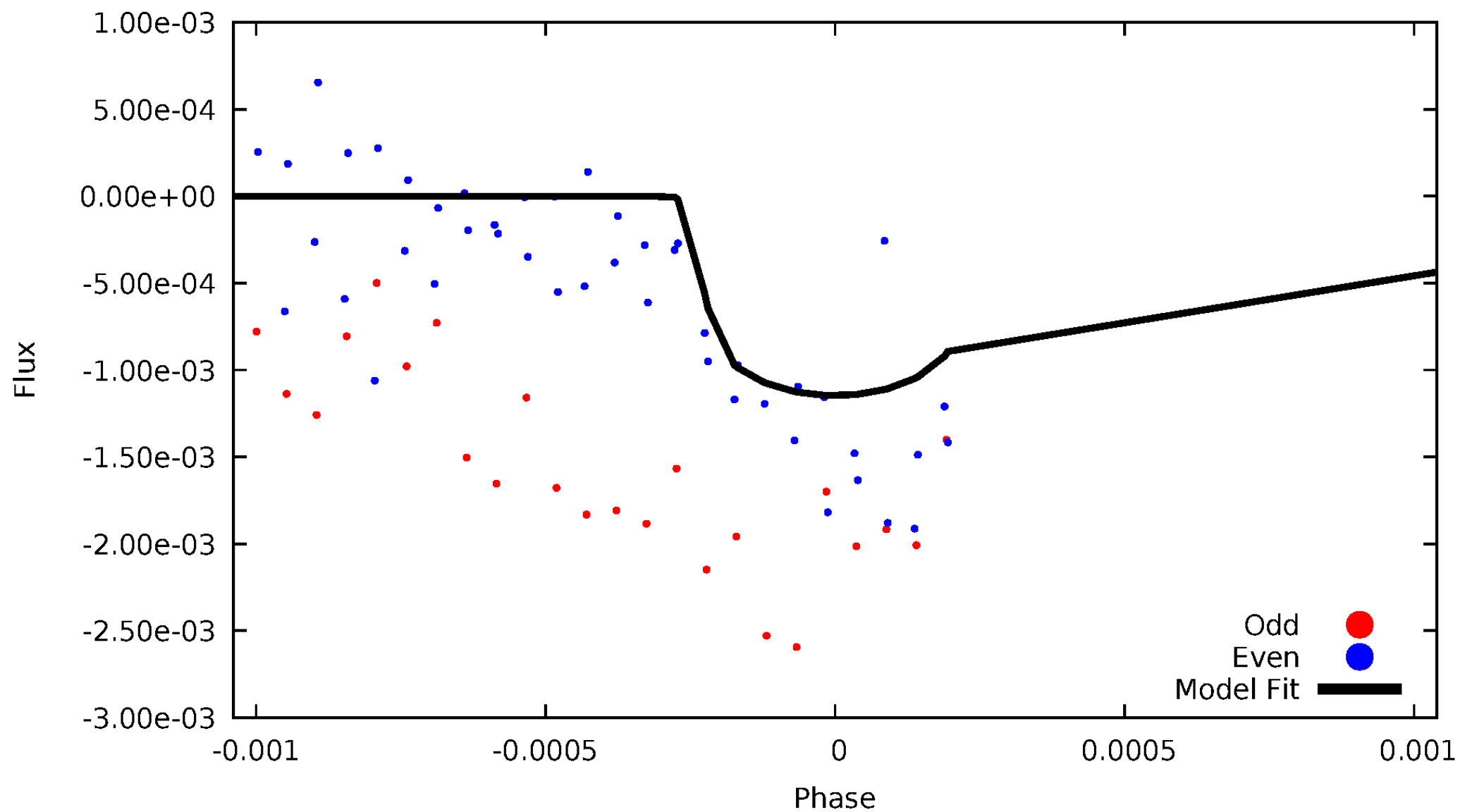


TCE 005270698-04



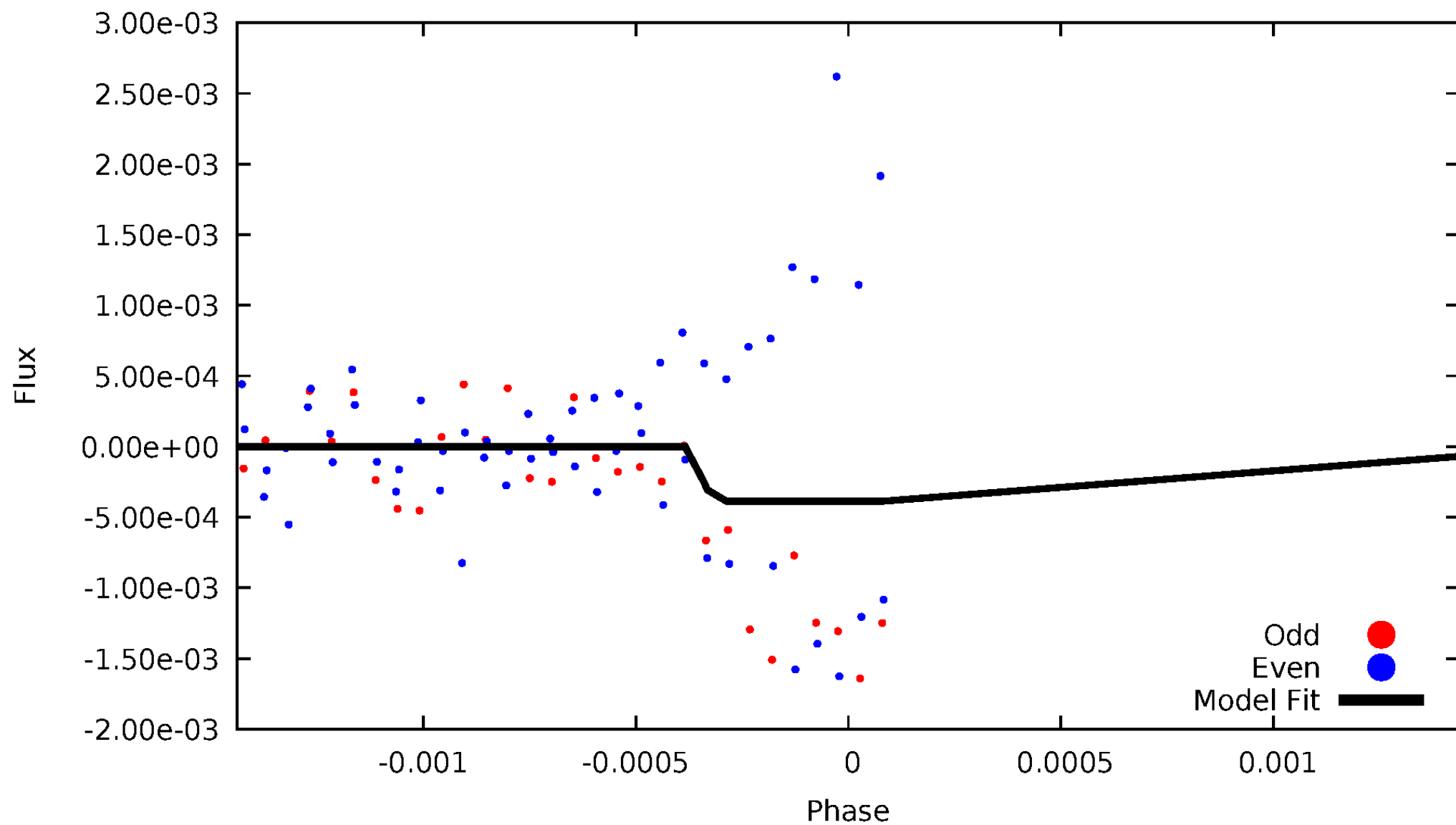
DV Odd/Even

TCE 005270698-04



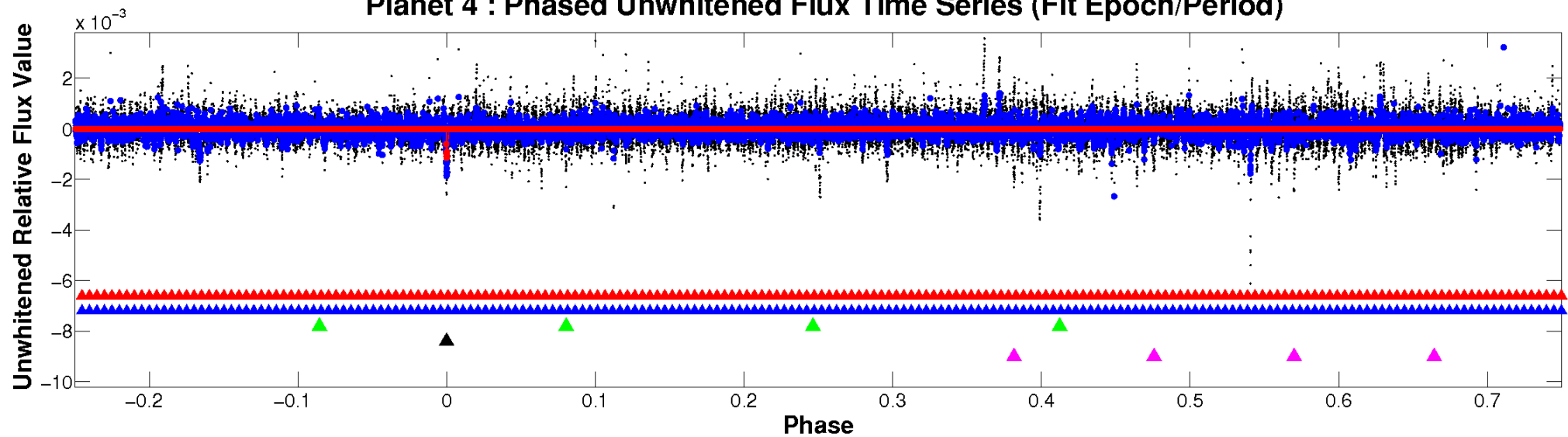
ALT Odd/Even

TCE 005270698-04

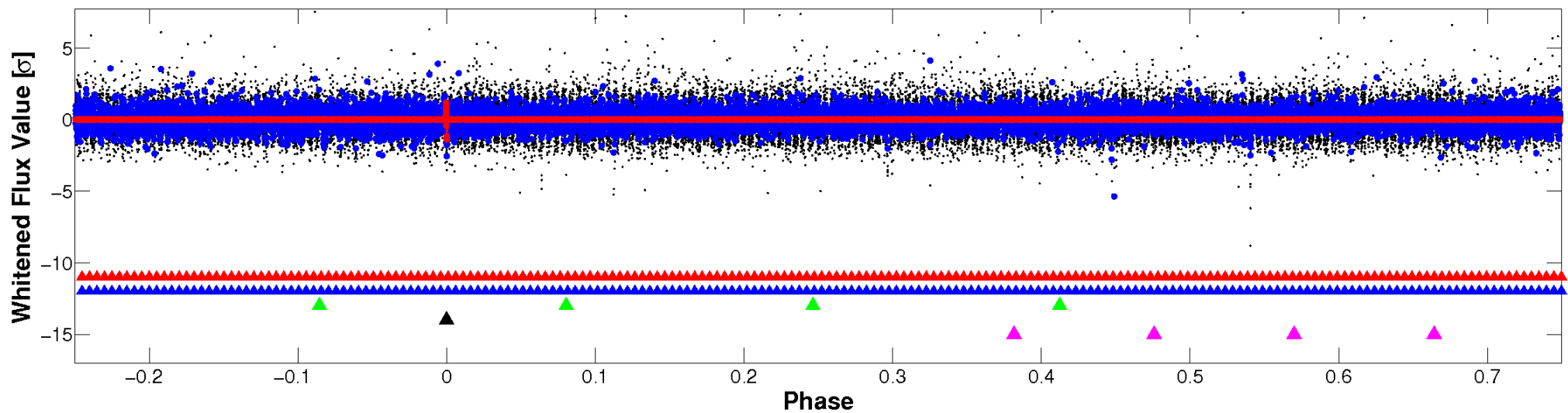


Non-Whitened Vs. Whitened Light Curve

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

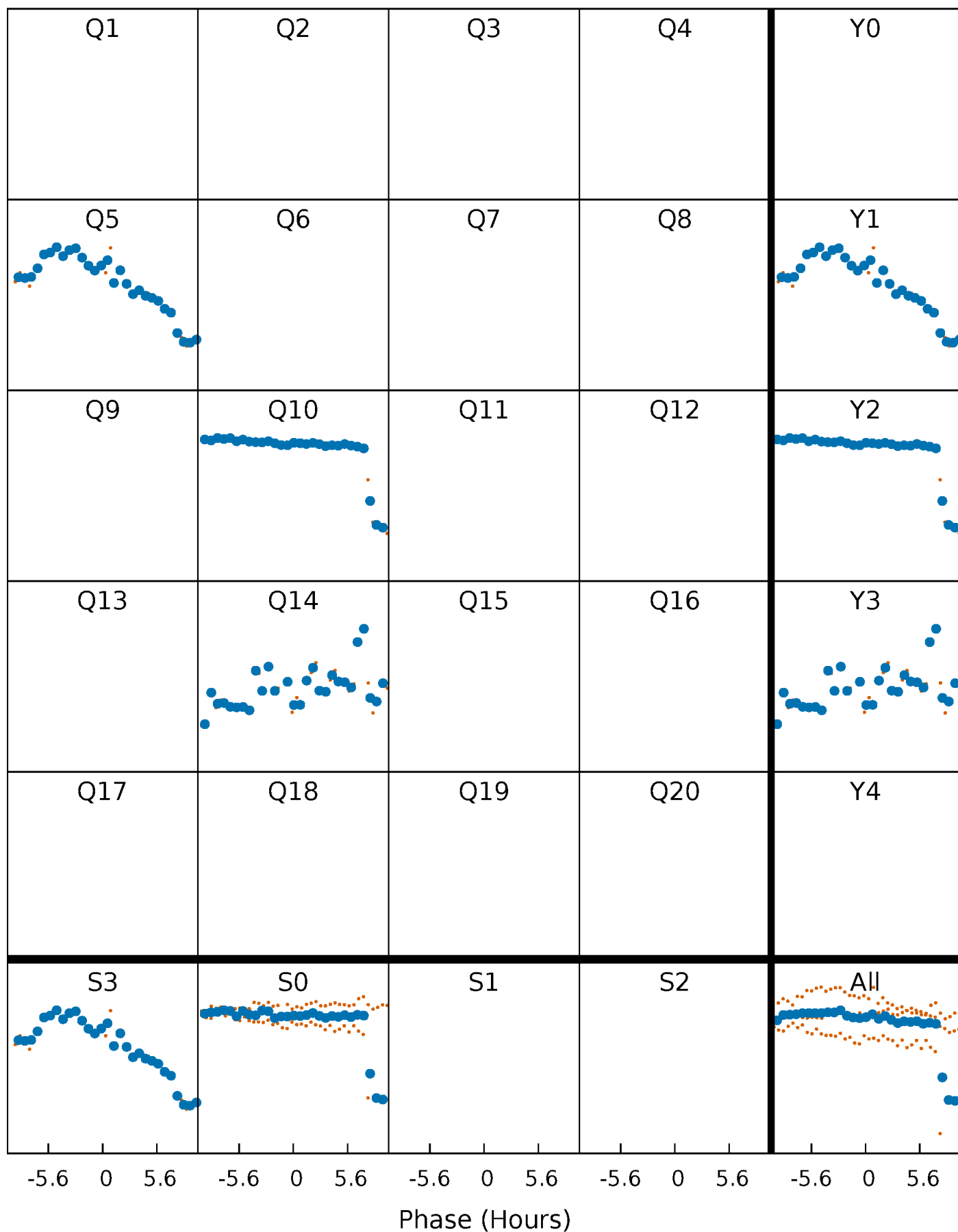


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



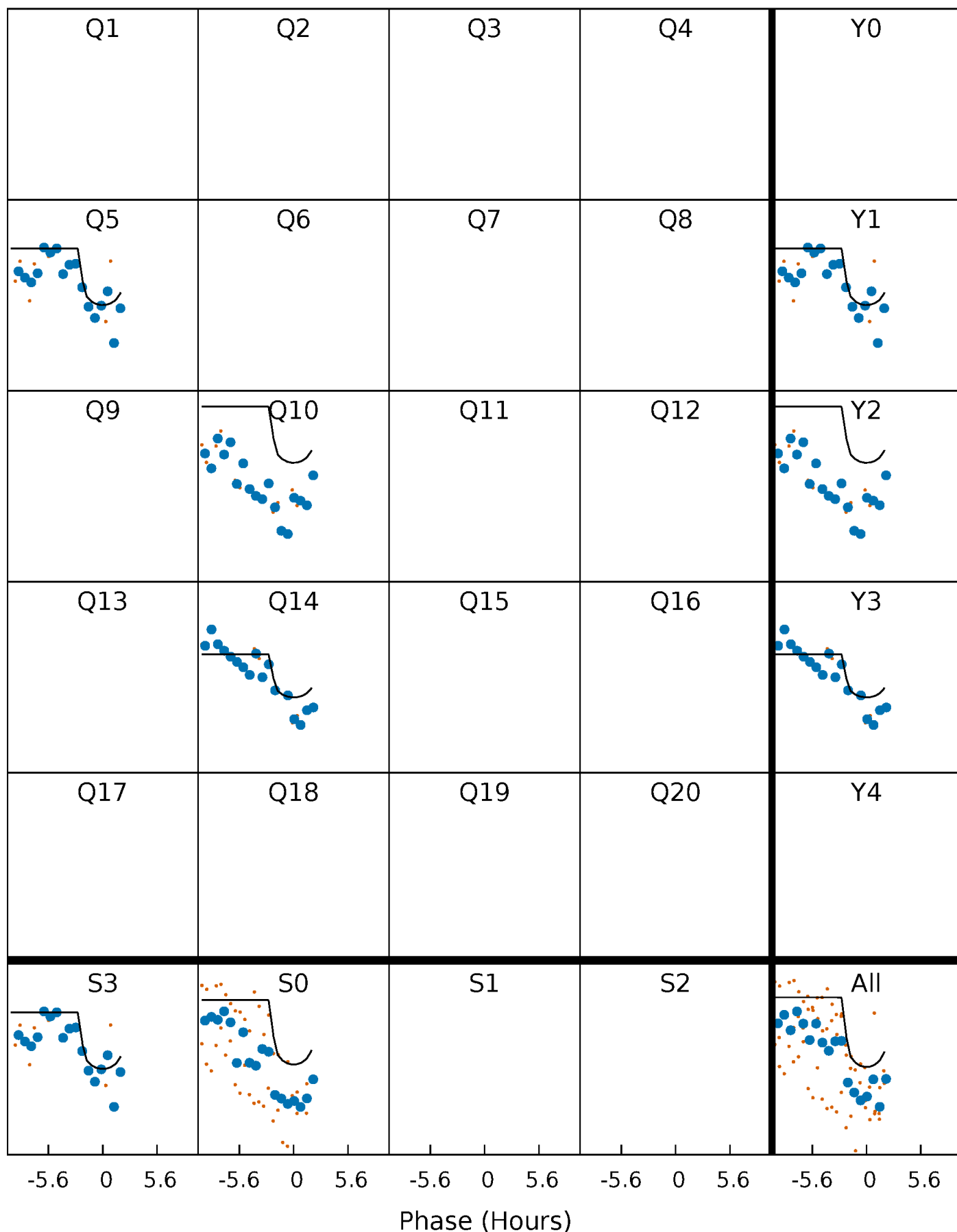
PDC Quarter-Phased Transit Curves

TCE 005270698-04 $P=394.449608$ Days $T_0=522.149689$ (BKJD)



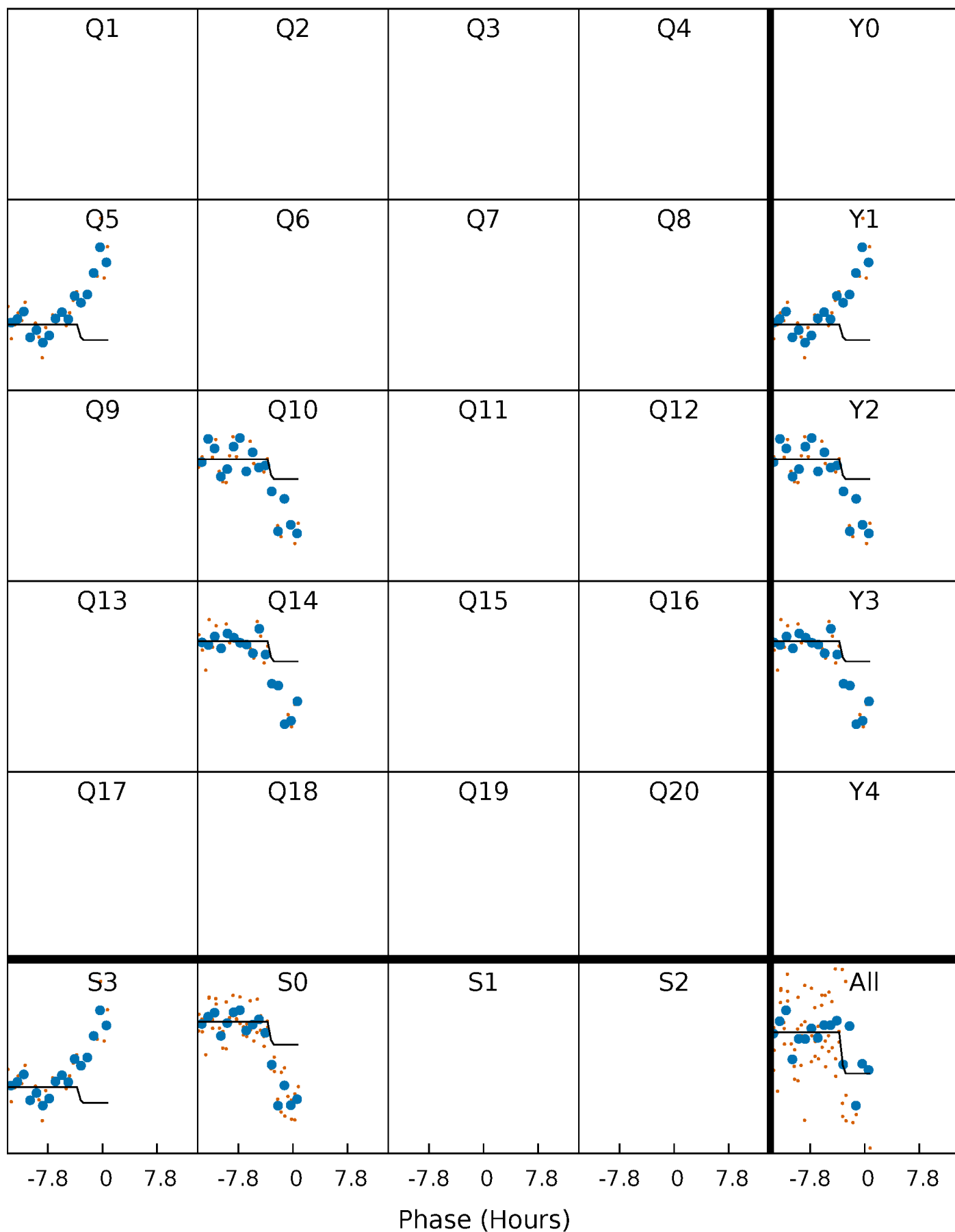
DV Quarter-Phased Transit Curves

TCE 005270698-04 $P=394.449608$ Days $T_0=522.149689$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

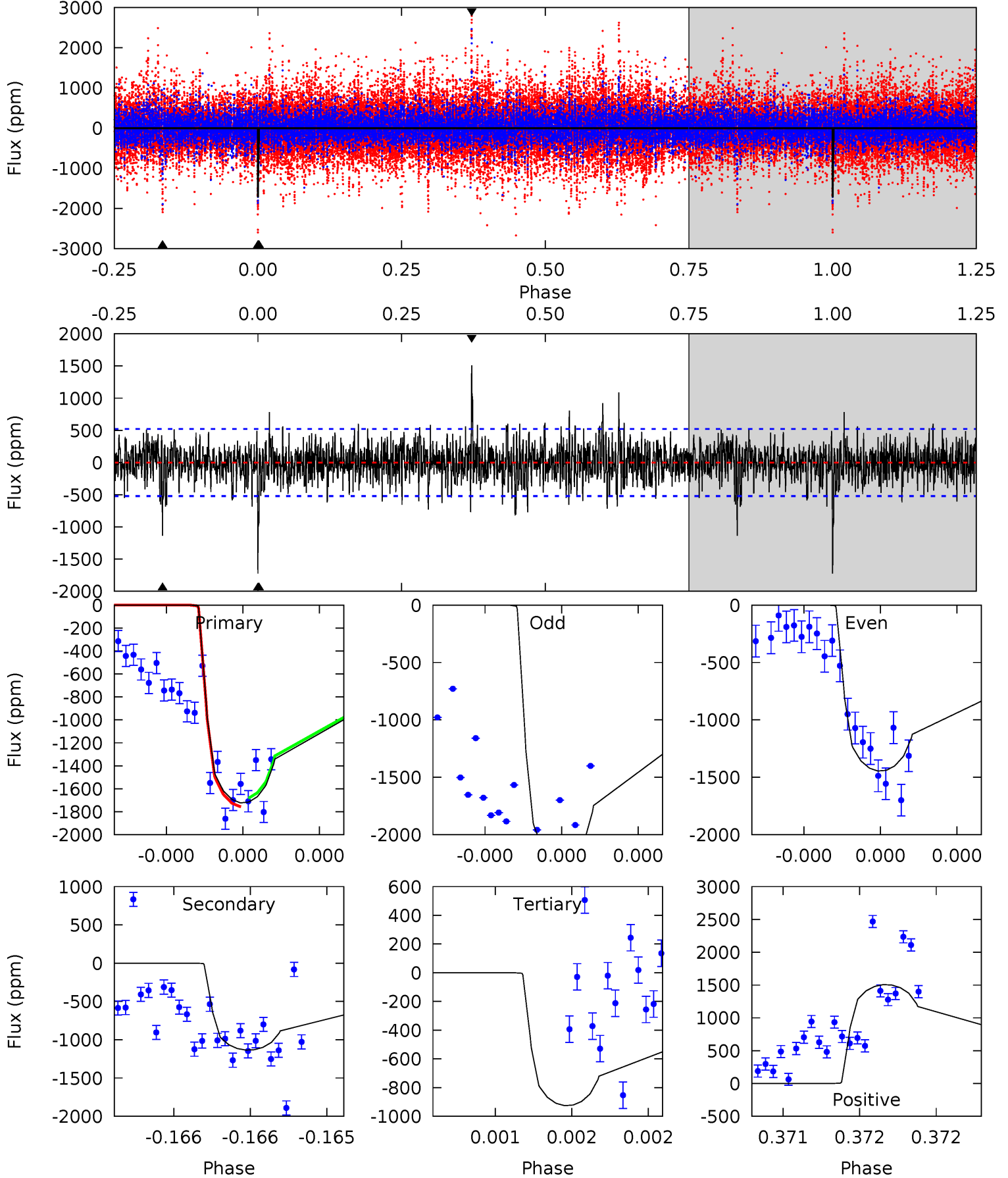
TCE 005270698-04 $P=394.449442$ Days $T_0=522.194359$ (BKJD)



DV Model-Shift Uniqueness Test

005270698-04, P = 394.449608 Days, E = 127.700081 Days

