

KIC 005731697

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})
005731697-01	OBS	No	217.090398	345.348716	195.3	1.592	14.4	2.0	1.00	5780	1.46	2.00
005731697-02	OBS	No	536.745193	487.612544	7046.8	11.008	11.3	11.0	1.00	5780	9.94	0.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005731697-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005731697-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA_TRACKER—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

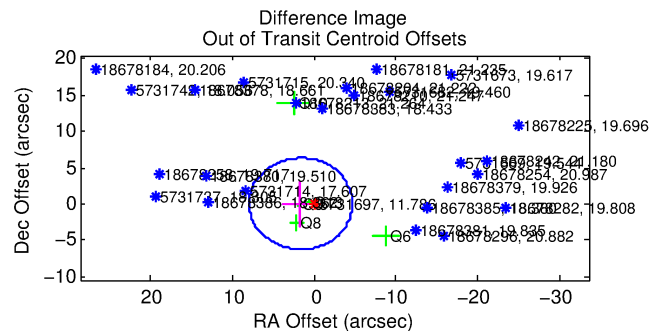
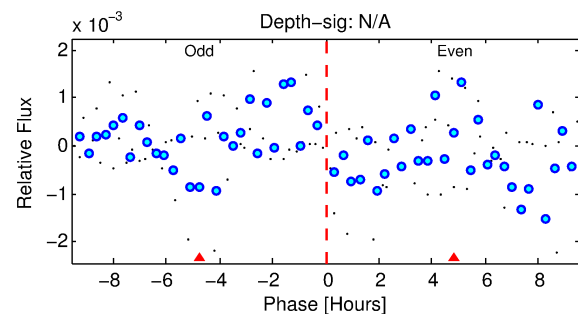
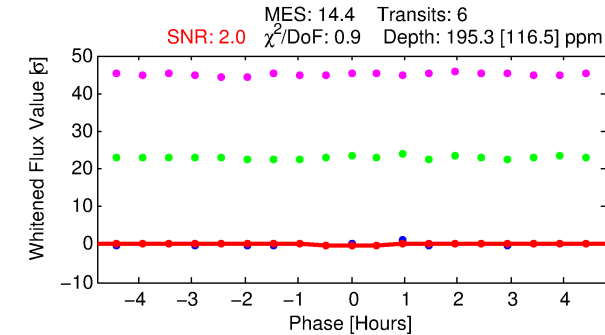
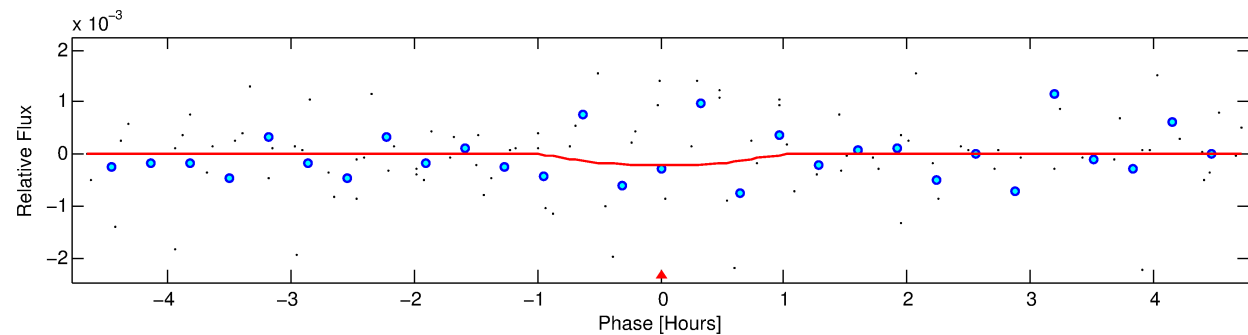
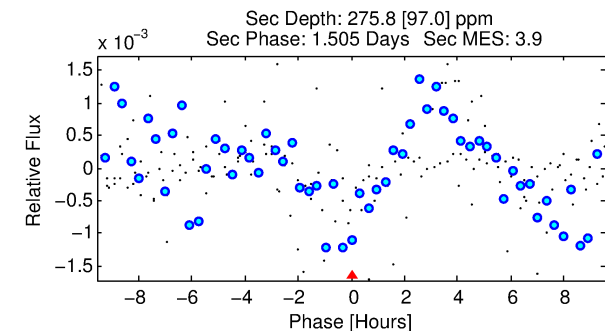
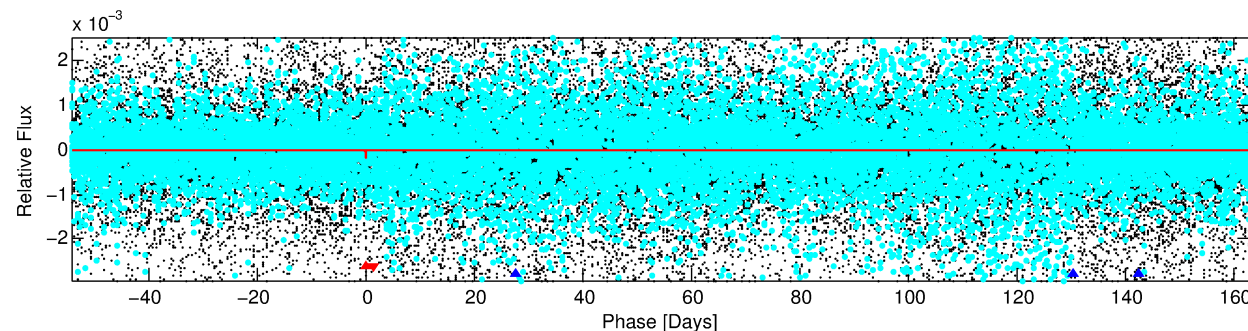
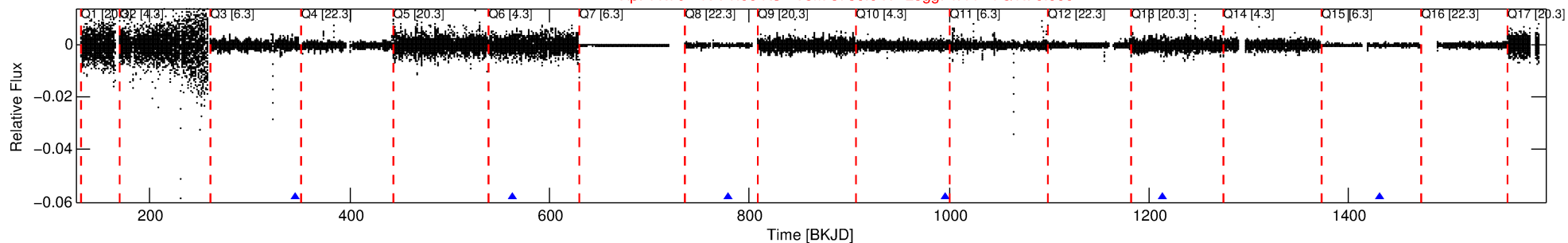
Ephemeris Match Information For 005731697-01

No Significant Match Found

DV One-Page Summary

KIC: 5731697 Candidate: 1 of 2 Period: 217.090 d

Kp: 11.79 R*: 1.00 Rs Teff: 5780.0 K Logg: 4.44 Fe/H: 0.000



DV Fit Results:

Period = 217.09040 [0.00460] d
Epoch = 345.3487 [0.0116] BKJD
Rp/R* = 0.0133 [0.0367]
a/R* = 857.99 [10373.93]
b = 0.59 [13.52]
Seff = 2.00 [0.00]
Teq = 303 [0] K
Rp = 1.46 [4.00] Re
a = 0.7071 [0.0000] AU
Ag = 35767.71 [197052.19] [0.18σ]
Teffp = 6448 [8881] K [0.69σ]

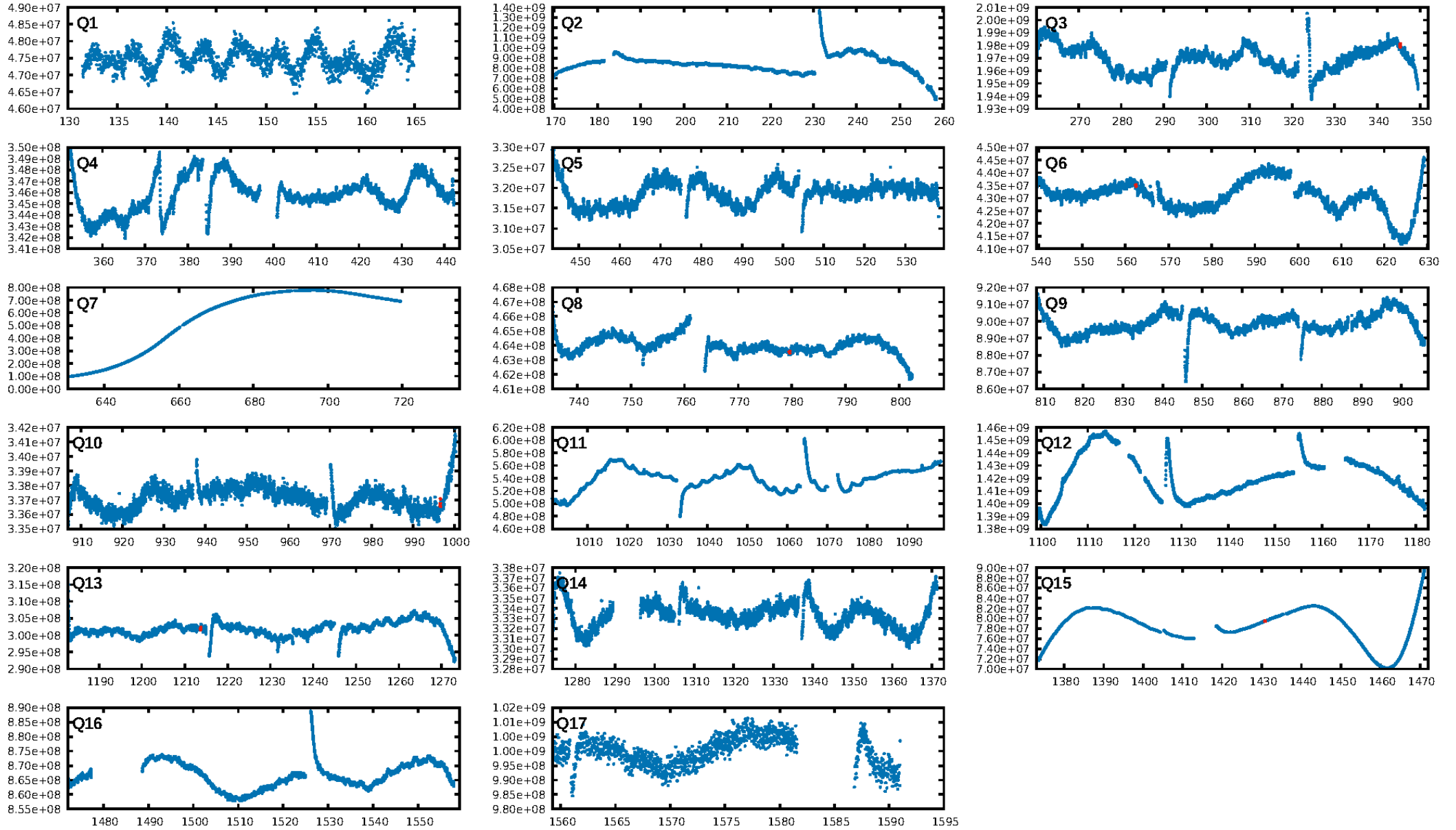
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [689.77σ]
ModelChiSquare2-sig: 10.3%
ModelChiSquareGof-sig: 98.5%
Bootstrap-pfa: 2.05e-13
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -0.5644
Centroid-sig: 30.1%
Centroid-so: 2.764 arcsec [1.06σ]
OotOffset-rm: 1.630 arcsec [0.78σ]
OotOffset-st: 2/1/1/1 [5]
KicOffset-rm: 1.959 arcsec [1.08σ]
KicOffset-st: 2/1/1/1 [5]
DiffImageQuality-fgm: 0.00 [0/5]
DiffImageOverlap-fno: 1.00 [6/6]

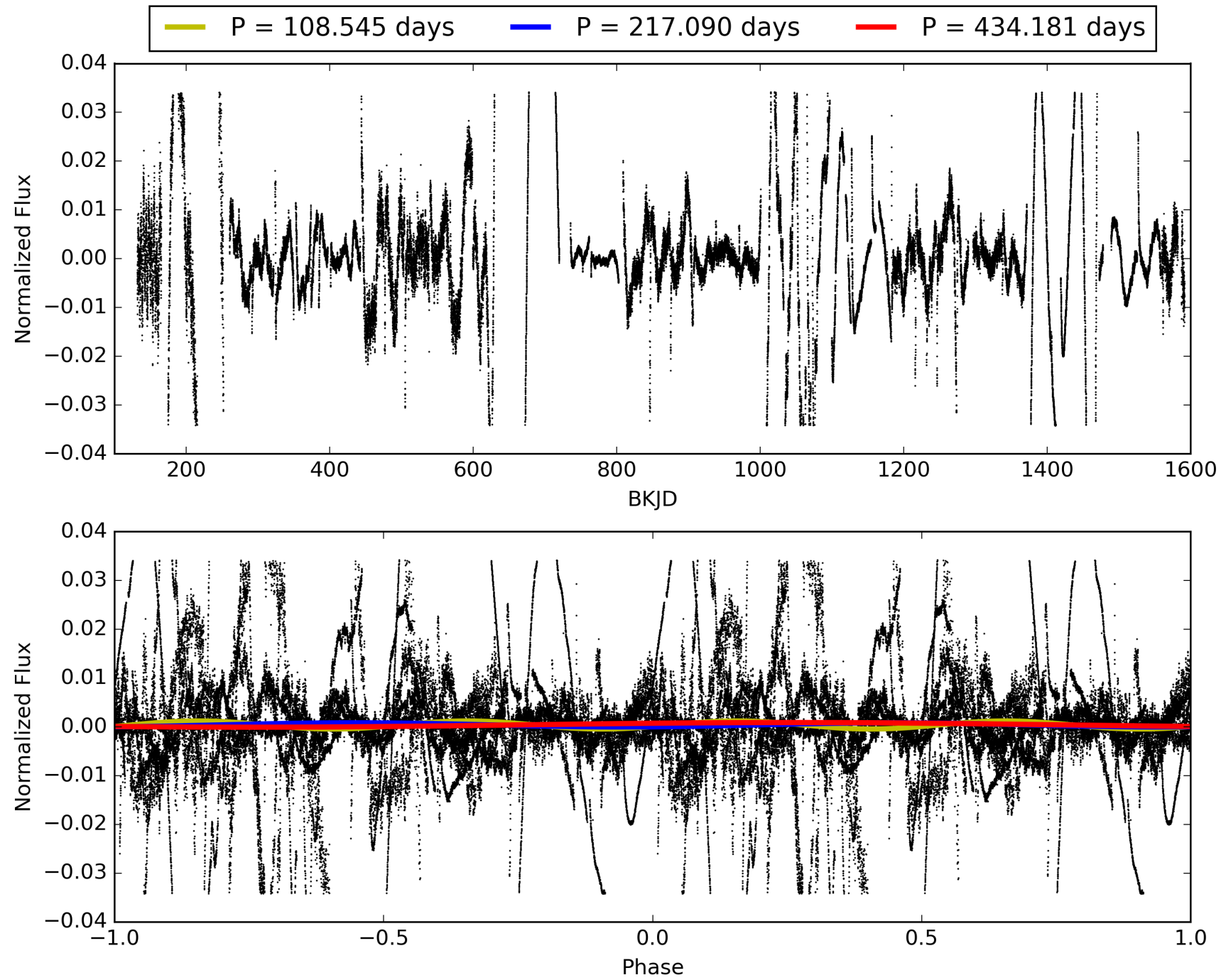
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005731697-01, PDC Light Curves

