

KIC 005787972

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})
005787972-01	OBS	No	1.099151	132.692479	3.2	7.513	8.9	2.8	1.63	6726	0.30	9375.91
005787972-02	OBS	No	57.208769	180.383070	159.0	3.963	12.3	10.1	1.63	6726	2.25	48.25
005787972-03	OBS	No	252.860410	272.632577	232.3	7.104	11.0	12.5	1.63	6726	2.71	6.65
005787972-04	OBS	No	46.490157	147.345820	197.2	1.772	11.2	10.1	1.63	6726	2.32	63.62
005787972-05	OBS	No	32.158912	152.995453	108.7	4.803	9.1	8.3	1.63	6726	1.79	104.00
005787972-06	OBS	No	46.187137	134.771064	173.7	3.448	9.4	10.5	1.63	6726	2.48	64.18
005787972-07	OBS	No	39.098565	153.376700	139.5	3.412	9.6	9.4	1.63	6726	2.14	80.14
005787972-08	OBS	No	25.787015	154.054388	105.4	4.687	8.7	9.3	1.63	6726	1.91	139.60
005787972-09	OBS	No	12.382392	142.368262	70.6	4.369	9.5	8.6	1.63	6726	1.56	371.26
005787972-10	OBS	No	41.093899	144.818289	211.9	2.500	9.1	-1.0	1.63	6726	2.40	75.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005787972-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
005787972-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005787972-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
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005787972-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNRESOLVED_OFFSET
005787972-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_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.

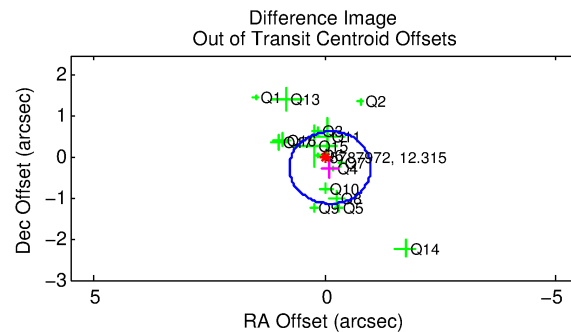
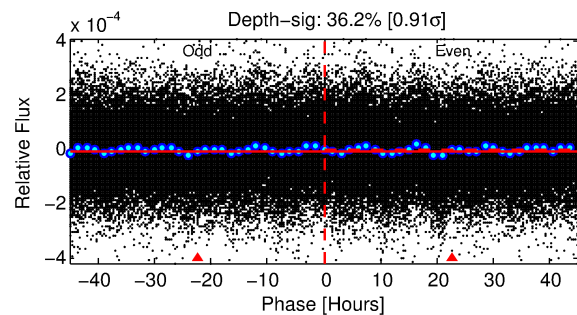
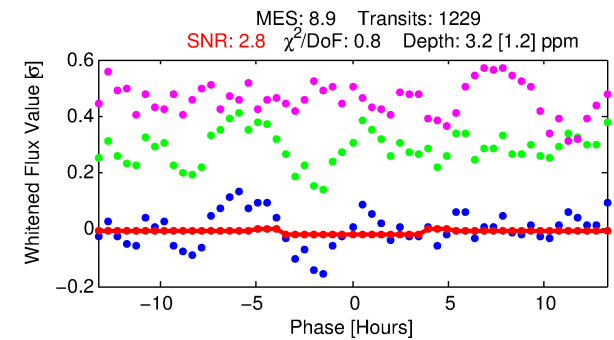
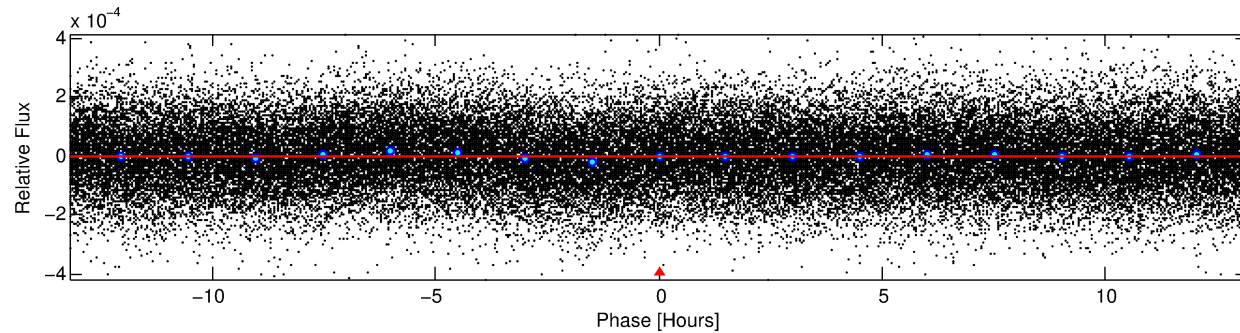
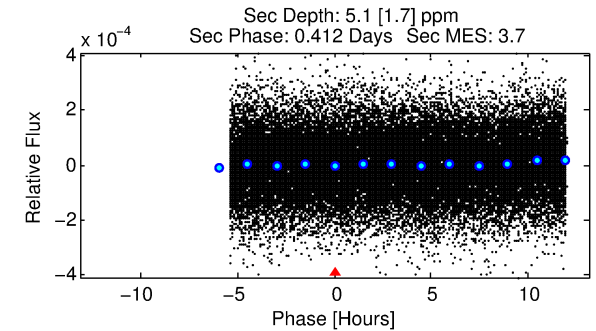
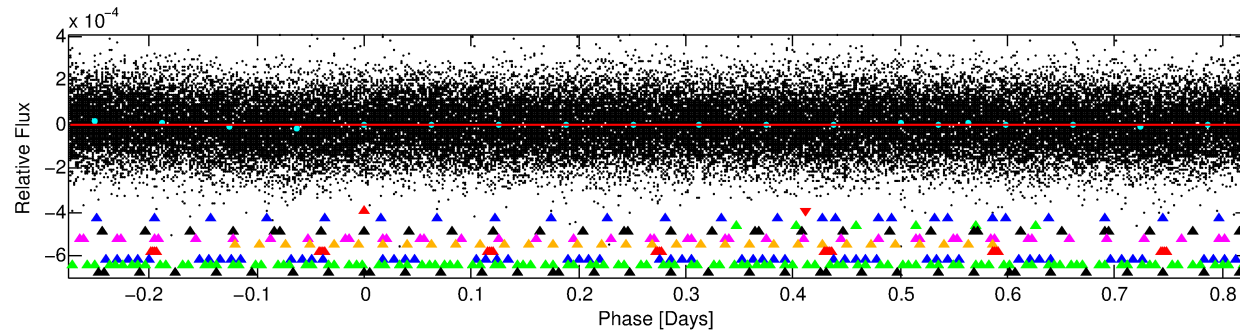
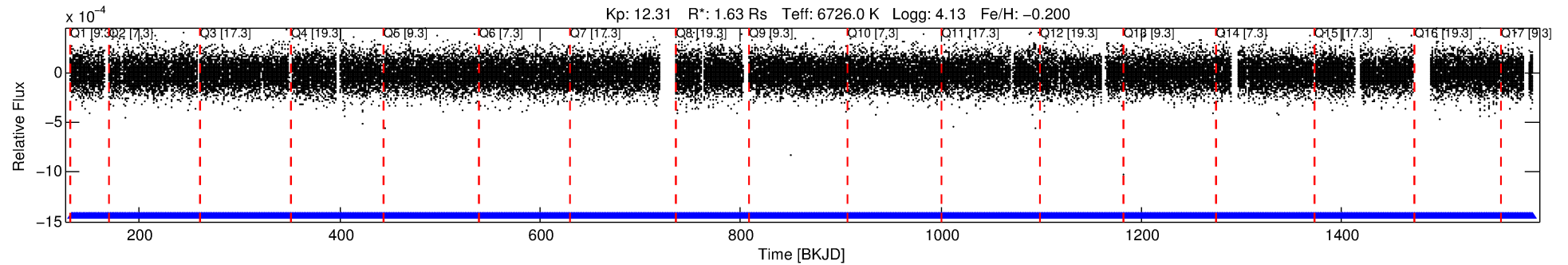
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005787972-01

No Significant Match Found

DV One-Page Summary

KIC: 5787972 Candidate: 1 of 10 Period: 1.099 d



DV Fit Results:

Period = 1.09915 [0.00007] d
Epoch = 132.6925 [0.0205] BKJD
Rp/R* = 0.0017 [0.0014]
a/R* = 1.21 [1.74]
b = 0.55 [5.90]
Seff = 9375.91 [2275.31]
Teq = 2509 [152] K
Rp = 0.30 [0.26] Re
a = 0.0229 [0.0037] AU
Ag = 16.04 [27.41] [0.55σ]
Teffp = 7764 [3286] K [1.60σ]

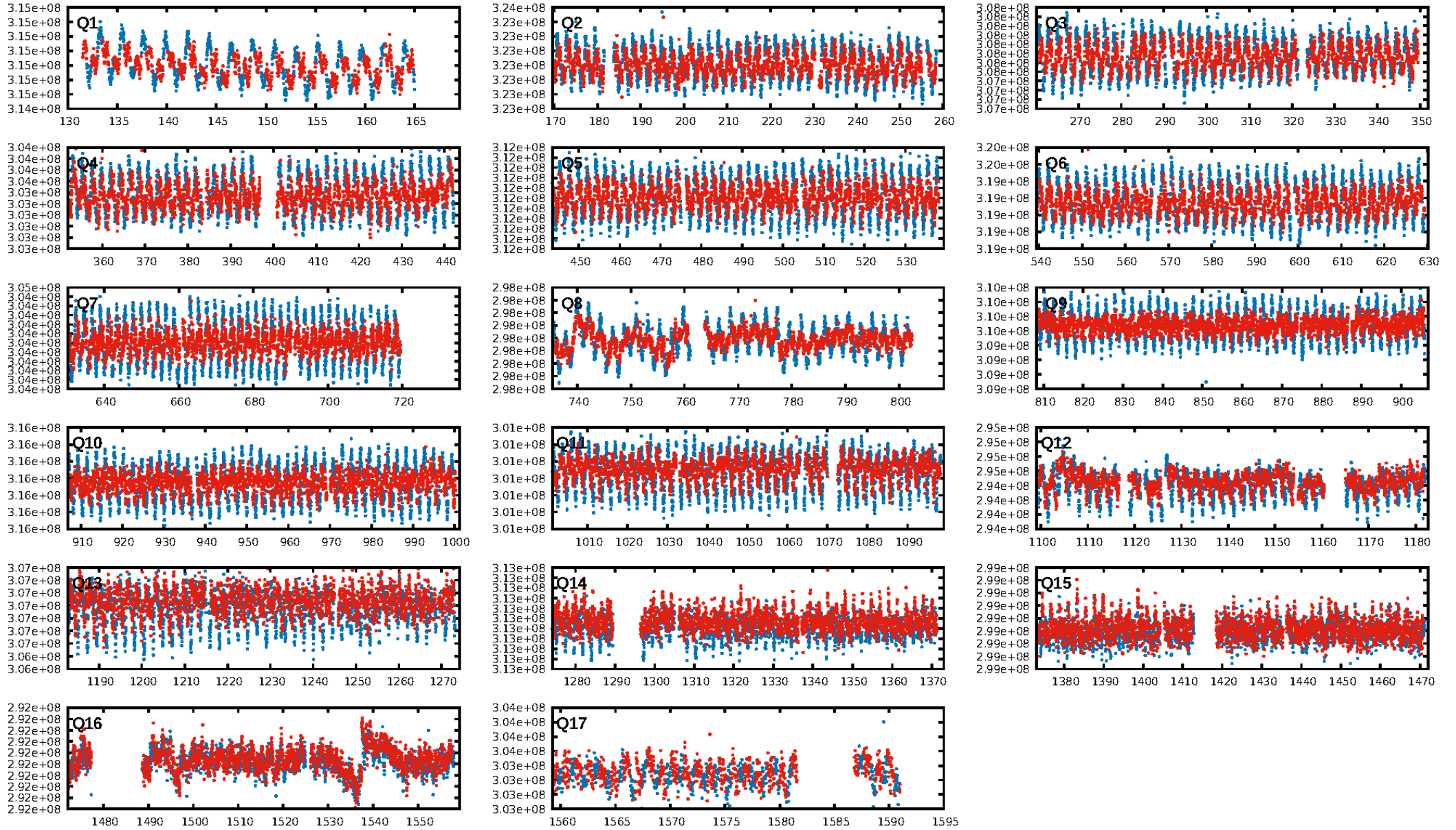
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [31.16σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1173/1173]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.277 arcsec [0.94σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-rm: 0.293 arcsec [1.03σ]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.62 [10/16]
DiffImageOverlap-fno: 1.00 [17/17]

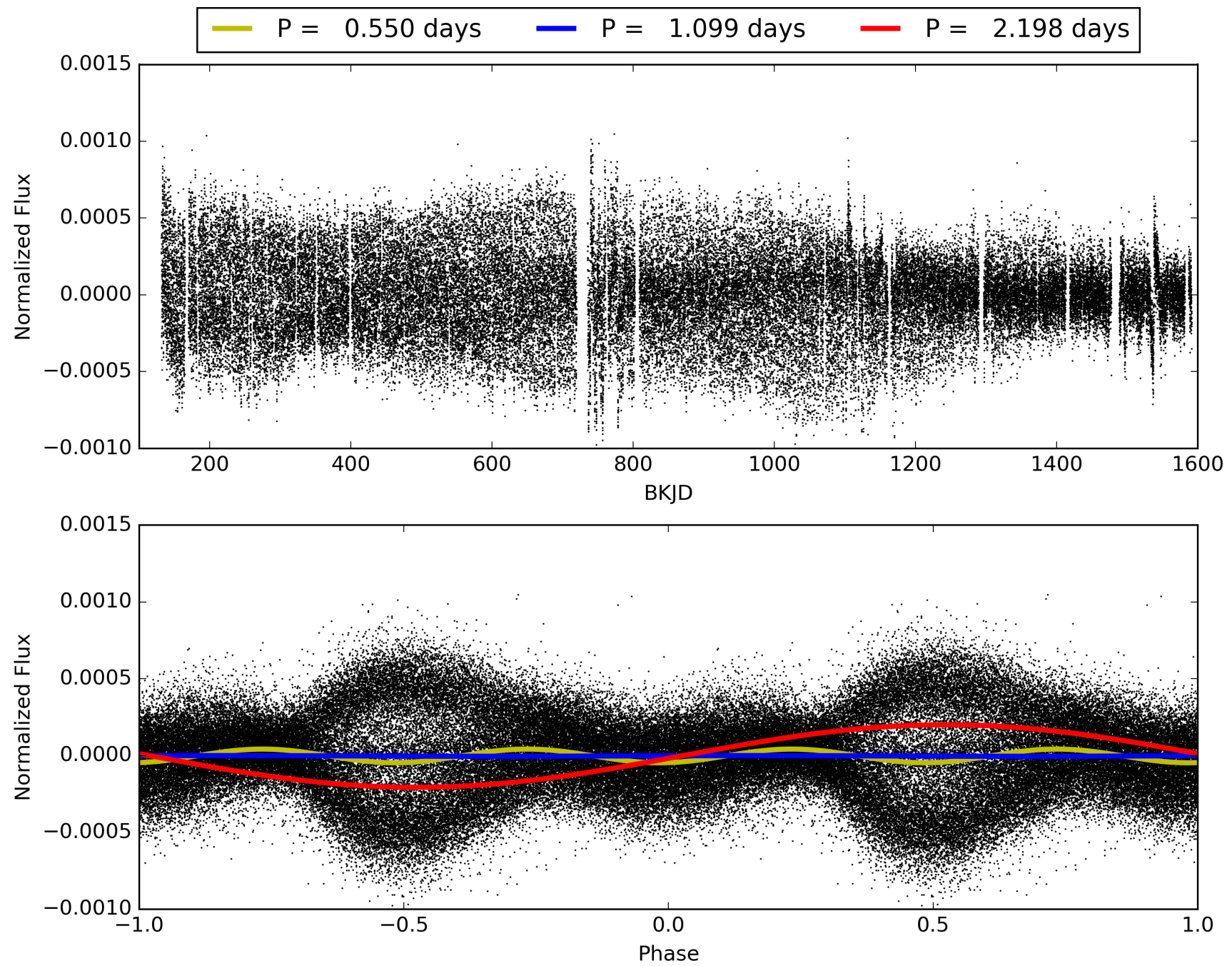
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:24:45 Z

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

TCE 005787972-01, PDC Light Curves

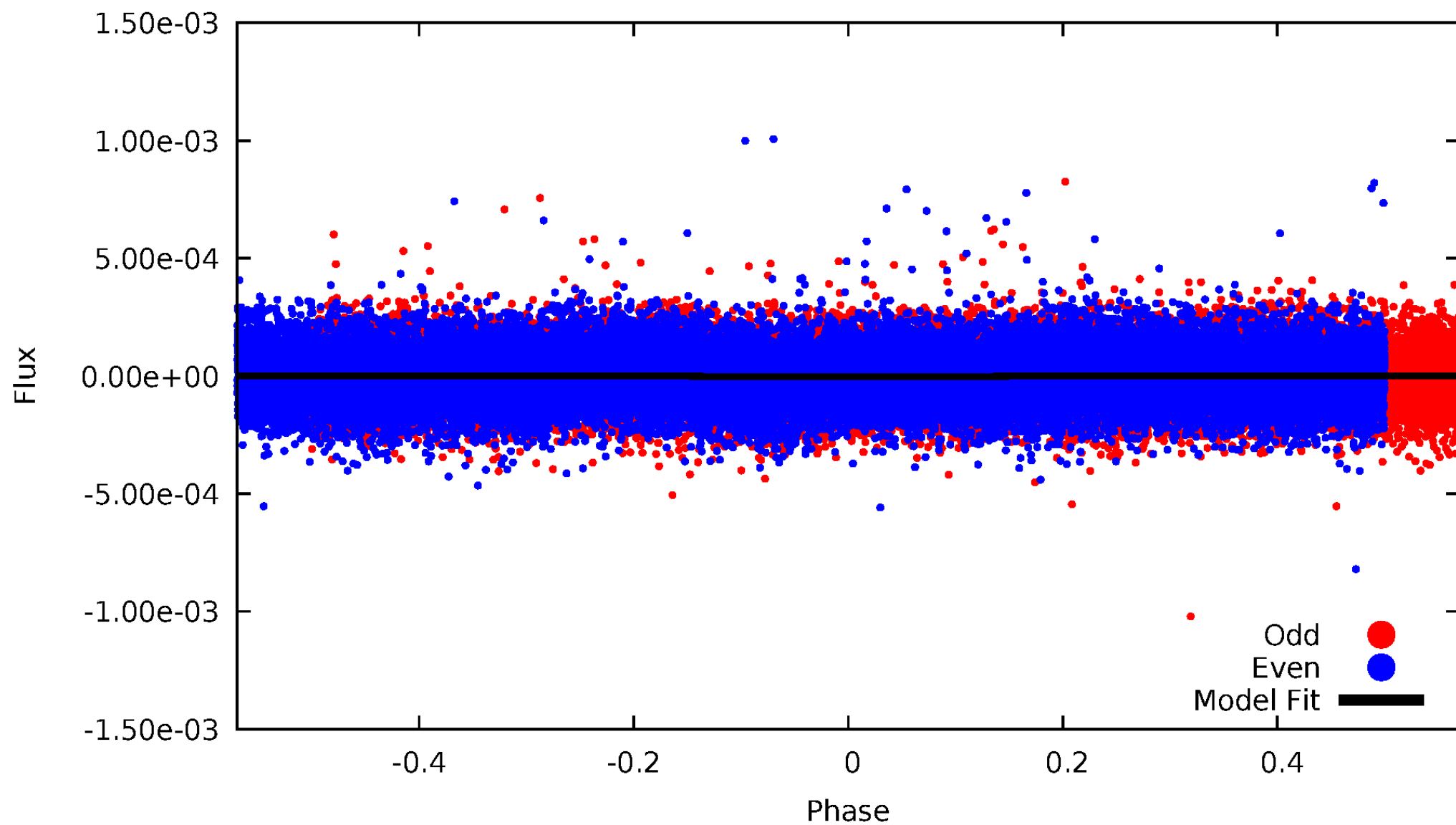


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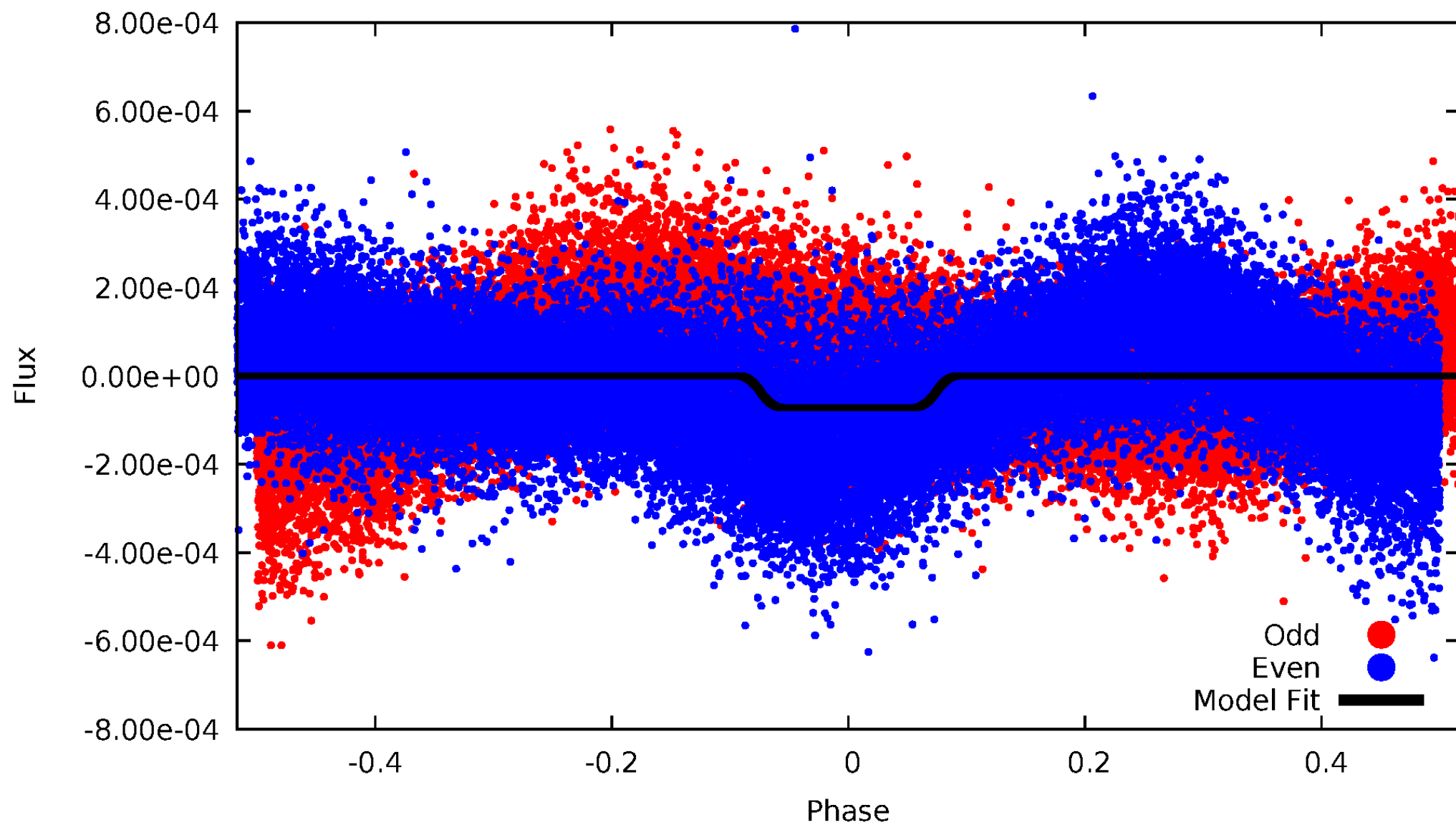
DV Odd/Even

TCE 005787972-01

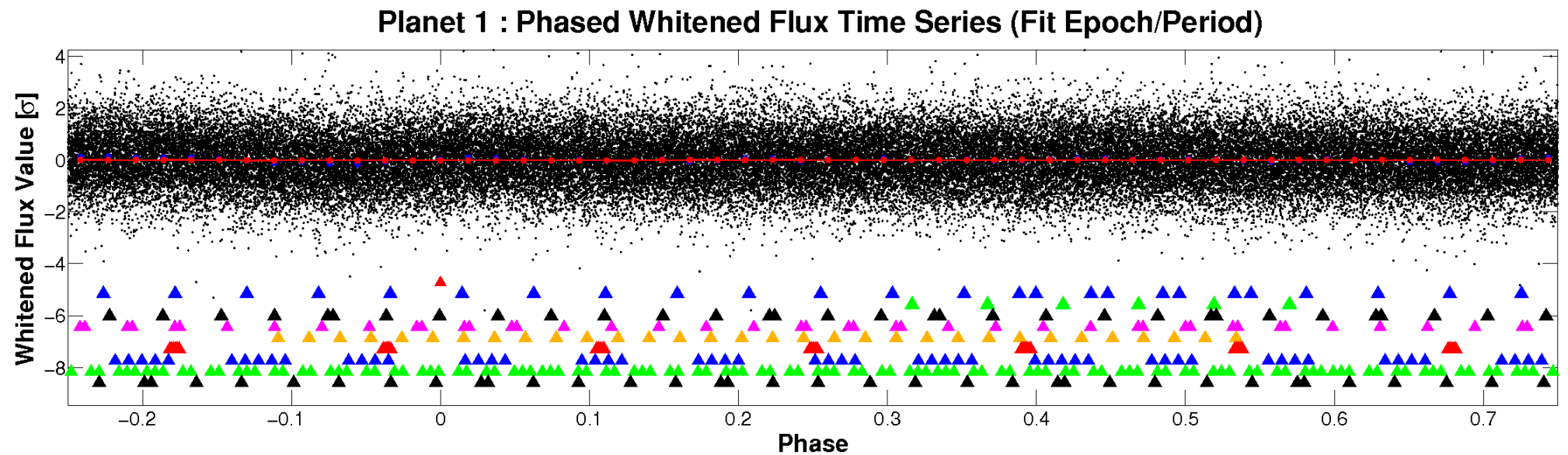
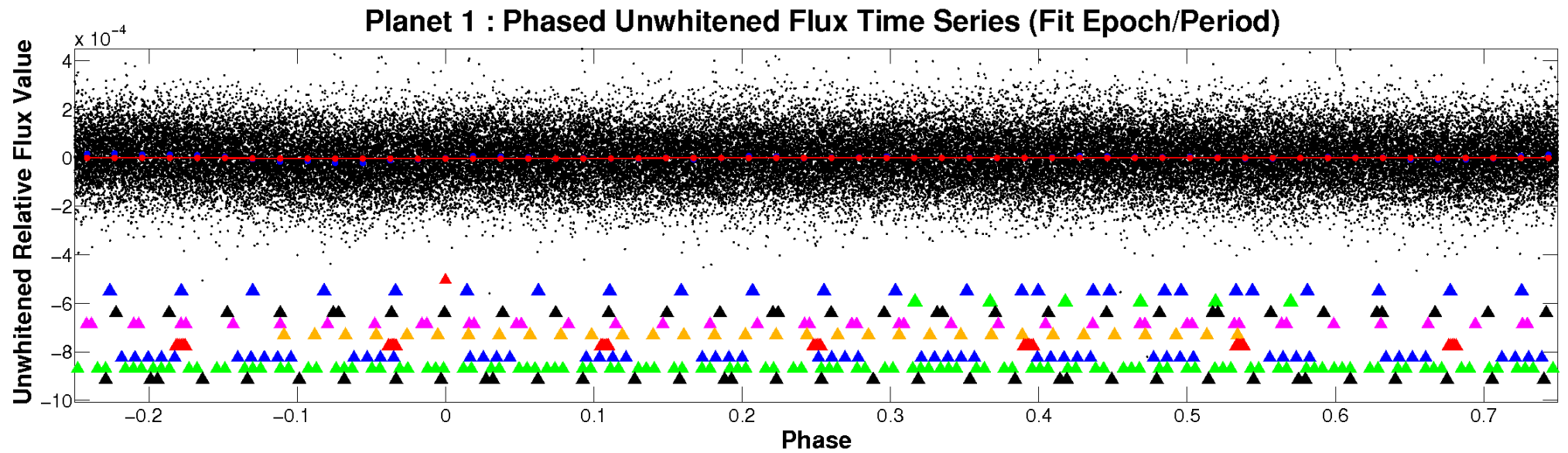


ALT Odd/Even

TCE 005787972-01

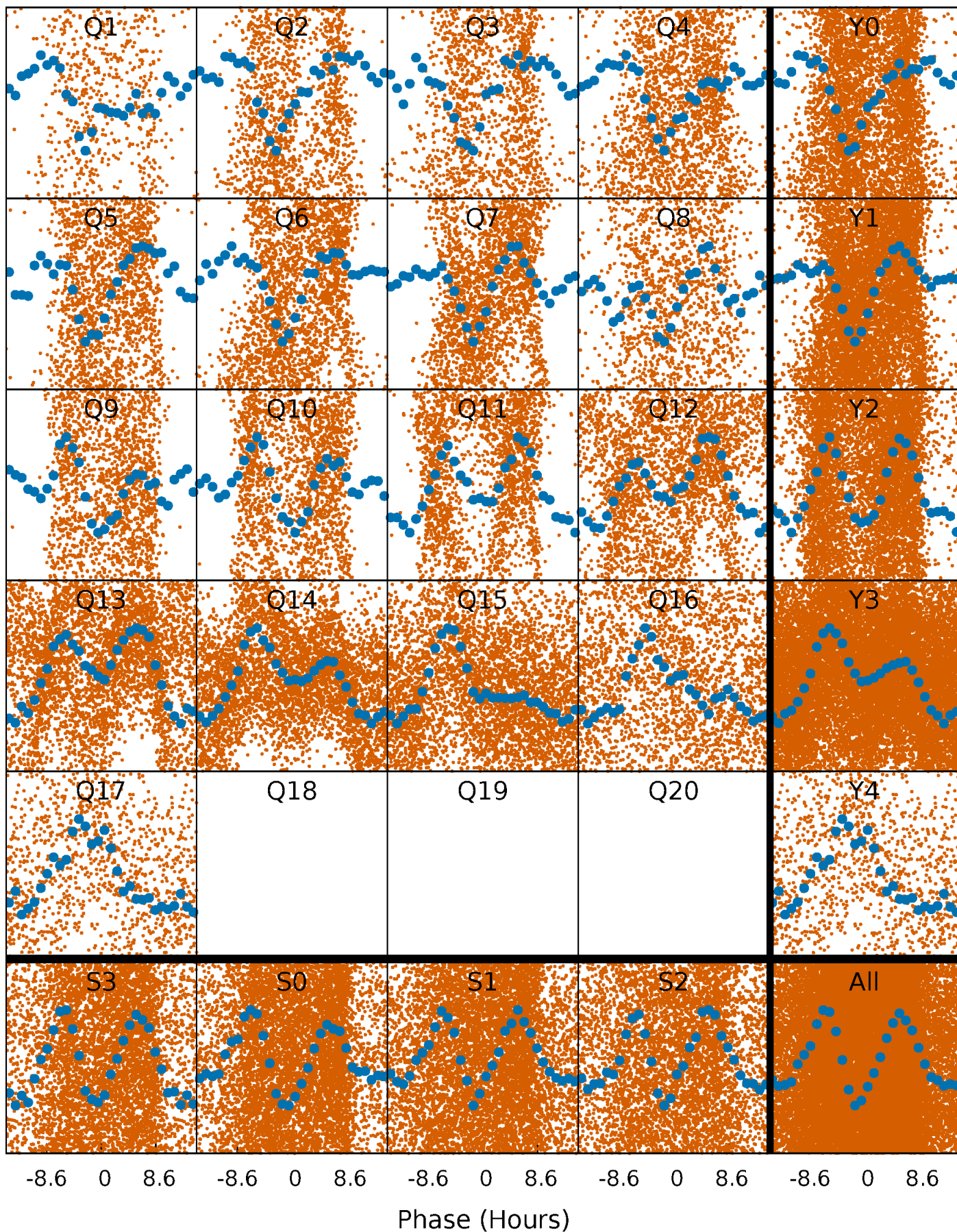


Non-Whitened Vs. Whitened Light Curve



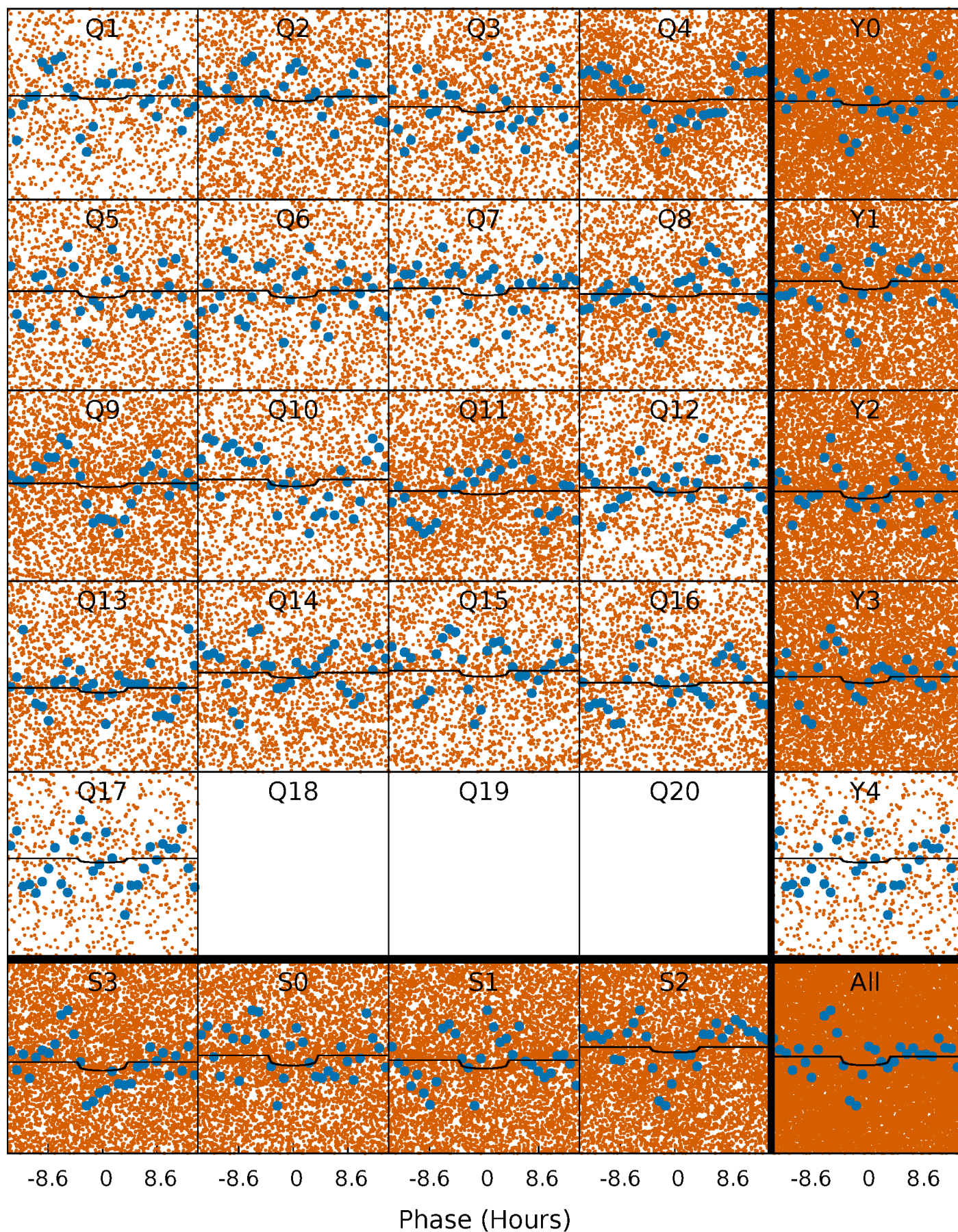
PDC Quarter-Phased Transit Curves

TCE 005787972-01 P= 1.099151 Days $T_0=132.692479$ (BKJD)



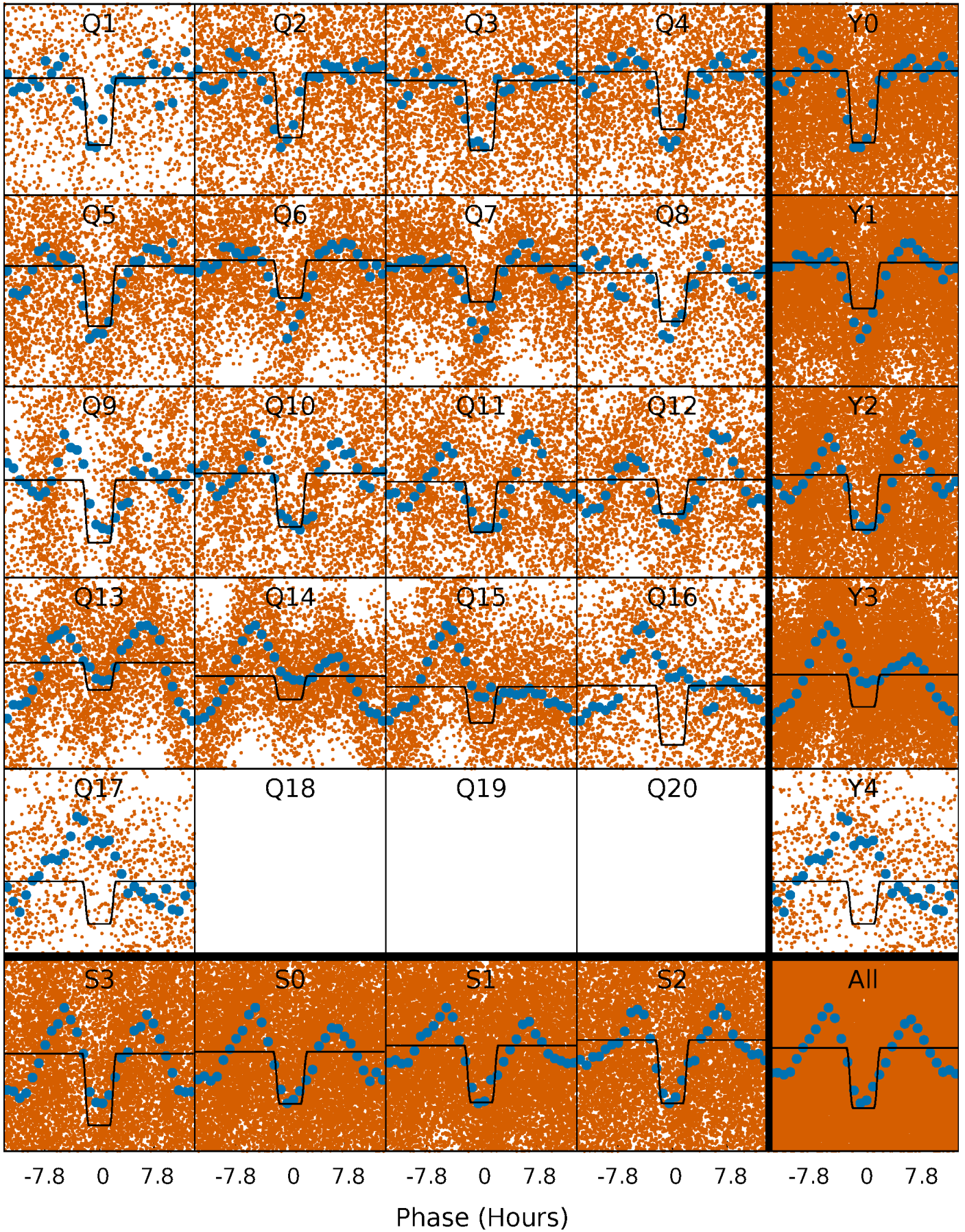
DV Quarter-Phased Transit Curves

TCE 005787972-01 P= 1.099151 Days $T_0=132.692479$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

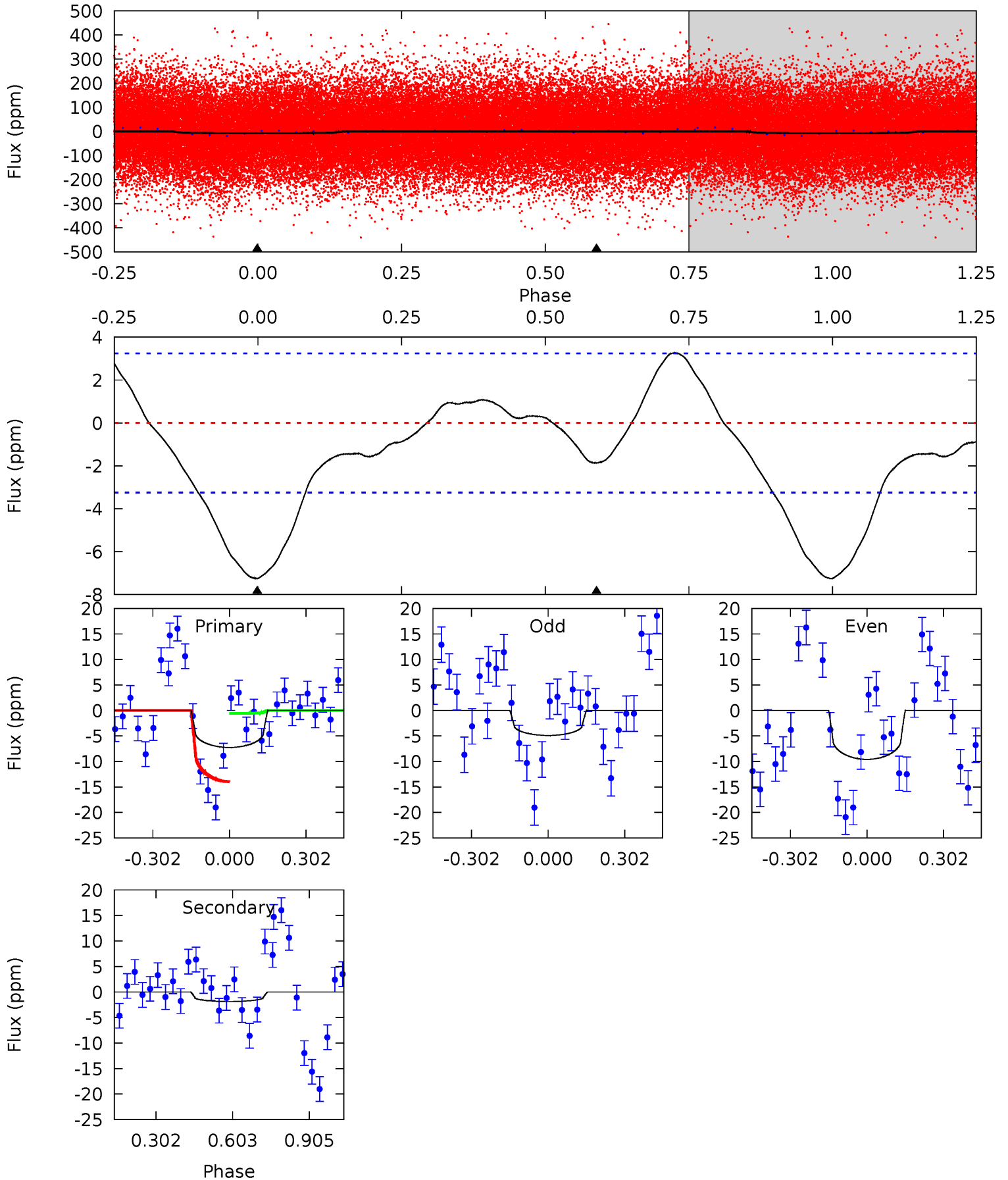
TCE 005787972-01 P= 1.099199 Days $T_0=132.617995$ (BKJD)



DV Model-Shift Uniqueness Test

005787972-01, P = 1.099151 Days, E = 130.494177 Days

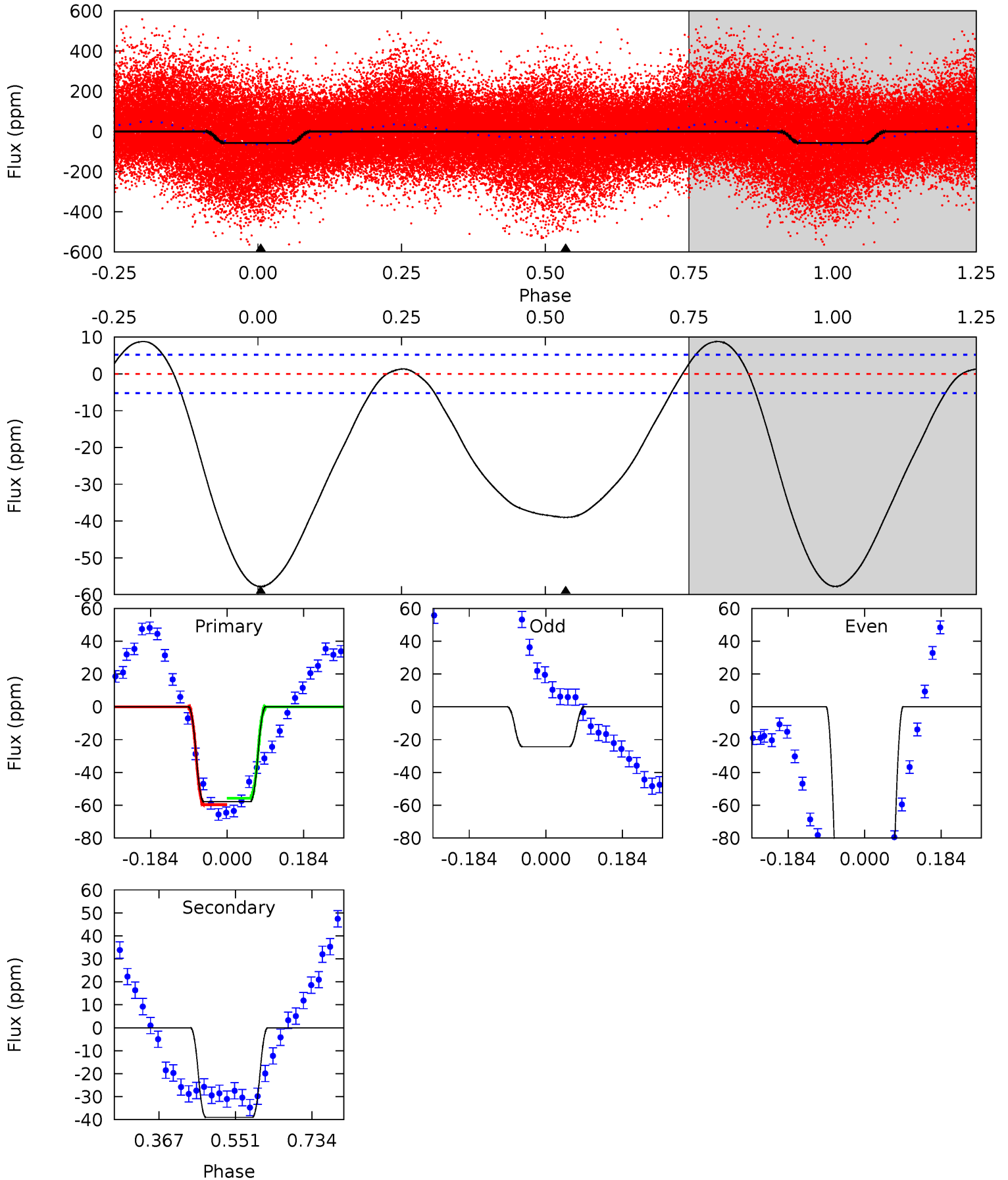
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.68	2.49	0	0	4.33	1.03	0.88	9.68	9.68	2.49	2.49	3.09	1.15	0.31	8.88



Alt Model-Shift Uniqueness Test

005787972-01, P = 1.099199 Days, E = 130.419597 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.2	33.2	0	0	4.44	1.33	5.47	49.2	49.2	33.2	33.2	57.3	1.27	0.13	1.71



Stellar Parameters For KIC 005787972

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6726^{+70}_{-90}	$4.131^{+0.130}_{-0.130}$	$-0.200^{+0.150}_{-0.150}$	$1.634^{+0.312}_{-0.284}$	$1.328^{+0.098}_{-0.122}$	$0.428^{+0.262}_{-0.163}$
	+1%/-1%	+3%/-3%	+75%/-75%	+19%/-17%	+7%/-9%	+61%/-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 005787972-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2±1	$0.33^{+0.23}_{-0.19}$	3504^{+175}_{-167}	5624^{+3385}_{-1450}	$4.584^{+20.924}_{-3.275}$
Alt.	-39±1	$1.50^{+0.33}_{-0.28}$	3505^{+170}_{-166}	5676^{+588}_{-423}	$4.956^{+2.564}_{-1.605}$

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

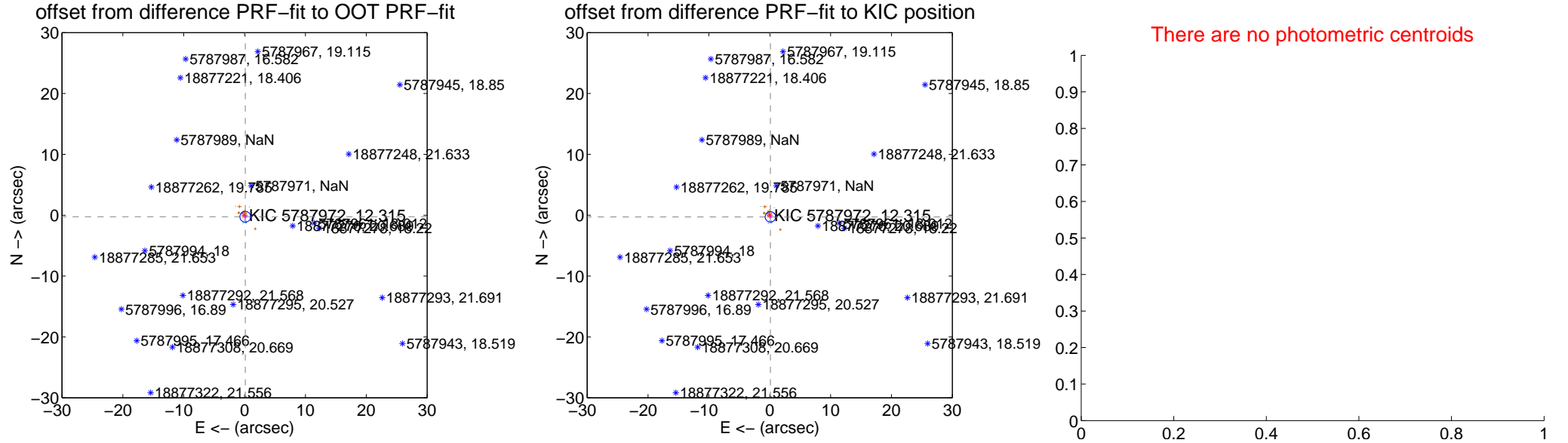
DV Centroid Data

Supplemental centroid analysis for 005787972-01. Kepler magnitude: 12.31. Transit SNR 2.79

There are 10 quarters with good PRF difference image offsets

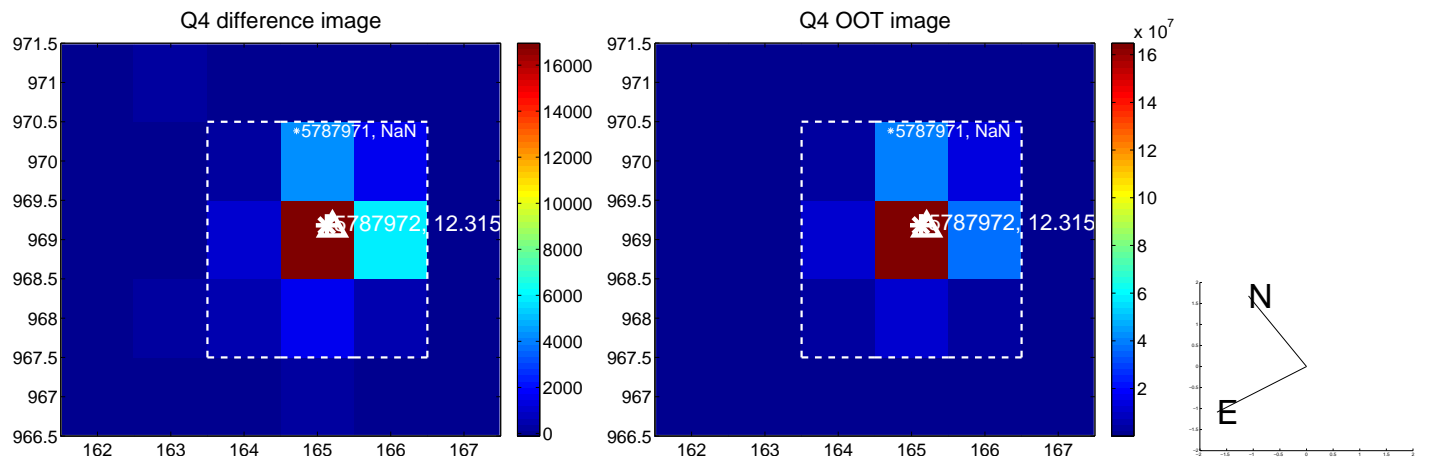
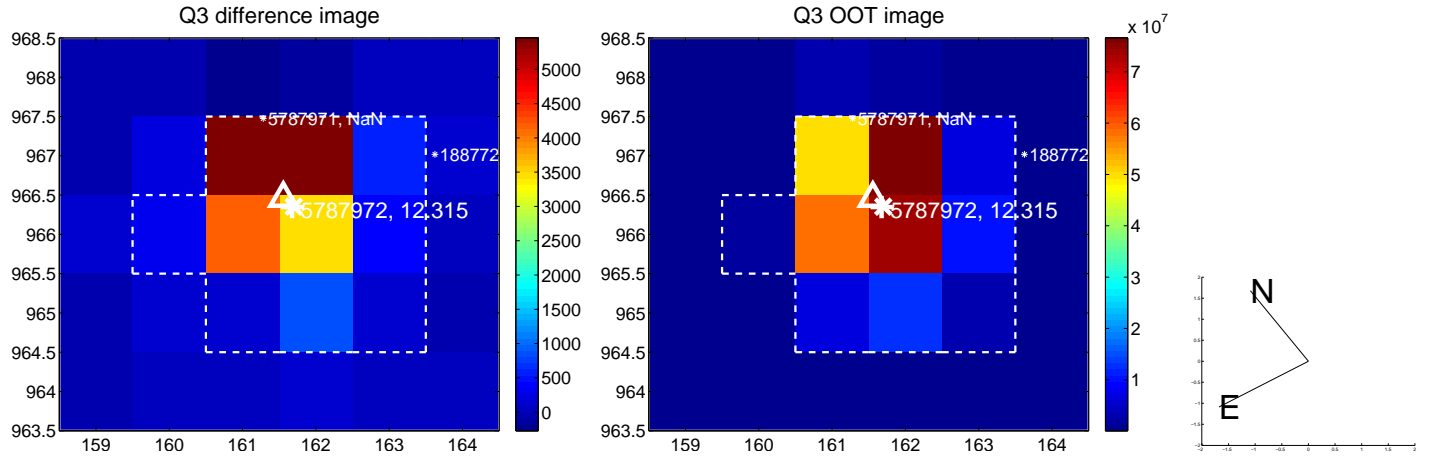
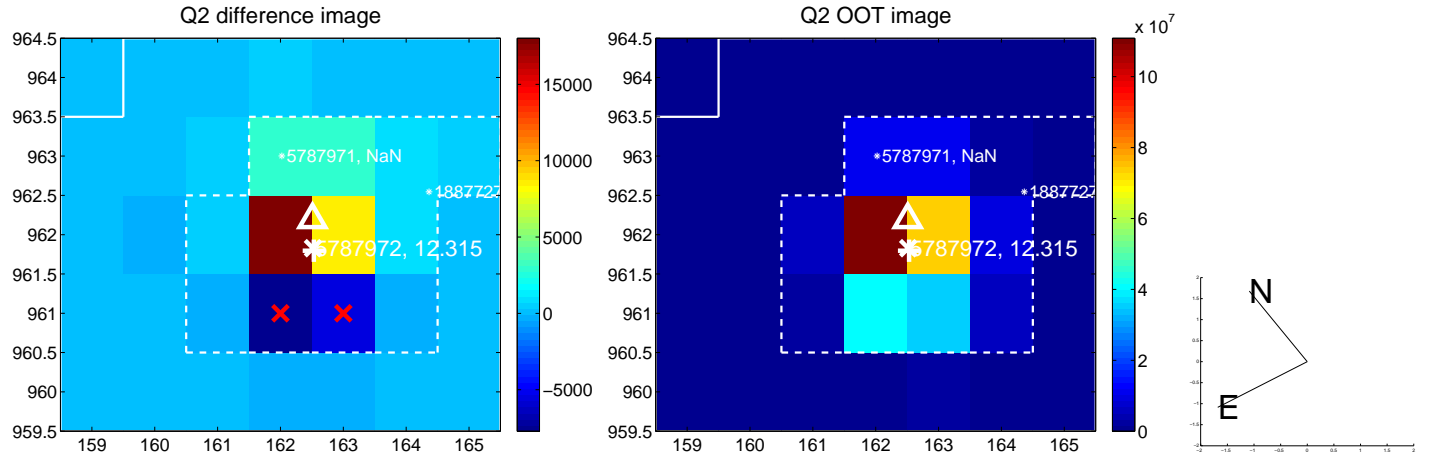
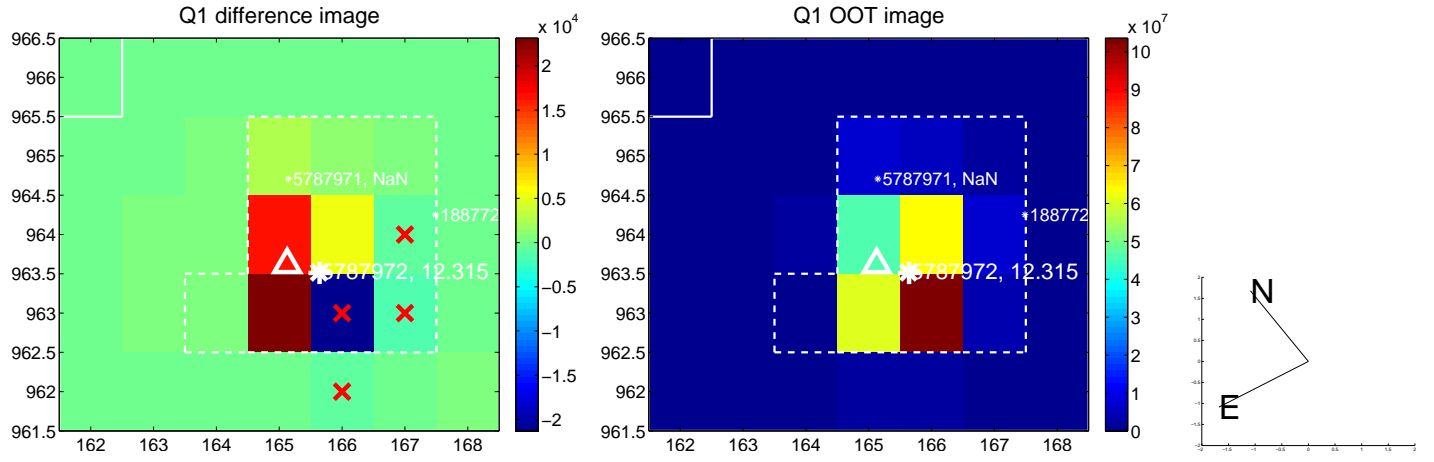
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.277 ± 0.295	0.94	-0.117 ± 0.193	-0.251 ± 0.262
PRF-fit source offset from KIC position	0.293 ± 0.285	1.03	-0.102 ± 0.192	-0.275 ± 0.256
photometric centroid source offset	—	—	—	—

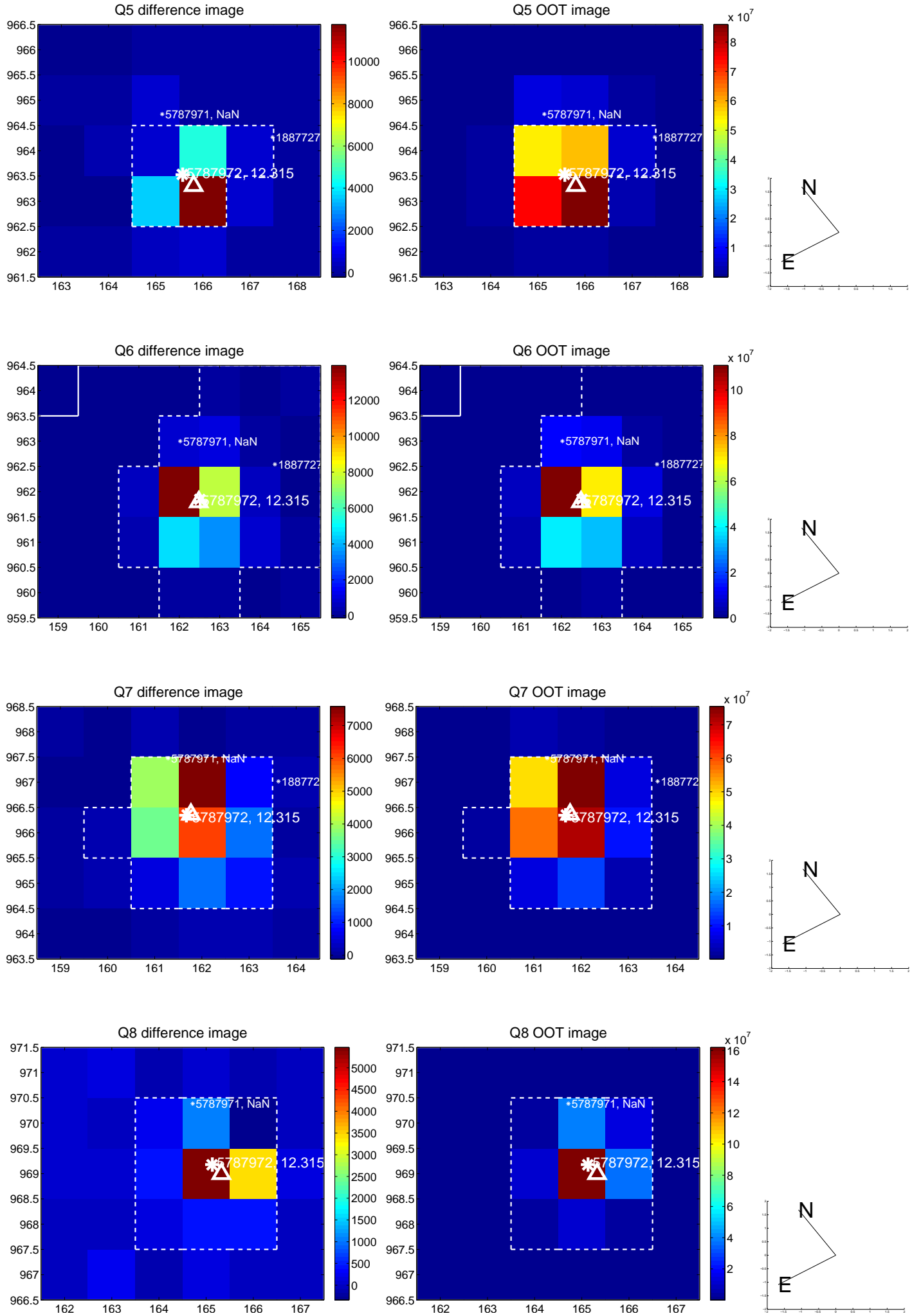


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

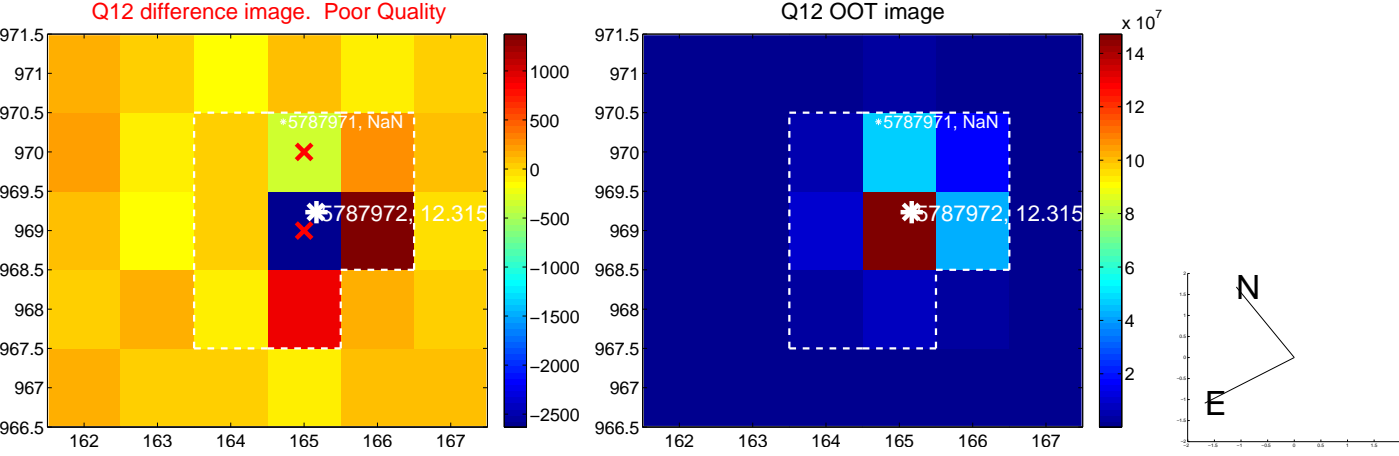
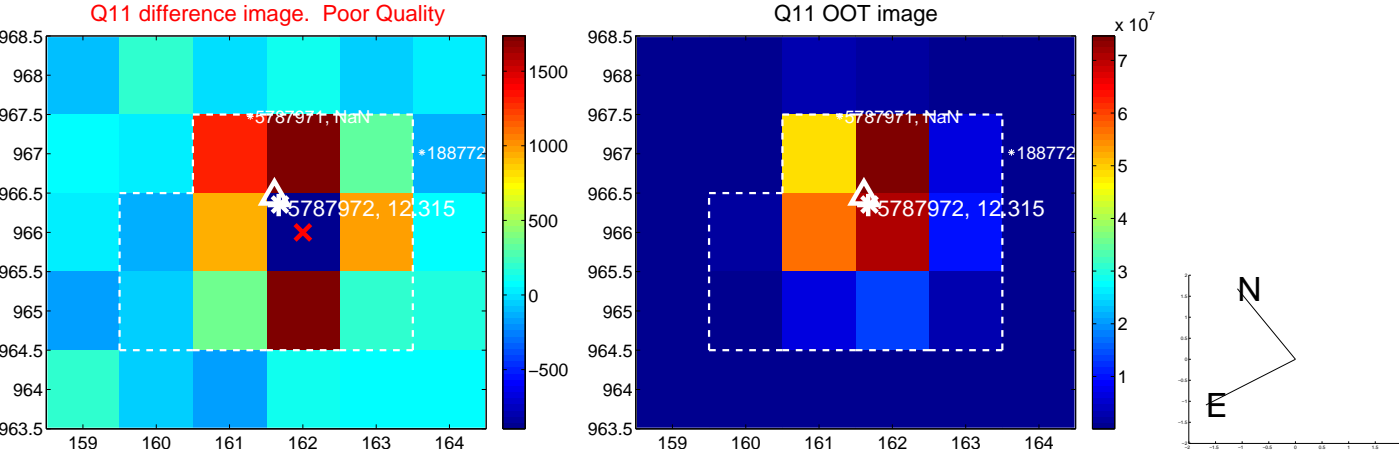
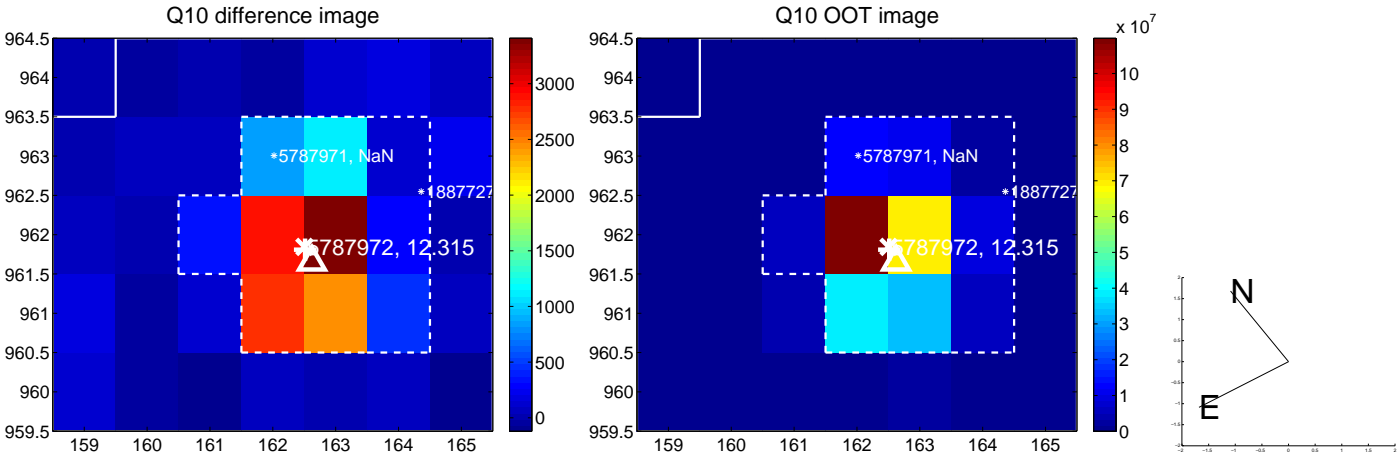
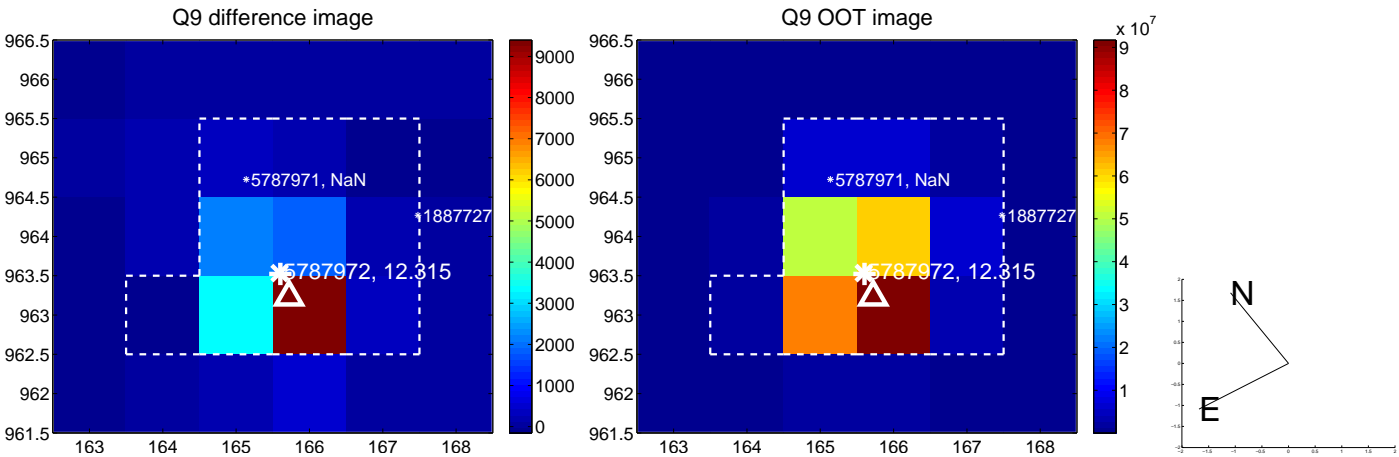
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



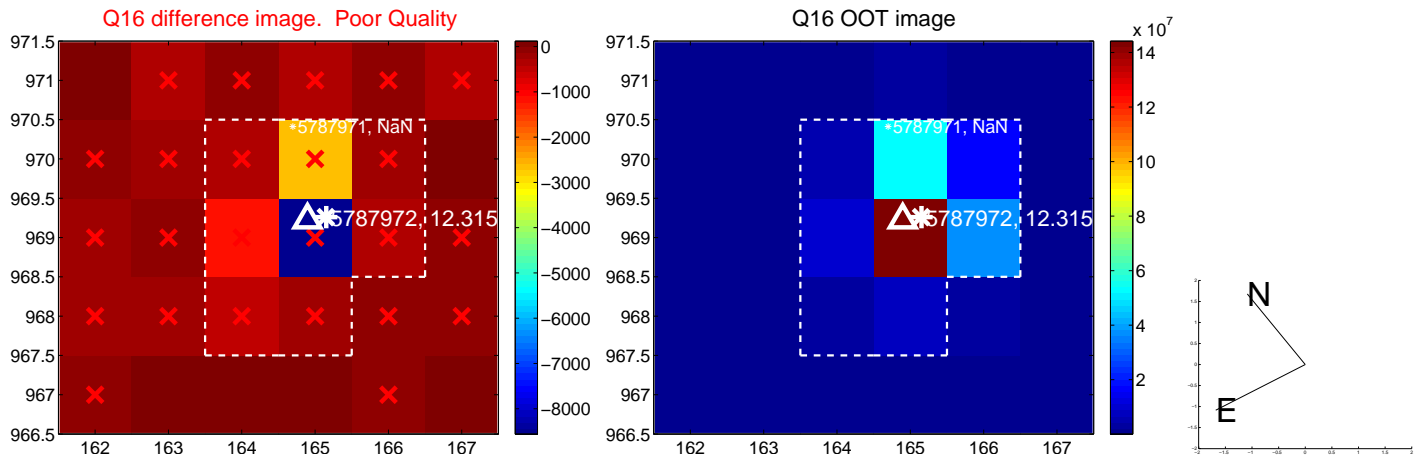
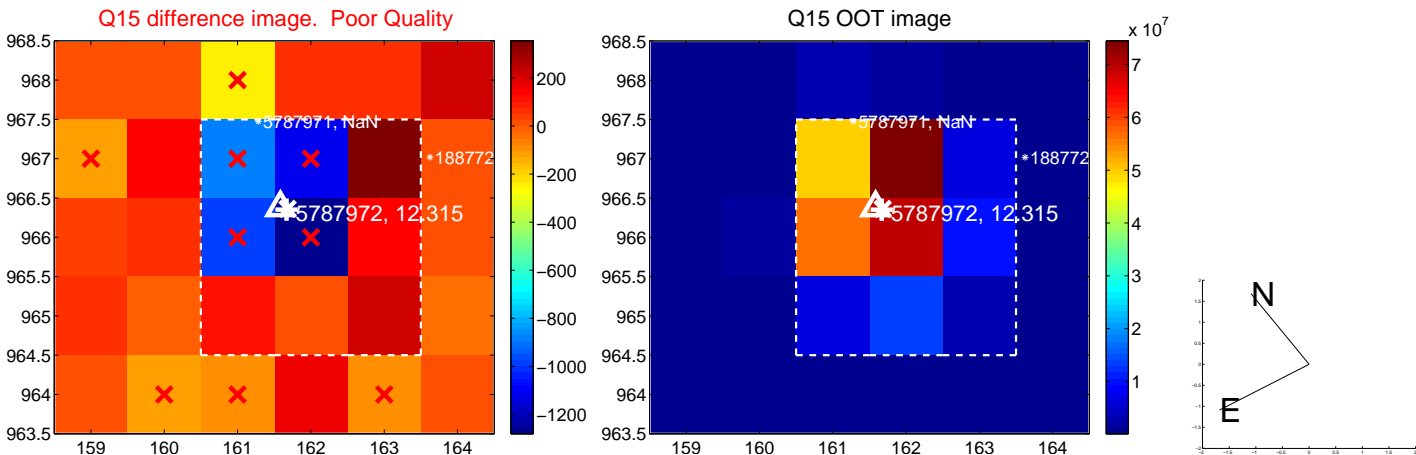
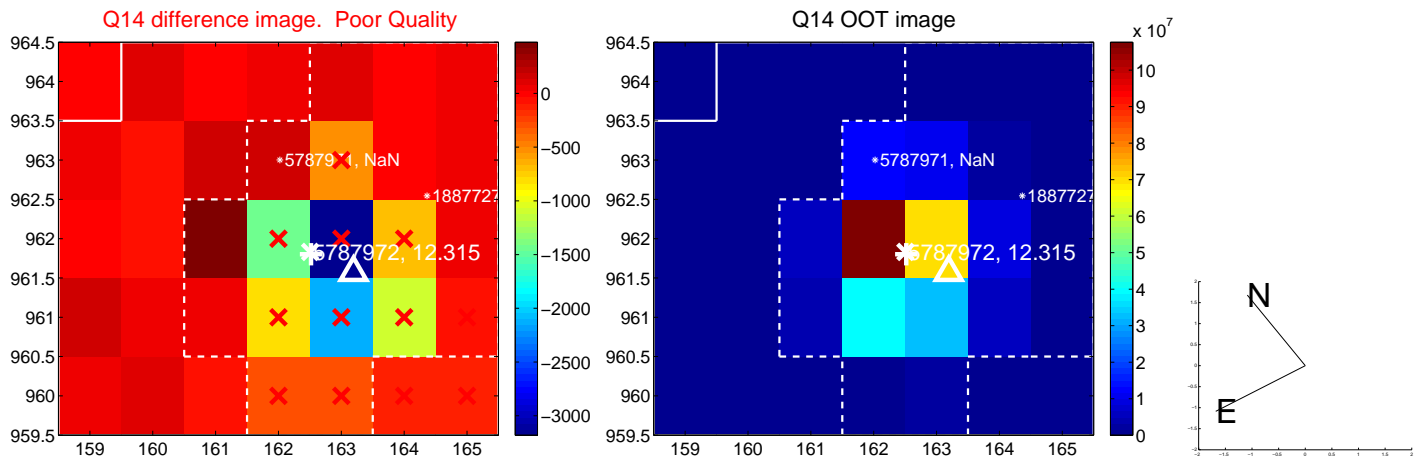
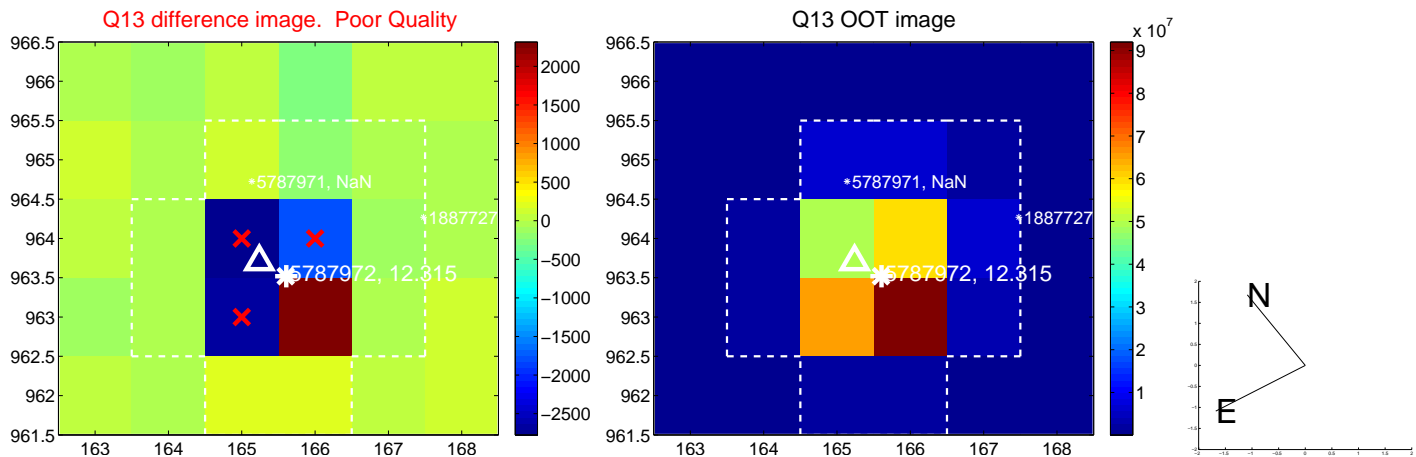
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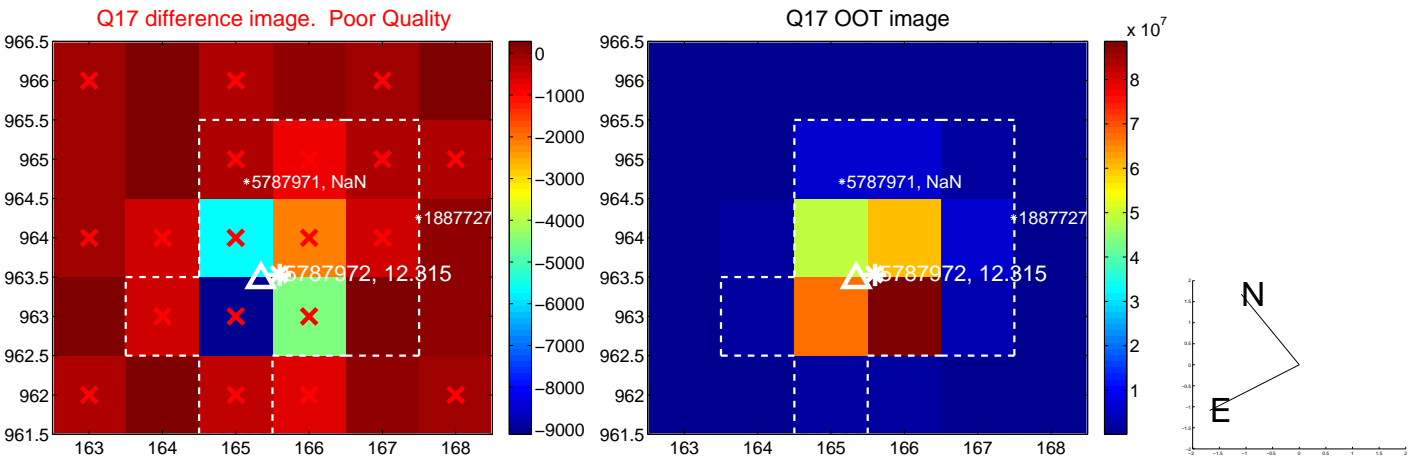
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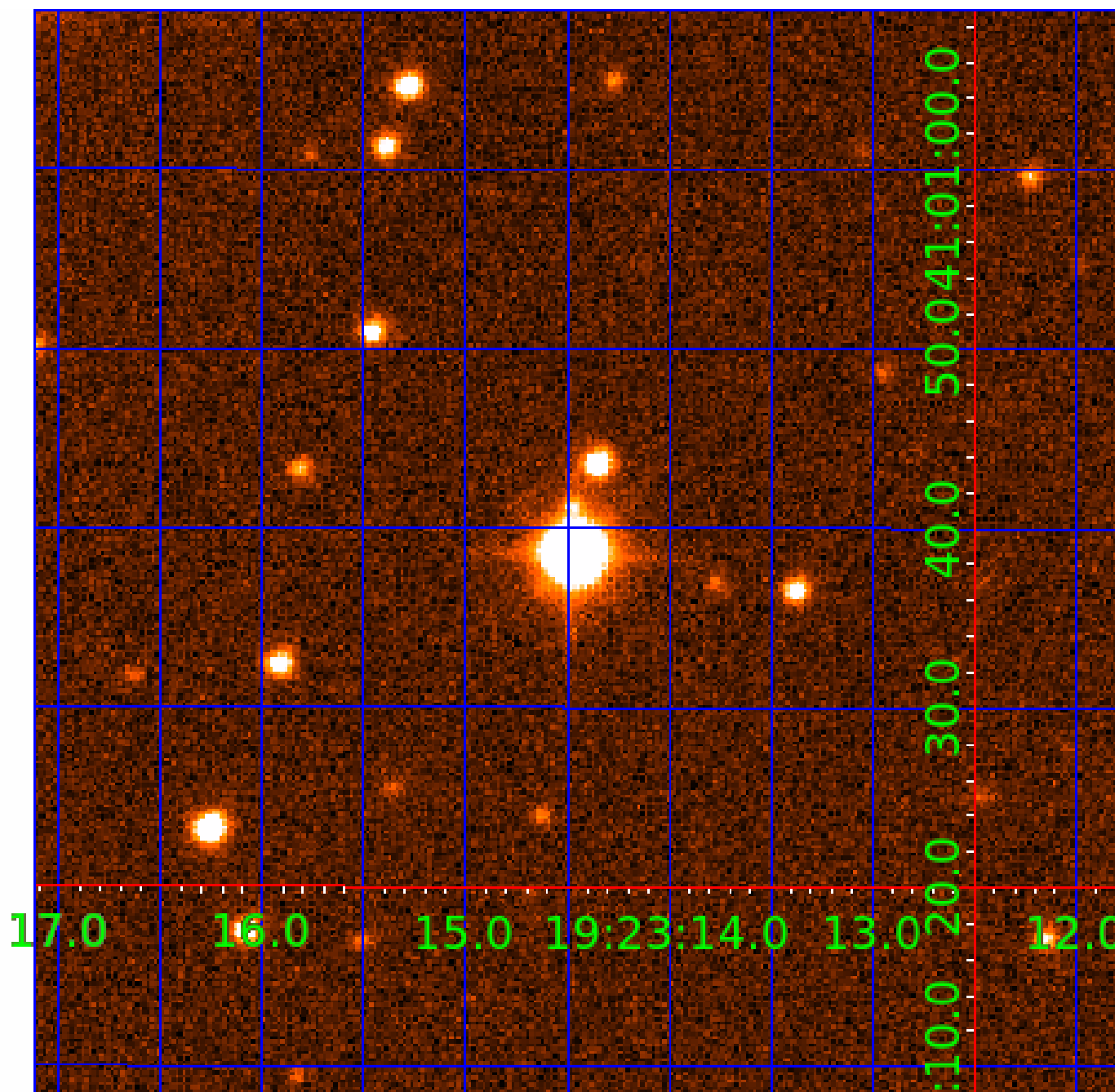
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folded centroid time series figure for this object.