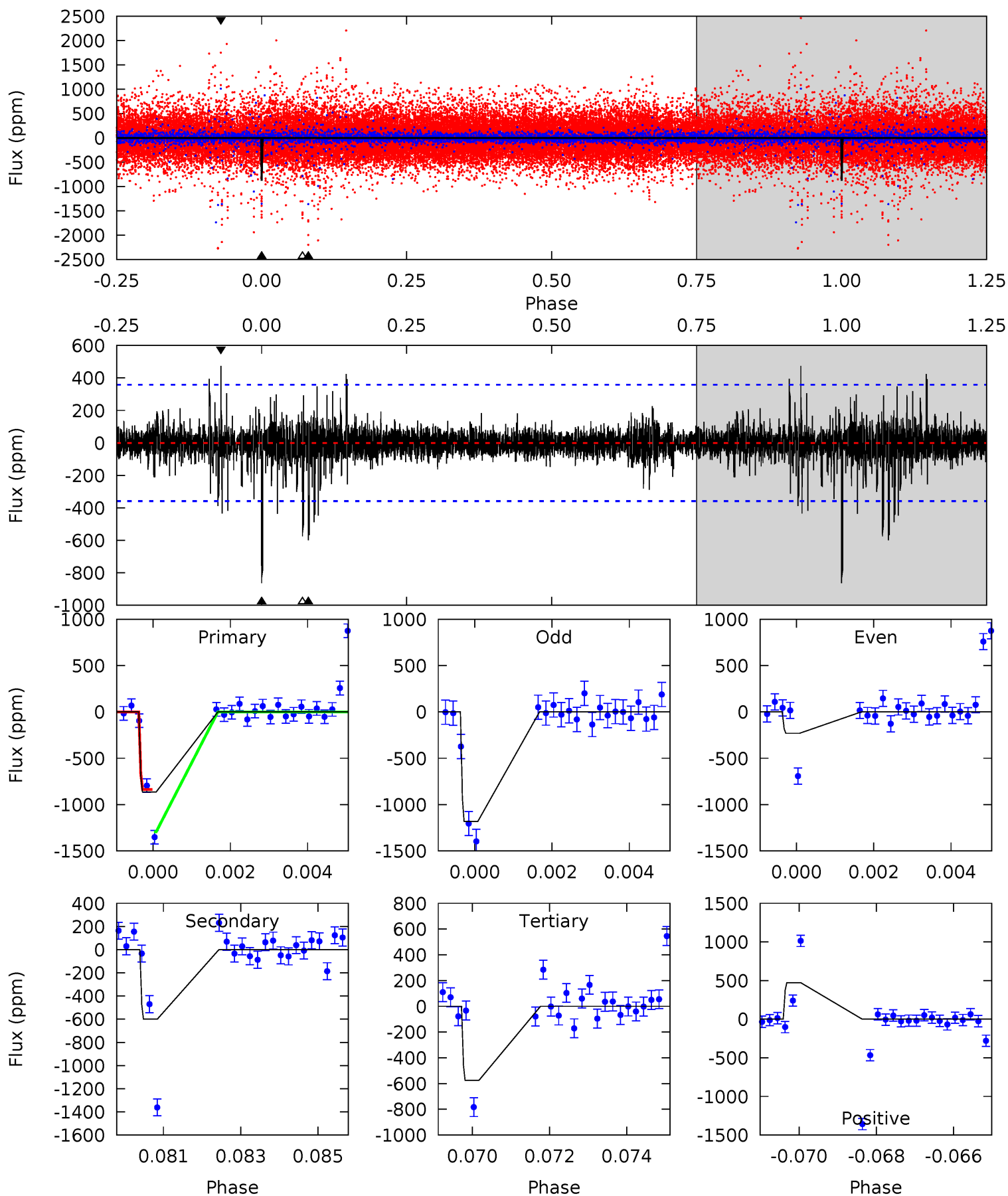
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.5	12.2	9.92	16.1	5.58	3.50	2.22	8.54	2.32	2.25	-3.98	3.90	1.08	0.47	0.40



Alt Model-Shift Uniqueness Test

005270698-04, P = 394.449442 Days, E = 127.744917 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	8.91	8.54	7.03	5.32	3.08	0.81	4.28	5.80	0.37	1.88	7.06	0.32	0.35	2.75



Stellar Parameters For KIC 005270698

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5758^{+77}_{-77}	$3.808^{+0.233}_{-0.093}$	$-0.060^{+0.150}_{-0.150}$	$2.318^{+0.380}_{-0.706}$	$1.258^{+0.106}_{-0.248}$	$0.142^{+0.192}_{-0.043}$
	+1%/-1%	+6%/-2%	+250%/-250%	+16%/-30%	+8%/-20%	+135%/-30%
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 005270698-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1135 ± 93	$8.41^{+4.32}_{-4.09}$	500^{+26}_{-37}	5638^{+2167}_{-900}	11212^{+29231}_{-6250}
Alt.	-600 ± 67	$5.32^{+3.95}_{-3.14}$	502^{+25}_{-34}	6048^{+4250}_{-1265}	14497^{+71202}_{-9635}