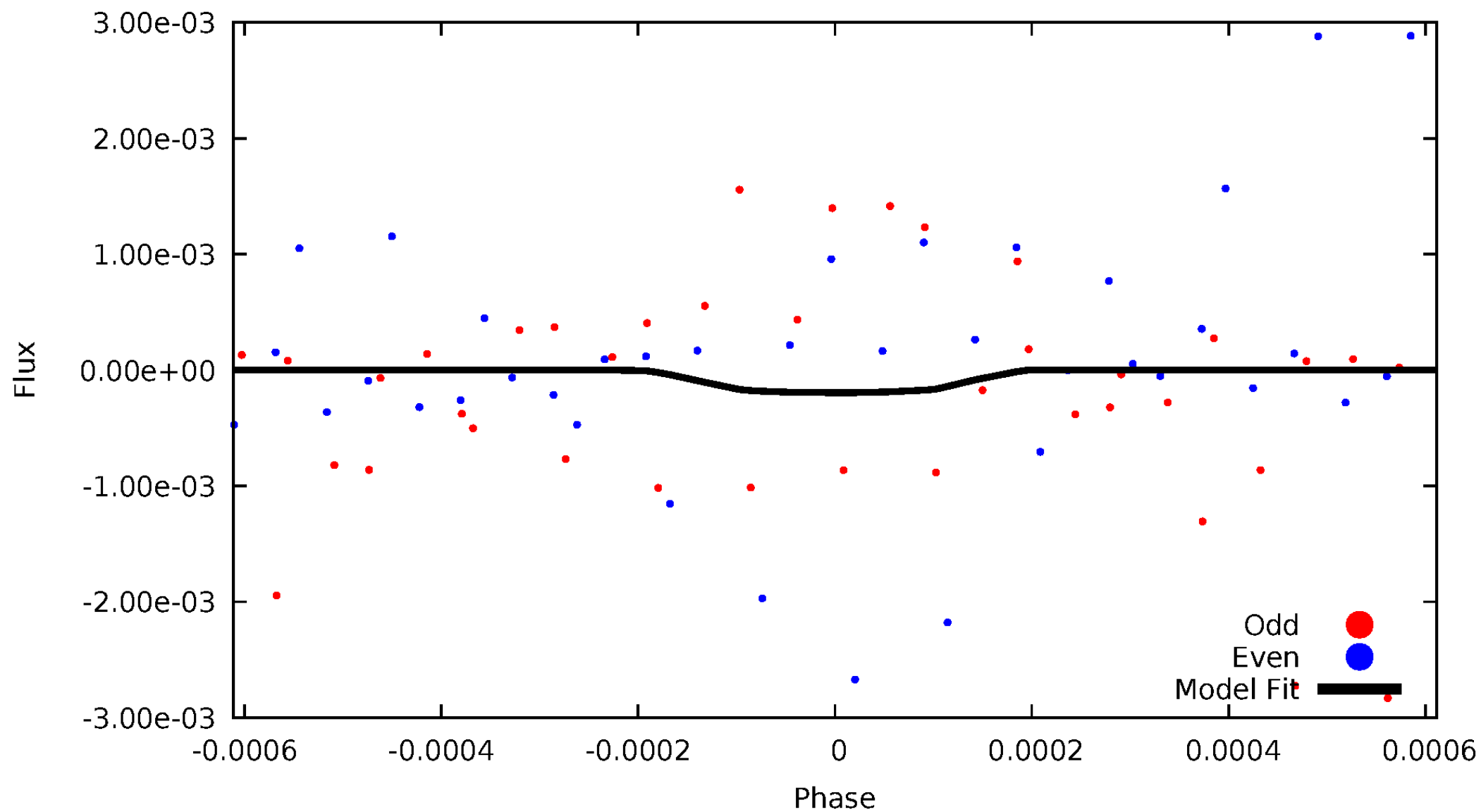


TCE 005731697-01



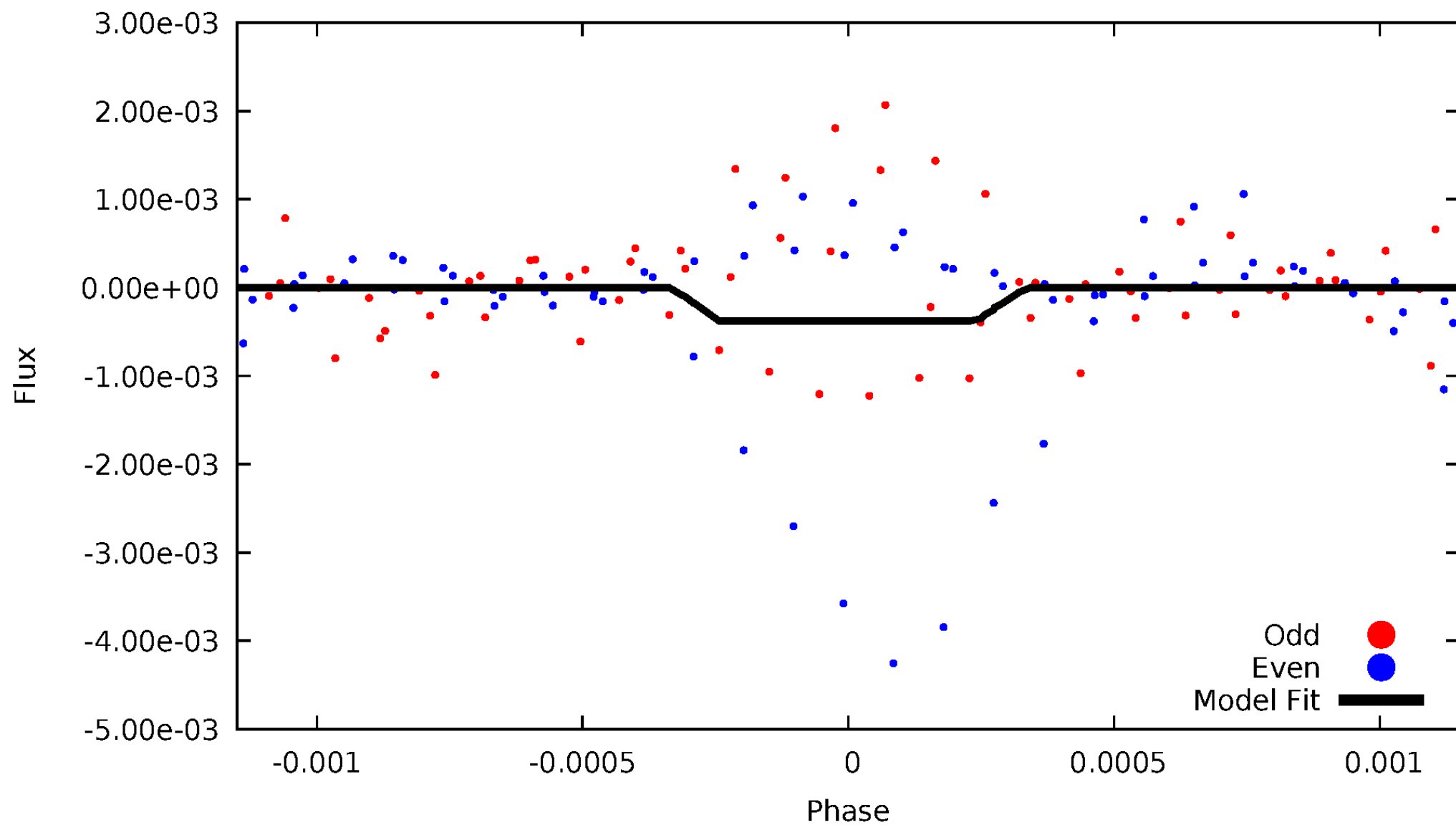
DV Odd/Even

TCE 005731697-01



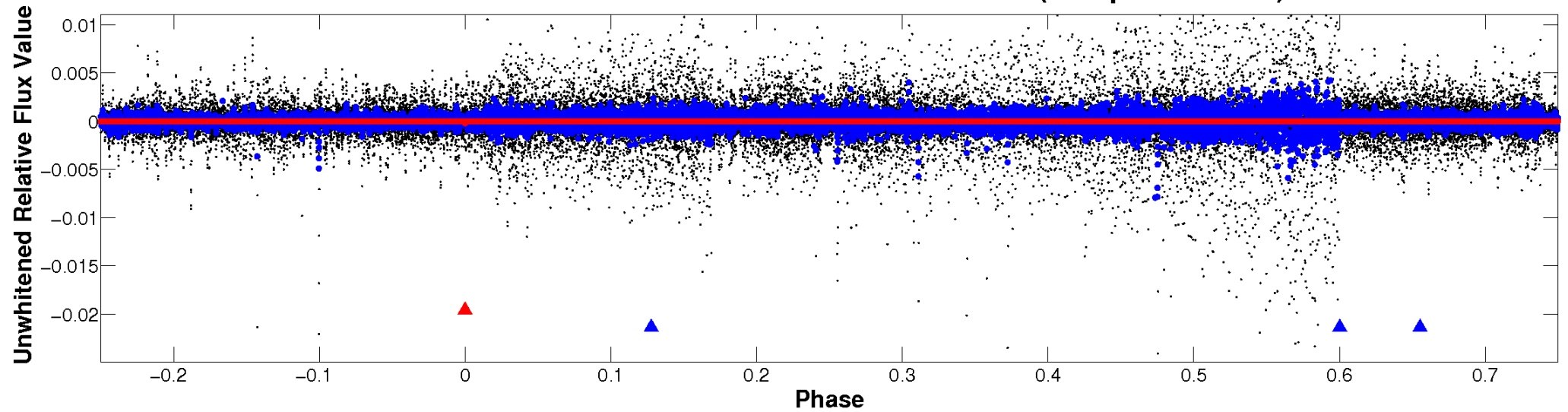
ALT Odd/Even

TCE 005731697-01

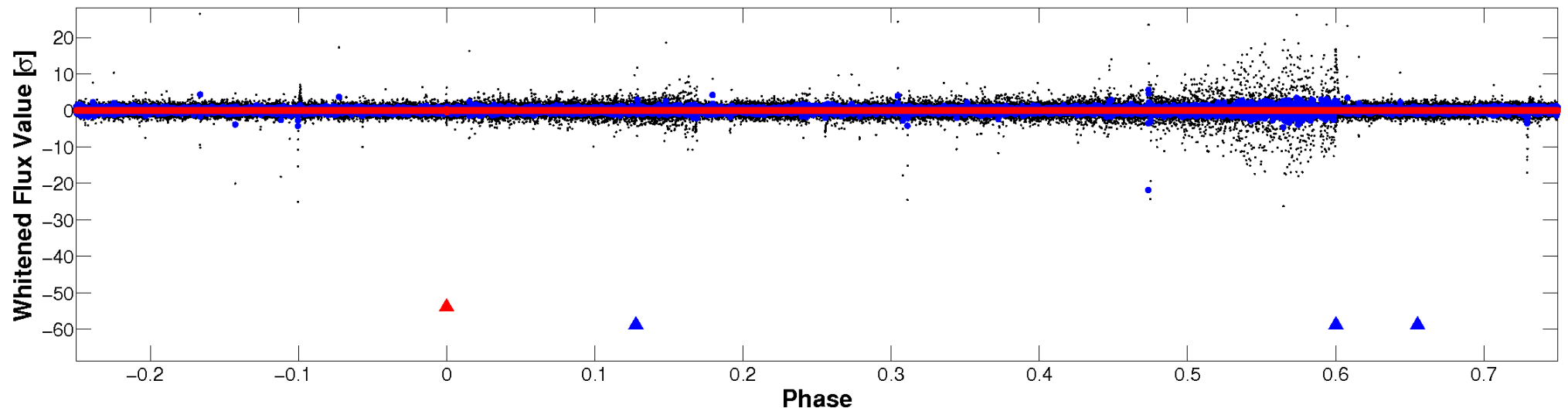


Non-Whitened Vs. Whitened Light Curve

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

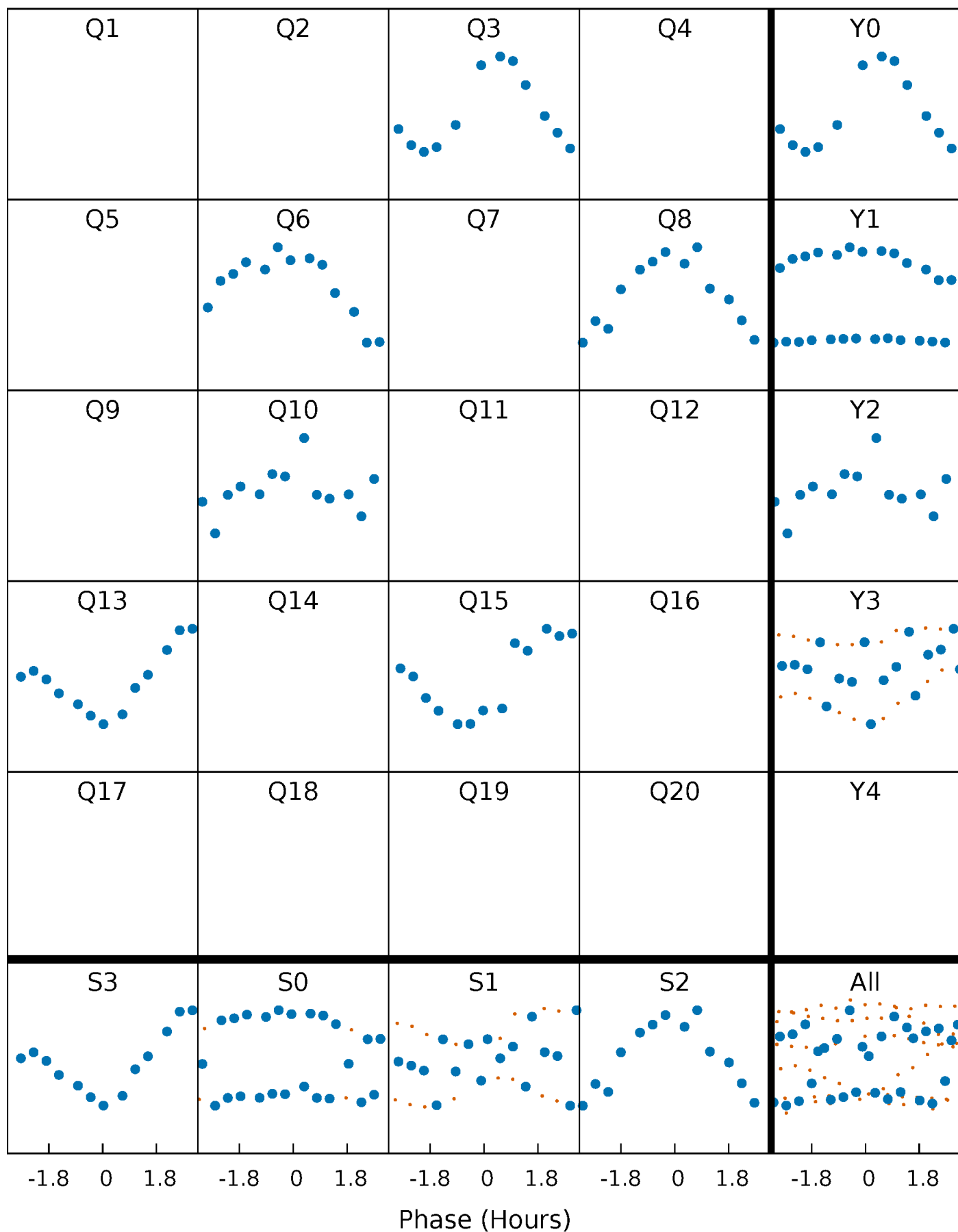


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



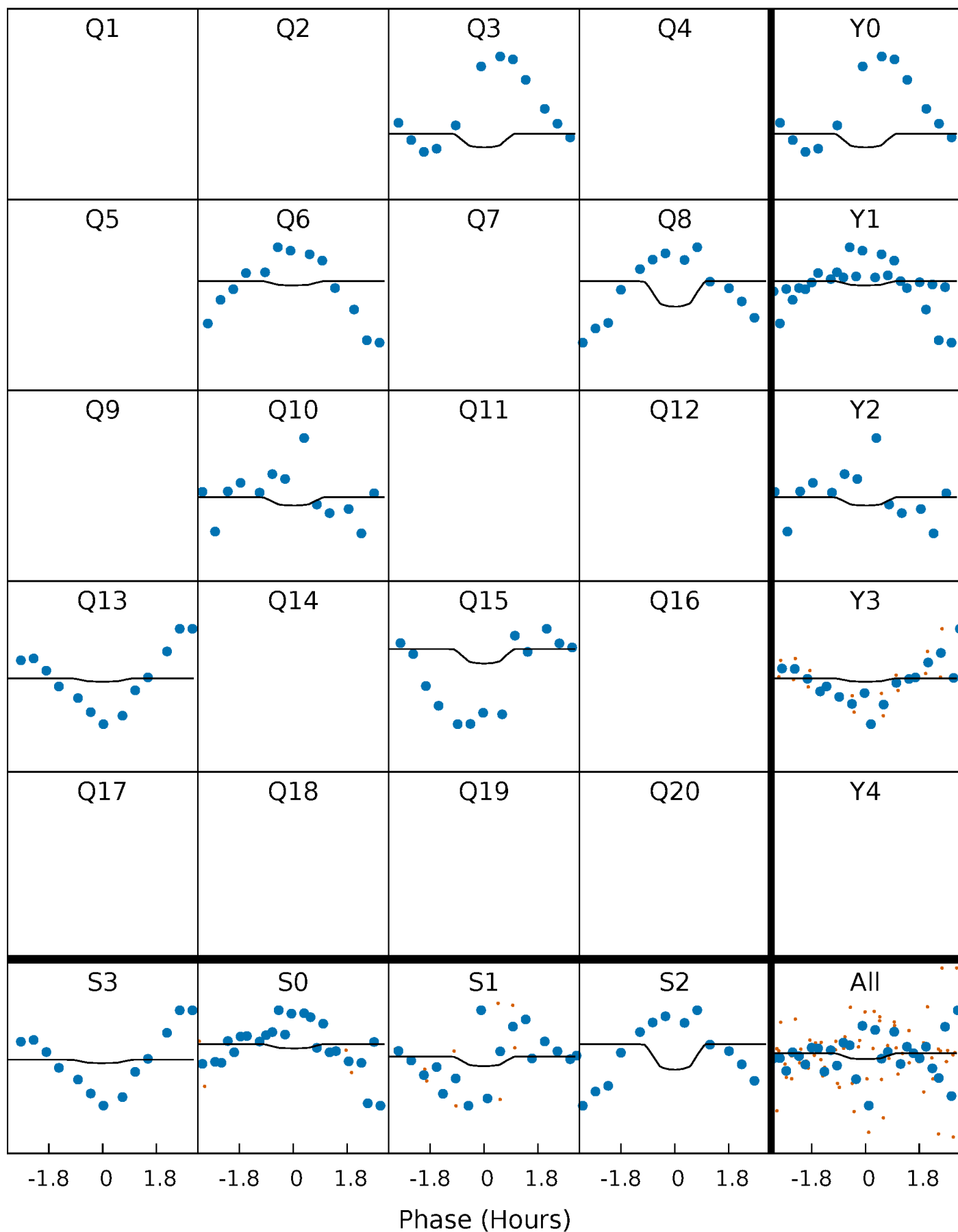
PDC Quarter-Phased Transit Curves

TCE 005731697-01 P=217.090398 Days $T_0=345.348716$ (BKJD)