UKIRT Image

Declination



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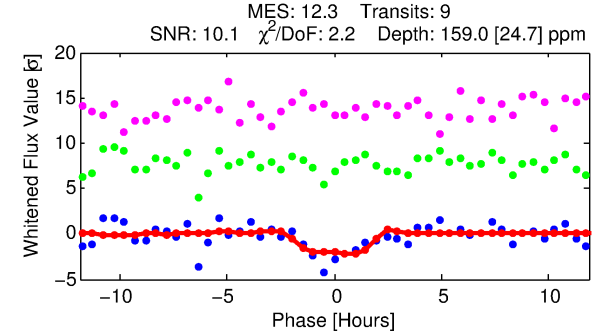
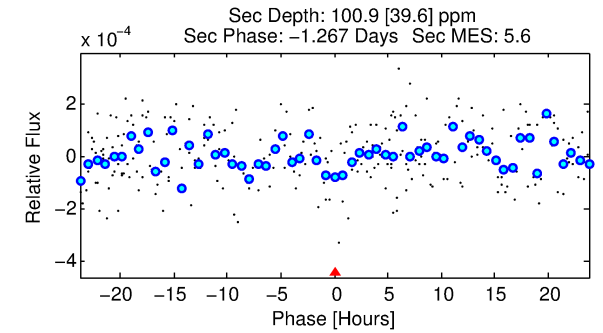
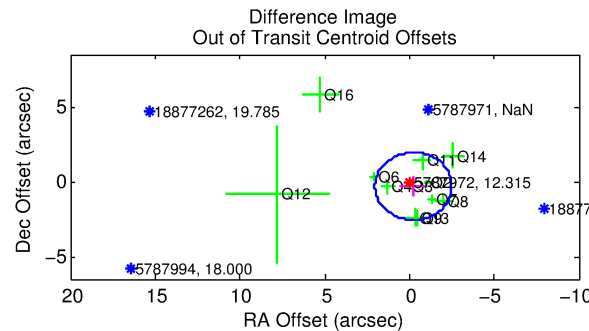
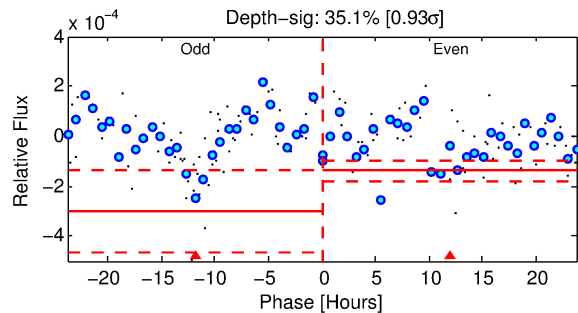
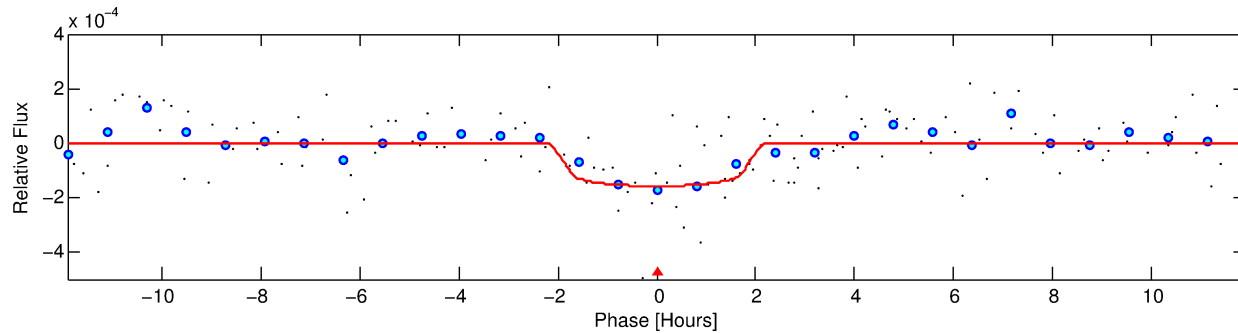
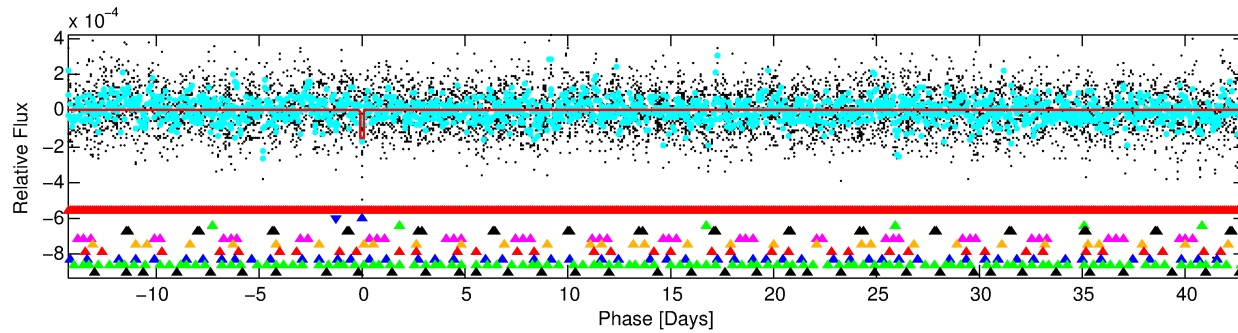
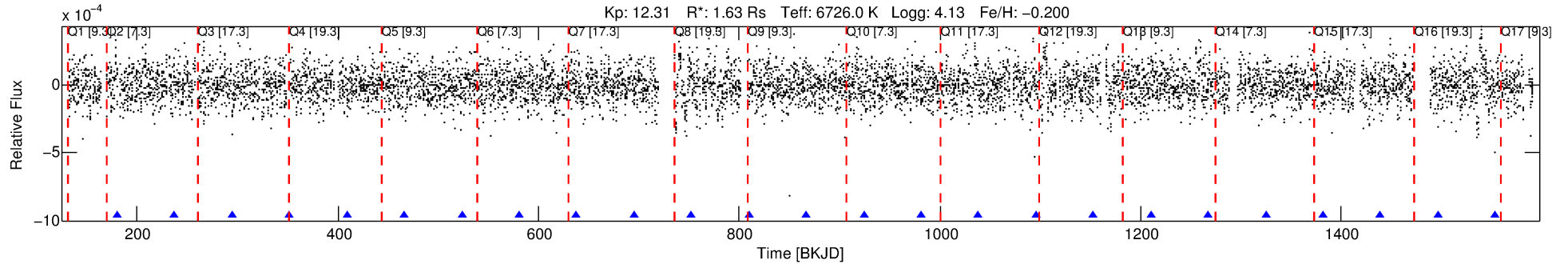
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005787972-02

No Significant Match Found

DV One-Page Summary

KIC: 5787972 Candidate: 2 of 10 Period: 57.209 d



DV Fit Results:

Period = 57.20877 [0.00071] d
Epoch = 180.3831 [0.0118] BKJD
Rp/R* = 0.0126 [0.0174]
a/R* = 73.00 [580.67]
b = 0.77 [4.32]
Seff = 48.25 [11.71]
Teff = 672 [41] K
Rp = 2.25 [3.13] Re
a = 0.3185 [0.0515] AU
Ag = 1114.59 [3120.37] [0.36σ]
Teffp = 6004 [4188] K [1.27σ]

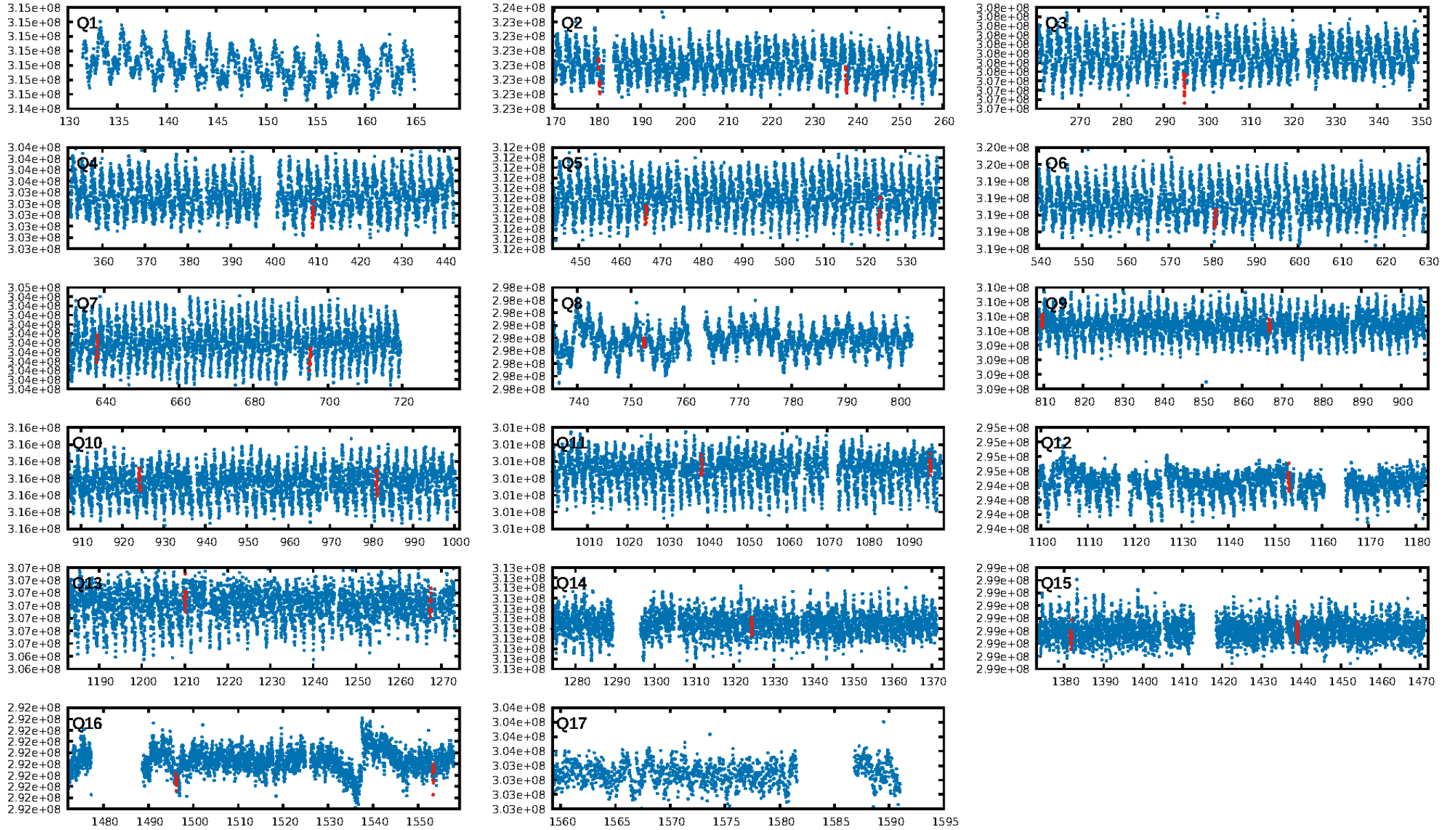
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [59.25σ]
LongPeriod-sig: 100.0% [577.23σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 0.7595
Centroid-sig: 40.4%
Centroid-so: 0.434 arcsec [1.01σ]
OotOffset-rm: 0.384 arcsec [0.51σ]
OotOffset-st: 3/3/4/2 [12]
KicOffset-rm: 0.385 arcsec [0.50σ]
KicOffset-st: 3/3/4/2 [12]
DiffImageQuality-fgm: 0.42 [5/12]
DiffImageOverlap-fno: 0.07 [1/15]

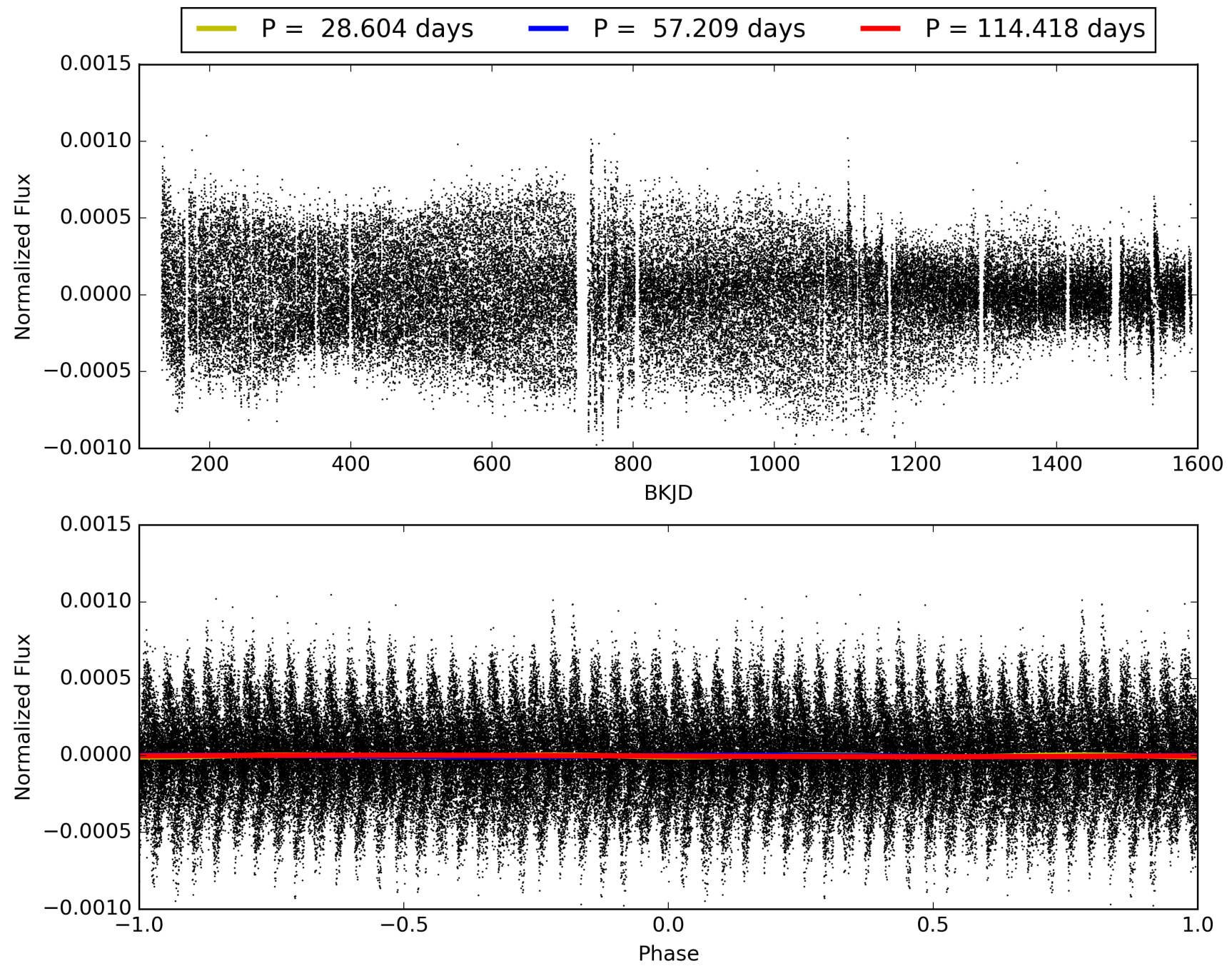
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:24:56 Z

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

TCE 005787972-02, PDC Light Curves

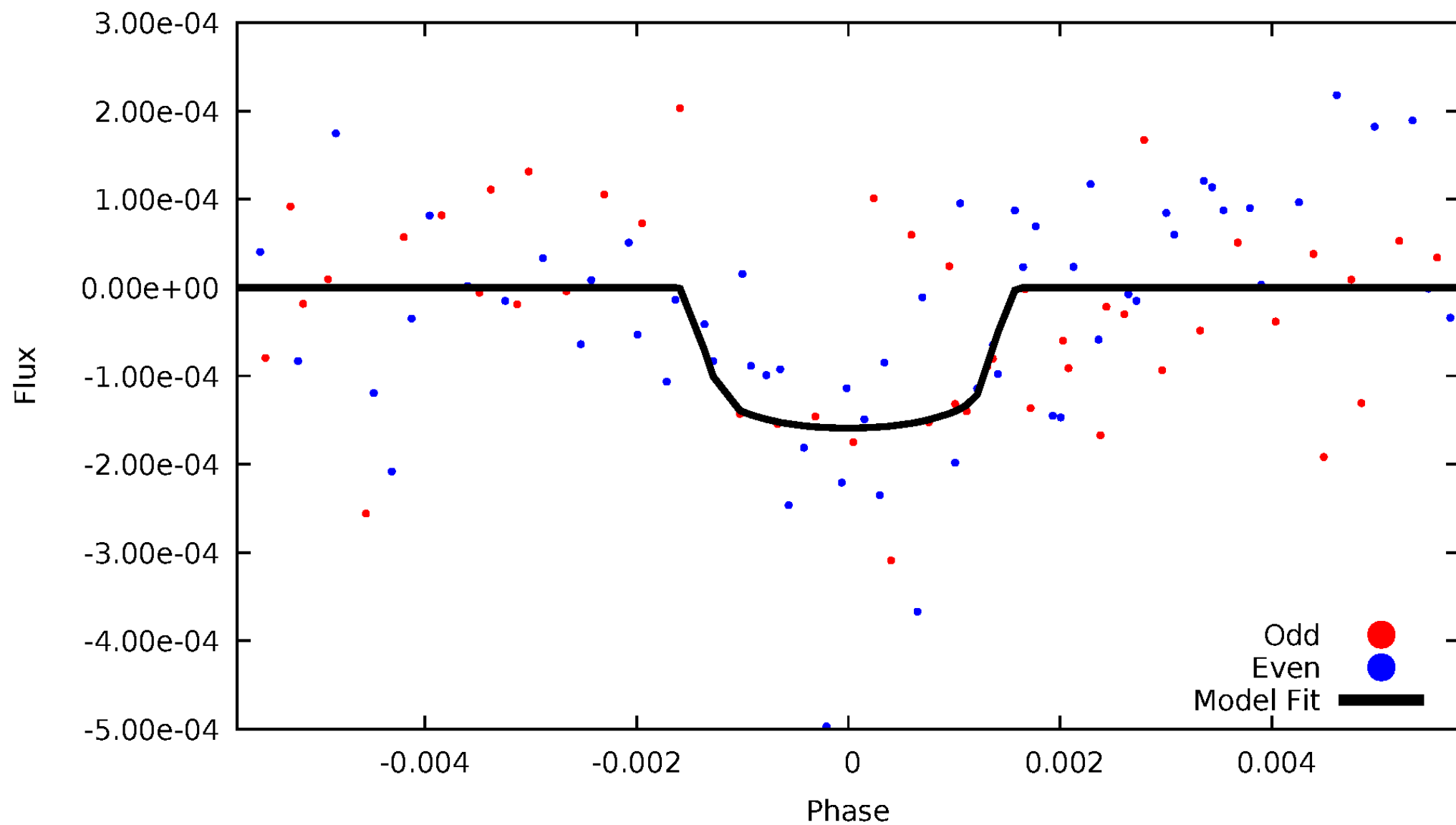


TCE 005787972-02



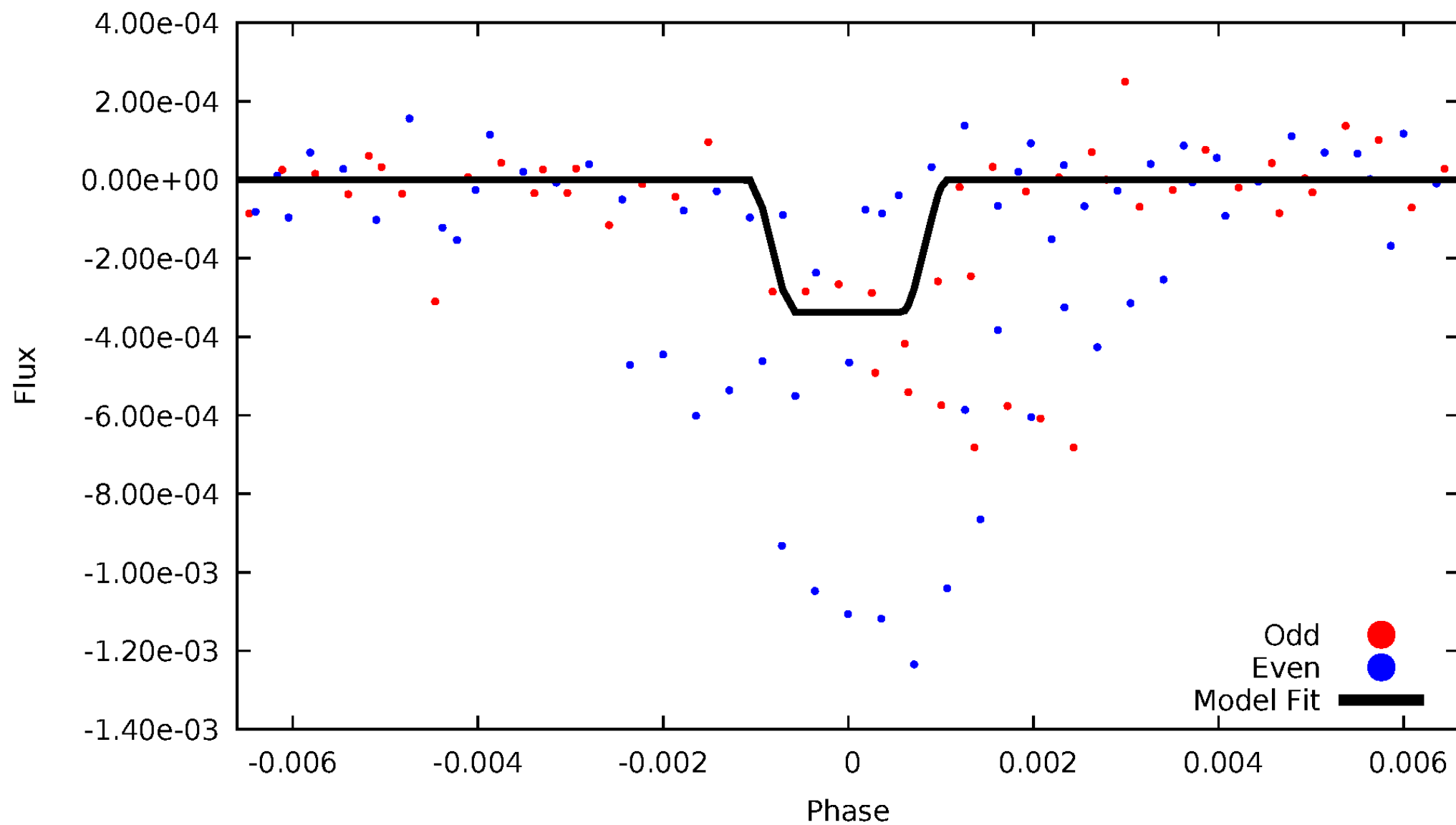
DV Odd/Even

TCE 005787972-02



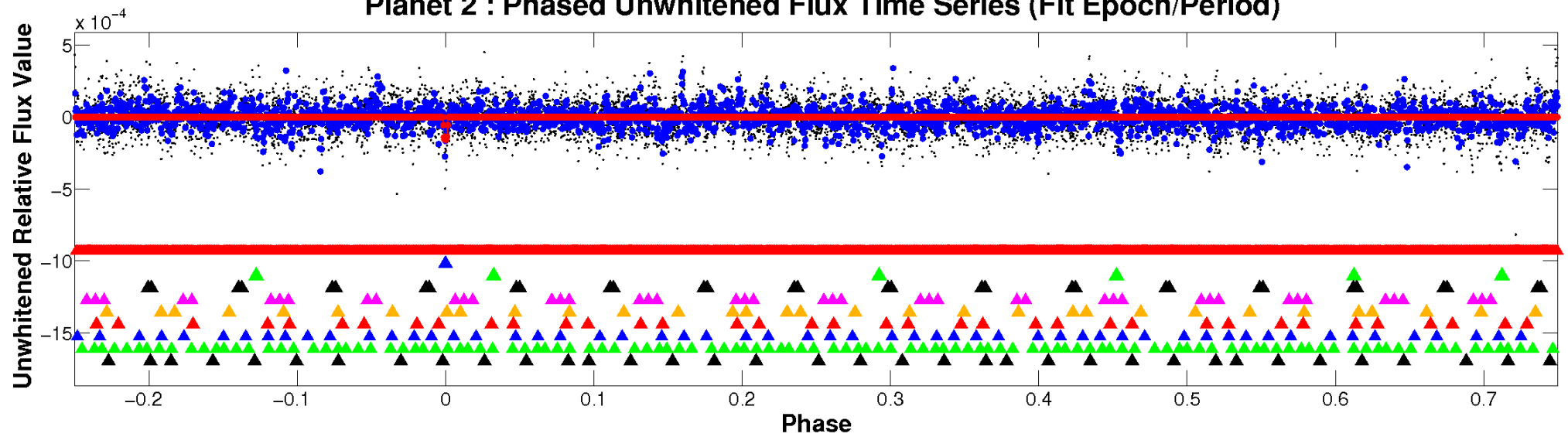
ALT Odd/Even

TCE 005787972-02

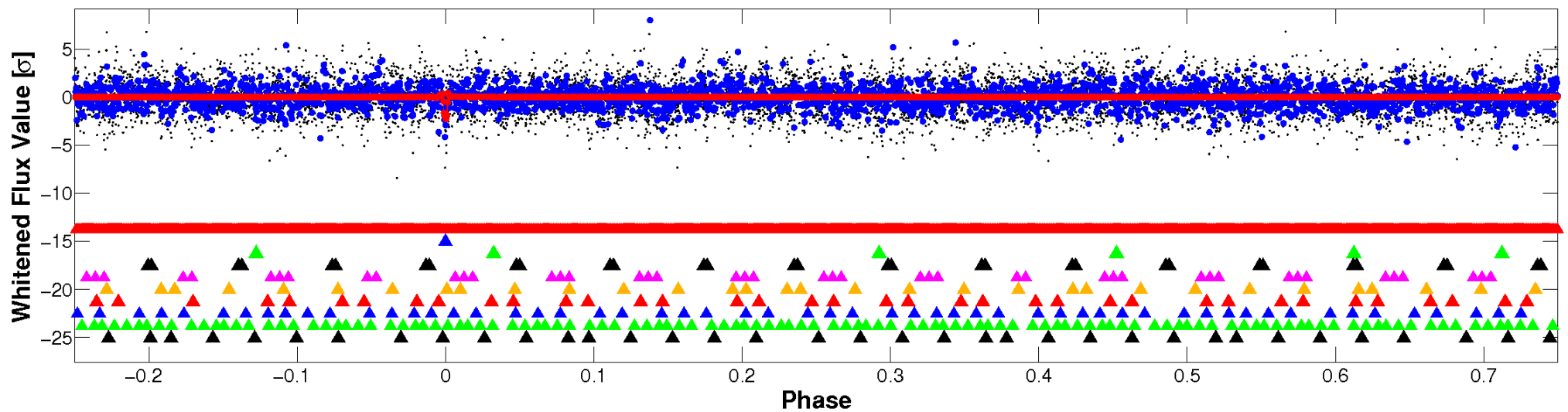


Non-Whitened Vs. Whitened Light Curve

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

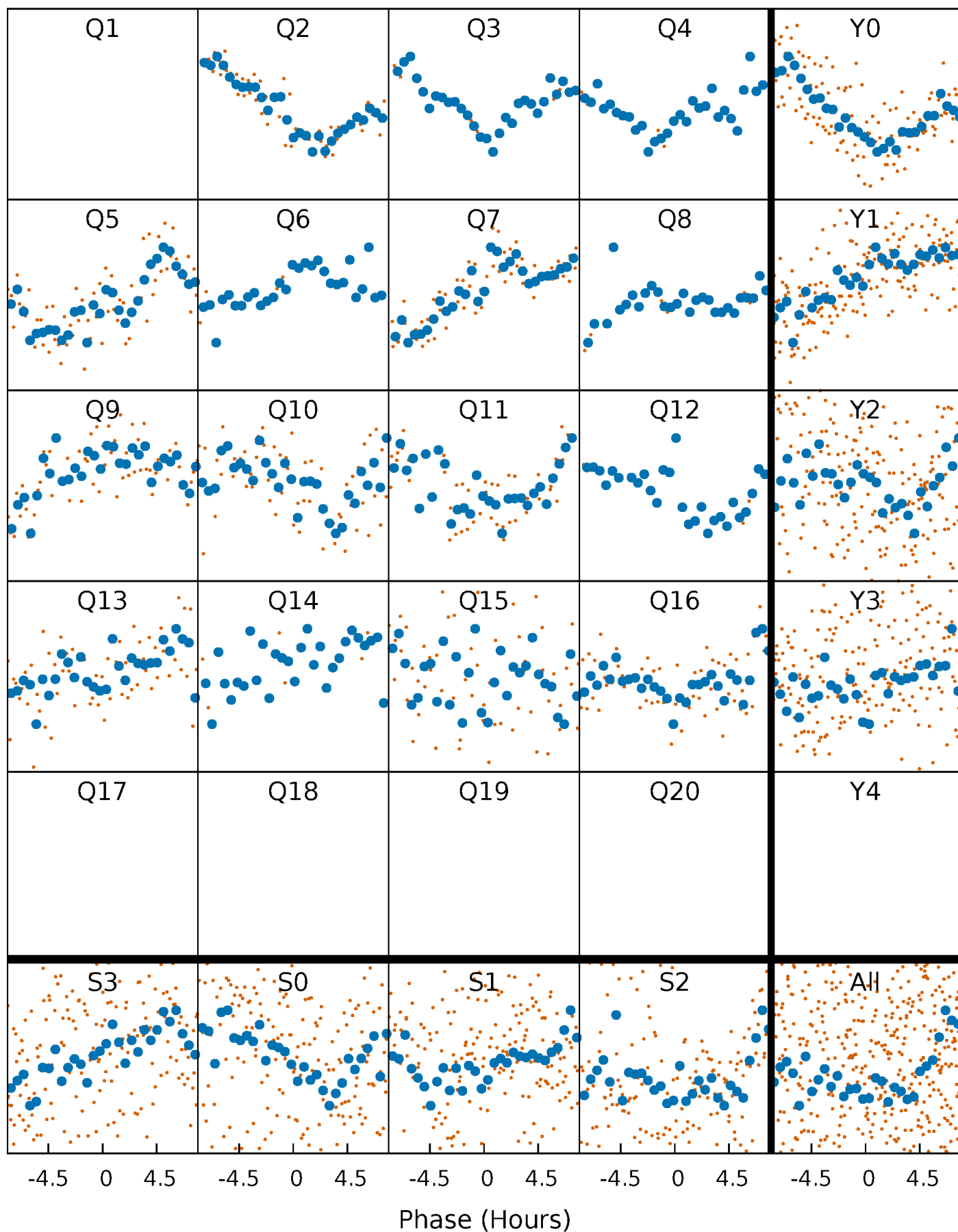


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



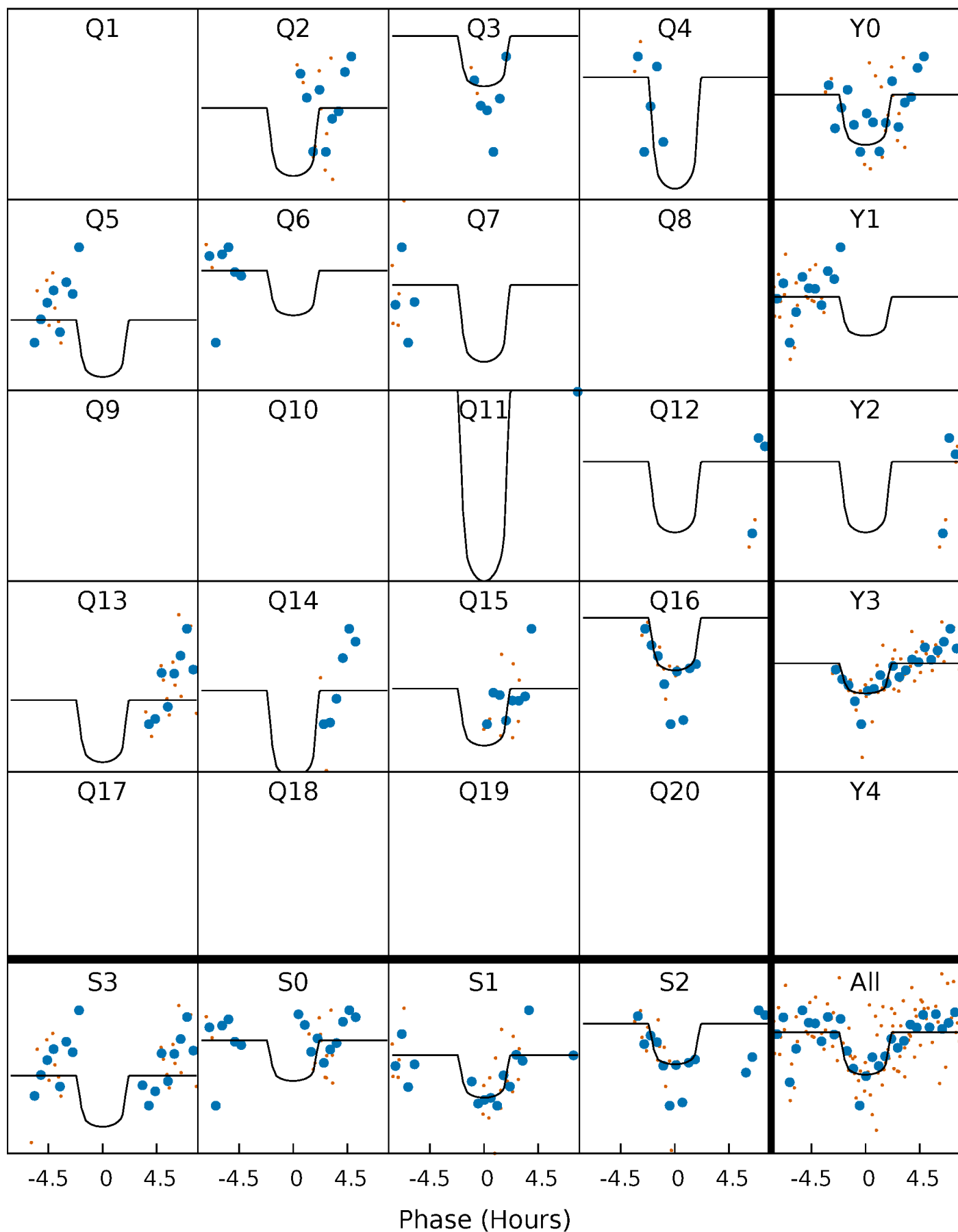
PDC Quarter-Phased Transit Curves

TCE 005787972-02 P= 57.208769 Days $T_0=180.383070$ (BKJD)



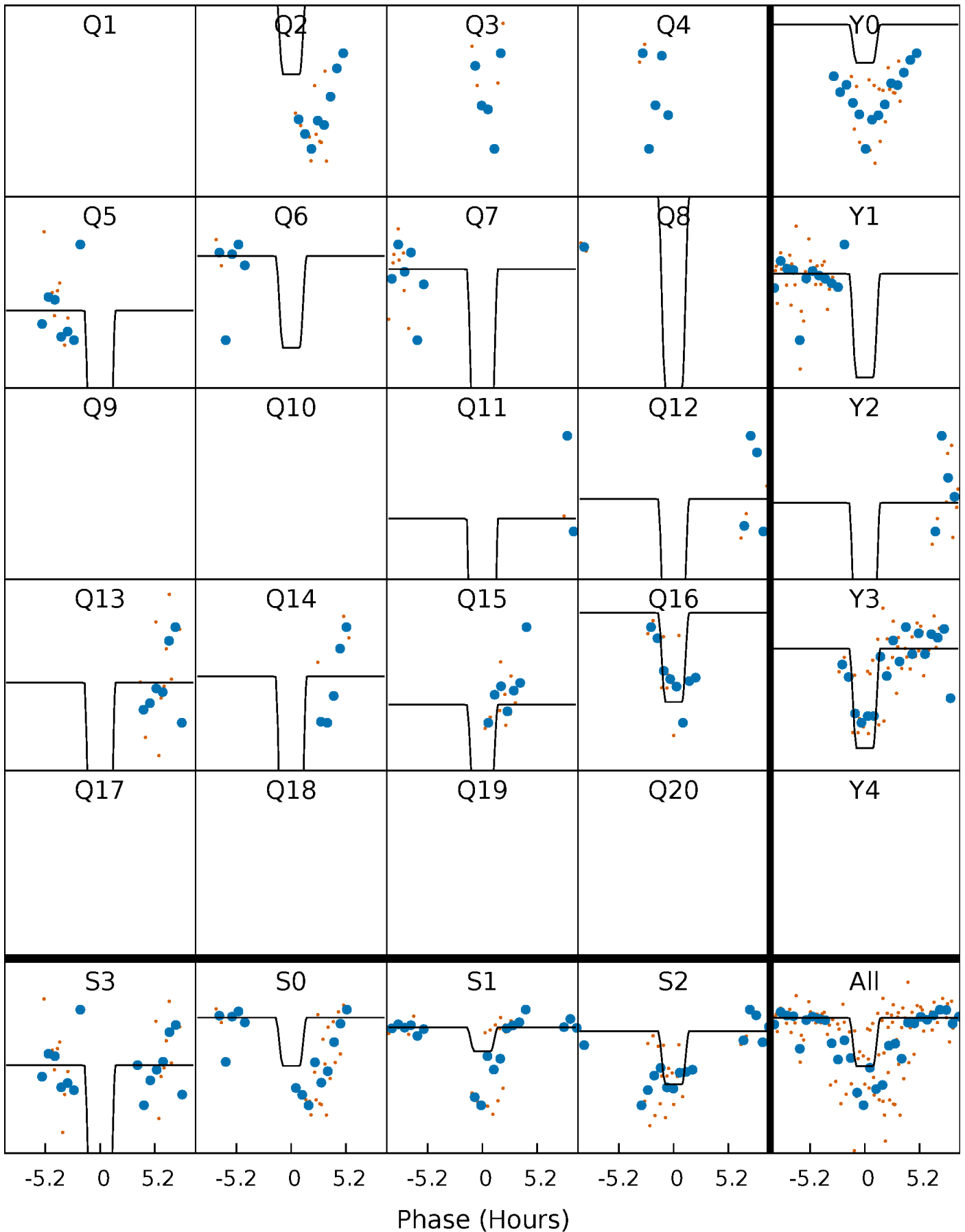
DV Quarter-Phased Transit Curves

TCE 005787972-02 P= 57.208769 Days $T_0=180.383070$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

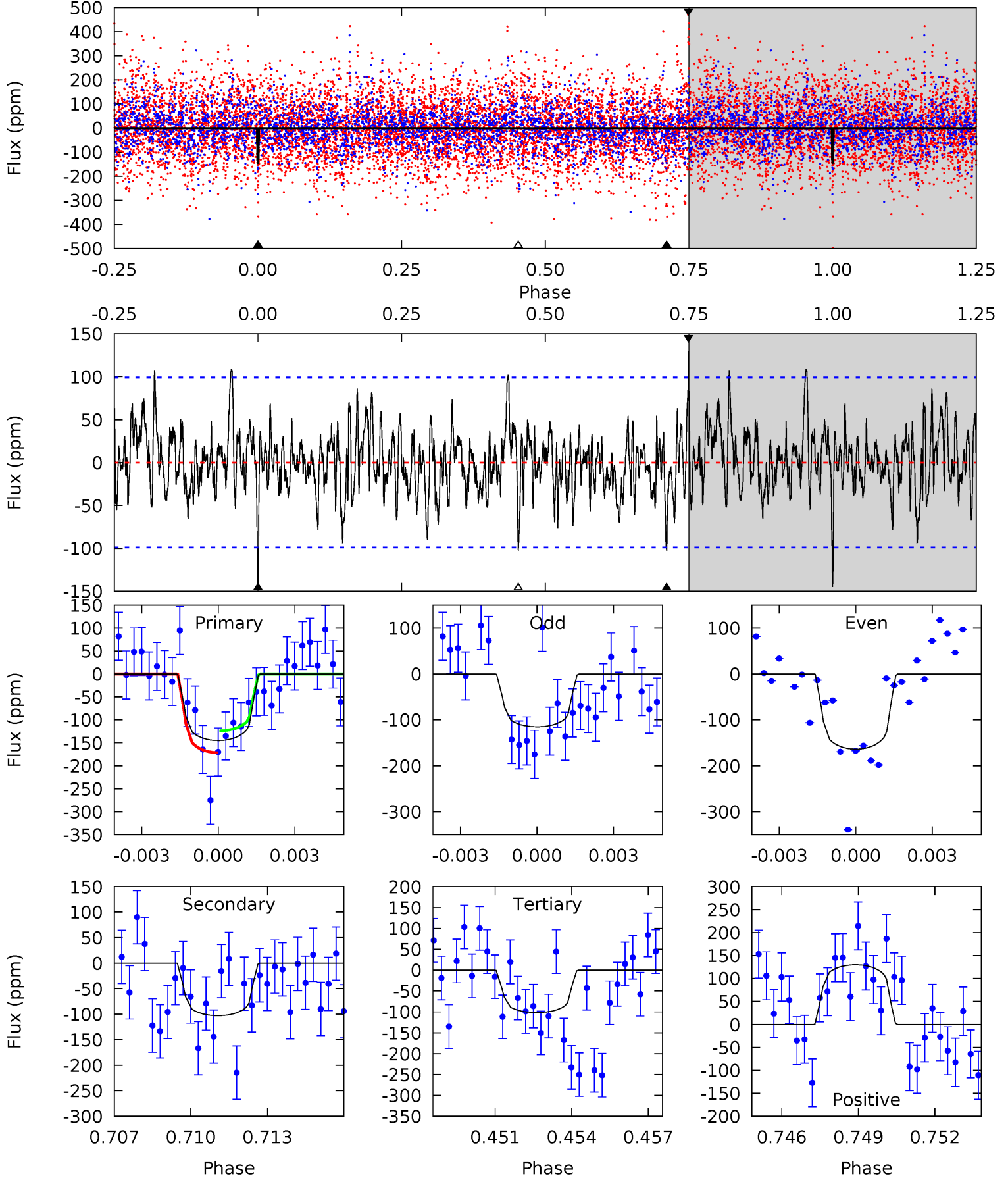
TCE 005787972-02 P= 57.208363 Days $T_0=180.380557$ (BKJD)



DV Model-Shift Uniqueness Test

005787972-02, P = 57.208769 Days, E = 123.174301 Days

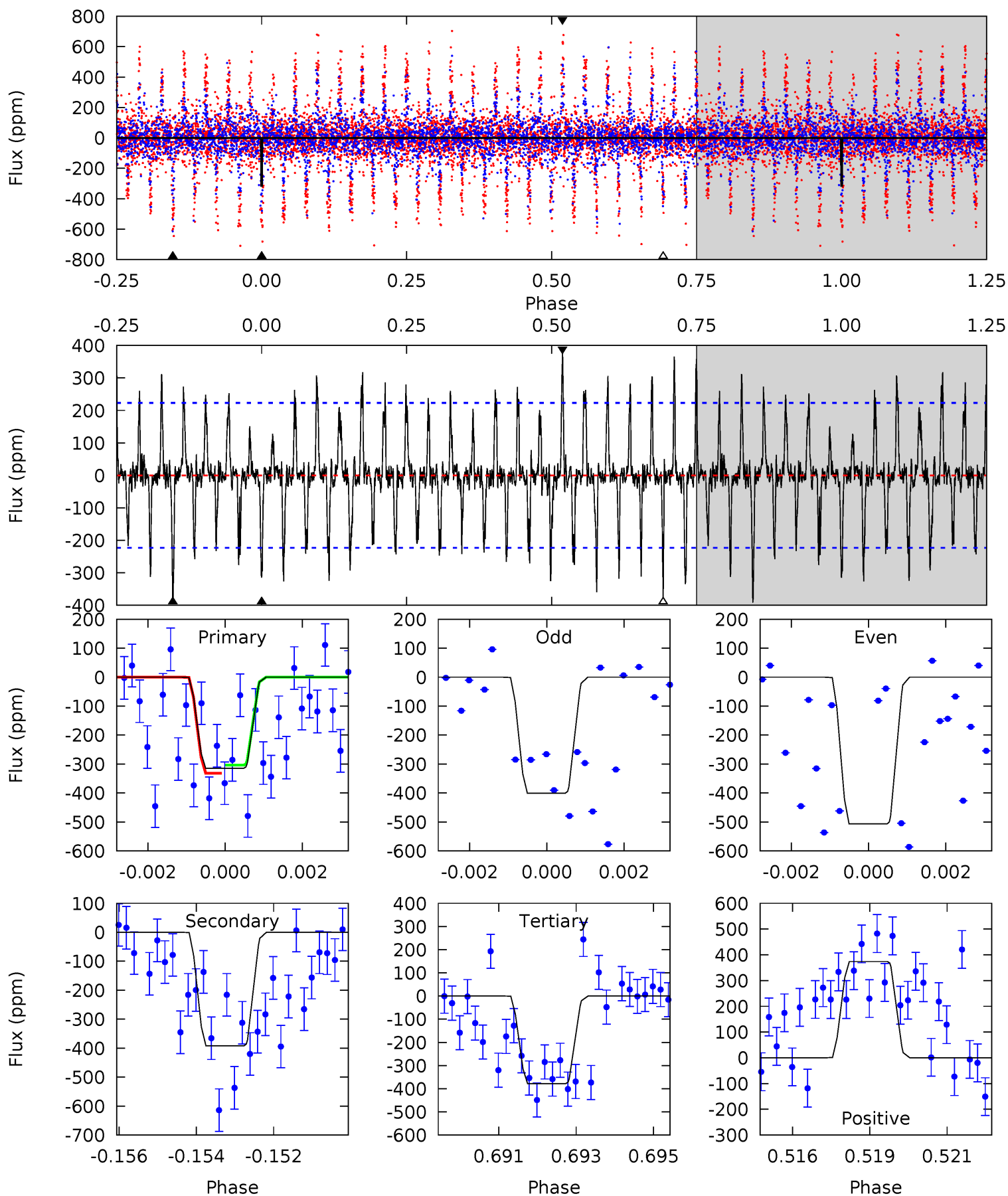
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.69	5.46	5.39	6.90	5.25	2.97	1.67	2.30	0.80	0.06	-1.44	1.26	0.83	0.47	1.22



Alt Model-Shift Uniqueness Test

005787972-02, P = 57.208363 Days, E = 123.172194 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.49	9.32	8.99	8.89	5.30	3.05	2.73	-1.50	-1.41	0.33	0.43	1.31	1.12	0.49	0



Stellar Parameters For KIC 005787972

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6726^{+70}_{-90}	$4.131^{+0.130}_{-0.130}$	$-0.200^{+0.150}_{-0.150}$	$1.634^{+0.312}_{-0.284}$	$1.328^{+0.098}_{-0.122}$	$0.428^{+0.262}_{-0.163}$
	+1%/-1%	+3%/-3%	+75%/-75%	+19%/-17%	+7%/-9%	+61%/-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 005787972-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-103 ± 19	$3.03^{+2.86}_{-1.78}$	943^{+45}_{-44}	5197^{+3128}_{-1169}	613^{+3041}_{-456}
Alt.	-392 ± 42	$3.89^{+2.89}_{-2.36}$	937^{+49}_{-43}	6349^{+5328}_{-1398}	1431^{+8219}_{-956}

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

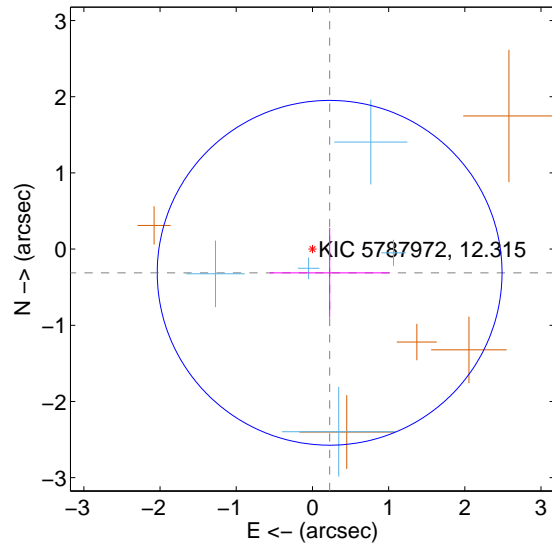
Supplemental centroid analysis for 005787972-02. Kepler magnitude: 12.31. Transit SNR 10.12

There are 5 quarters with good PRF difference image offsets

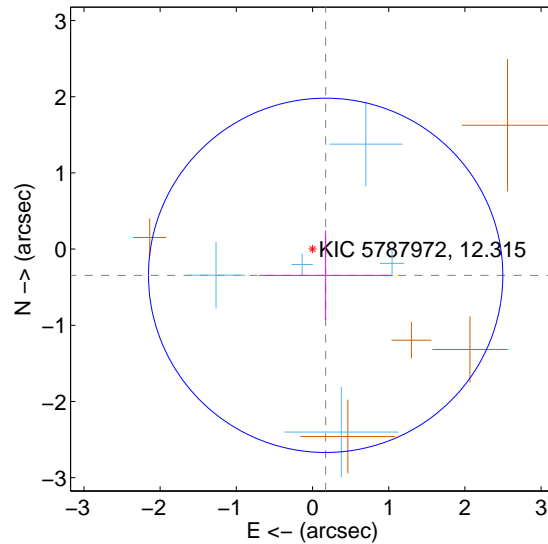
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.384 ± 0.754	0.51	-0.226 ± 0.788	-0.311 ± 0.588
PRF-fit source offset from KIC position	0.385 ± 0.775	0.50	-0.172 ± 0.875	-0.344 ± 0.588
photometric centroid source offset	0.43 ± 0.43	1.01	0.42 ± 0.43	0.11 ± 0.43

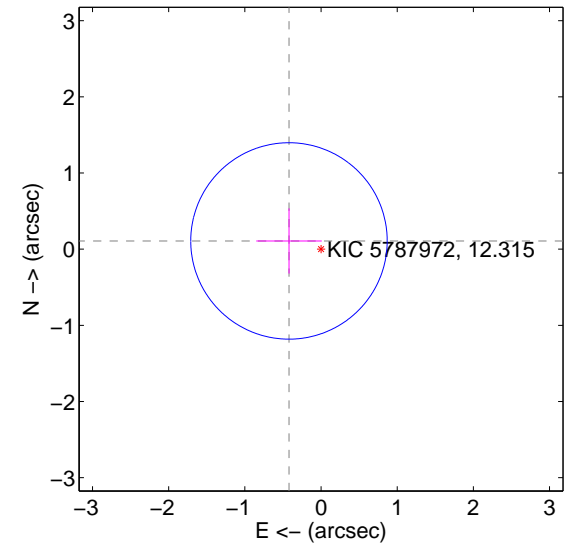
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

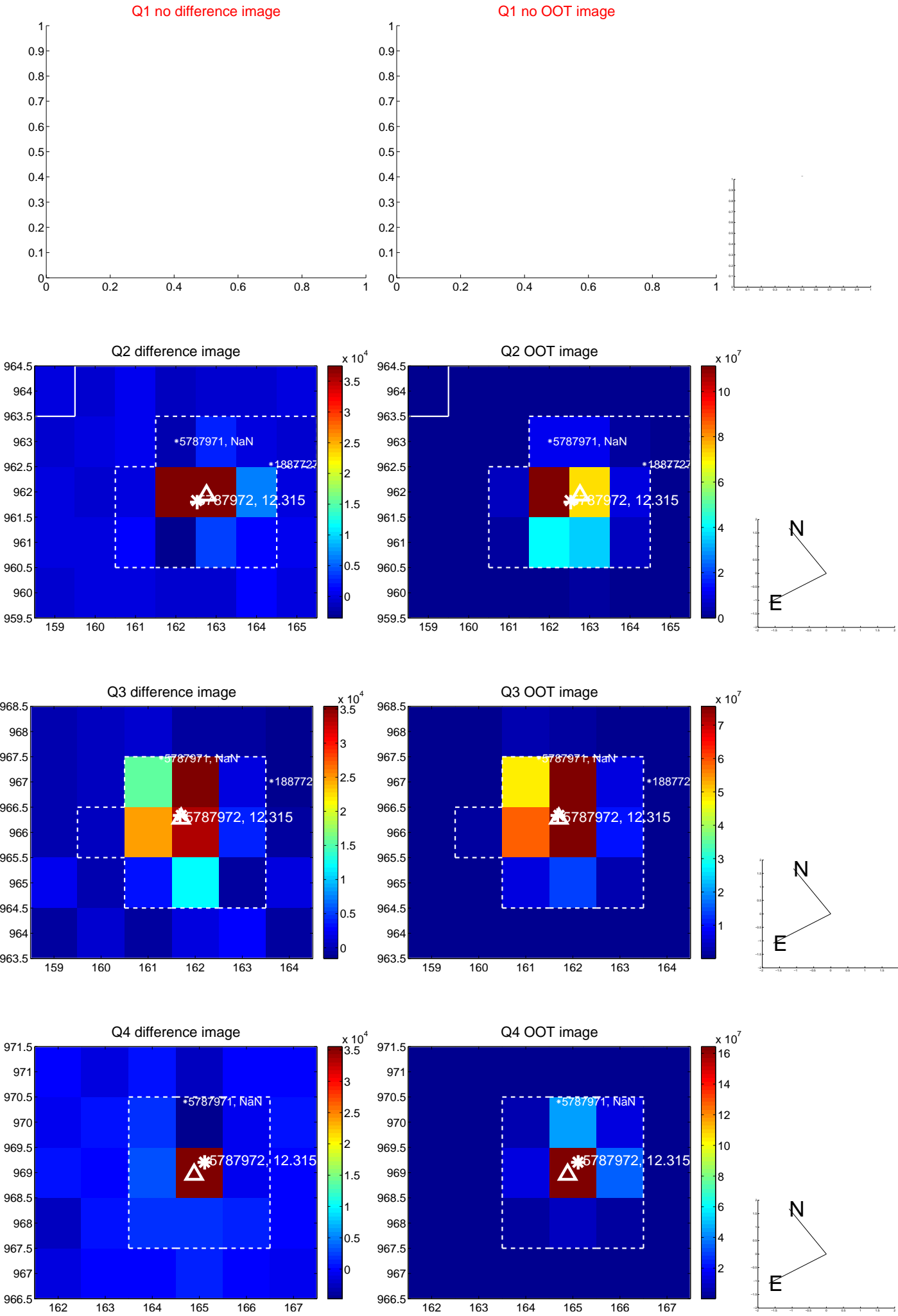


offset from photometric centroids

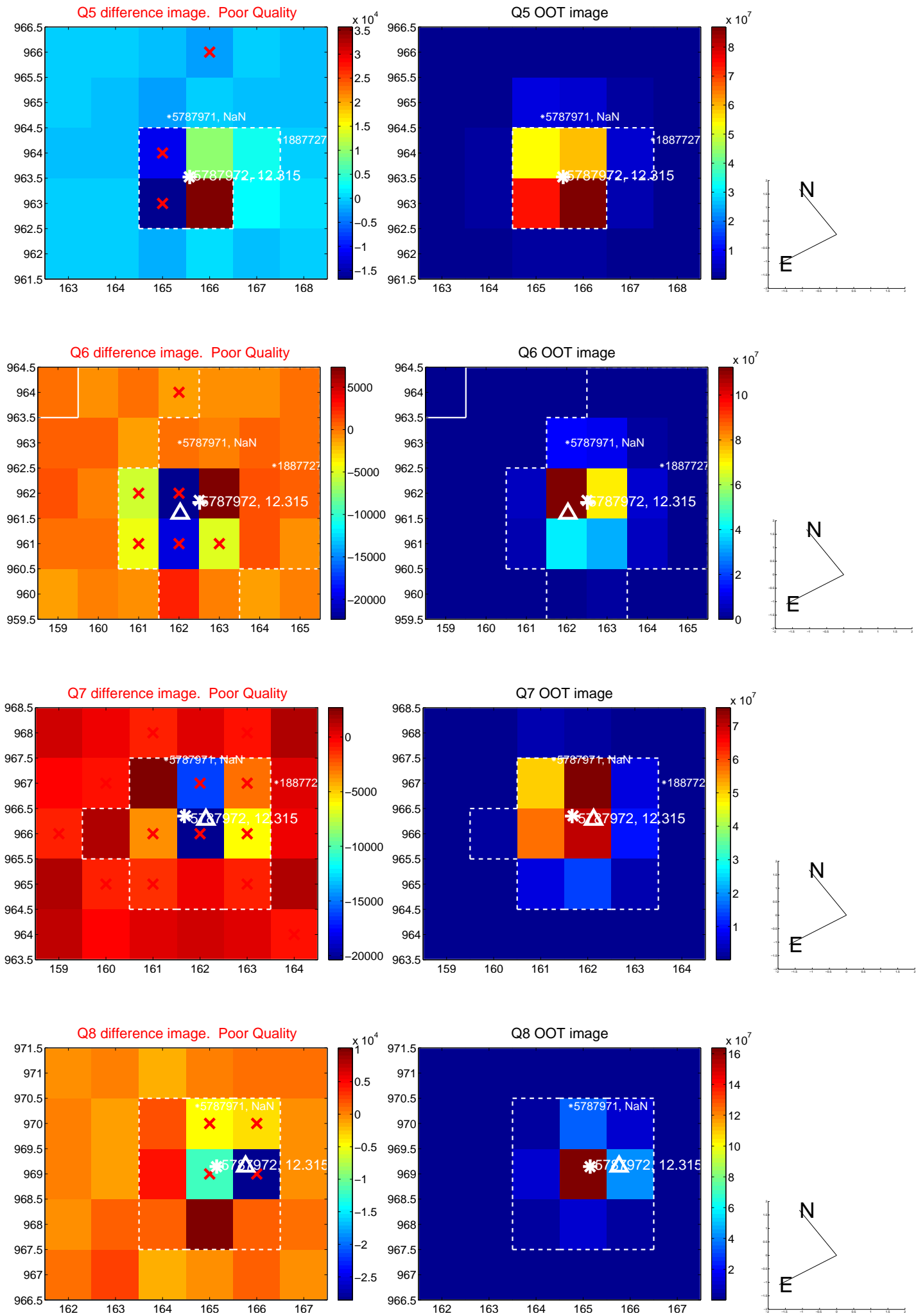


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

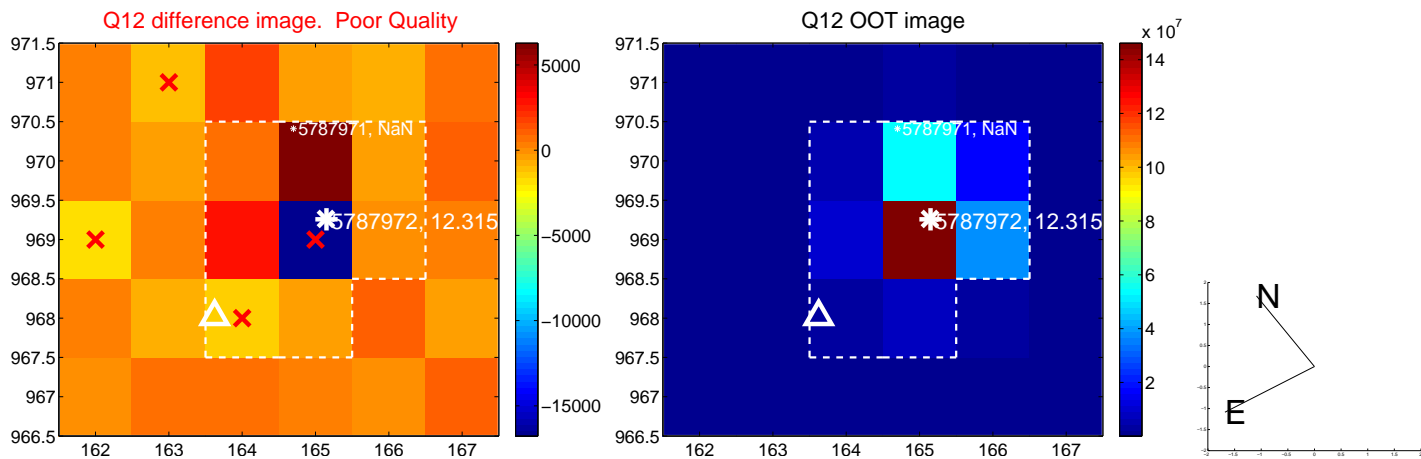
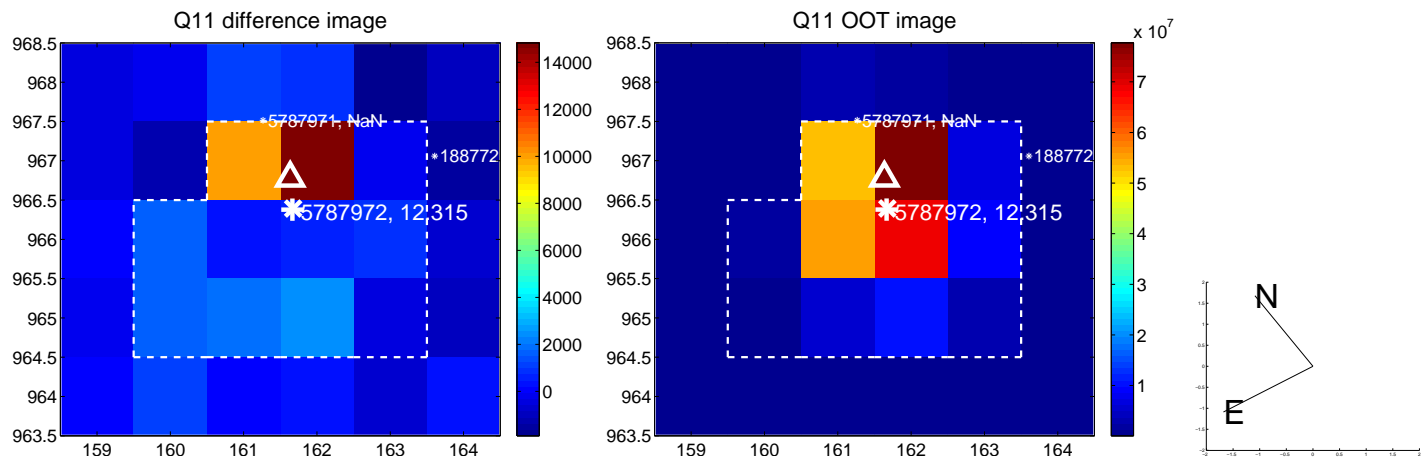
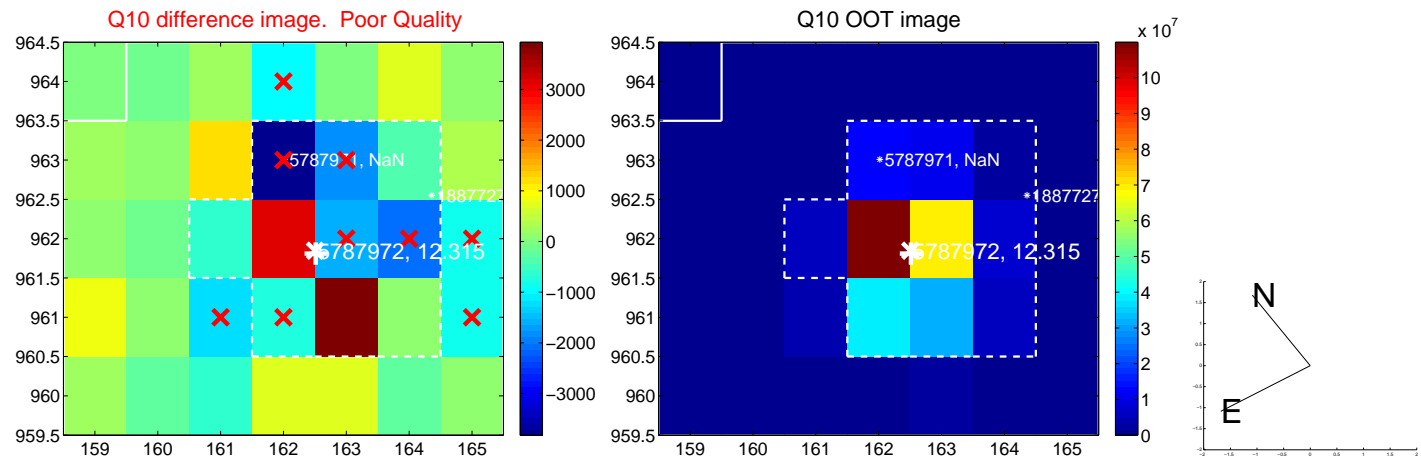
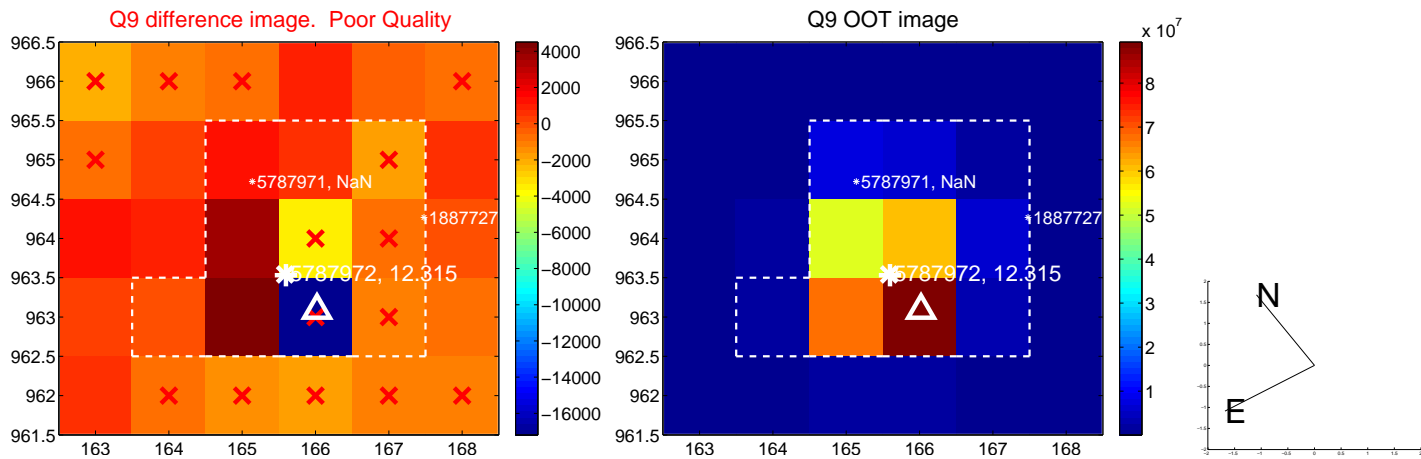
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