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

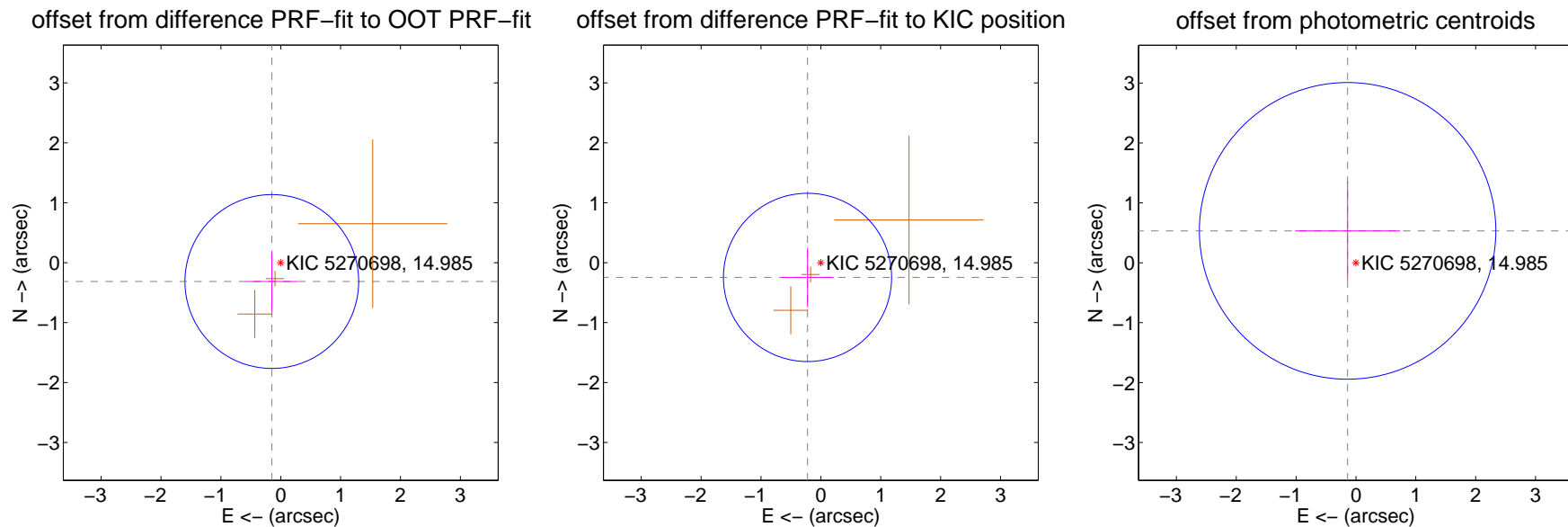
DV Centroid Data

Supplemental centroid analysis for 005270698-04. Kepler magnitude: 14.98. Transit SNR 6.94

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.348 ± 0.483	0.72	0.149 ± 0.434	-0.314 ± 0.494
PRF-fit source offset from KIC position	0.332 ± 0.468	0.71	0.223 ± 0.434	-0.246 ± 0.494
photometric centroid source offset	0.55 ± 0.83	0.67	0.14 ± 0.88	0.53 ± 0.82

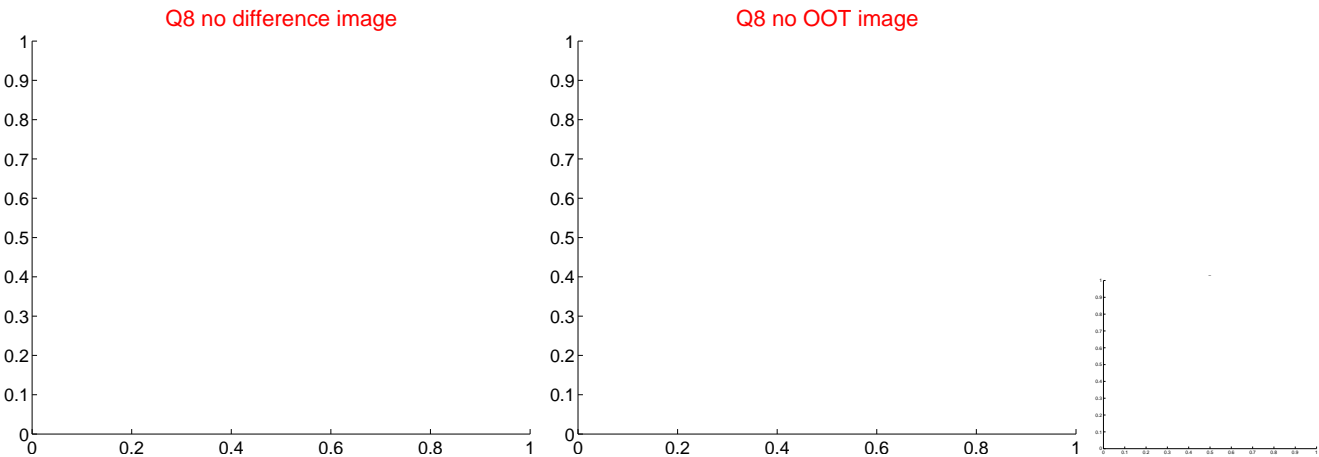
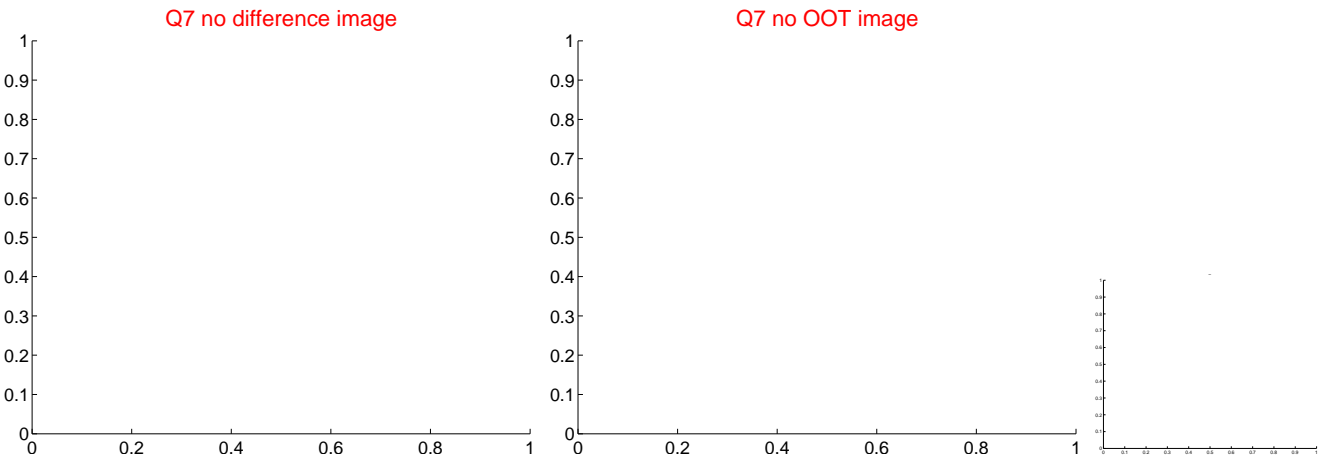
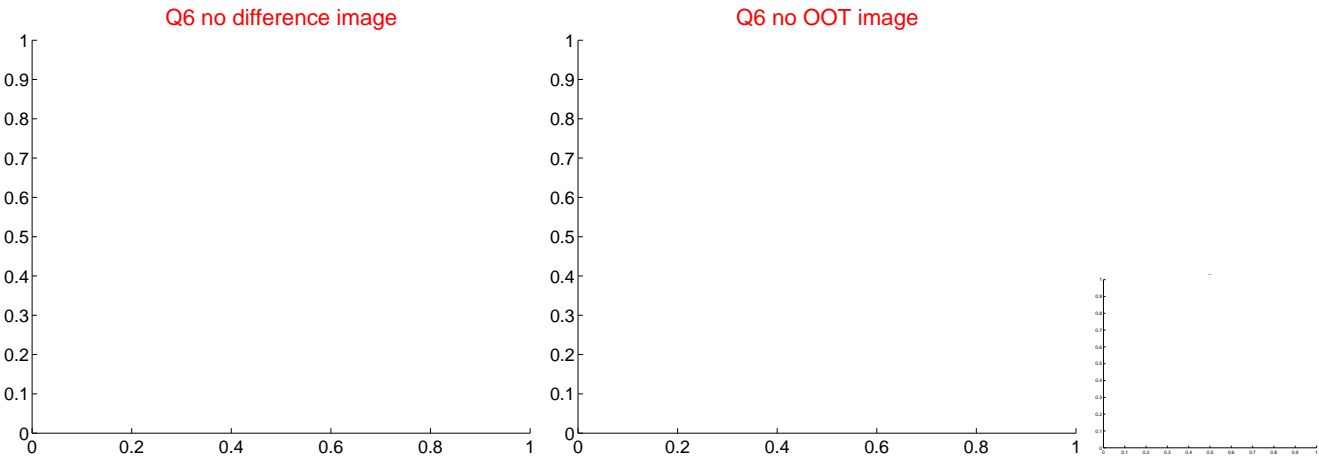
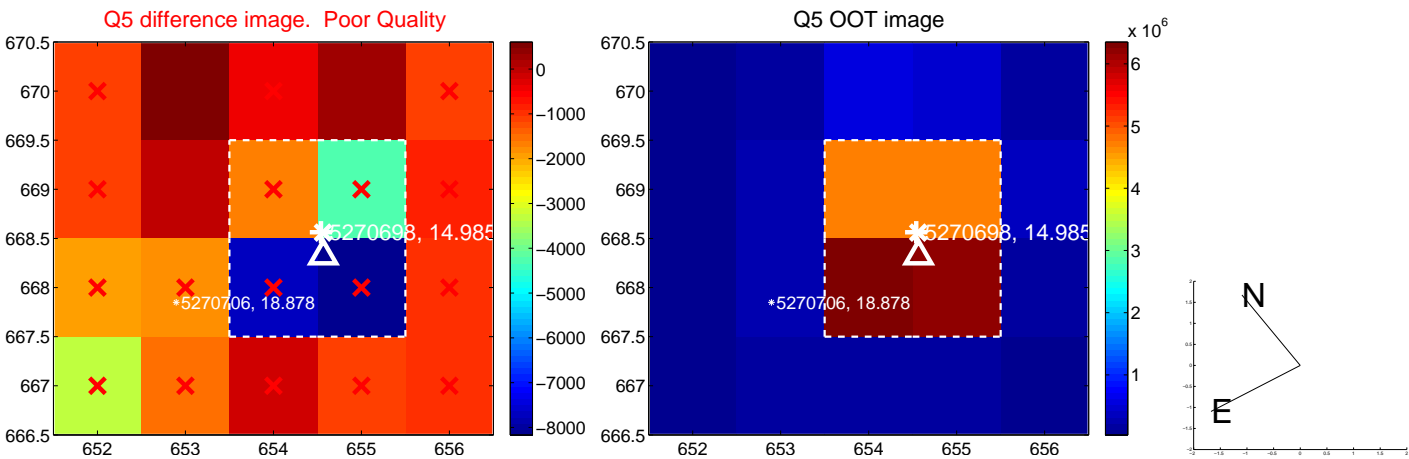


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

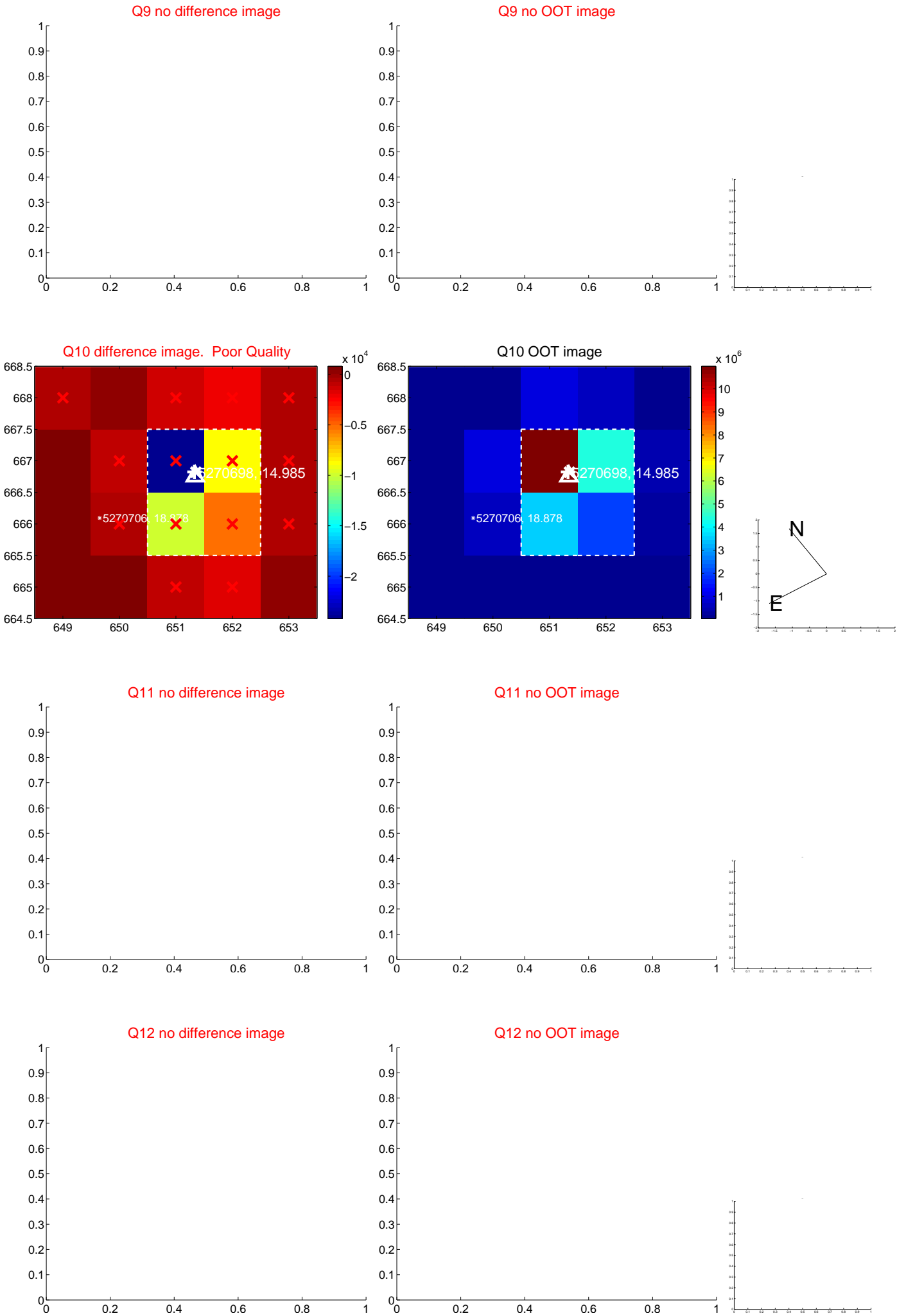
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