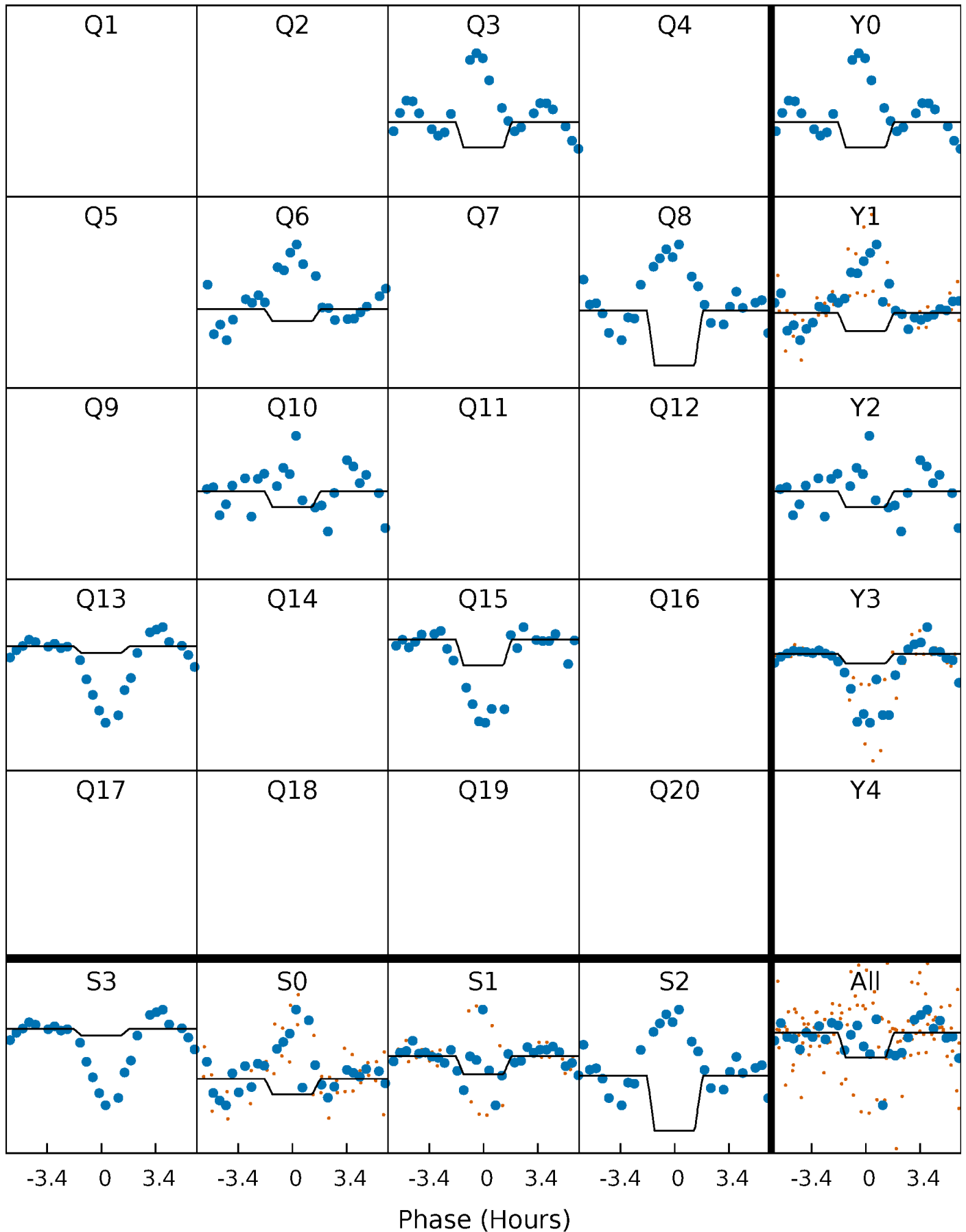
DV Quarter-Phased Transit Curves

TCE 005731697-01 P=217.090398 Days $T_0=345.348716$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

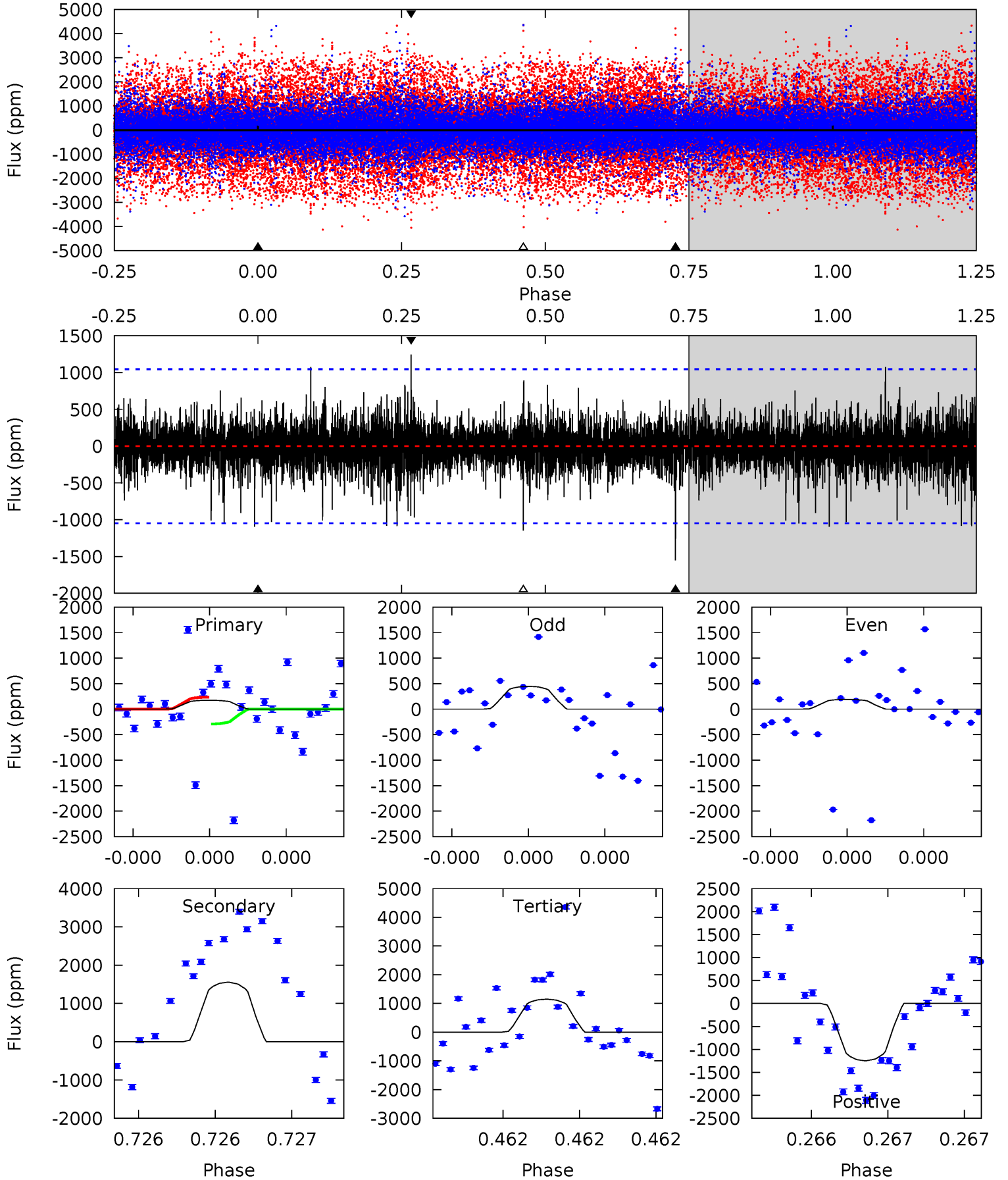
TCE 005731697-01 P=217.077338 Days $T_0=345.386886$ (BKJD)



DV Model-Shift Uniqueness Test

005731697-01, P = 217.090398 Days, E = 128.258318 Days

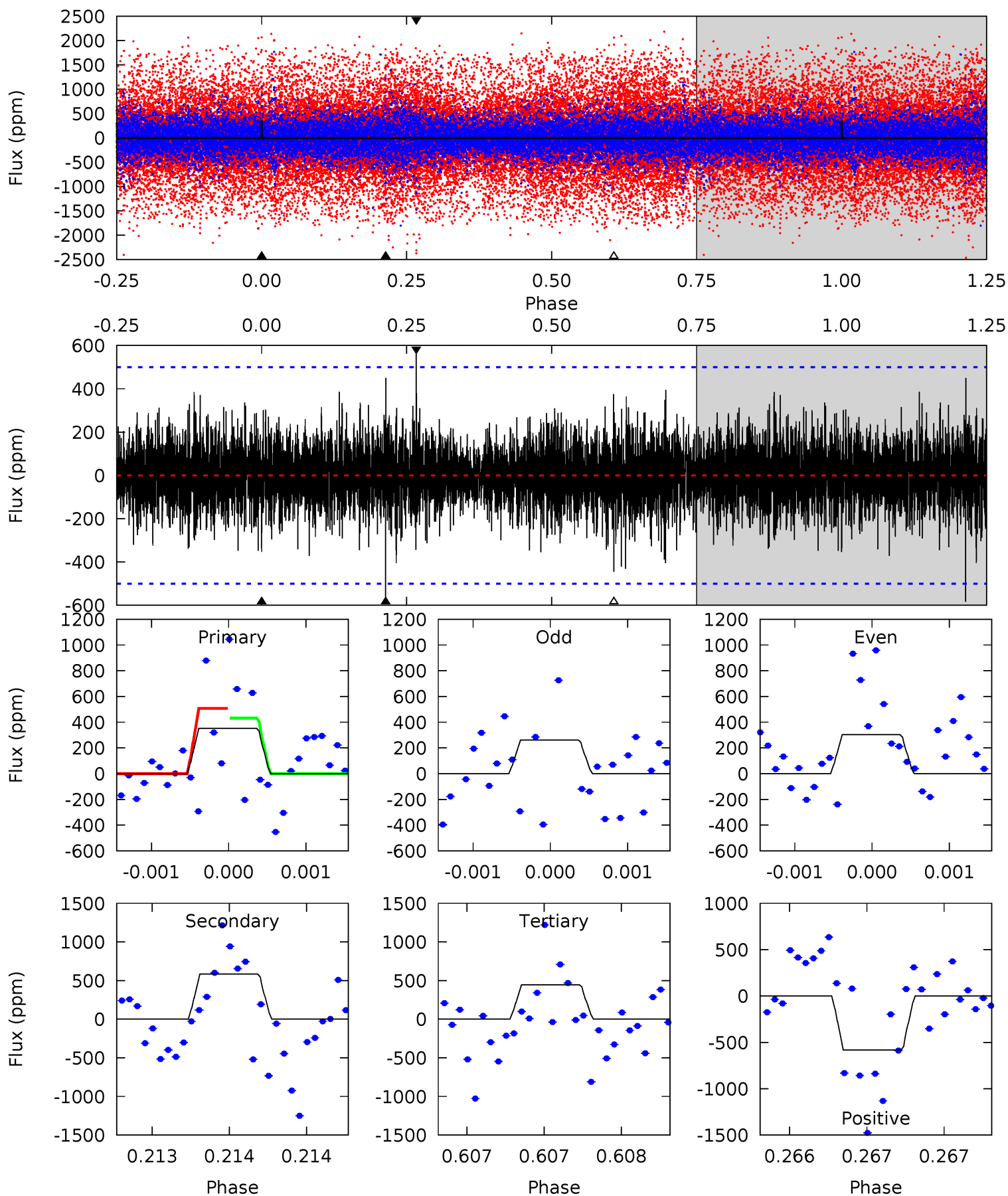
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.93	8.33	6.16	6.69	5.62	3.55	1.21	-5.23	-5.75	2.17	1.65	0.64	0.04	0.45	0.16



Alt Model-Shift Uniqueness Test

005731697-01, P = 217.077338 Days, E = 128.309548 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.90	6.45	4.92	6.43	5.53	3.42	1.24	-1.02	-2.53	1.53	0.02	0.23	-0.60	0.50	0.41



Stellar Parameters For KIC 005731697

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5780^{+1}_{-1}	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

Secondary Eclipse Parameters for KIC 005731697-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1553 ± 186	$3.31^{+3.26}_{-2.28}$	423^{+21}_{-19}	6596^{+8263}_{-1810}	$38776^{+346832}_{-28974}$
Alt.	-583 ± 90	$3.65^{+3.23}_{-2.36}$	424^{+20}_{-20}	4965^{+3710}_{-1029}	11886^{+83311}_{-8493}

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 $A_{obs} \gg 1.0$

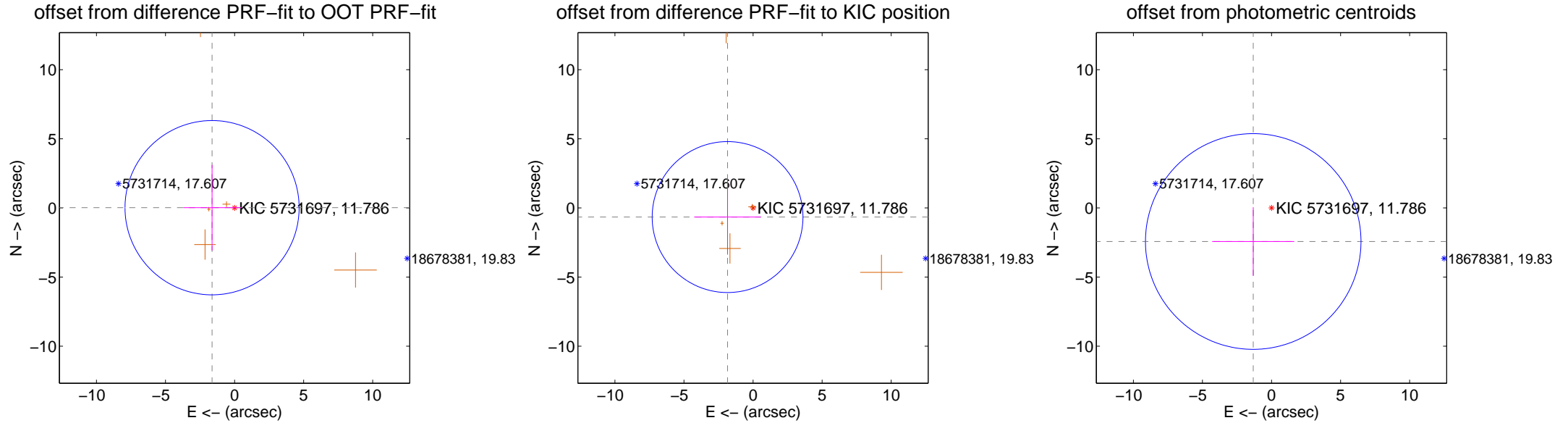
DV Centroid Data

Supplemental centroid analysis for 005731697-01. **Kepler magnitude: 11.79.** Transit SNR 2.05

There are 0 quarters with good PRF difference image offsets

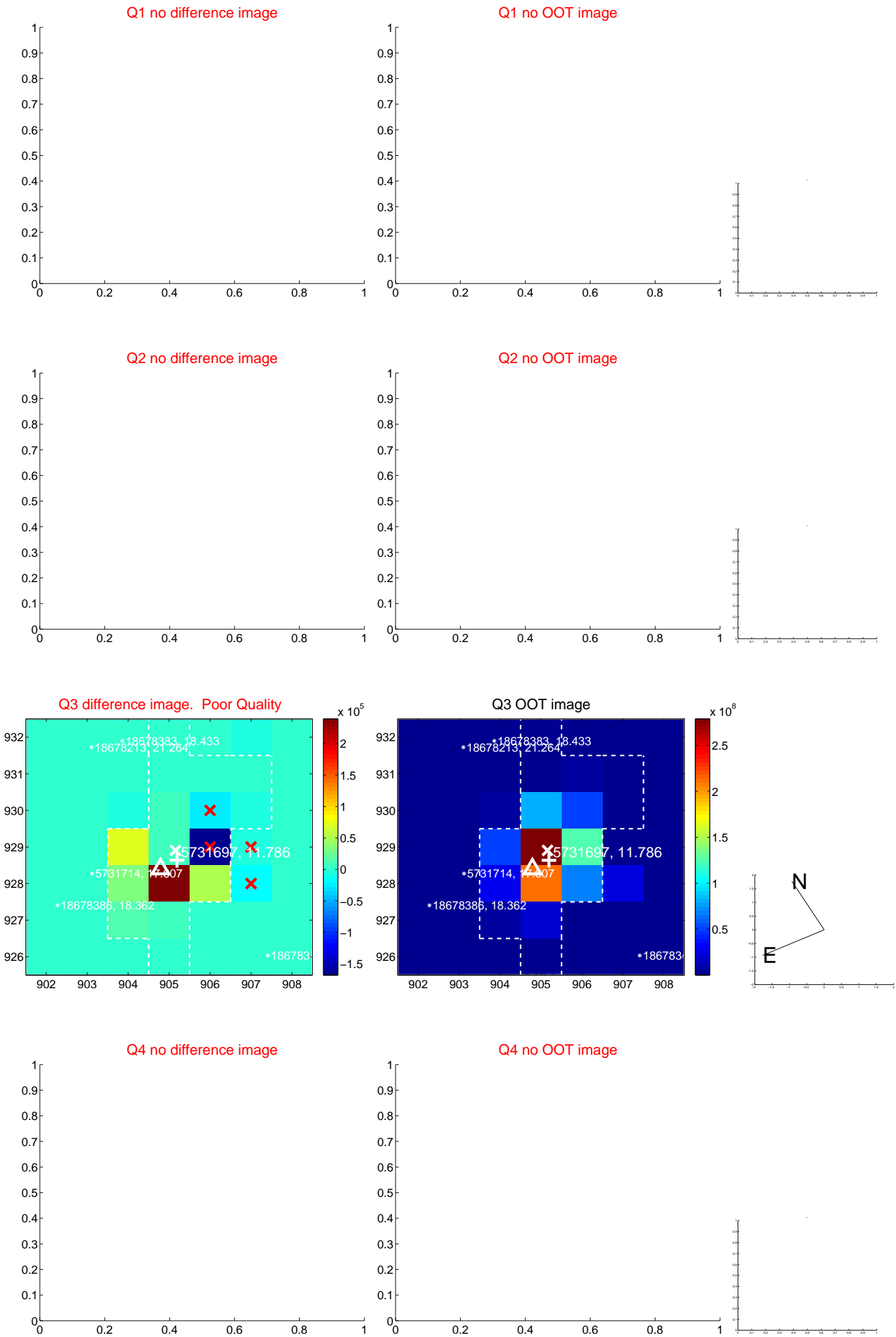
The direct PRF centroid is offset from the target star catalog position by about 0.56 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.630 ± 2.101	0.78	1.630 ± 2.089	0.018 ± 3.093
PRF-fit source offset from KIC position	1.959 ± 1.819	1.08	1.845 ± 2.418	-0.660 ± 2.717
photometric centroid source offset	2.76 ± 2.60	1.06	1.32 ± 2.97	-2.43 ± 2.48



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.