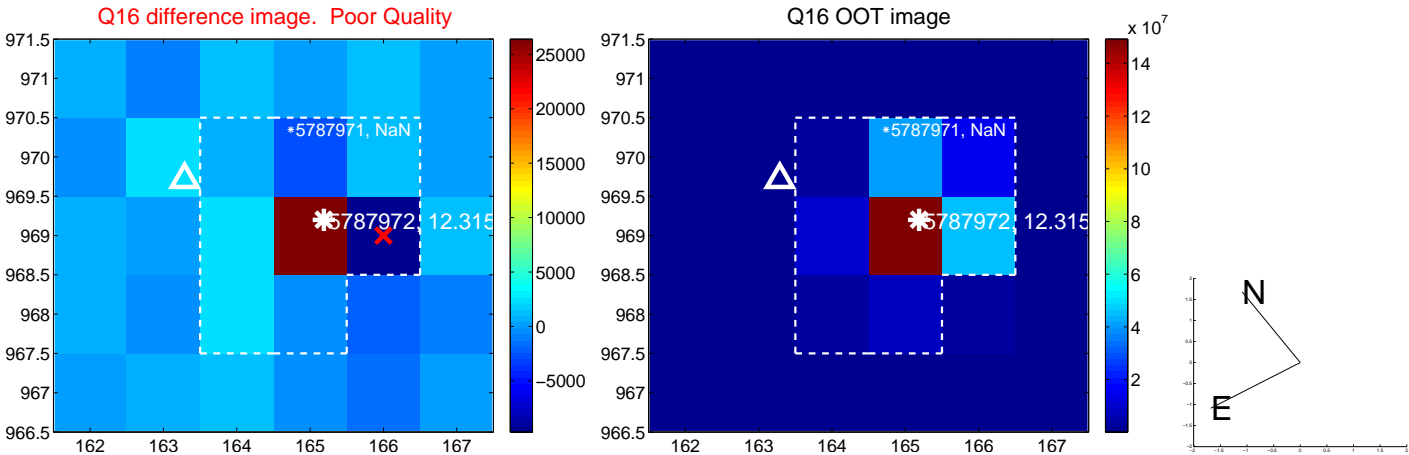
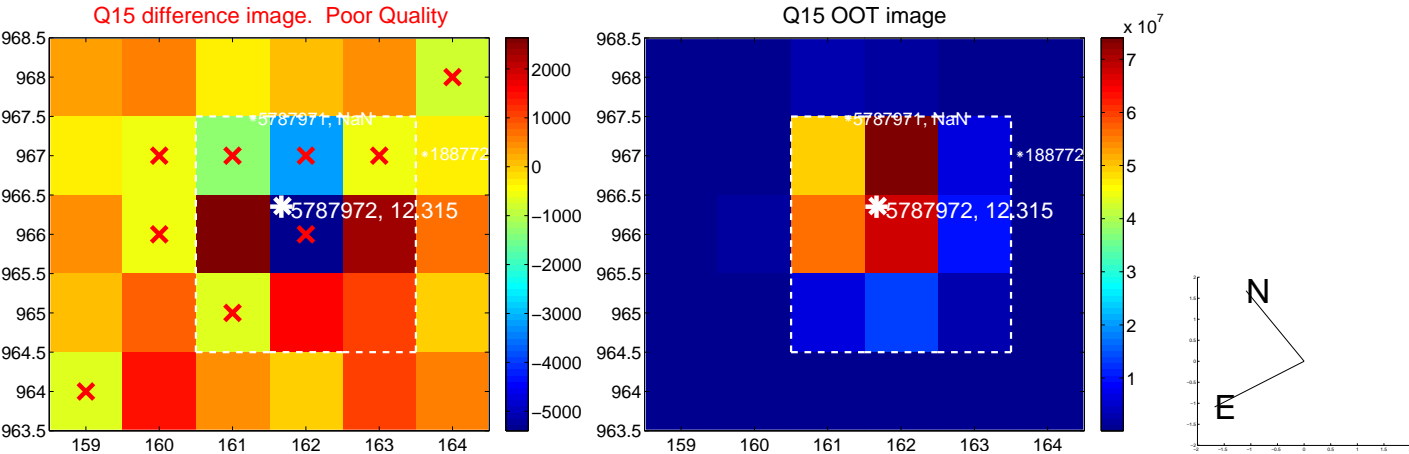
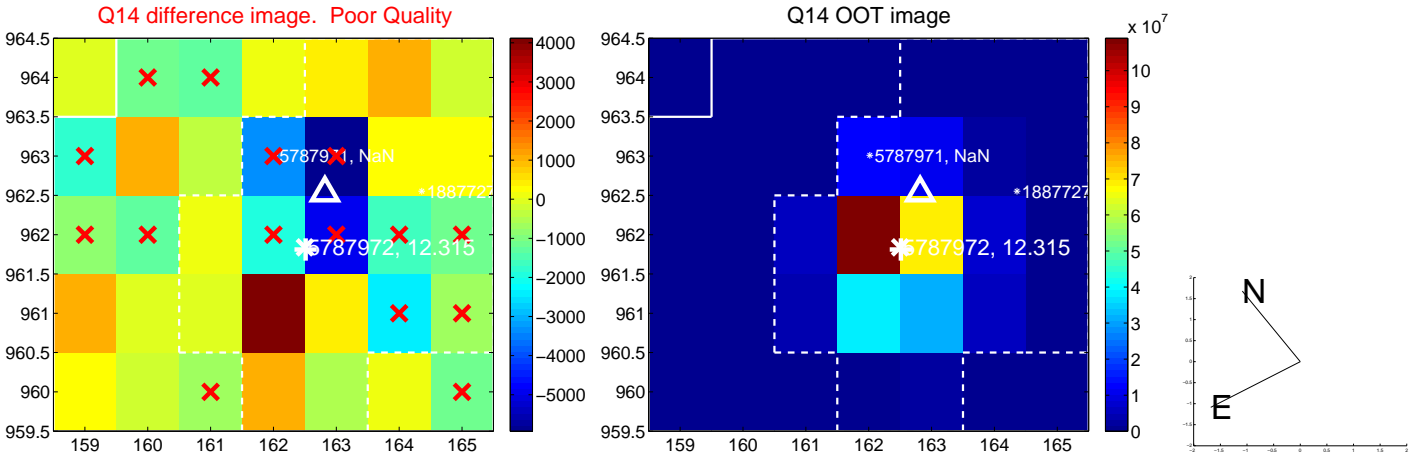
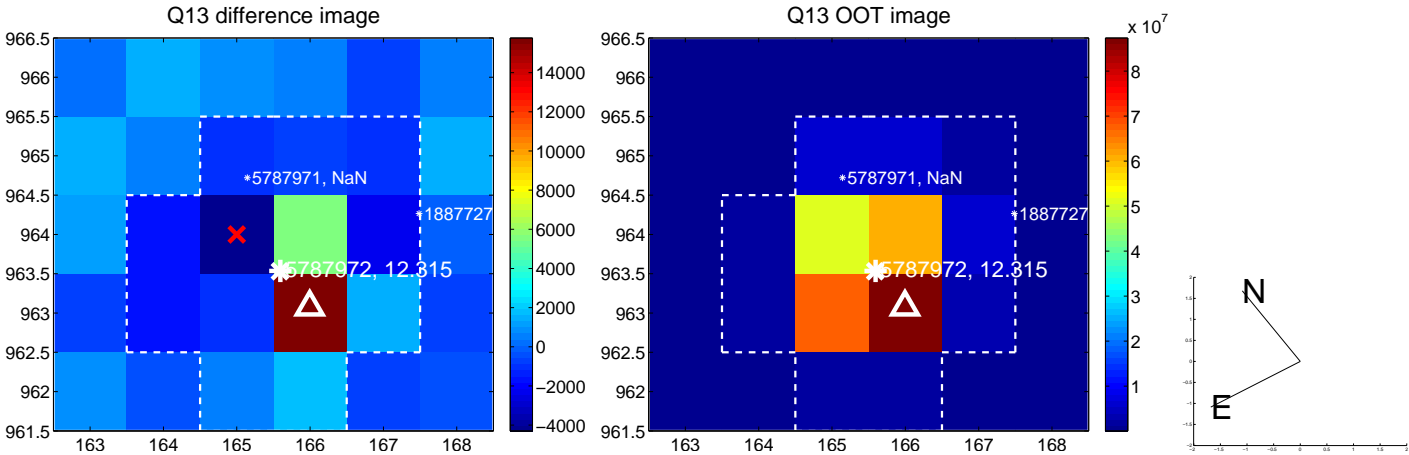
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



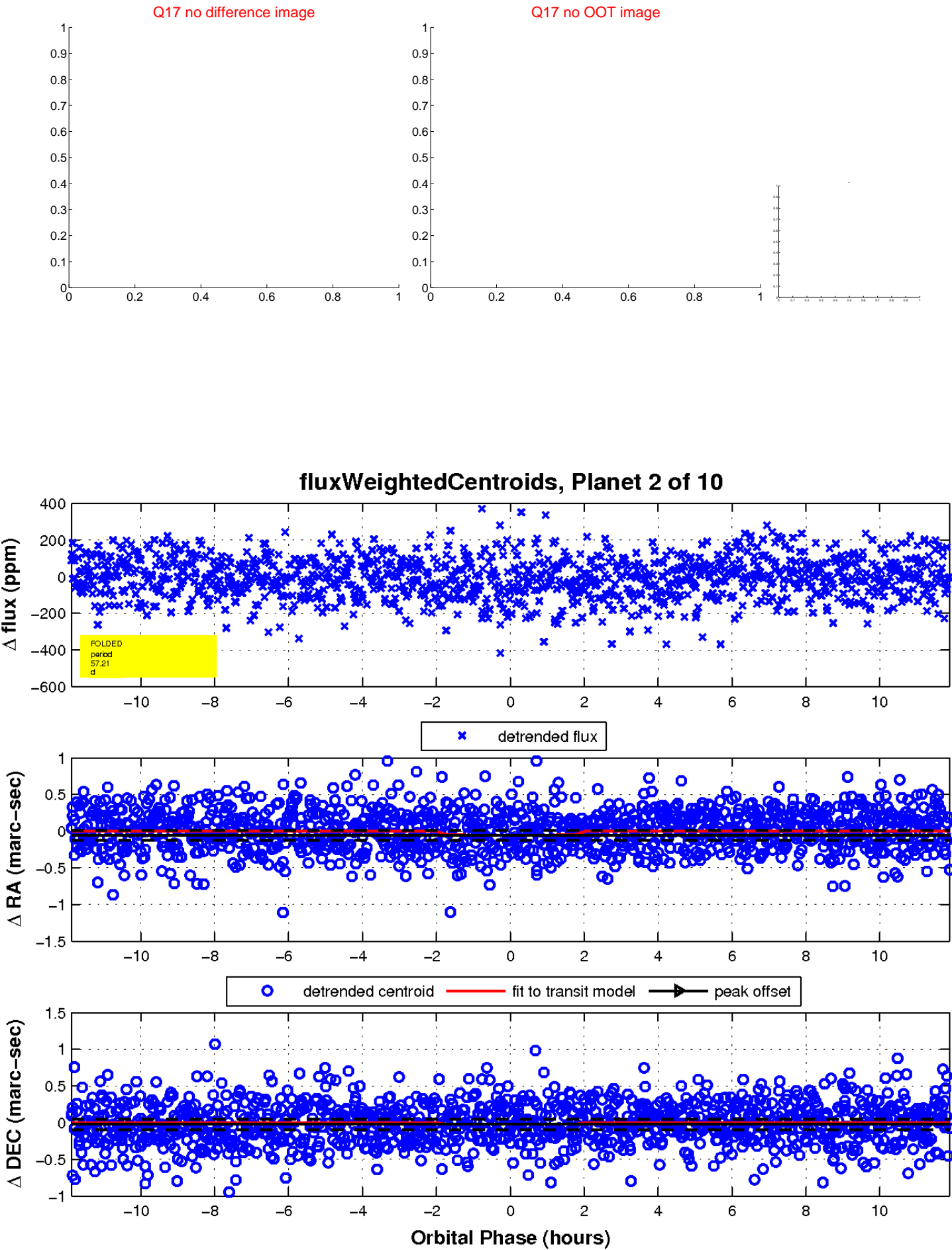
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

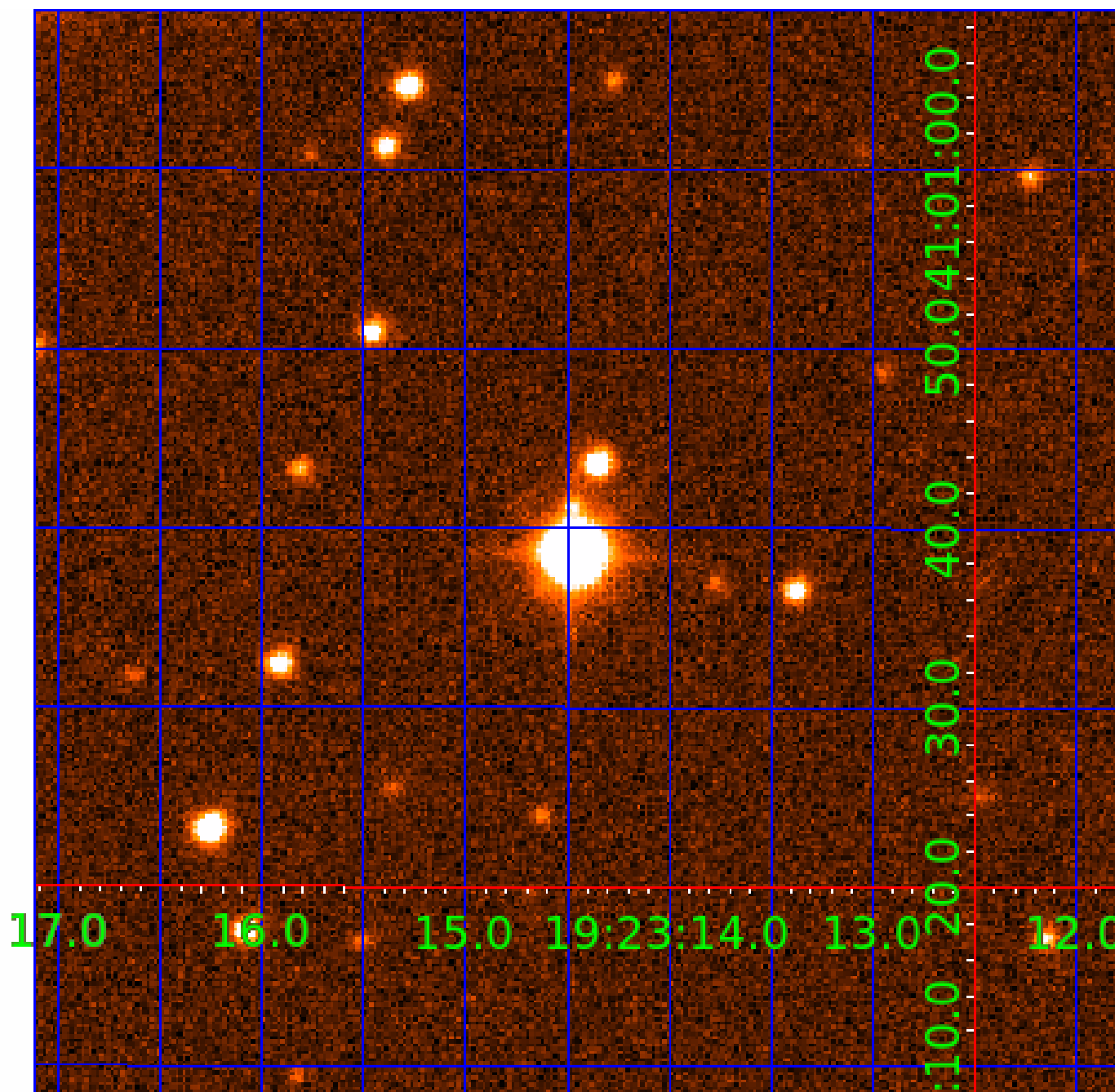


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
005787972-01	OBS	No	1.099151	132.692479	3.2	7.513	8.9	2.8	1.63	6726	0.30	9375.91
005787972-02	OBS	No	57.208769	180.383070	159.0	3.963	12.3	10.1	1.63	6726	2.25	48.25
005787972-03	OBS	No	252.860410	272.632577	232.3	7.104	11.0	12.5	1.63	6726	2.71	6.65
005787972-04	OBS	No	46.490157	147.345820	197.2	1.772	11.2	10.1	1.63	6726	2.32	63.62
005787972-05	OBS	No	32.158912	152.995453	108.7	4.803	9.1	8.3	1.63	6726	1.79	104.00
005787972-06	OBS	No	46.187137	134.771064	173.7	3.448	9.4	10.5	1.63	6726	2.48	64.18
005787972-07	OBS	No	39.098565	153.376700	139.5	3.412	9.6	9.4	1.63	6726	2.14	80.14
005787972-08	OBS	No	25.787015	154.054388	105.4	4.687	8.7	9.3	1.63	6726	1.91	139.60
005787972-09	OBS	No	12.382392	142.368262	70.6	4.369	9.5	8.6	1.63	6726	1.56	371.26
005787972-10	OBS	No	41.093899	144.818289	211.9	2.500	9.1	-1.0	1.63	6726	2.40	75.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005787972-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
005787972-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005787972-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
005787972-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005787972-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNRESOLVED_OFFSET
005787972-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_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.

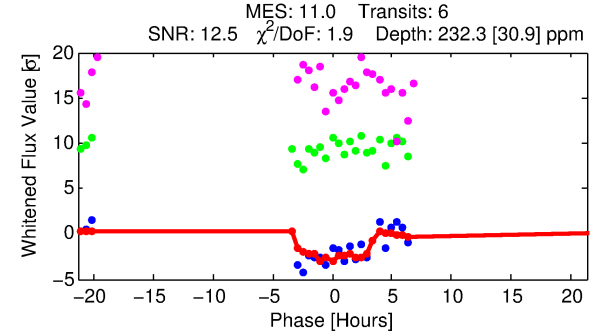
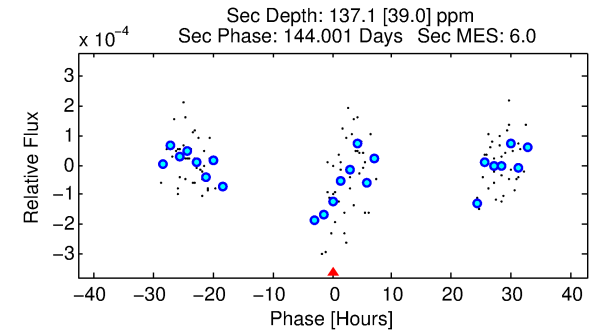
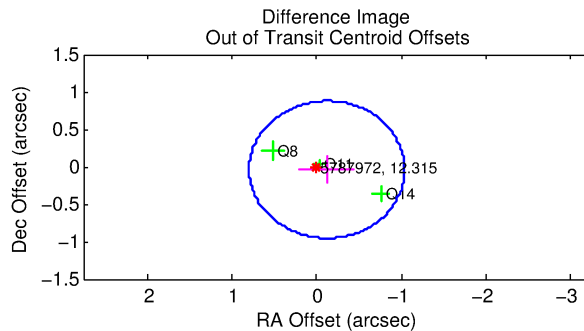
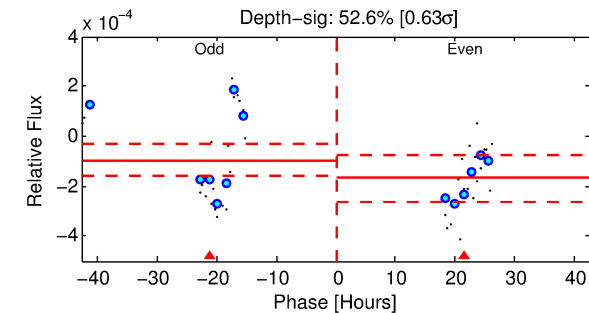
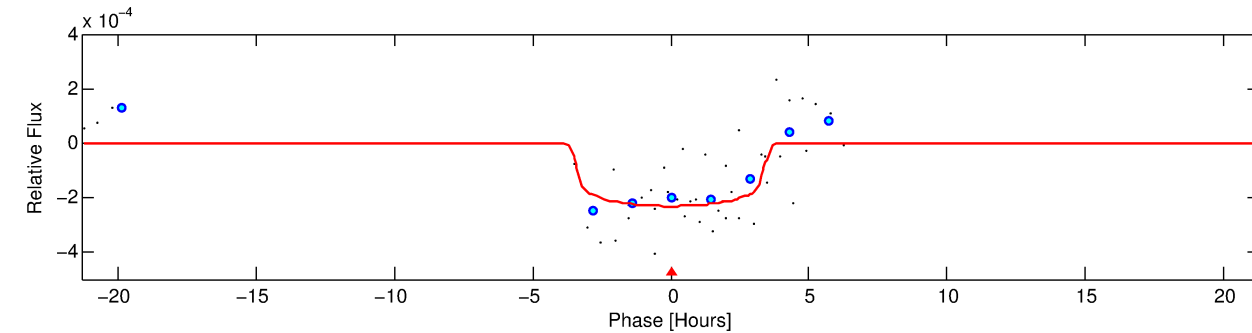
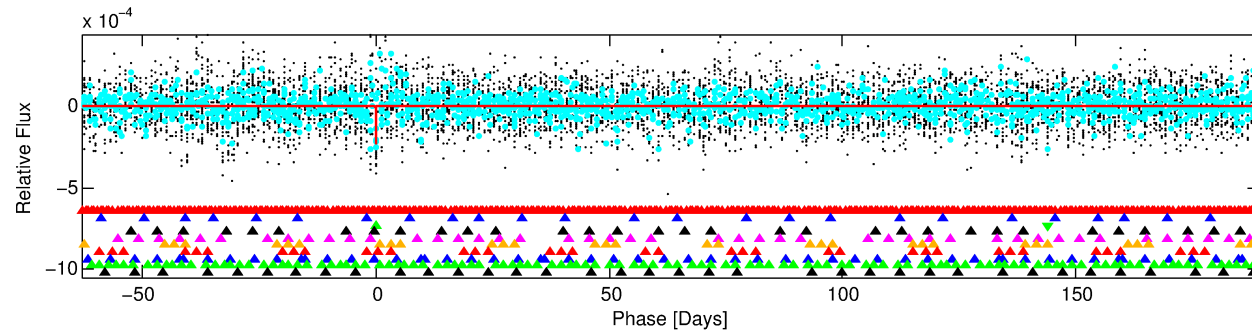
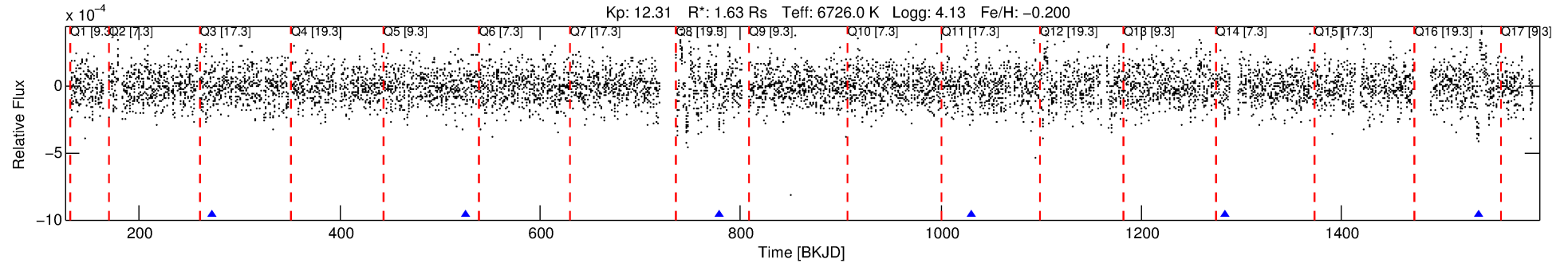
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005787972-03

No Significant Match Found

DV One-Page Summary

KIC: 5787972 Candidate: 3 of 10 Period: 252.860 d



DV Fit Results:

Period = 252.86041 [0.01352] d
Epoch = 272.6326 [0.0419] BKJD
Rp/R* = 0.0152 [0.0475]
a/R* = 183.27 [3312.59]
b = 0.76 [10.18]
Seff = 6.65 [1.61]
Teq = 410 [25] K
Rp = 2.71 [8.48] Re
a = 0.8579 [0.1388] AU
Ag = 7560.99 [47301.77] [0.16 σ]
Teffp = 5904 [9227] K [0.60 σ]

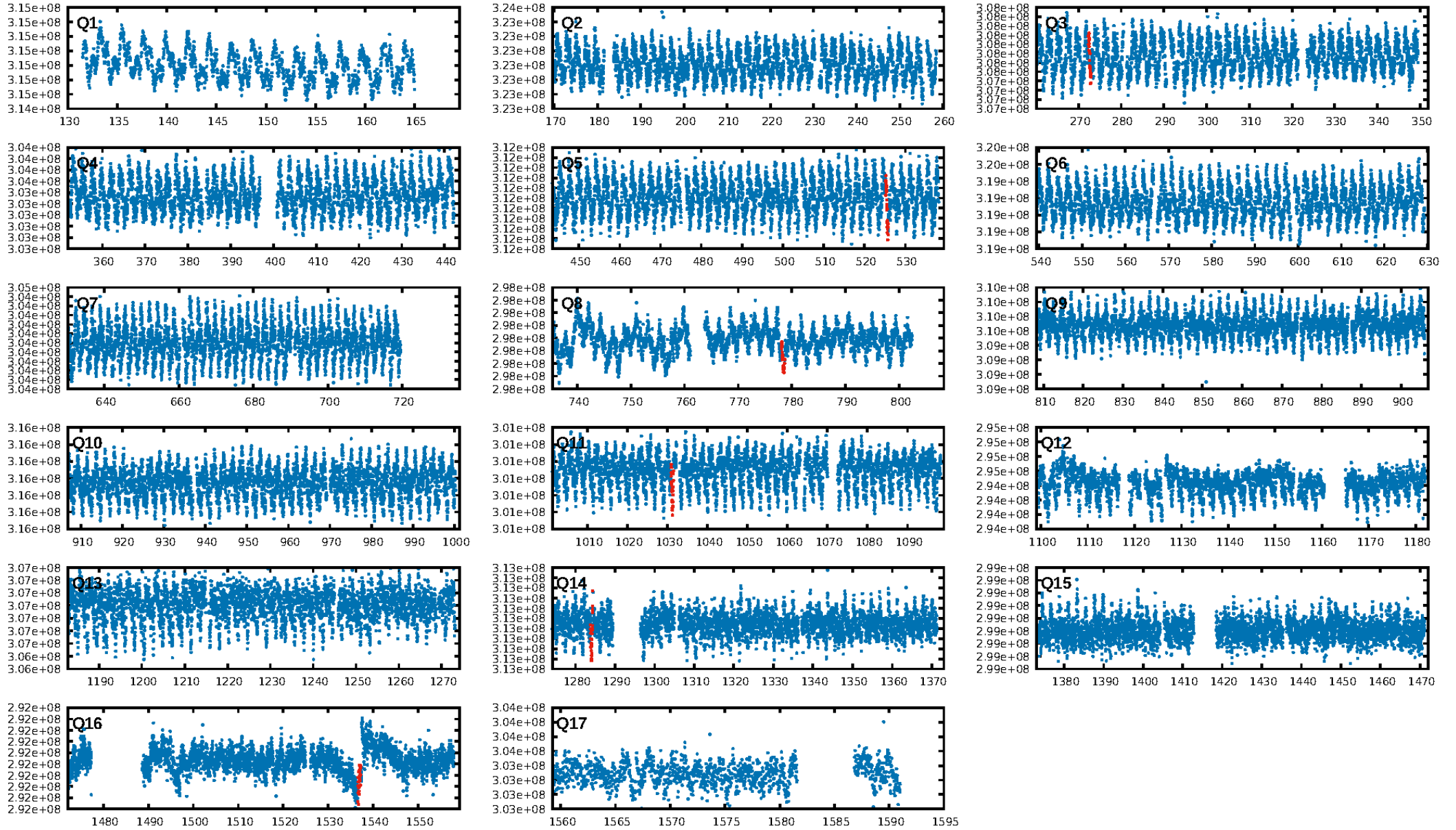
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [577.23 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -0.07301
Centroid-sig: 26.7%
Centroid-so: 0.594 arcsec [1.27 σ]
OotOffset-rm: 0.130 arcsec [0.42 σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-rm: 0.072 arcsec [0.18 σ]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.00 [0/6]

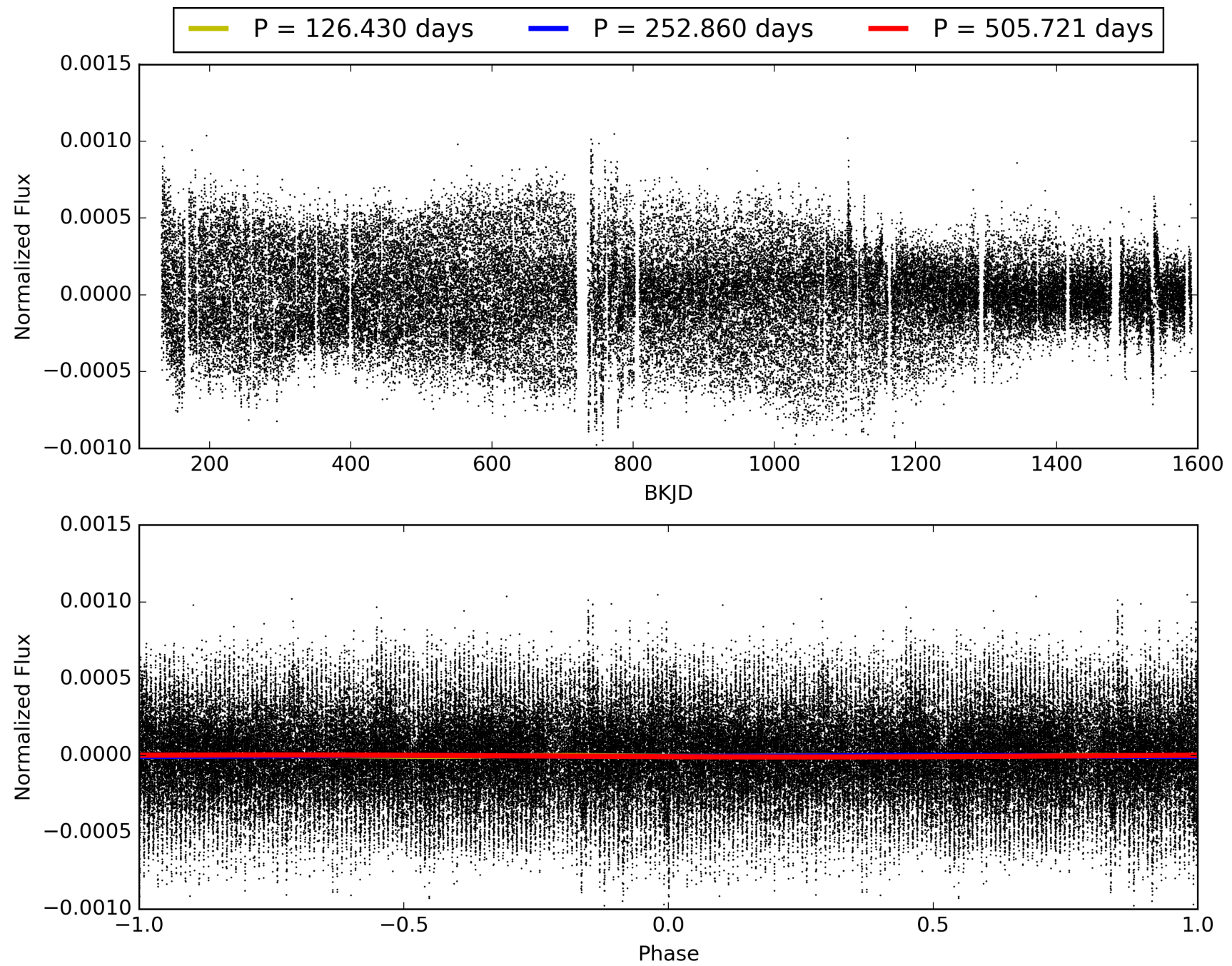
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:24:59 Z

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

TCE 005787972-03, PDC Light Curves

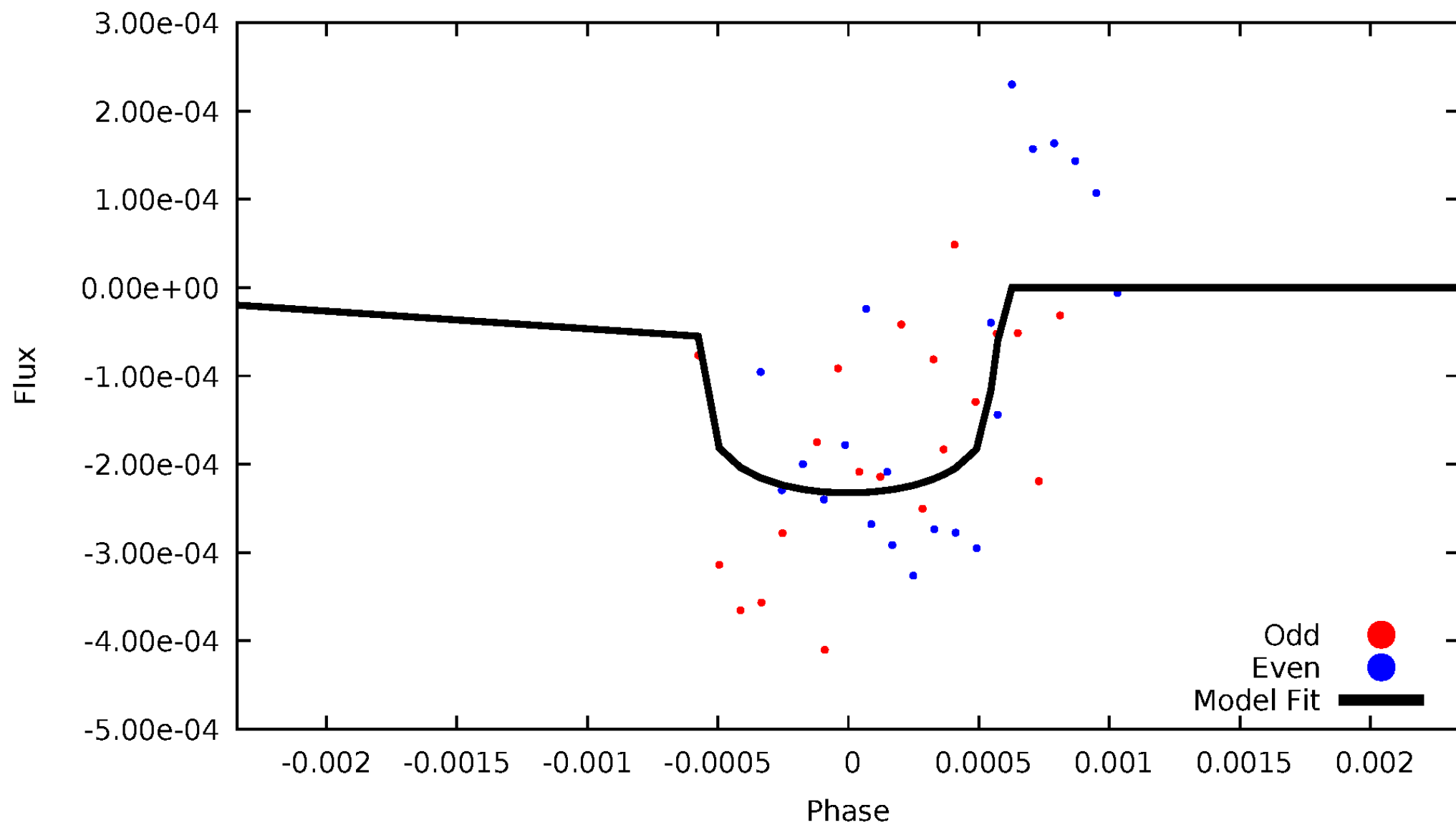


TCE 005787972-03



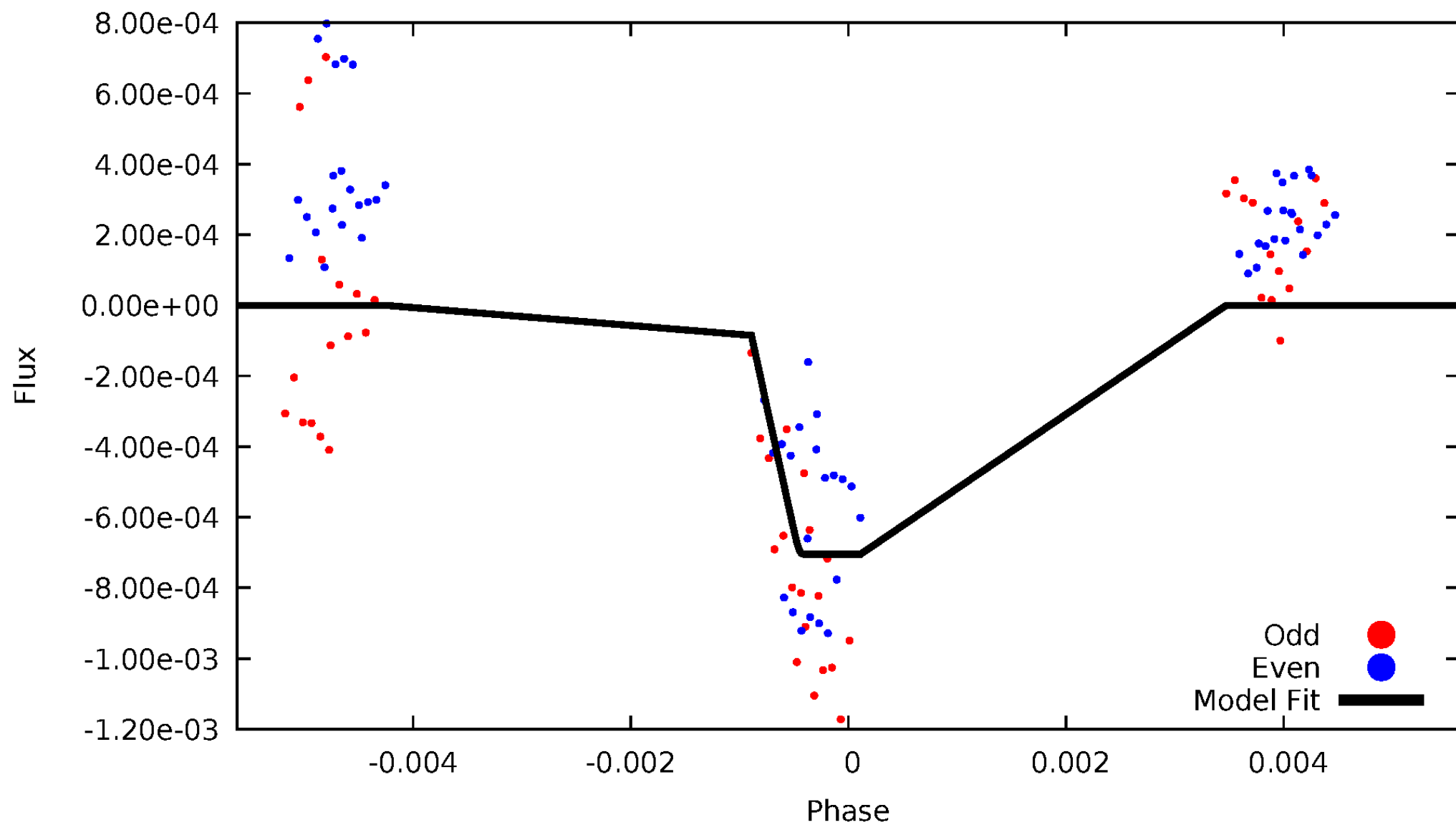
DV Odd/Even

TCE 005787972-03



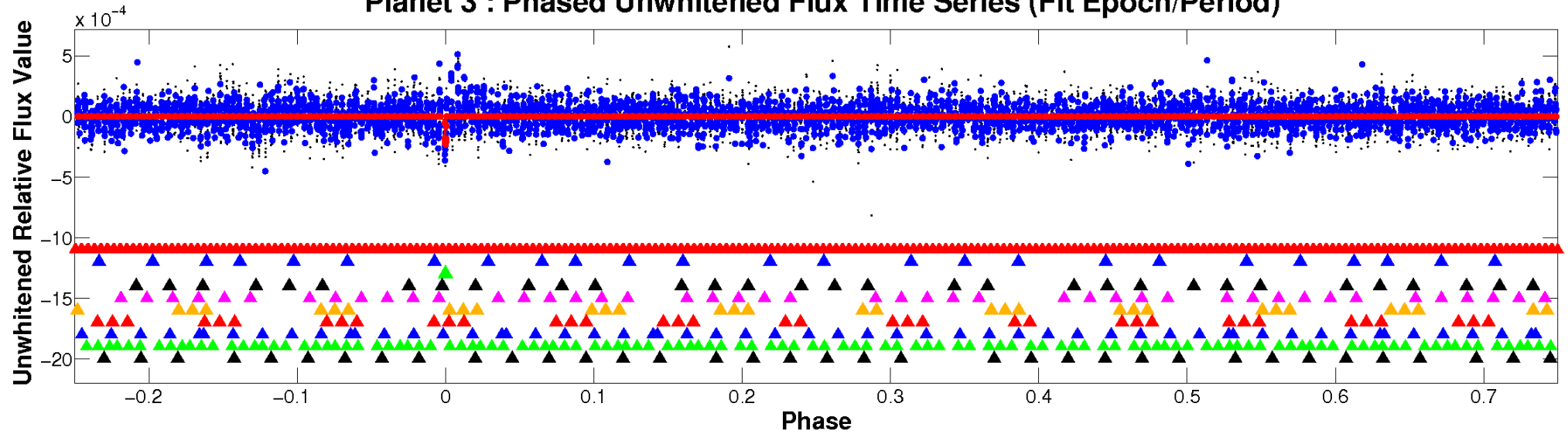
ALT Odd/Even

TCE 005787972-03

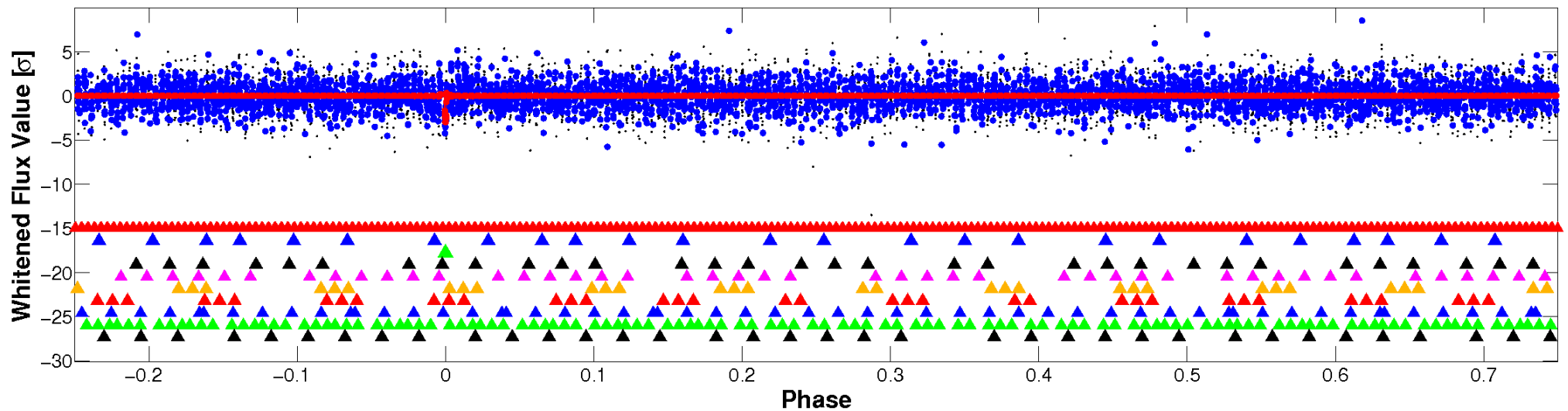


Non-Whitened Vs. Whitened Light Curve

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

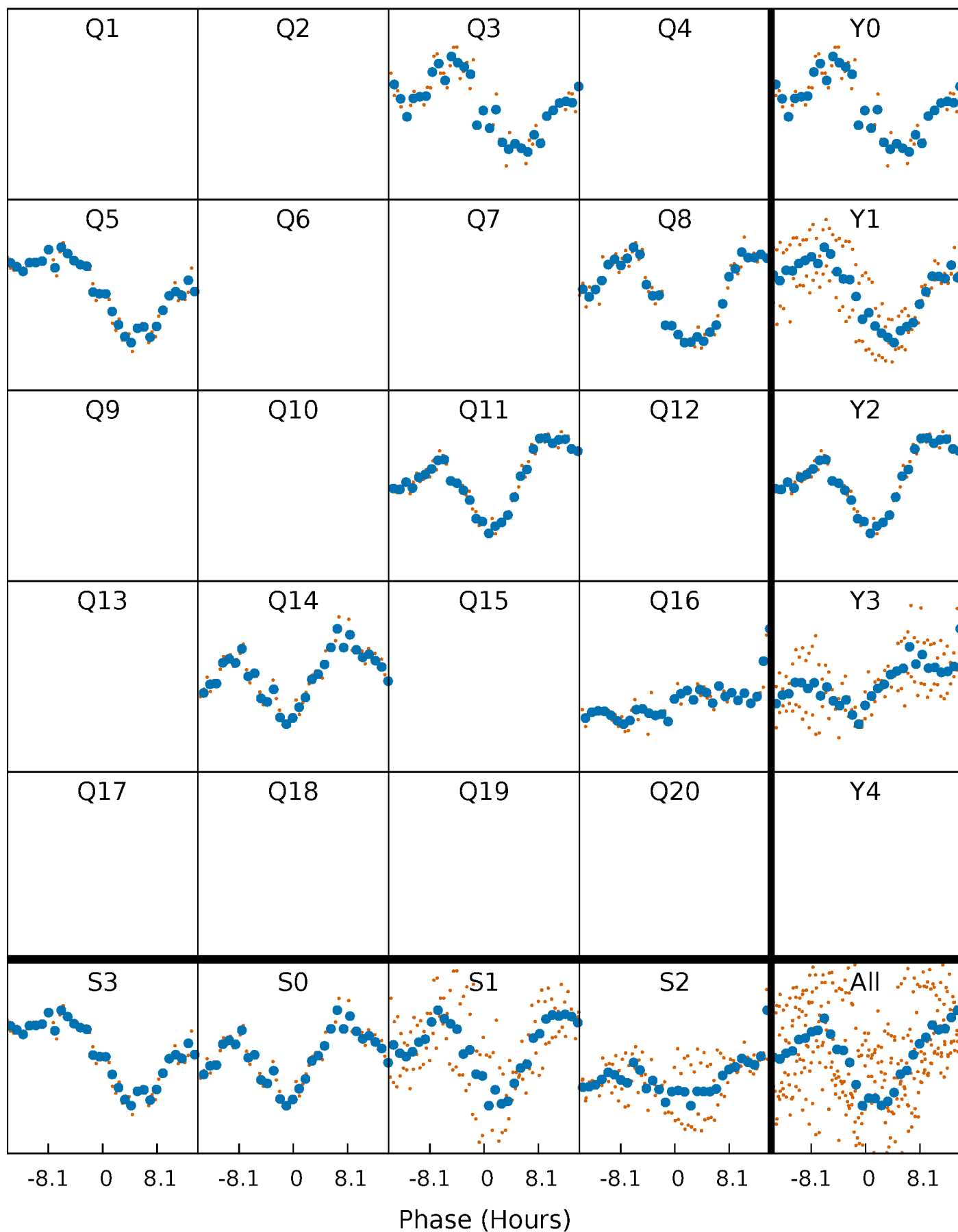


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



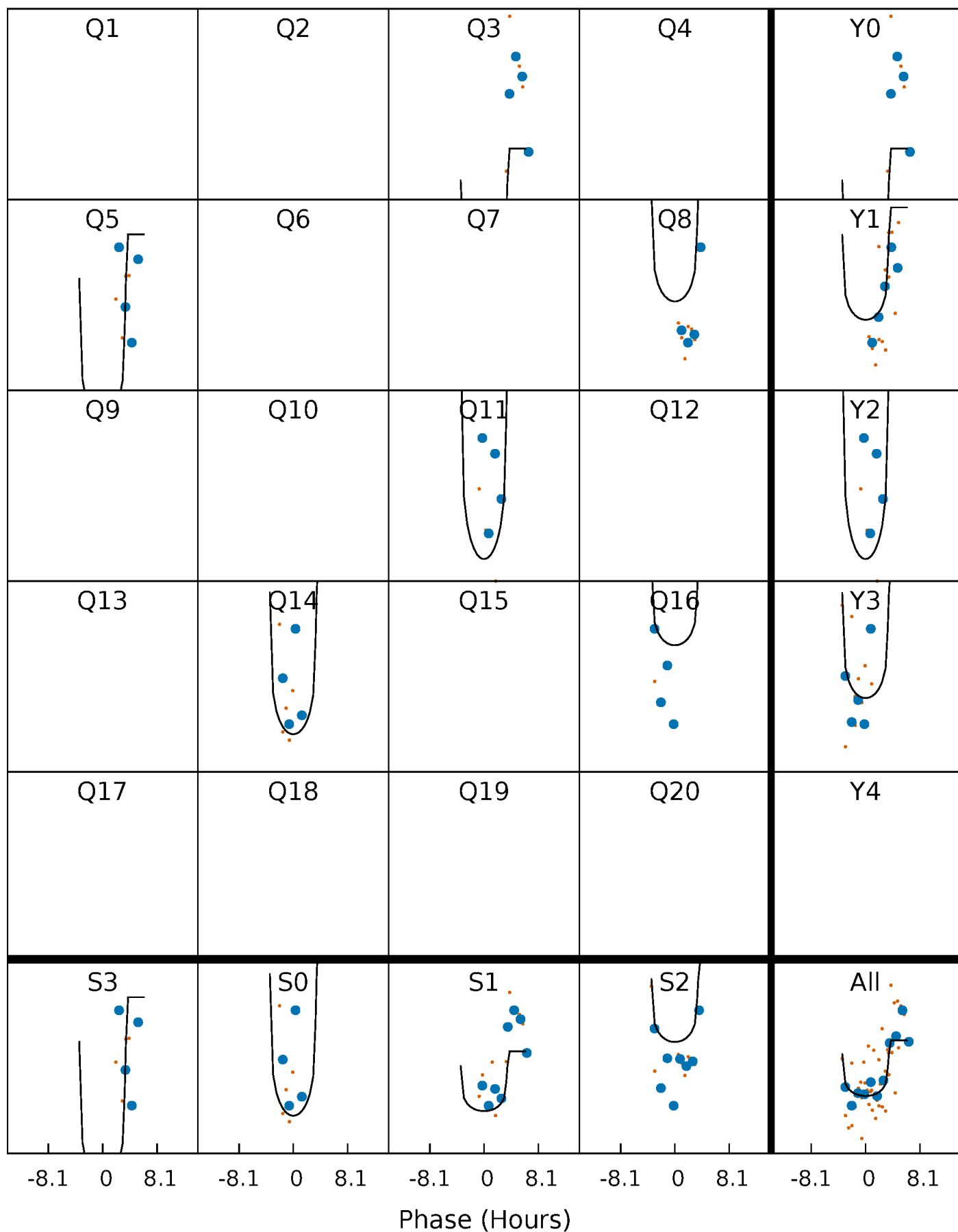
PDC Quarter-Phased Transit Curves

TCE 005787972-03 P=252.860410 Days $T_0=272.632577$ (BKJD)



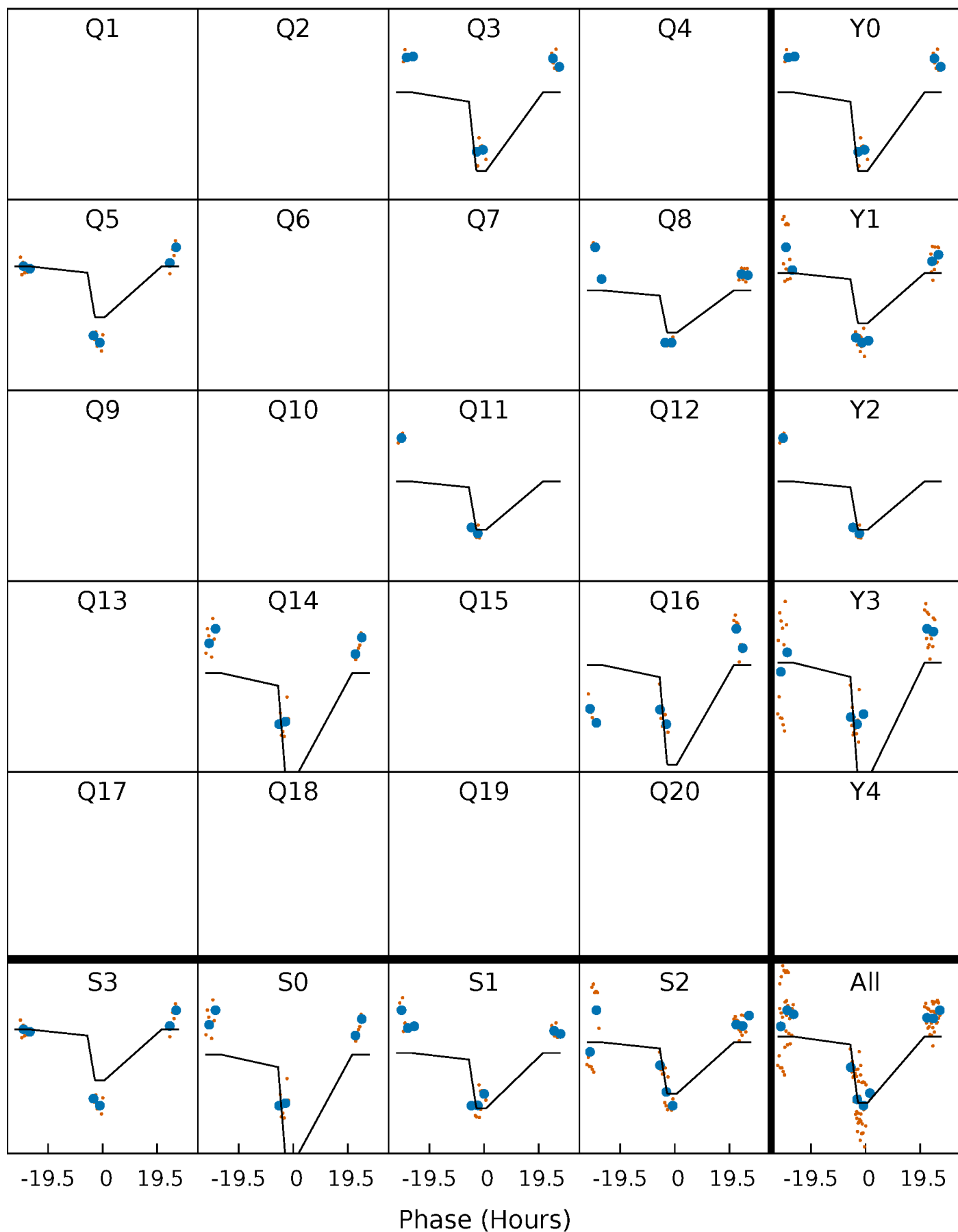
DV Quarter-Phased Transit Curves

TCE 005787972-03 P=252.860410 Days $T_0=272.632577$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

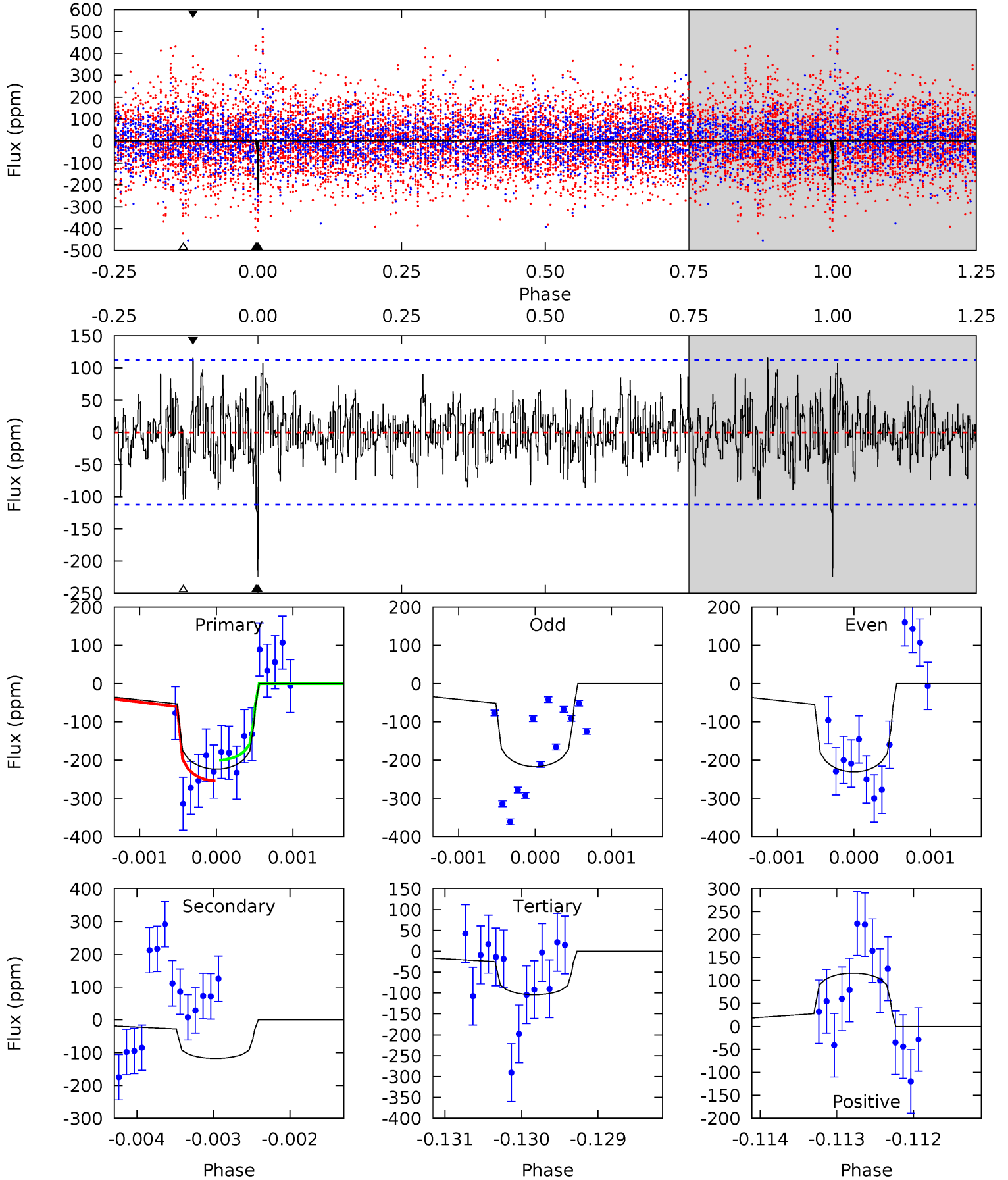
TCE 005787972-03 P=252.829796 Days $T_0=272.865511$ (BKJD)



DV Model-Shift Uniqueness Test

005787972-03, P = 252.860410 Days, E = 19.772167 Days

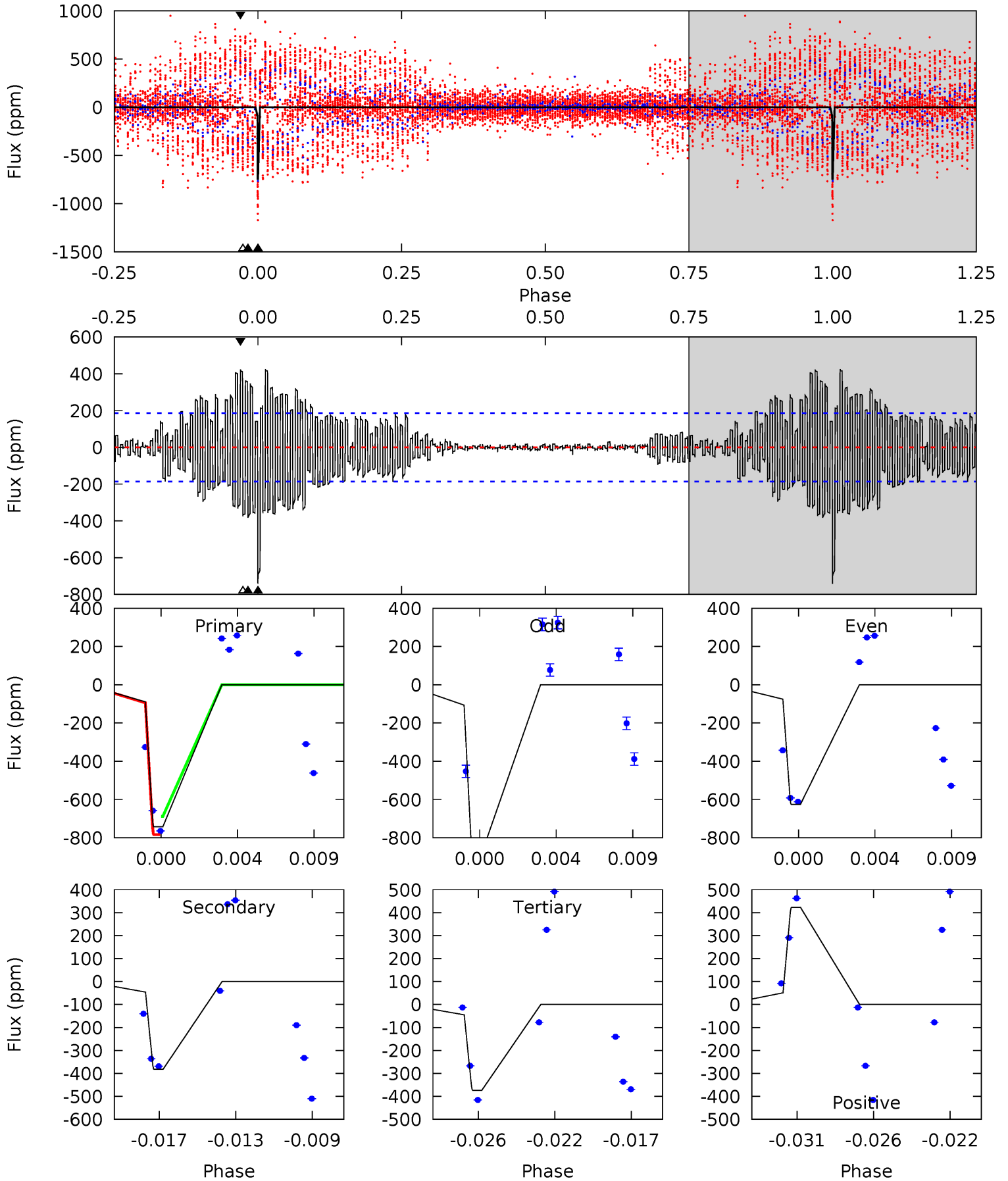
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	5.67	5.02	5.59	5.43	3.26	1.61	5.77	5.20	0.65	0.08	0.33	1.28	0.34	1.24



Alt Model-Shift Uniqueness Test

005787972-03, P = 252.829796 Days, E = 20.035715 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.7	10.7	10.4	11.8	5.18	2.85	2.83	10.3	8.90	0.23	-1.13	3.50	1.01	0.36	0.67



Stellar Parameters For KIC 005787972

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6726^{+70}_{-90}	$4.131^{+0.130}_{-0.130}$	$-0.200^{+0.150}_{-0.150}$	$1.634^{+0.312}_{-0.284}$	$1.328^{+0.098}_{-0.122}$	$0.428^{+0.262}_{-0.163}$
	+1%/-1%	+3%/-3%	+75%/-75%	+19%/-17%	+7%/-9%	+61%/-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 005787972-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-118 ± 21	$6.62^{+6.39}_{-4.53}$	571^{+29}_{-24}	3944^{+2510}_{-781}	1051^{+10008}_{-776}
Alt.	-382 ± 36	$7.65^{+7.20}_{-5.17}$	573^{+29}_{-29}	4670^{+3474}_{-974}	2622^{+21996}_{-1906}

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 $A_{obs} \gg 1.0$

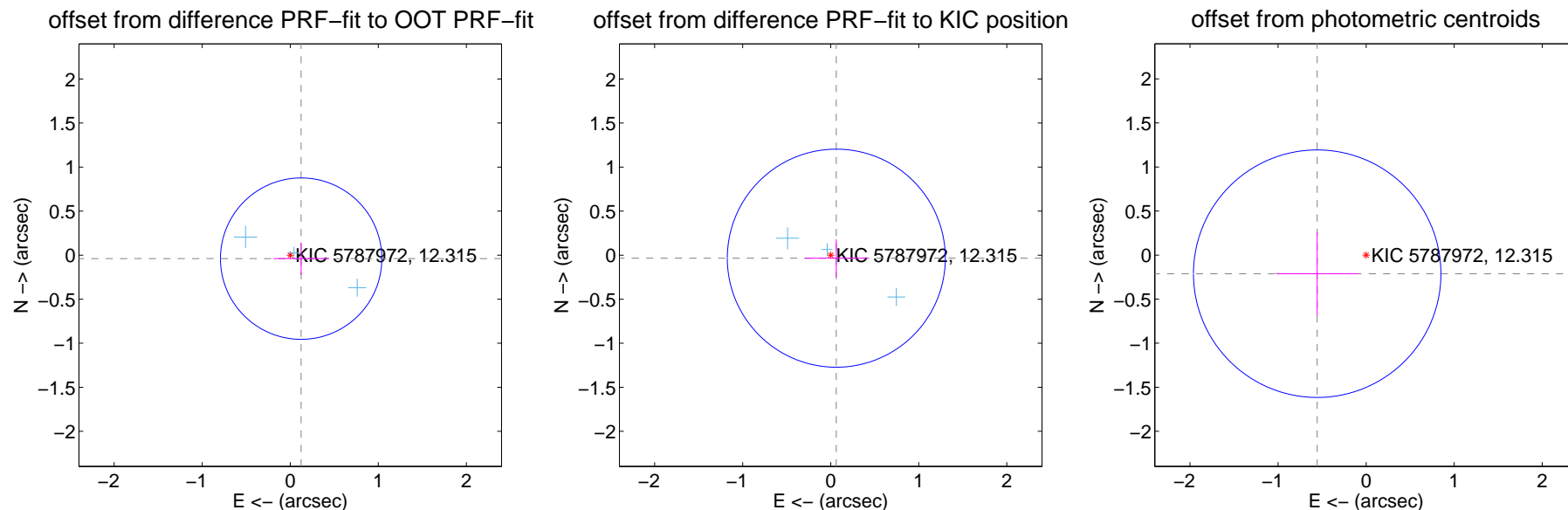
DV Centroid Data

Supplemental centroid analysis for 005787972-03. Kepler magnitude: 12.31. Transit SNR 12.53

There are 3 quarters with good PRF difference image offsets

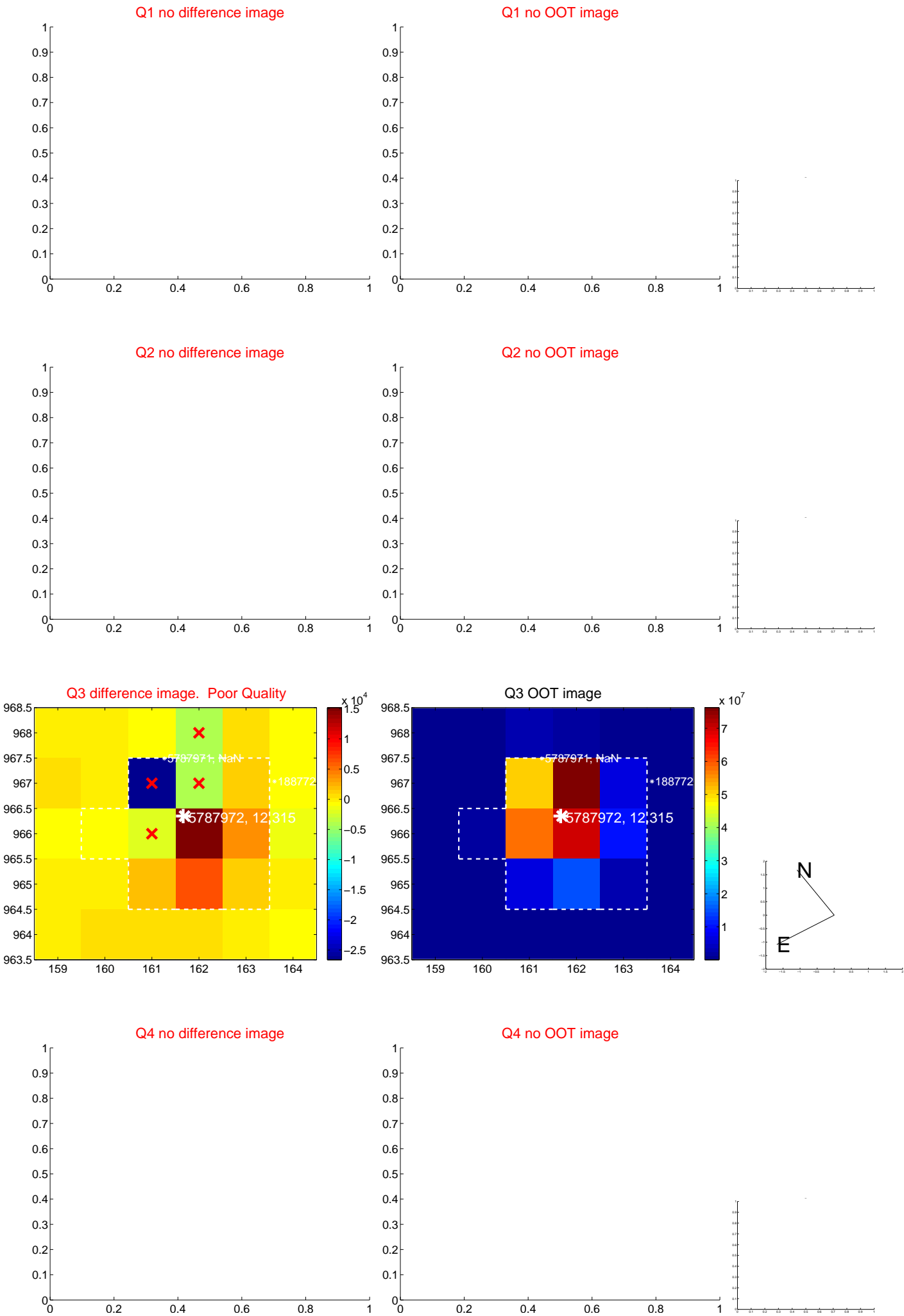
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.130 ± 0.305	0.42	-0.123 ± 0.315	-0.040 ± 0.183
PRF-fit source offset from KIC position	0.072 ± 0.413	0.18	-0.064 ± 0.360	-0.035 ± 0.214
photometric centroid source offset	0.59 ± 0.47	1.27	0.56 ± 0.47	-0.21 ± 0.47

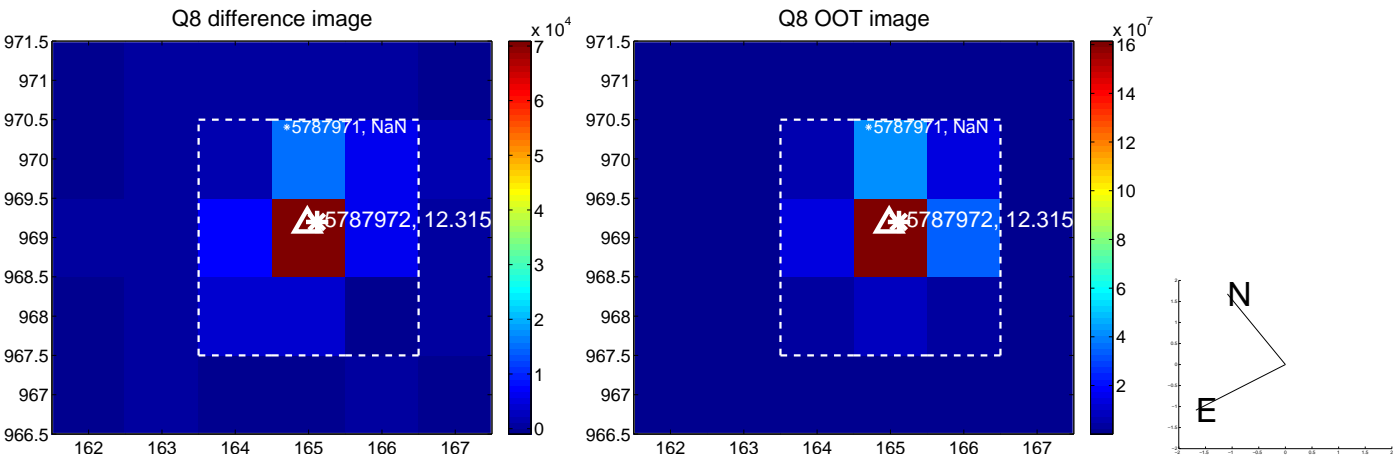
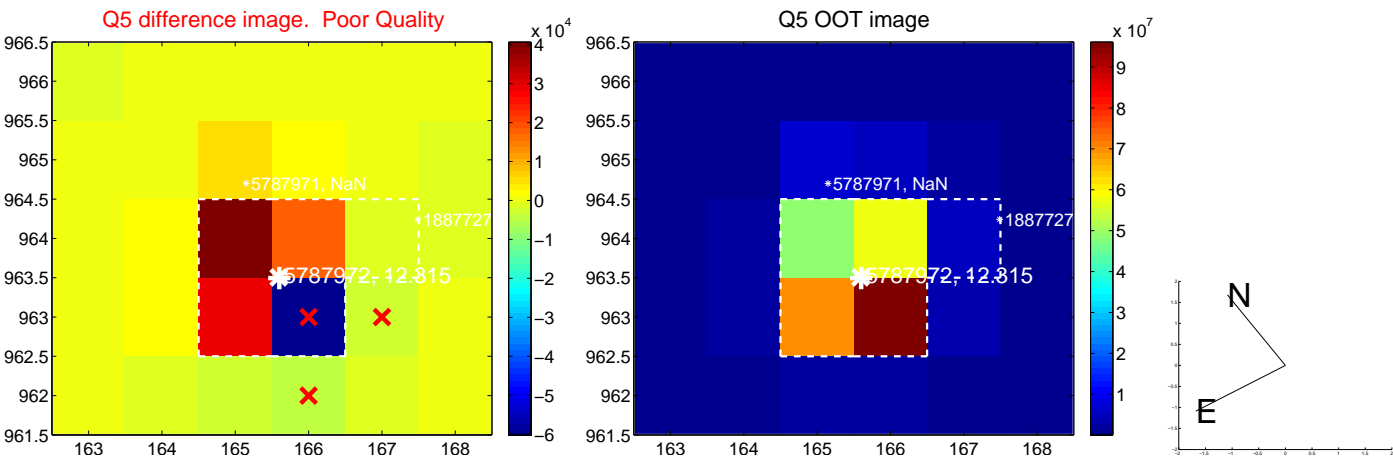


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

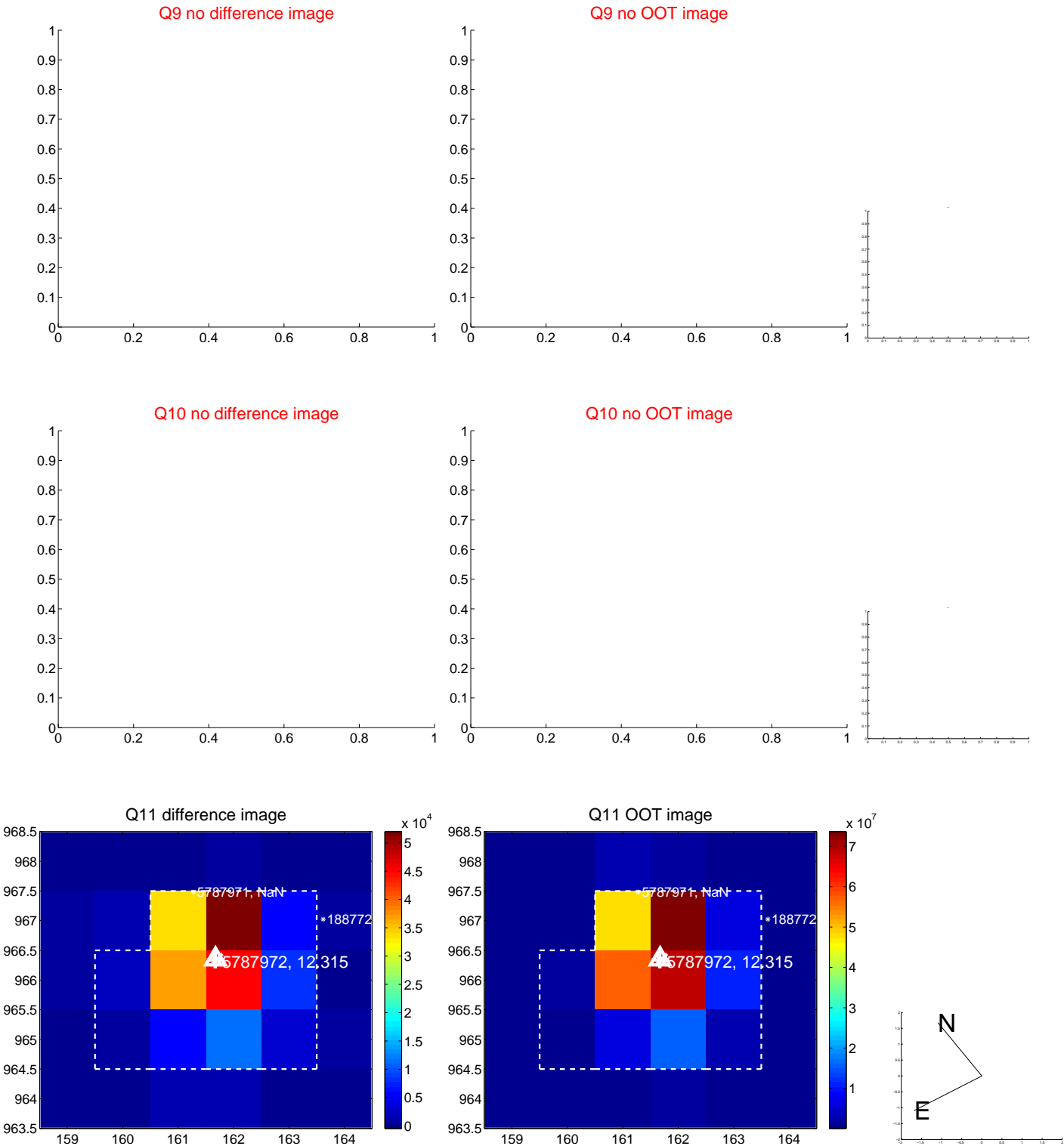
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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.