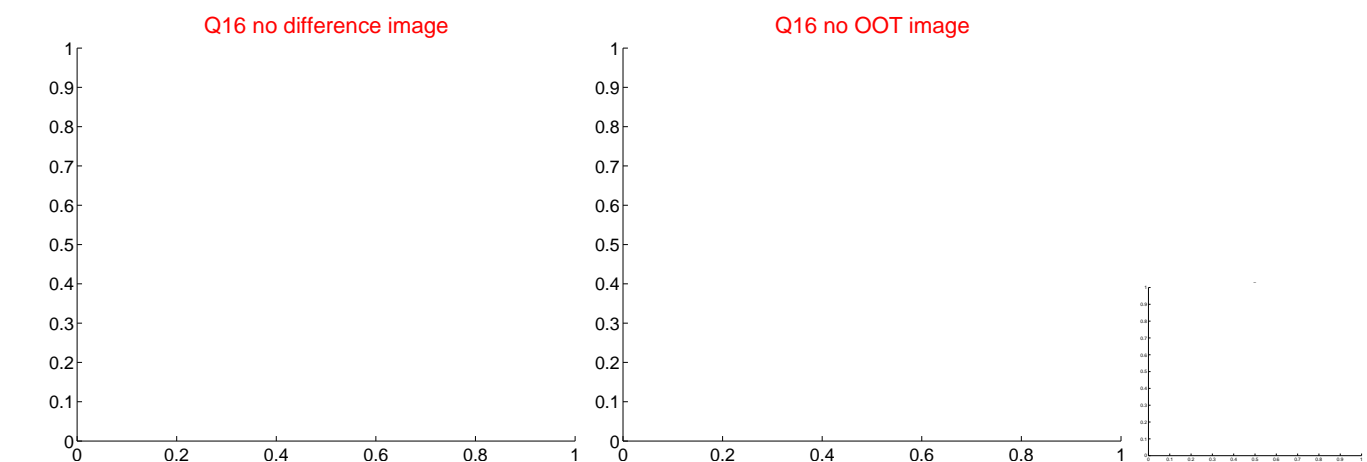
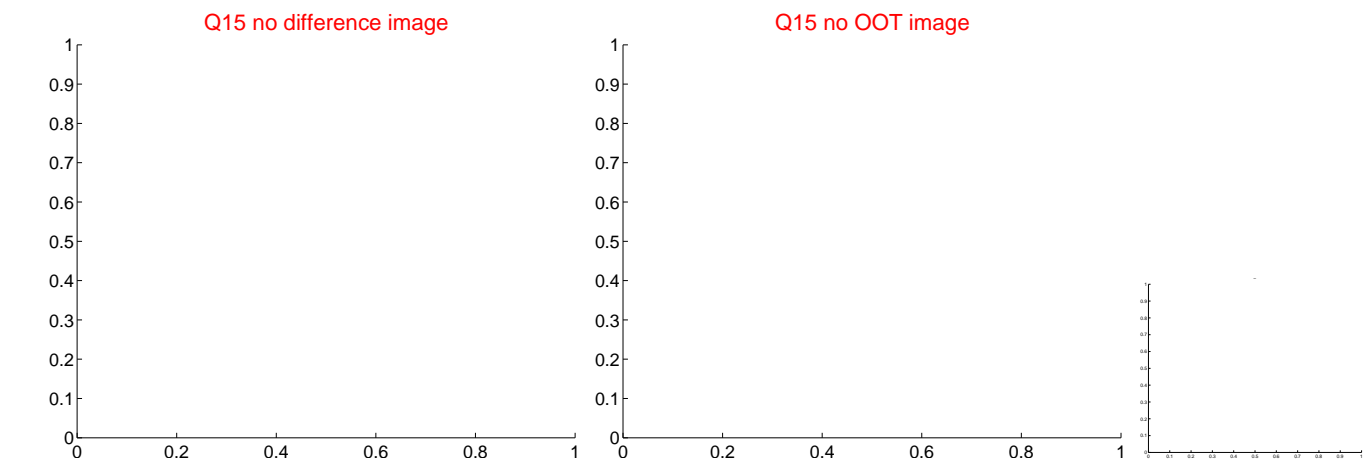
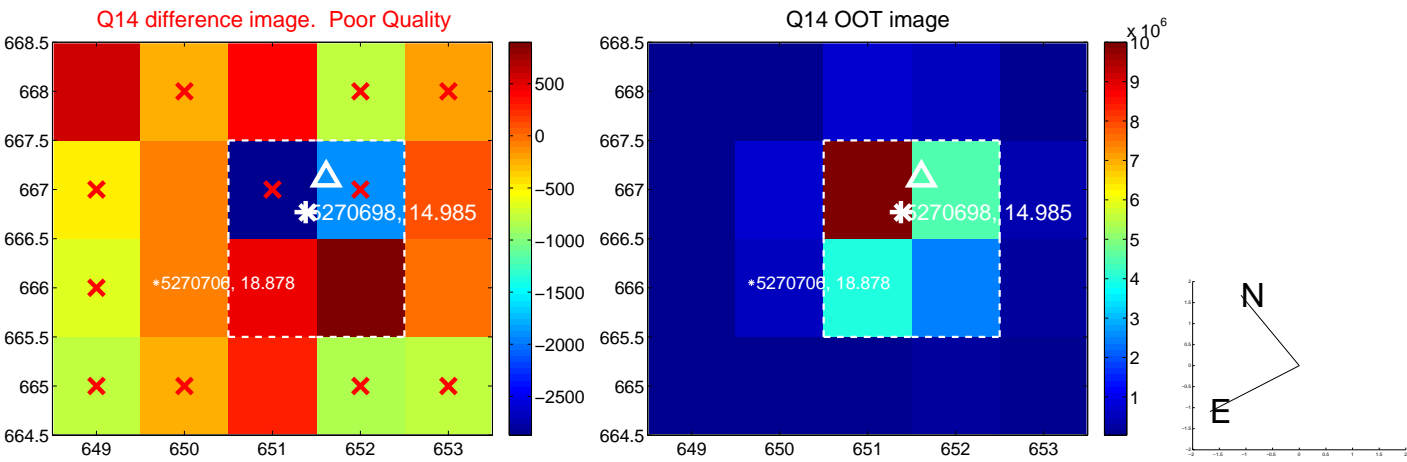
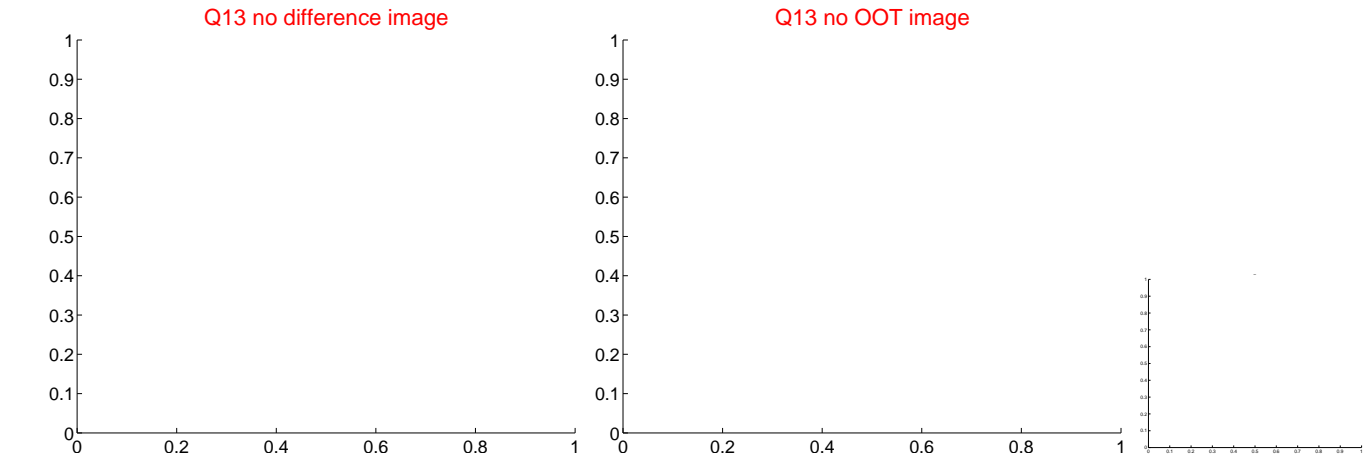
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



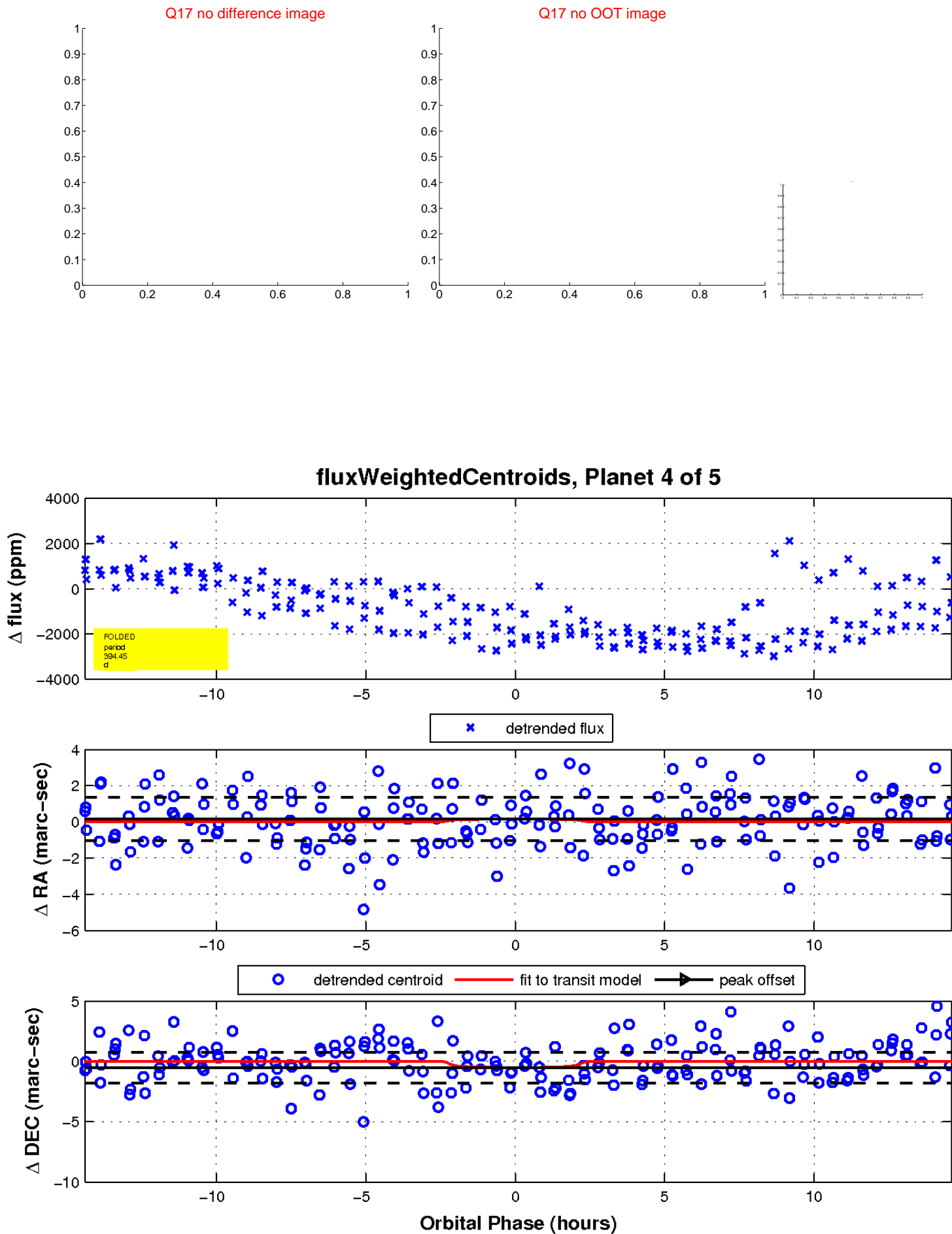
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

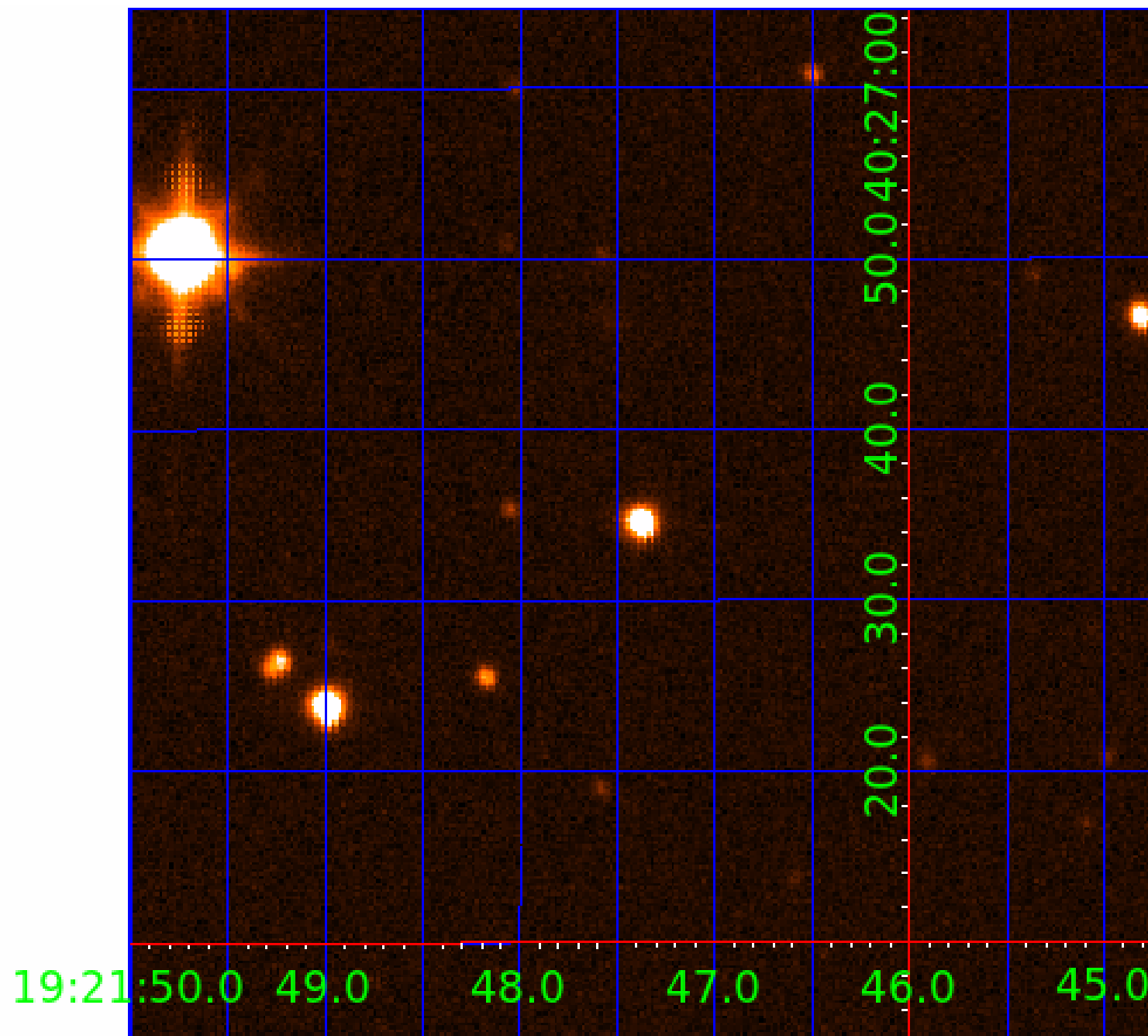


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005270698

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})
005270698-01	OBS	1543.01	3.964332	132.065425	25928.7	4.722	1801.7	1671.7	2.32	5758	37.26	1887.25
005270698-02	OBS	No	1.982155	132.068550	677.3	4.827	49.8	49.5	2.32	5758	7.16	4755.61
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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005270698-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
005270698-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005270698-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—SAME_NTL_PERIOD—CENT_FEW_DIFFS
005270698-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