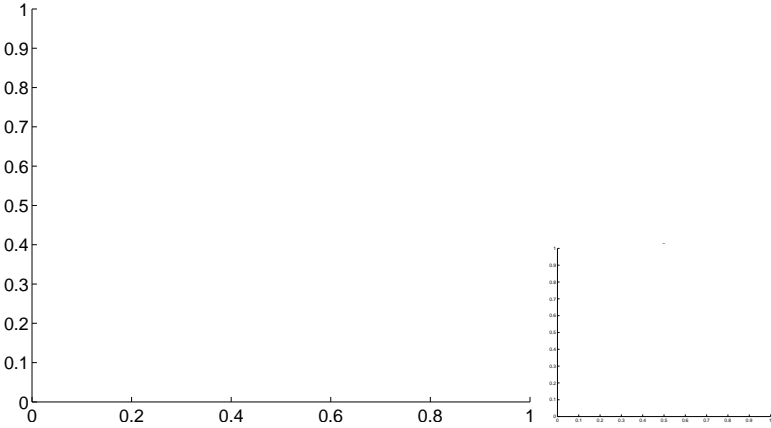


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

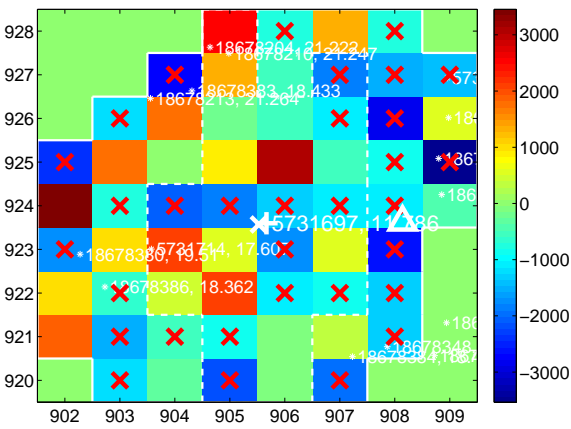
Q5 no difference image



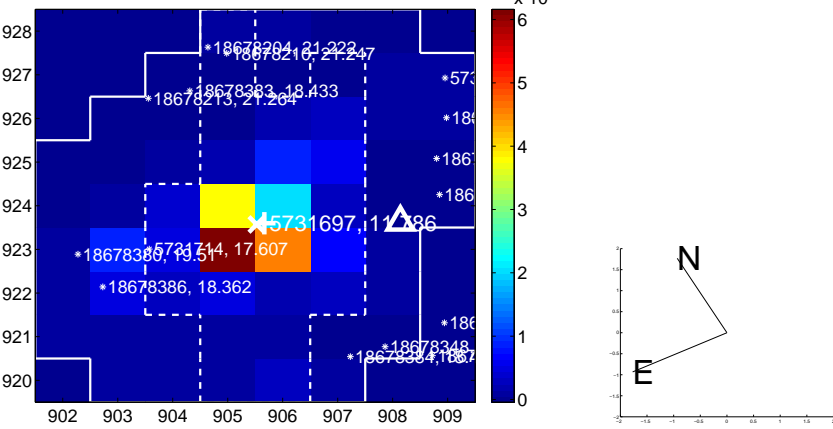
Q5 no OOT image



Q6 difference image. Poor Quality



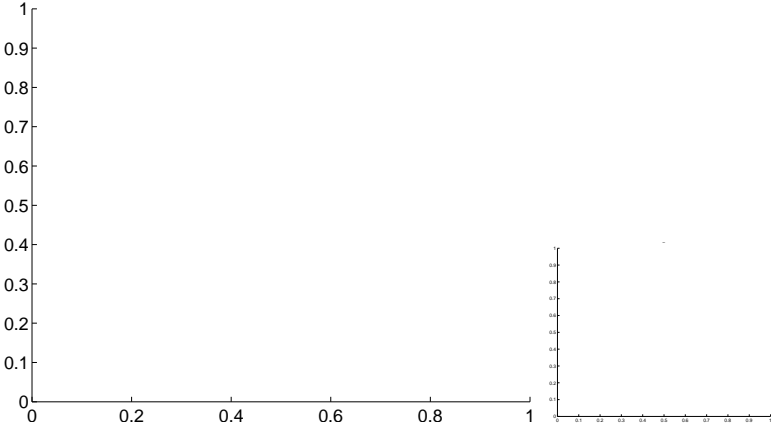
Q6 OOT image



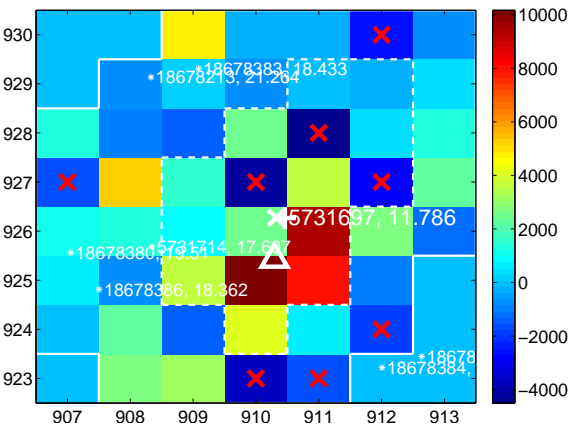
Q7 no difference image



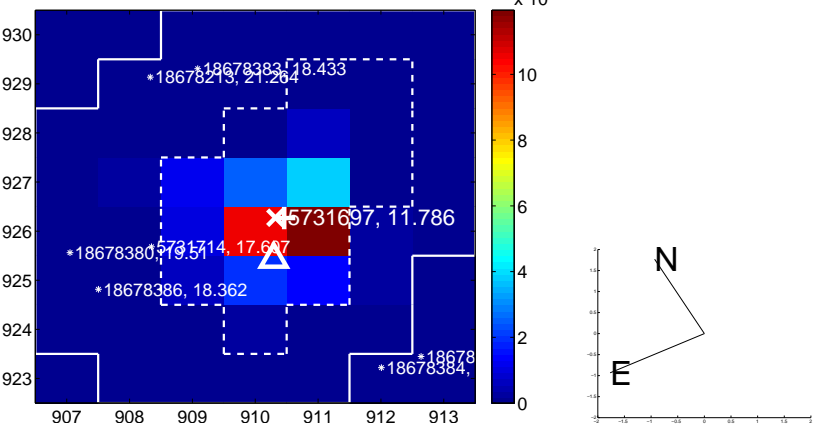
Q7 no OOT image



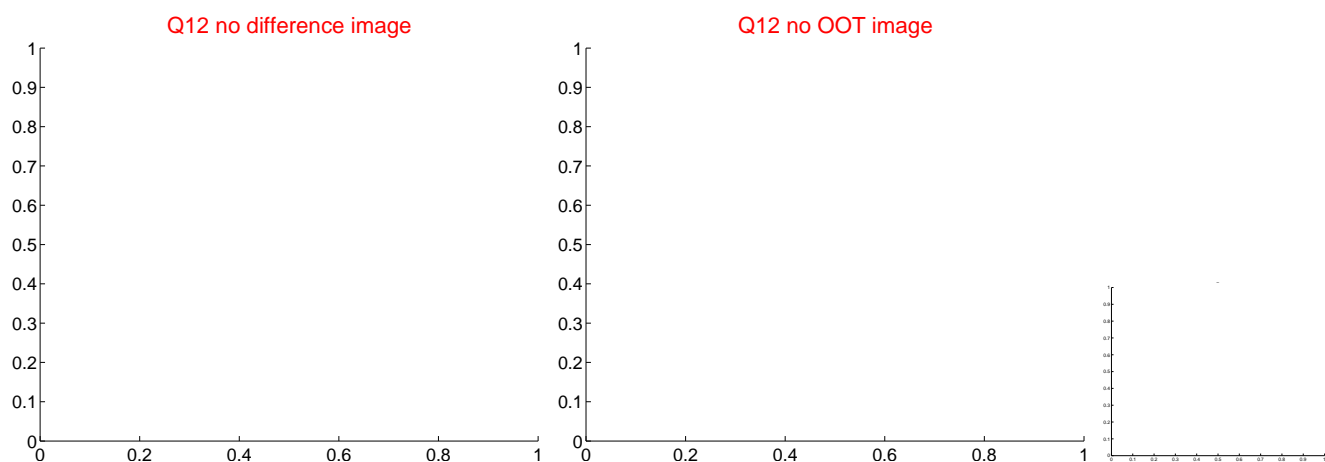
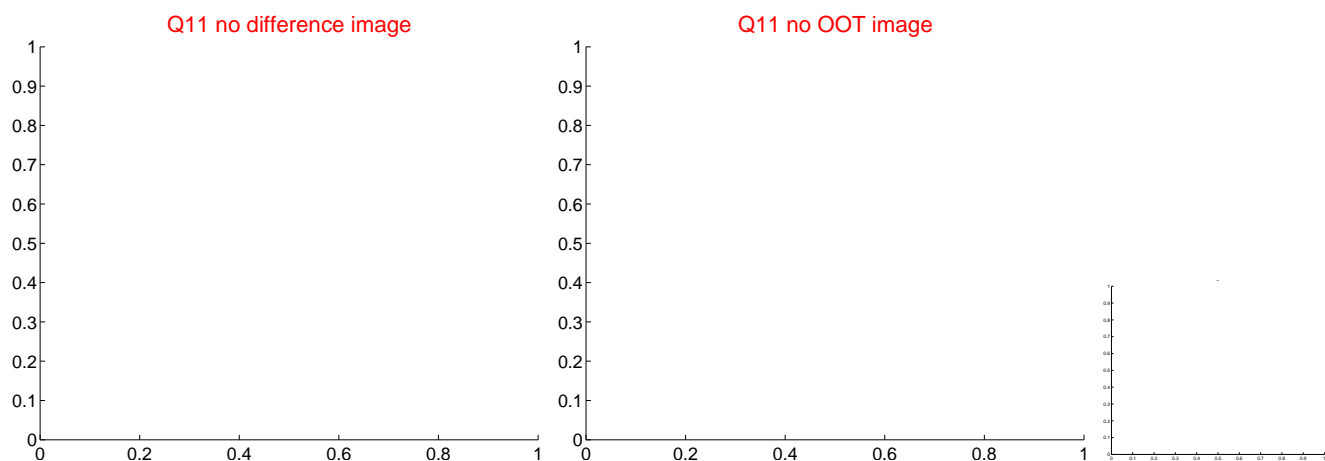
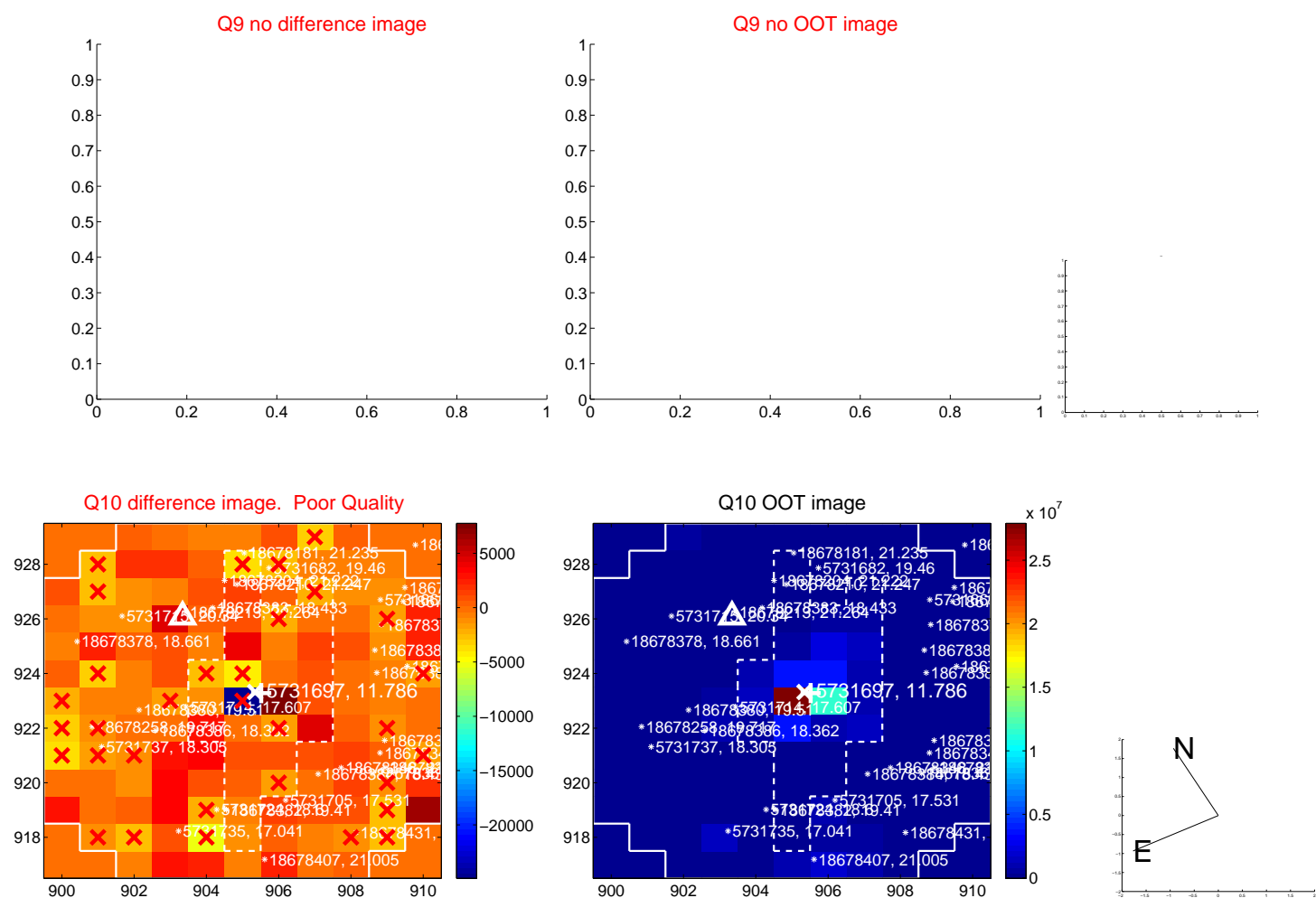
Q8 difference image. Poor Quality