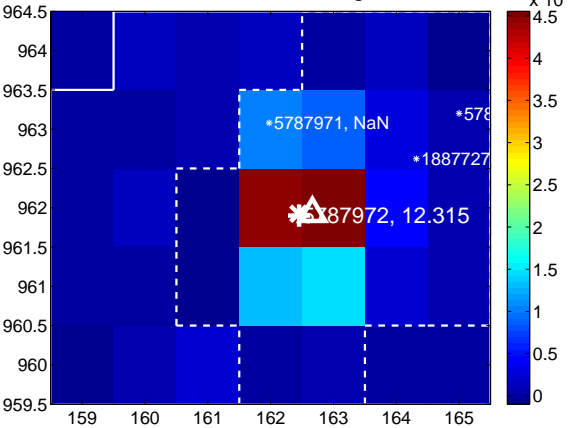
Q13 no difference image



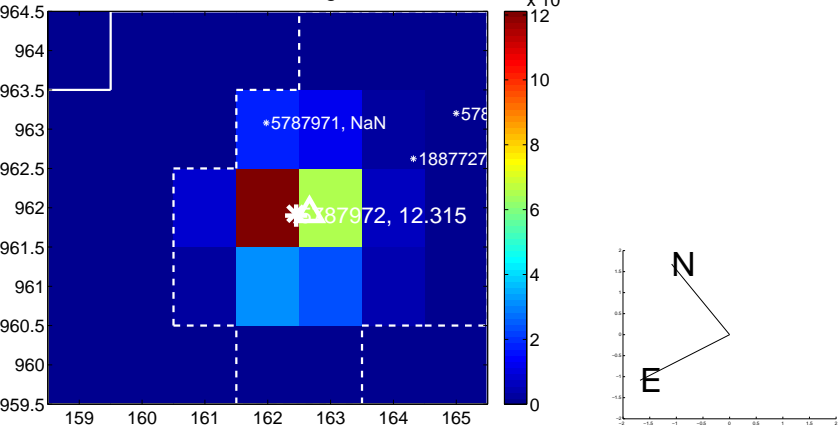
Q13 no OOT image



Q14 difference image



Q14 OOT image



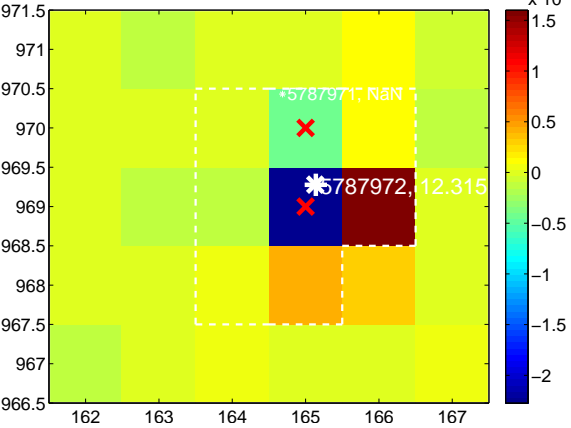
Q15 no difference image



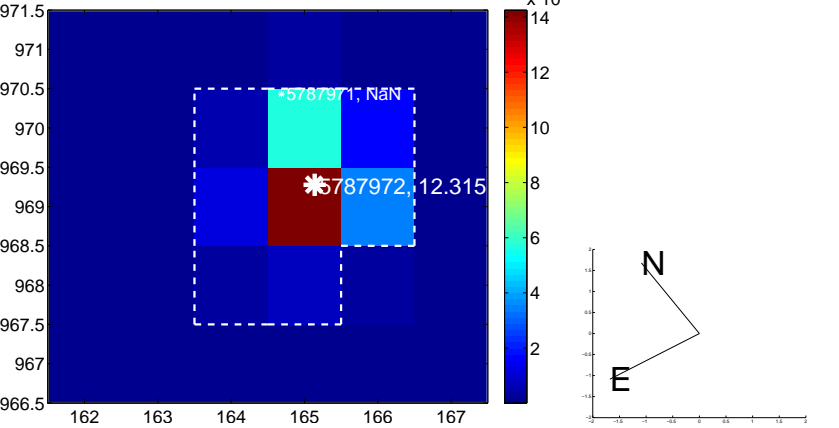
Q15 no OOT image



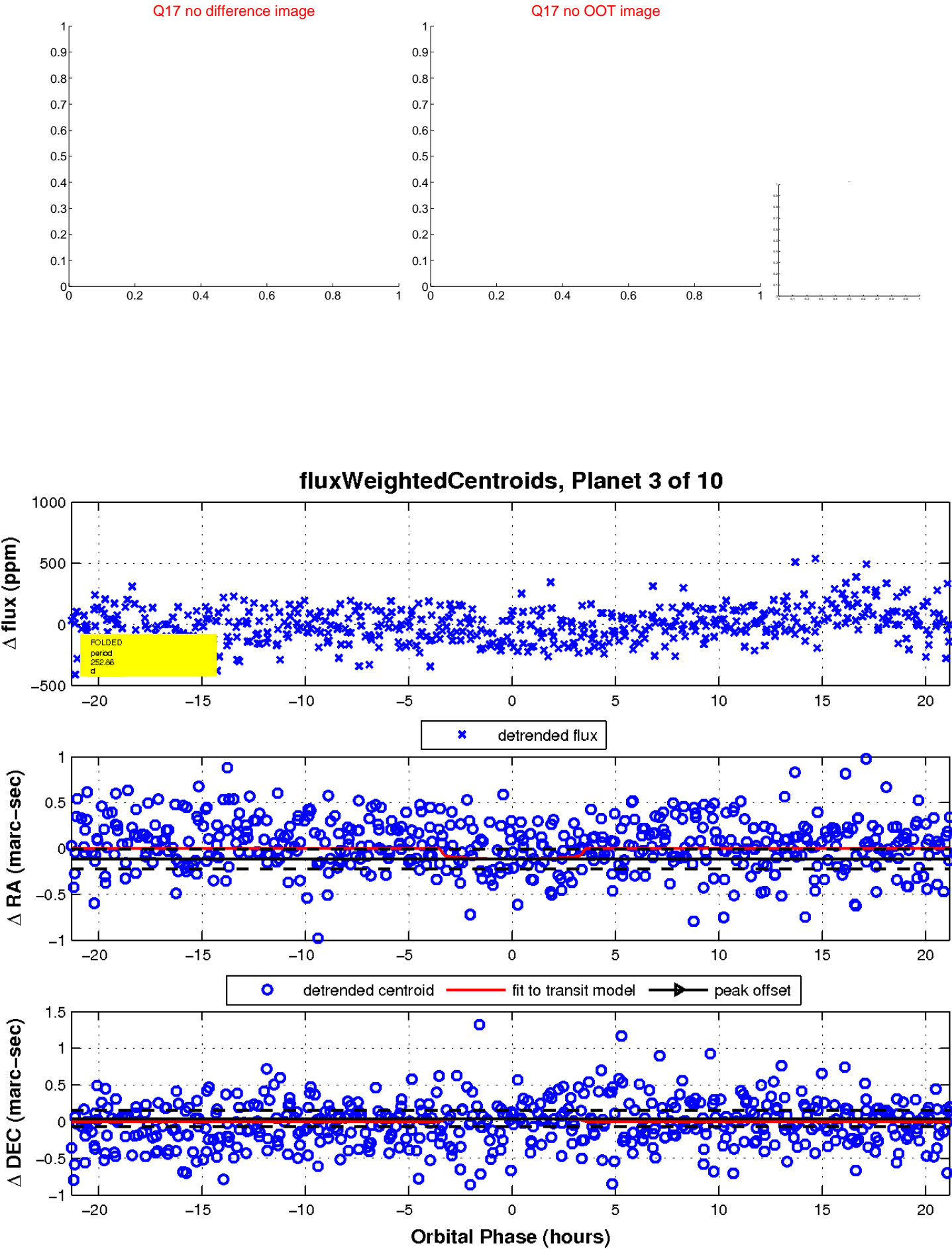
Q16 difference image. Poor Quality



Q16 OOT image

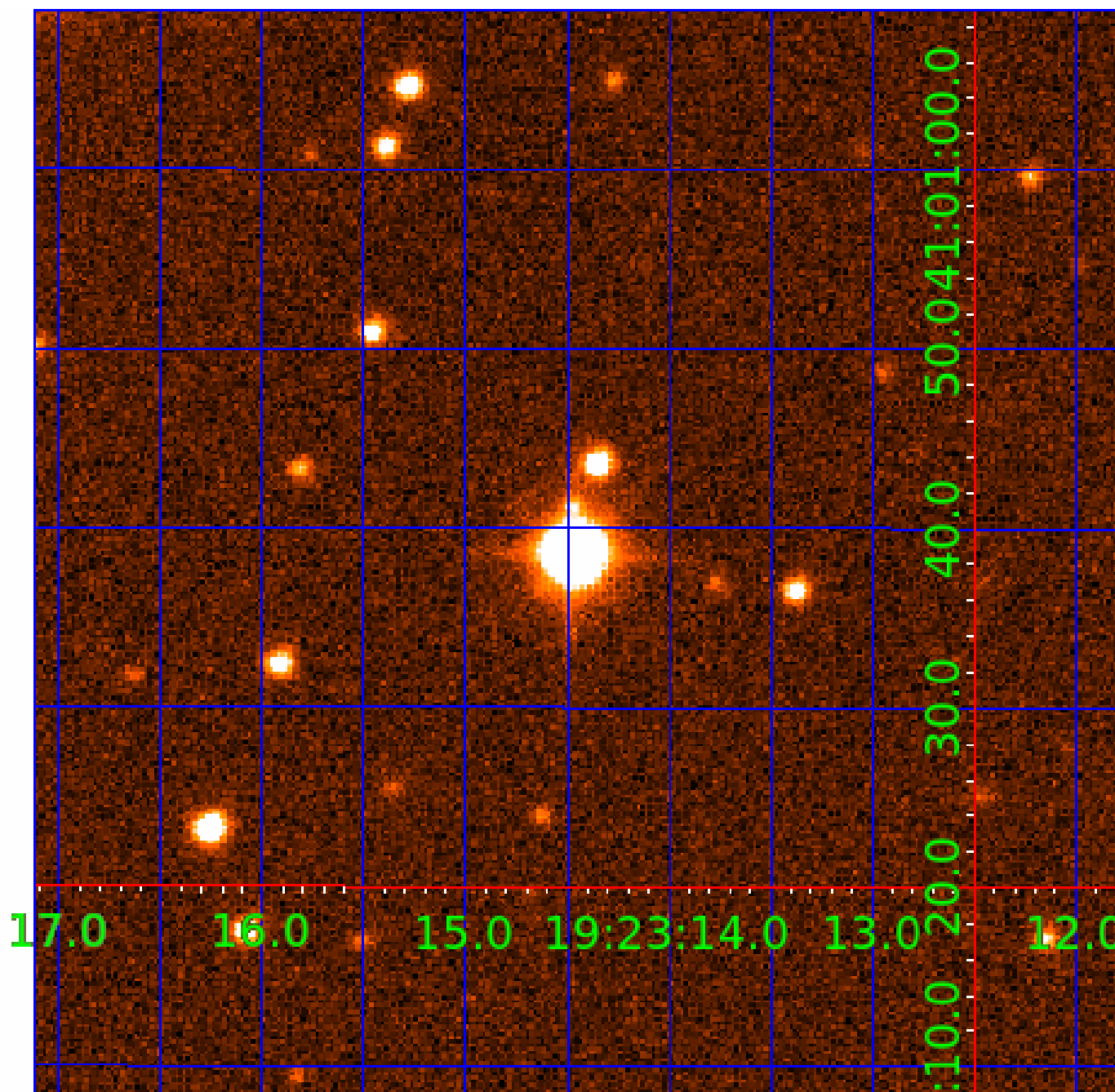


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005787972

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})
005787972-01	OBS	No	1.099151	132.692479	3.2	7.513	8.9	2.8	1.63	6726	0.30	9375.91
005787972-02	OBS	No	57.208769	180.383070	159.0	3.963	12.3	10.1	1.63	6726	2.25	48.25
005787972-03	OBS	No	252.860410	272.632577	232.3	7.104	11.0	12.5	1.63	6726	2.71	6.65
005787972-04	OBS	No	46.490157	147.345820	197.2	1.772	11.2	10.1	1.63	6726	2.32	63.62
005787972-05	OBS	No	32.158912	152.995453	108.7	4.803	9.1	8.3	1.63	6726	1.79	104.00
005787972-06	OBS	No	46.187137	134.771064	173.7	3.448	9.4	10.5	1.63	6726	2.48	64.18
005787972-07	OBS	No	39.098565	153.376700	139.5	3.412	9.6	9.4	1.63	6726	2.14	80.14
005787972-08	OBS	No	25.787015	154.054388	105.4	4.687	8.7	9.3	1.63	6726	1.91	139.60
005787972-09	OBS	No	12.382392	142.368262	70.6	4.369	9.5	8.6	1.63	6726	1.56	371.26
005787972-10	OBS	No	41.093899	144.818289	211.9	2.500	9.1	-1.0	1.63	6726	2.40	75.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005787972-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
005787972-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005787972-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
005787972-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005787972-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNRESOLVED_OFFSET
005787972-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_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.

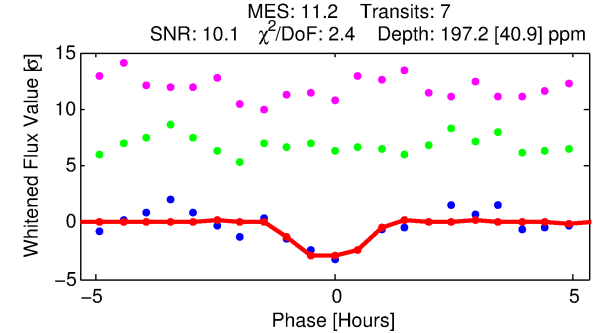
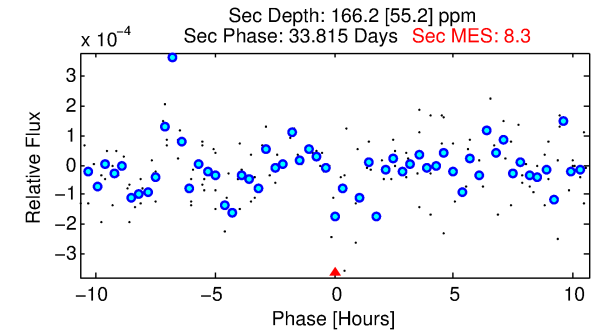
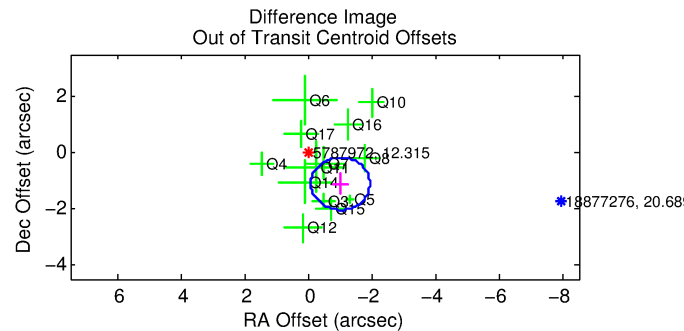
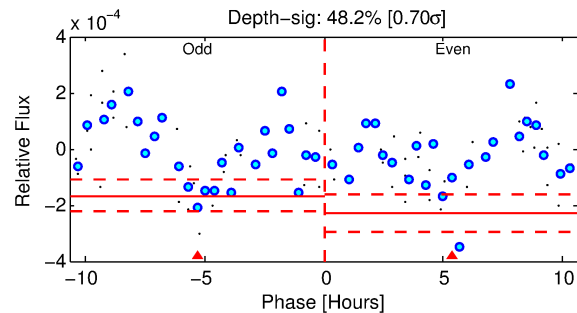
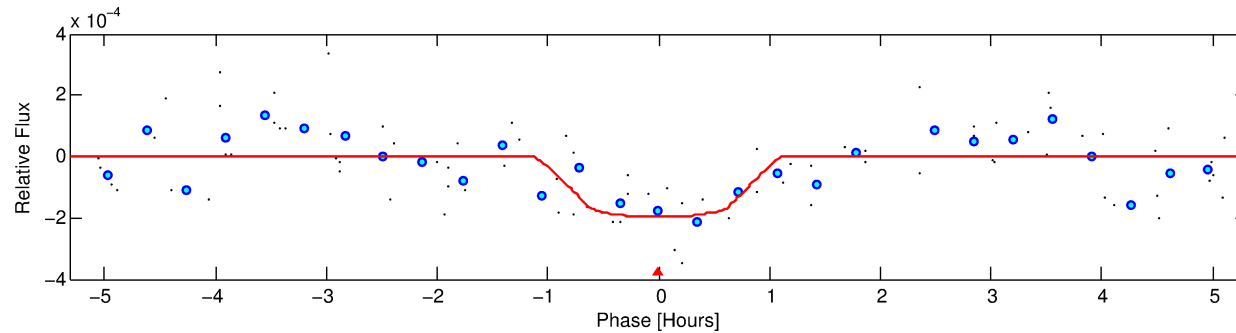
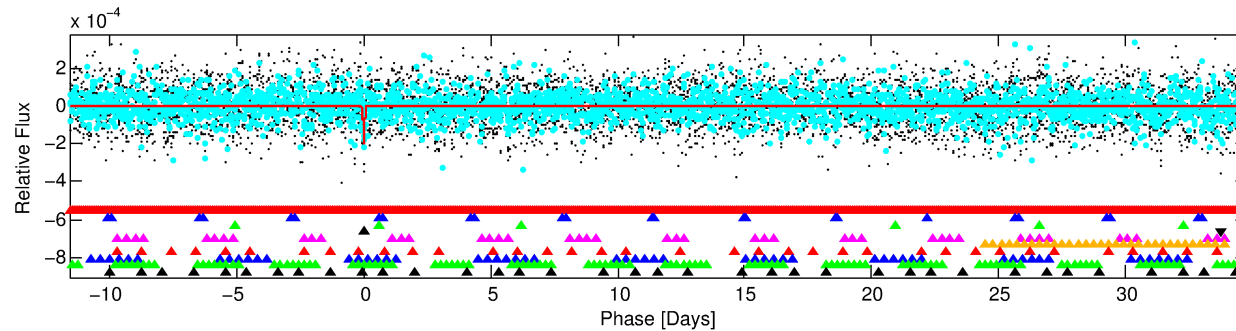
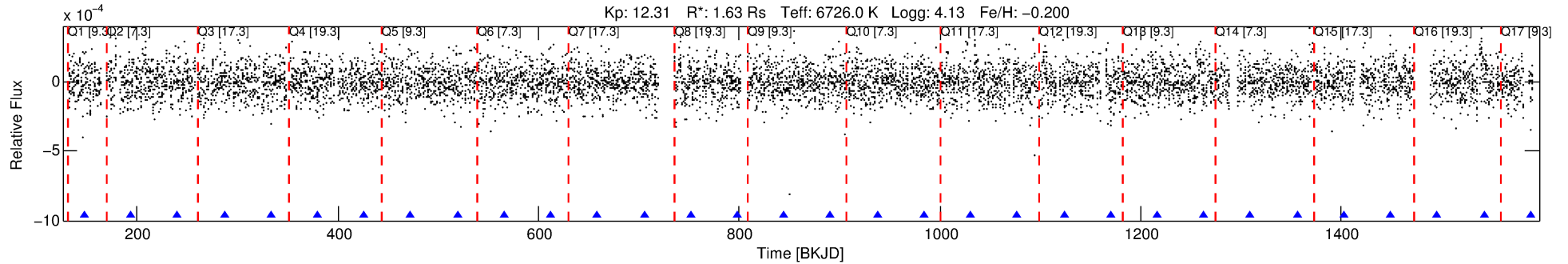
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005787972-04

No Significant Match Found

DV One-Page Summary

KIC: 5787972 Candidate: 4 of 10 Period: 46.490 d



DV Fit Results:

Period = 46.49016 [0.00043] d
Epoch = 147.3458 [0.0103] BKJD
Rp/R* = 0.0130 [0.0268]
a/R* = 202.98 [2262.76]
b = 0.00 [4242.73]
Seff = 63.62 [15.44]
Teff = 720 [44] K
Rp = 2.32 [4.80] Re
a = 0.2774 [0.0449] AU
Ag = 1311.25 [5442.30] [0.24 σ]
Teffp = 6700 [6942] K [0.86 σ]

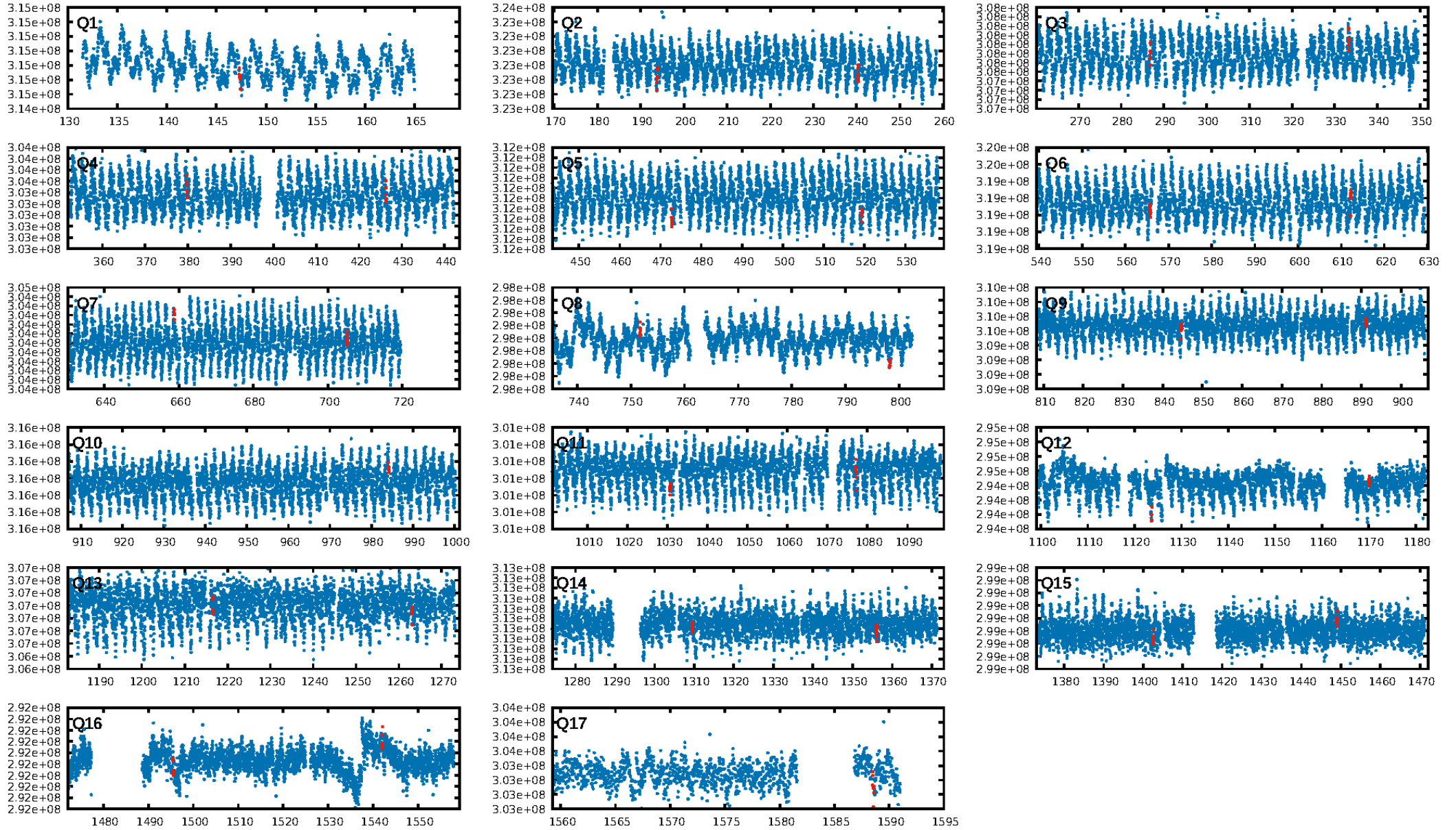
DV Diagnostic Results:

ShortPeriod-sig: 93.9% [1.88 σ]
LongPeriod-sig: 100.0% [59.25 σ]
ModelChiSquare2-sig: 36.7%
ModelChiSquareGof-sig: 68.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 0.1163
Centroid-sig: 61.2%
Centroid-so: 0.241 arcsec [0.56 σ]
OotOffset-rm: 1.485 arcsec [4.77 σ]
KicOffset-rm: 1.483 arcsec [4.63 σ]
OotOffset-st: 3/4/4/2 [13]
KicOffset-st: 3/4/4/2 [13]
DiffImageQuality-fgm: 0.69 [9/13]
DiffImageOverlap-fno: 0.41 [7/17]

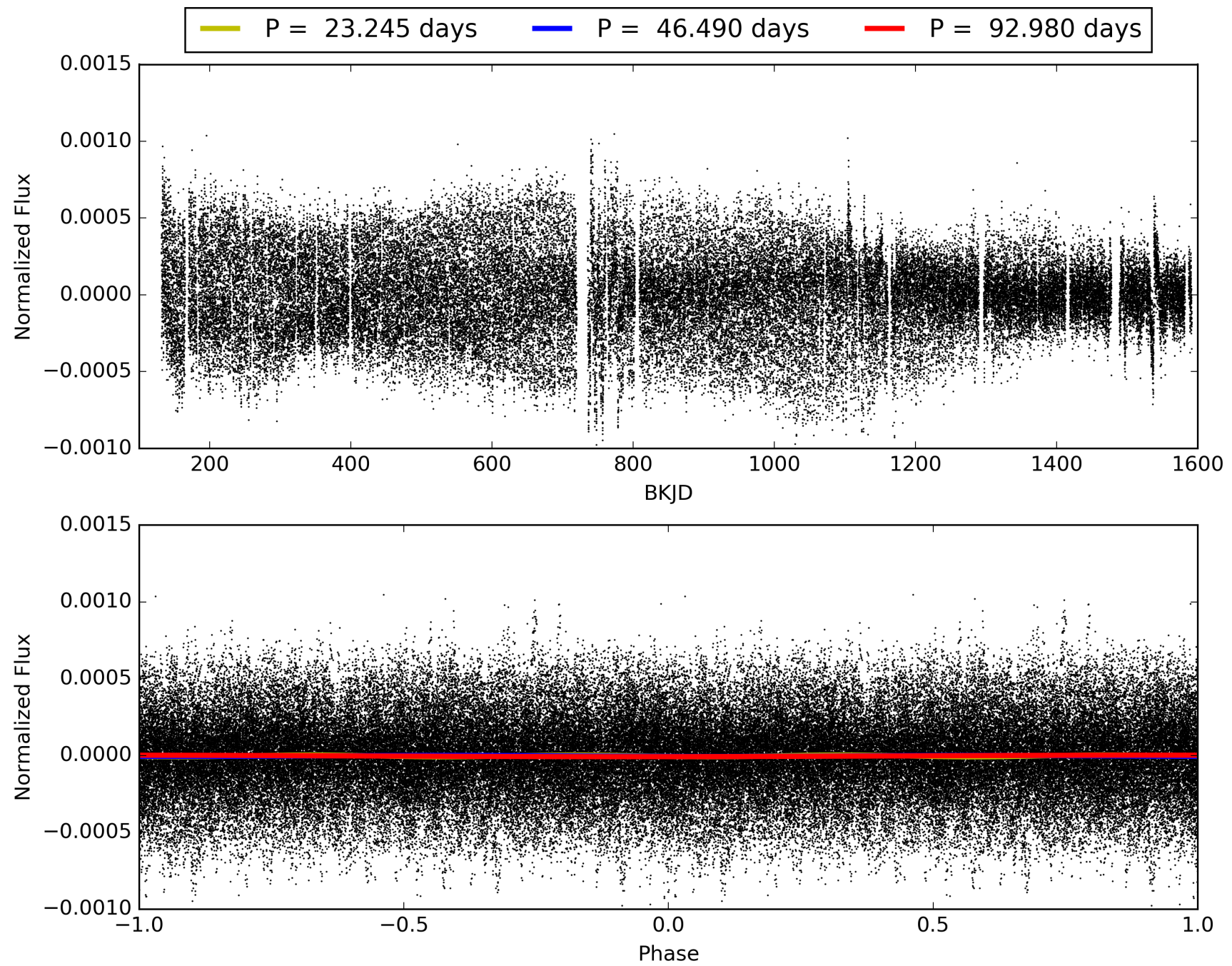
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:25:03 Z

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

TCE 005787972-04, PDC Light Curves

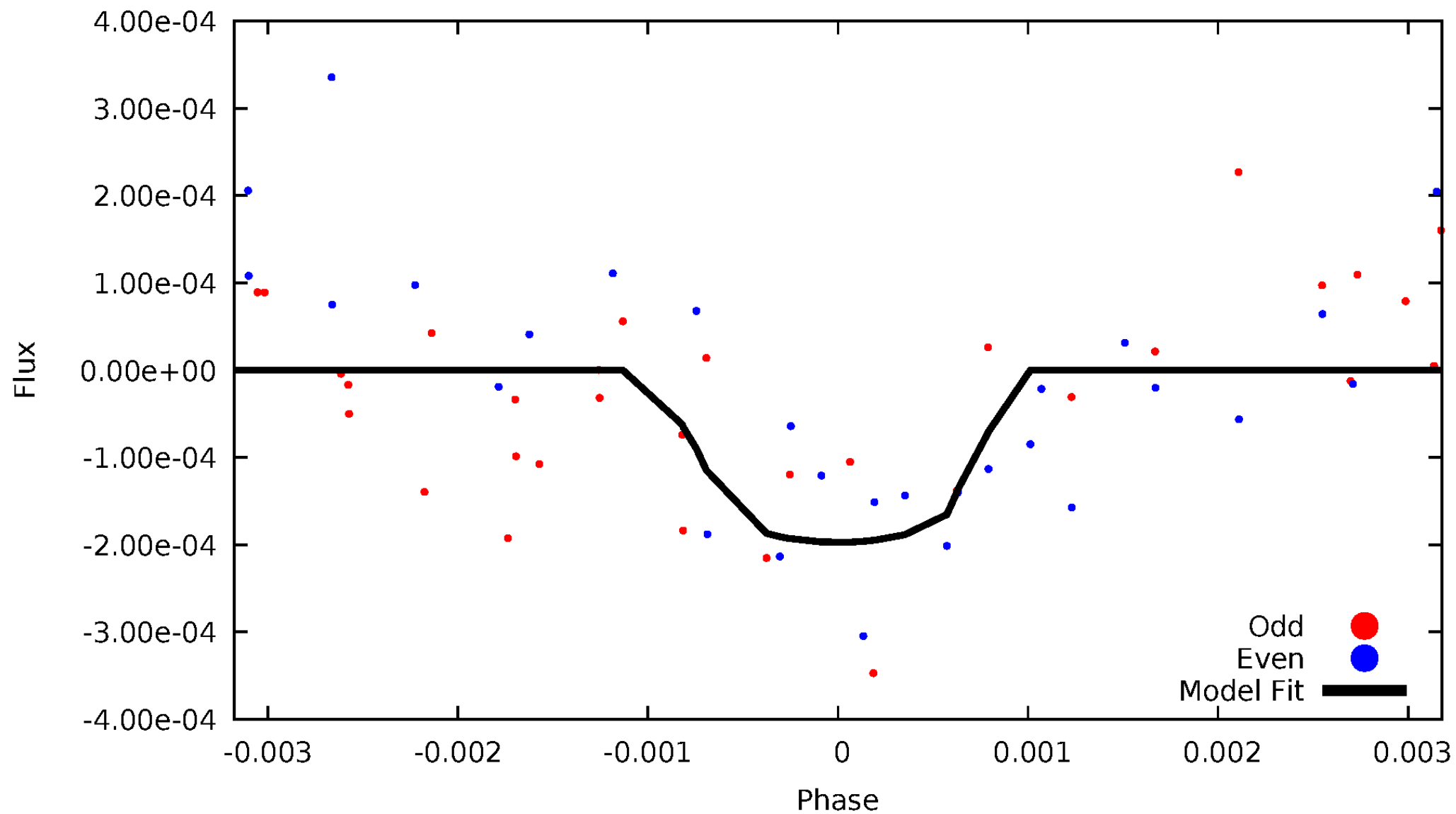


TCE 005787972-04



DV Odd/Even

TCE 005787972-04

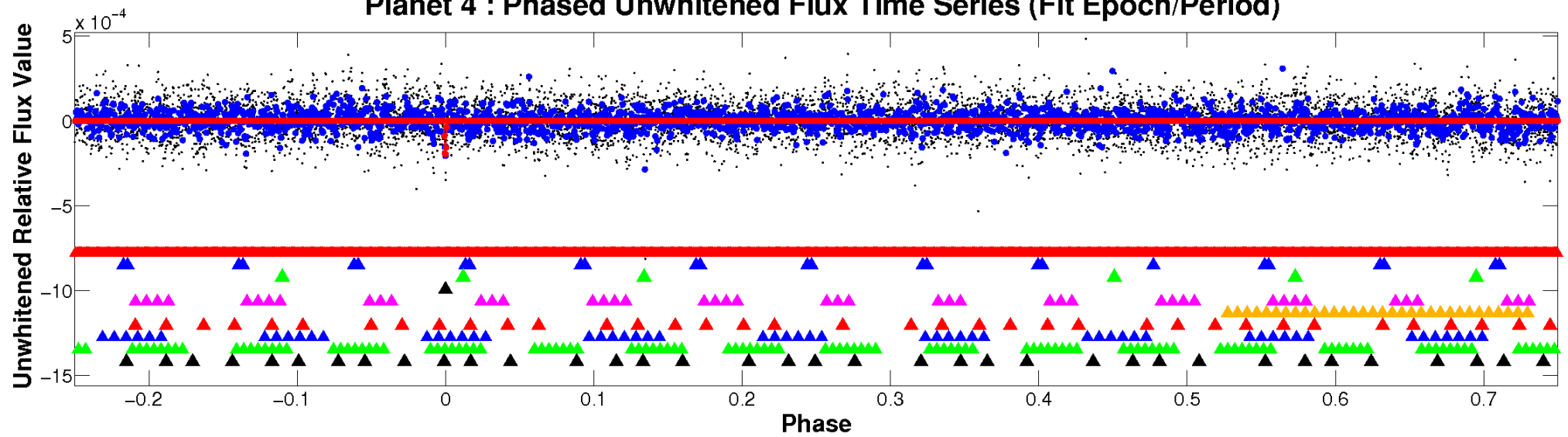


ALT Odd/Even

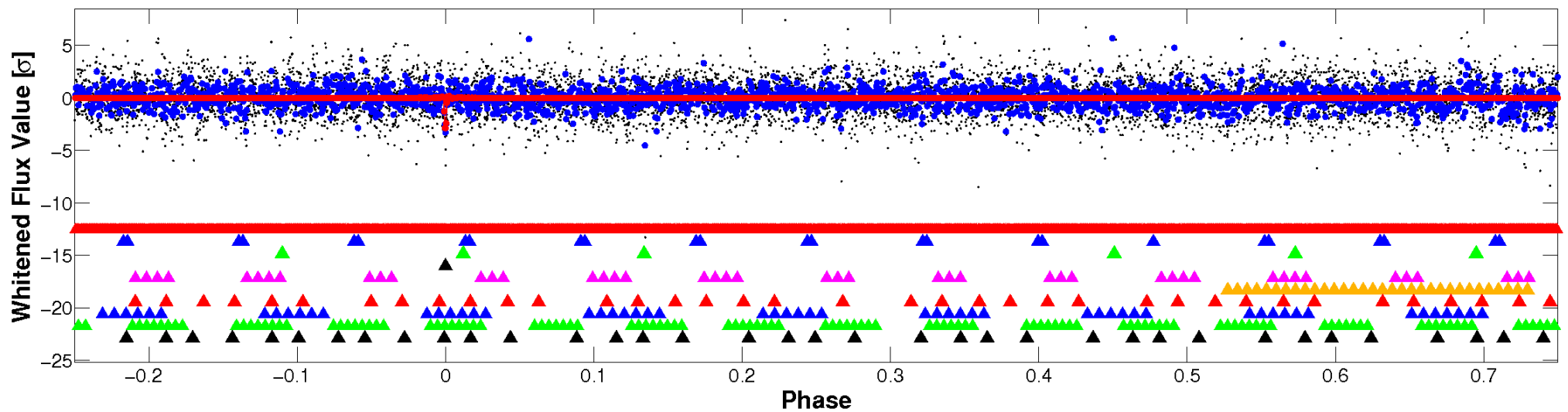
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

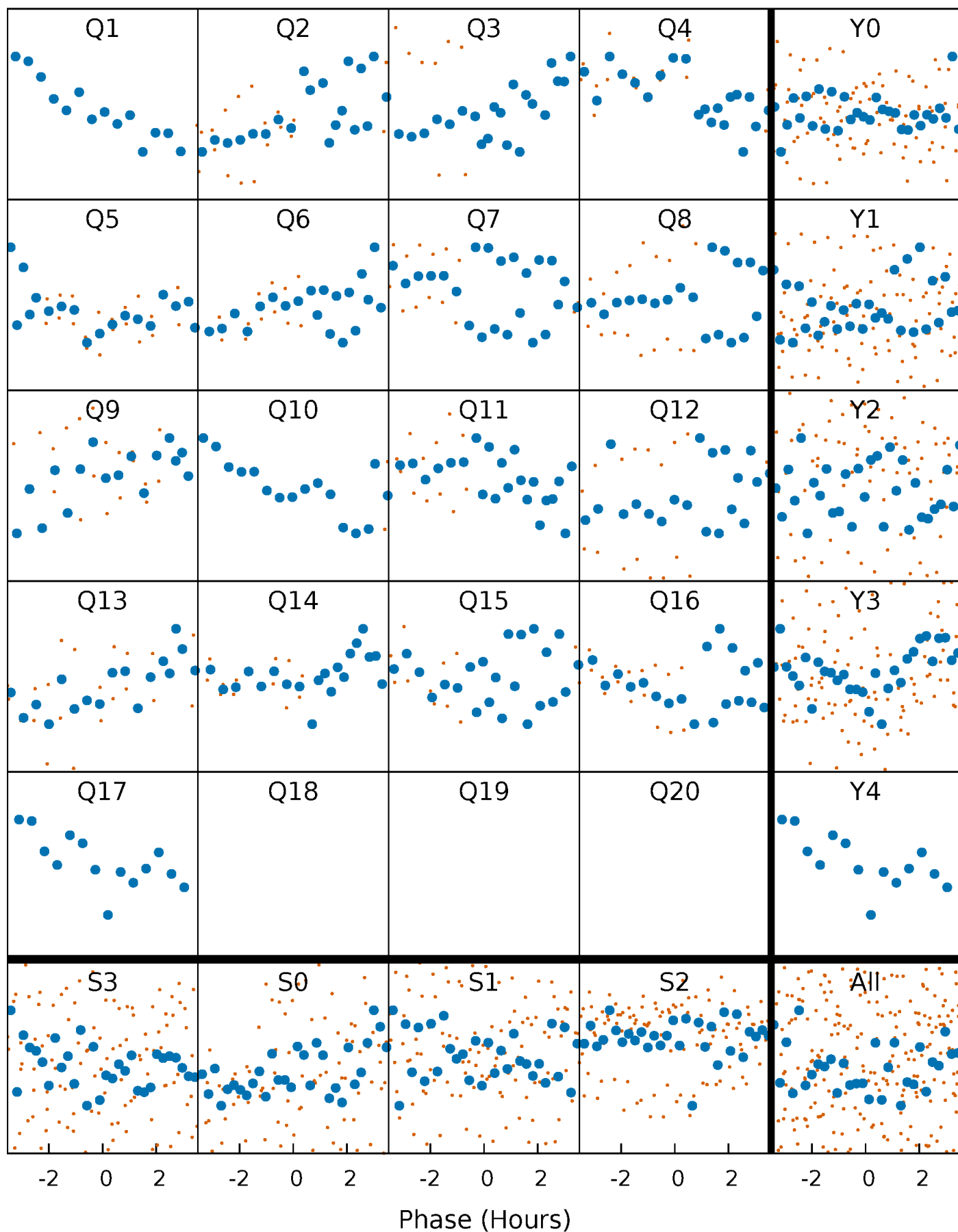


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



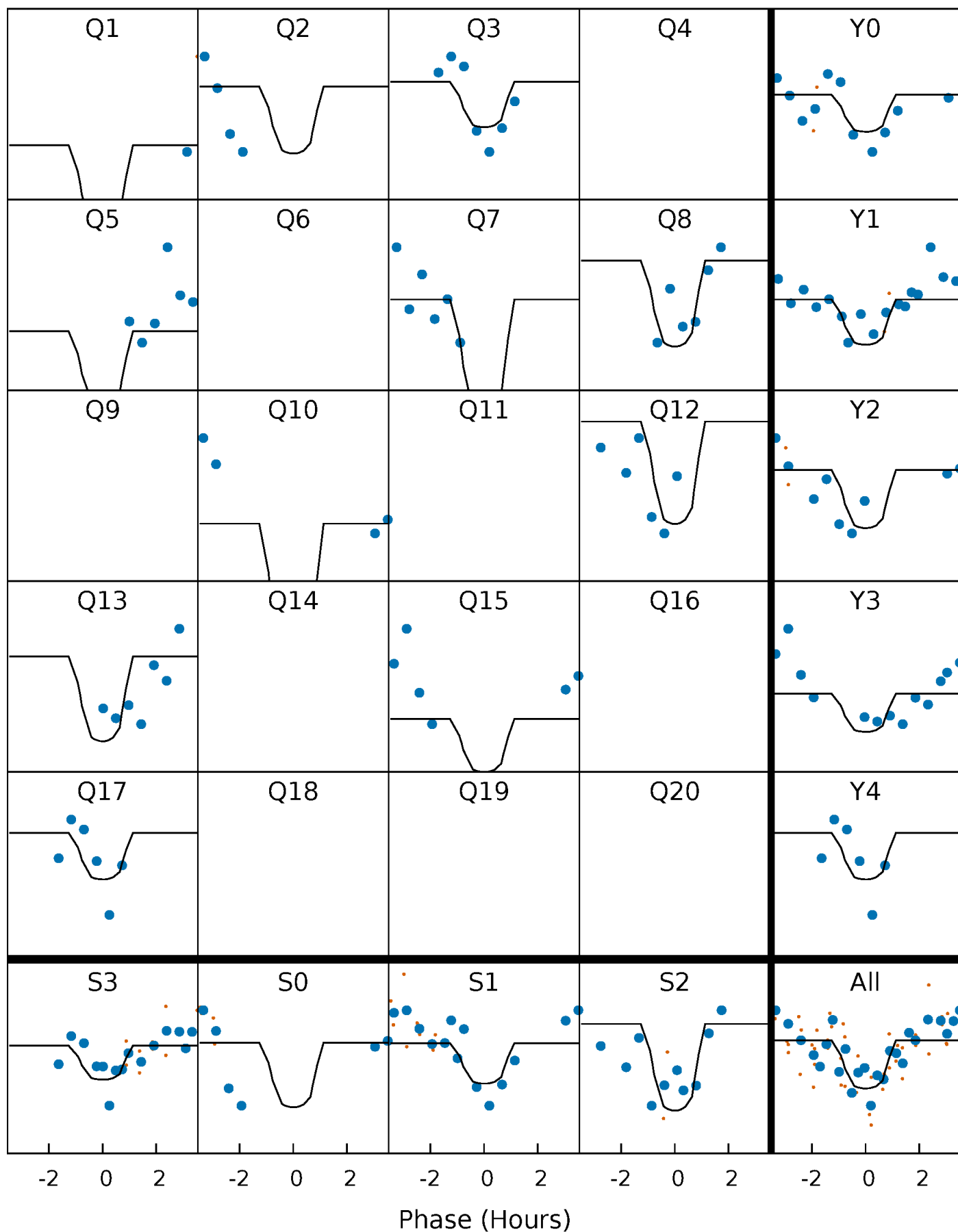
PDC Quarter-Phased Transit Curves

TCE 005787972-04 P= 46.490157 Days $T_0=147.345820$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 005787972-04 P= 46.490157 Days $T_0=147.345820$ (BKJD)

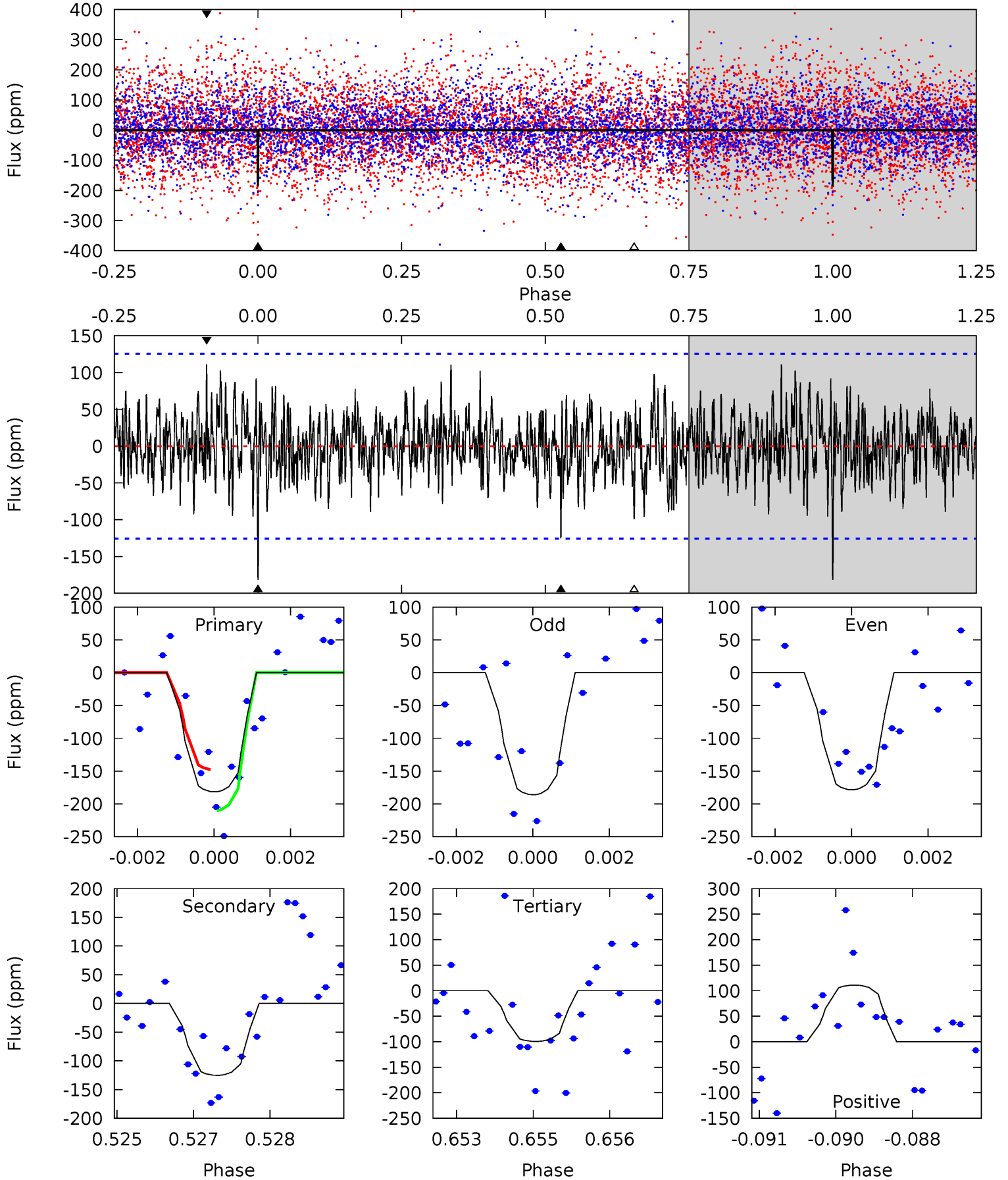


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

005787972-04, P = 46.490157 Days, E = 100.855663 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.72	5.32	4.23	4.72	5.34	3.12	1.45	3.49	3.00	1.10	0.60	0.16	0.99	0.38	1.32



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 005787972

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6726^{+70}_{-90}	$4.131^{+0.130}_{-0.130}$	$-0.200^{+0.150}_{-0.150}$	$1.634^{+0.312}_{-0.284}$	$1.328^{+0.098}_{-0.122}$	$0.428^{+0.262}_{-0.163}$
	+1%/-1%	+3%/-3%	+75%/-75%	+19%/-17%	+7%/-9%	+61%/-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 005787972-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-125 ± 24	$3.90^{+3.98}_{-2.61}$	1006^{+48}_{-47}	4884^{+3828}_{-1129}	362^{+2757}_{-280}
Alt.	N/A	N/A	N/A	N/A	N/A

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 $A_{obs} \gg 1.0$

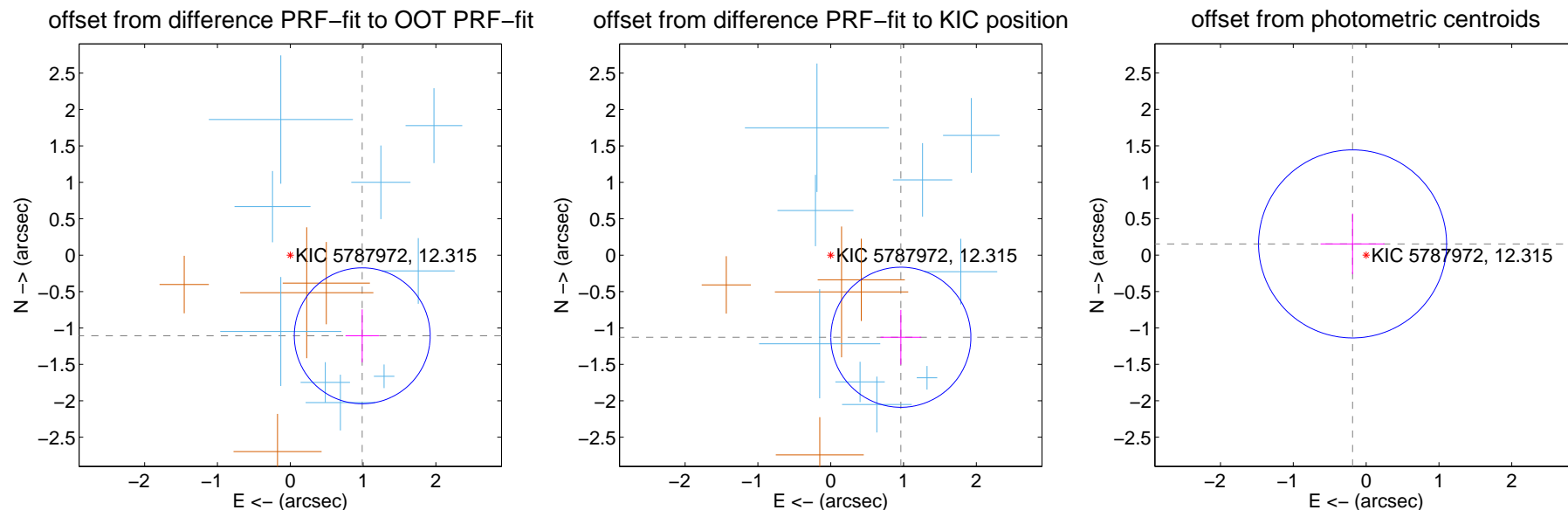
DV Centroid Data

Supplemental centroid analysis for 005787972-04. Kepler magnitude: 12.31. Transit SNR 10.13

There are 9 quarters with good PRF difference image offsets

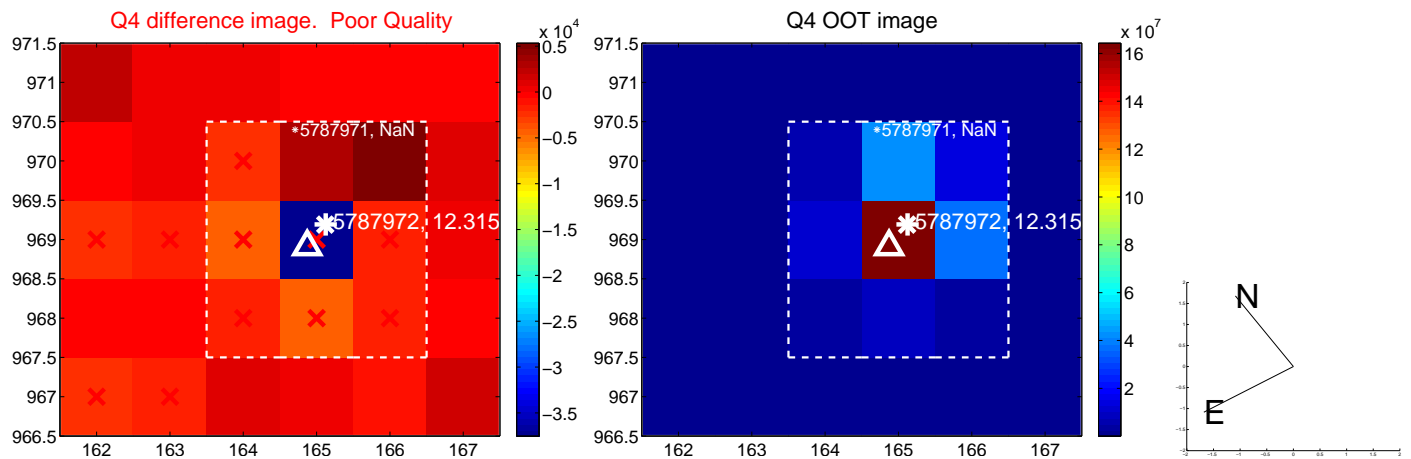
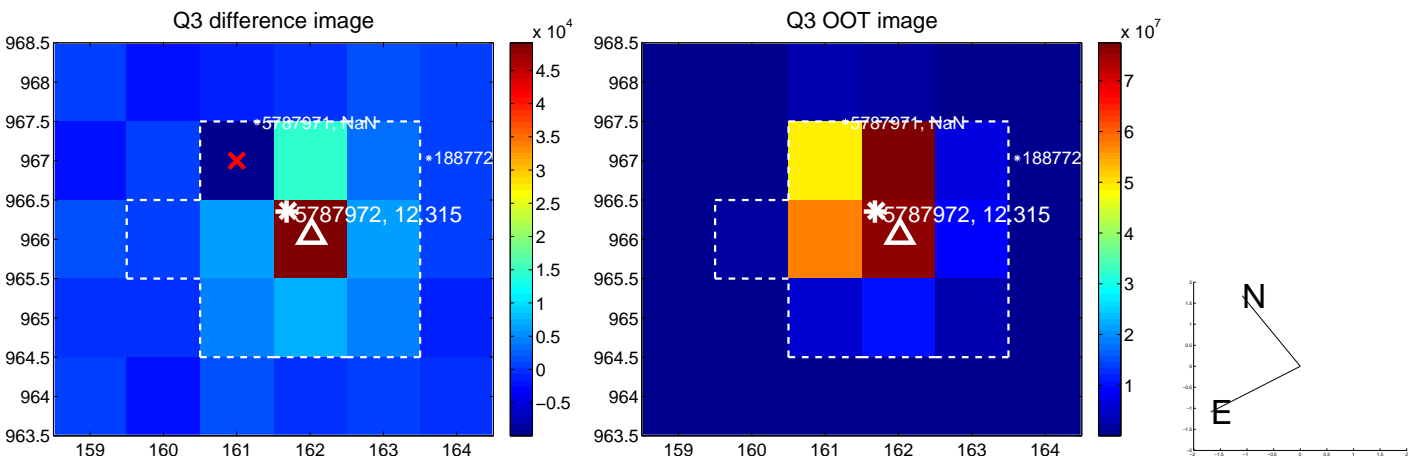
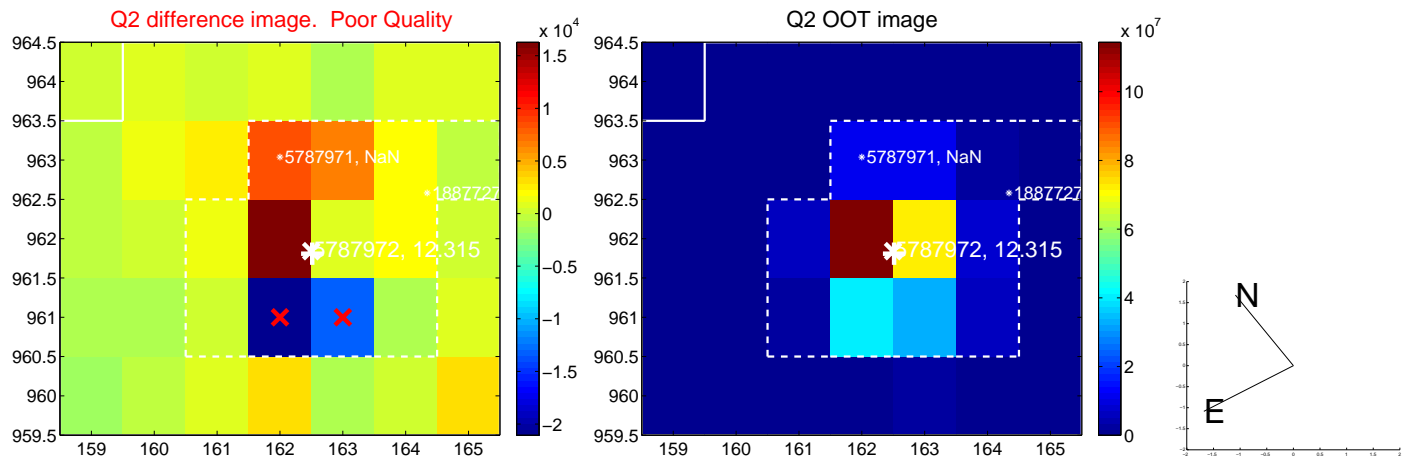
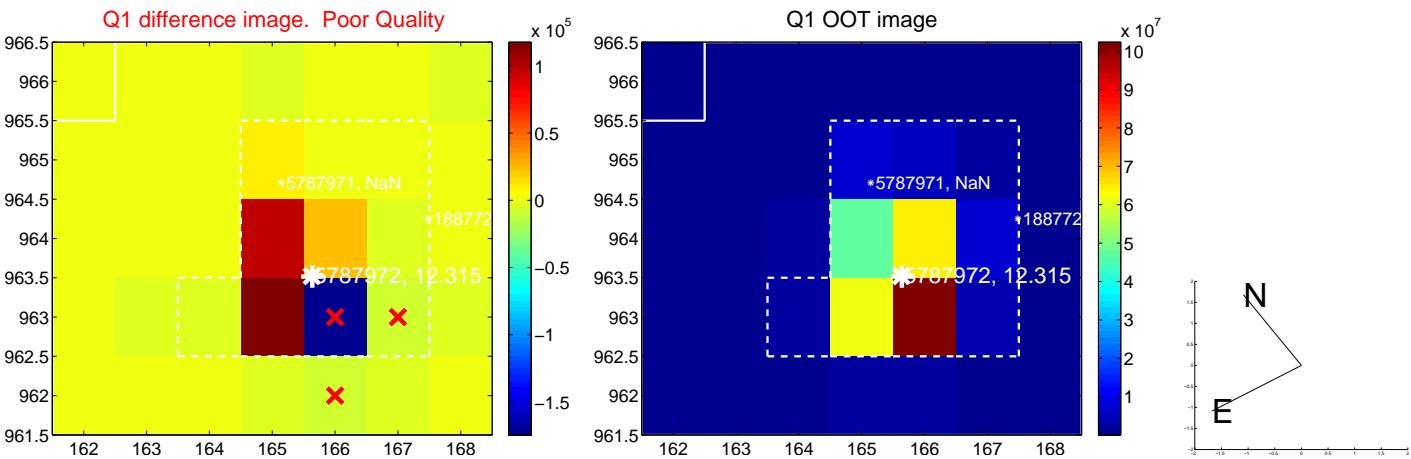
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.485 ± 0.311	4.77	-0.989 ± 0.230	-1.108 ± 0.363
PRF-fit source offset from KIC position	1.483 ± 0.321	4.63	-0.963 ± 0.280	-1.127 ± 0.376
photometric centroid source offset	0.24 ± 0.43	0.56	0.19 ± 0.44	0.15 ± 0.42

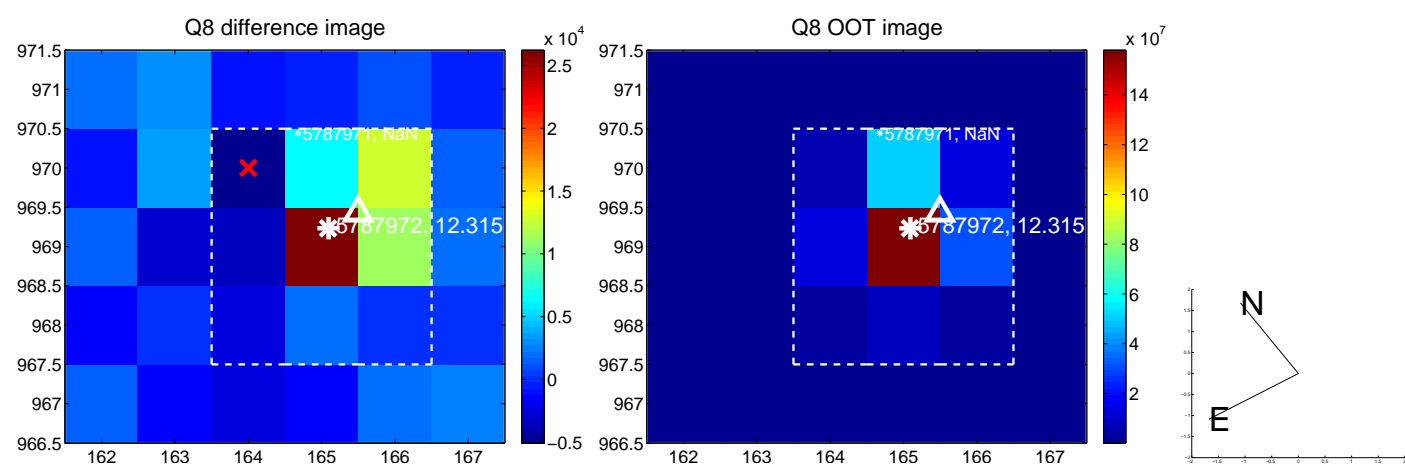
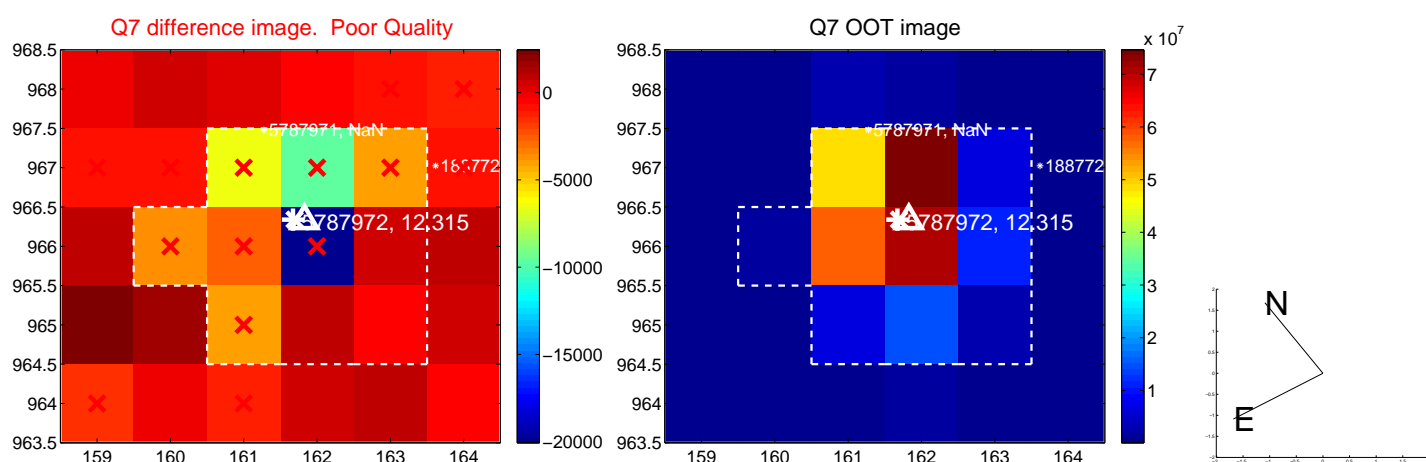
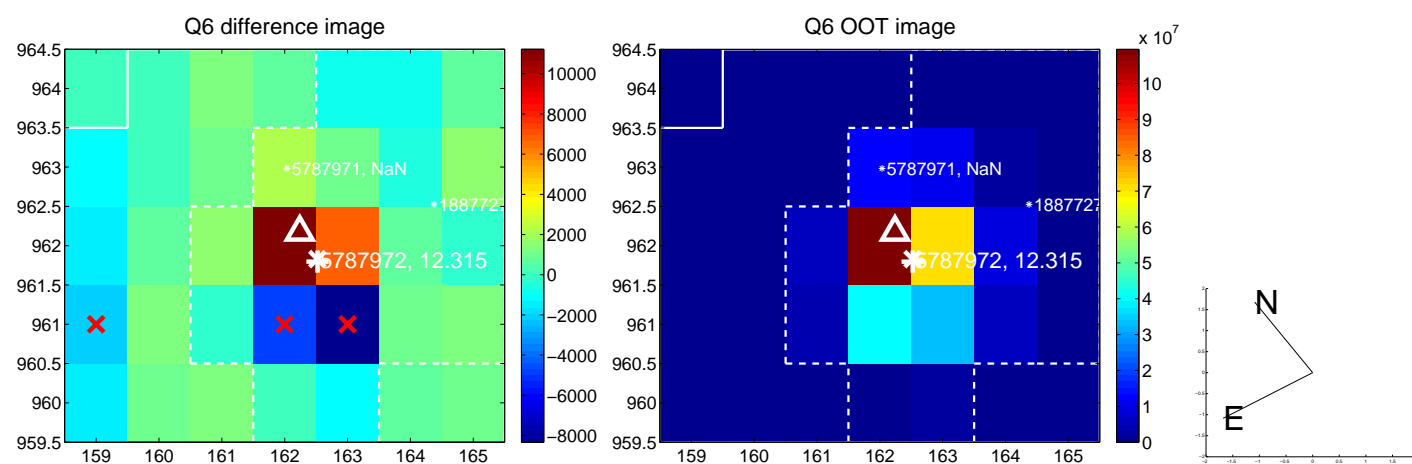
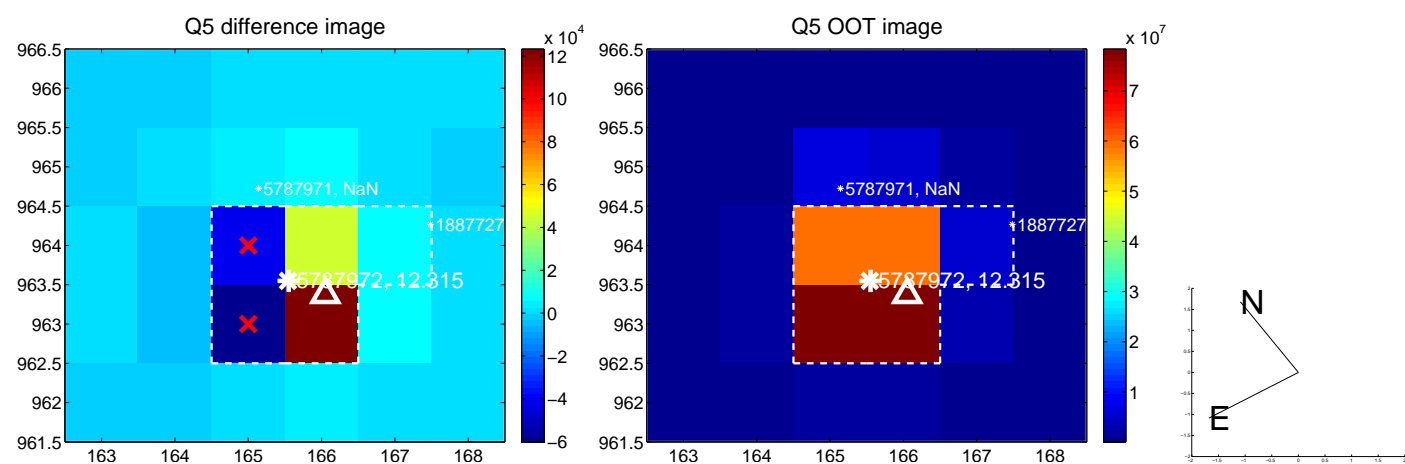


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

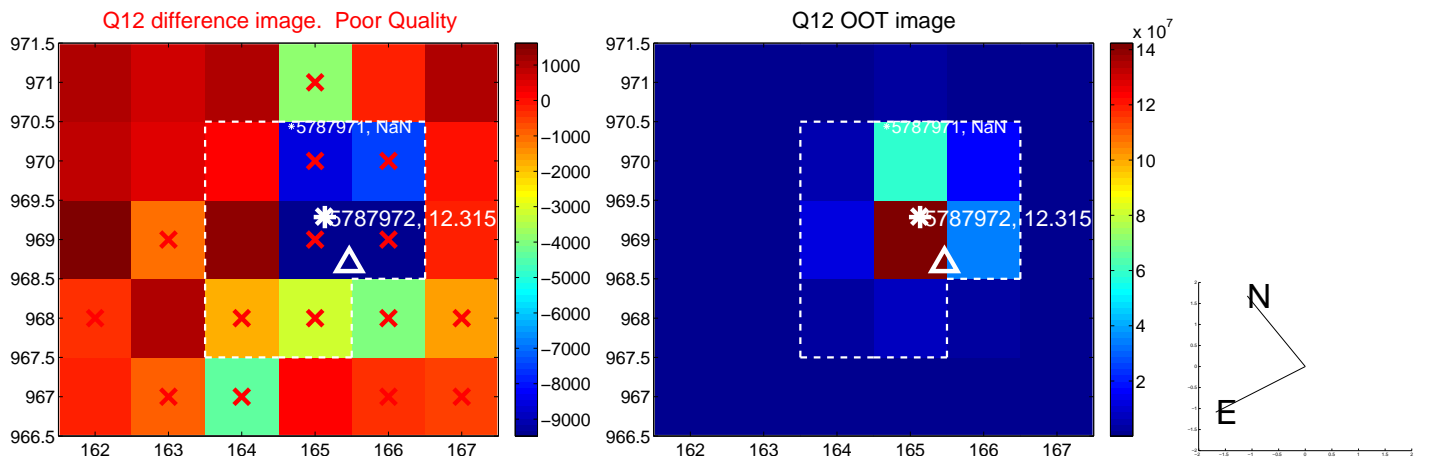
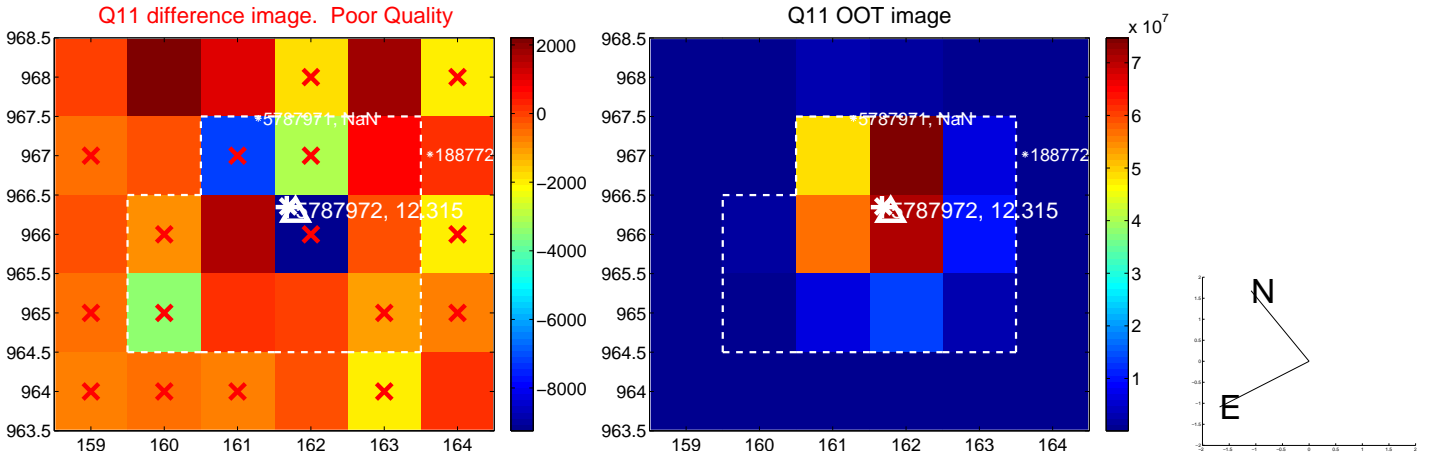
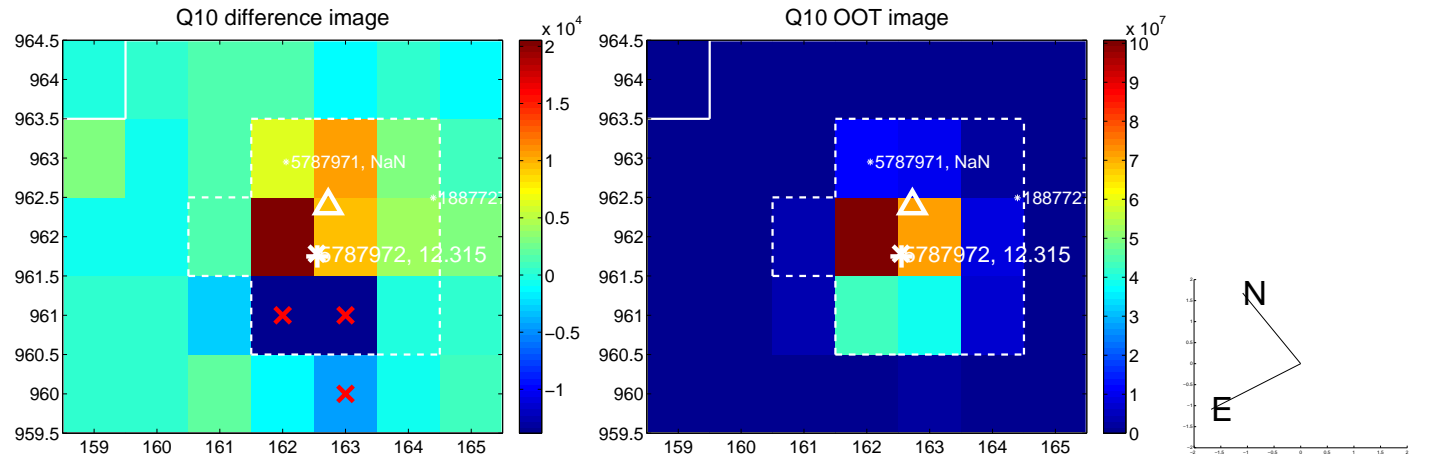
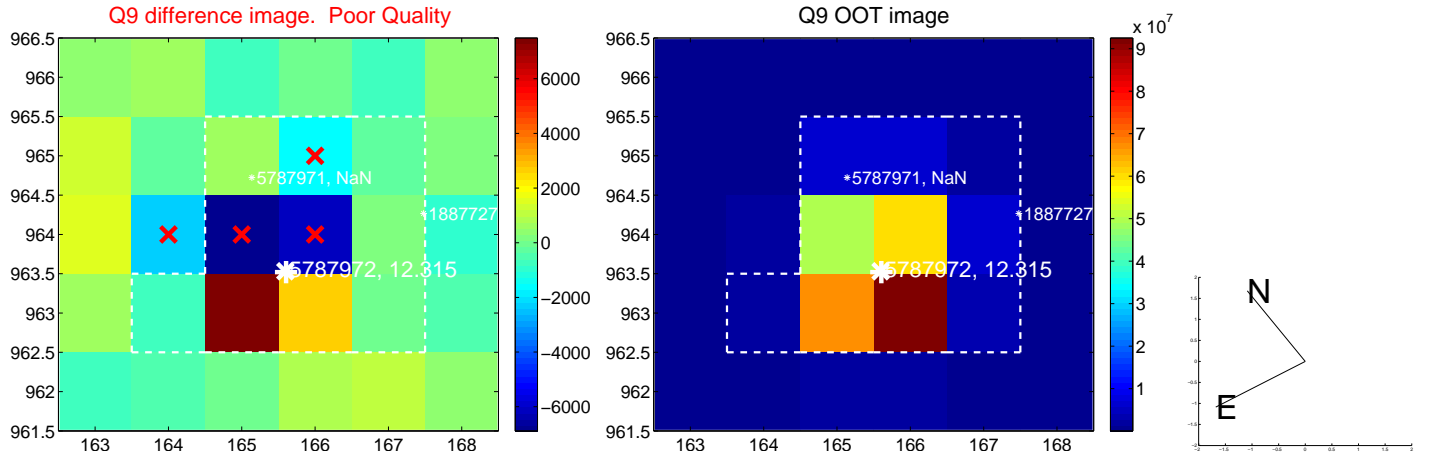
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