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

Ephemeris Match Information For 005270698-05

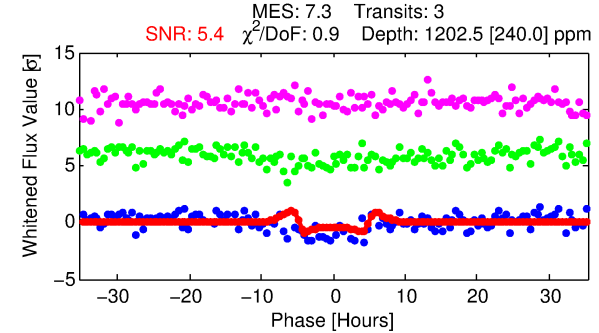
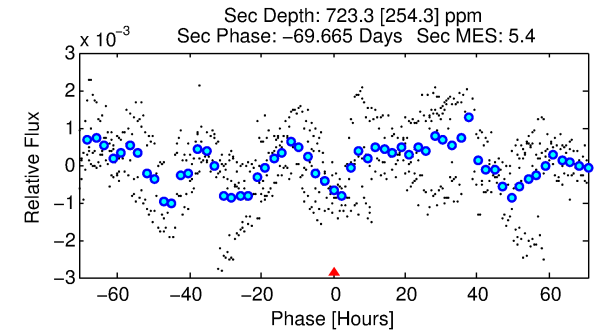
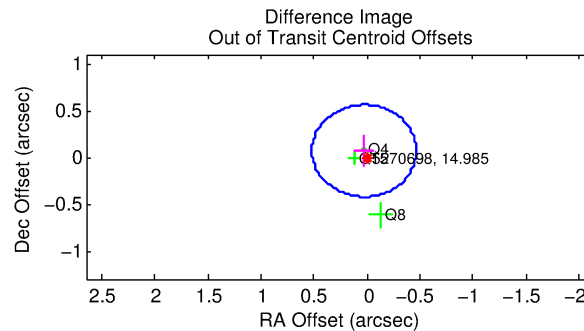
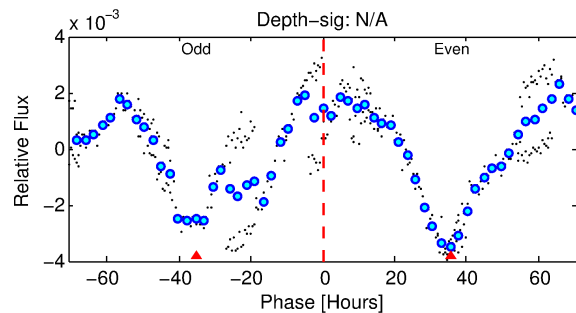
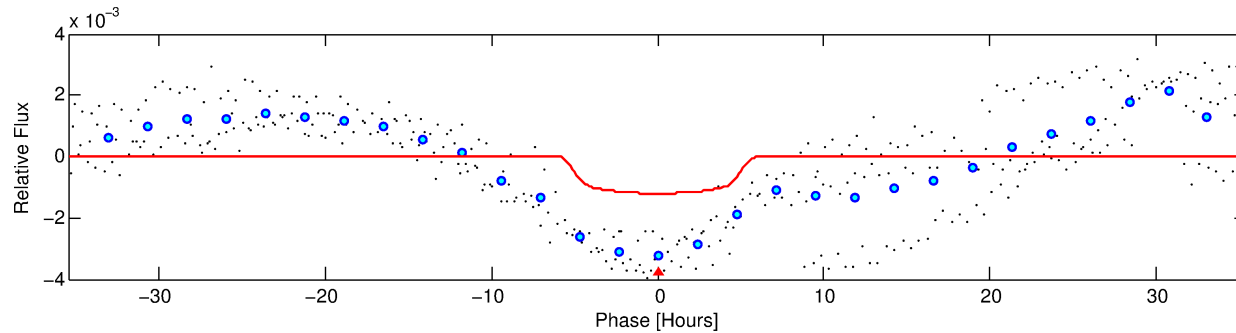
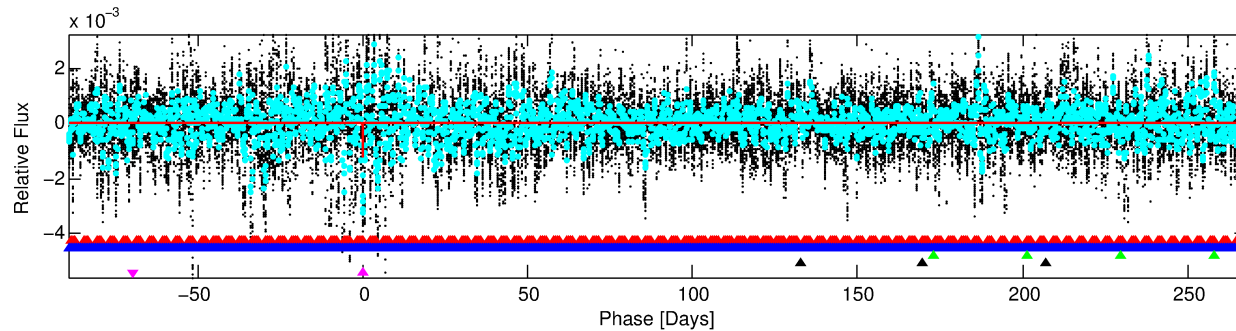
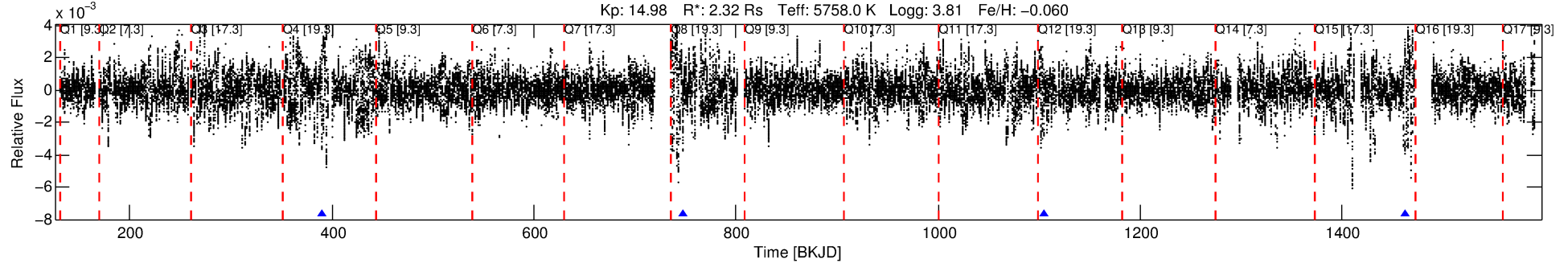
No Significant Match Found

DV One-Page Summary

KIC: 5270698 Candidate: 5 of 5 Period: 357.297 d

KOI: K01543 Corr: No Ephemeris Match

Kp: 14.98 R*: 2.32 Rs Teff: 5758.0 K Logg: 3.81 Fe/H: -0.060



DV Fit Results:

Period = 357.29748 [0.01431] d
Epoch = 389.7064 [0.0303] BKJD
Rp/R* = 0.0369 [0.0046]
a/R* = 128.78 [34.87]
b = 0.87 [0.07]
Seff = 4.67 [1.94]
Teq = 375 [39] K
Rp = 9.33 [3.07] Re
a = 1.0645 [0.2880] AU
Ag = 5176.05 [3083.08] [1.68σ]
Teffp = 4916 [534] K [8.49σ]

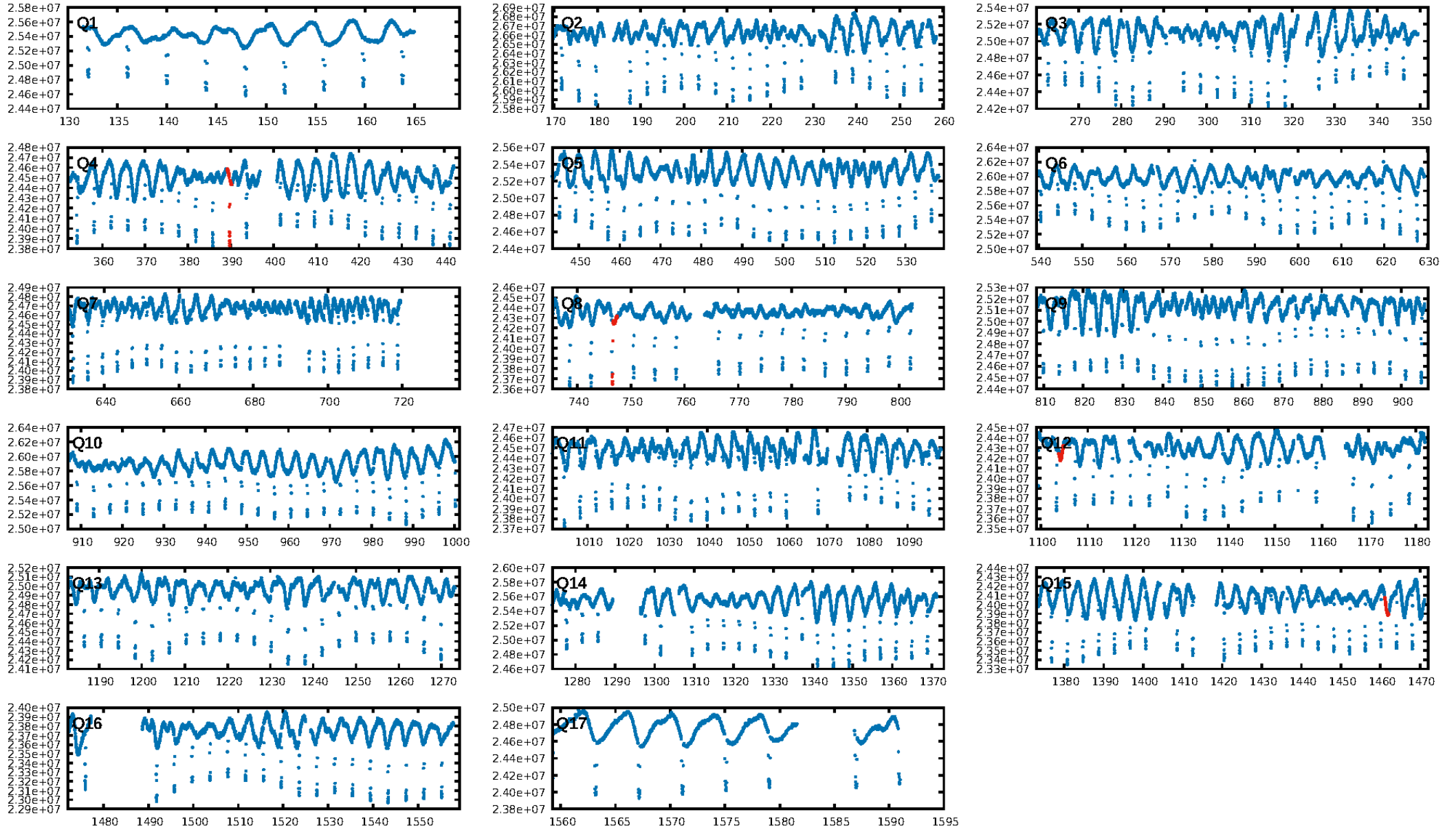
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [52.12σ]
LongPeriod-sig: 100.0% [69.66σ]
ModelChiSquare2-sig: 94.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.42e-07
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.1155
Centroid-sig: 10.5%
Centroid-so: 0.591 arcsec [1.11σ]
OotOffset-rm: 0.075 arcsec [0.46σ]
OotOffset-st: 0/1/2/0 [3]
KicOffset-rm: 0.293 arcsec [2.06σ]
KicOffset-st: 0/1/2/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.00 [0/3]

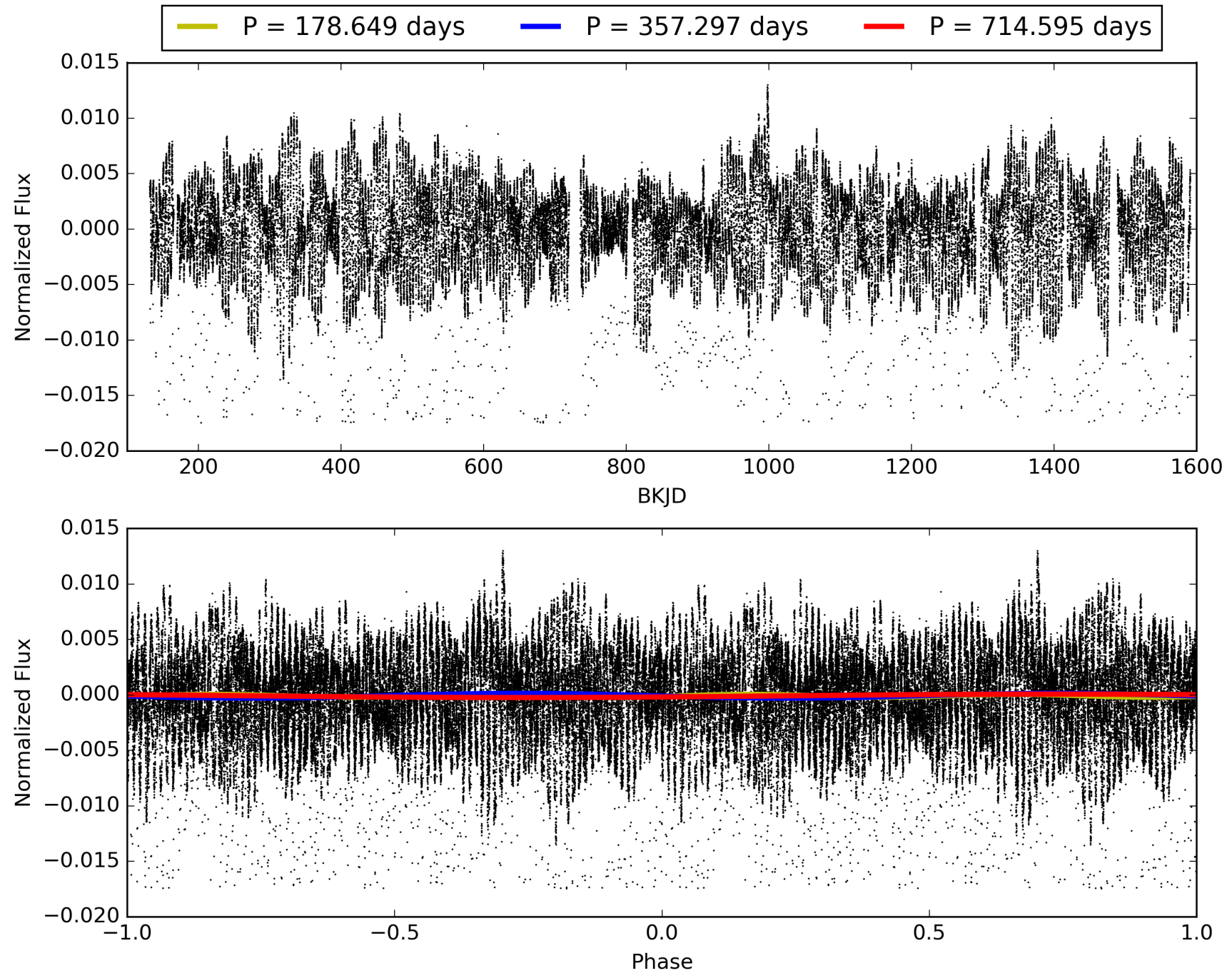
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:54:25 Z