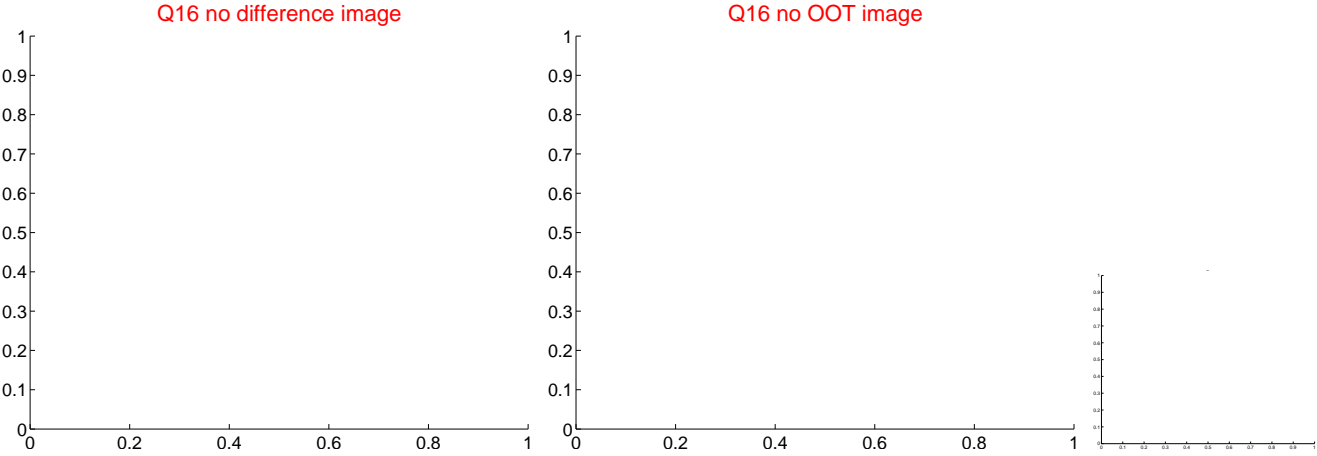
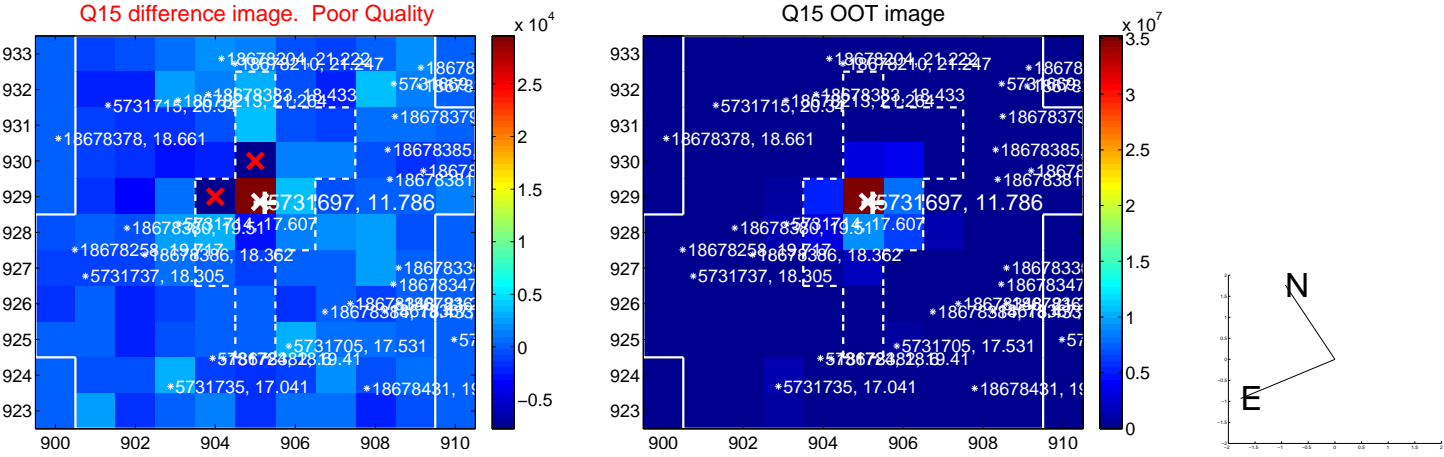
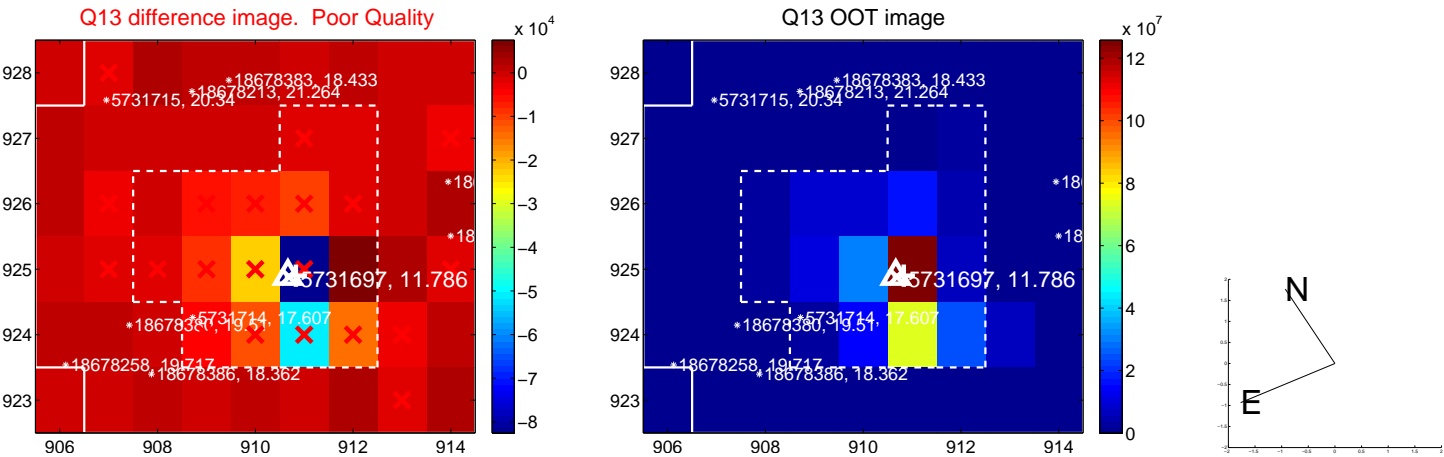
Q8 OOT image



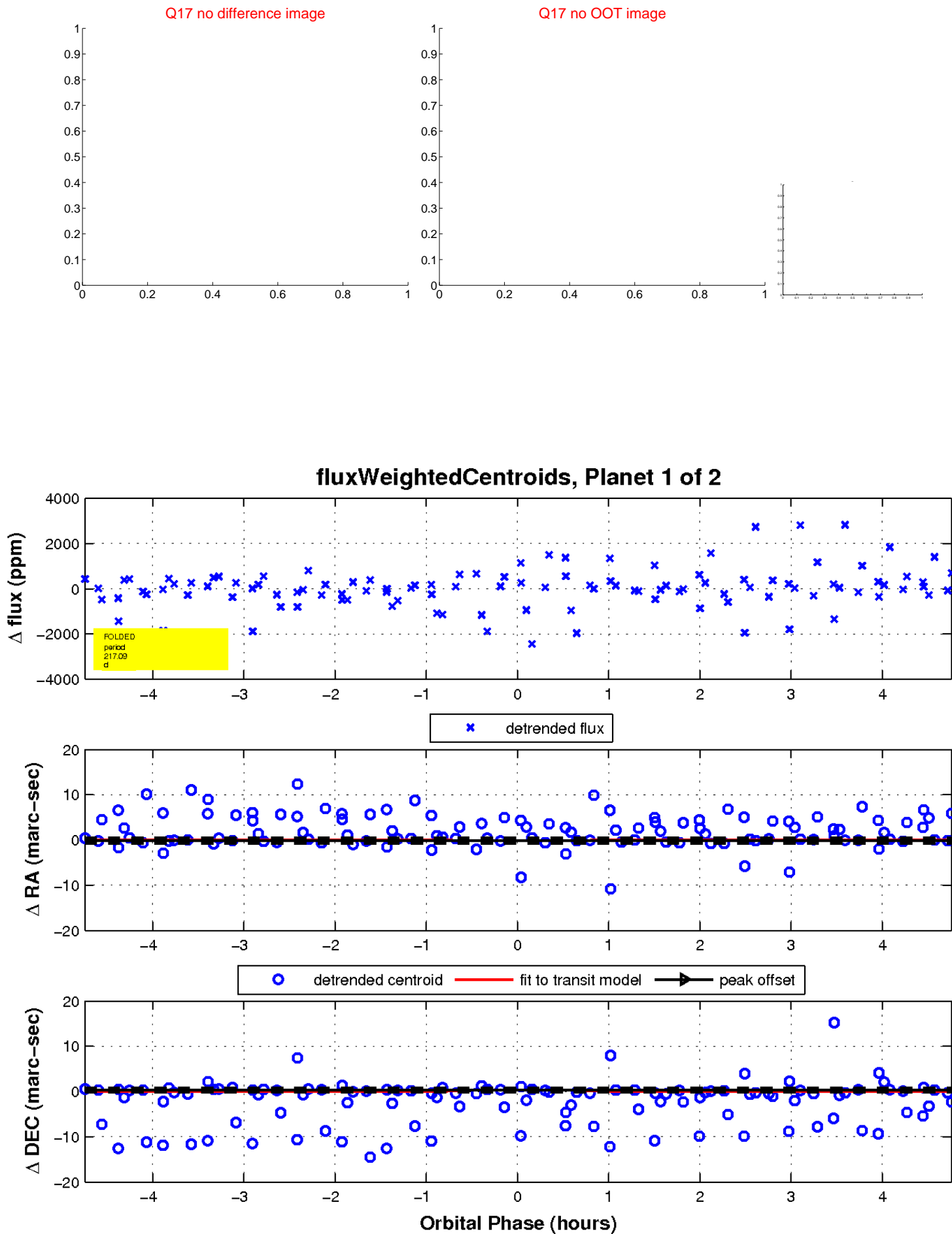
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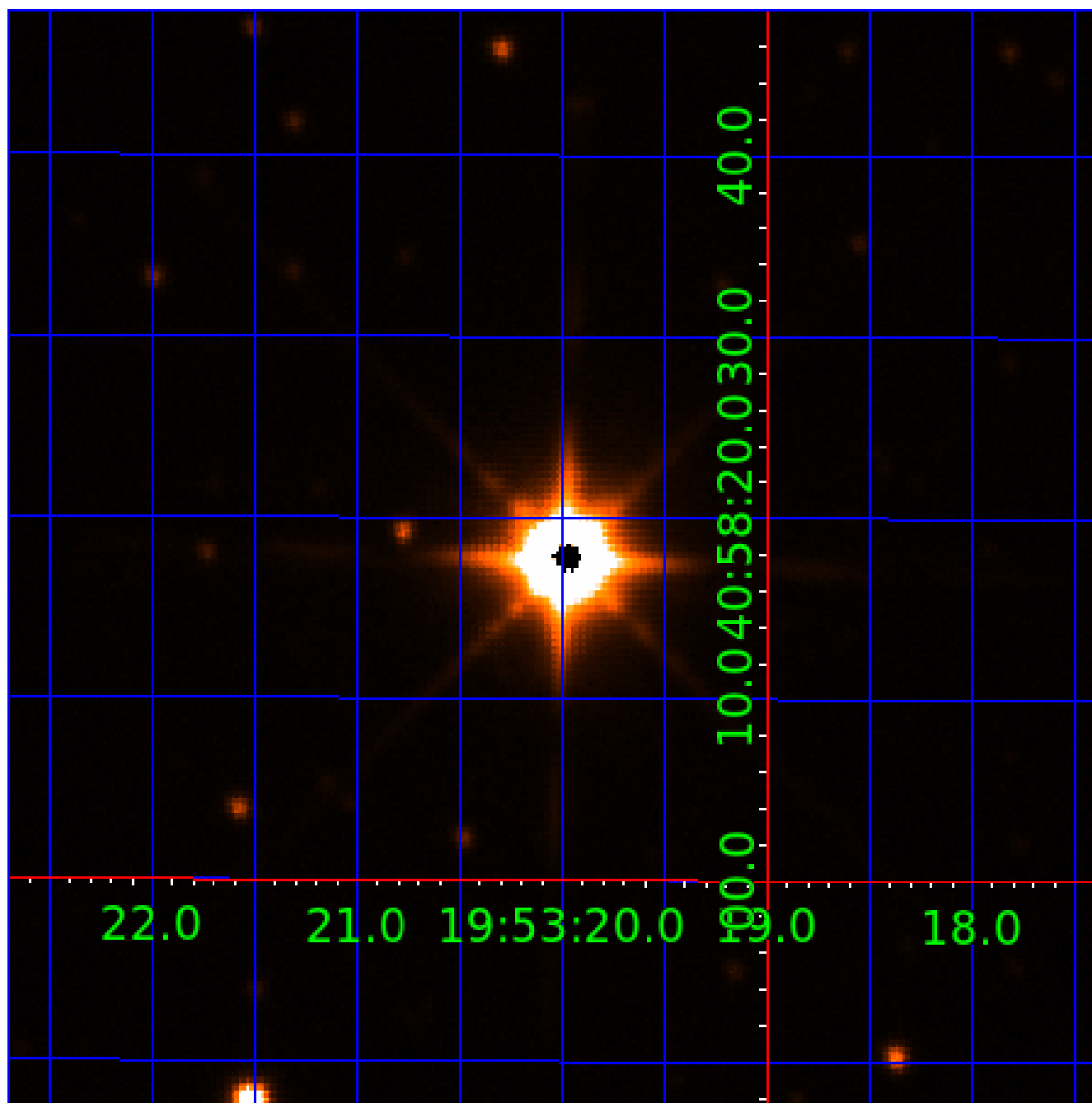


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005731697

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})
005731697-01	OBS	No	217.090398	345.348716	195.3	1.592	14.4	2.0	1.00	5780	1.46	2.00
005731697-02	OBS	No	536.745193	487.612544	7046.8	11.008	11.3	11.0	1.00	5780	9.94	0.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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005731697-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA_TRACKER—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

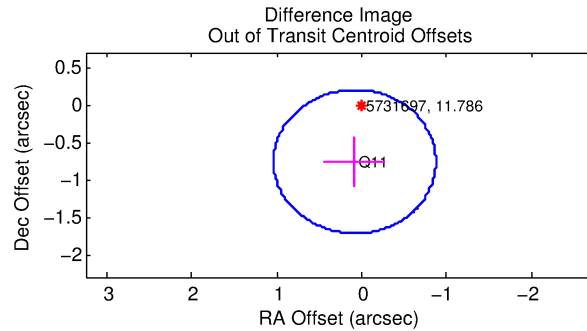
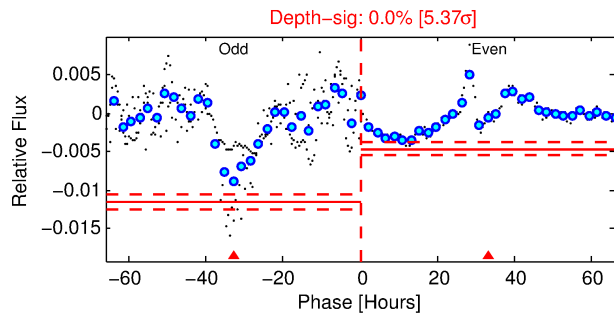
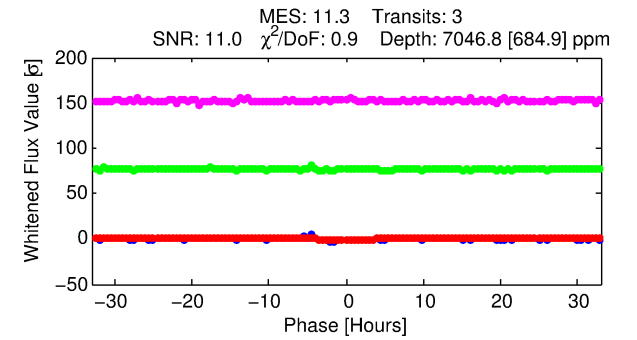
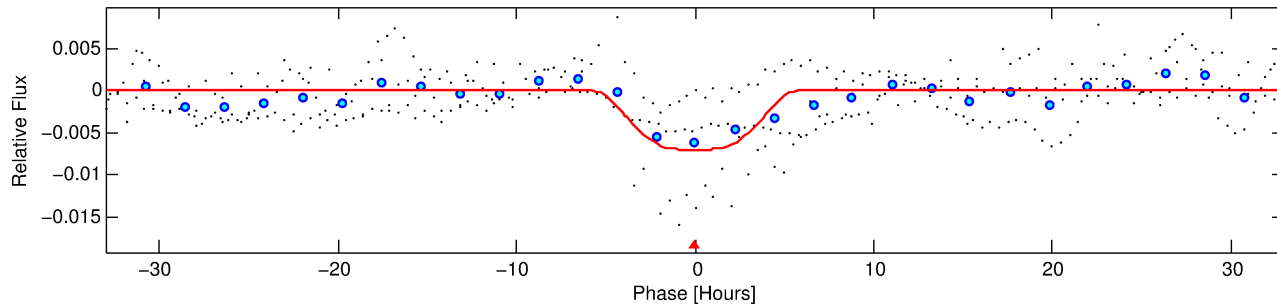
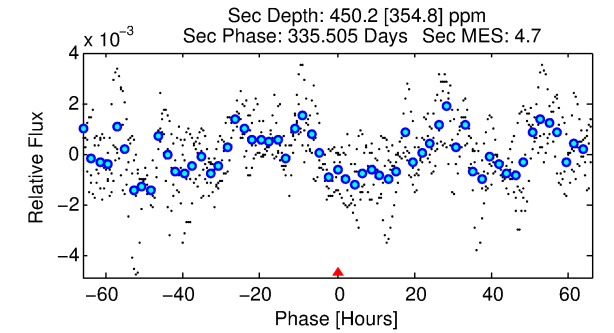
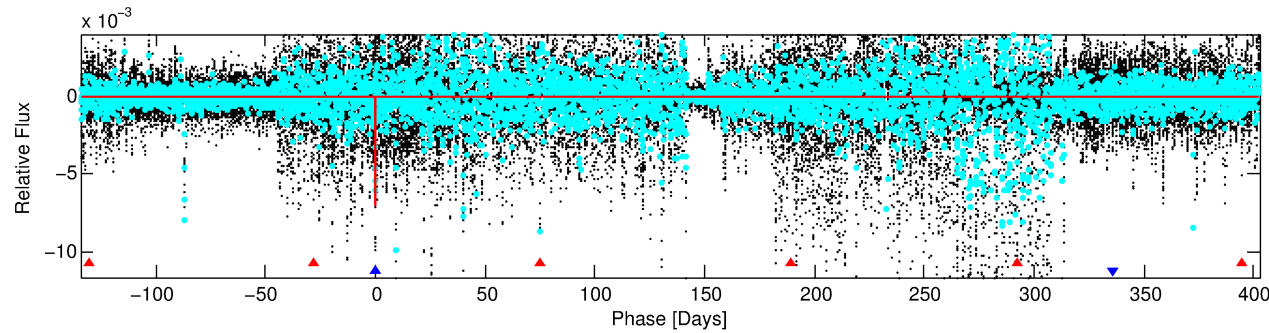
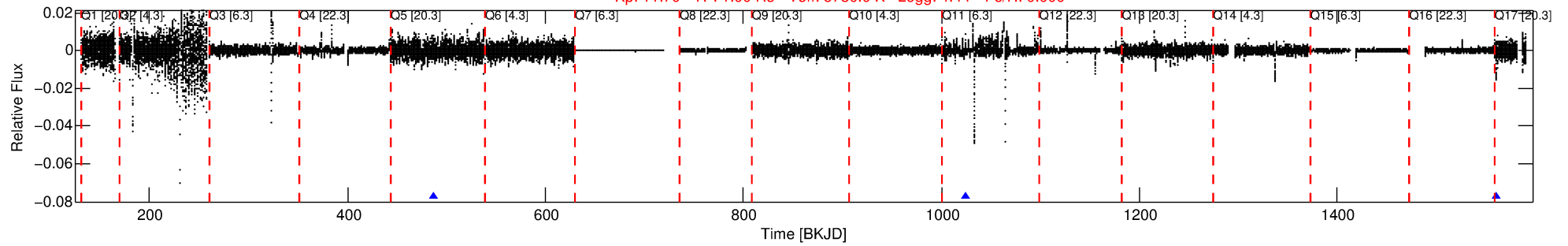
Ephemeris Match Information For 005731697-02