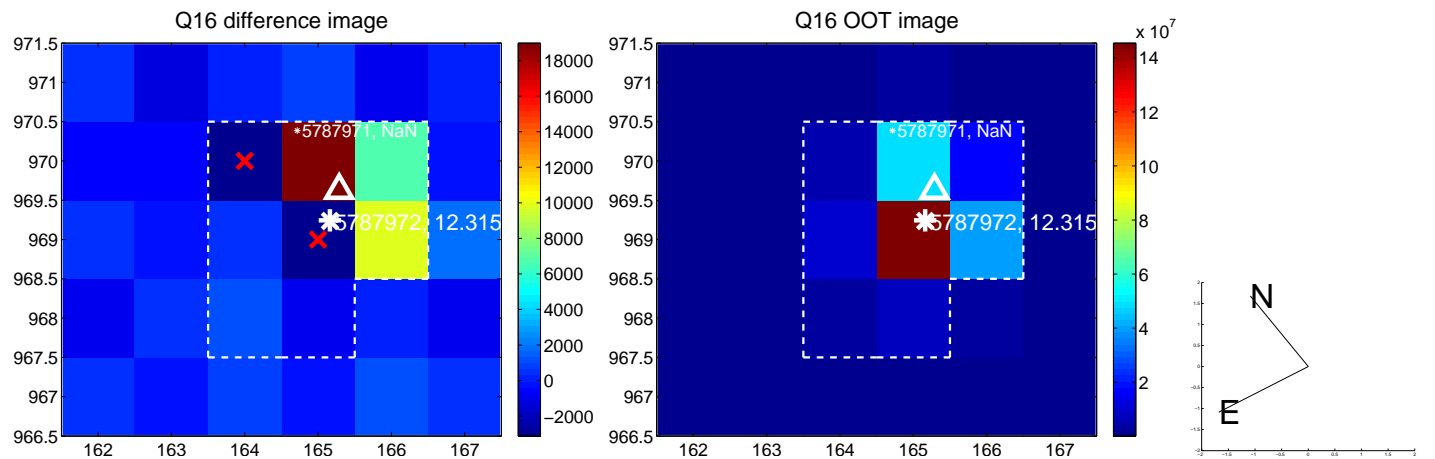
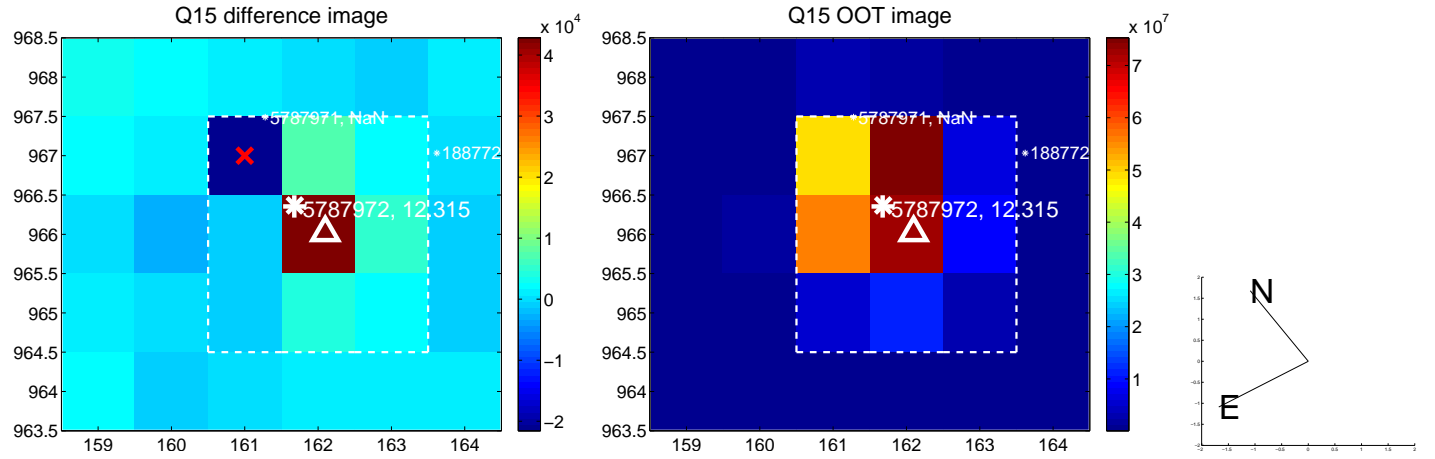
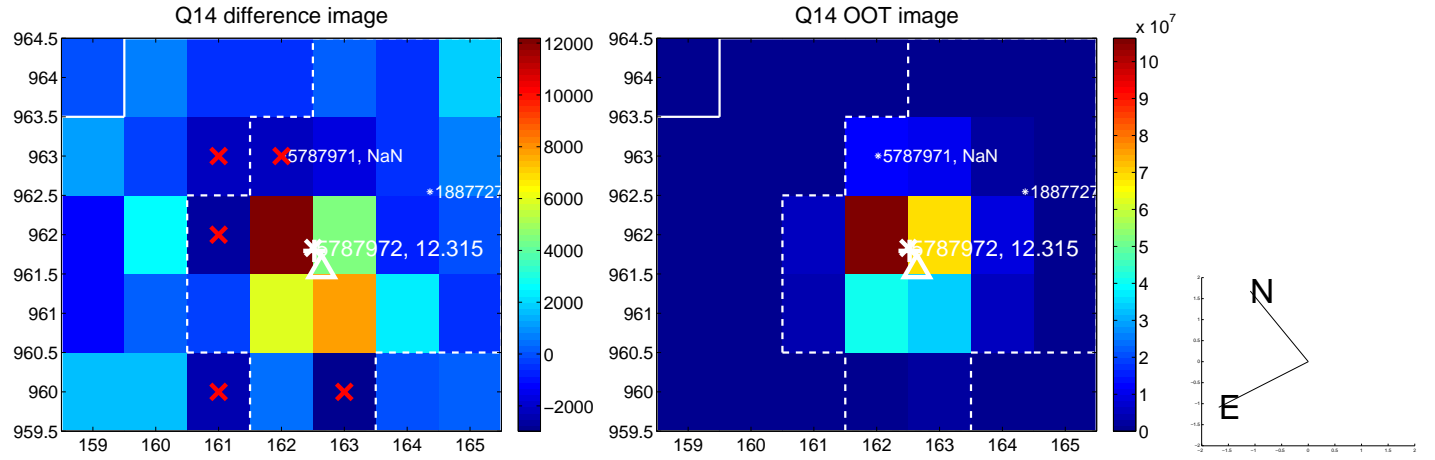
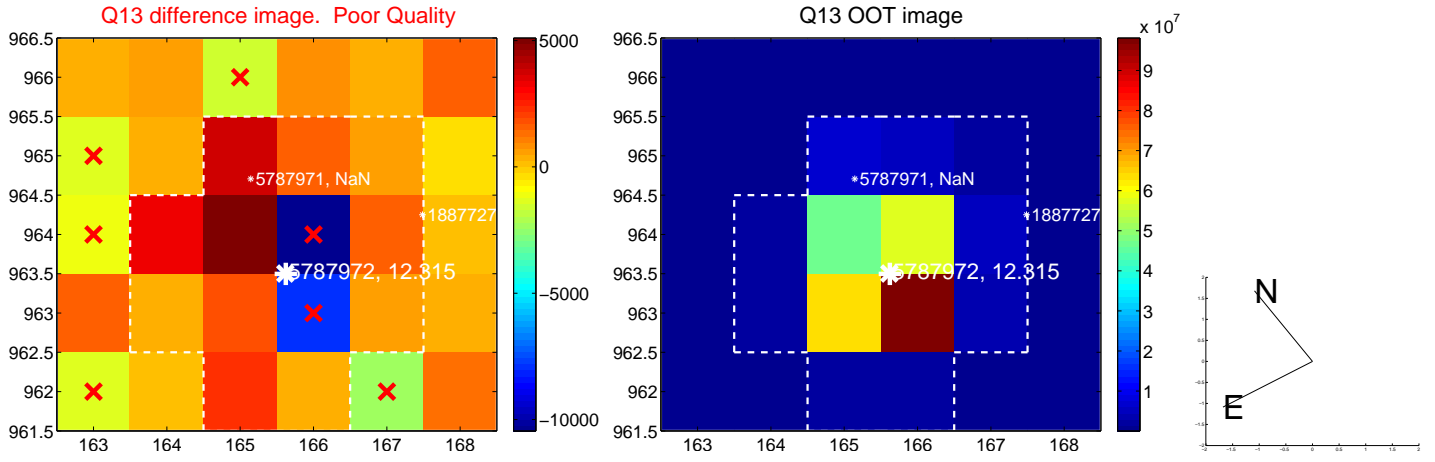
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



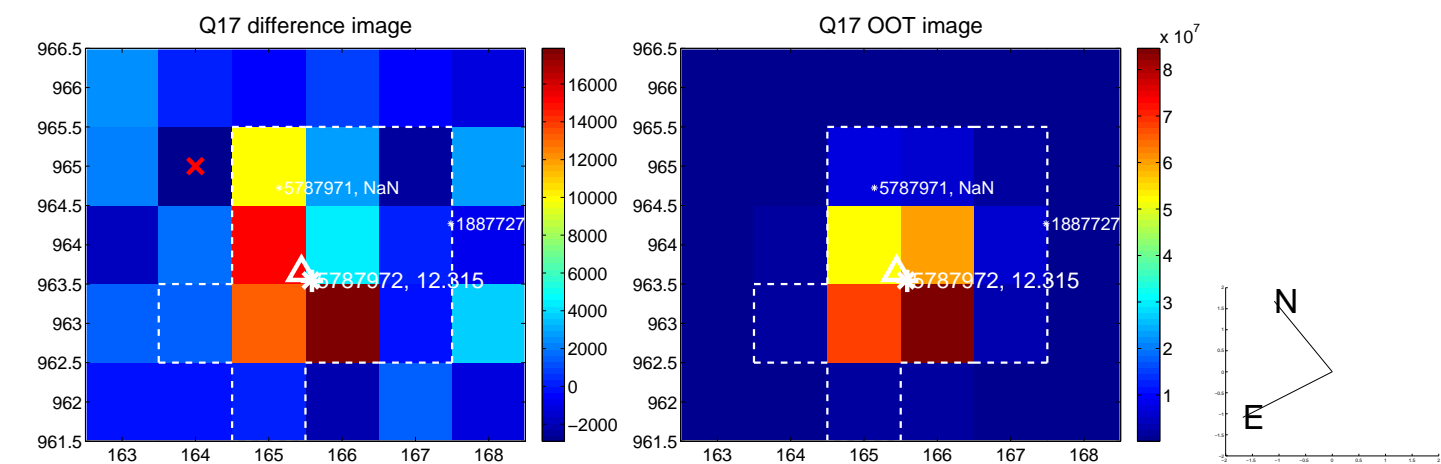
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



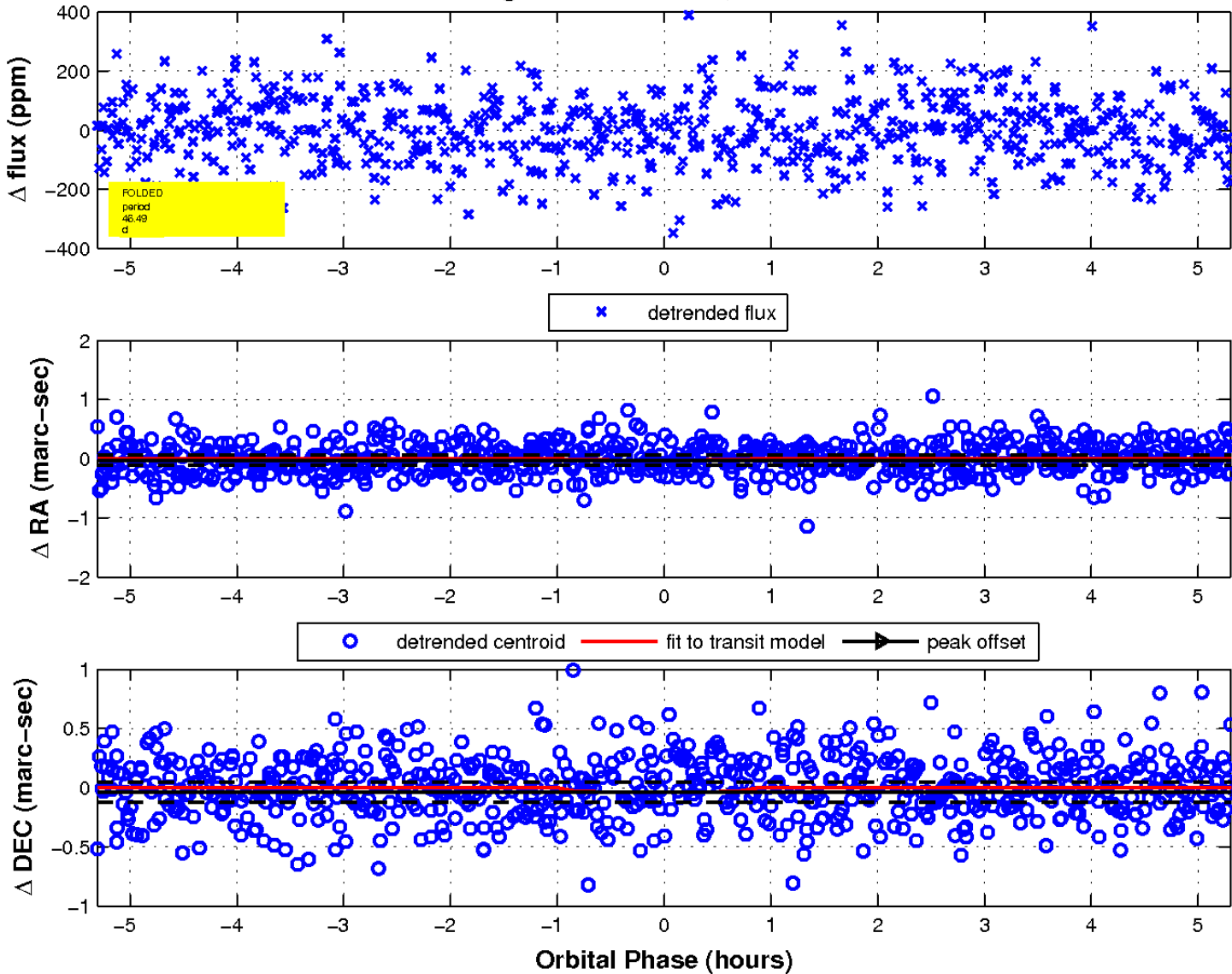
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

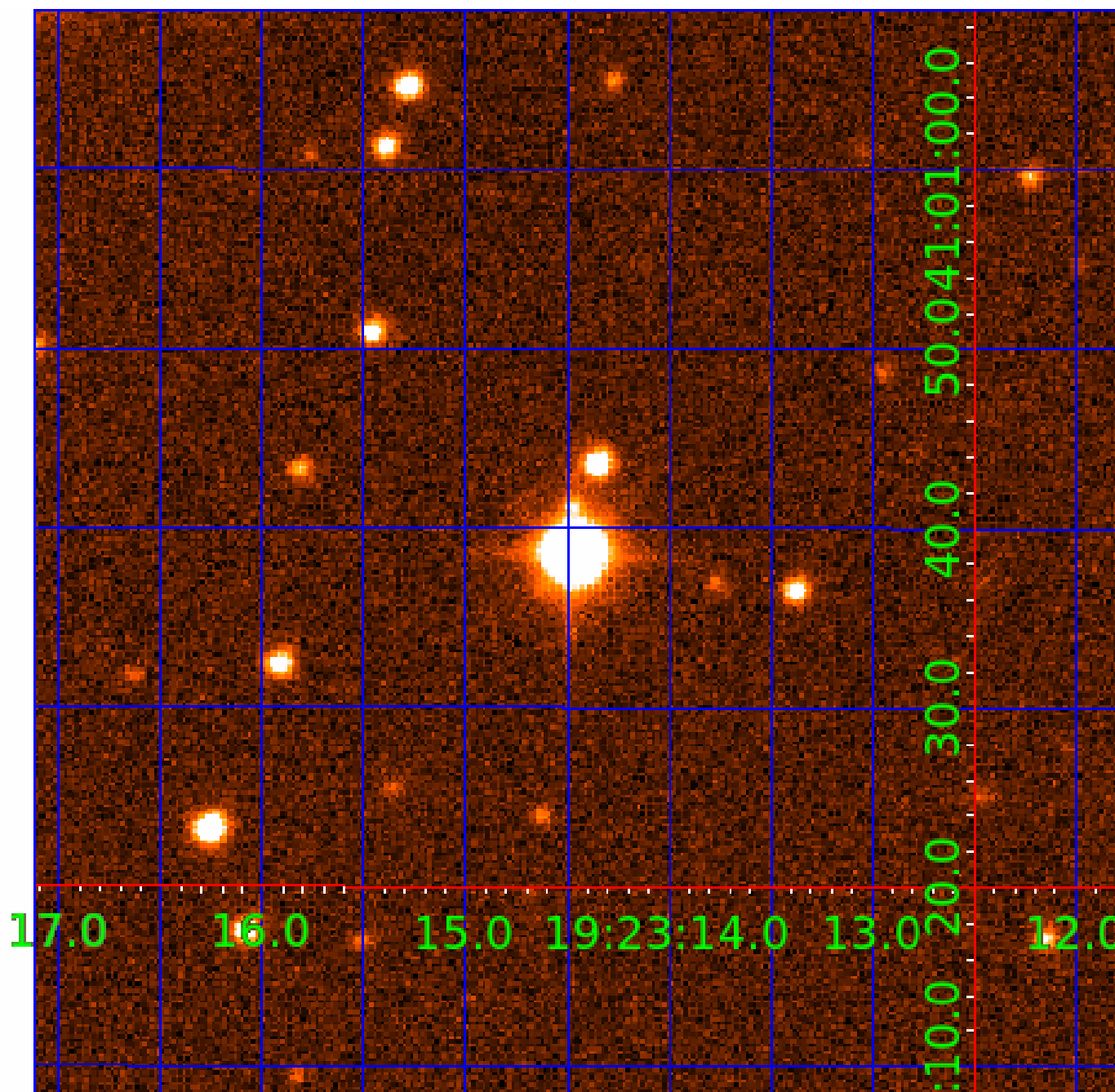


fluxWeightedCentroids, Planet 4 of 10



UKIRT Image

Declination



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})
005787972-01	OBS	No	1.099151	132.692479	3.2	7.513	8.9	2.8	1.63	6726	0.30	9375.91
005787972-02	OBS	No	57.208769	180.383070	159.0	3.963	12.3	10.1	1.63	6726	2.25	48.25
005787972-03	OBS	No	252.860410	272.632577	232.3	7.104	11.0	12.5	1.63	6726	2.71	6.65
005787972-04	OBS	No	46.490157	147.345820	197.2	1.772	11.2	10.1	1.63	6726	2.32	63.62
005787972-05	OBS	No	32.158912	152.995453	108.7	4.803	9.1	8.3	1.63	6726	1.79	104.00
005787972-06	OBS	No	46.187137	134.771064	173.7	3.448	9.4	10.5	1.63	6726	2.48	64.18
005787972-07	OBS	No	39.098565	153.376700	139.5	3.412	9.6	9.4	1.63	6726	2.14	80.14
005787972-08	OBS	No	25.787015	154.054388	105.4	4.687	8.7	9.3	1.63	6726	1.91	139.60
005787972-09	OBS	No	12.382392	142.368262	70.6	4.369	9.5	8.6	1.63	6726	1.56	371.26
005787972-10	OBS	No	41.093899	144.818289	211.9	2.500	9.1	-1.0	1.63	6726	2.40	75.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005787972-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
005787972-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005787972-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
005787972-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005787972-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNRESOLVED_OFFSET
005787972-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_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.

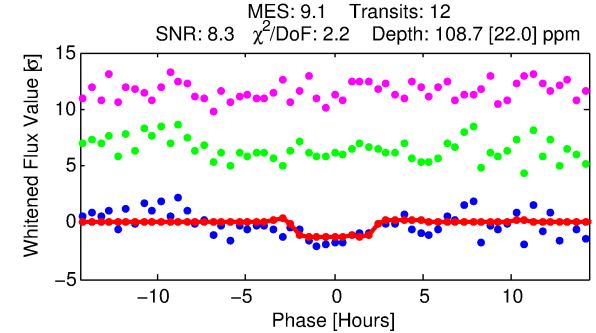
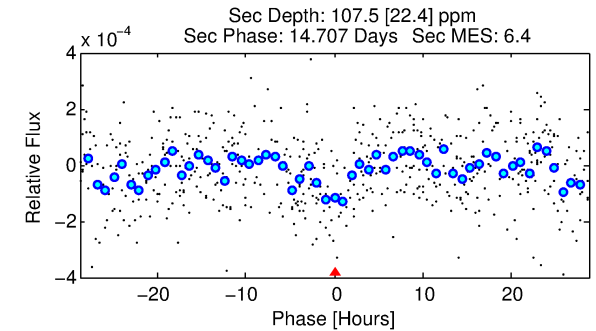
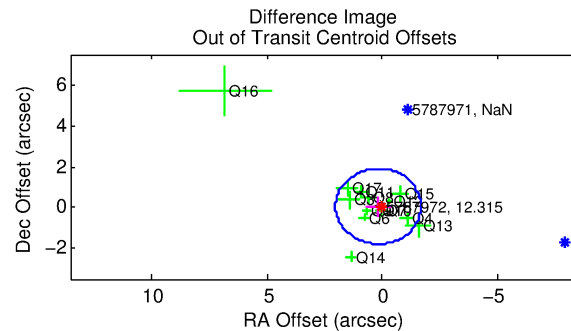
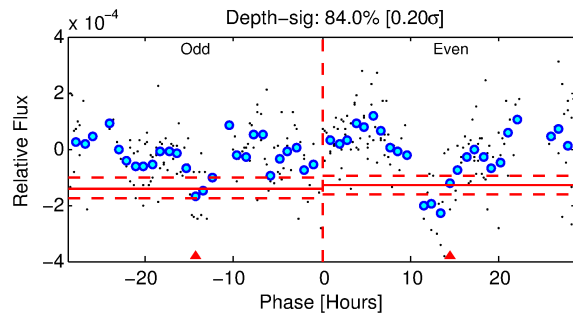
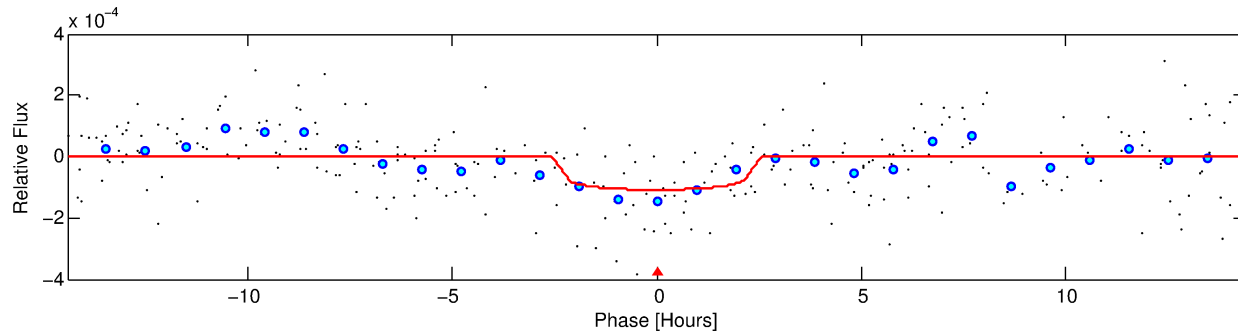
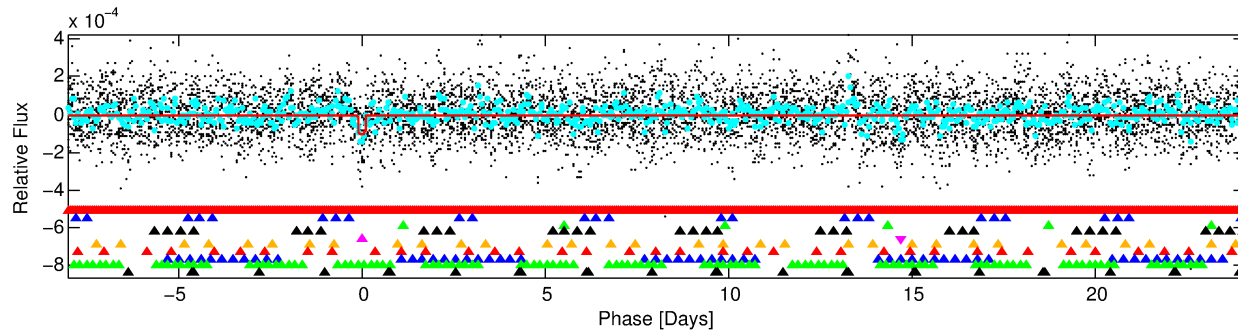
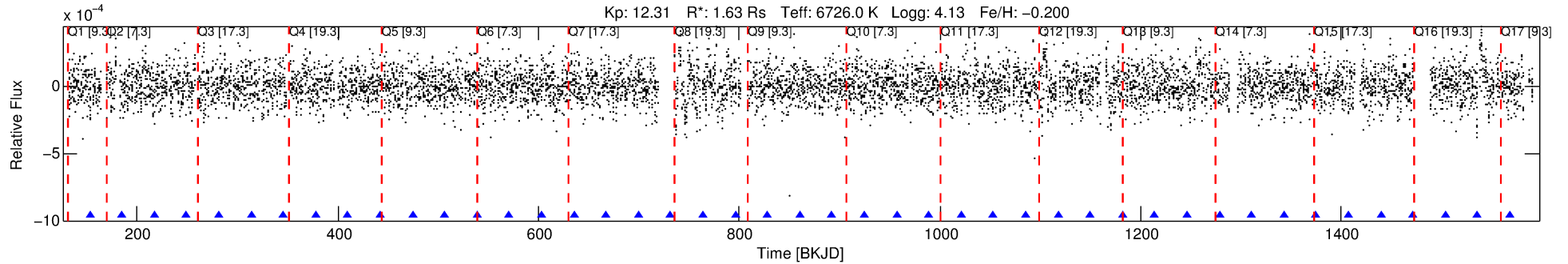
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005787972-05

No Significant Match Found

DV One-Page Summary

KIC: 5787972 Candidate: 5 of 10 Period: 32.159 d



DV Fit Results:

Period = 32.15891 [0.00072] d
Epoch = 152.9955 [0.0197] BKJD
Rp/R* = 0.0100 [0.0154]
a/R* = 41.65 [363.49]
b = 0.60 [9.43]
Seff = 104.00 [25.24]
Teq = 814 [49] K
Rp = 1.79 [2.78] Re
a = 0.2170 [0.0351] AU
Ag = 872.35 [2703.70] [0.32 σ]
Teffp = 6842 [5287] K [1.14 σ]

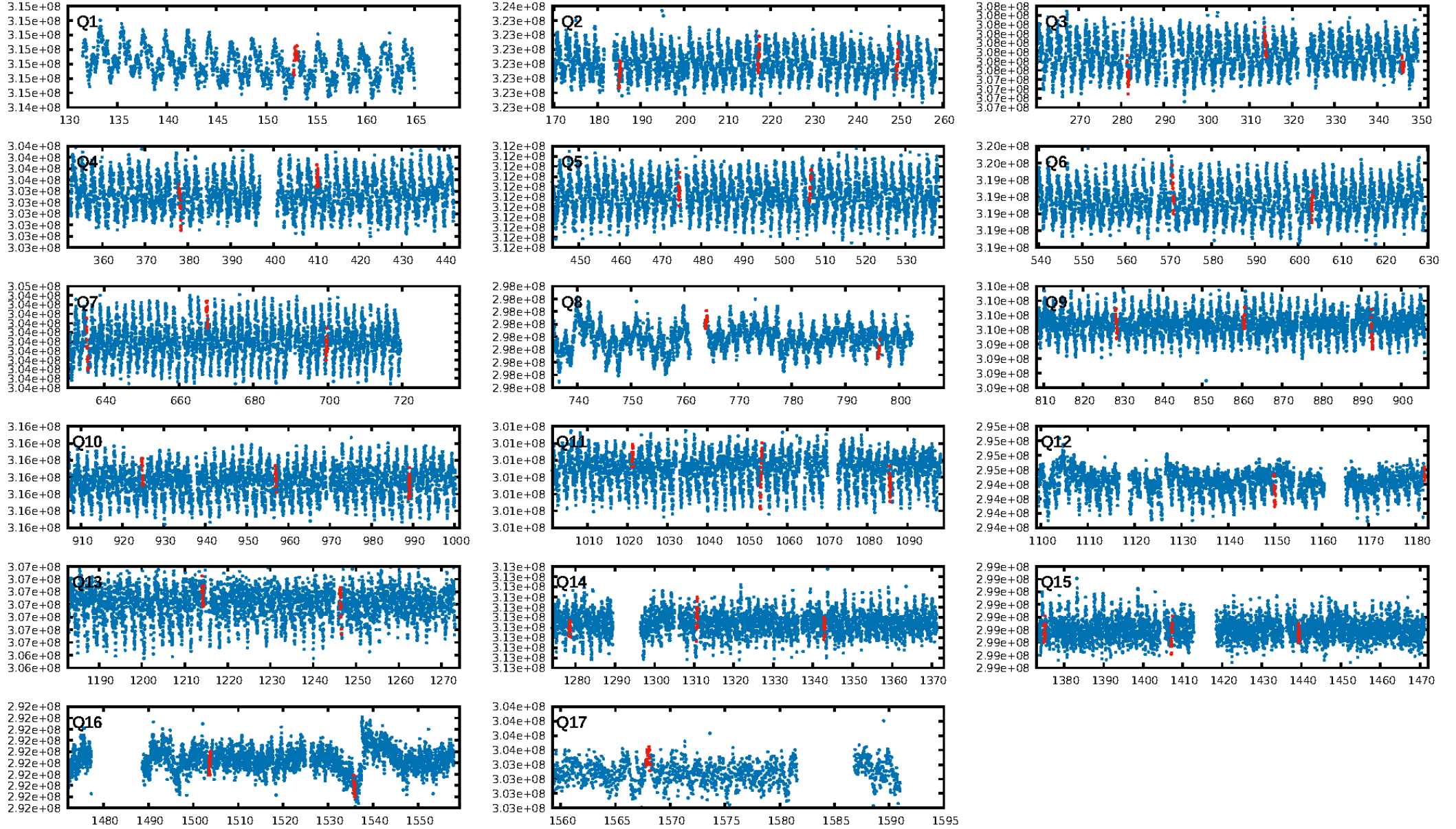
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [22.79 σ]
LongPeriod-sig: 100.0% [28.27 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: 5.338
Centroid-sig: 3.6%
Centroid-so: 0.924 arcsec [1.98 σ]
OotOffset-rm: 0.195 arcsec [0.32 σ]
KicOffset-rm: 0.209 arcsec [0.37 σ]
OotOffset-st: 3/4/4/3 [14]
KicOffset-st: 3/4/4/3 [14]
DiffImageQuality-fgm: 0.57 [8/14]
DiffImageOverlap-fno: 0.00 [0/17]

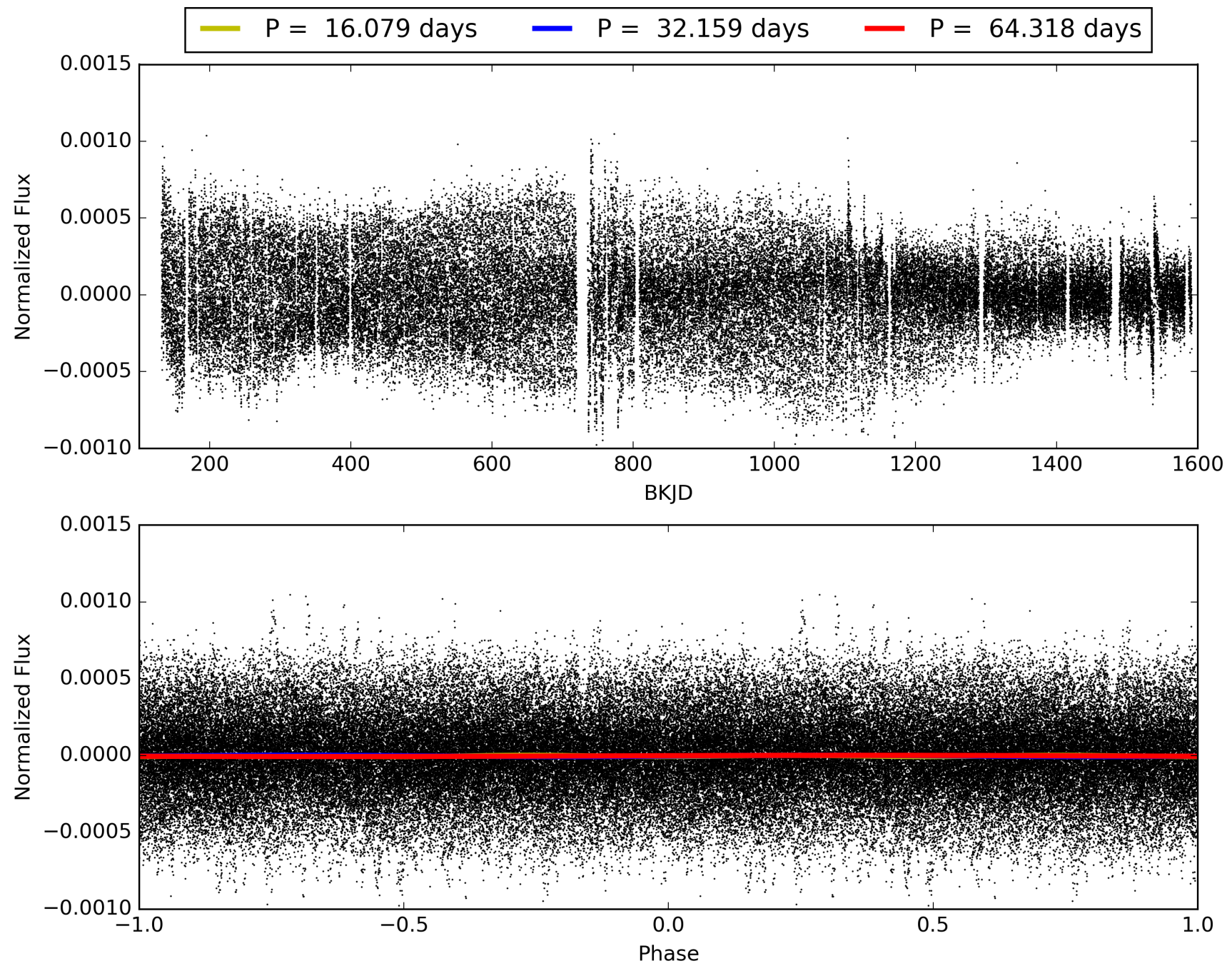
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:25:06 Z

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

TCE 005787972-05, PDC Light Curves

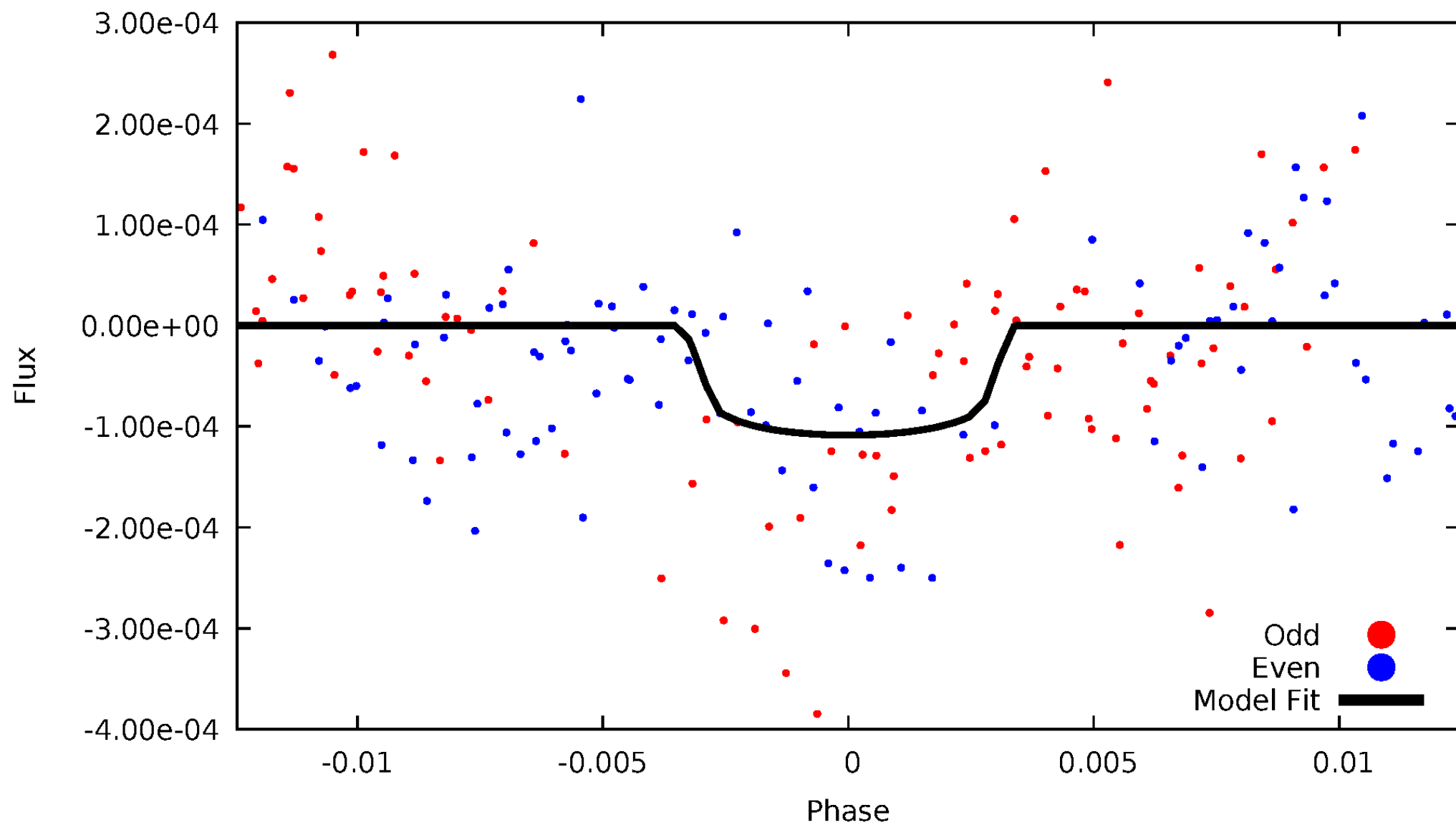


TCE 005787972-05



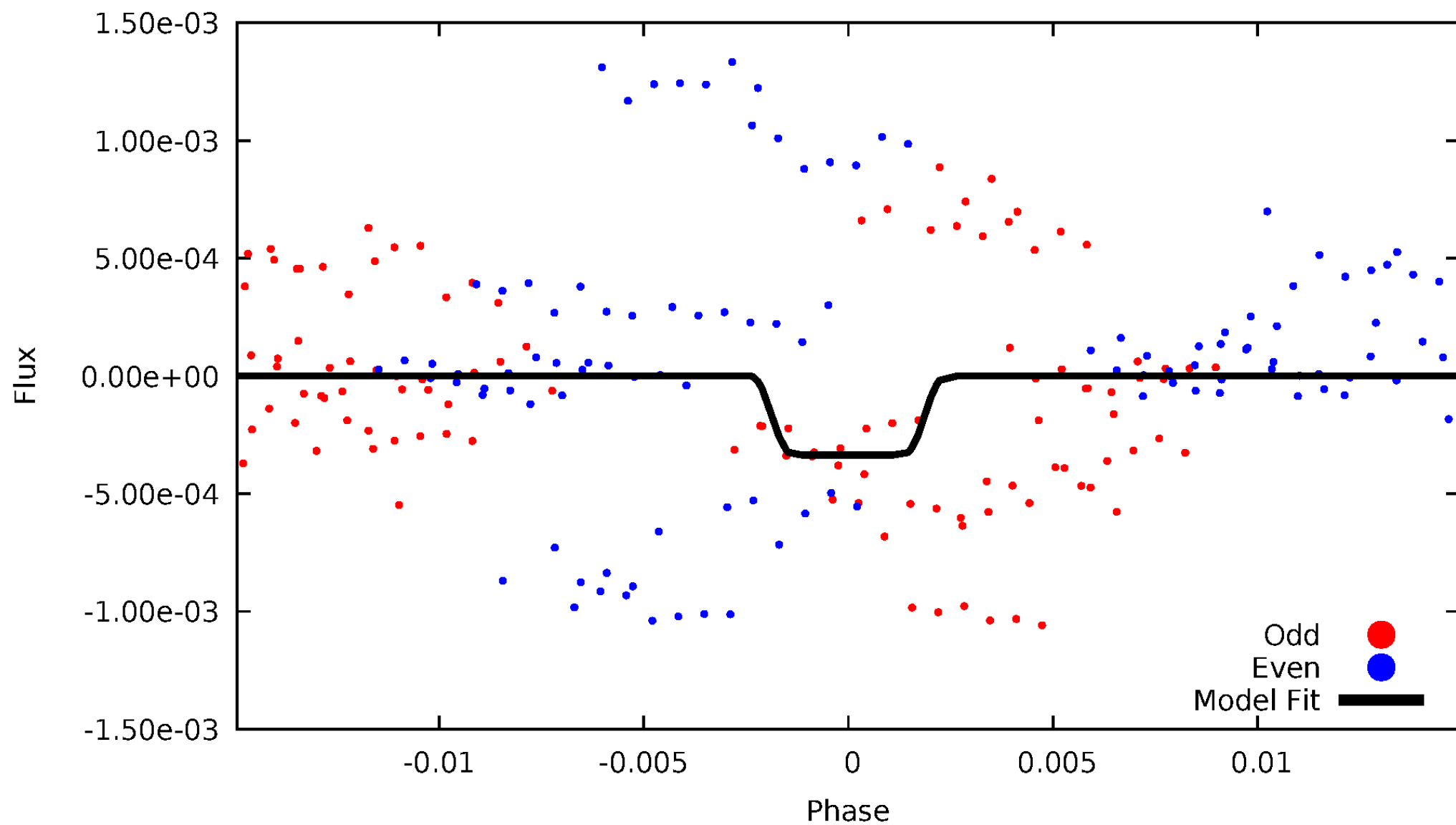
DV Odd/Even

TCE 005787972-05

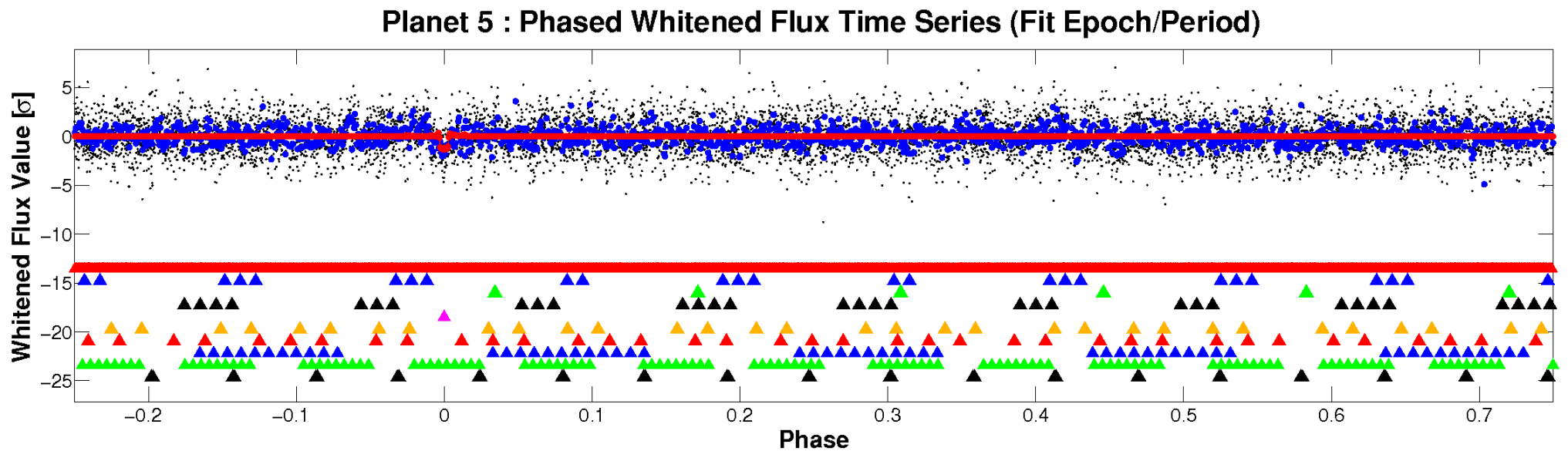
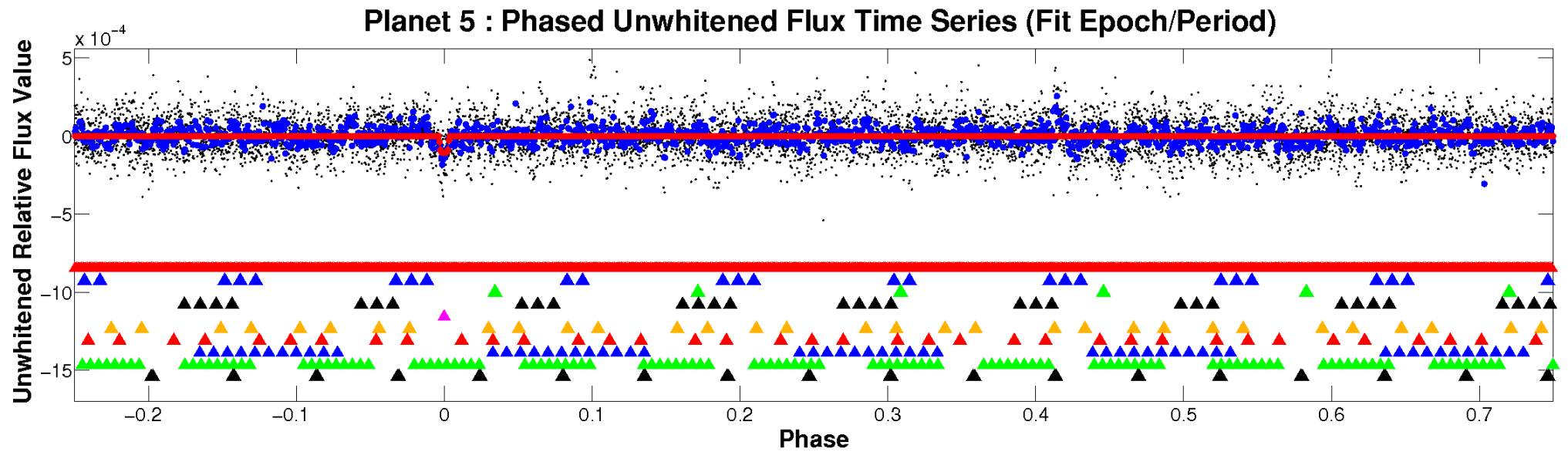


ALT Odd/Even

TCE 005787972-05

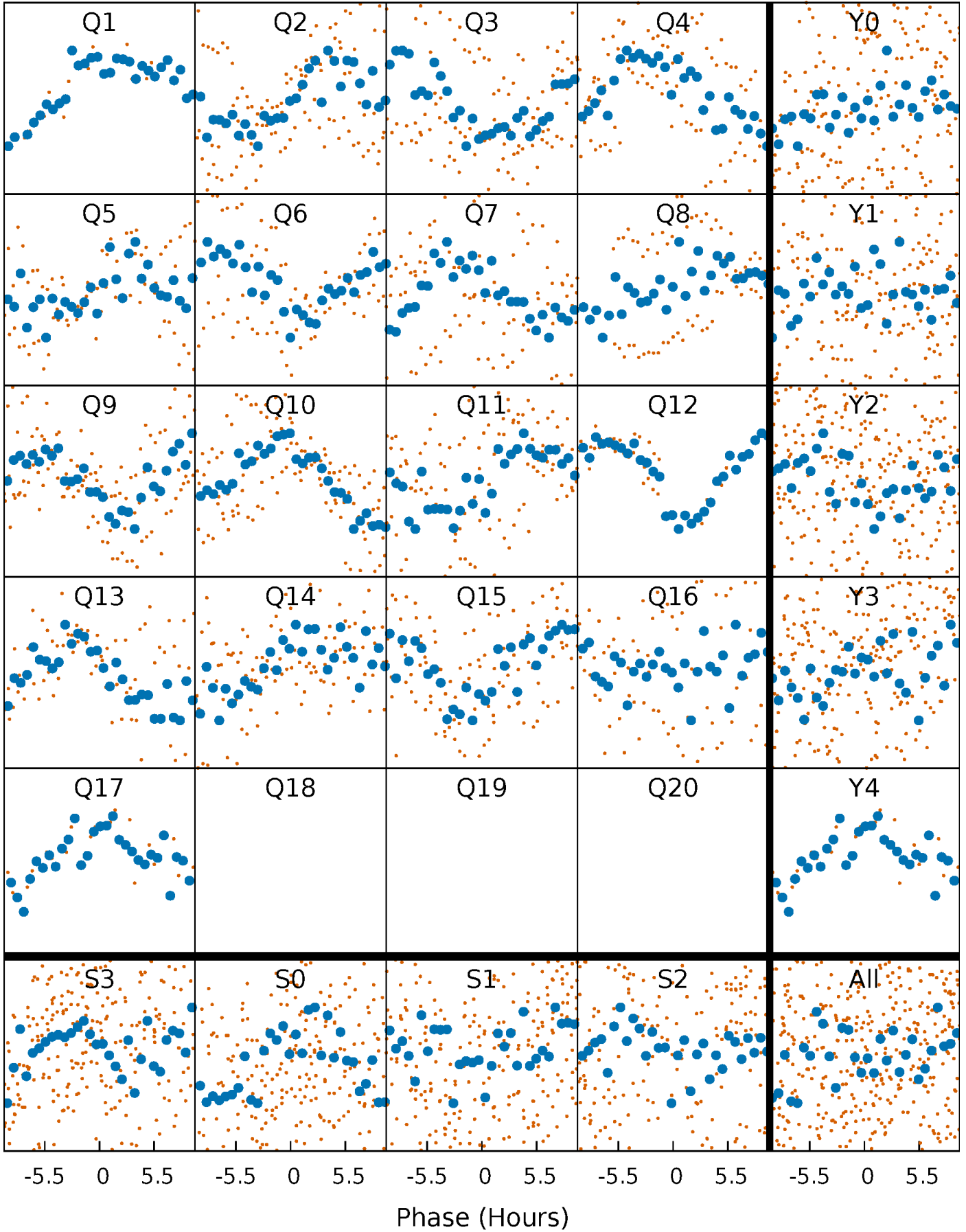


Non-Whitened Vs. Whitened Light Curve



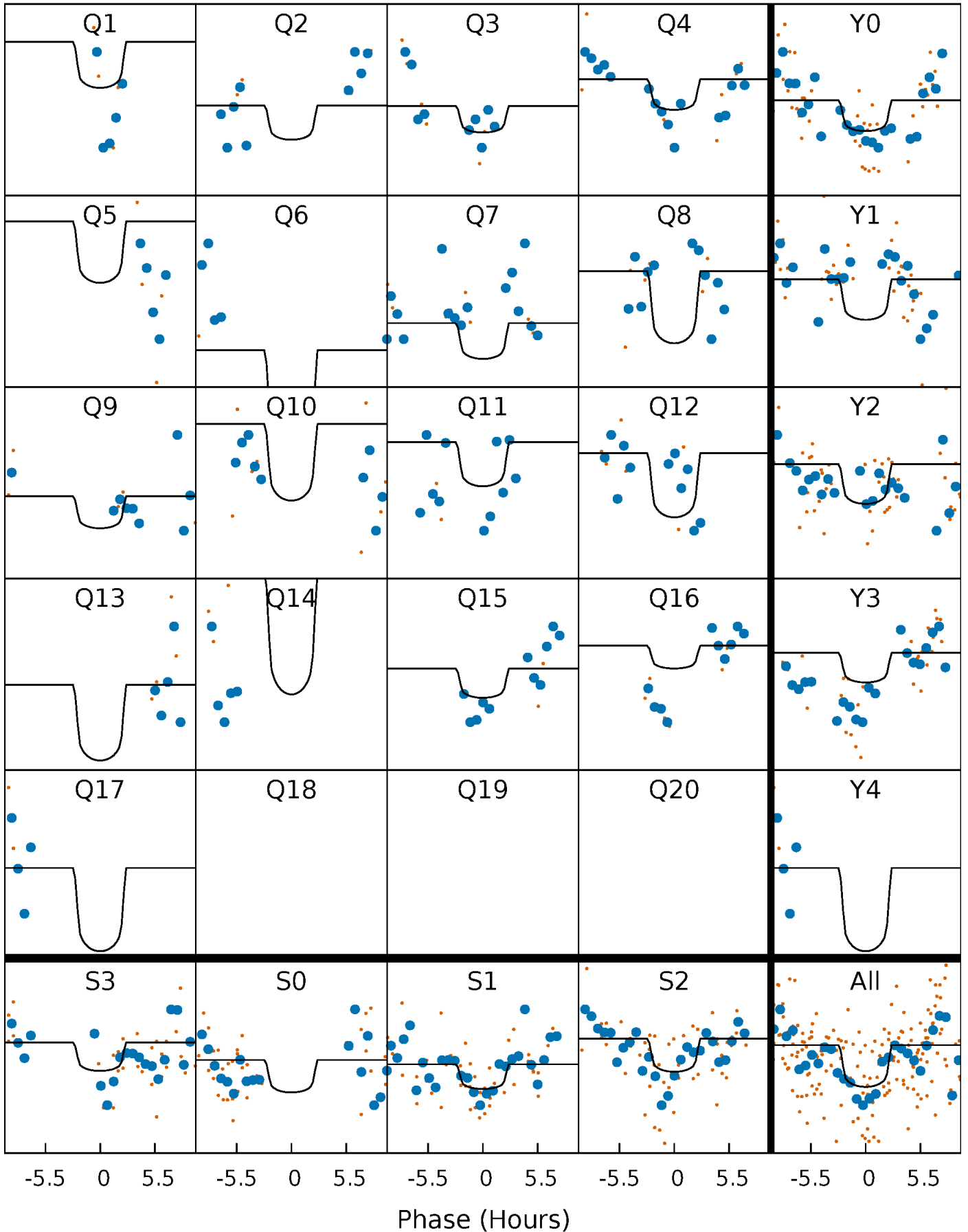
PDC Quarter-Phased Transit Curves

TCE 005787972-05 P= 32.158912 Days $T_0=152.995453$ (BKJD)



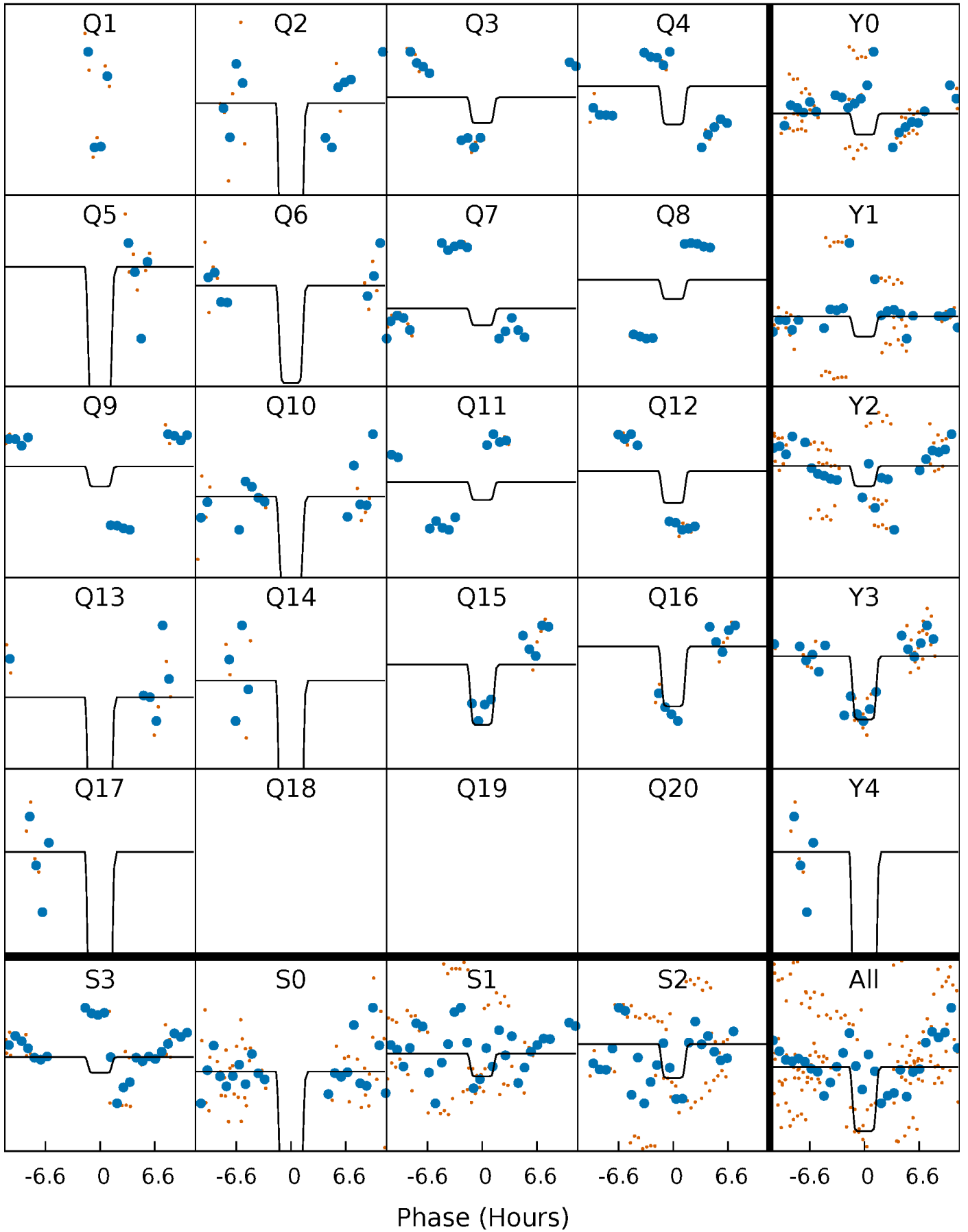
DV Quarter-Phased Transit Curves

TCE 005787972-05 P= 32.158912 Days $T_0=152.995453$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

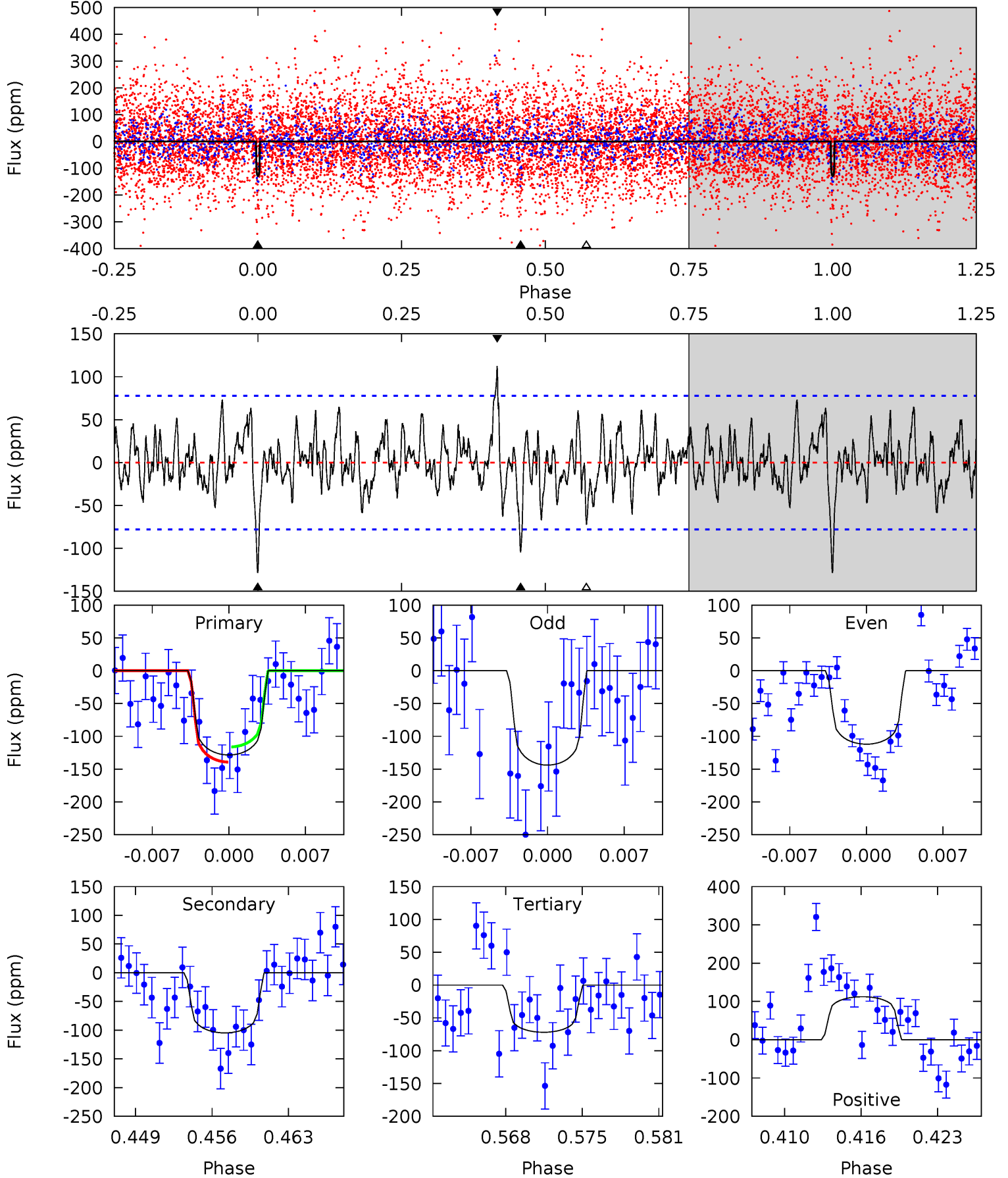
TCE 005787972-05 $P = 32.157012$ Days $T_0 = 153.044326$ (BKJD)



DV Model-Shift Uniqueness Test

005787972-05, P = 32.158912 Days, E = 120.836541 Days

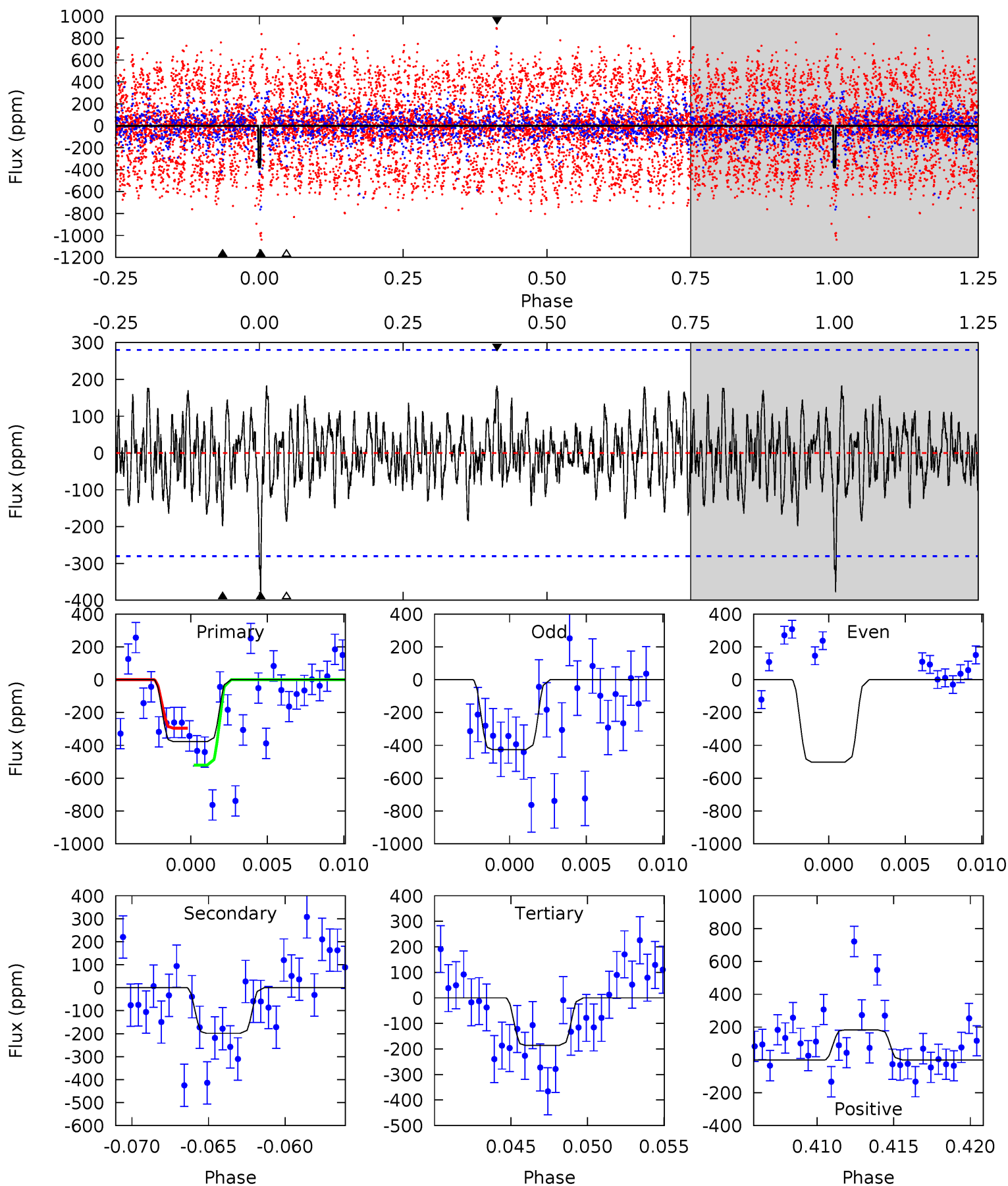
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.43	6.87	4.72	7.37	5.11	2.72	1.68	3.71	1.05	2.15	-0.50	1.04	0.94	0.47	0.76



Alt Model-Shift Uniqueness Test

005787972-05, P = 32.157012 Days, E = 120.887314 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.96	3.66	3.43	3.36	5.16	2.81	1.21	3.53	3.59	0.23	0.30	0.75	0.42	0.33	2.01



Stellar Parameters For KIC 005787972

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6726^{+70}_{-90}	$4.131^{+0.130}_{-0.130}$	$-0.200^{+0.150}_{-0.150}$	$1.634^{+0.312}_{-0.284}$	$1.328^{+0.098}_{-0.122}$	$0.428^{+0.262}_{-0.163}$
	+1%/-1%	+3%/-3%	+75%/-75%	+19%/-17%	+7%/-9%	+61%/-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 005787972-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-105 ± 15	$2.65^{+2.42}_{-1.76}$	1137^{+53}_{-53}	5597^{+5090}_{-1377}	394^{+2869}_{-288}
Alt.	-199 ± 54	$3.69^{+2.64}_{-2.25}$	1137^{+60}_{-51}	5509^{+3900}_{-1129}	372^{+2167}_{-255}

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 $A_{obs} \gg 1.0$

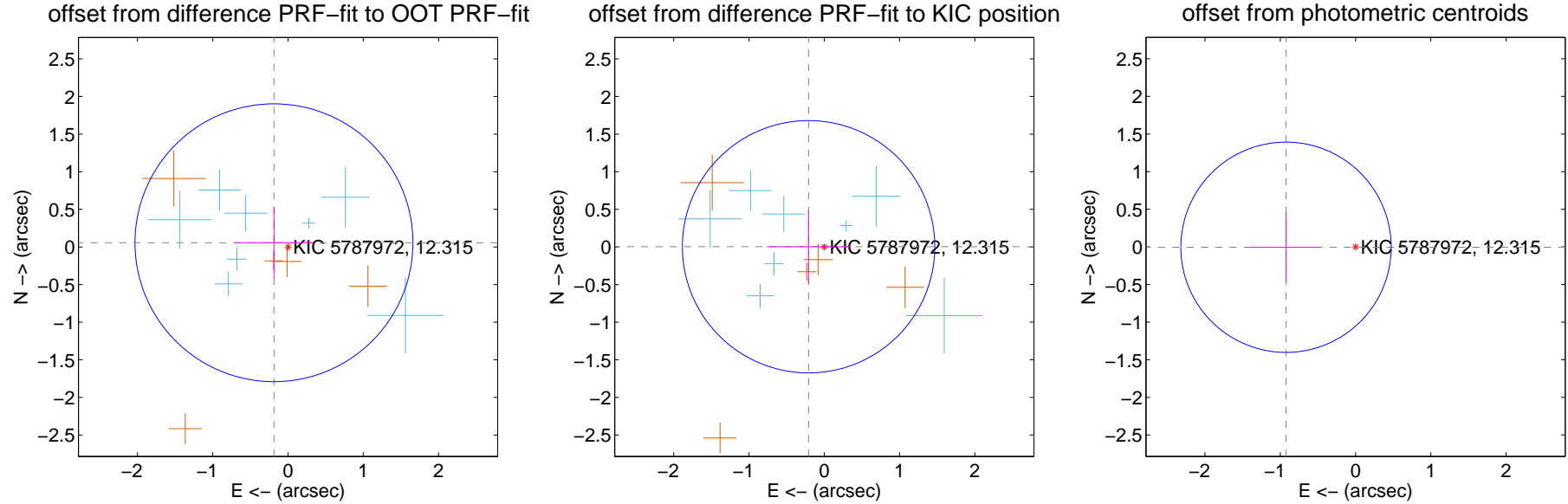
DV Centroid Data

Supplemental centroid analysis for 005787972-05. Kepler magnitude: 12.31. Transit SNR 8.28