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

TCE 005270698-05, PDC Light Curves

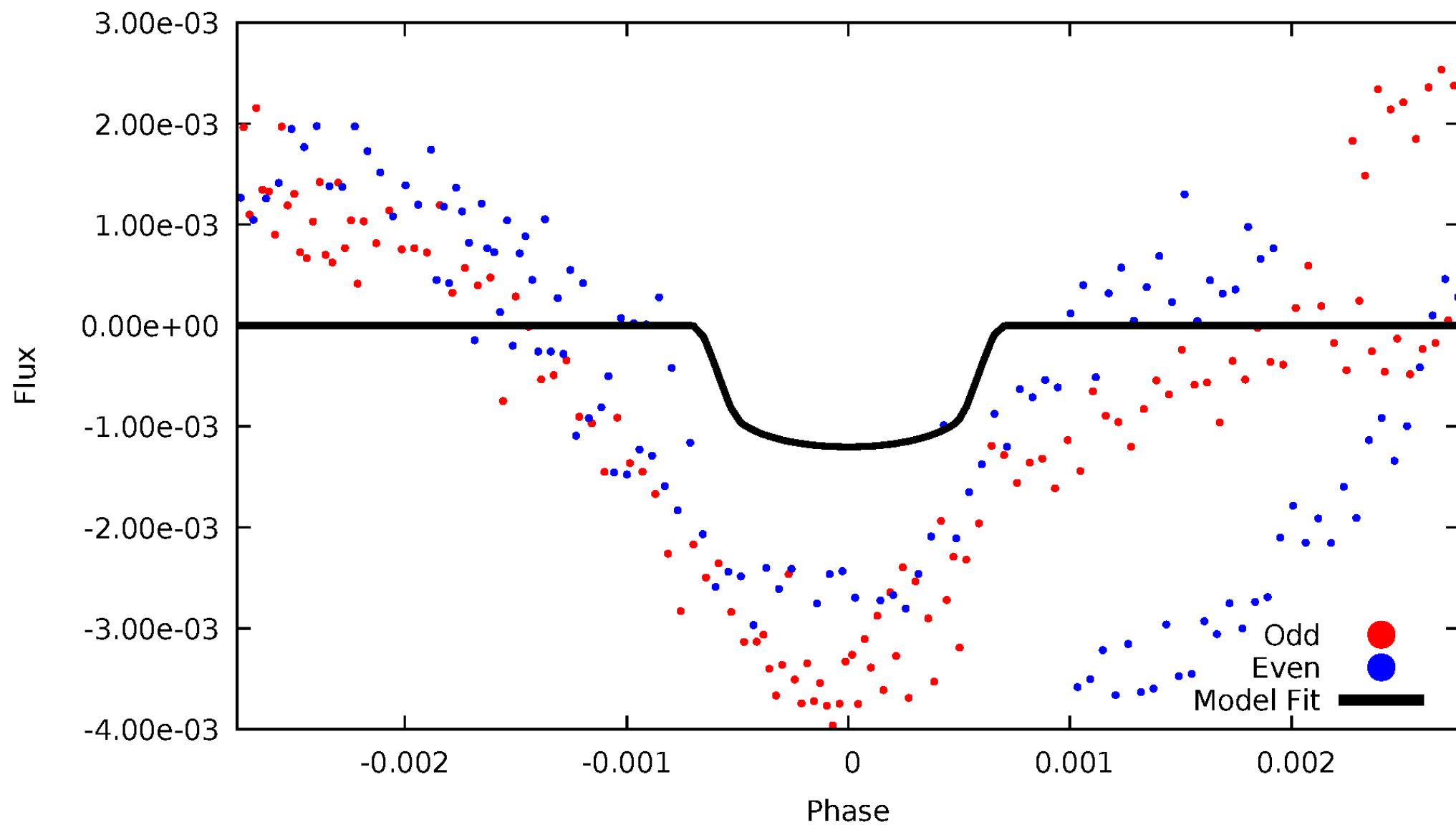


TCE 005270698-05



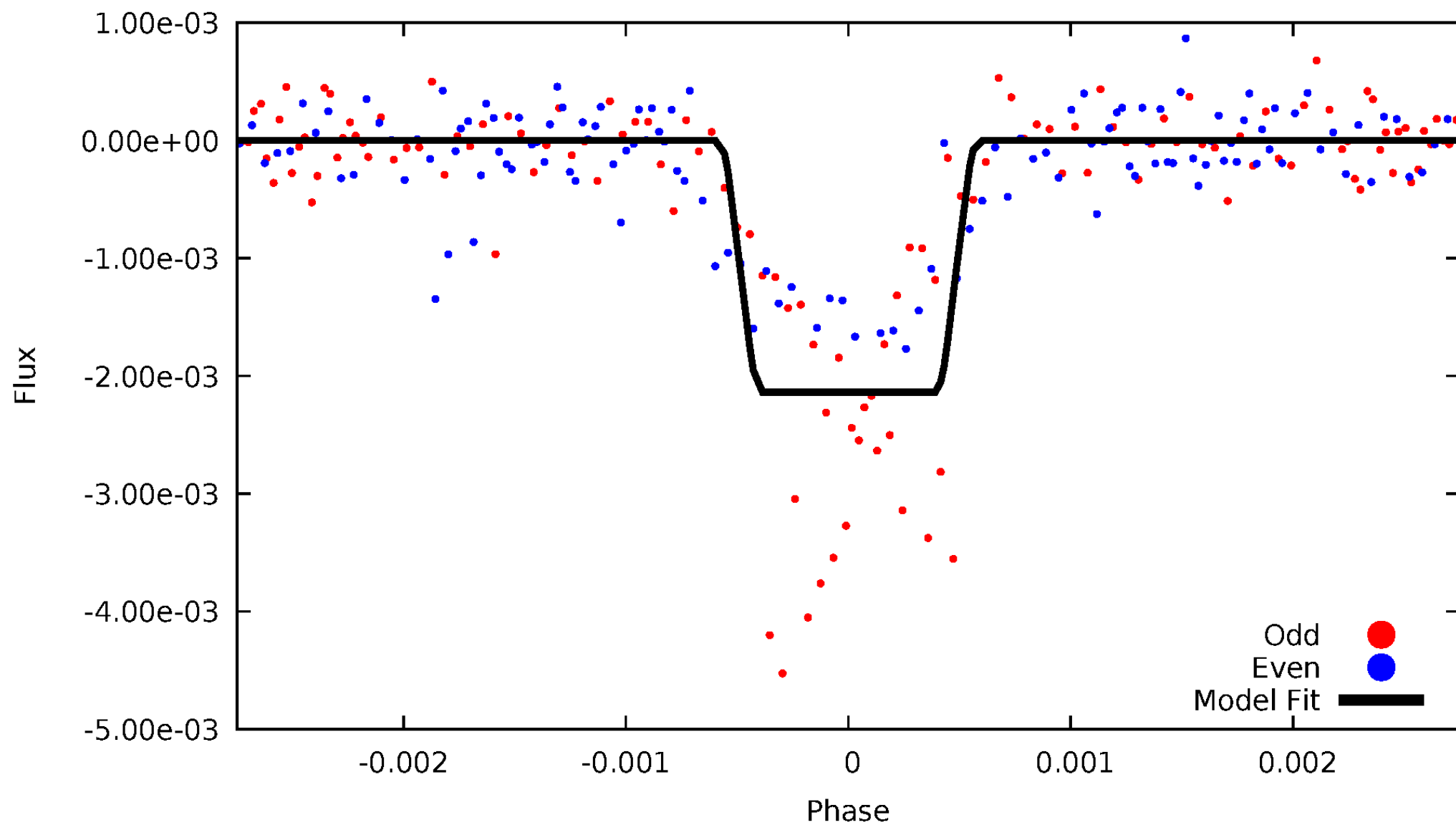
DV Odd/Even

TCE 005270698-05

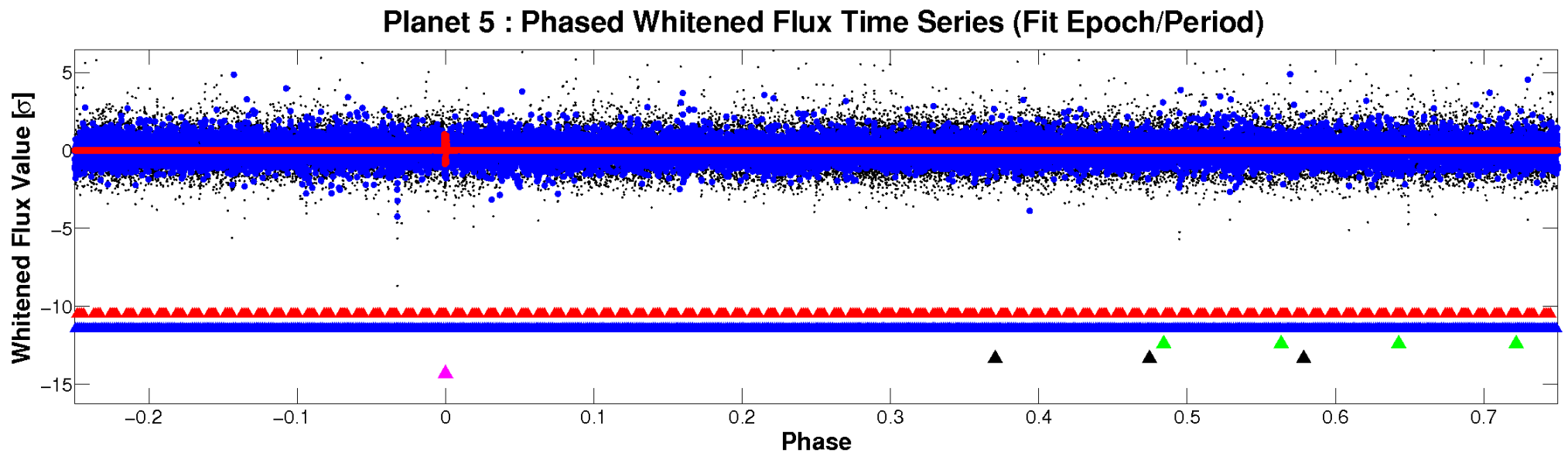
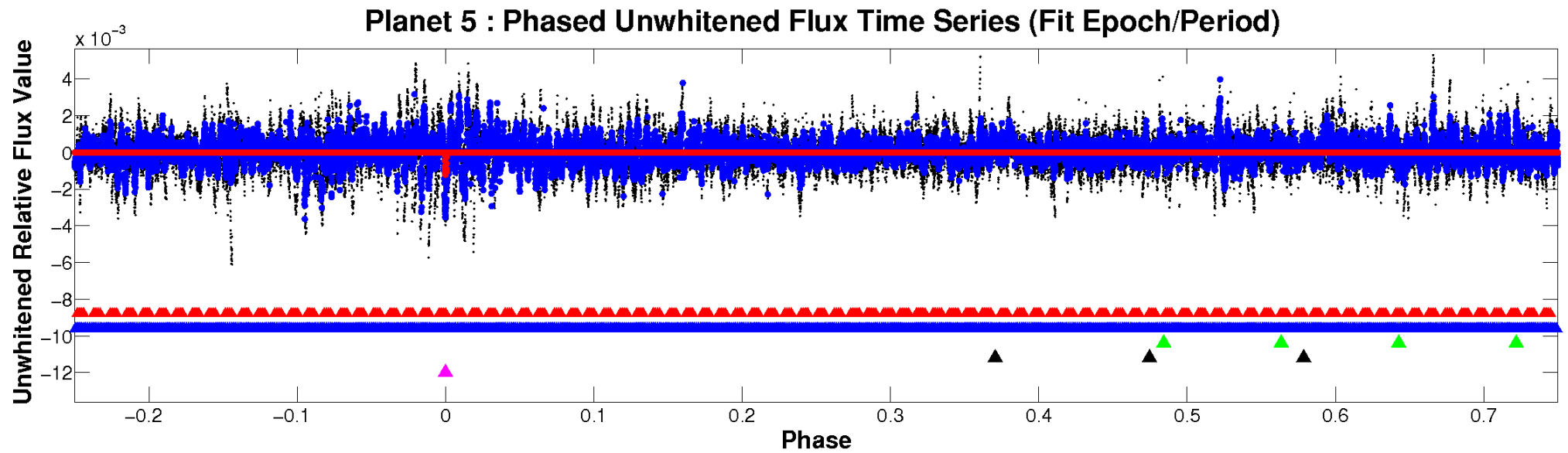


ALT Odd/Even

TCE 005270698-05

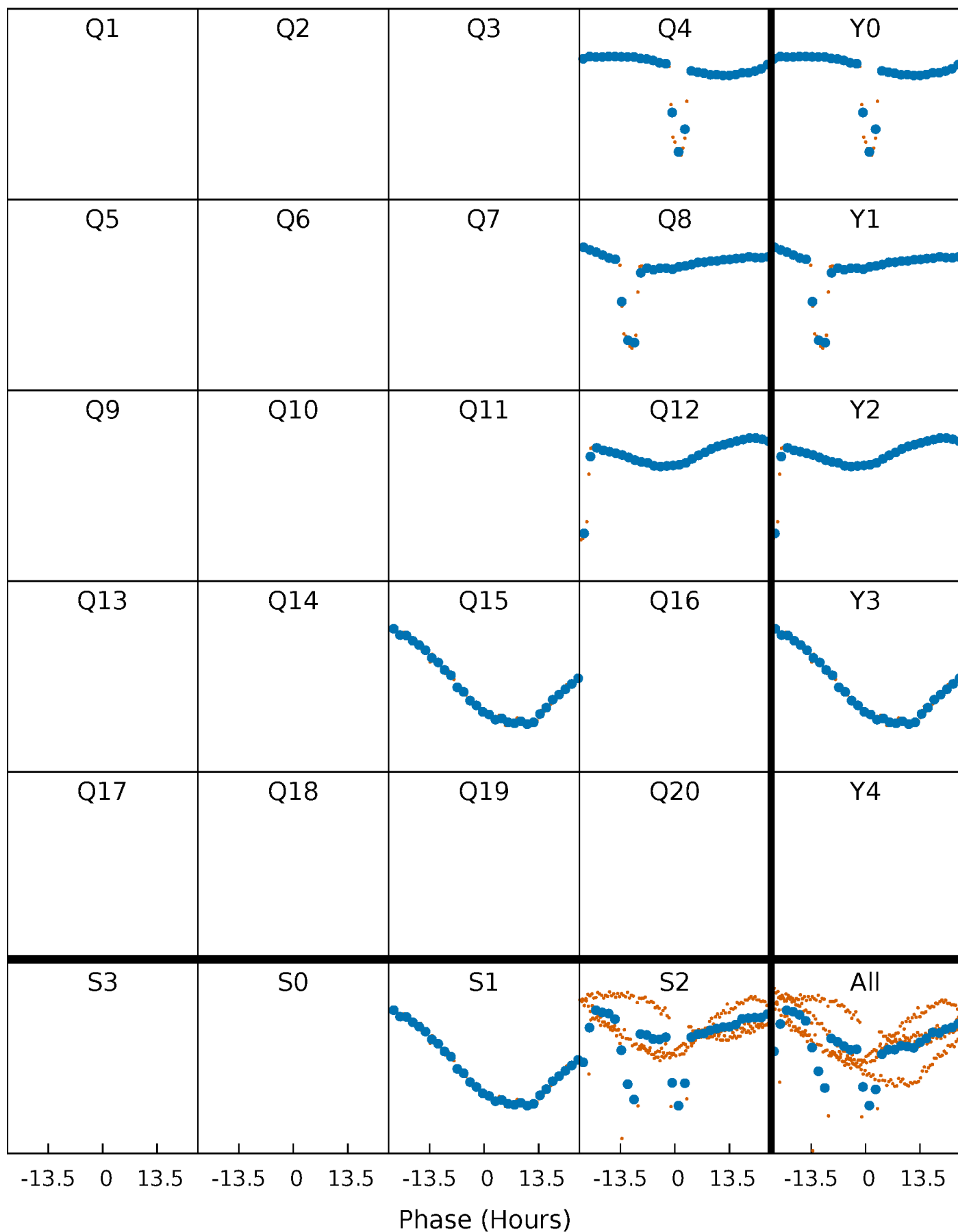


Non-Whitened Vs. Whitened Light Curve



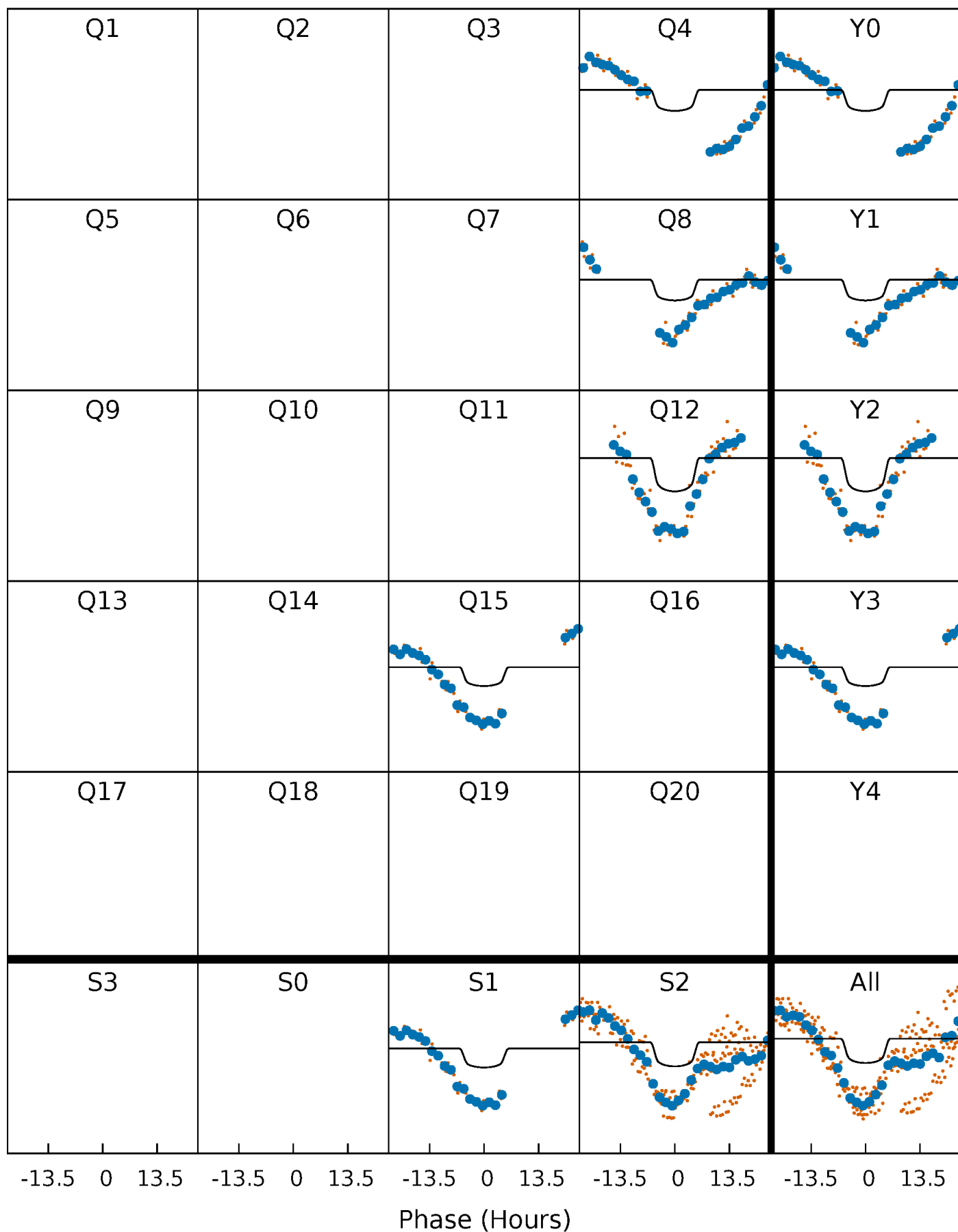
PDC Quarter-Phased Transit Curves

TCE 005270698-05 $P=357.297482$ Days $T_0=389.706419$ (BKJD)