No Significant Match Found

DV One-Page Summary

KIC: 5731697 Candidate: 2 of 2 Period: 536.745 d

Kp: 11.79 R*: 1.00 Rs Teff: 5780.0 K Logg: 4.44 Fe/H: 0.000



DV Fit Results:

Period = 536.74519 [0.01254] d
Epoch = 487.6125 [0.0141] BKJD
Rp/R* = 0.0911 [0.0049]
a/R* = 236.23 [14.08]
b = 0.89 [0.02]
Seff = 0.60 [0.00]
Teq = 224 [0] K
Rp = 9.94 [0.53] Re
a = 1.2928 [0.0000] AU
Ag = 4186.48 [3329.41] [1.26σ]
Teff = 2789 [555] K [4.63σ]

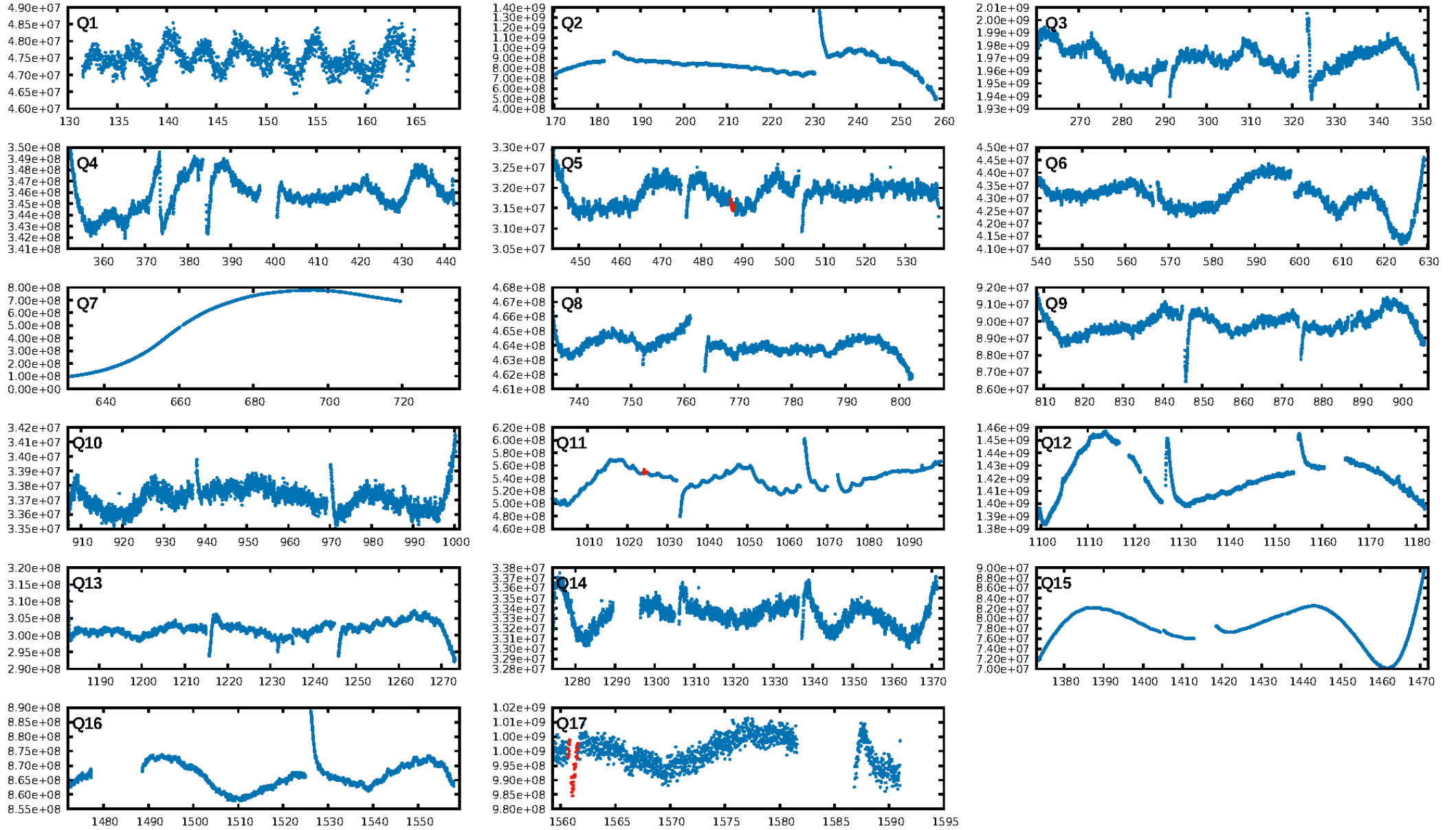
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [689.77σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.2%
Bootstrap-pfa: 4.55e-05
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -0.008699
Centroid-sig: 53.5%
Centroid-so: 1.029 arcsec [11.24σ]
OotOffset-rm: 0.764 arcsec [2.39σ]
KicOffset-rm: 1.218 arcsec [3.78σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
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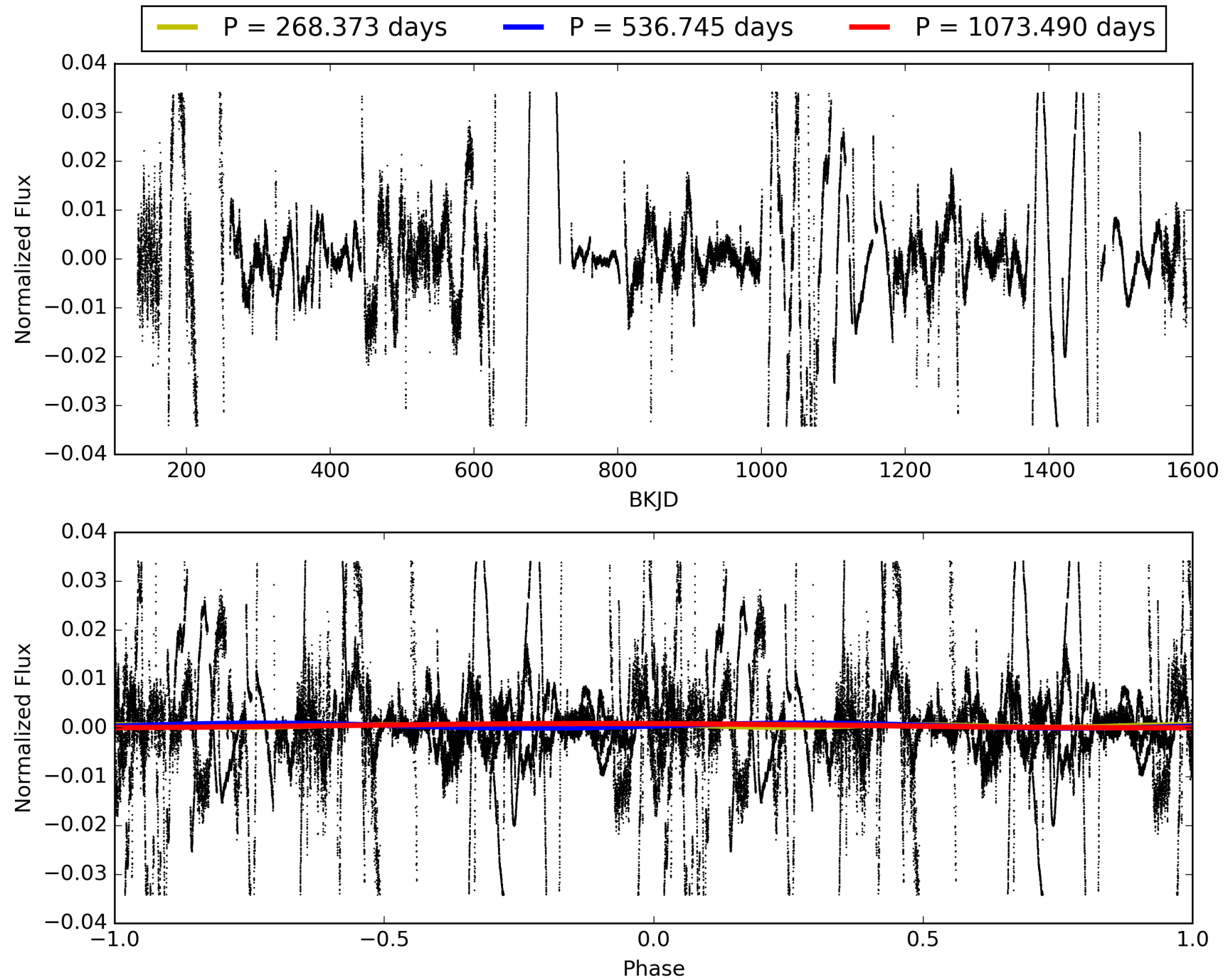
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:05:32 Z