There are 8 quarters with good PRF difference image offsets

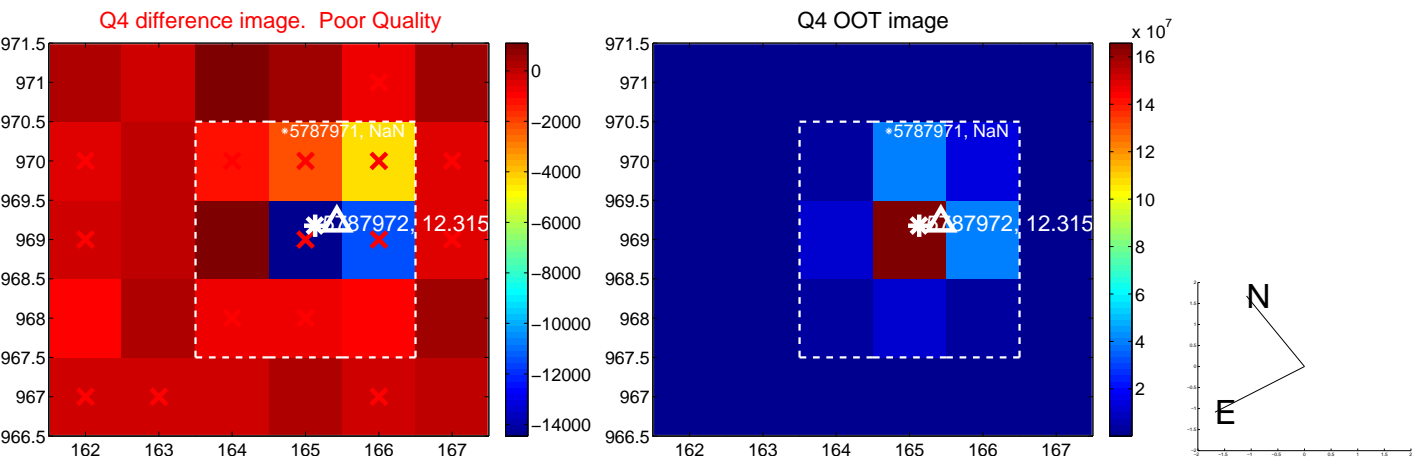
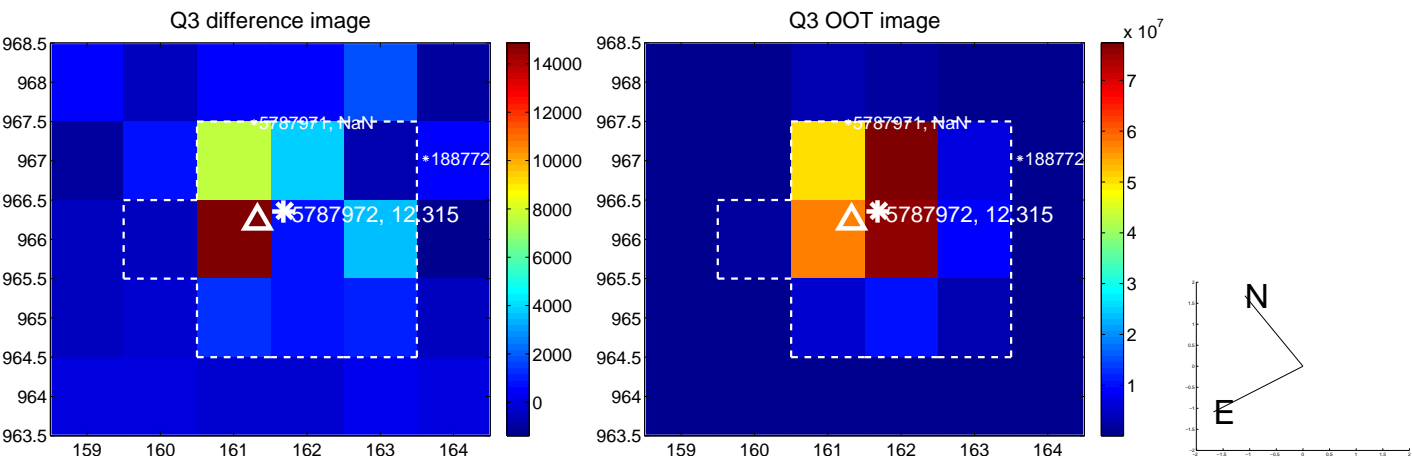
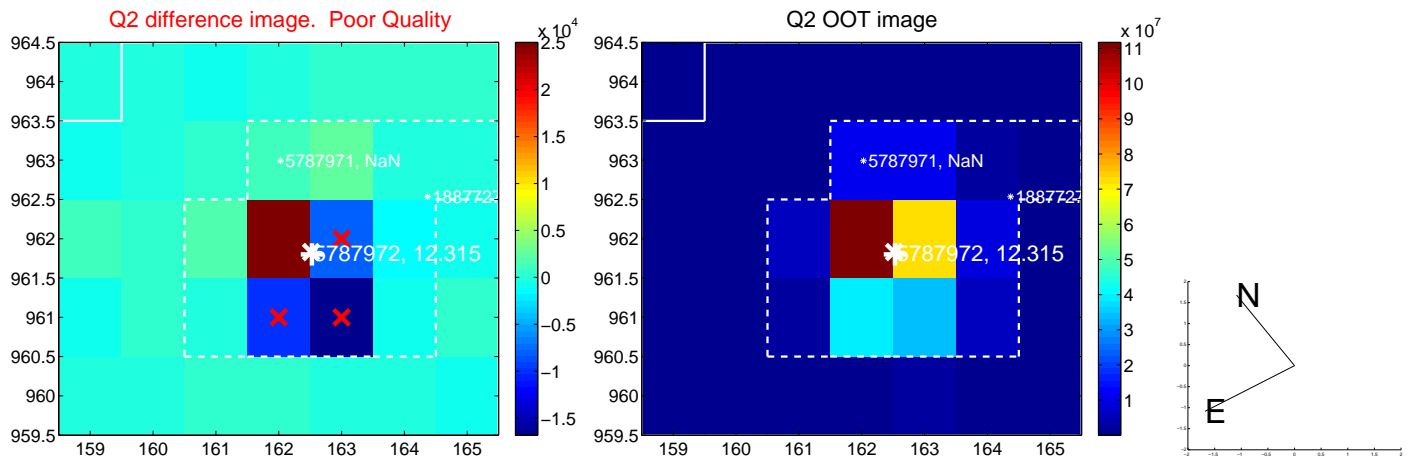
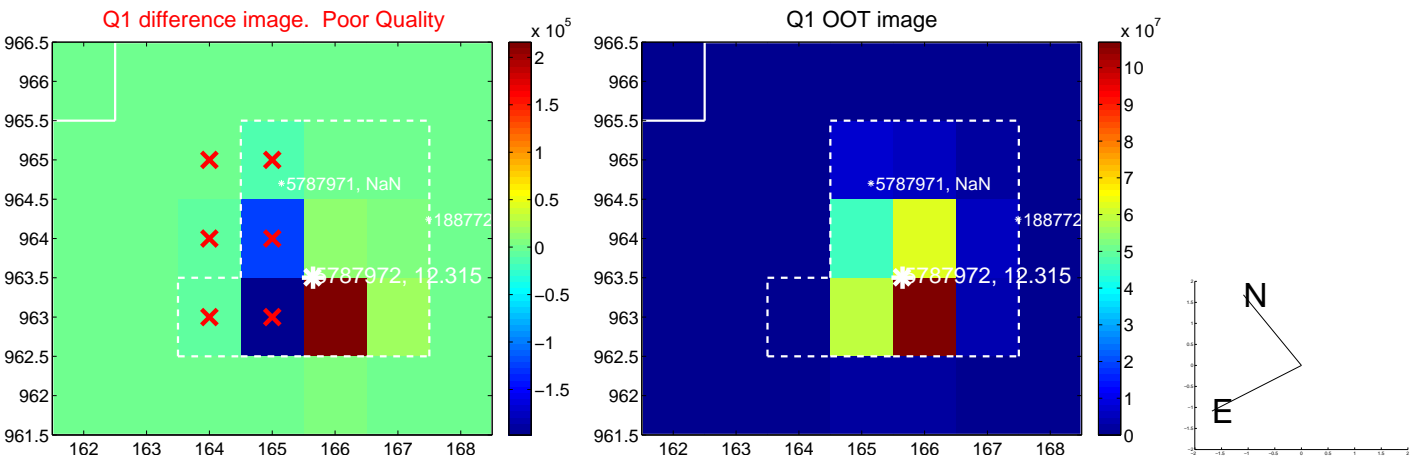
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.195 ± 0.616	0.32	0.187 ± 0.525	0.056 ± 0.474
PRF-fit source offset from KIC position	0.209 ± 0.559	0.37	0.209 ± 0.554	0.003 ± 0.482
photometric centroid source offset	0.92 ± 0.47	1.98	0.92 ± 0.47	-0.00 ± 0.46

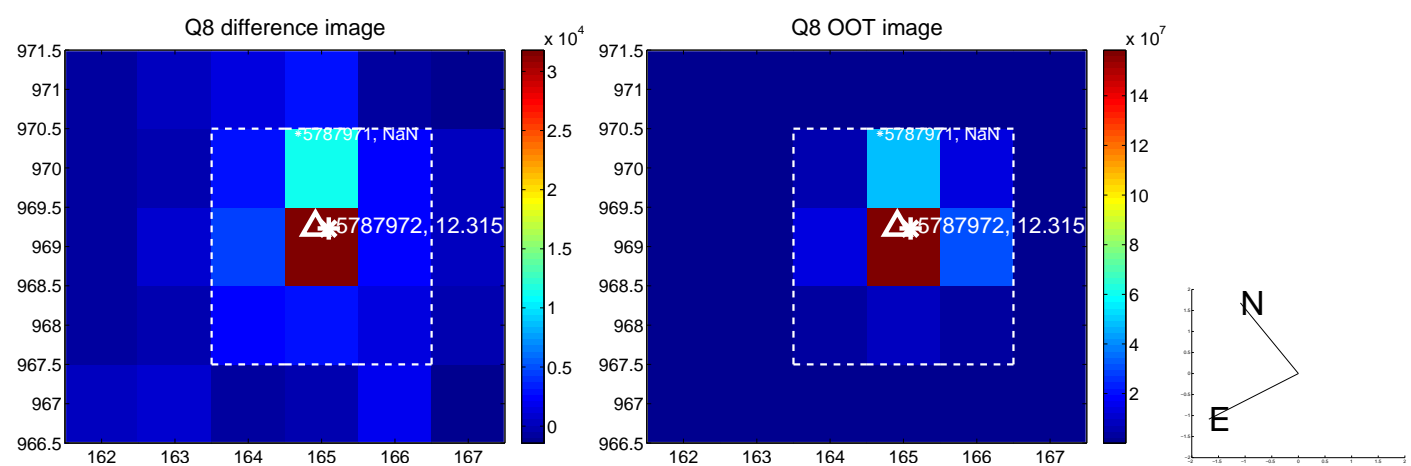
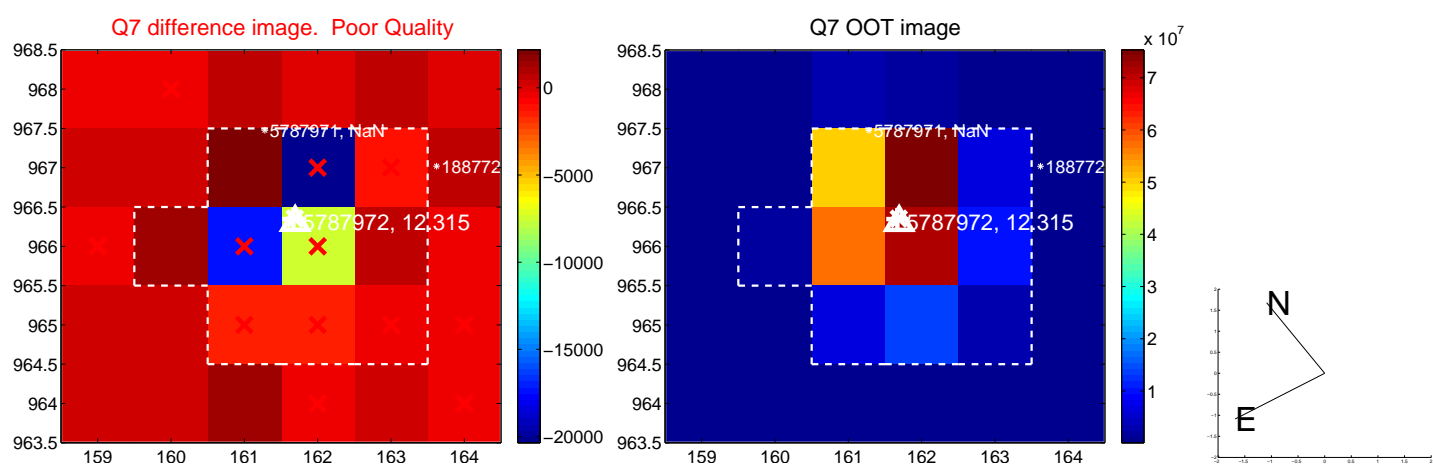
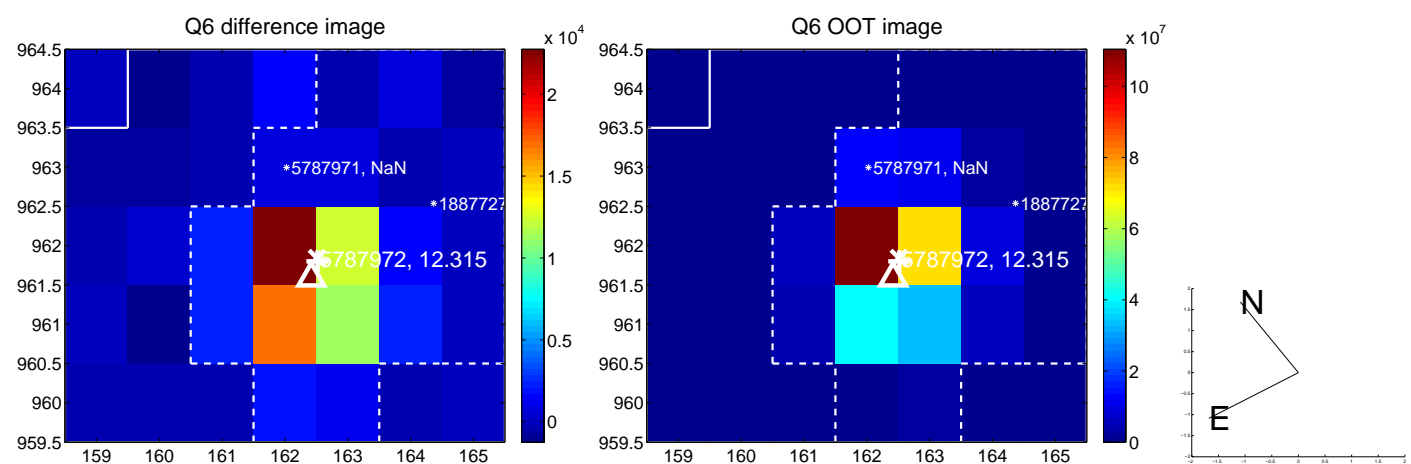
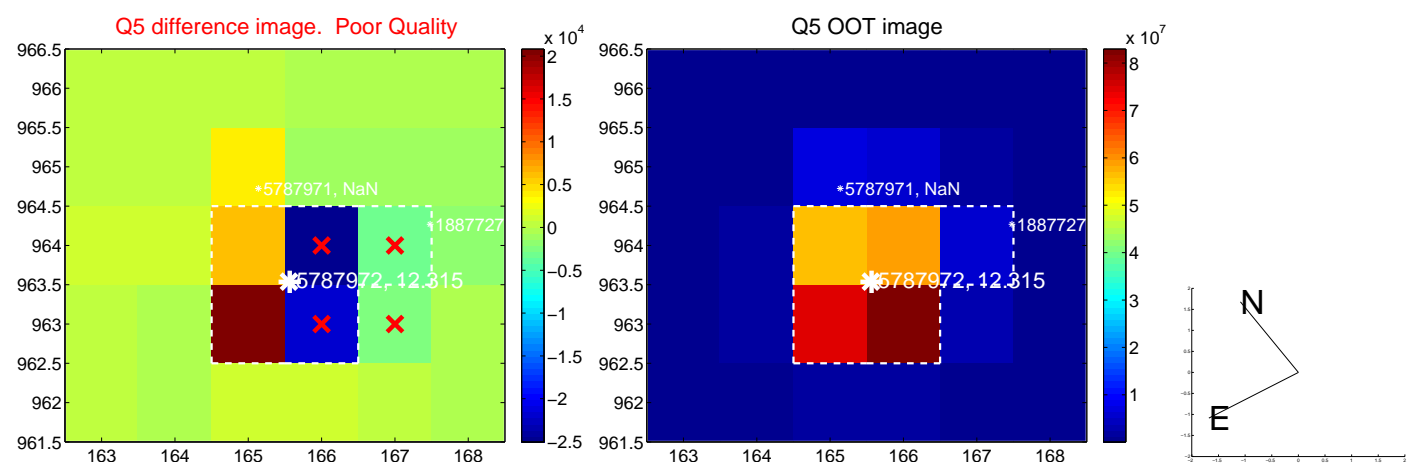


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

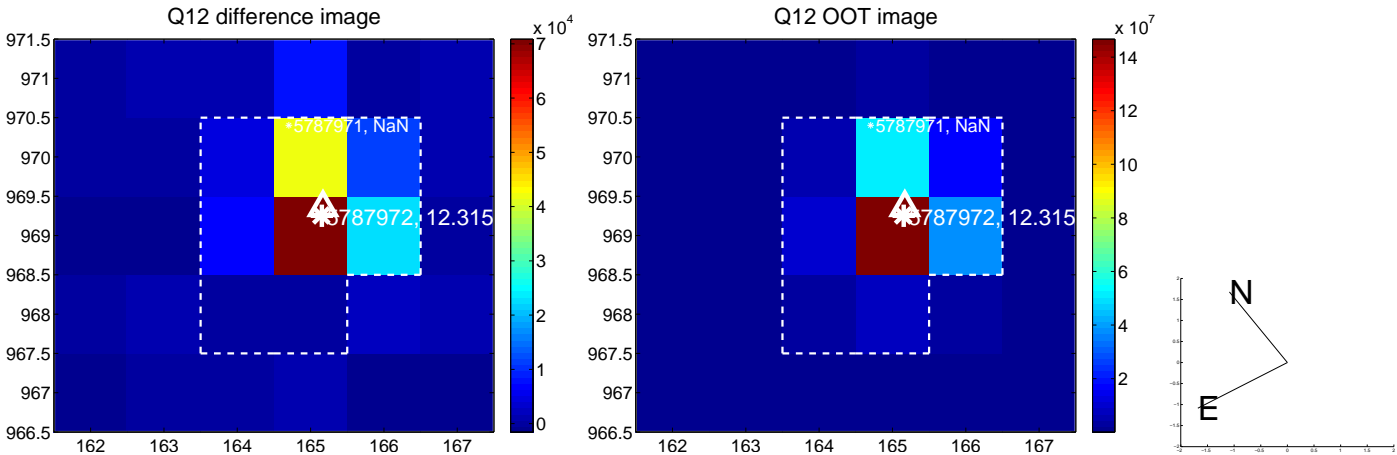
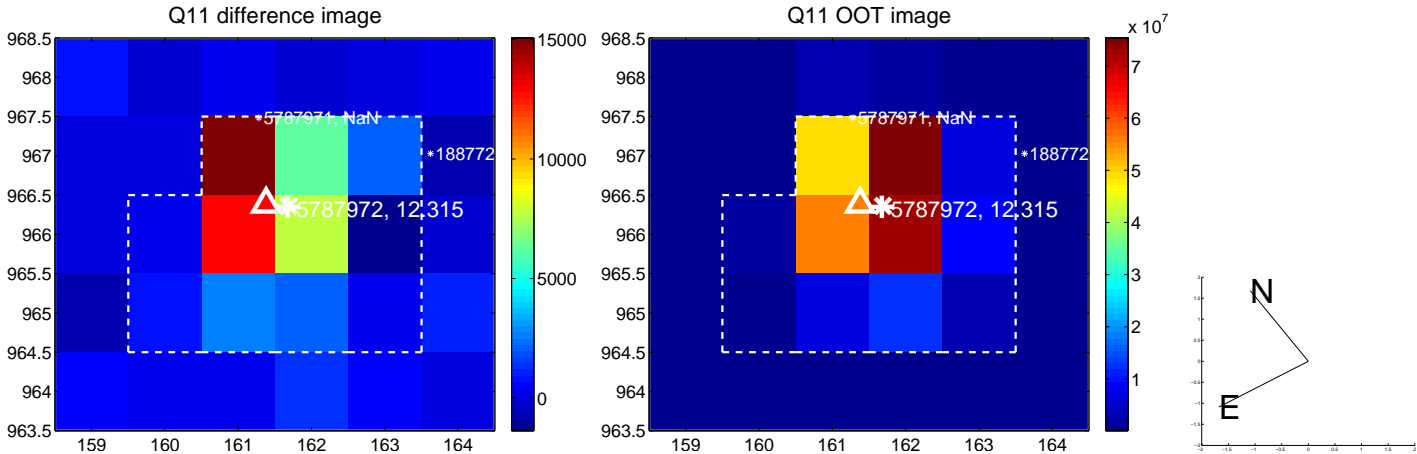
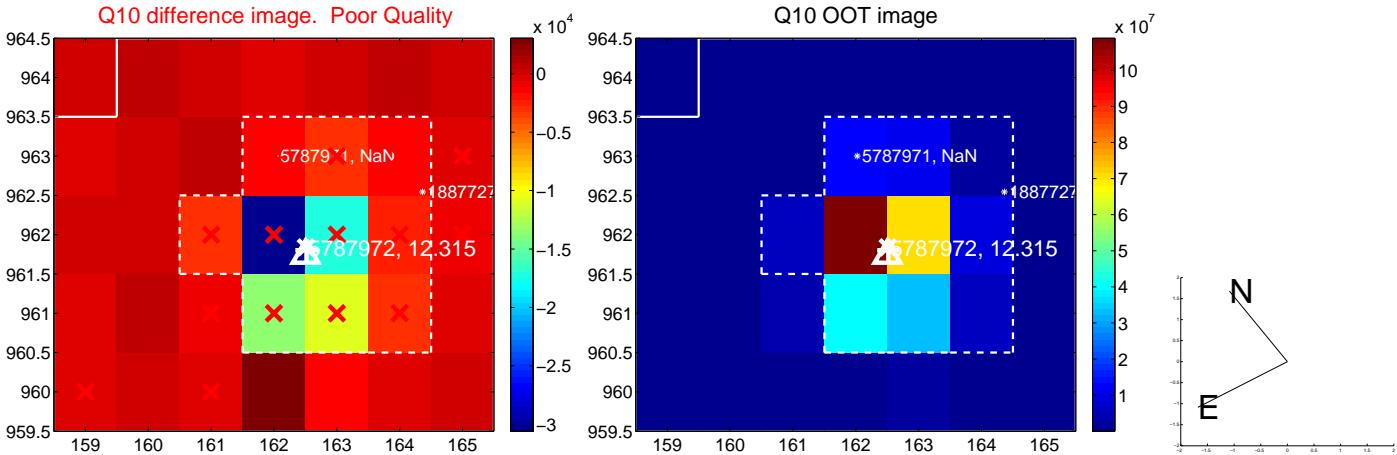
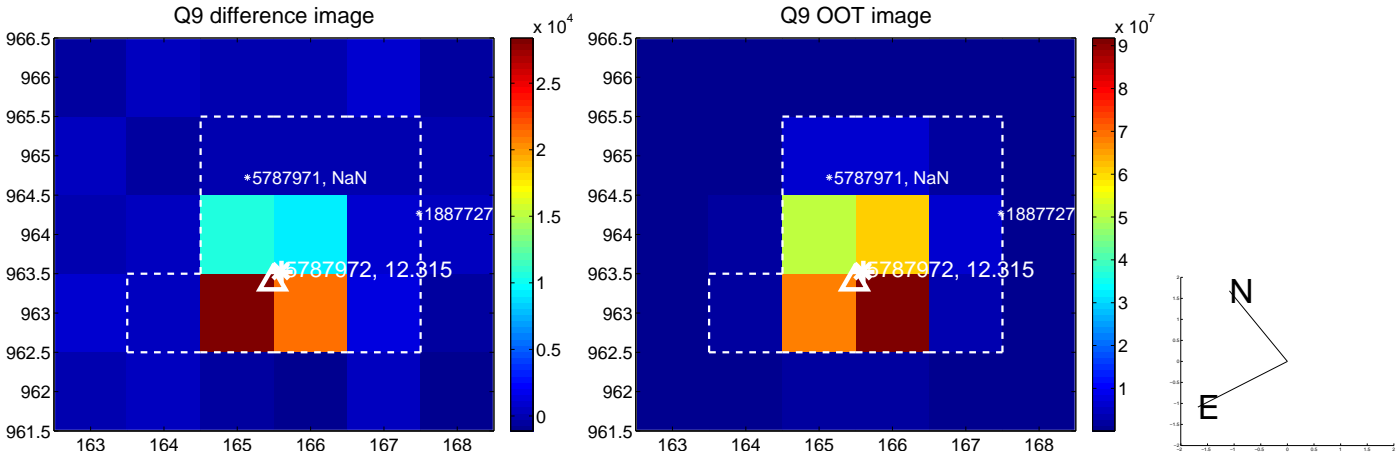
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



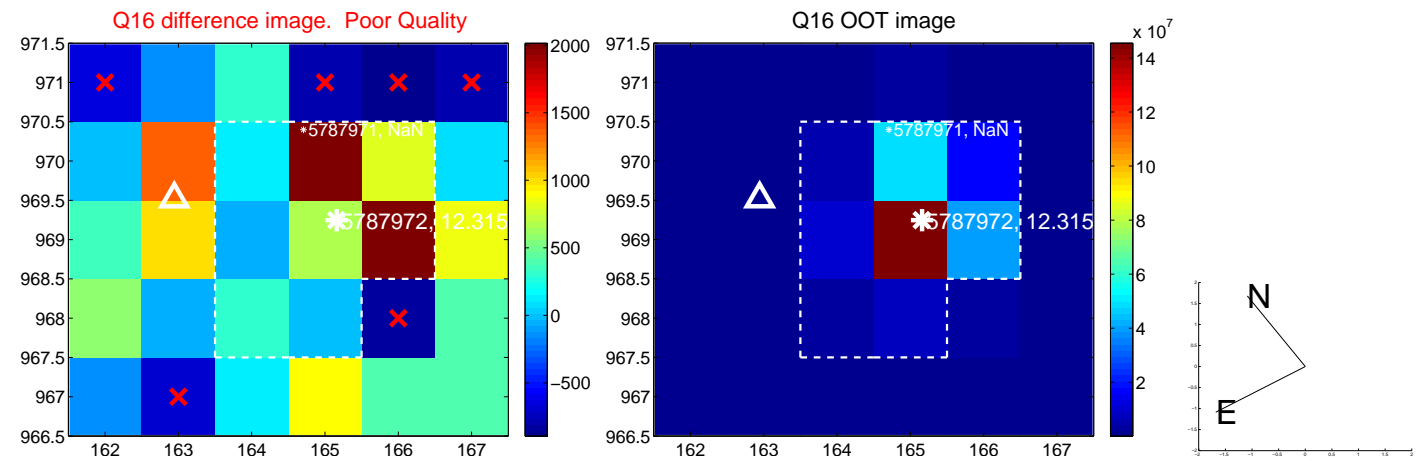
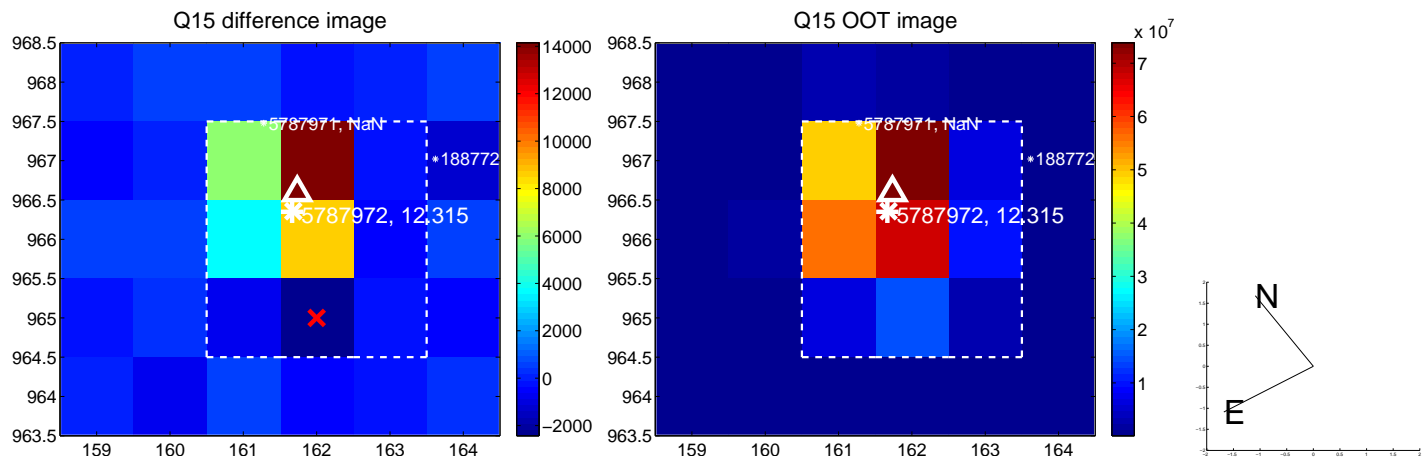
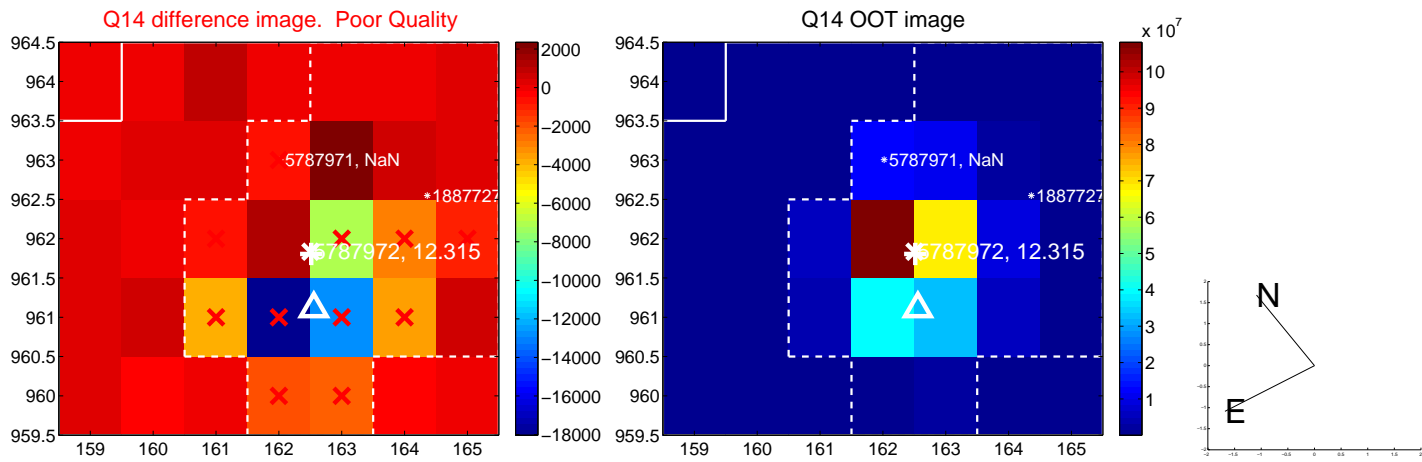
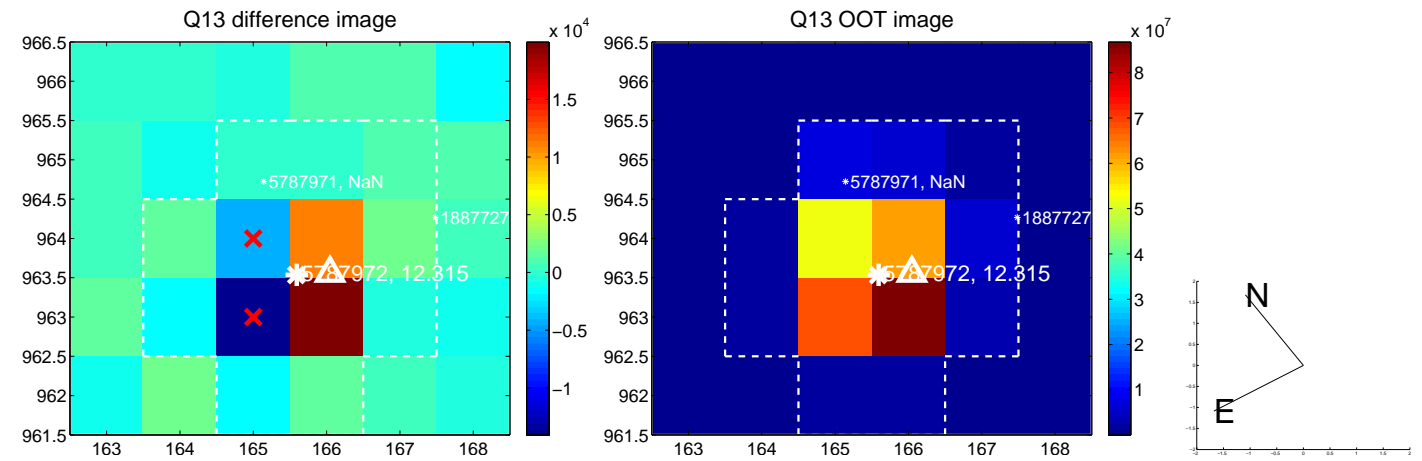
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

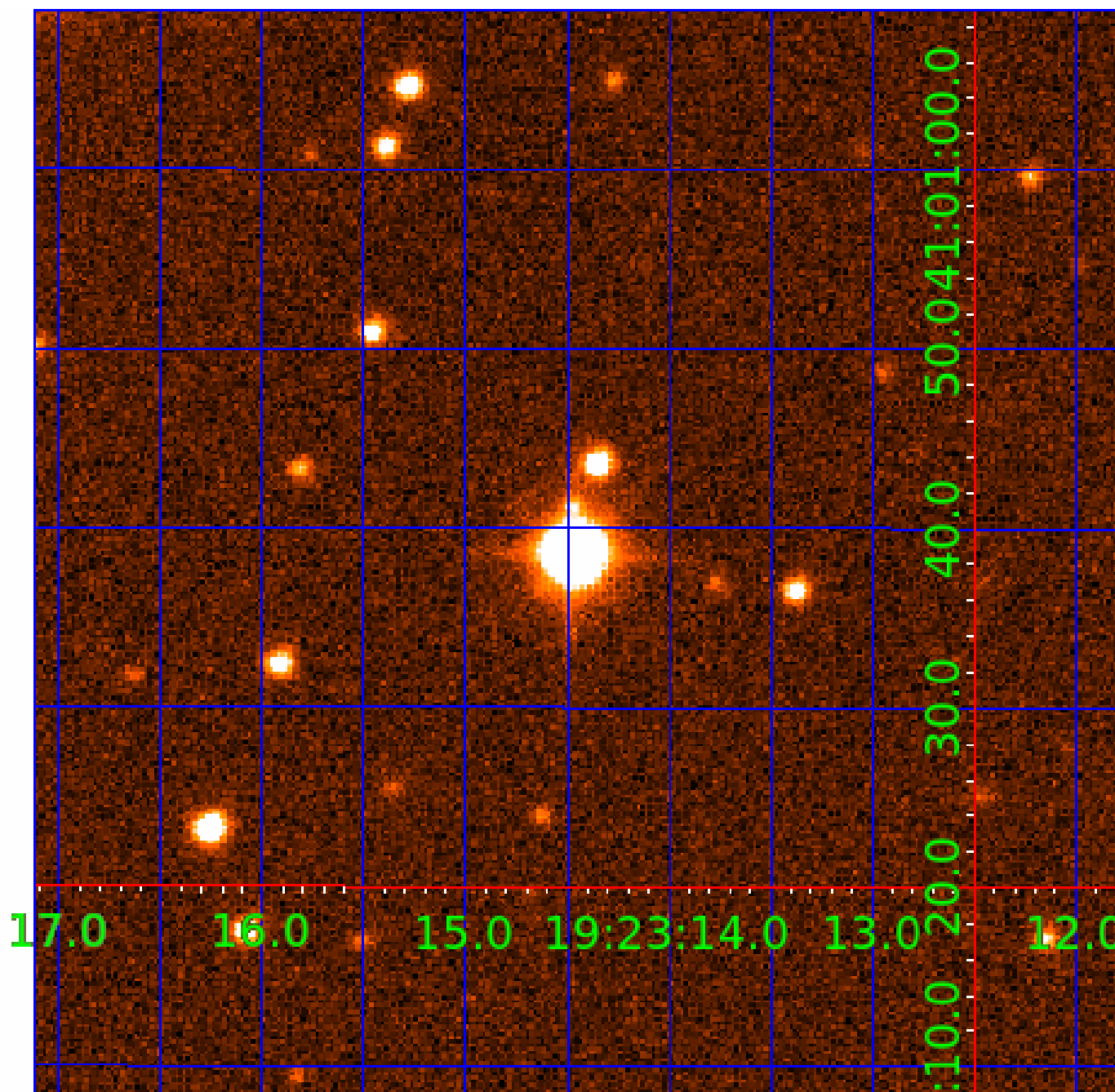


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
005787972-01	OBS	No	1.099151	132.692479	3.2	7.513	8.9	2.8	1.63	6726	0.30	9375.91
005787972-02	OBS	No	57.208769	180.383070	159.0	3.963	12.3	10.1	1.63	6726	2.25	48.25
005787972-03	OBS	No	252.860410	272.632577	232.3	7.104	11.0	12.5	1.63	6726	2.71	6.65
005787972-04	OBS	No	46.490157	147.345820	197.2	1.772	11.2	10.1	1.63	6726	2.32	63.62
005787972-05	OBS	No	32.158912	152.995453	108.7	4.803	9.1	8.3	1.63	6726	1.79	104.00
005787972-06	OBS	No	46.187137	134.771064	173.7	3.448	9.4	10.5	1.63	6726	2.48	64.18
005787972-07	OBS	No	39.098565	153.376700	139.5	3.412	9.6	9.4	1.63	6726	2.14	80.14
005787972-08	OBS	No	25.787015	154.054388	105.4	4.687	8.7	9.3	1.63	6726	1.91	139.60
005787972-09	OBS	No	12.382392	142.368262	70.6	4.369	9.5	8.6	1.63	6726	1.56	371.26
005787972-10	OBS	No	41.093899	144.818289	211.9	2.500	9.1	-1.0	1.63	6726	2.40	75.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005787972-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
005787972-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005787972-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
005787972-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005787972-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNRESOLVED_OFFSET
005787972-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_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.

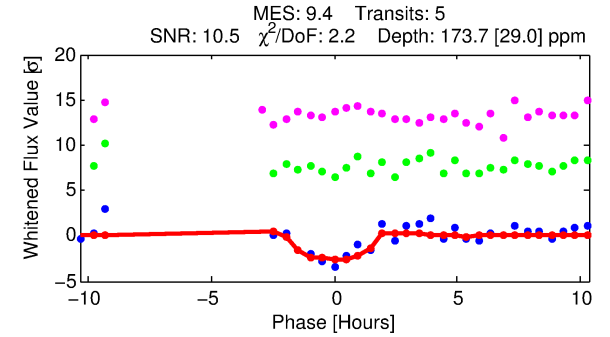
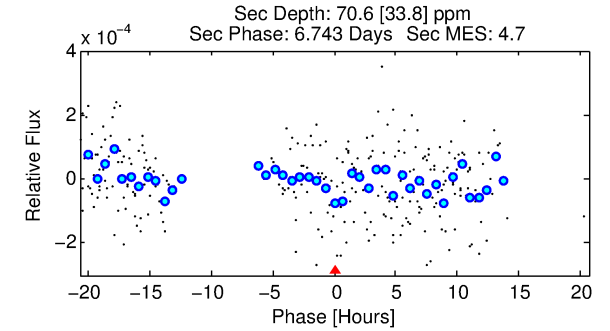
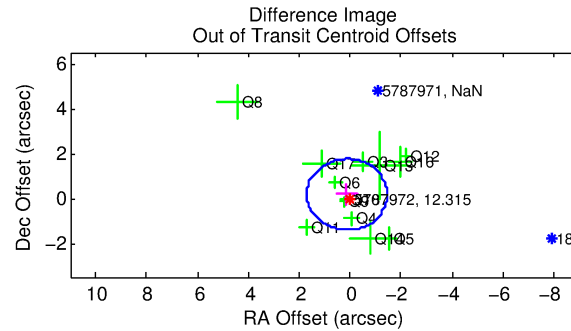
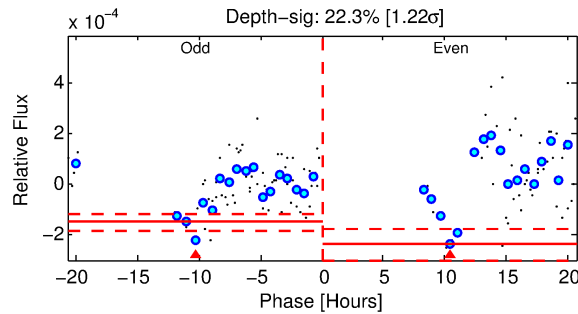
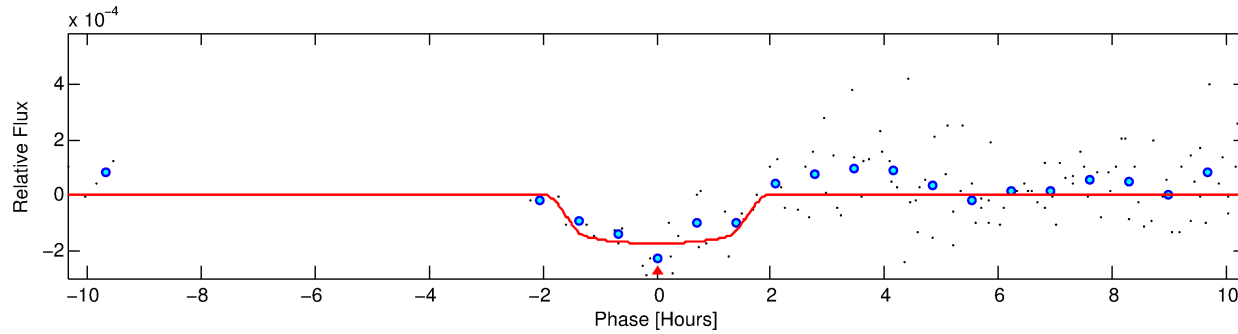
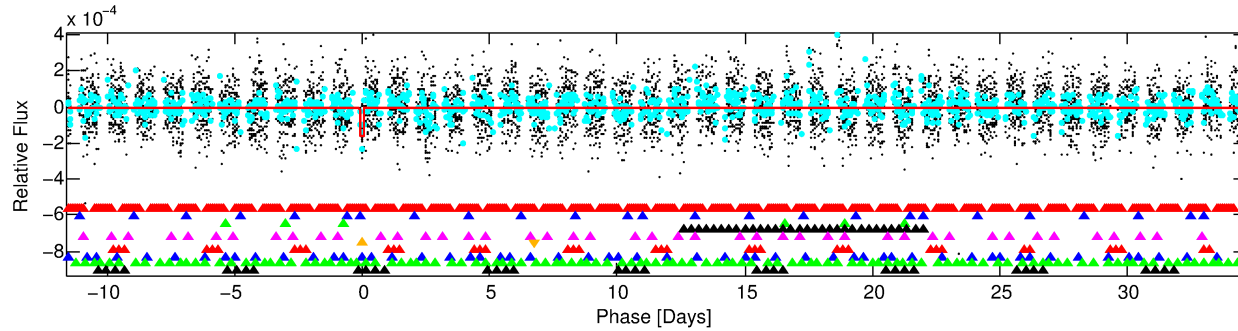
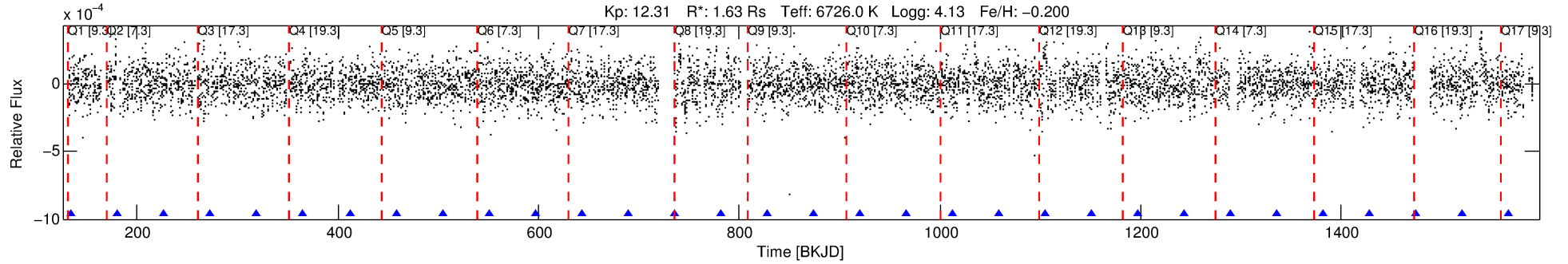
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005787972-06

No Significant Match Found

DV One-Page Summary

KIC: 5787972 Candidate: 6 of 10 Period: 46.187 d



DV Fit Results:

Period = 46.18714 [0.00399] d
Epoch = 134.7711 [0.1139] BKJD
Rp/R* = 0.0139 [0.0203]
a/R* = 50.70 [436.96]
b = 0.88 [2.16]
Seff = 64.18 [15.57]
Teq = 722 [44] K
Rp = 2.48 [3.65] Re
a = 0.2762 [0.0447] AU
Ag = 480.92 [1426.90] [0.34 σ]
Teffp = 5226 [3864] K [1.17 σ]

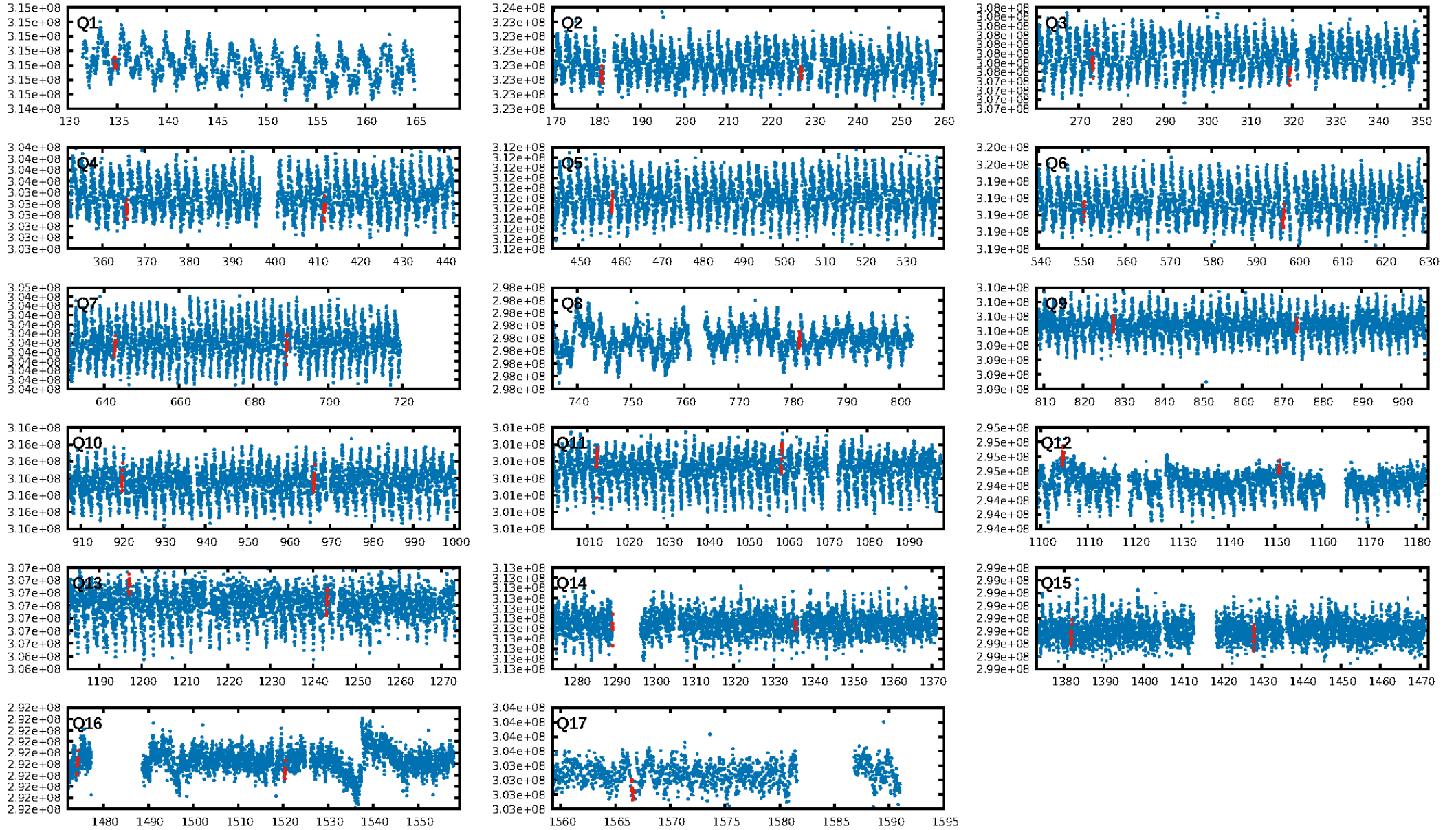
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [28.70 σ]
LongPeriod-sig: 93.9% [1.88 σ]
ModelChiSquare2-sig: 8.8%
ModelChiSquareGof-sig: 94.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -20.44
Centroid-sig: 36.5%
Centroid-so: 0.290 arcsec [0.77 σ]
OotOffset-rm: 0.210 arcsec [0.40 σ]
KicOffset-rm: 0.177 arcsec [0.33 σ]
OotOffset-st: 3/2/4/4 [13]
KicOffset-st: 3/2/4/4 [13]
DiffImageQuality-fgm: 0.62 [8/13]
DiffImageOverlap-fno: 0.06 [1/17]

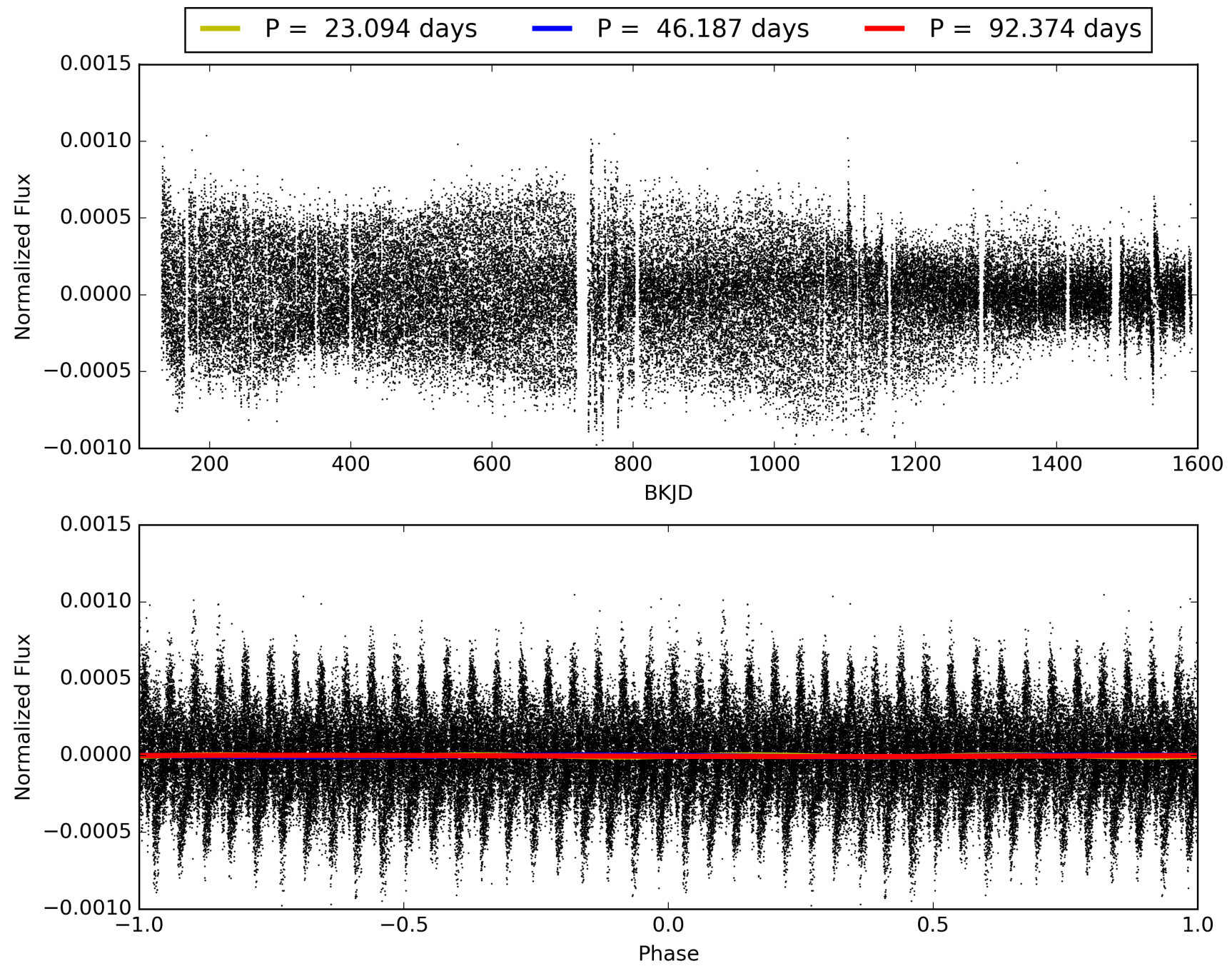
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005787972-06, PDC Light Curves

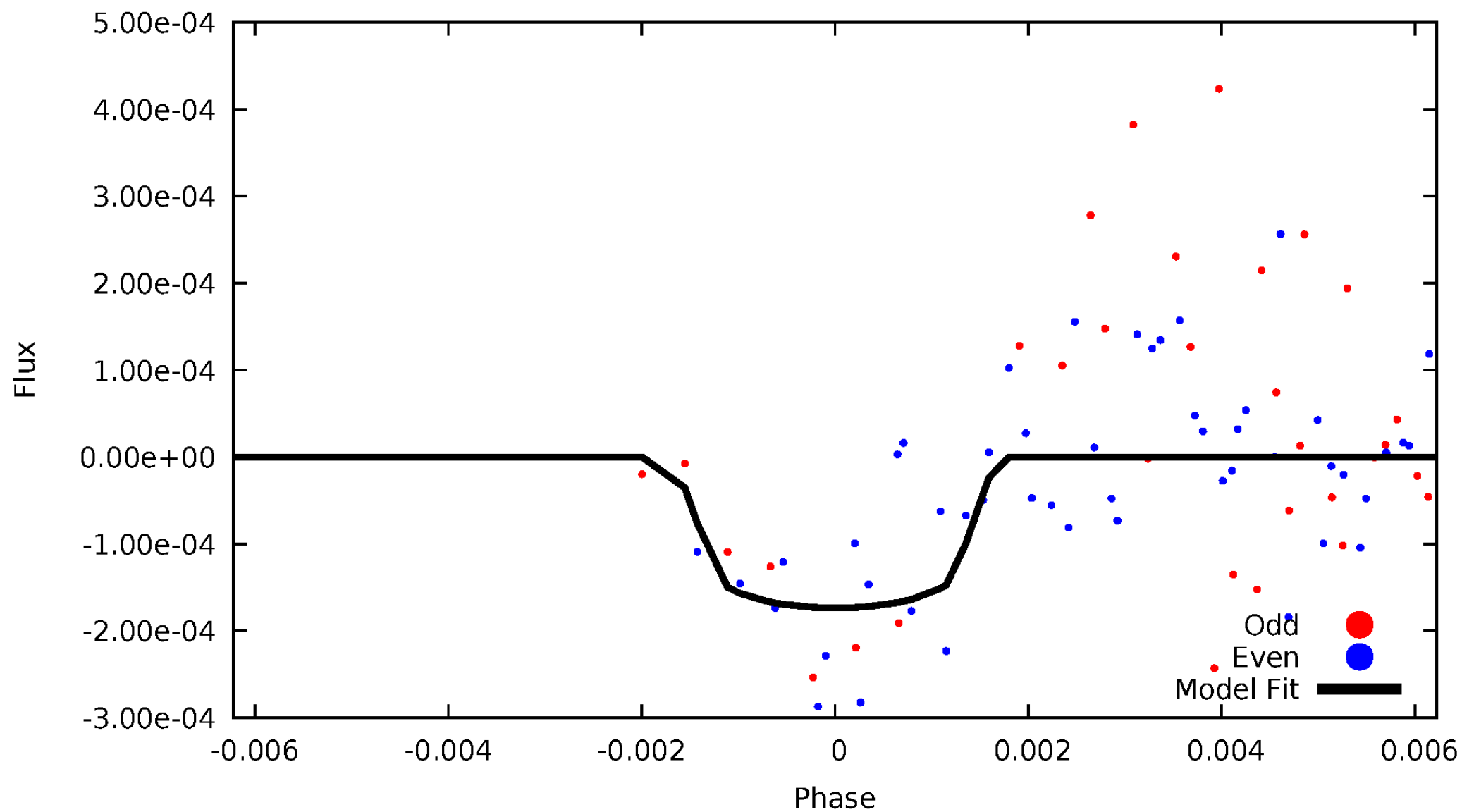


TCE 005787972-06



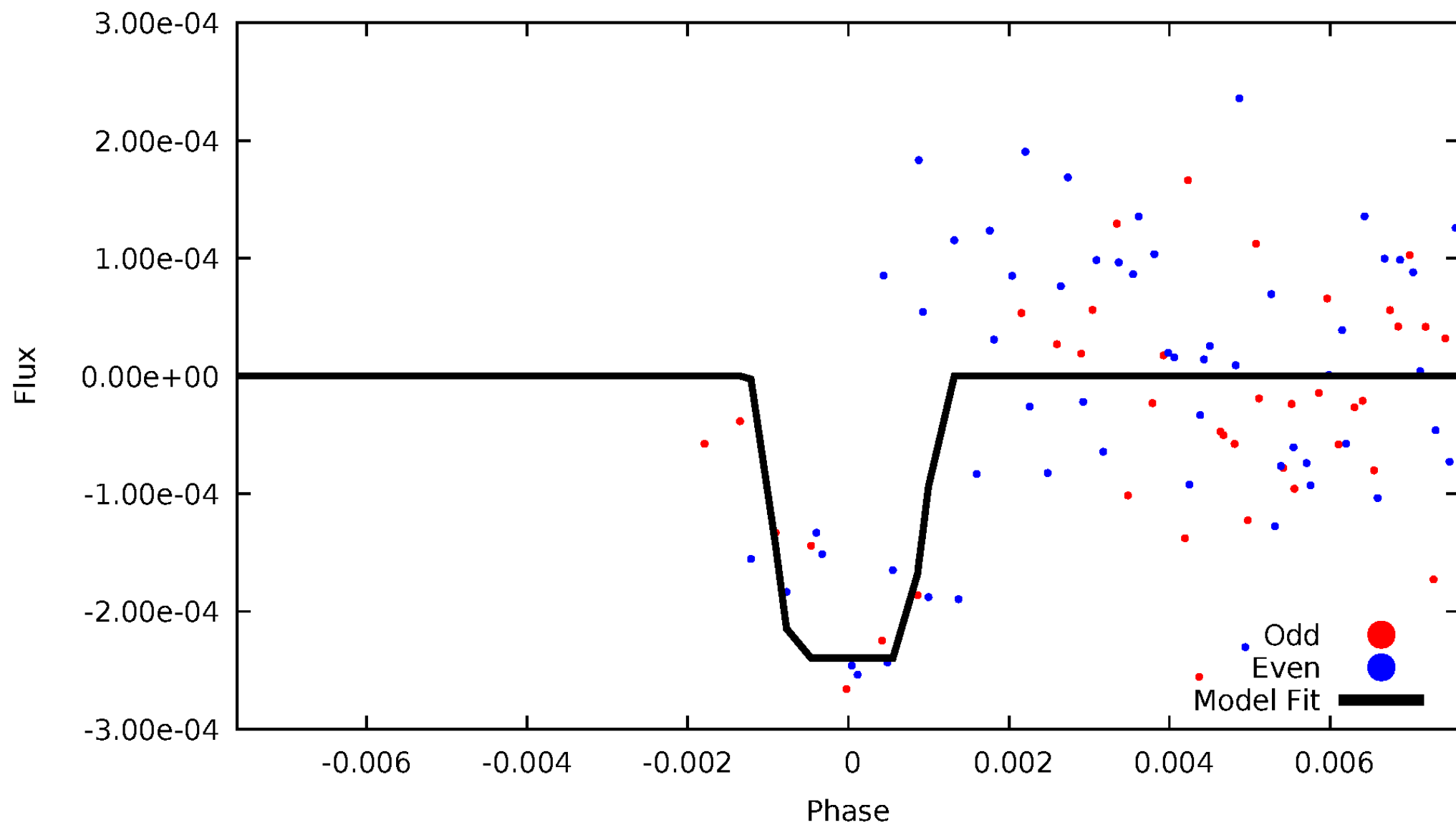
DV Odd/Even

TCE 005787972-06



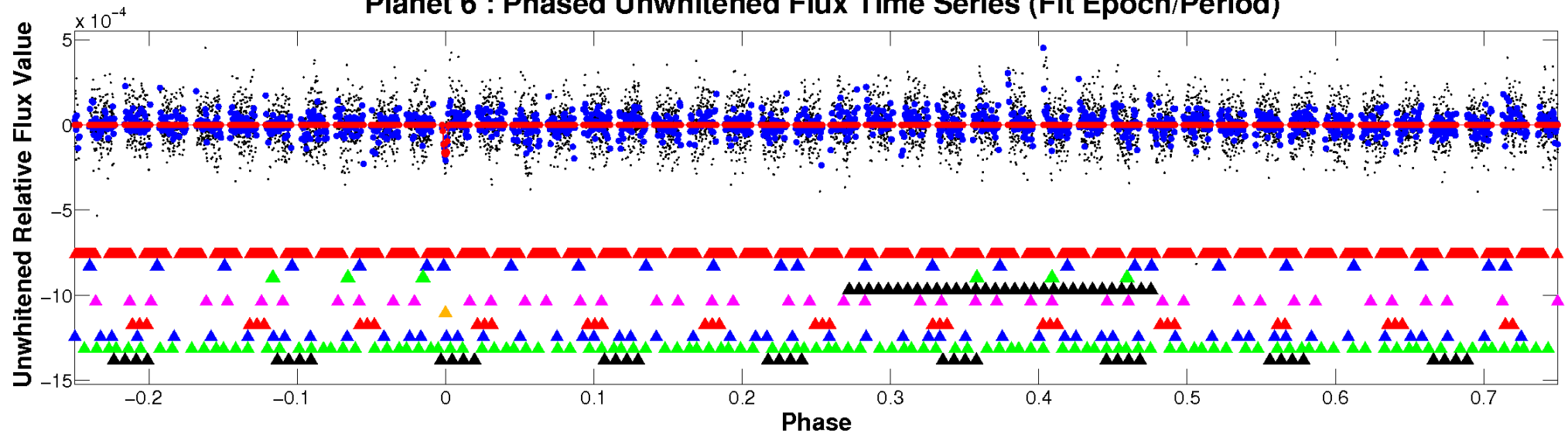
ALT Odd/Even

TCE 005787972-06

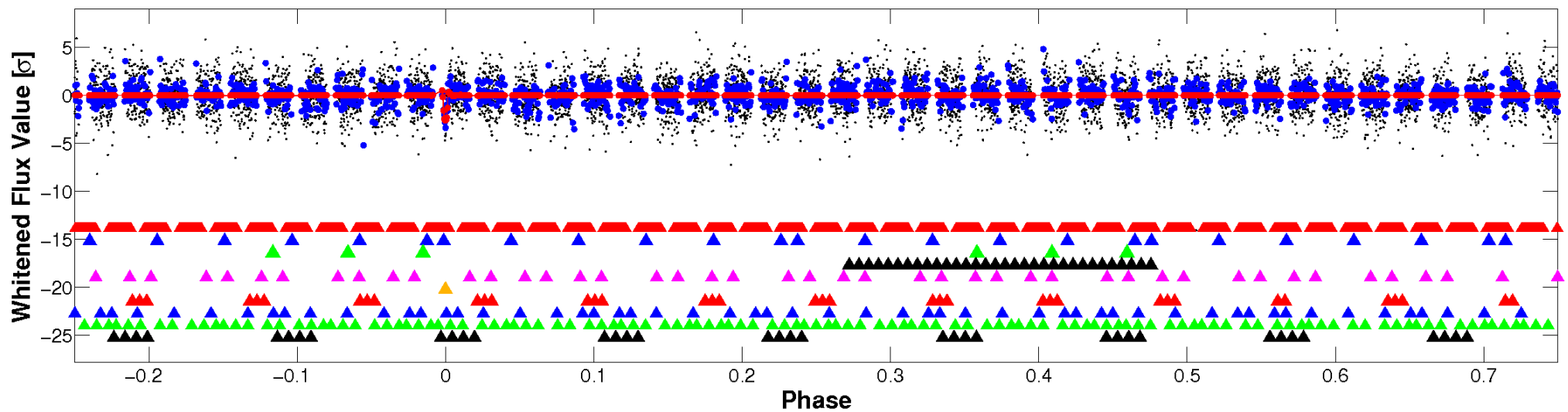


Non-Whitened Vs. Whitened Light Curve

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

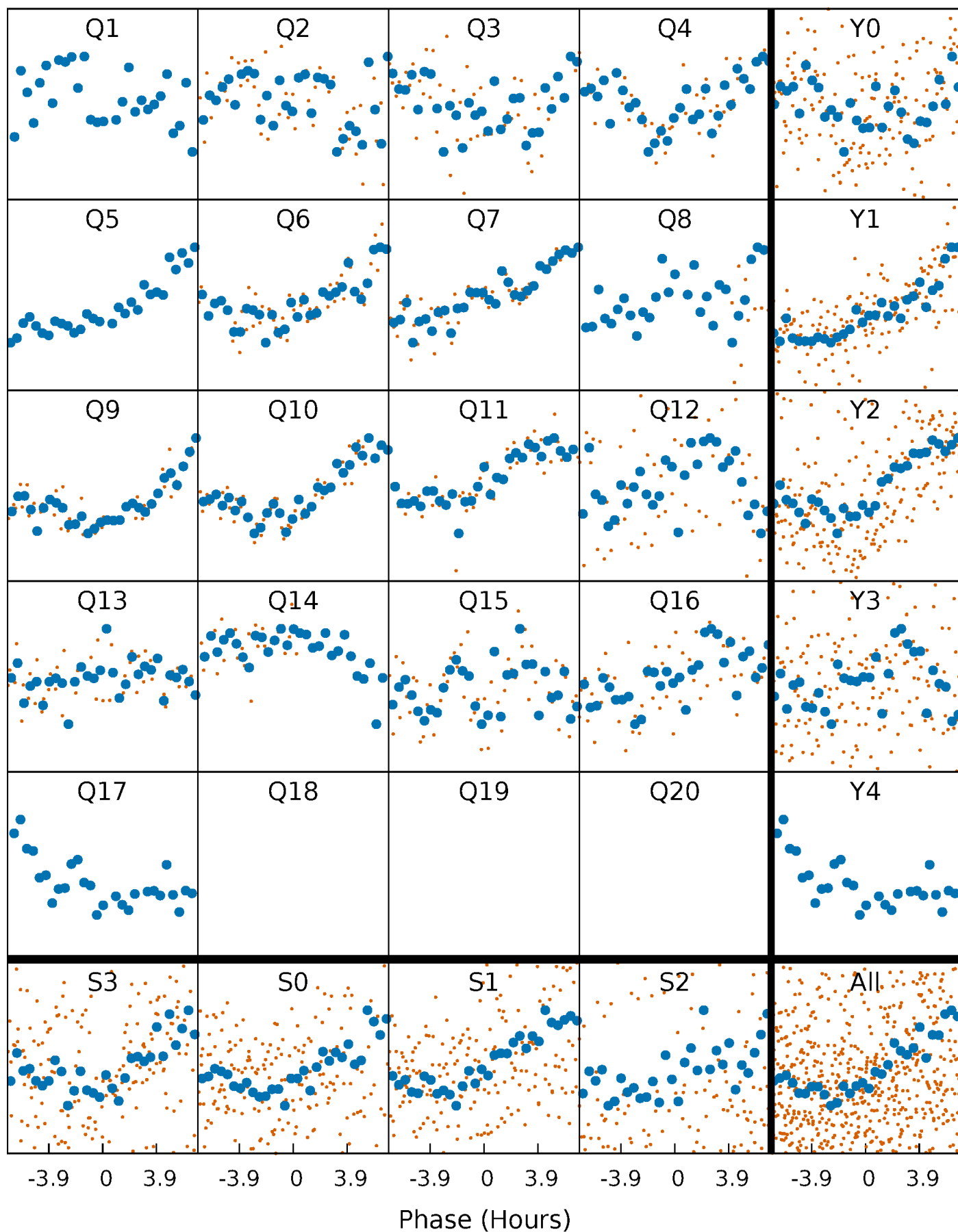


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



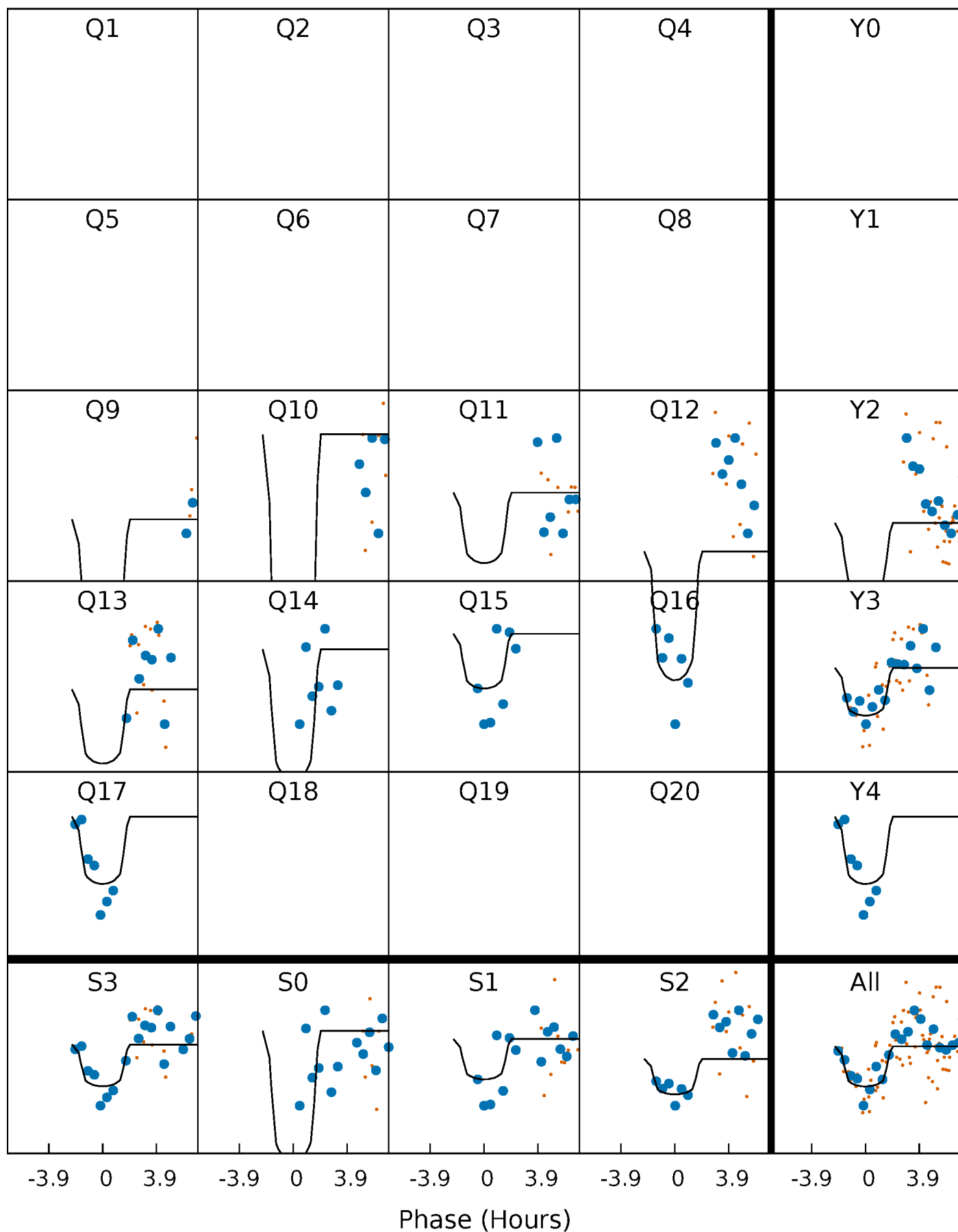
PDC Quarter-Phased Transit Curves

TCE 005787972-06 P= 46.187137 Days $T_0=134.771064$ (BKJD)



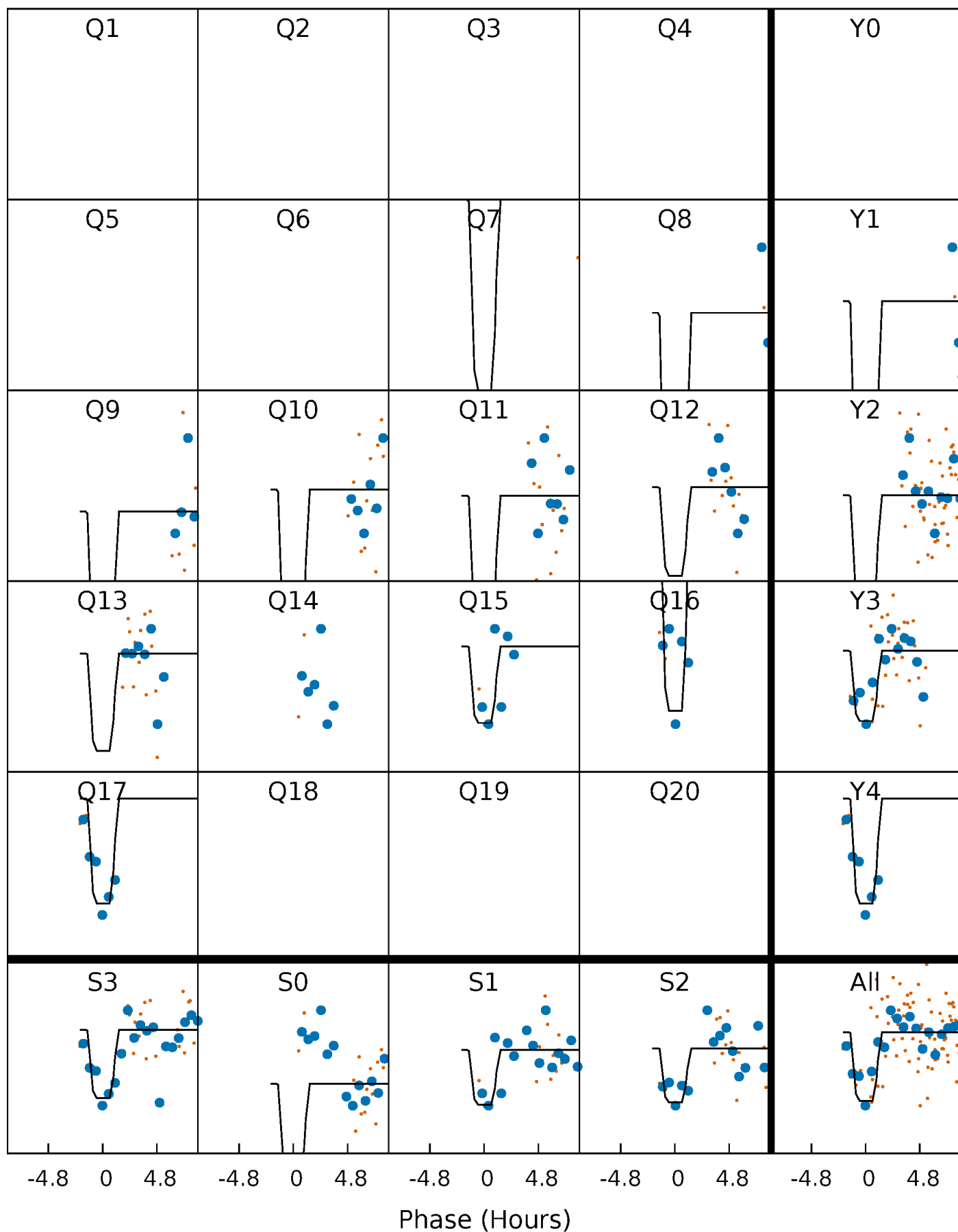
DV Quarter-Phased Transit Curves

TCE 005787972-06 P= 46.187137 Days $T_0=134.771064$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