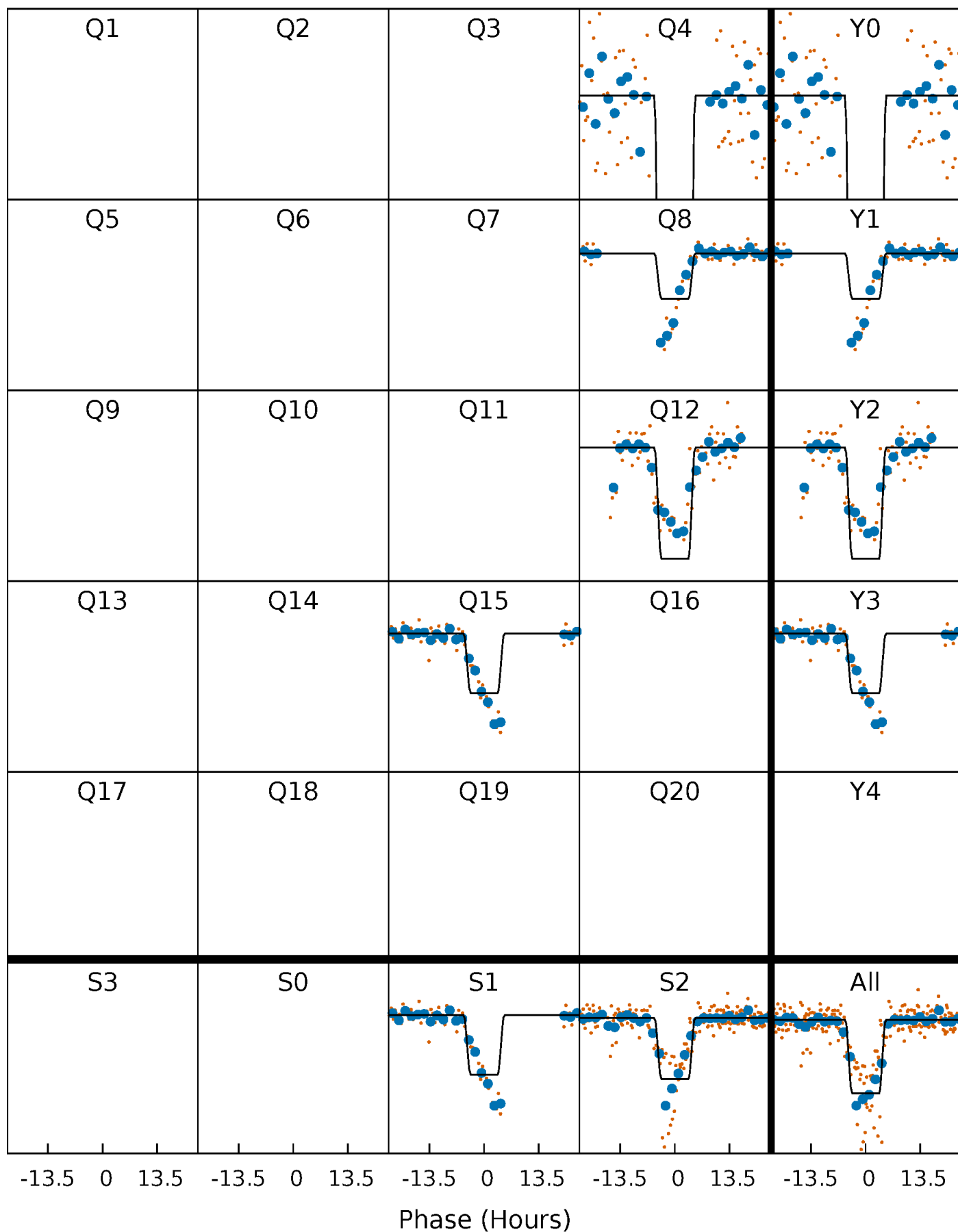
DV Quarter-Phased Transit Curves

TCE 005270698-05 $P=357.297482$ Days $T_0=389.706419$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

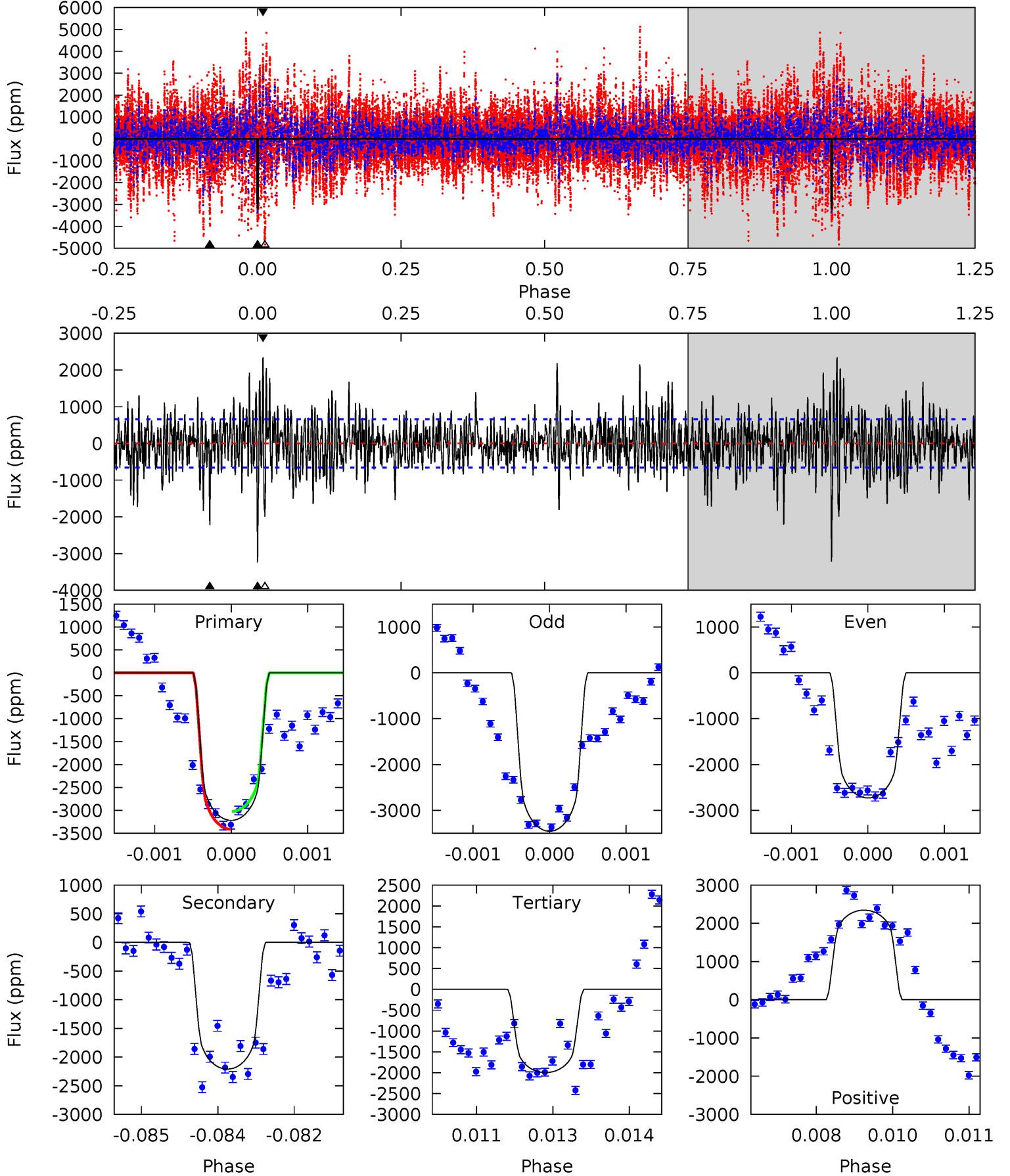
TCE 005270698-05 $P=357.308041$ Days $T_0=389.685149$ (BKJD)



DV Model-Shift Uniqueness Test

005270698-05, $P = 357.297482$ Days, $E = 32.408937$ Days

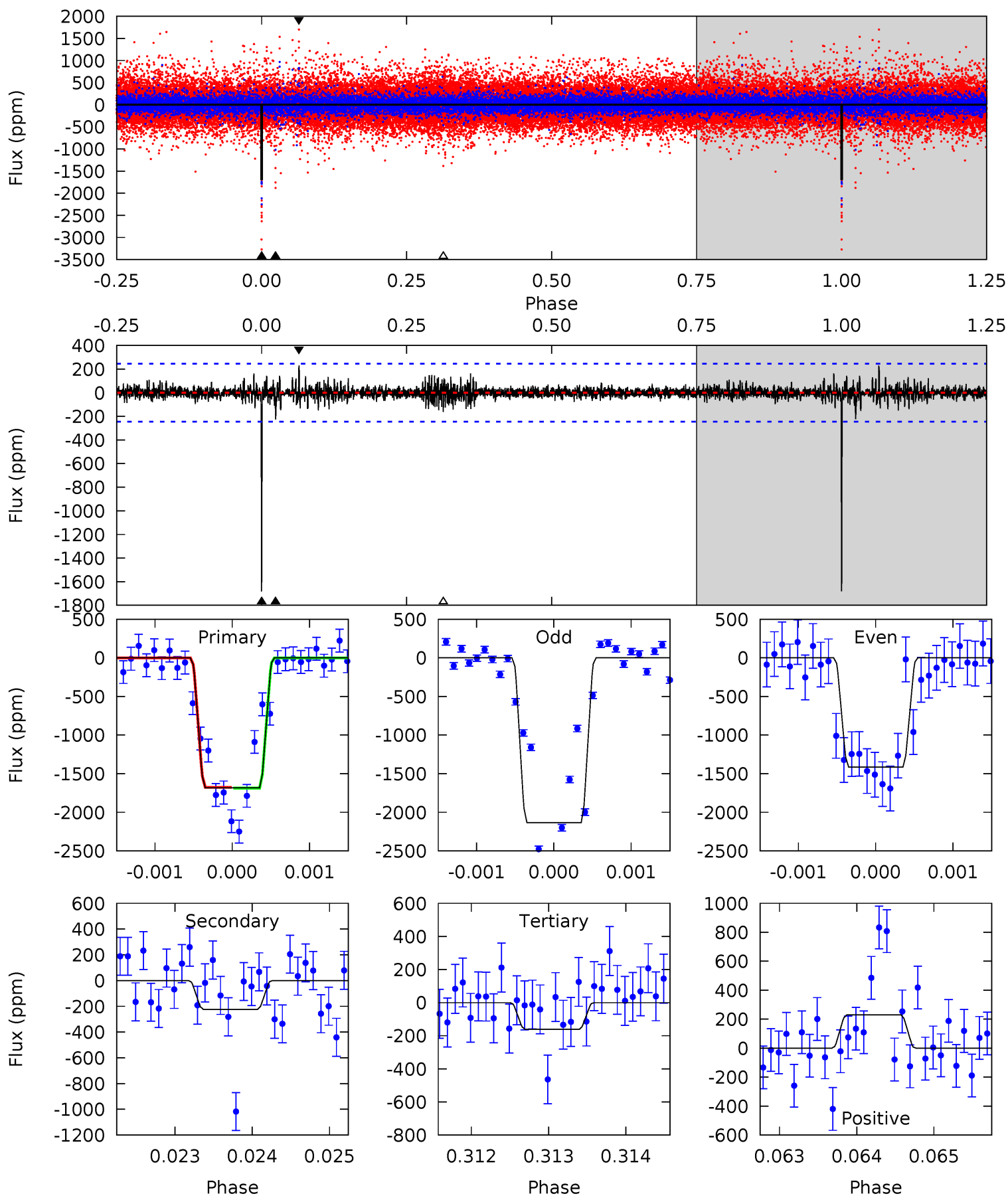
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.3	18.0	16.3	19.1	5.39	3.19	4.42	9.98	7.13	1.74	-1.11	2.85	1.00	0.42	1.57



Alt Model-Shift Uniqueness Test

005270698-05, P = 357.308041 Days, E = 32.377108 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.2	4.95	3.56	5.09	5.43	3.26	0.75	33.7	32.1	1.39	-0.14	8.07	0.93	0.12	0.11



Stellar Parameters For KIC 005270698

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5758^{+77}_{-77}	$3.808^{+0.233}_{-0.093}$	$-0.060^{+0.150}_{-0.150}$	$2.318^{+0.380}_{-0.706}$	$1.258^{+0.106}_{-0.248}$	$0.142^{+0.192}_{-0.043}$
	+1%/-1%	+6%/-2%	+250%/-250%	+16%/-30%	+8%/-20%	+135%/-30%
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 005270698-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2209±122	$8.88^{+1.68}_{-1.63}$	518^{+23}_{-37}	6505^{+482}_{-409}	17217^{+7624}_{-4909}
Alt.	-224±45	$11.26^{+1.91}_{-1.95}$	518^{+25}_{-35}	3674^{+192}_{-171}	1073^{+511}_{-333}

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 $A_{obs} \gg 1.0$

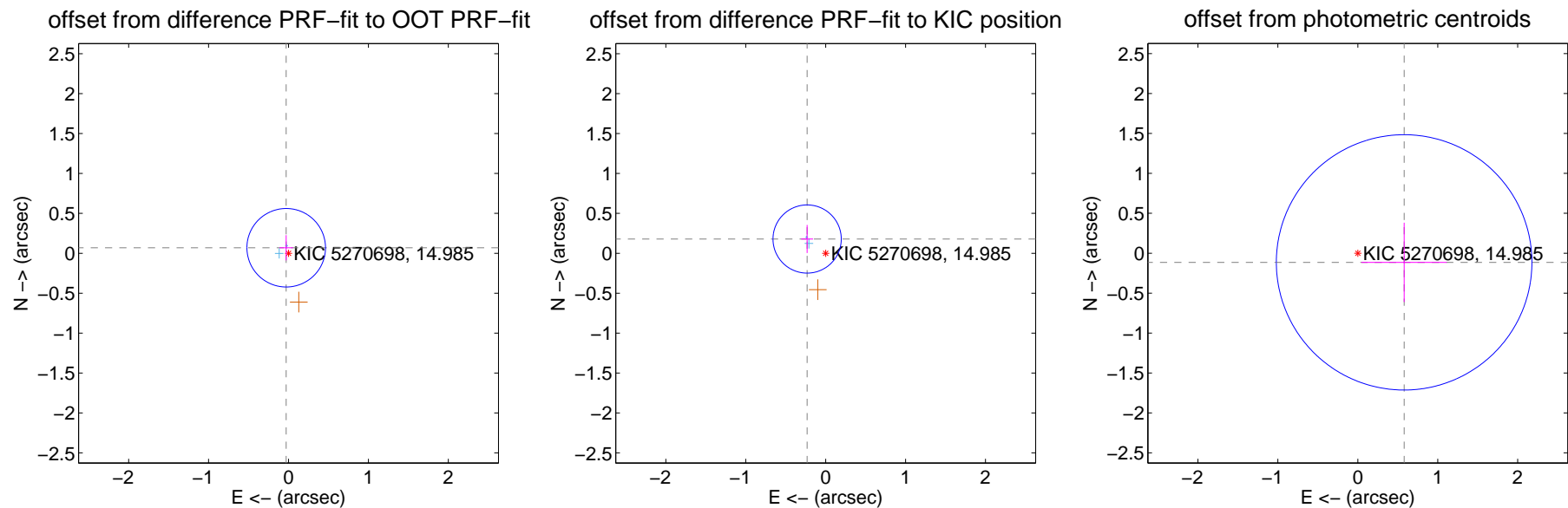
DV Centroid Data

Supplemental centroid analysis for 005270698-05. Kepler magnitude: 14.98. Transit SNR 5.38