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

TCE 005731697-02, PDC Light Curves

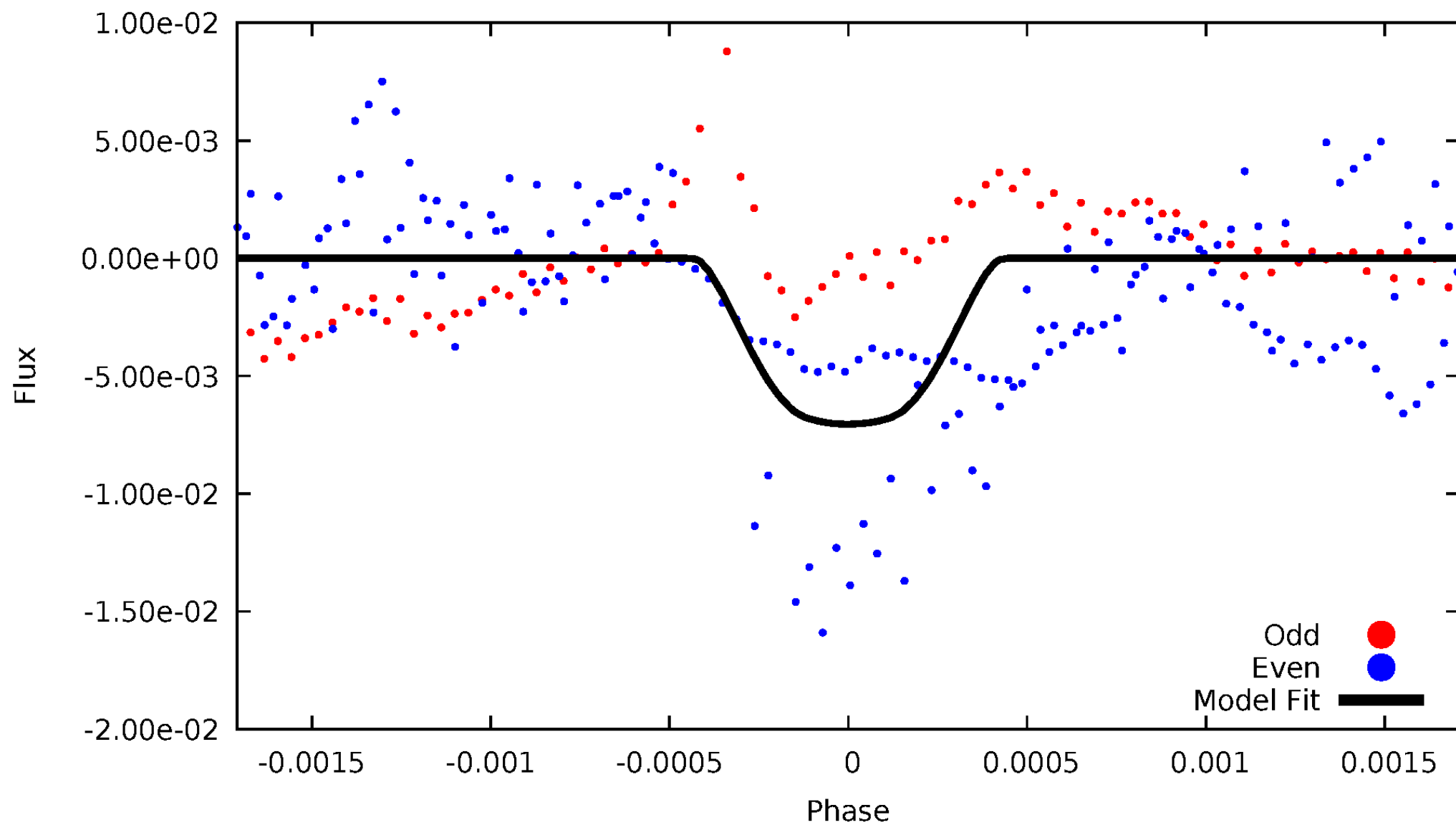


TCE 005731697-02



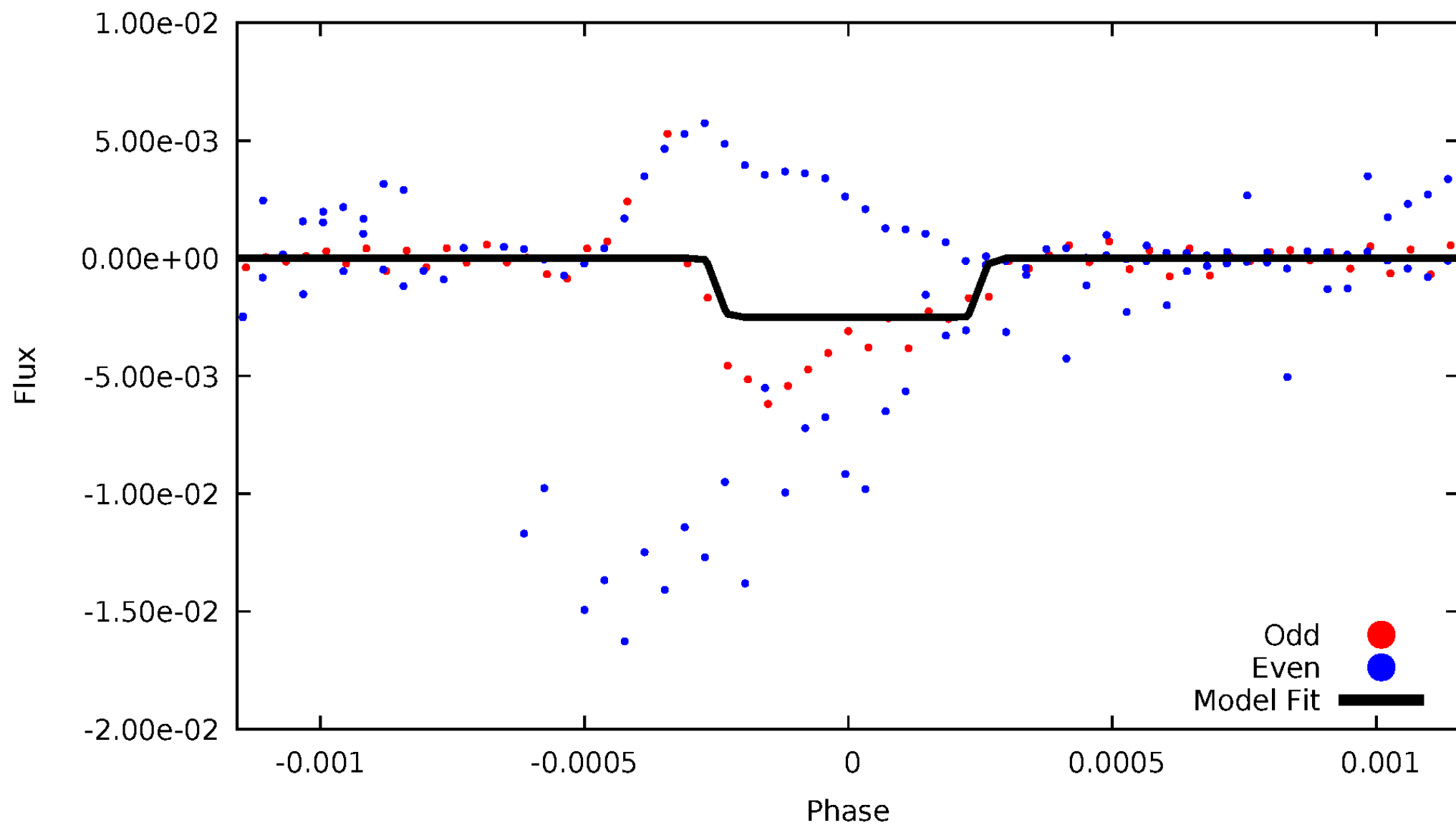
DV Odd/Even

TCE 005731697-02



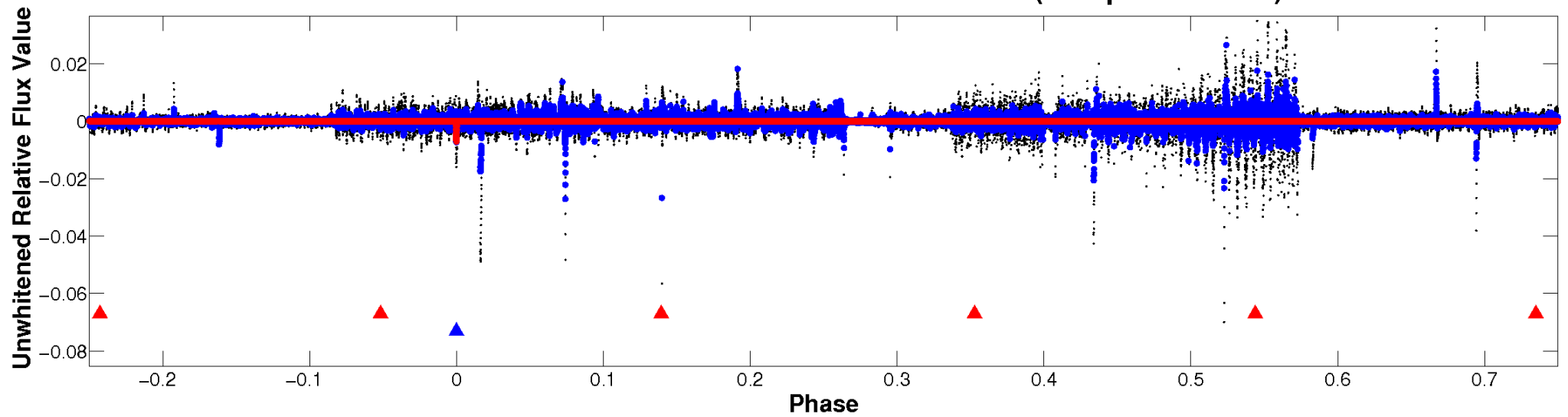
ALT Odd/Even

TCE 005731697-02

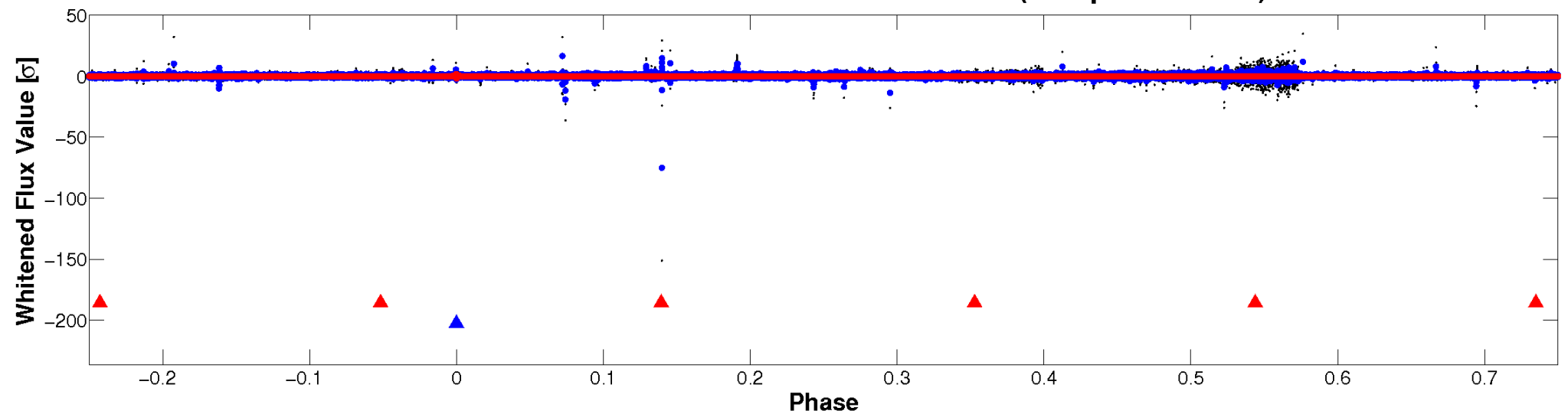


Non-Whitened Vs. Whitened Light Curve

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

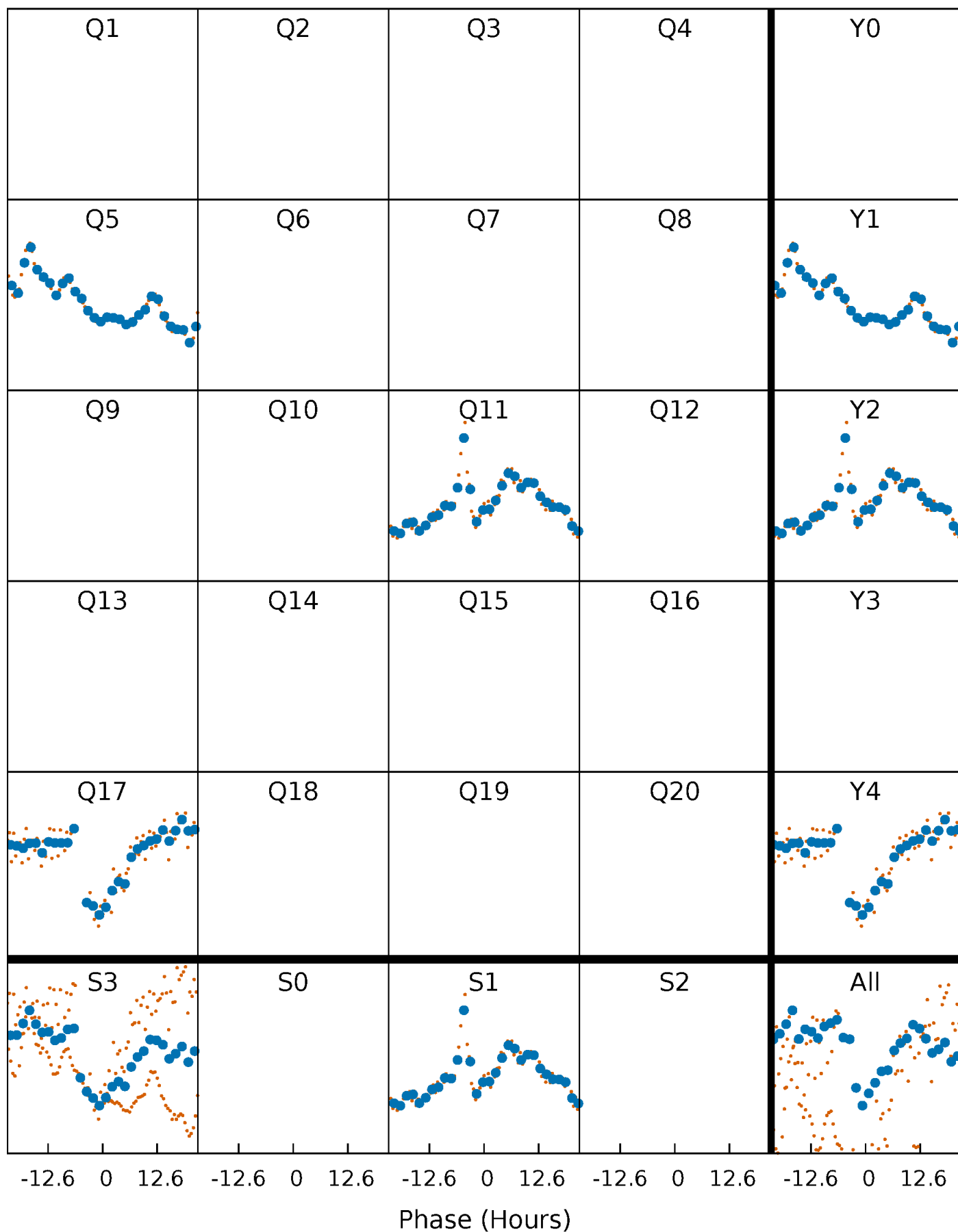


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



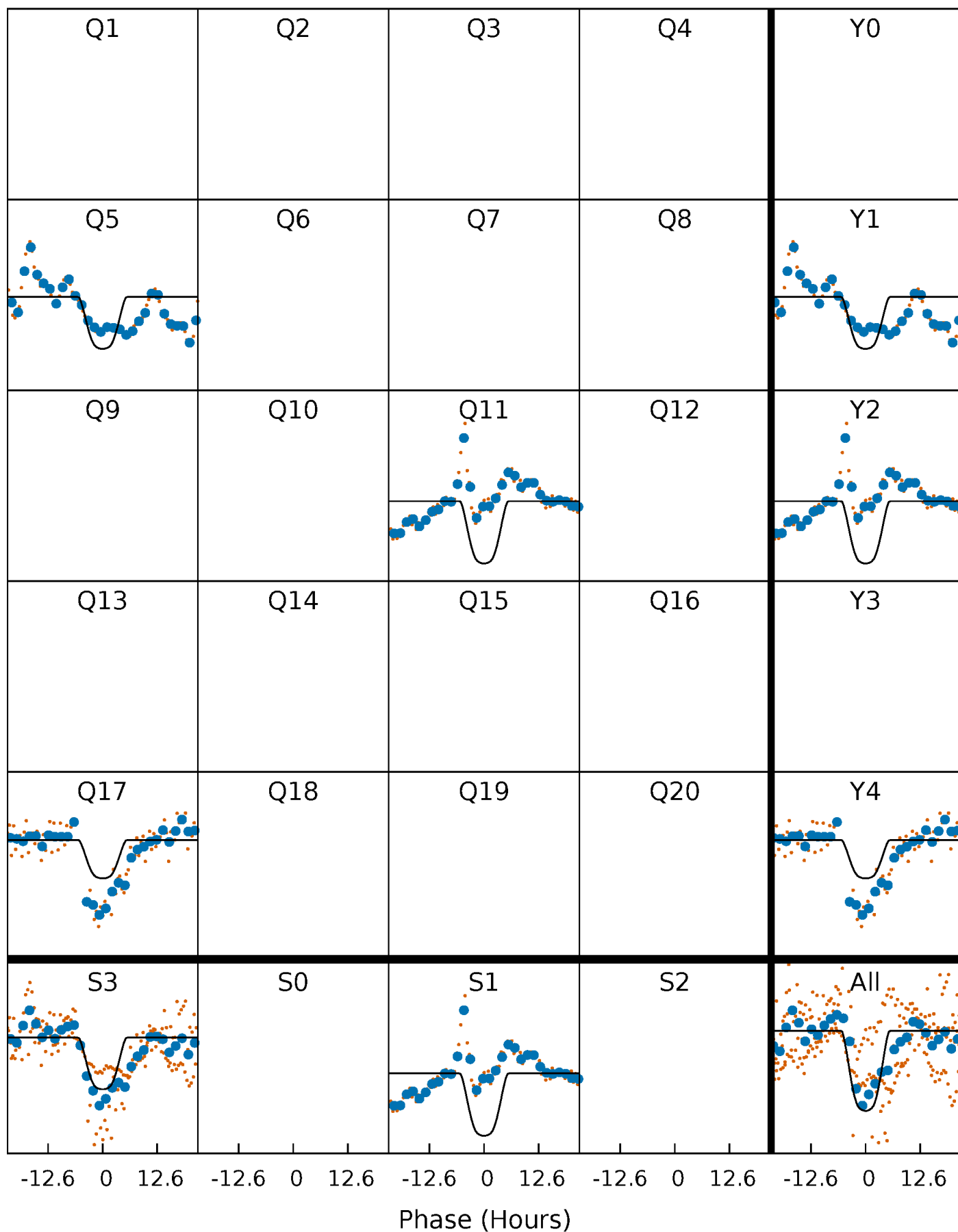
PDC Quarter-Phased Transit Curves

TCE 005731697-02 $P=536.745193$ Days $T_0=487.612544$ (BKJD)



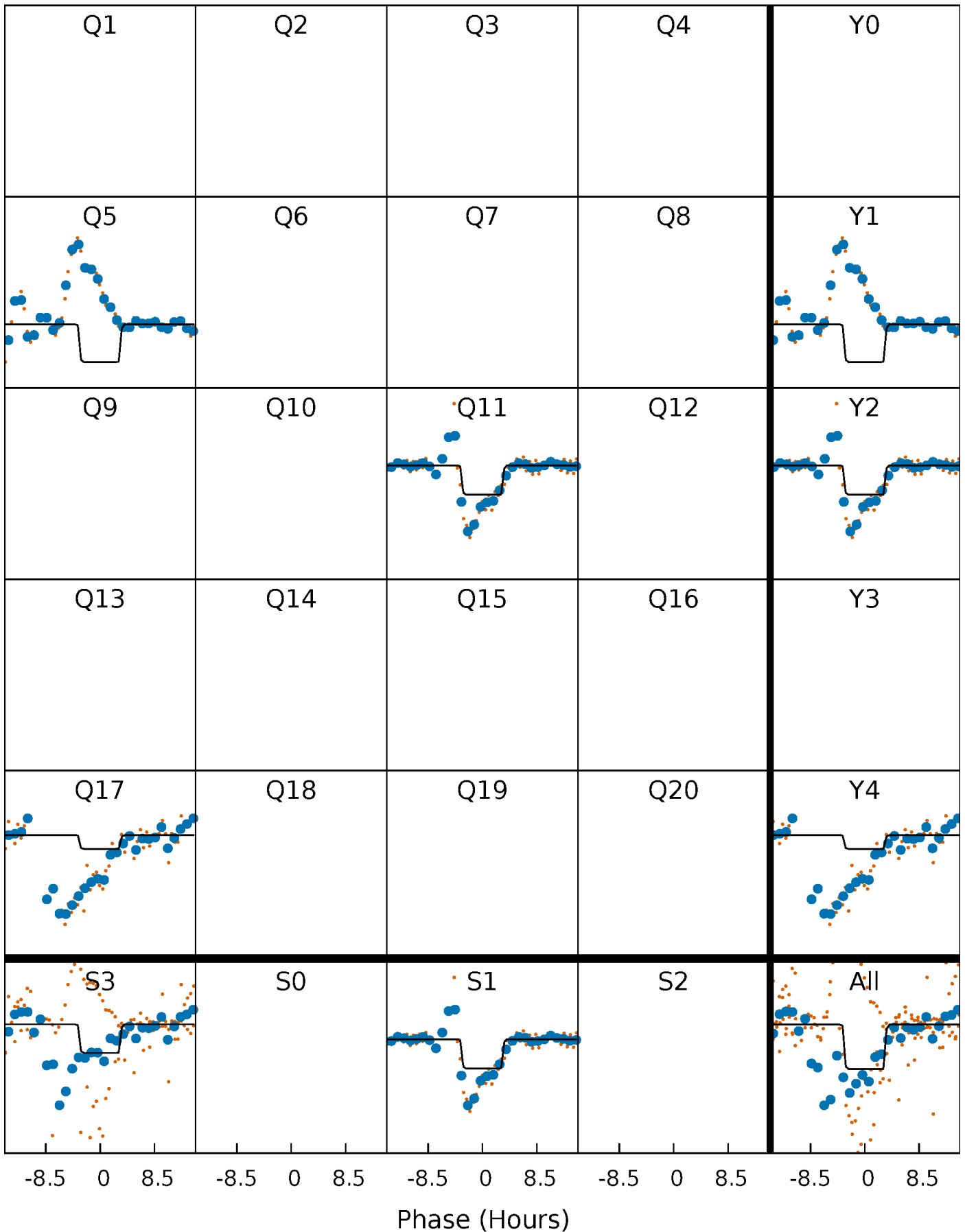
DV Quarter-Phased Transit Curves

TCE 005731697-02 $P=536.745193$ Days $T_0=487.612544$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

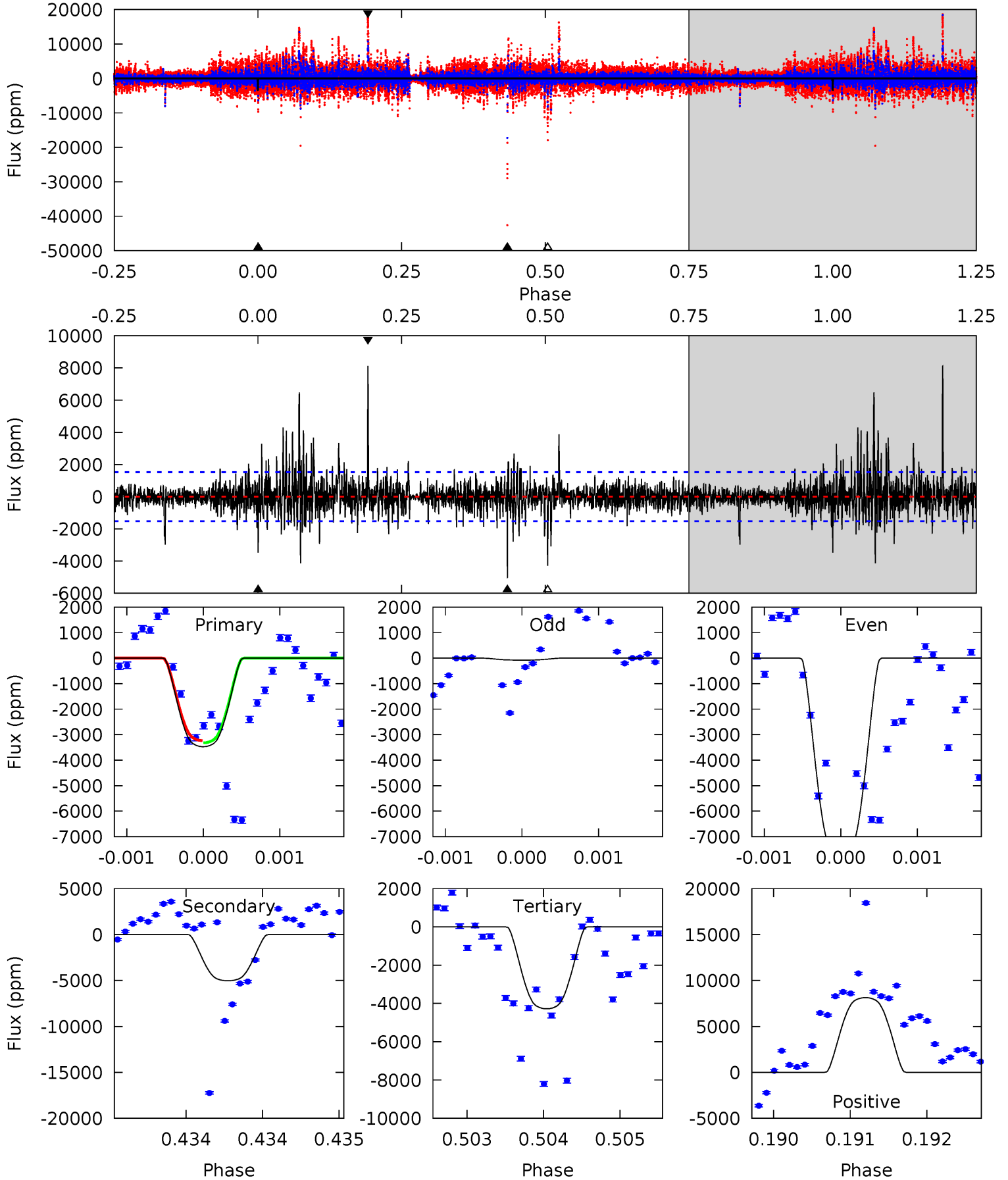
TCE 005731697-02 $P=536.932656$ Days $T_0=487.426866$ (BKJD)