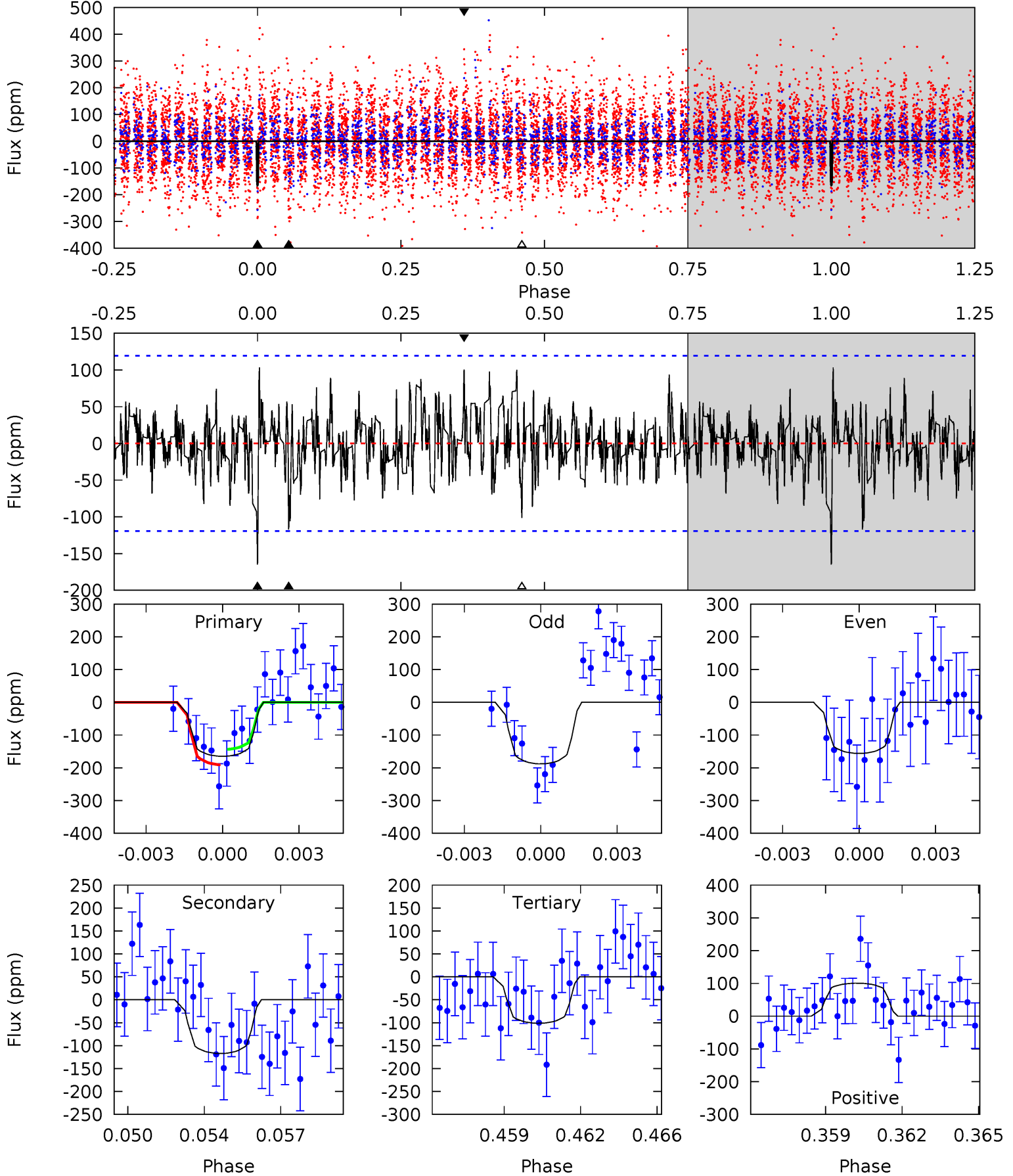
TCE 005787972-06 $P = 46.187386$ Days $T_0 = 134.753915$ (BKJD)



DV Model-Shift Uniqueness Test

005787972-06, P = 46.187137 Days, E = 88.583927 Days

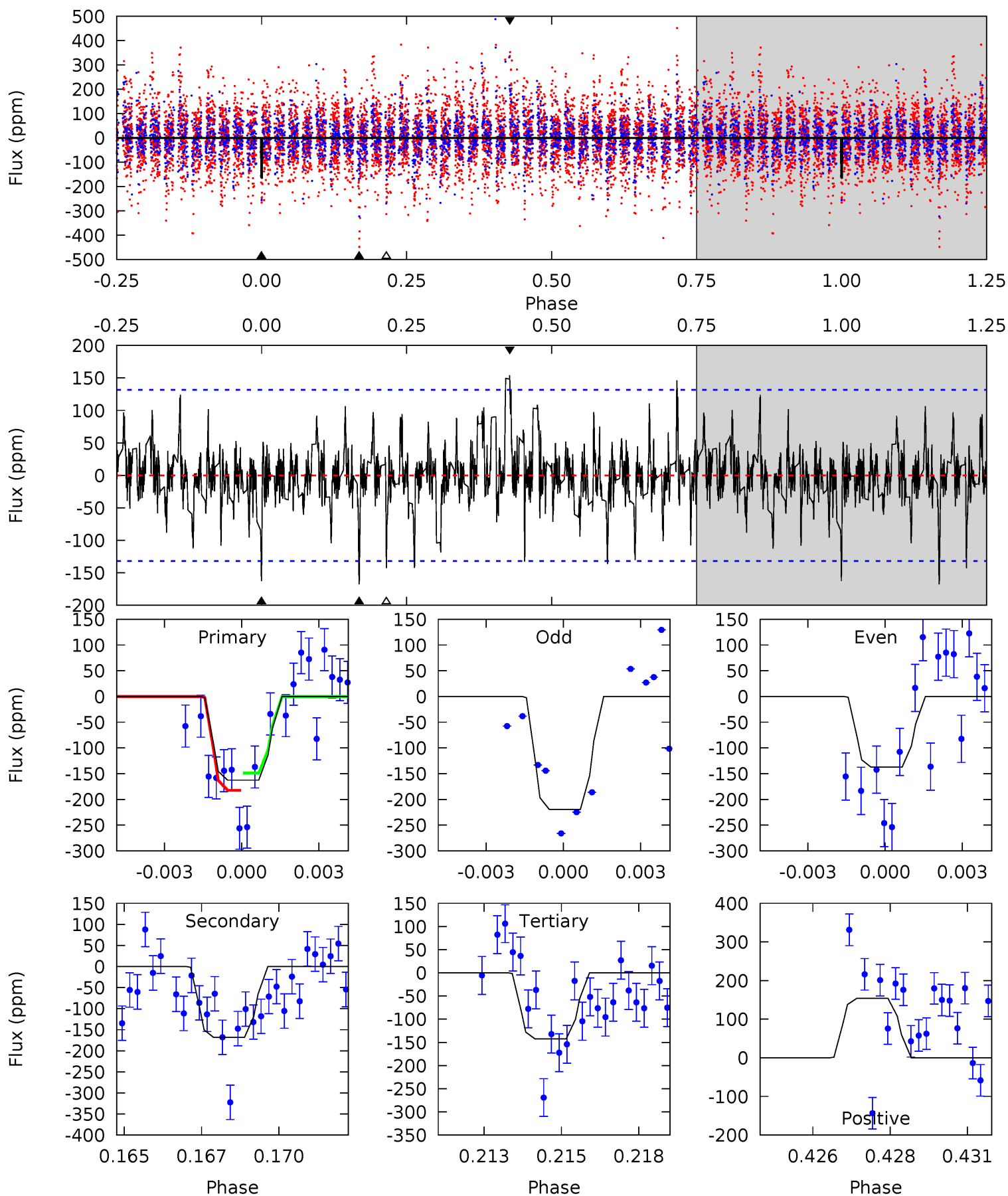
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.22	5.13	4.43	4.41	5.23	2.93	1.35	2.79	2.82	0.70	0.73	0.59	0.86	0.39	1.02



Alt Model-Shift Uniqueness Test

005787972-06, P = 46.187386 Days, E = 88.566529 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.52	6.73	5.72	6.17	5.28	3.02	1.47	0.80	0.34	1.01	0.56	1.54	0.60	0.48	0.65



Stellar Parameters For KIC 005787972

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6726^{+70}_{-90}	$4.131^{+0.130}_{-0.130}$	$-0.200^{+0.150}_{-0.150}$	$1.634^{+0.312}_{-0.284}$	$1.328^{+0.098}_{-0.122}$	$0.428^{+0.262}_{-0.163}$
	+1%/-1%	+3%/-3%	+75%/-75%	+19%/-17%	+7%/-9%	+61%/-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 005787972-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-117 ± 23	$3.54^{+3.28}_{-2.35}$	1011^{+49}_{-52}	5011^{+3807}_{-1126}	393^{+2942}_{-290}
Alt.	-168 ± 25	$3.75^{+3.24}_{-2.33}$	1009^{+47}_{-45}	5295^{+3381}_{-1152}	490^{+2745}_{-349}

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 $A_{obs} \gg 1.0$

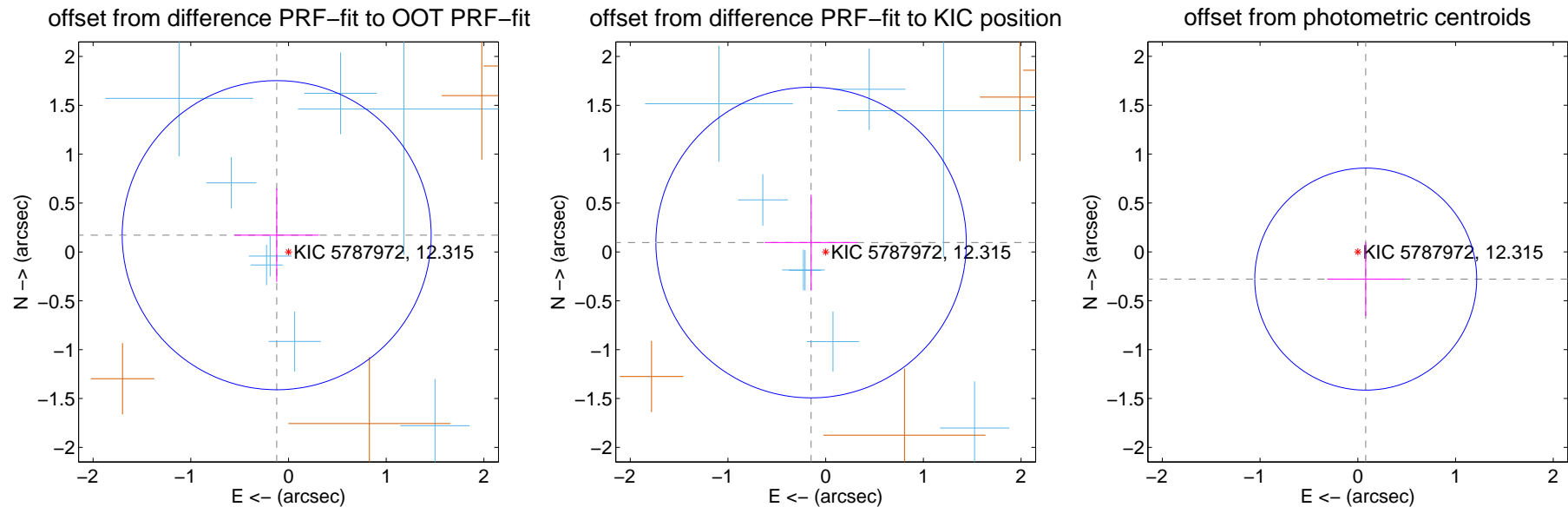
DV Centroid Data

Supplemental centroid analysis for 005787972-06. Kepler magnitude: 12.31. Transit SNR 10.48

There are 8 quarters with good PRF difference image offsets

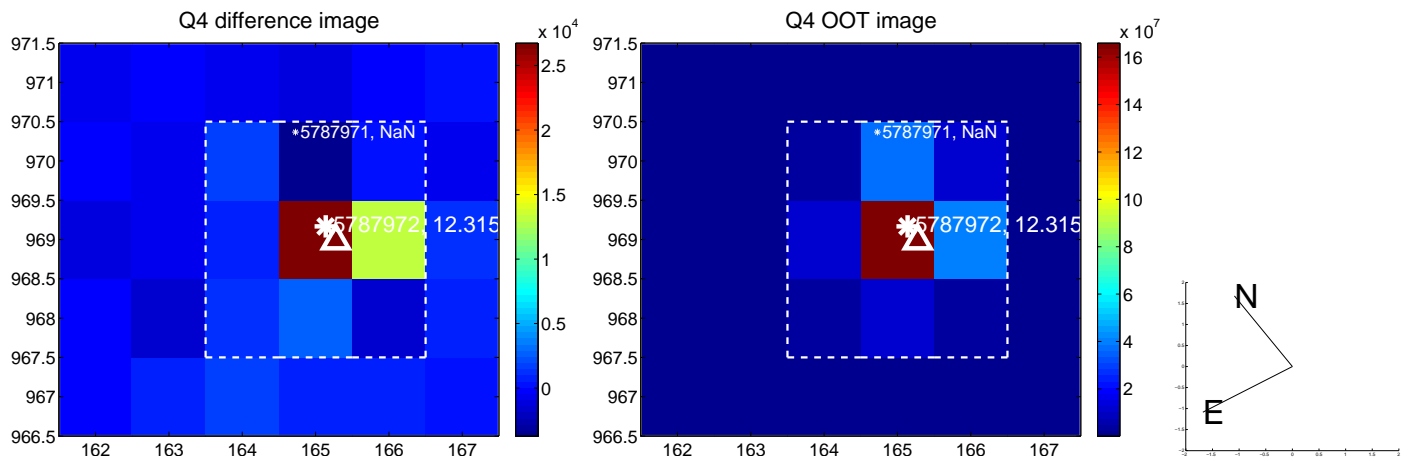
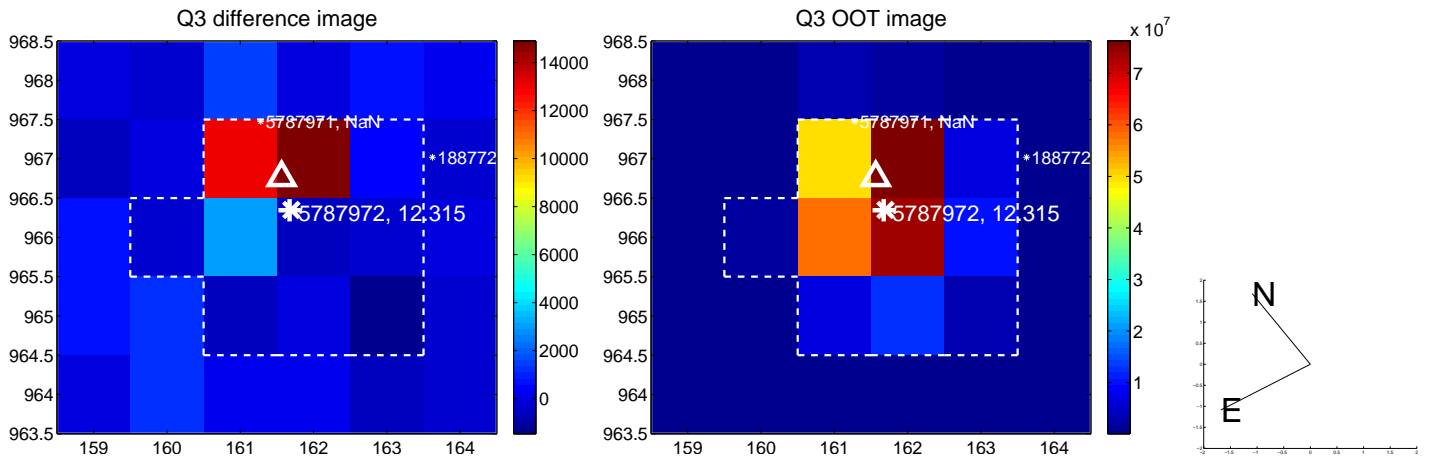
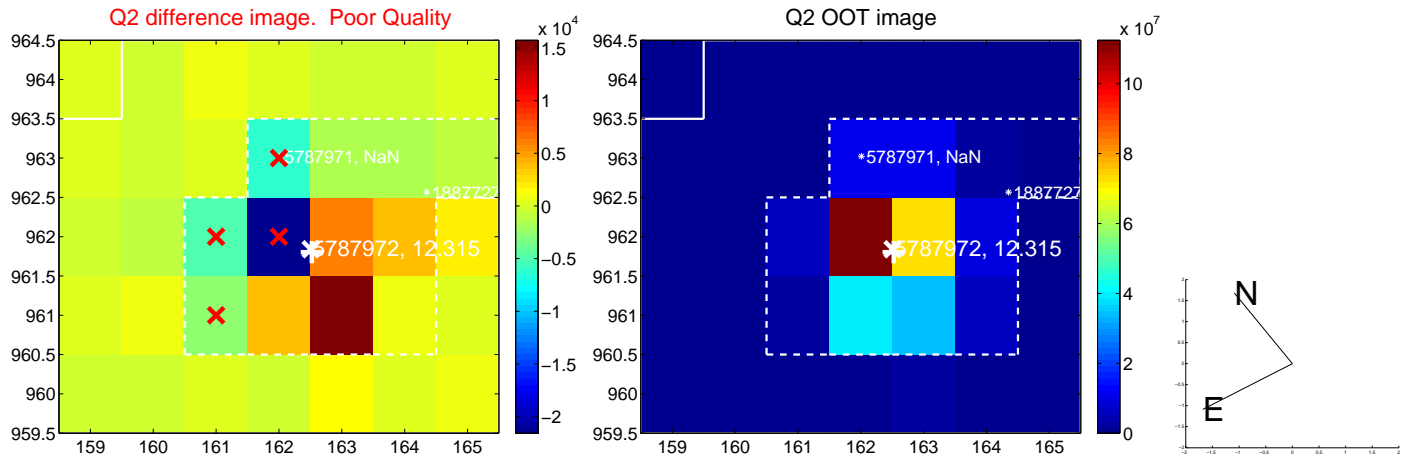
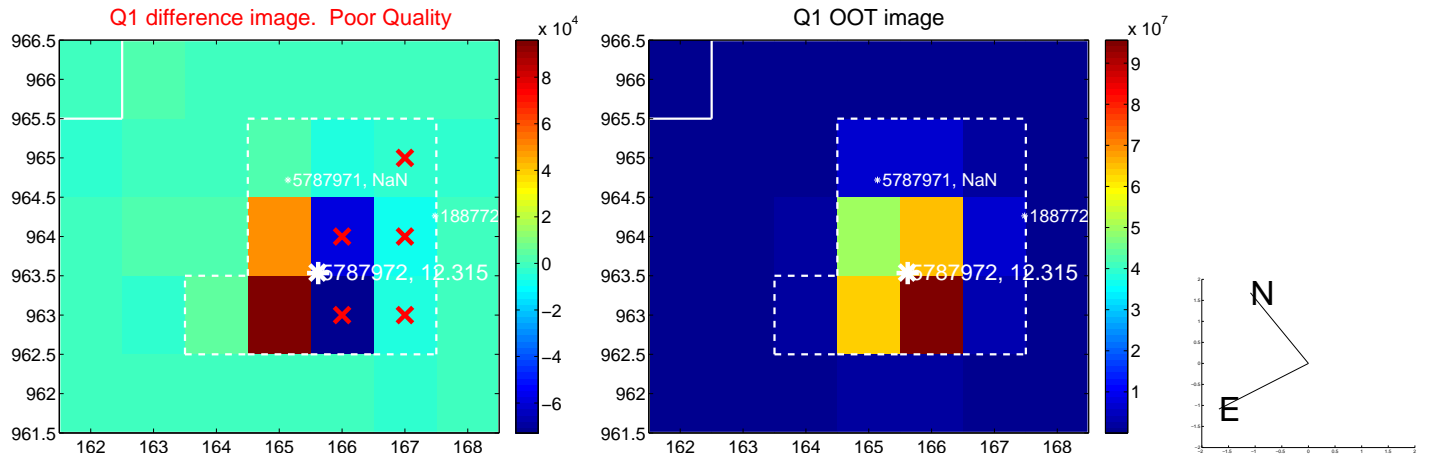
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.210 ± 0.527	0.40	0.121 ± 0.430	0.171 ± 0.478
PRF-fit source offset from KIC position	0.177 ± 0.530	0.33	0.149 ± 0.476	0.096 ± 0.489
photometric centroid source offset	0.29 ± 0.38	0.77	-0.08 ± 0.39	-0.28 ± 0.38

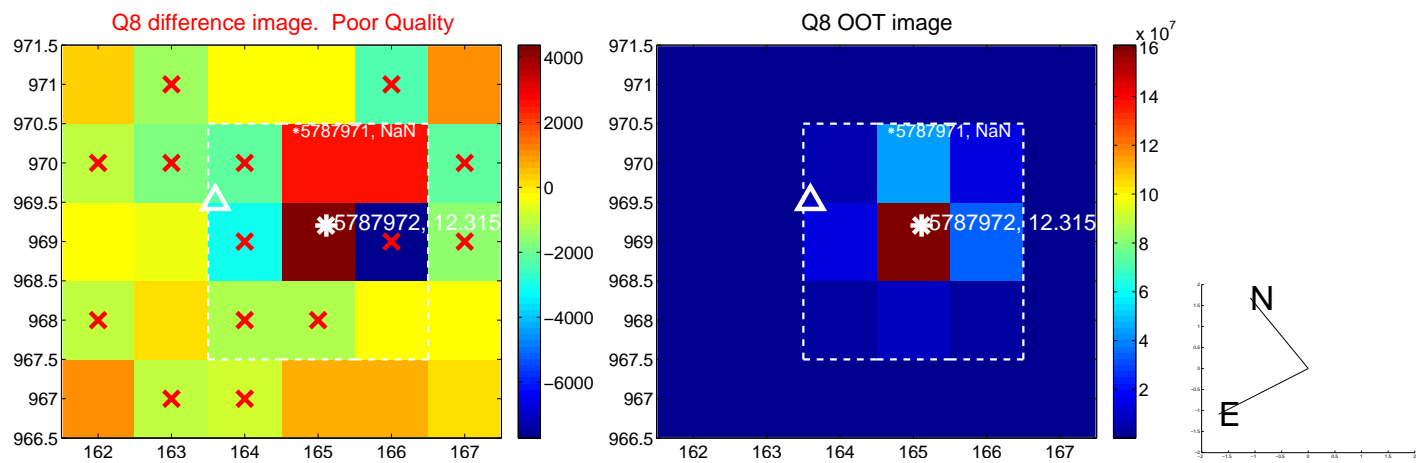
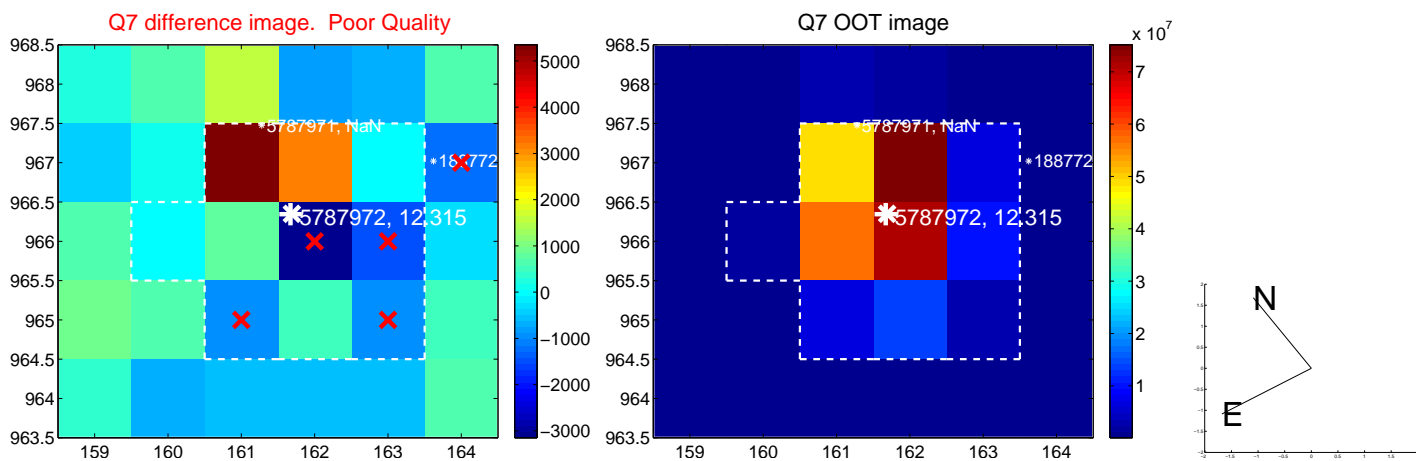
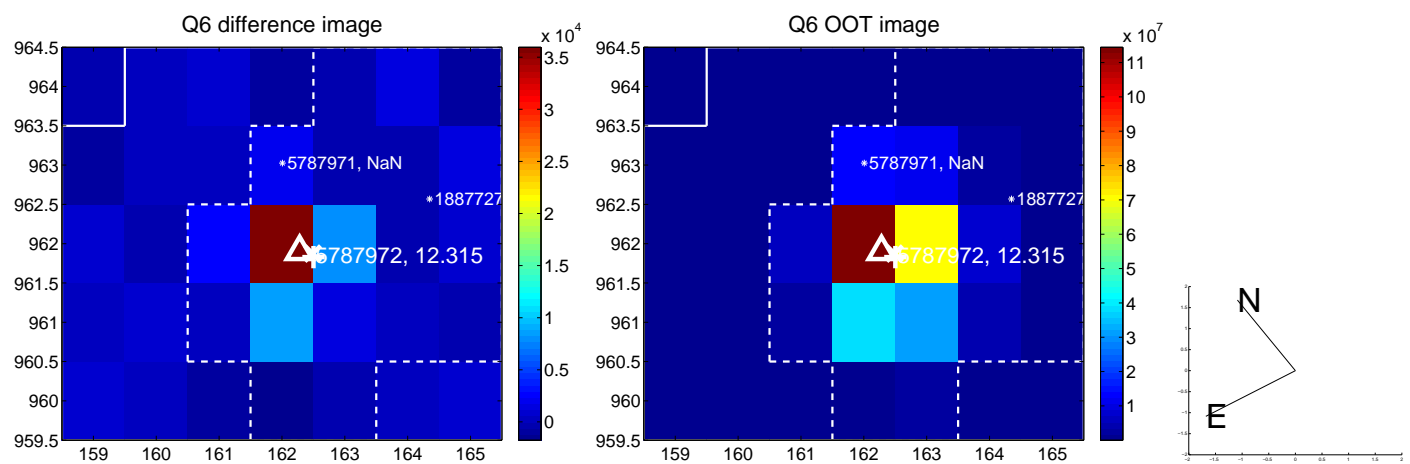
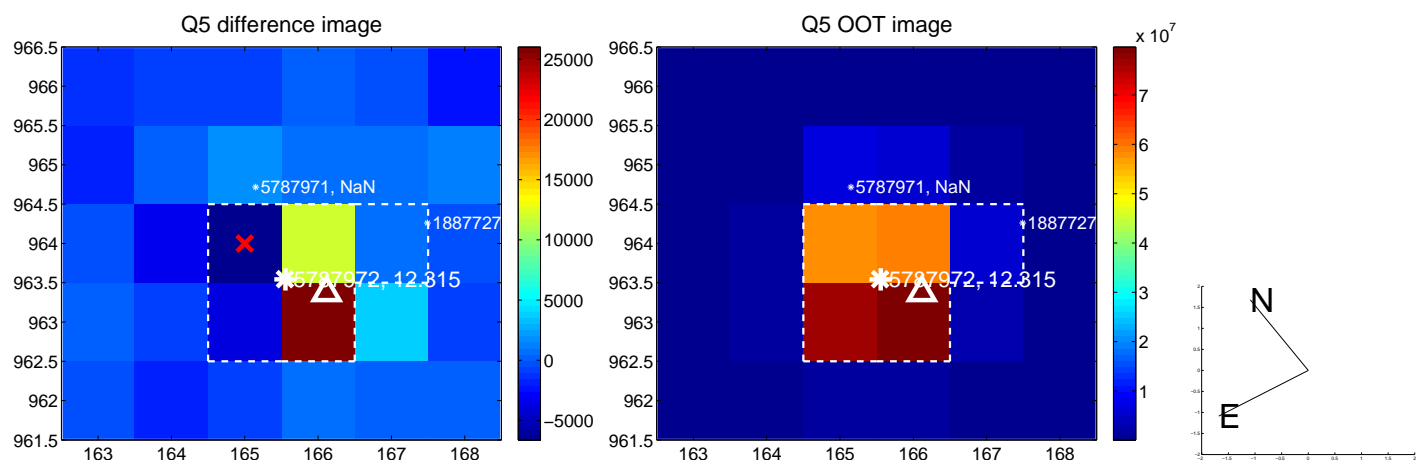


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

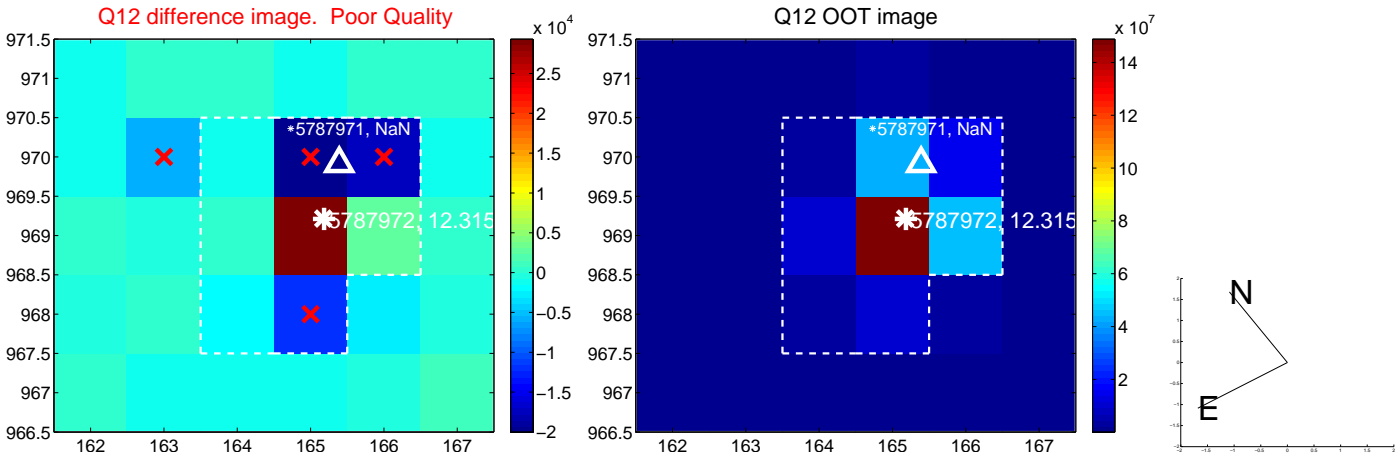
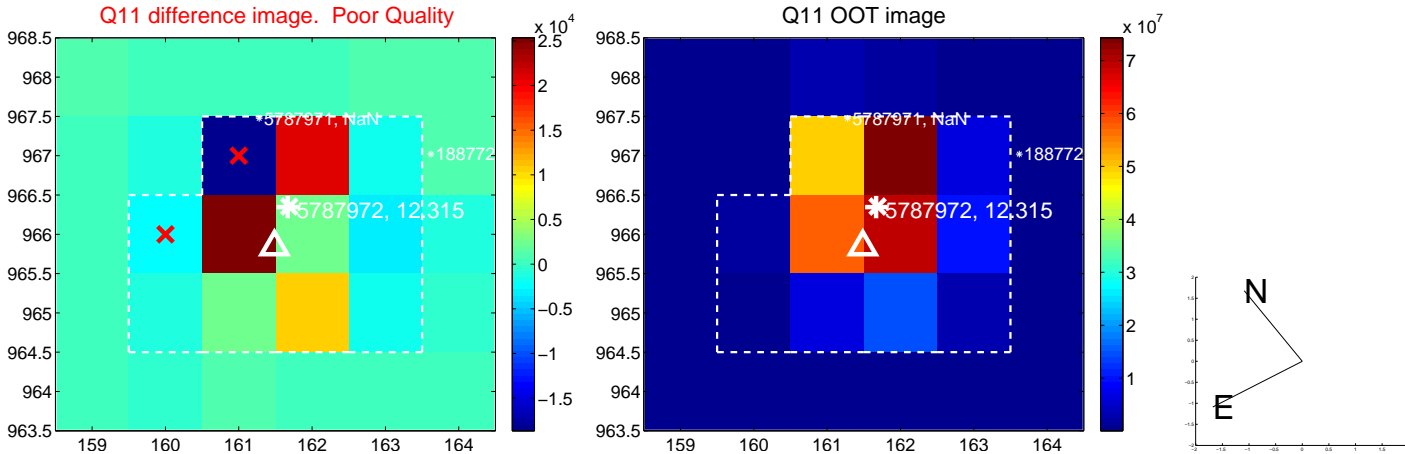
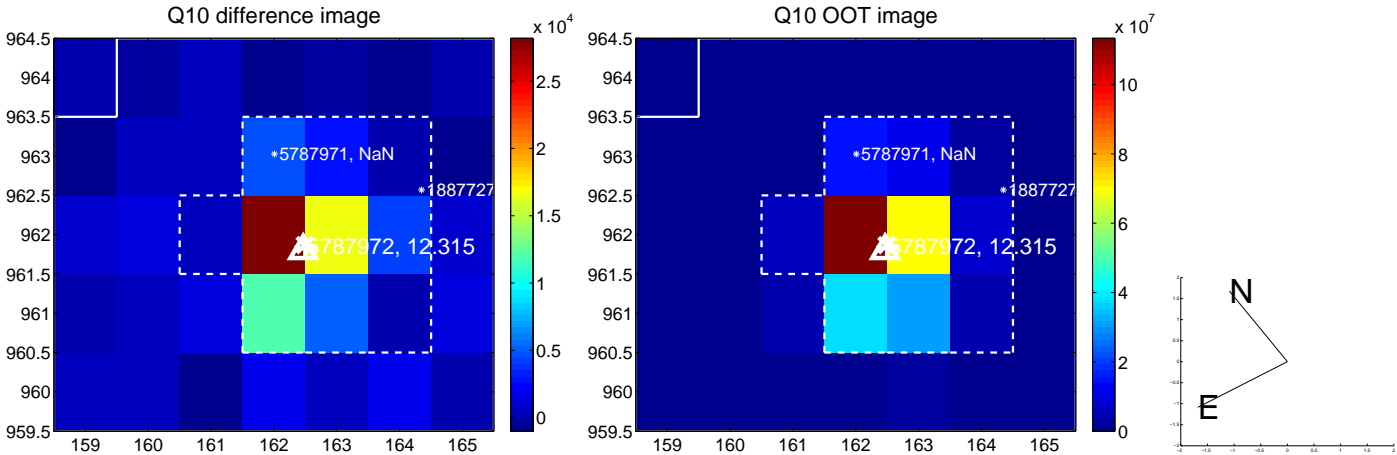
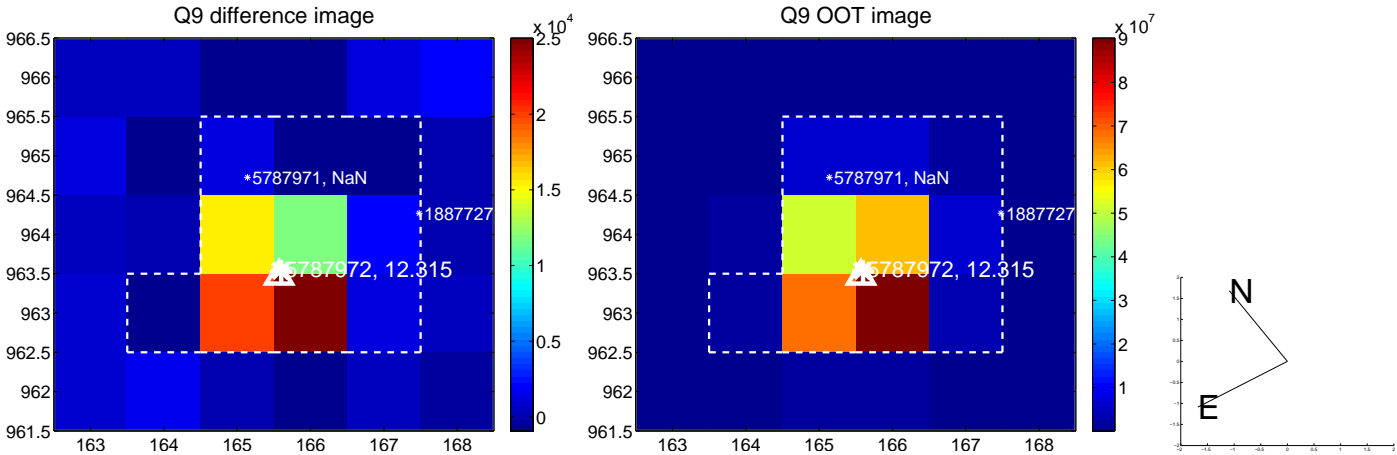
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



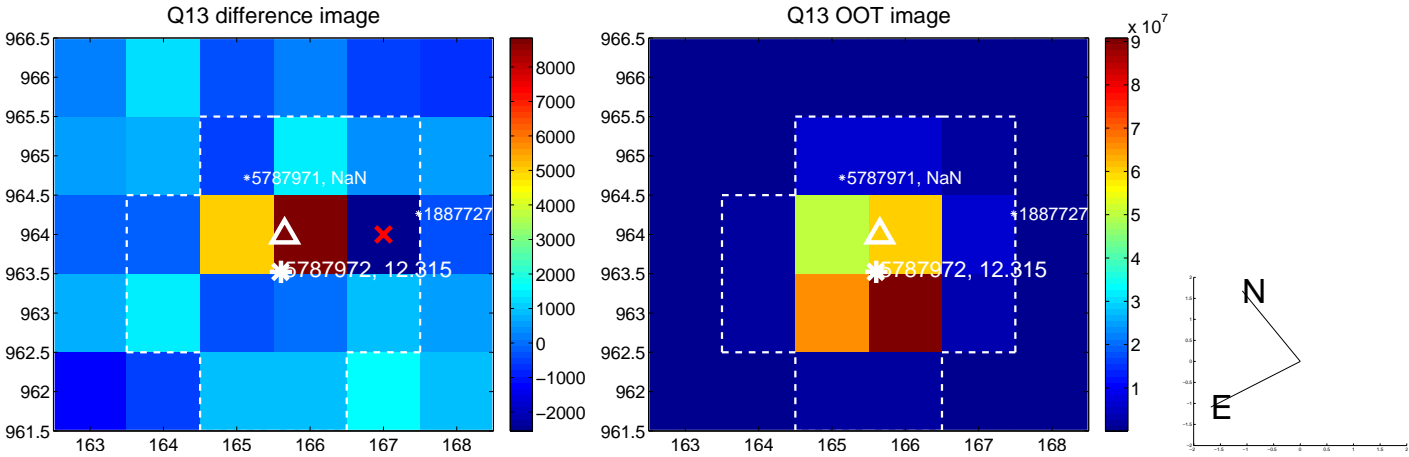
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



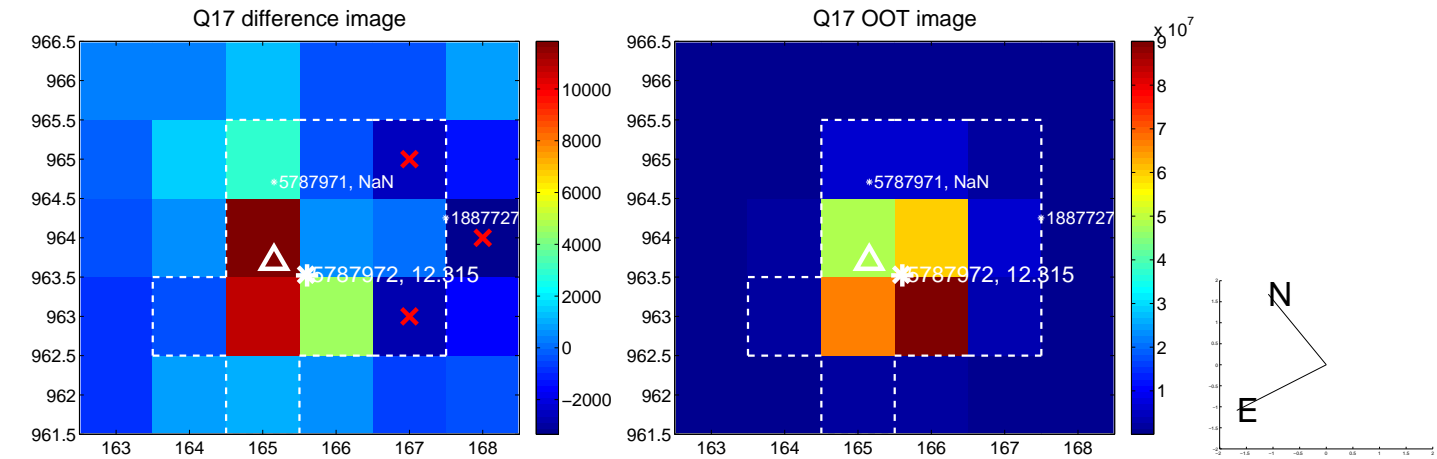
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



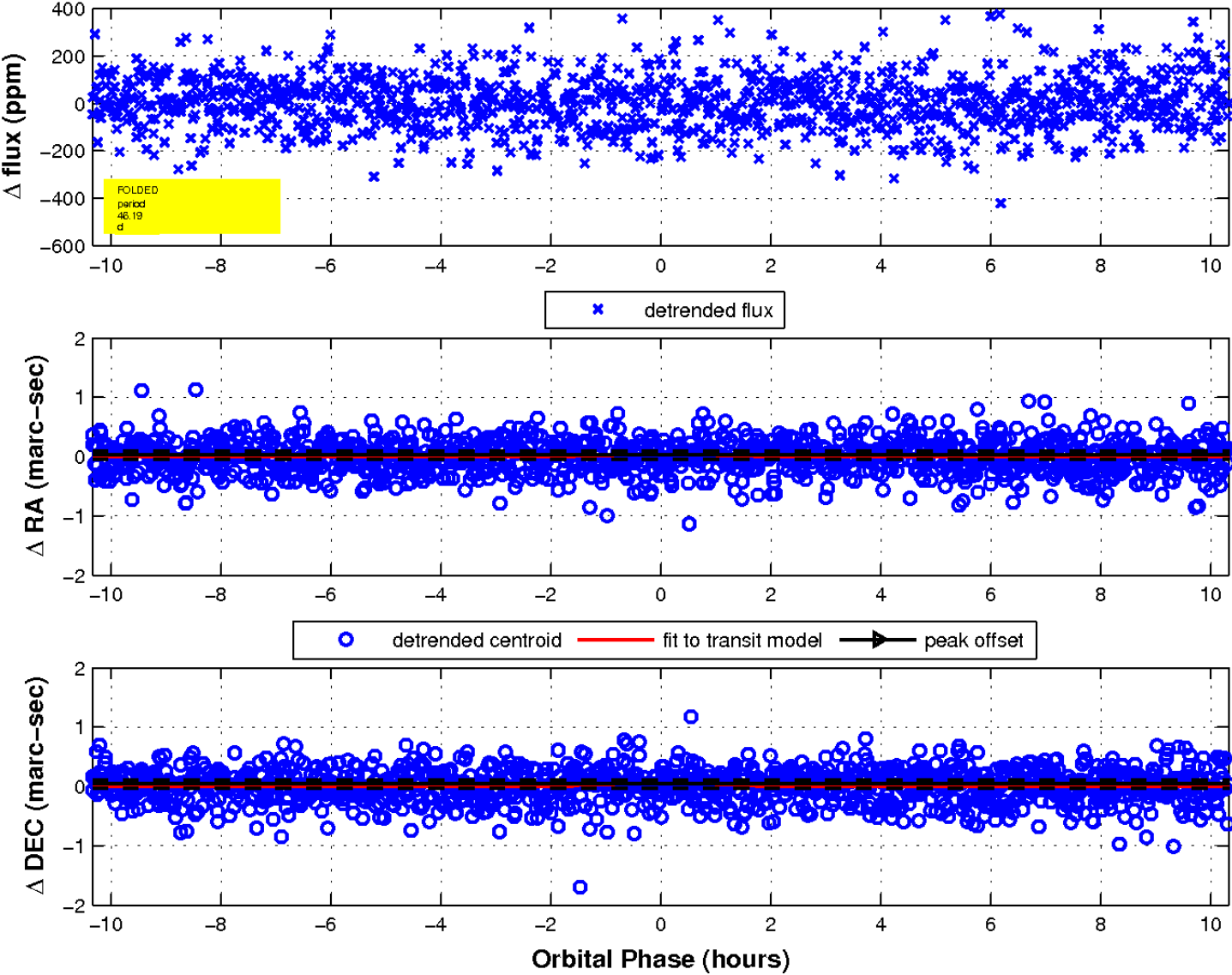
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

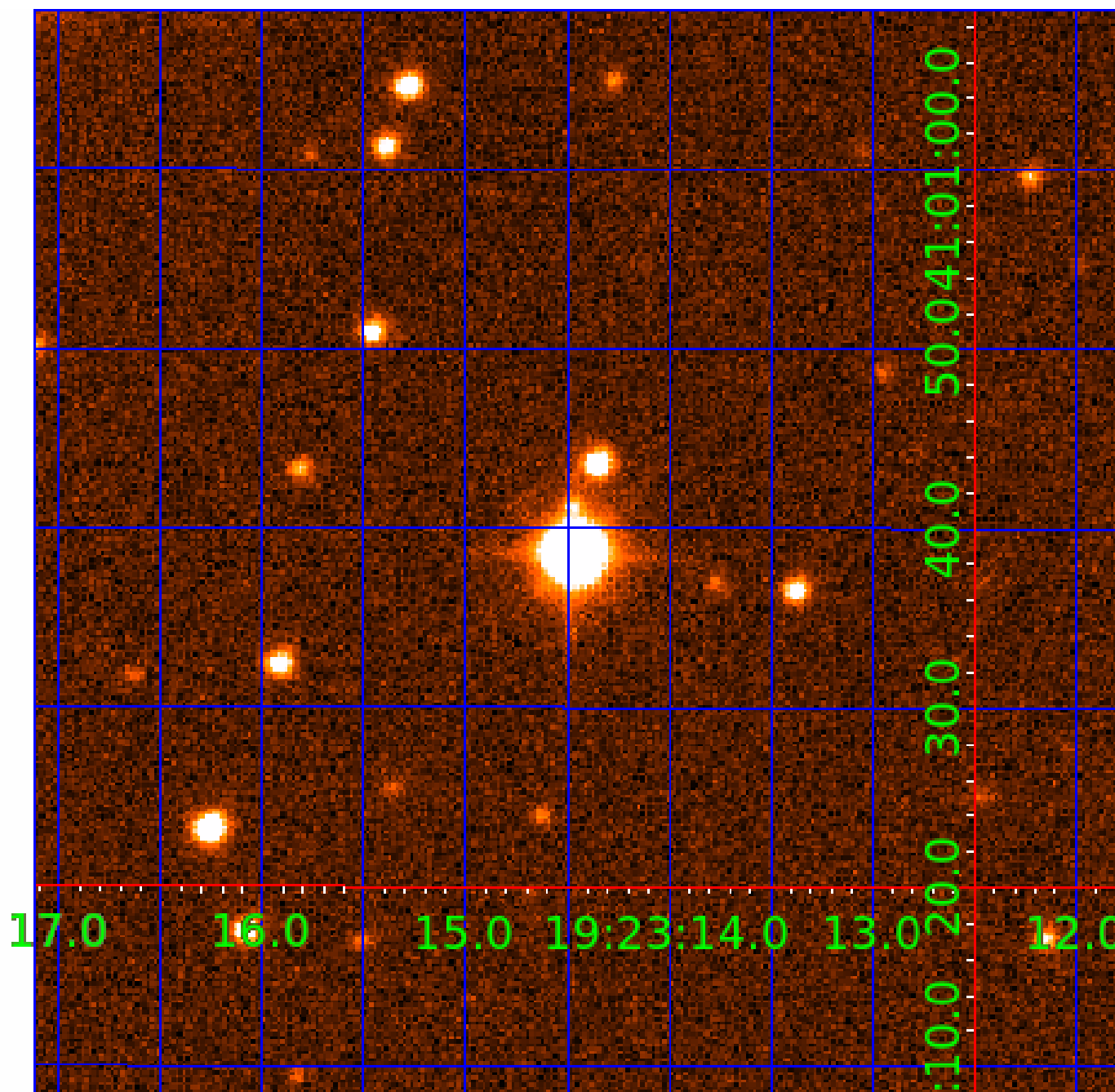


fluxWeightedCentroids, Planet 6 of 10



UKIRT Image

Declination



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})
005787972-01	OBS	No	1.099151	132.692479	3.2	7.513	8.9	2.8	1.63	6726	0.30	9375.91
005787972-02	OBS	No	57.208769	180.383070	159.0	3.963	12.3	10.1	1.63	6726	2.25	48.25
005787972-03	OBS	No	252.860410	272.632577	232.3	7.104	11.0	12.5	1.63	6726	2.71	6.65
005787972-04	OBS	No	46.490157	147.345820	197.2	1.772	11.2	10.1	1.63	6726	2.32	63.62
005787972-05	OBS	No	32.158912	152.995453	108.7	4.803	9.1	8.3	1.63	6726	1.79	104.00
005787972-06	OBS	No	46.187137	134.771064	173.7	3.448	9.4	10.5	1.63	6726	2.48	64.18
005787972-07	OBS	No	39.098565	153.376700	139.5	3.412	9.6	9.4	1.63	6726	2.14	80.14
005787972-08	OBS	No	25.787015	154.054388	105.4	4.687	8.7	9.3	1.63	6726	1.91	139.60
005787972-09	OBS	No	12.382392	142.368262	70.6	4.369	9.5	8.6	1.63	6726	1.56	371.26
005787972-10	OBS	No	41.093899	144.818289	211.9	2.500	9.1	-1.0	1.63	6726	2.40	75.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005787972-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
005787972-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005787972-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
005787972-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005787972-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNRESOLVED_OFFSET
005787972-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_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.

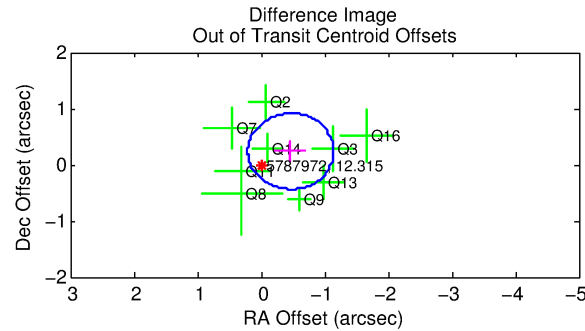
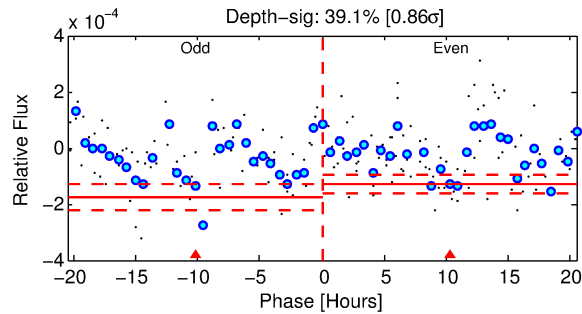
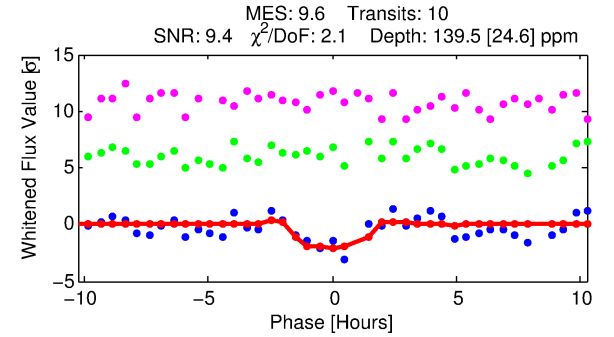
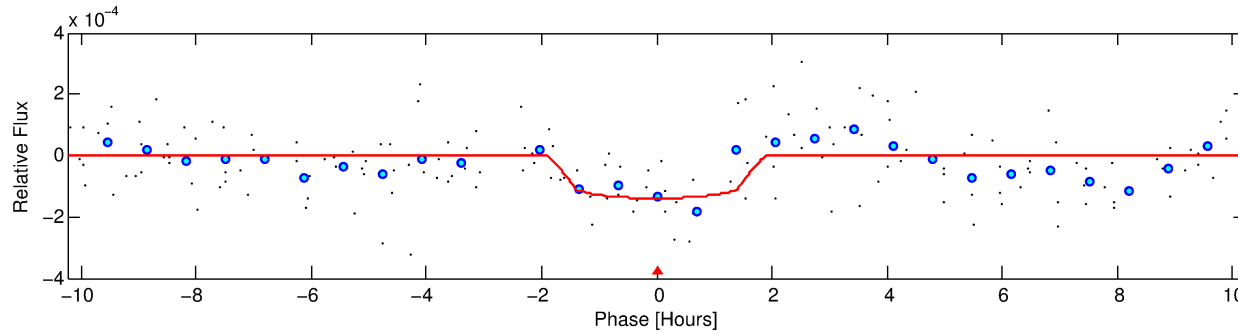
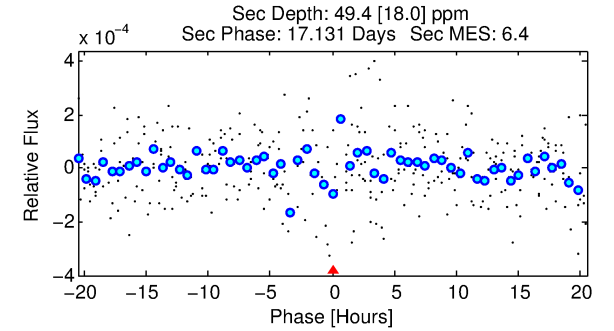
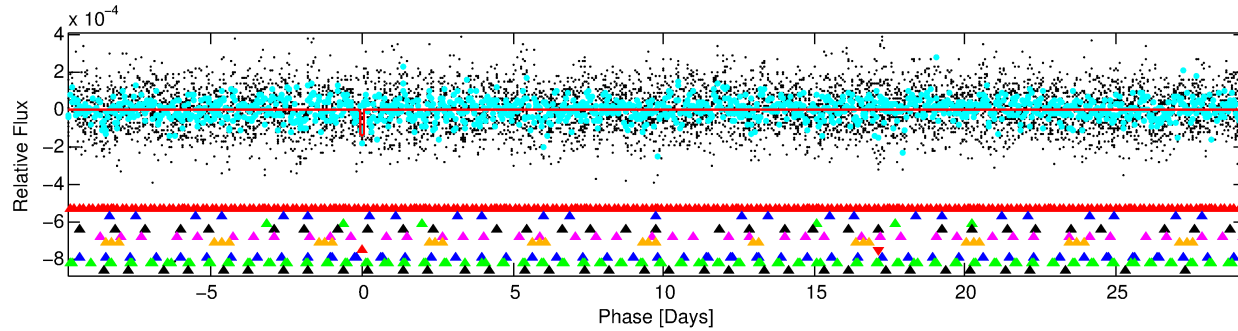
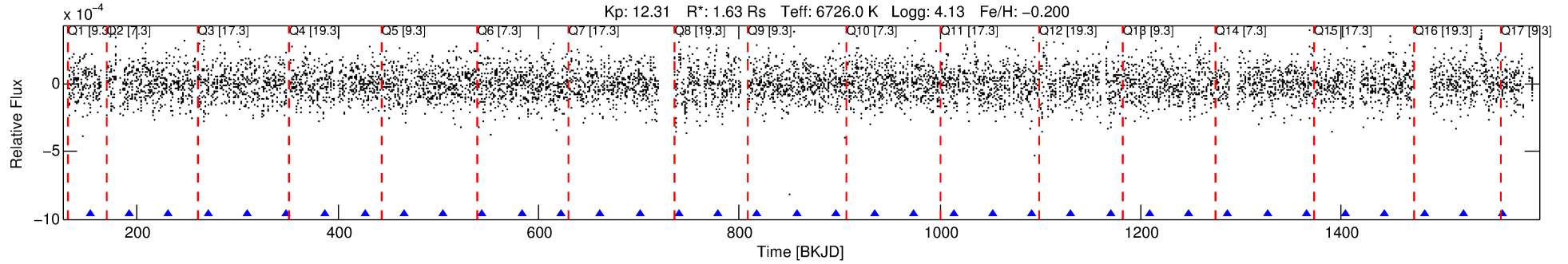
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005787972-07

No Significant Match Found

DV One-Page Summary

KIC: 5787972 Candidate: 7 of 10 Period: 39.099 d



DV Fit Results:

Period = 39.09856 [0.00054] d
Epoch = 153.3767 [0.0120] BKJD
Rp/R* = 0.0120 [0.0114]
a/R* = 53.17 [289.54]
b = 0.81 [2.35]
Seff = 80.14 [19.45]
Teff = 763 [46] K
Rp = 2.14 [2.08] Re
a = 0.2472 [0.0400] AU
Ag = 363.03 [709.54] [0.51σ]
Teffp = 5149 [2498] K [1.76σ]

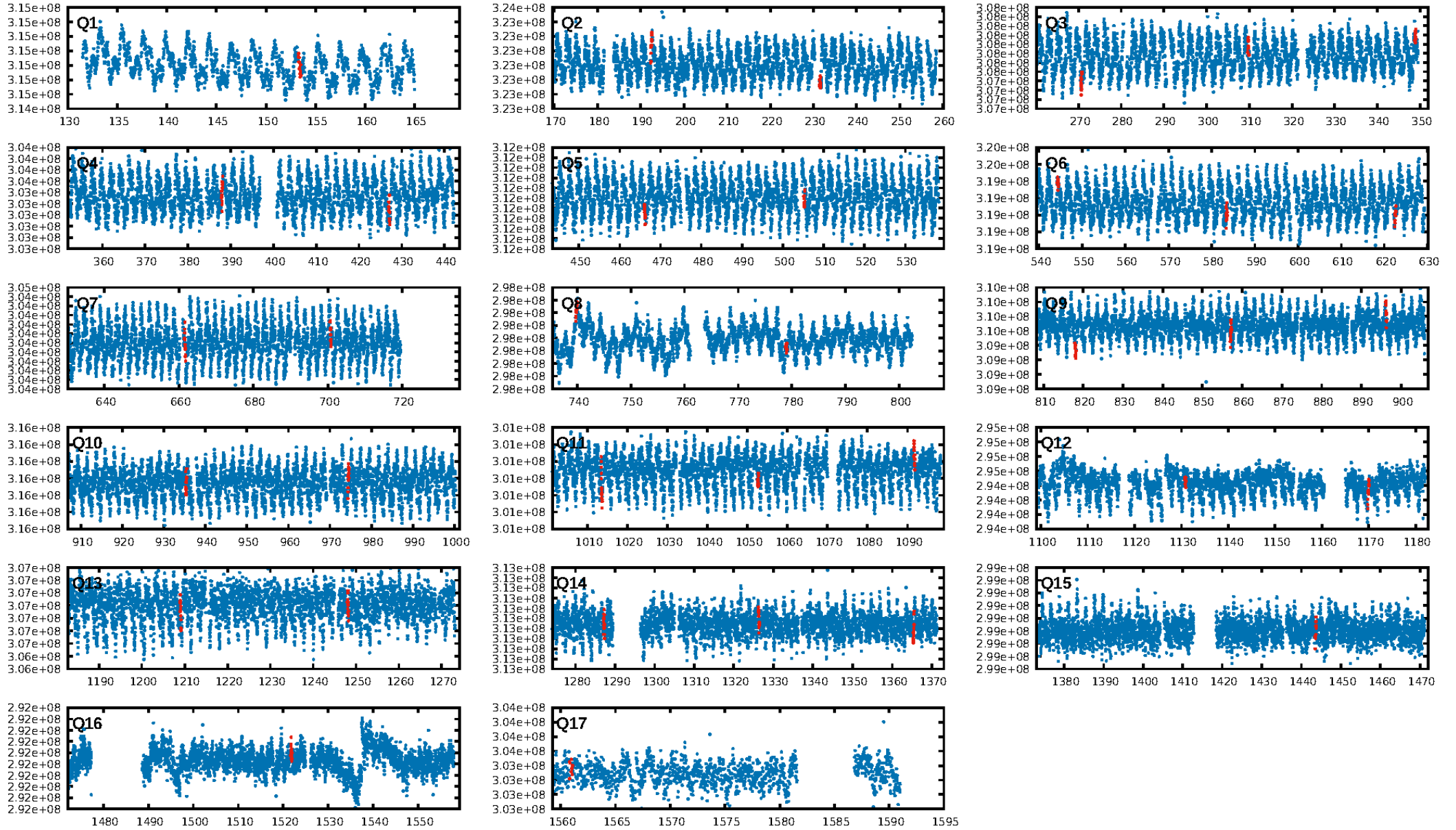
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [28.27σ]
LongPeriod-sig: 100.0% [11.32σ]
ModelChiSquare2-sig: 21.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 2.908
Centroid-sig: 22.8%
Centroid-so: 0.464 arcsec [1.07σ]
OotOffset-rm: 0.524 arcsec [2.33σ]
OotOffset-st: 2/3/2/2 [9]
KicOffset-rm: 0.505 arcsec [2.10σ]
KicOffset-st: 2/3/2/2 [9]
DiffImageQuality-fgm: 0.44 [4/9]
DiffImageOverlap-fno: 0.31 [5/16]

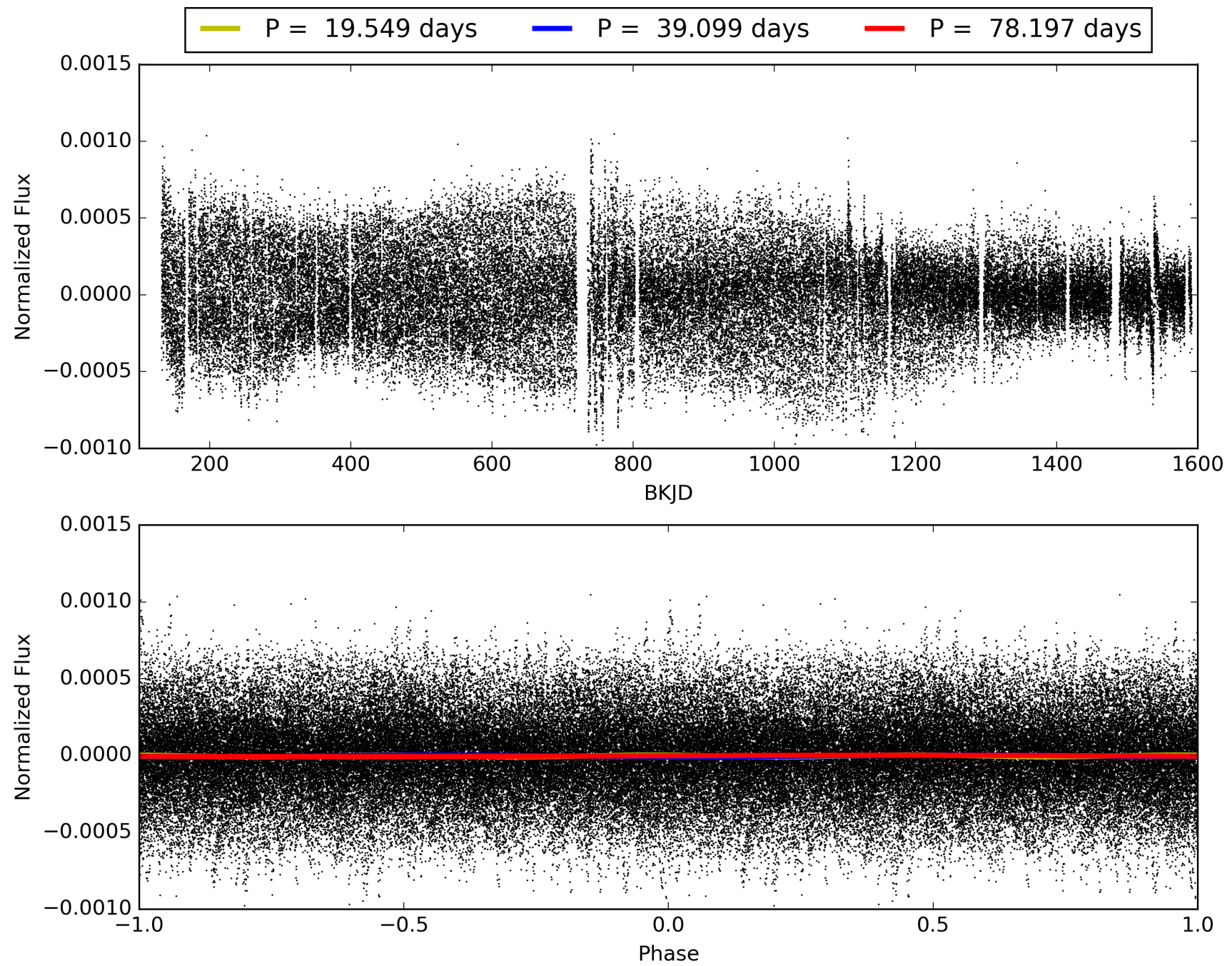
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:25:13 Z

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

TCE 005787972-07, PDC Light Curves

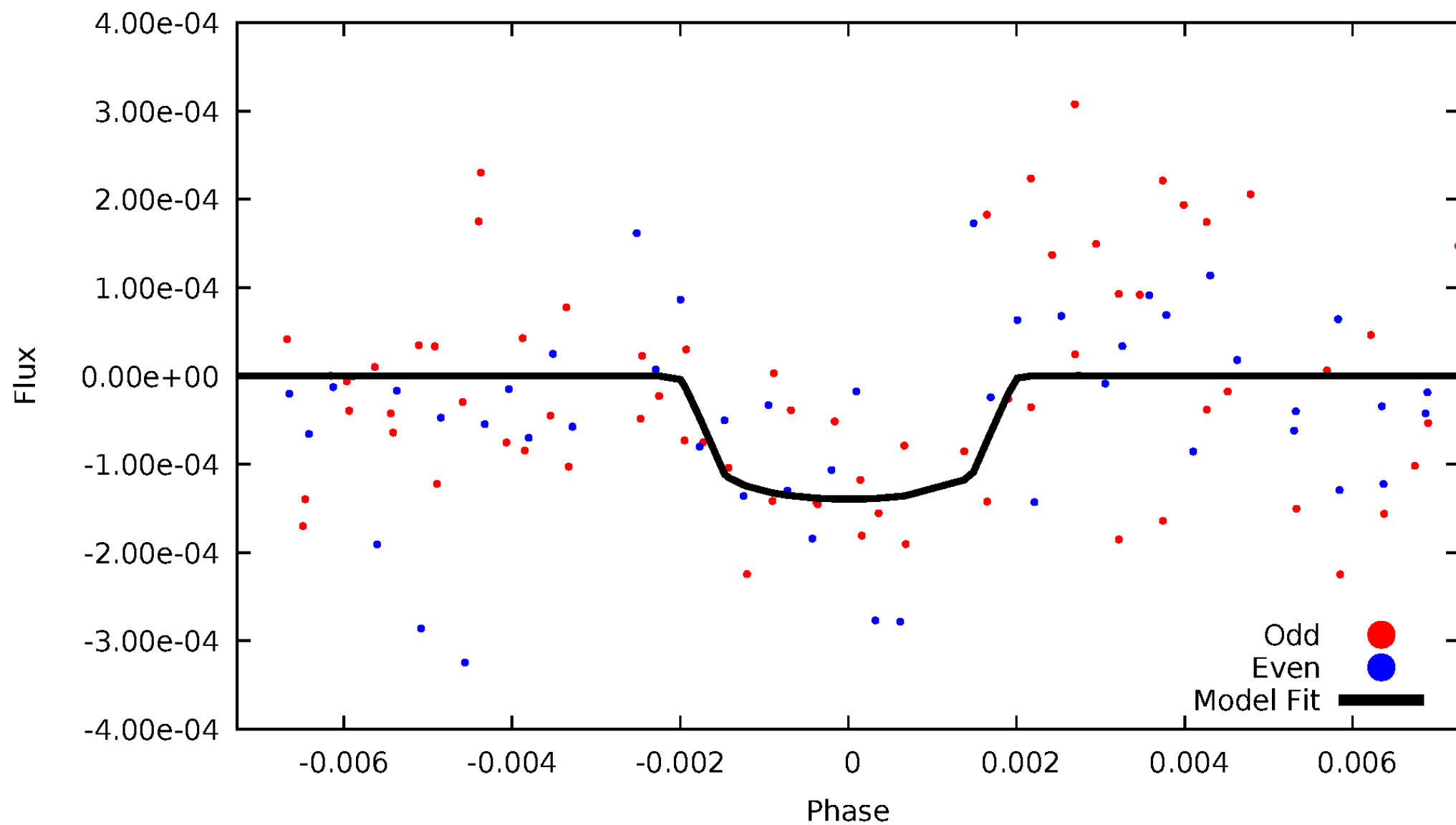


TCE 005787972-07



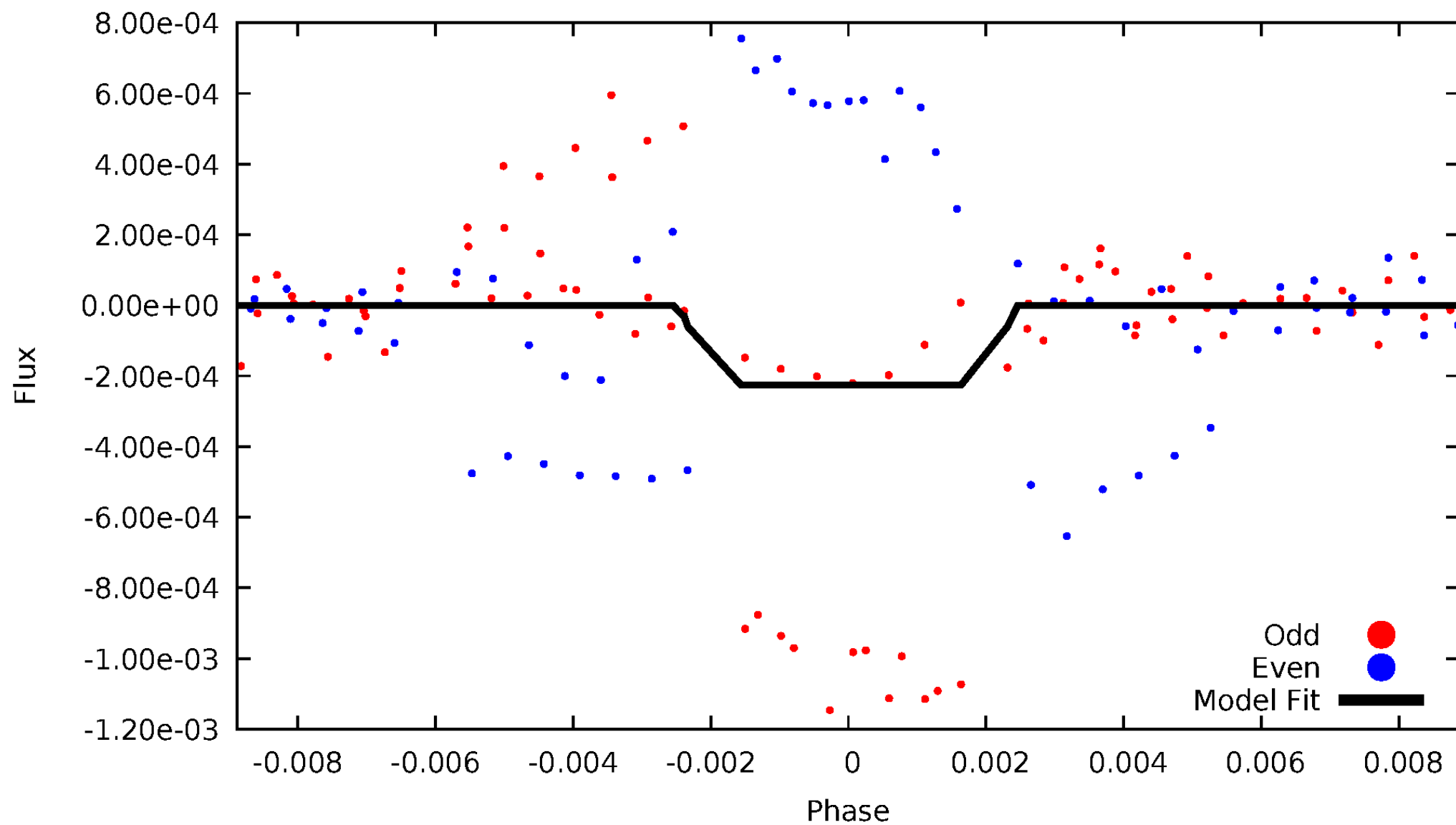
DV Odd/Even

TCE 005787972-07



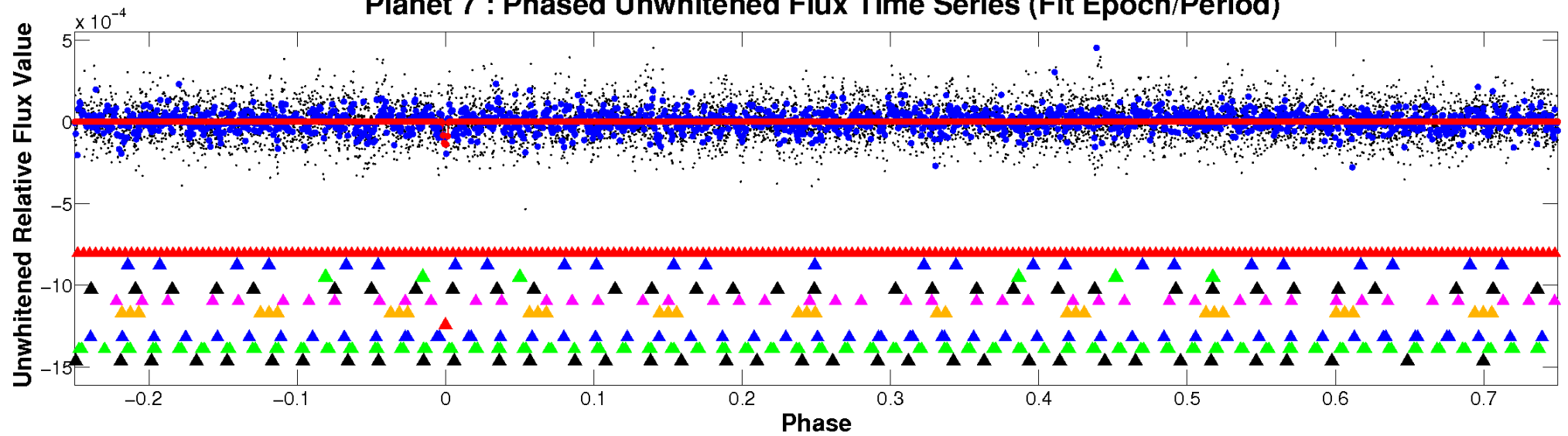
ALT Odd/Even

TCE 005787972-07

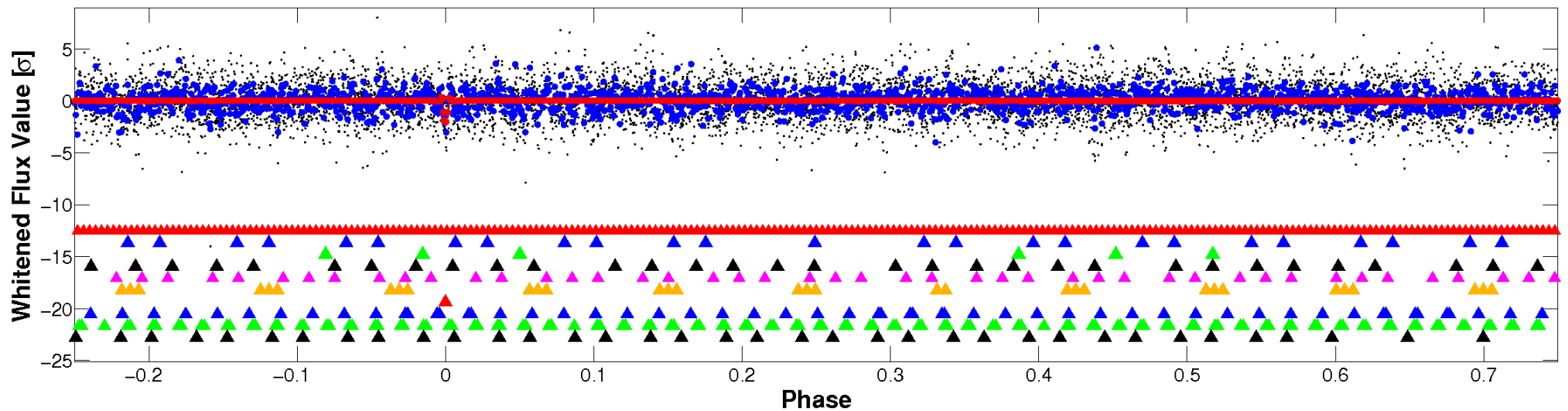


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

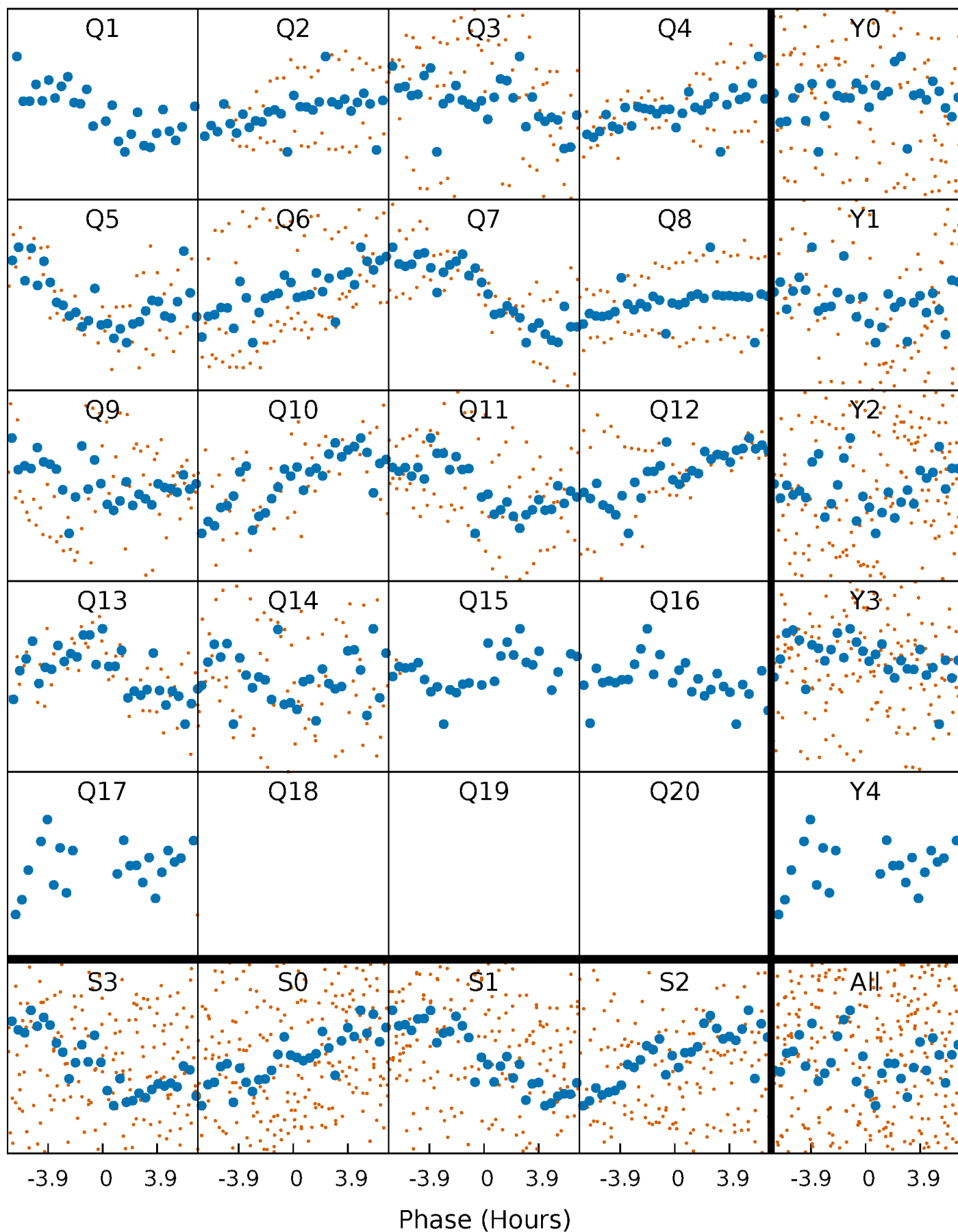


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



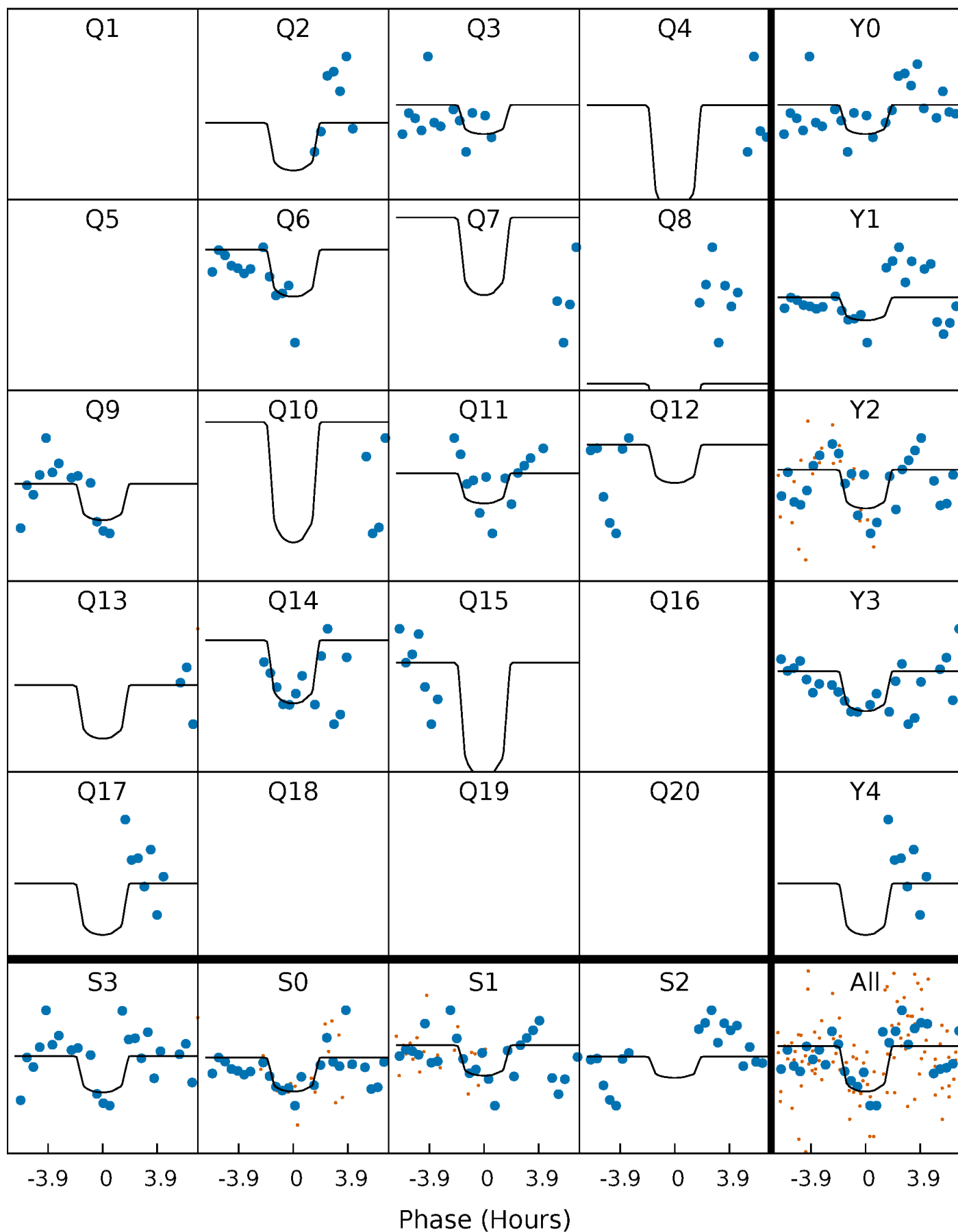
PDC Quarter-Phased Transit Curves

TCE 005787972-07 P= 39.098565 Days $T_0=153.376700$ (BKJD)