There are 2 quarters with good PRF difference image offsets

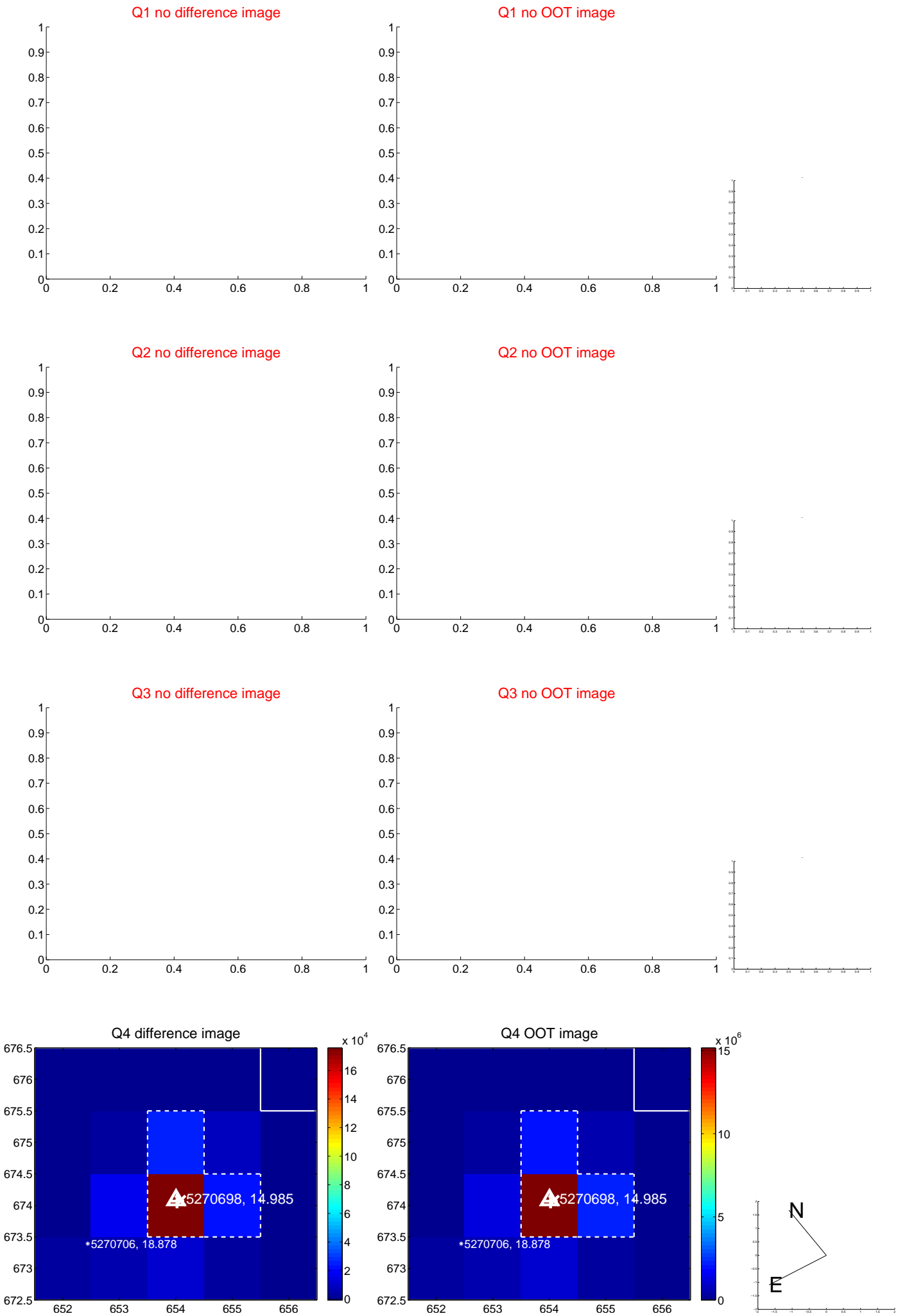
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.075 ± 0.164	0.46	0.029 ± 0.085	0.069 ± 0.158
PRF-fit source offset from KIC position	0.293 ± 0.142	2.06	0.232 ± 0.075	0.179 ± 0.176
photometric centroid source offset	0.59 ± 0.53	1.11	-0.58 ± 0.53	-0.11 ± 0.50

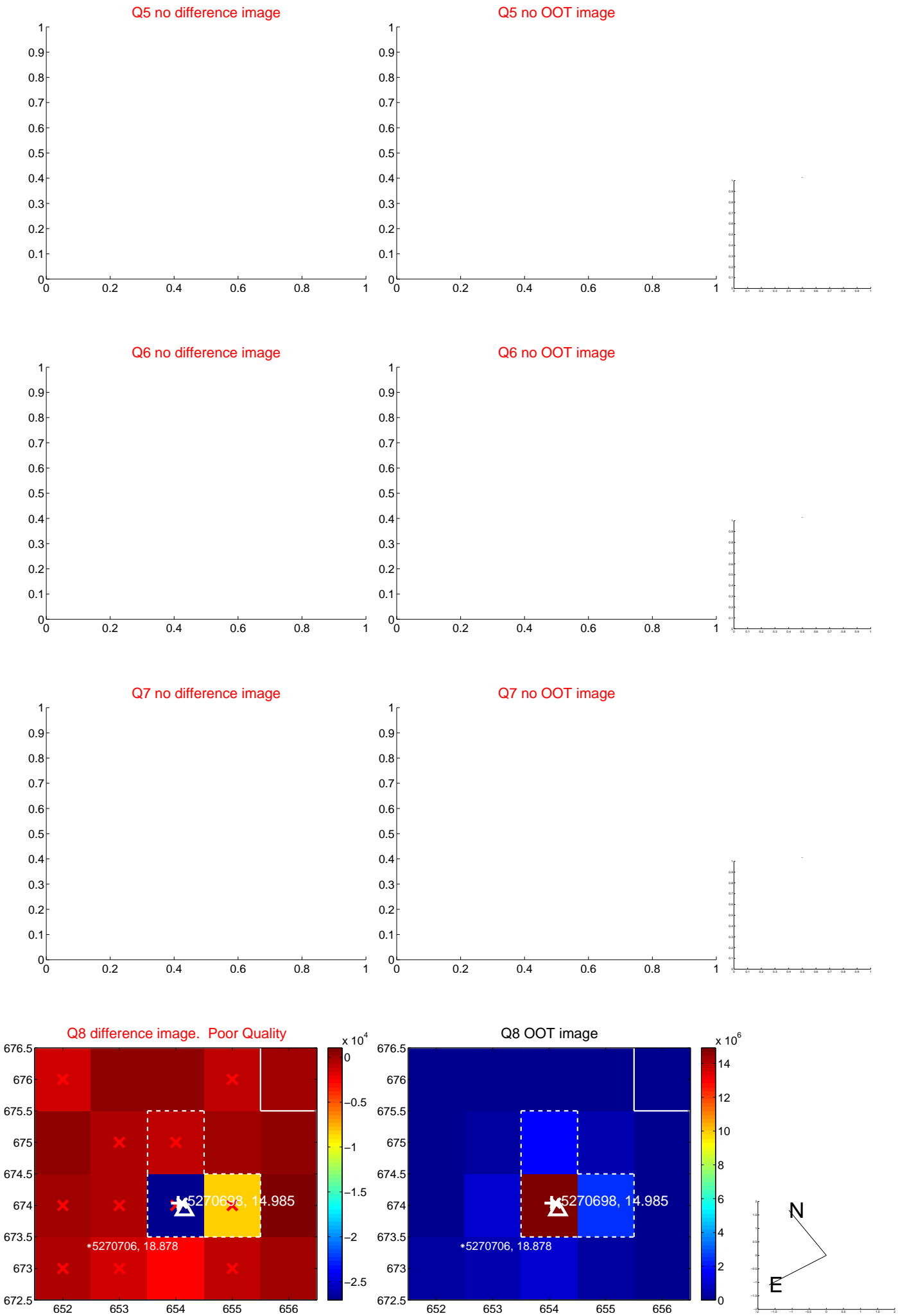


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



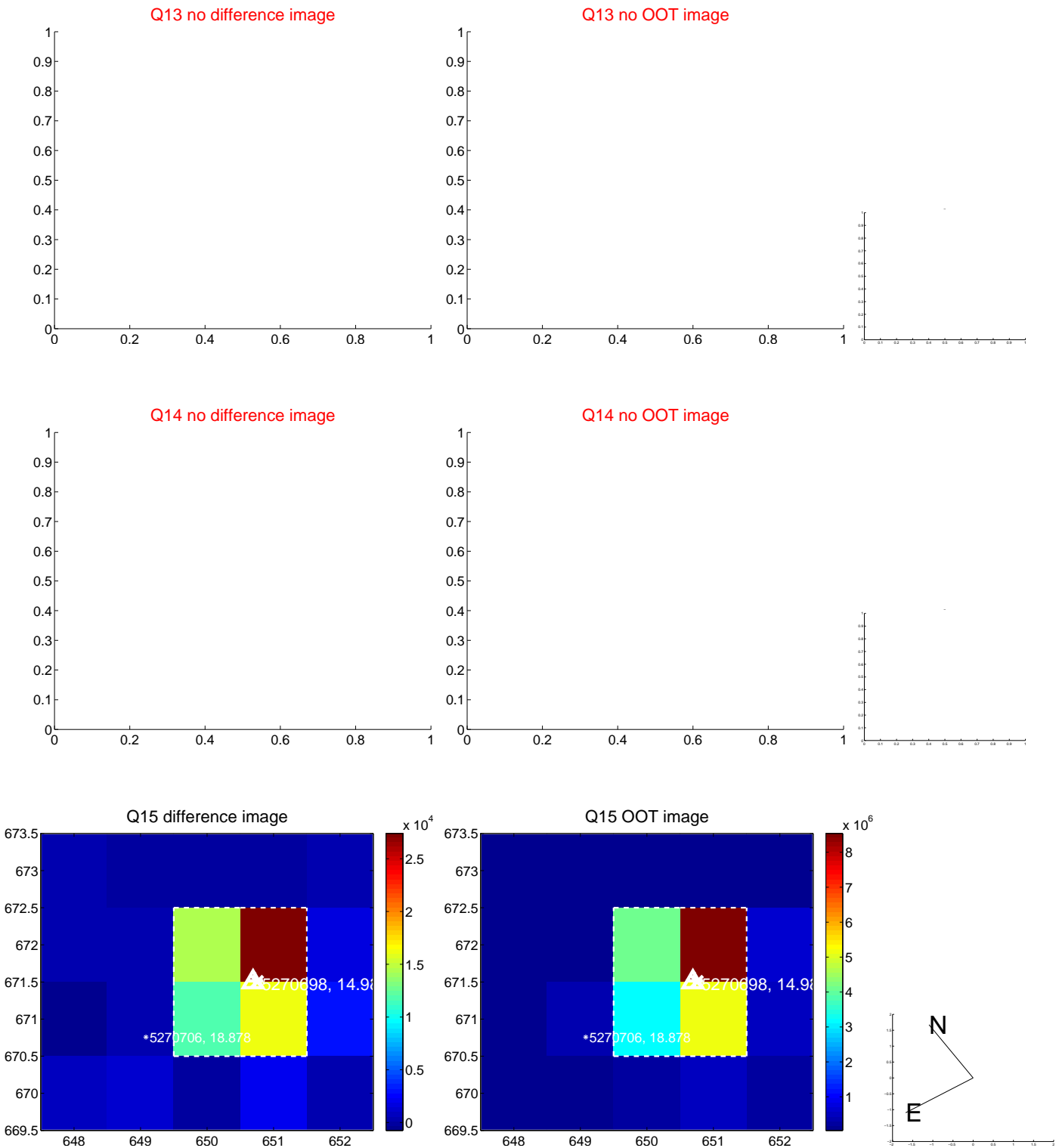
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



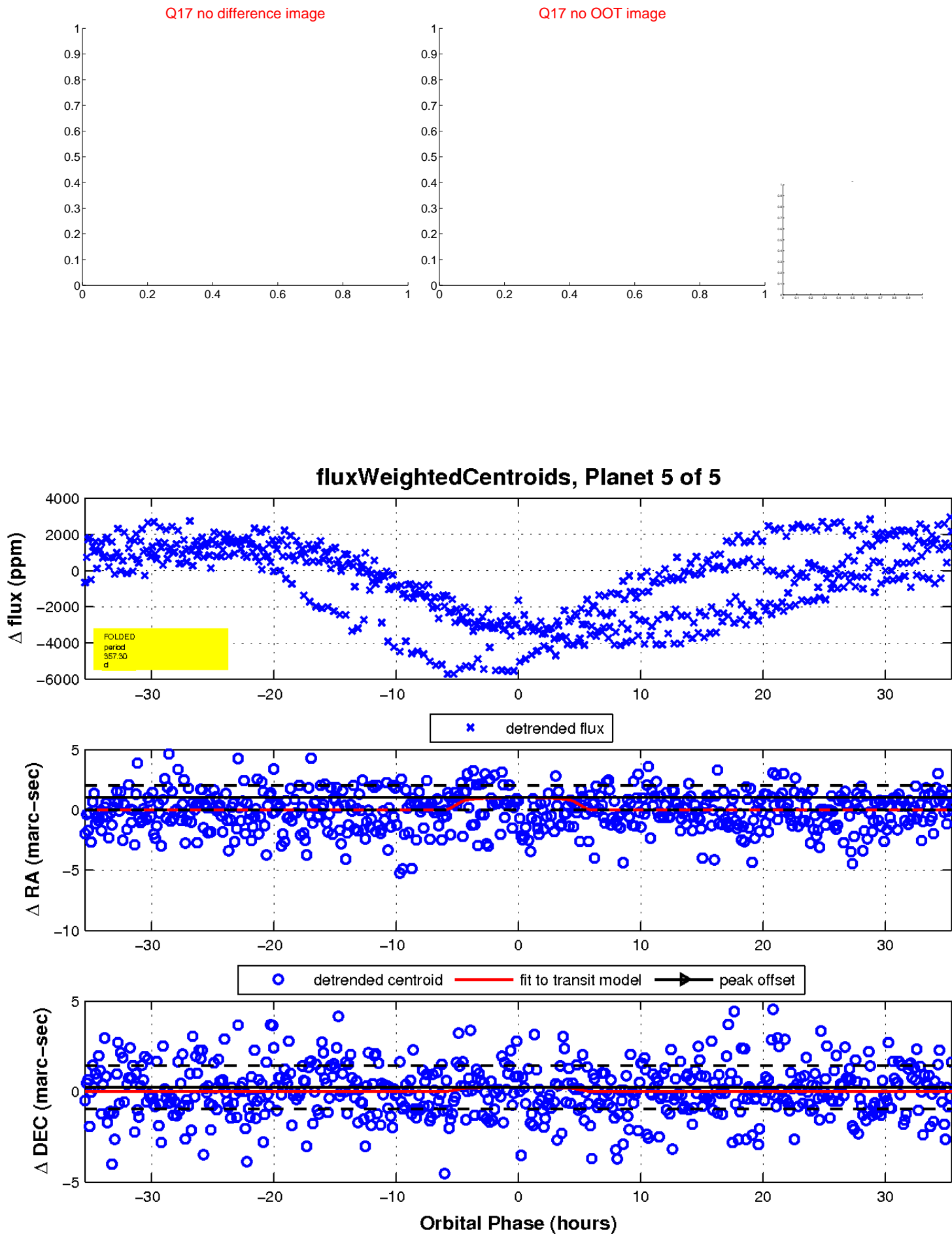
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