DV Model-Shift Uniqueness Test

005731697-02, P = 536.745193 Days, E = 487.612544 Days

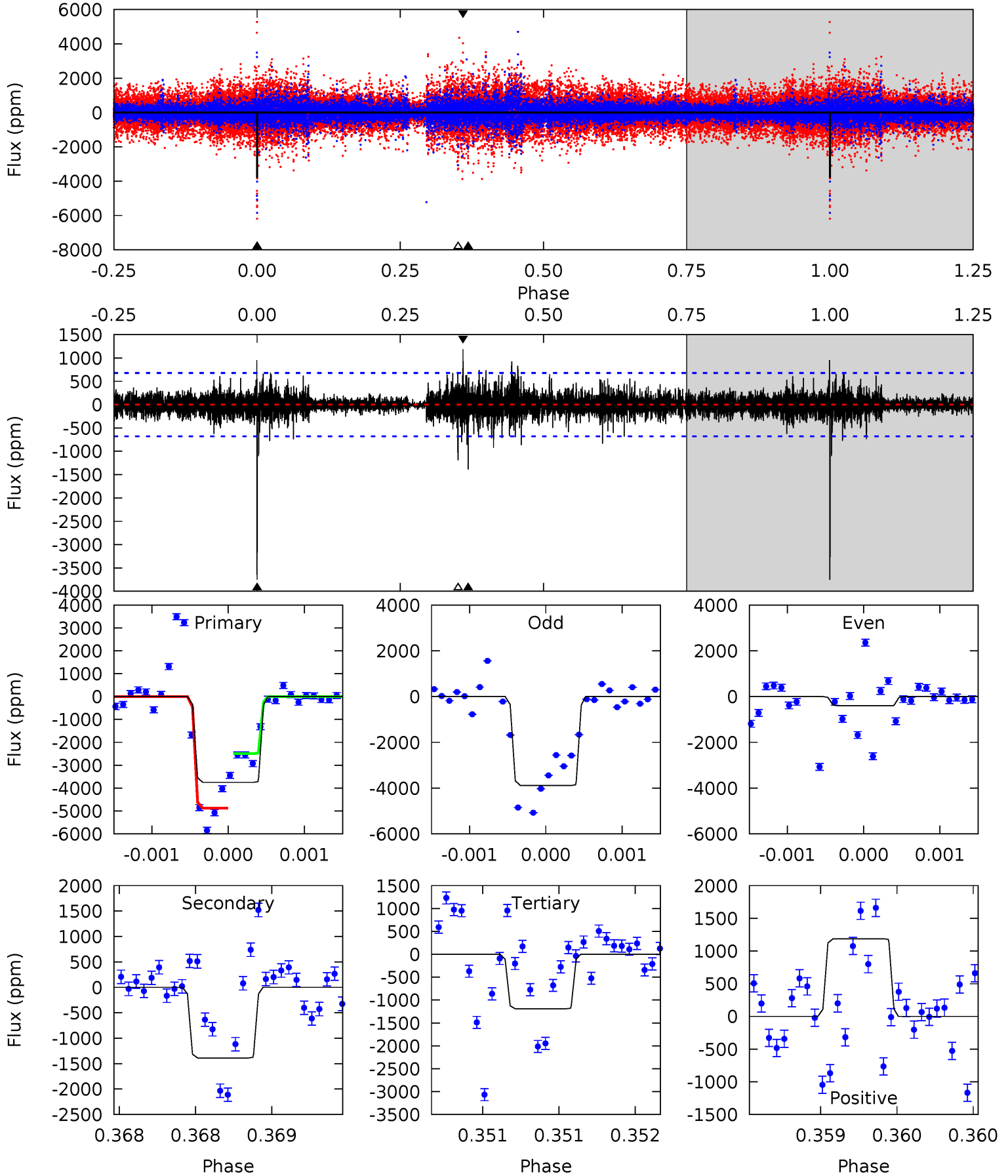
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	18.1	15.4	29.3	5.48	3.34	2.62	-2.91	-16.8	2.69	-11.2	12.6	1.23	0.62	0.15



Alt Model-Shift Uniqueness Test

005731697-02, P = 536.932656 Days, E = 487.426866 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.7	11.4	9.73	9.71	5.55	3.45	1.22	20.9	20.9	1.63	1.65	15.1	0.73	0.24	9.70



Stellar Parameters For KIC 005731697

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5780^{+1}_{-1}	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

Secondary Eclipse Parameters for KIC 005731697-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-5017 ± 277	$9.93^{+0.88}_{-0.84}$	313^{+15}_{-14}	5170^{+186}_{-227}	46962^{+8888}_{-7625}
Alt.	-1390 ± 122	$5.44^{+0.66}_{-0.67}$	313^{+15}_{-13}	5074^{+284}_{-272}	43353^{+13307}_{-9924}

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 $A_{obs} \gg 1.0$

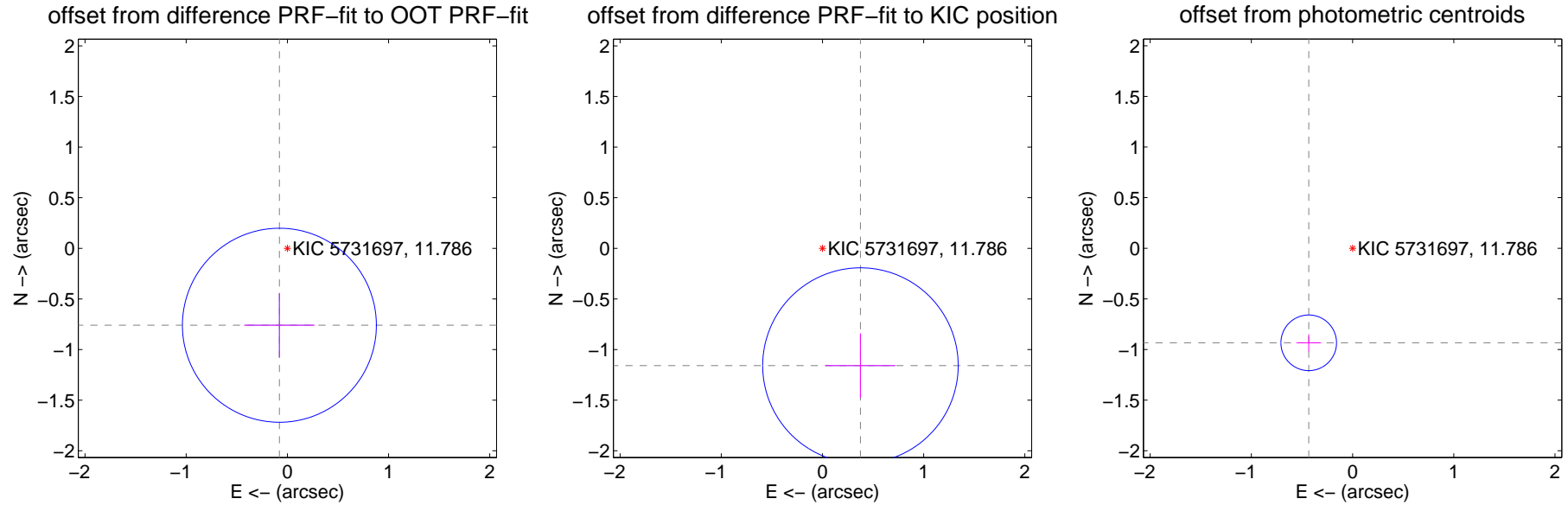
DV Centroid Data

Supplemental centroid analysis for 005731697-02. **Kepler magnitude: 11.79.** Transit SNR 10.99

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.60 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.764 ± 0.319	2.39	0.079 ± 0.348	-0.760 ± 0.319
PRF-fit source offset from KIC position	1.218 ± 0.322	3.78	-0.375 ± 0.348	-1.159 ± 0.319
photometric centroid source offset	1.03 ± 0.09	11.24	0.43 ± 0.12	-0.93 ± 0.08

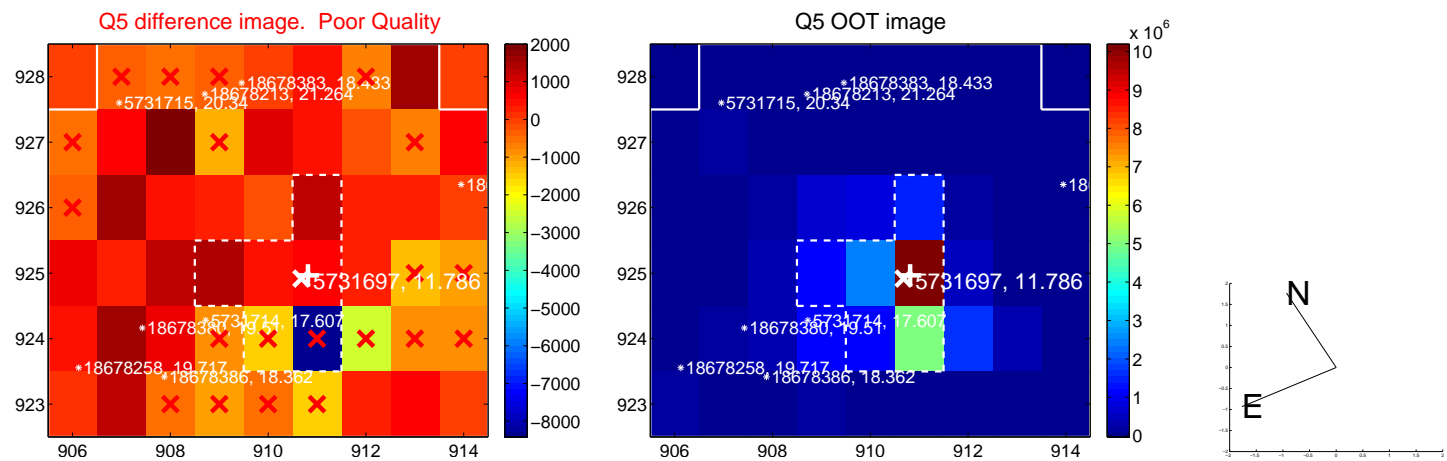


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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



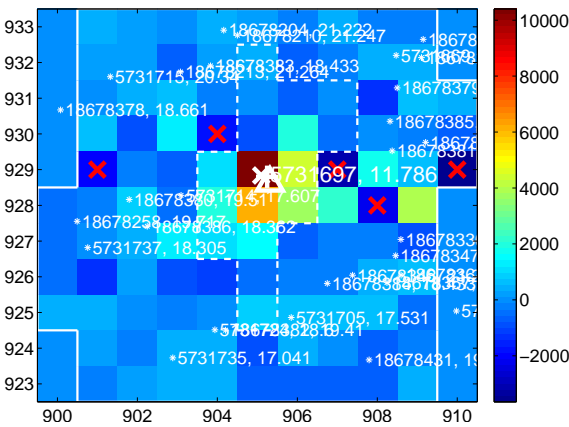
Q10 no difference image



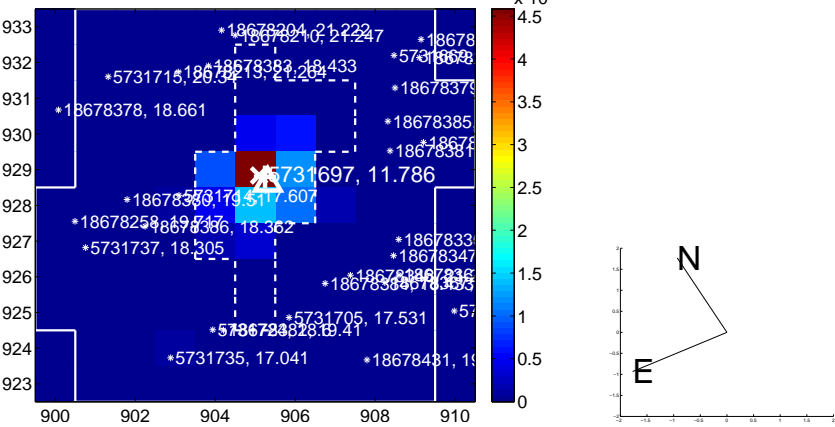
Q10 no OOT image



Q11 difference image



Q11 OOT image



Q12 no difference image



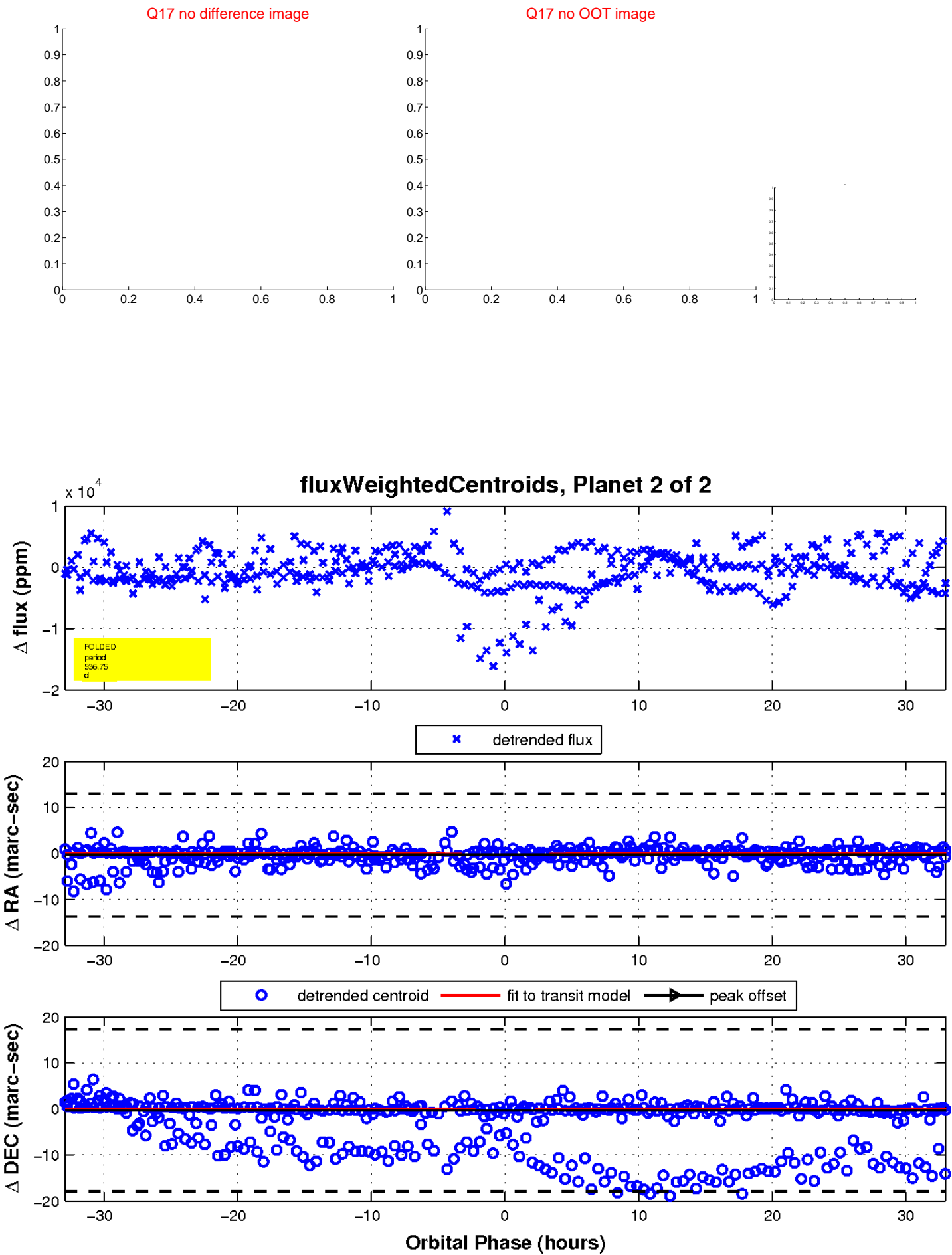
Q12 no OOT image



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



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



UKIRT Image

Declination