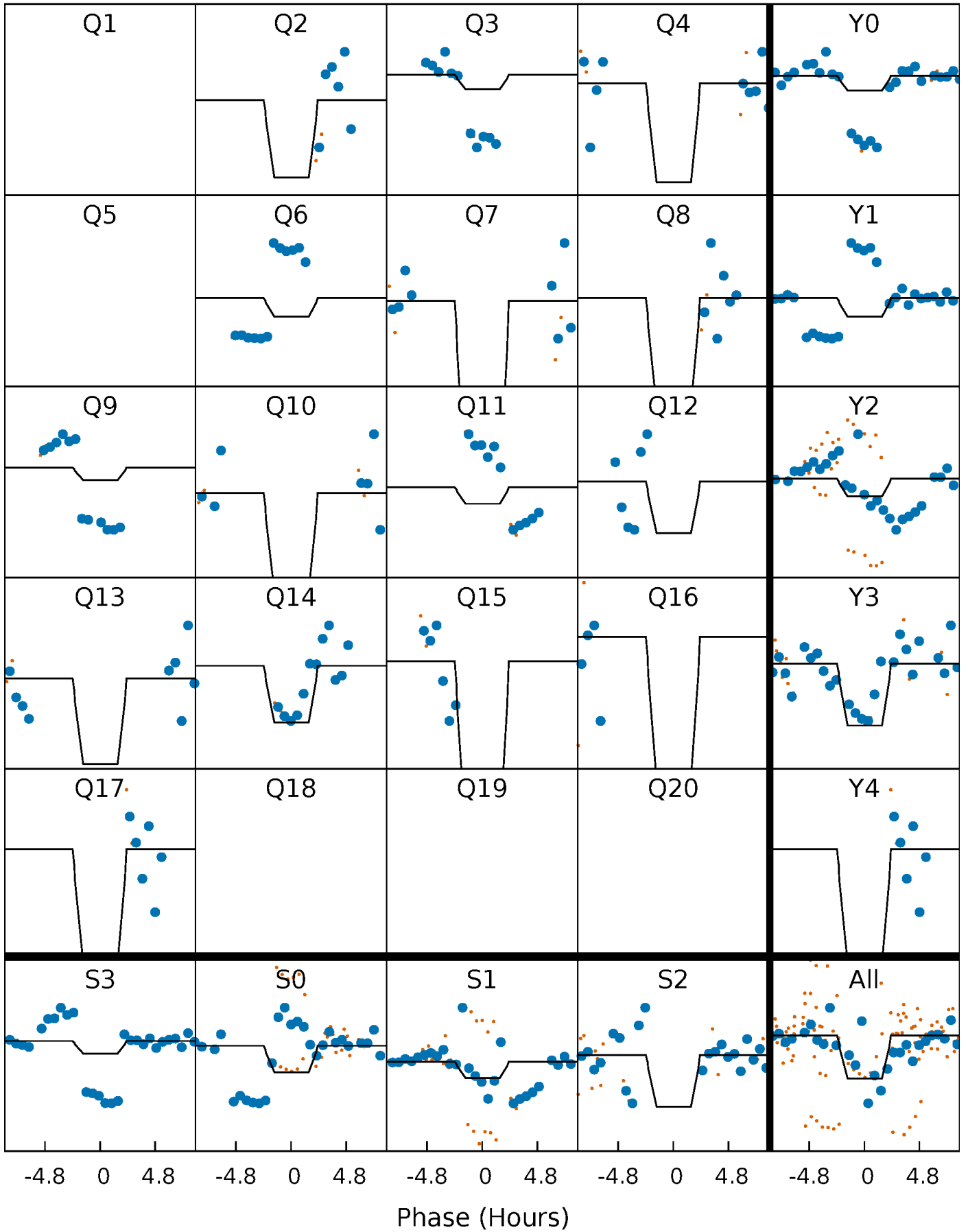
DV Quarter-Phased Transit Curves

TCE 005787972-07 $P = 39.098565$ Days $T_0 = 153.376700$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

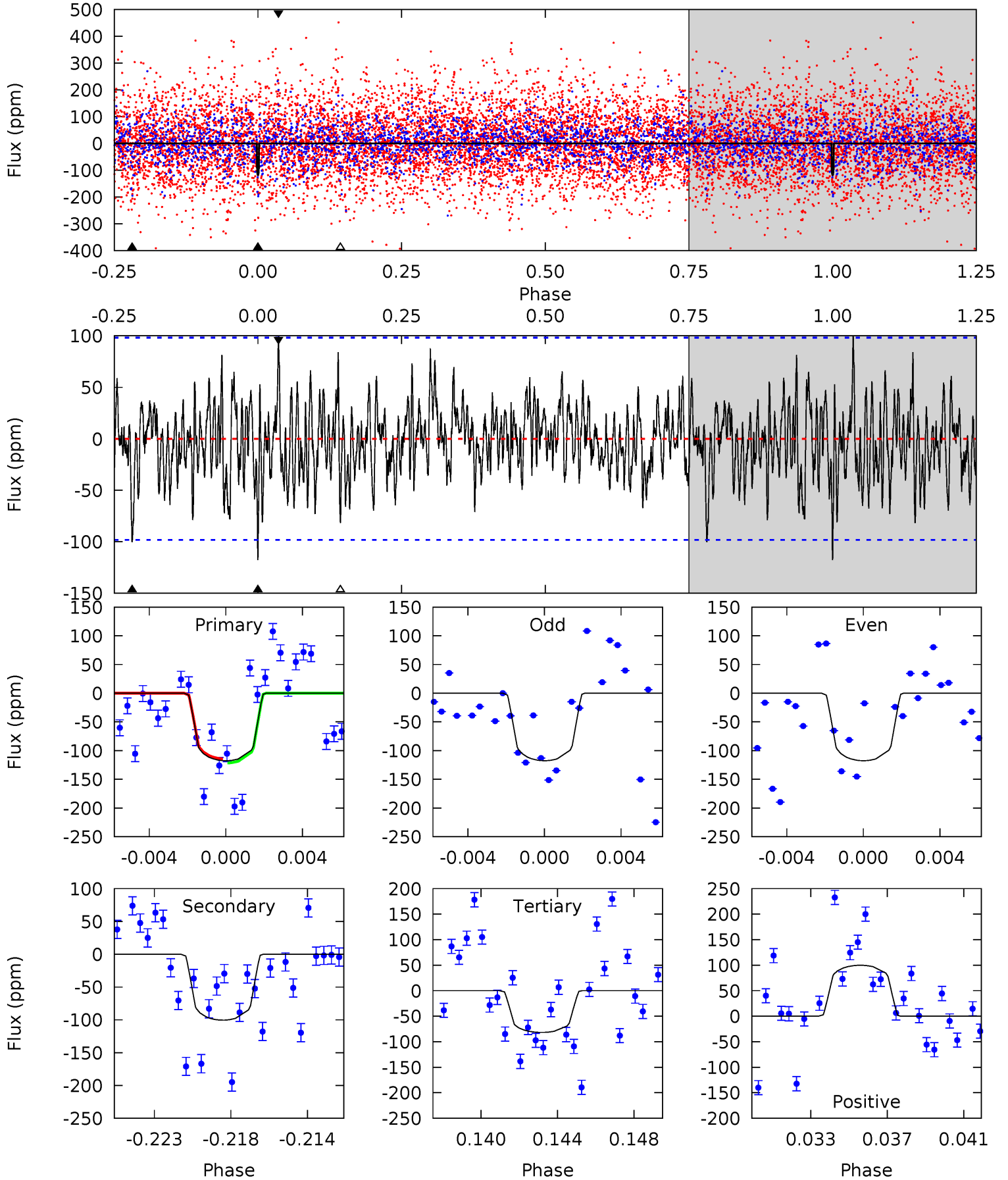
TCE 005787972-07 P= 39.098522 Days $T_0=153.340142$ (BKJD)



DV Model-Shift Uniqueness Test

005787972-07, P = 39.098565 Days, E = 114.278135 Days

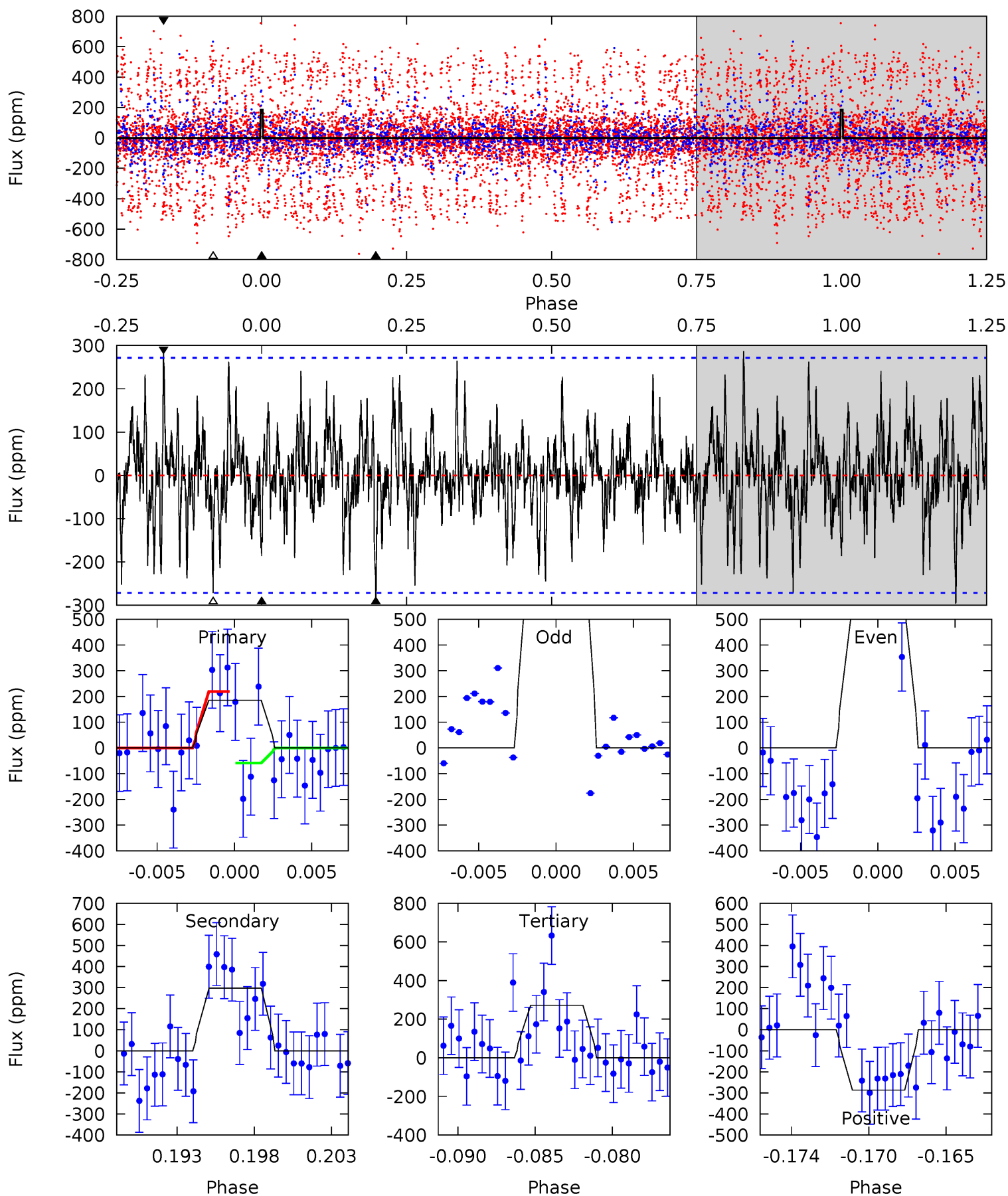
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.22	5.31	4.32	5.28	5.19	2.87	1.53	1.90	0.94	0.99	0.03	0.00	0.64	0.46	0.19



Alt Model-Shift Uniqueness Test

005787972-07, P = 39.098522 Days, E = 114.241620 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.53	5.65	5.17	5.46	5.17	2.83	1.39	-1.64	-1.93	0.48	0.19	3.37	1.41	0.49	0



Stellar Parameters For KIC 005787972

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6726^{+70}_{-90}	$4.131^{+0.130}_{-0.130}$	$-0.200^{+0.150}_{-0.150}$	$1.634^{+0.312}_{-0.284}$	$1.328^{+0.098}_{-0.122}$	$0.428^{+0.262}_{-0.163}$
	+1%/-1%	+3%/-3%	+75%/-75%	+19%/-17%	+7%/-9%	+61%/-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 005787972-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-100 ± 19	$2.51^{+1.96}_{-1.64}$	1070^{+50}_{-54}	5753^{+4605}_{-1295}	548^{+3564}_{-385}
Alt.	-297 ± 52	$2.86^{+1.86}_{-1.66}$	1066^{+57}_{-48}	7017^{+5580}_{-1582}	1215^{+6046}_{-779}

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 $A_{obs} \gg 1.0$

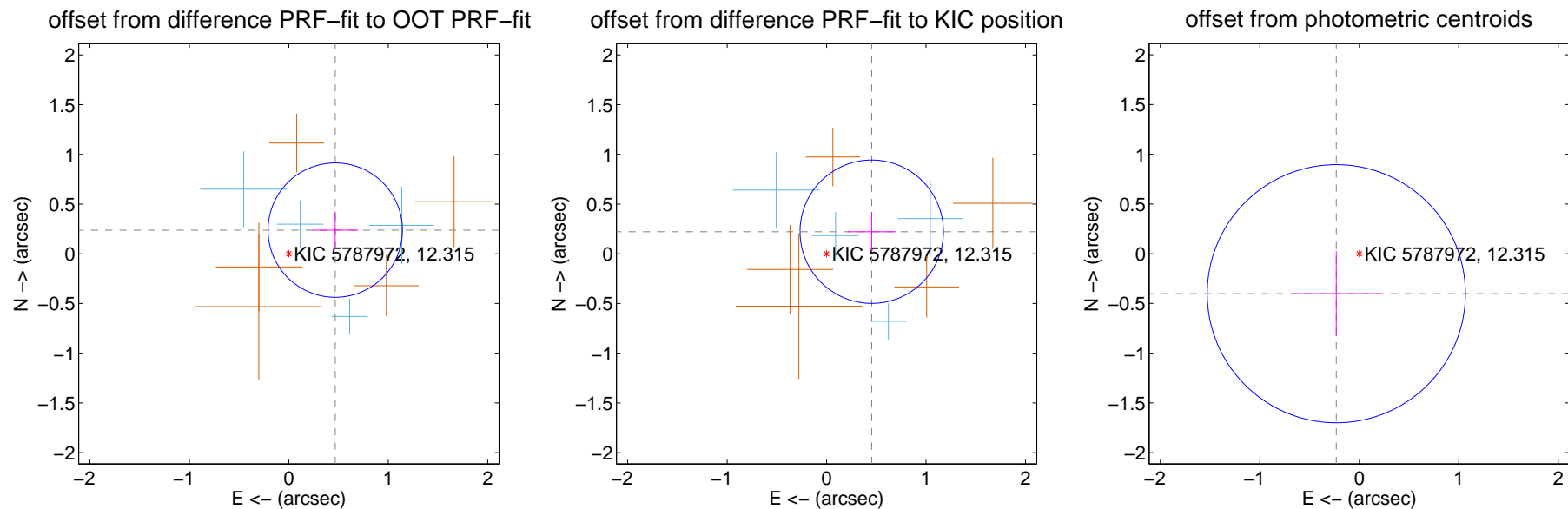
DV Centroid Data

Supplemental centroid analysis for 005787972-07. Kepler magnitude: 12.31. Transit SNR 9.37

There are 4 quarters with good PRF difference image offsets

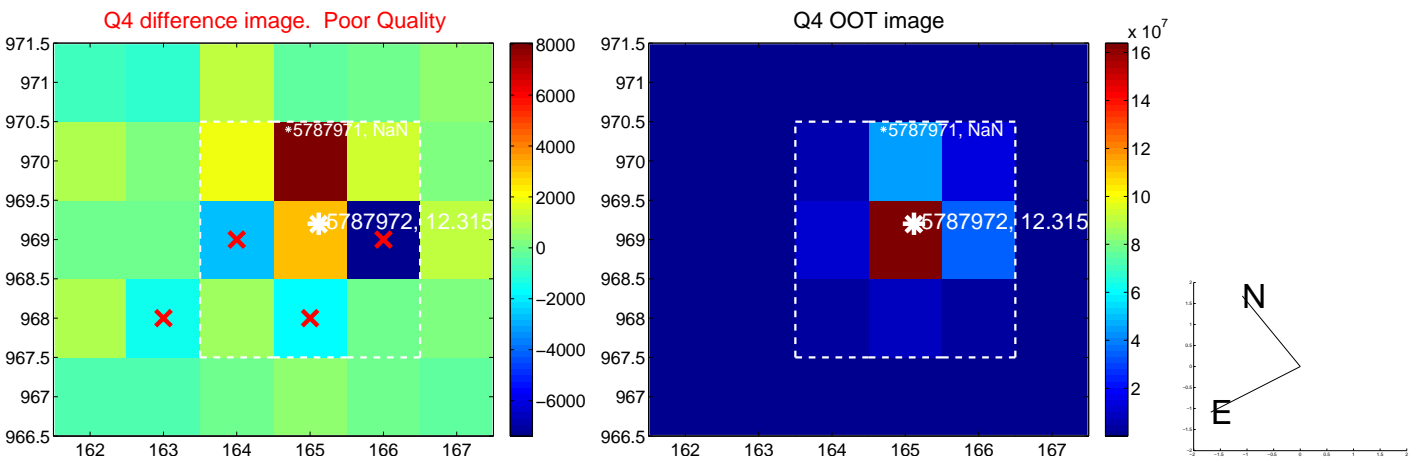
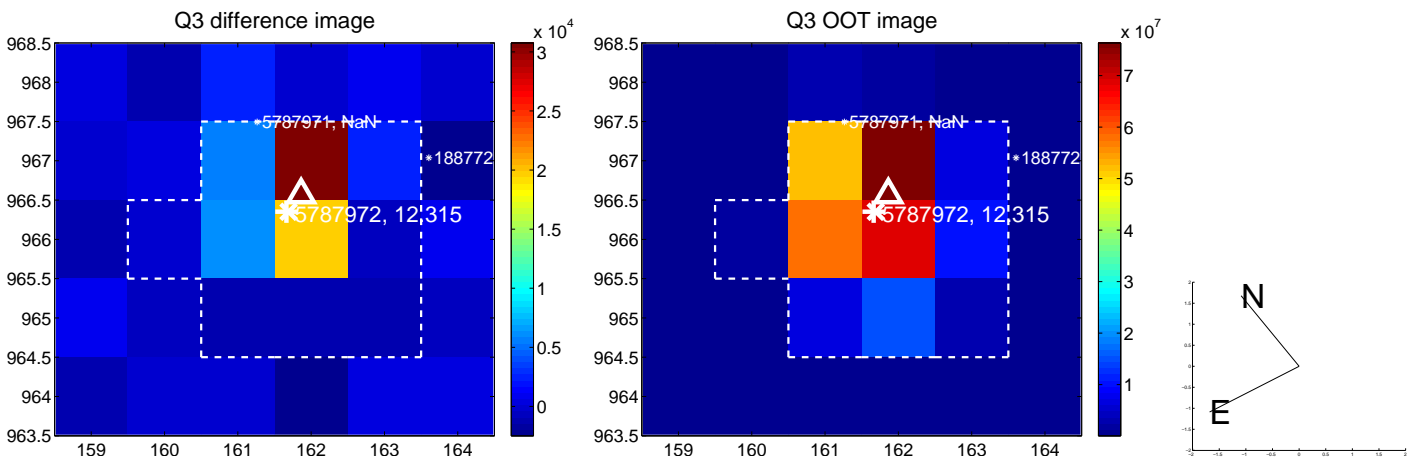
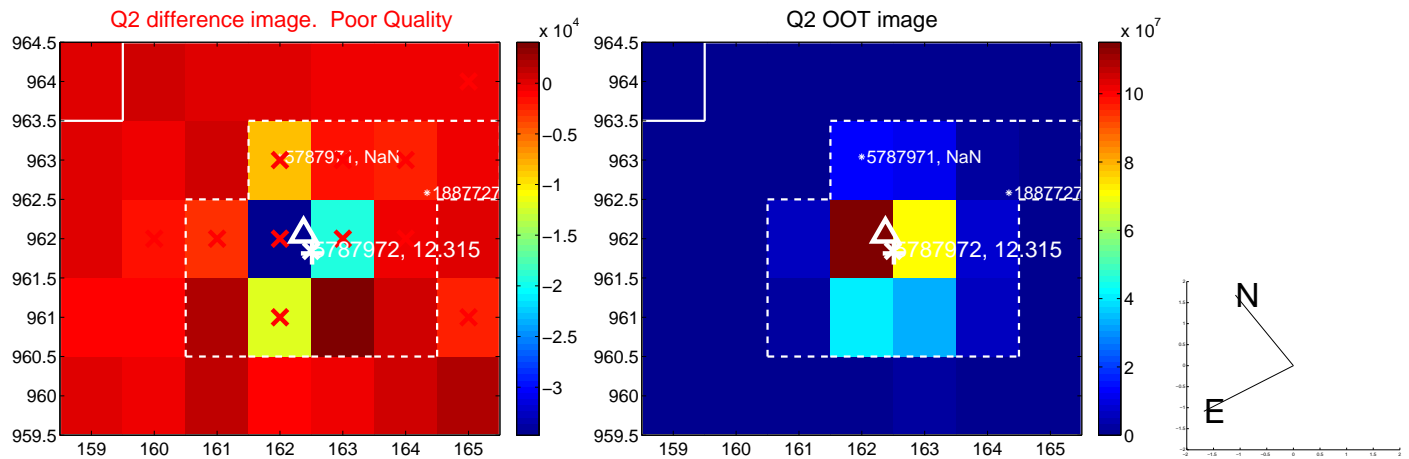
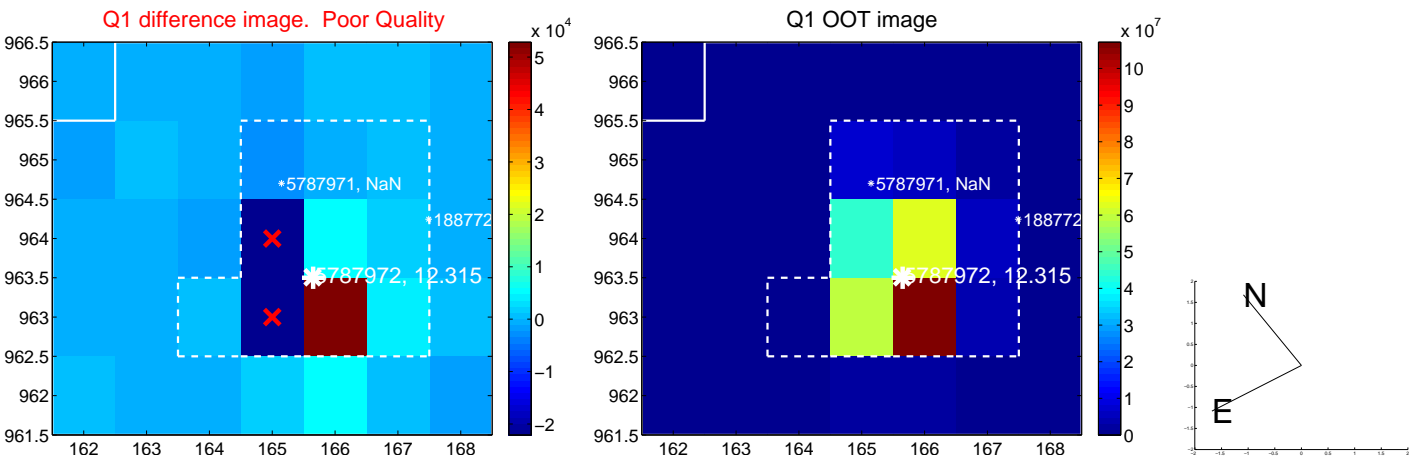
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.524 ± 0.225	2.33	-0.467 ± 0.232	0.238 ± 0.187
PRF-fit source offset from KIC position	0.505 ± 0.240	2.10	-0.454 ± 0.241	0.222 ± 0.198
photometric centroid source offset	0.46 ± 0.43	1.07	0.23 ± 0.45	-0.40 ± 0.43

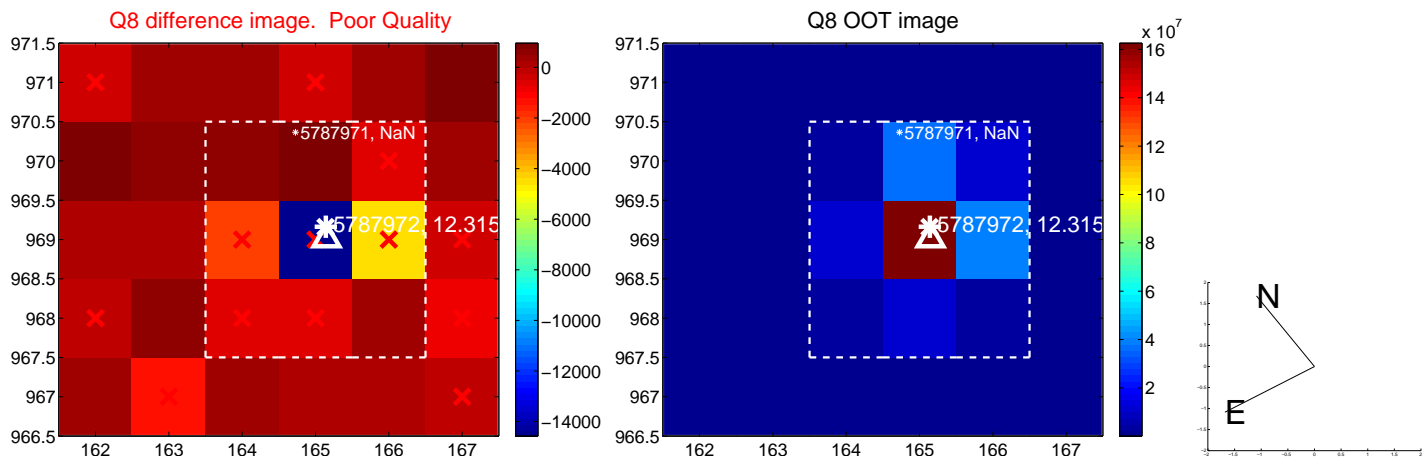
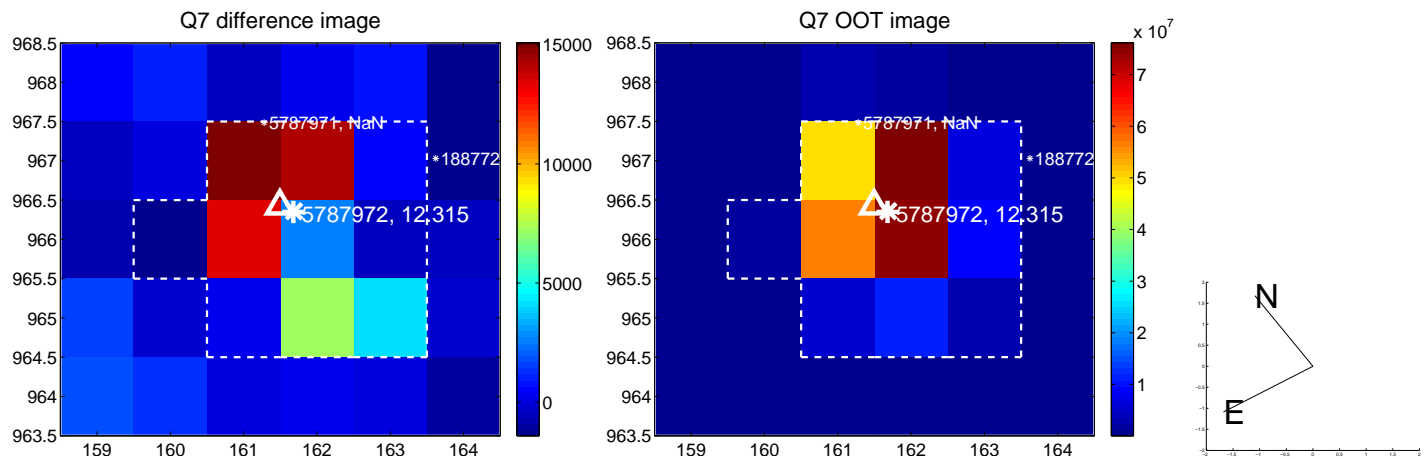
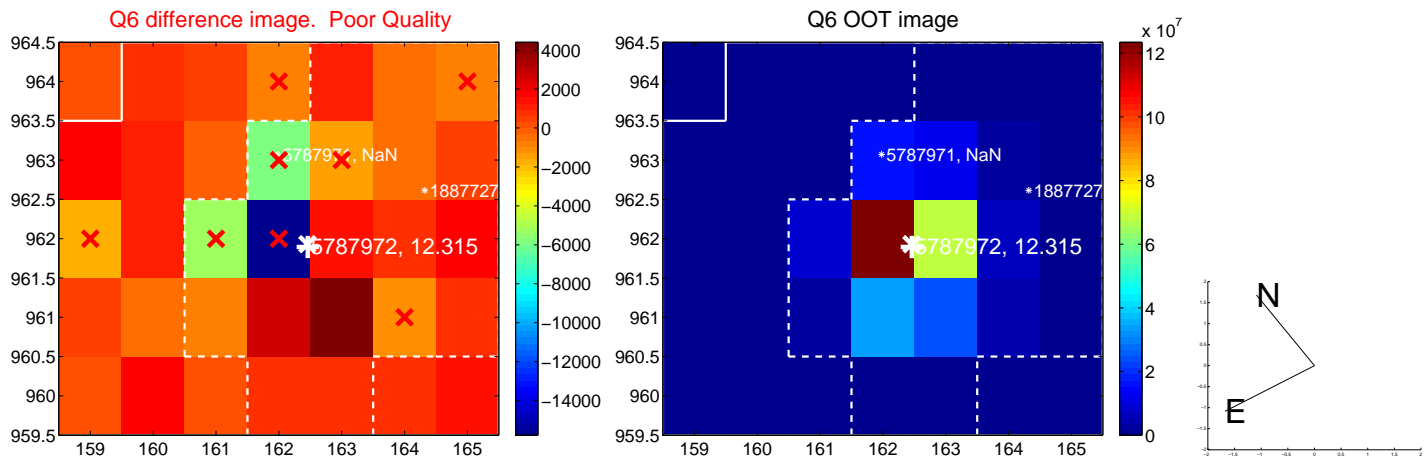
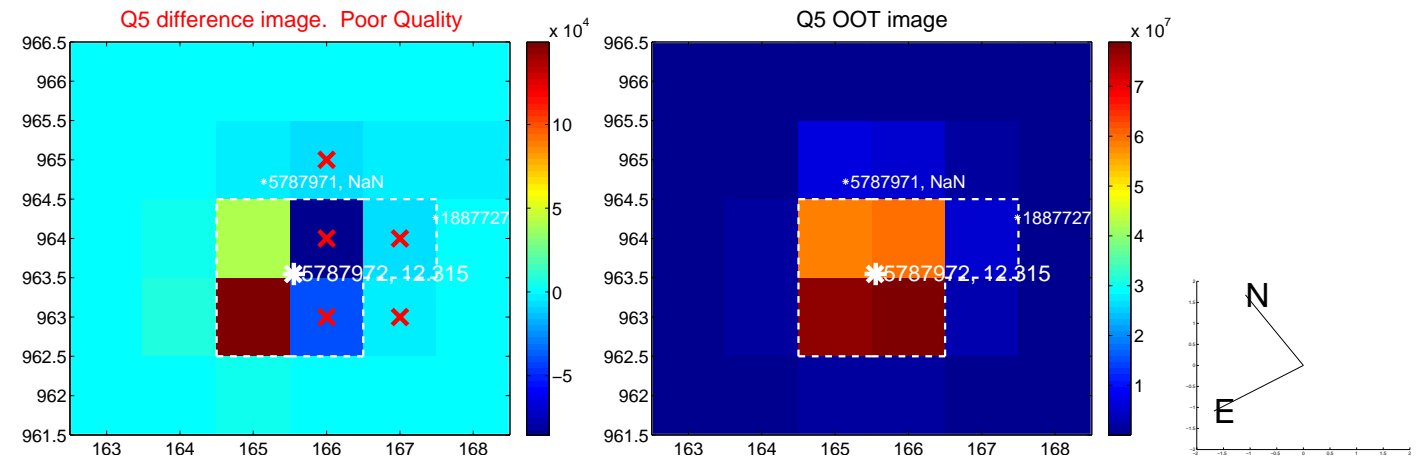


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

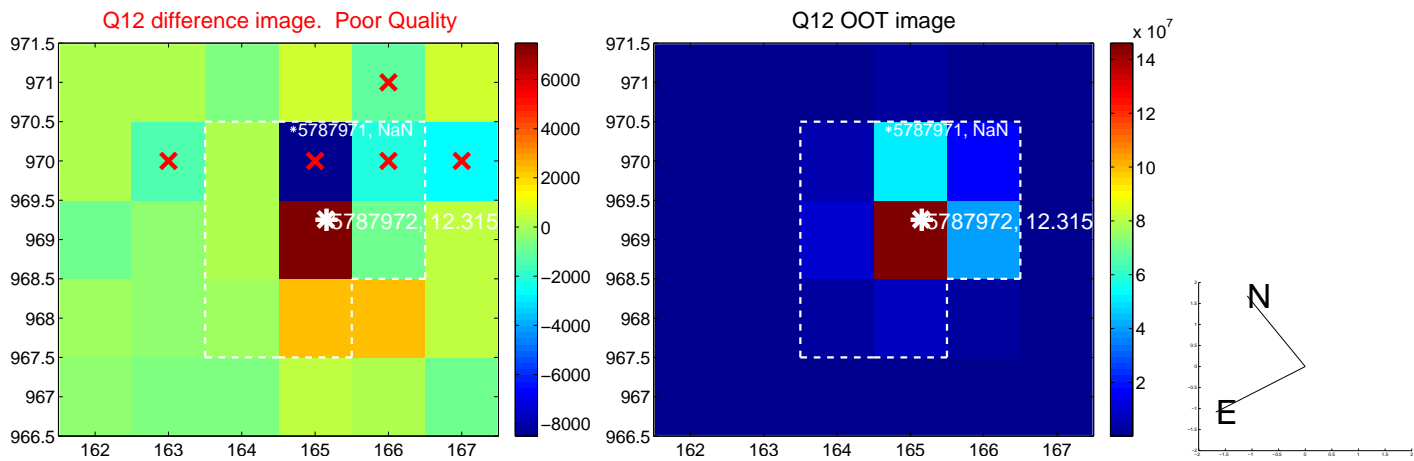
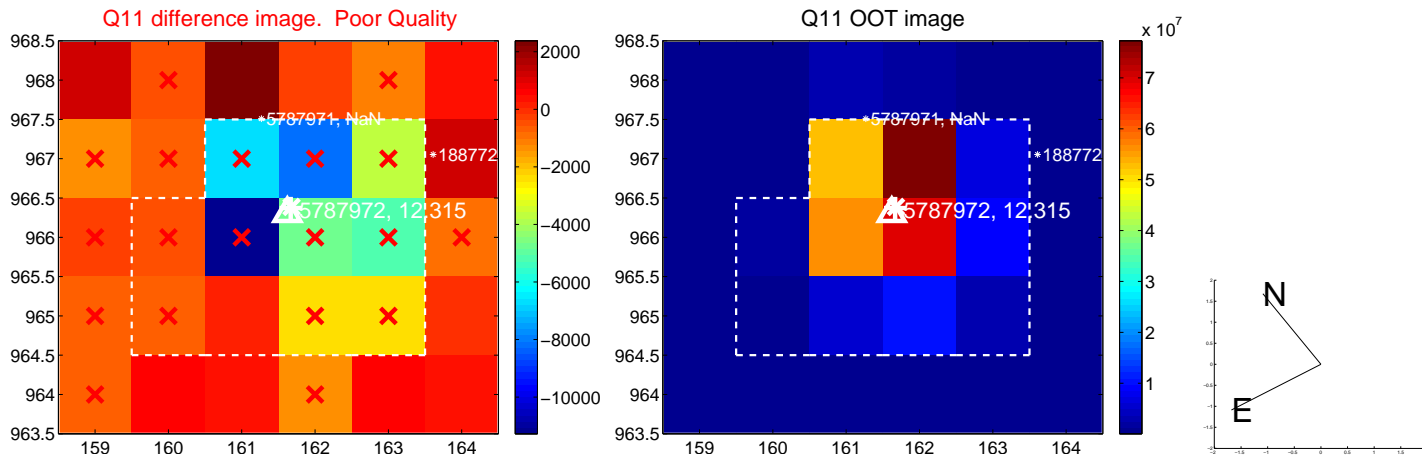
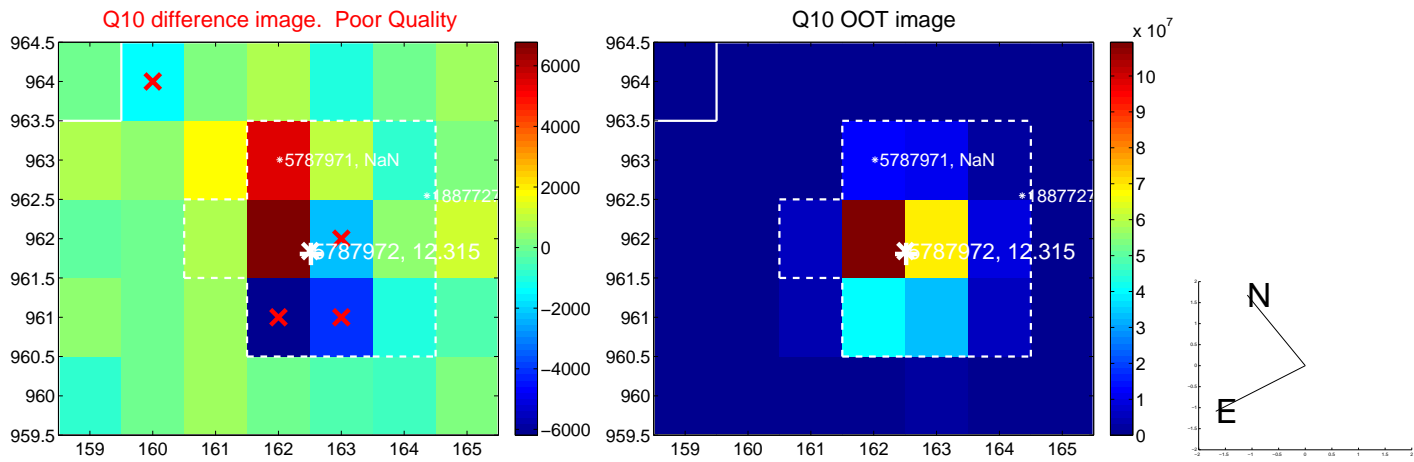
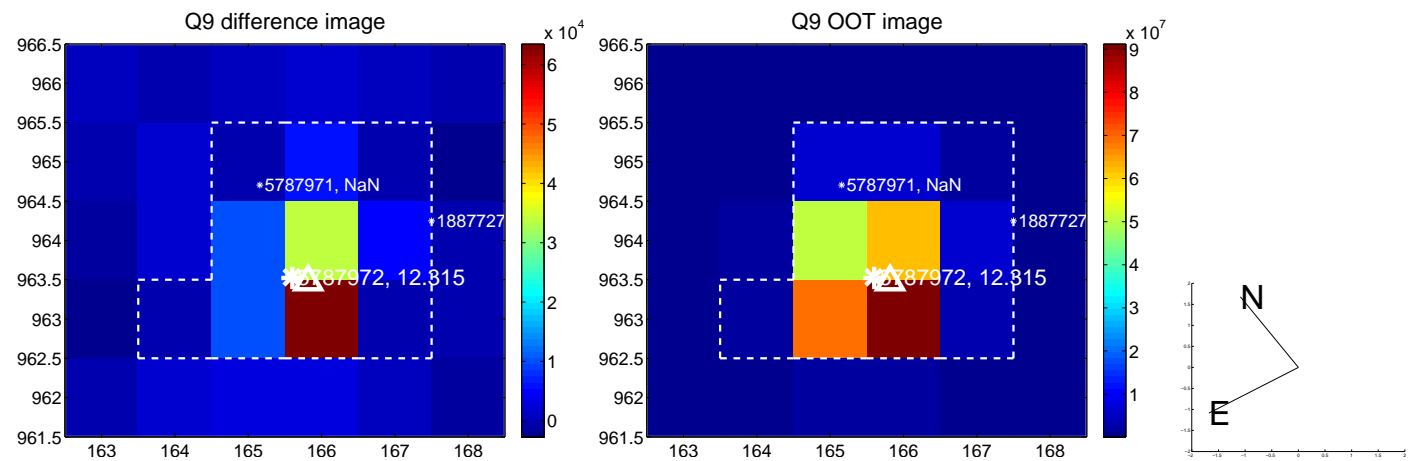
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



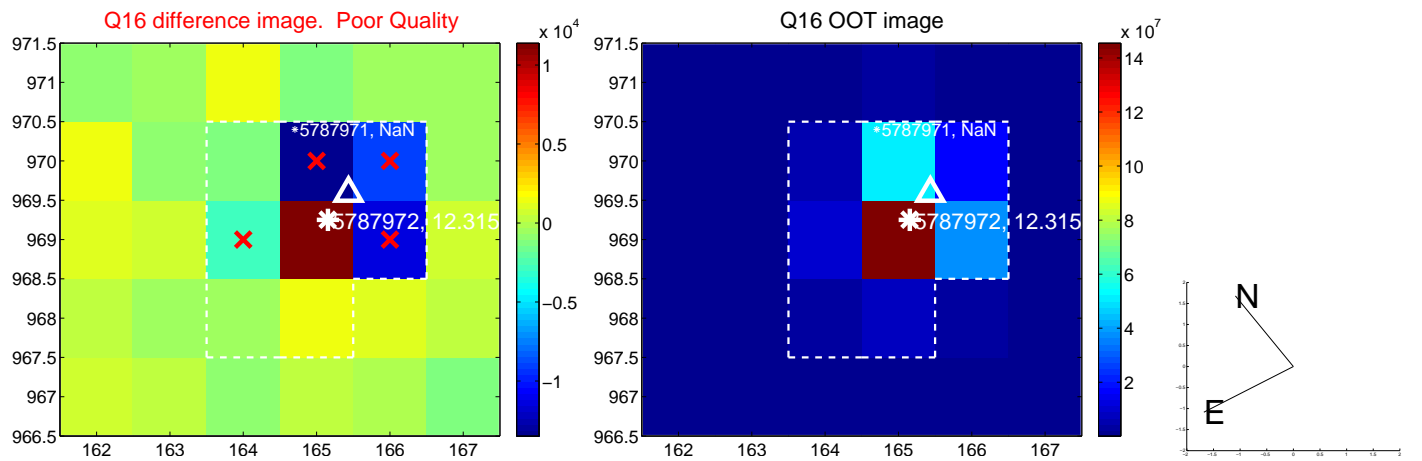
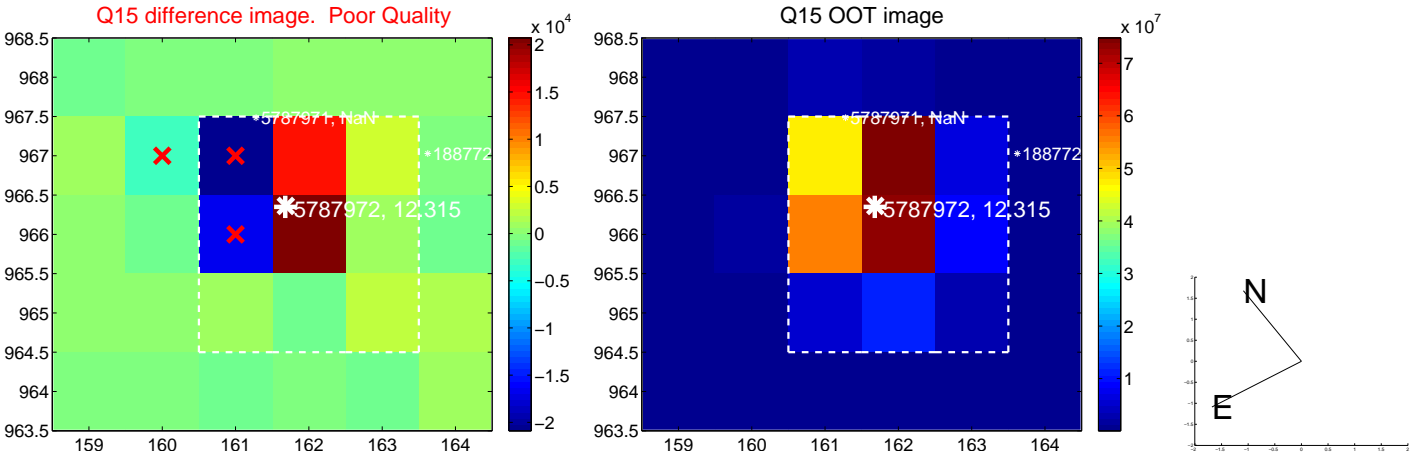
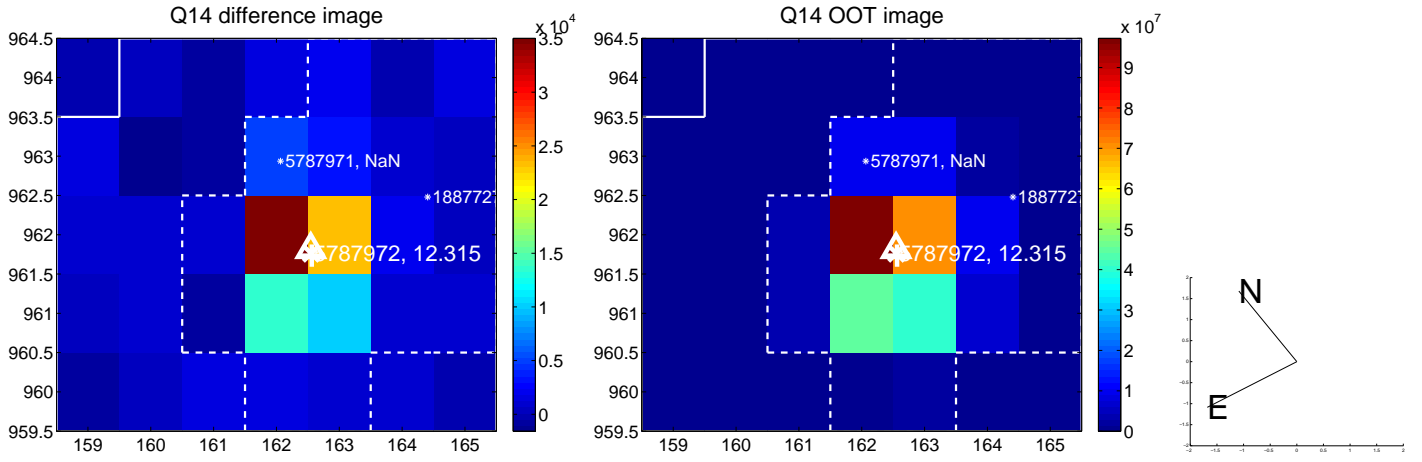
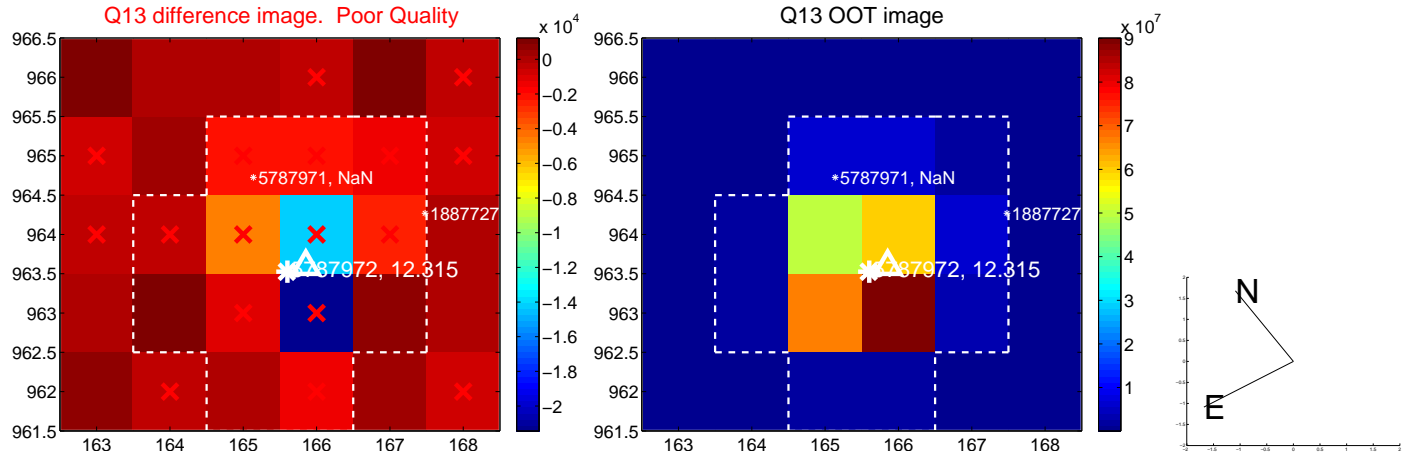
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



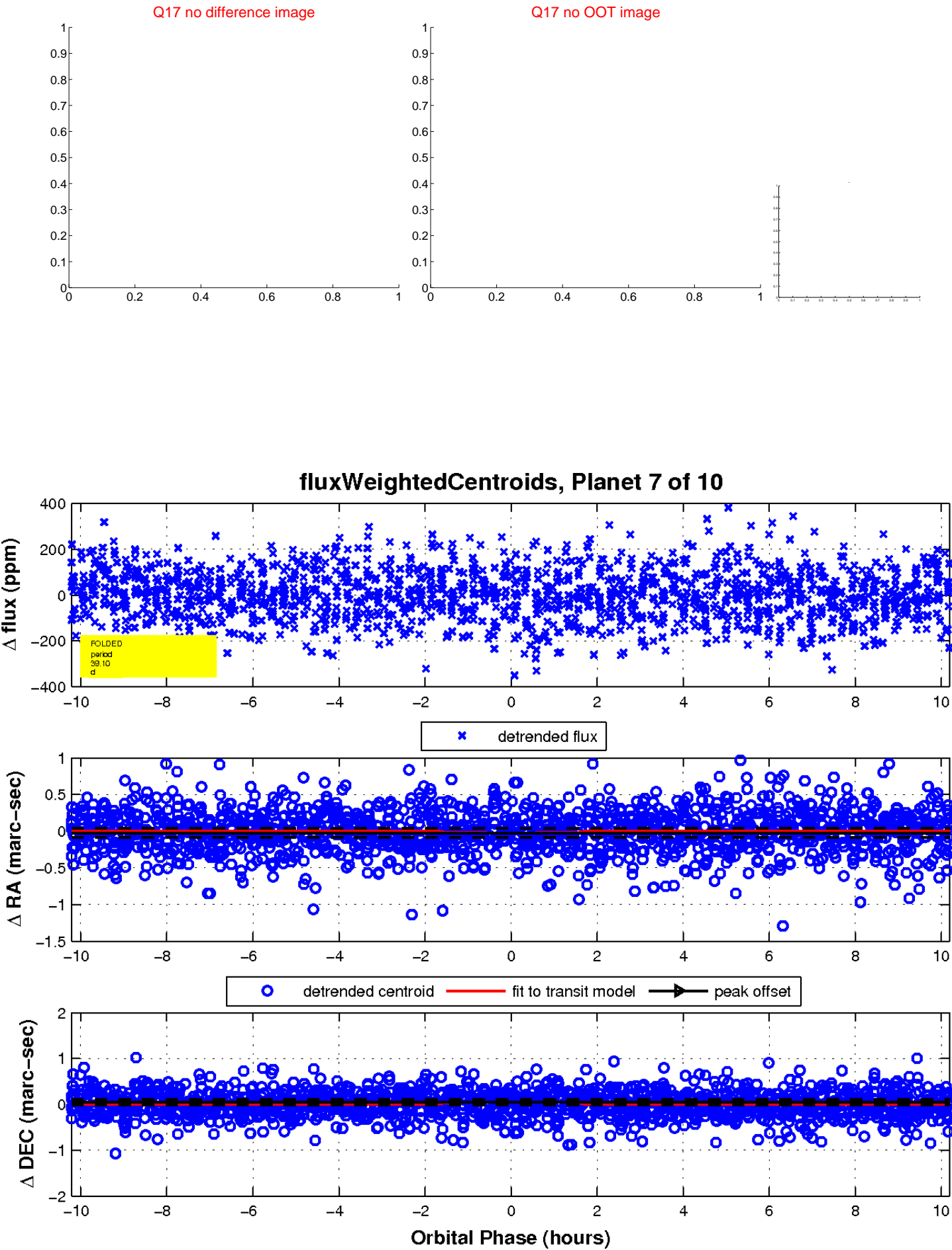
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

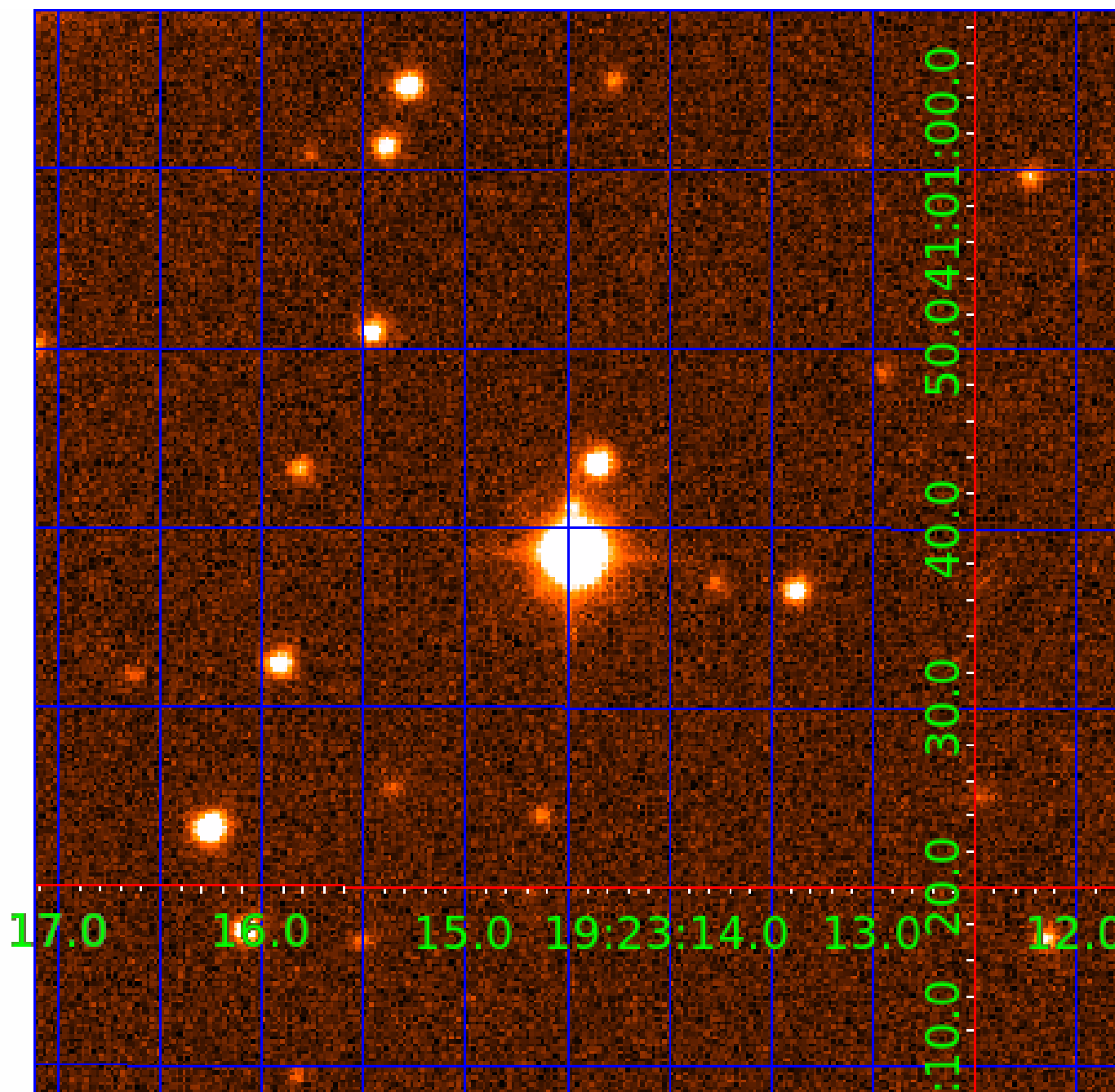


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
005787972-01	OBS	No	1.099151	132.692479	3.2	7.513	8.9	2.8	1.63	6726	0.30	9375.91
005787972-02	OBS	No	57.208769	180.383070	159.0	3.963	12.3	10.1	1.63	6726	2.25	48.25
005787972-03	OBS	No	252.860410	272.632577	232.3	7.104	11.0	12.5	1.63	6726	2.71	6.65
005787972-04	OBS	No	46.490157	147.345820	197.2	1.772	11.2	10.1	1.63	6726	2.32	63.62
005787972-05	OBS	No	32.158912	152.995453	108.7	4.803	9.1	8.3	1.63	6726	1.79	104.00
005787972-06	OBS	No	46.187137	134.771064	173.7	3.448	9.4	10.5	1.63	6726	2.48	64.18
005787972-07	OBS	No	39.098565	153.376700	139.5	3.412	9.6	9.4	1.63	6726	2.14	80.14
005787972-08	OBS	No	25.787015	154.054388	105.4	4.687	8.7	9.3	1.63	6726	1.91	139.60
005787972-09	OBS	No	12.382392	142.368262	70.6	4.369	9.5	8.6	1.63	6726	1.56	371.26
005787972-10	OBS	No	41.093899	144.818289	211.9	2.500	9.1	-1.0	1.63	6726	2.40	75.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005787972-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
005787972-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005787972-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
005787972-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005787972-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNRESOLVED_OFFSET
005787972-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_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.

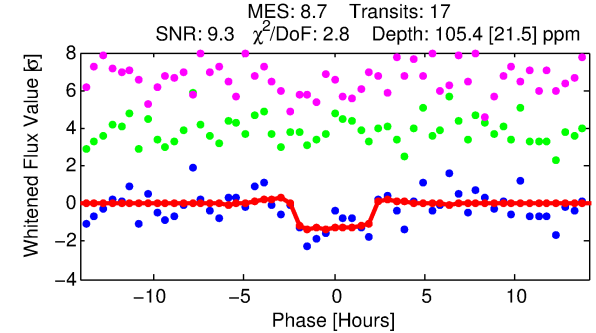
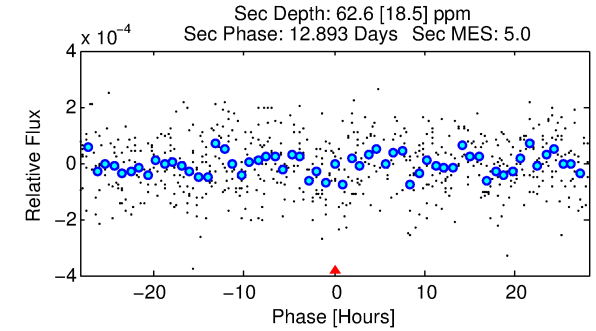
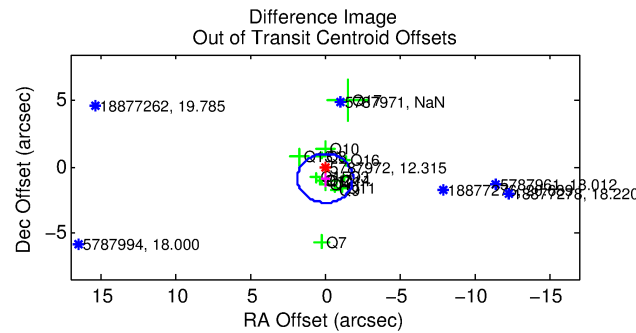
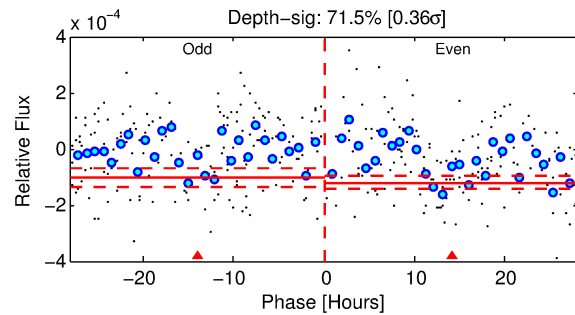
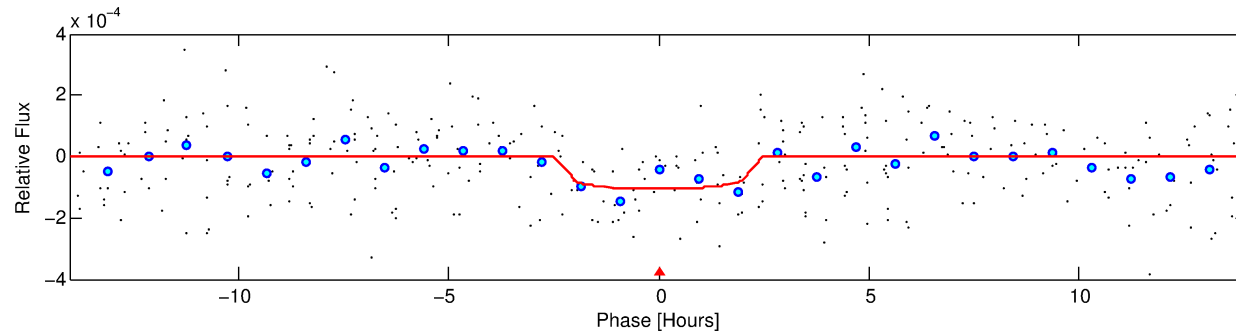
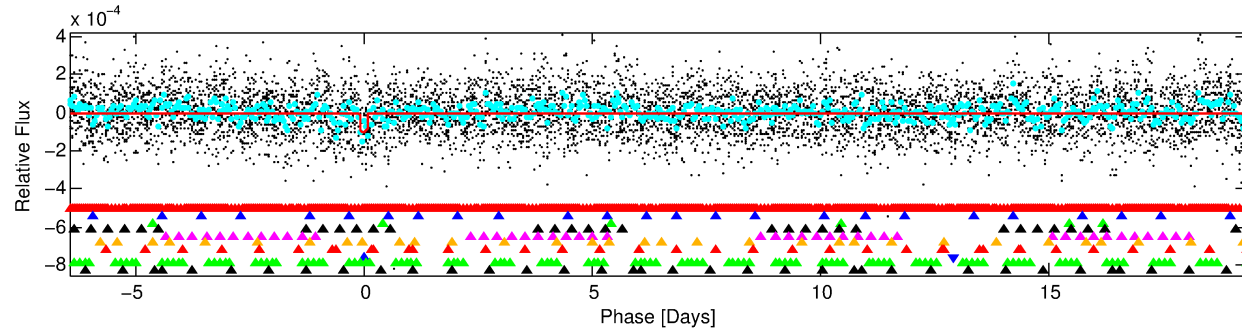
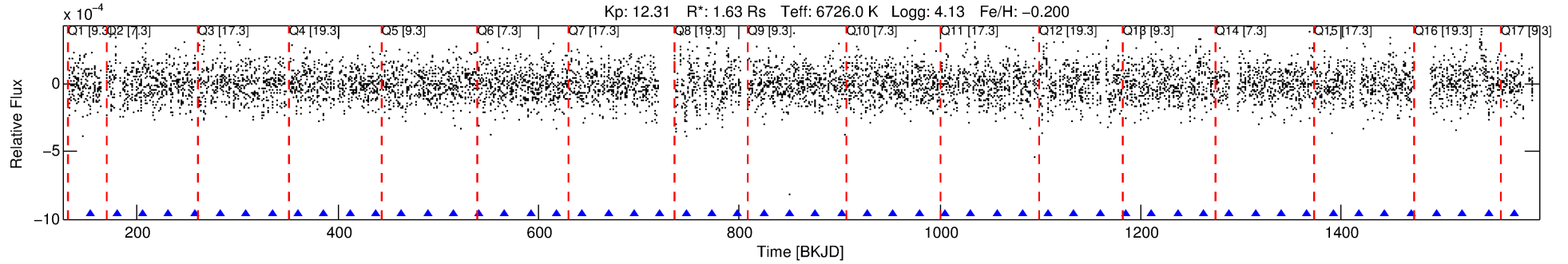
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005787972-08

No Significant Match Found

DV One-Page Summary

KIC: 5787972 Candidate: 8 of 10 Period: 25.787 d



DV Fit Results:

Period = 25.78702 [0.00055] d
Epoch = 154.0544 [0.0162] BKJD
Rp/R* = 0.0107 [0.0074]
a/R* = 21.72 [85.24]
b = 0.87 [1.13]
Seff = 139.60 [33.88]
Teff = 876 [53] K
Rp = 1.91 [1.36] Re
a = 0.1873 [0.0303] AU
Ag = 330.23 [470.49] [0.70 σ]
Teffp = 5777 [2031] K [2.41 σ]

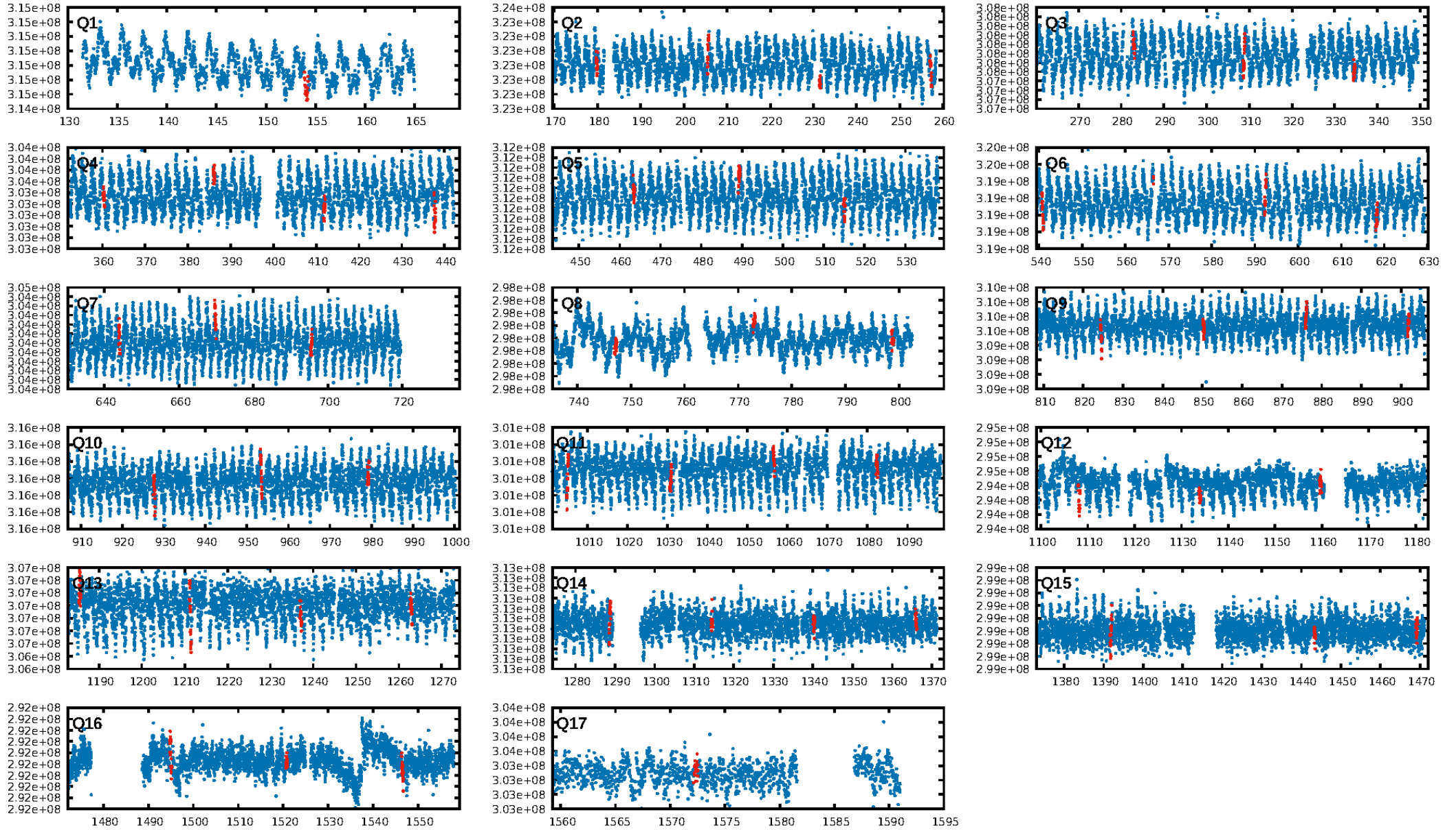
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [50.21 σ]
LongPeriod-sig: 100.0% [22.79 σ]
ModelChiSquare2-sig: 11.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [16/16]
GhostDiagnostic-chr: 1.004
Centroid-sig: 81.3%
Centroid-so: 0.098 arcsec [0.24 σ]
OotOffset-rm: 0.877 arcsec [1.42 σ]
OotOffset-st: 2/4/4/4 [14]
KicOffset-rm: 0.906 arcsec [1.53 σ]
KicOffset-st: 2/4/4/4 [14]
DiffImageQuality-fgm: 0.50 [7/14]
DiffImageOverlap-fno: 0.00 [0/17]

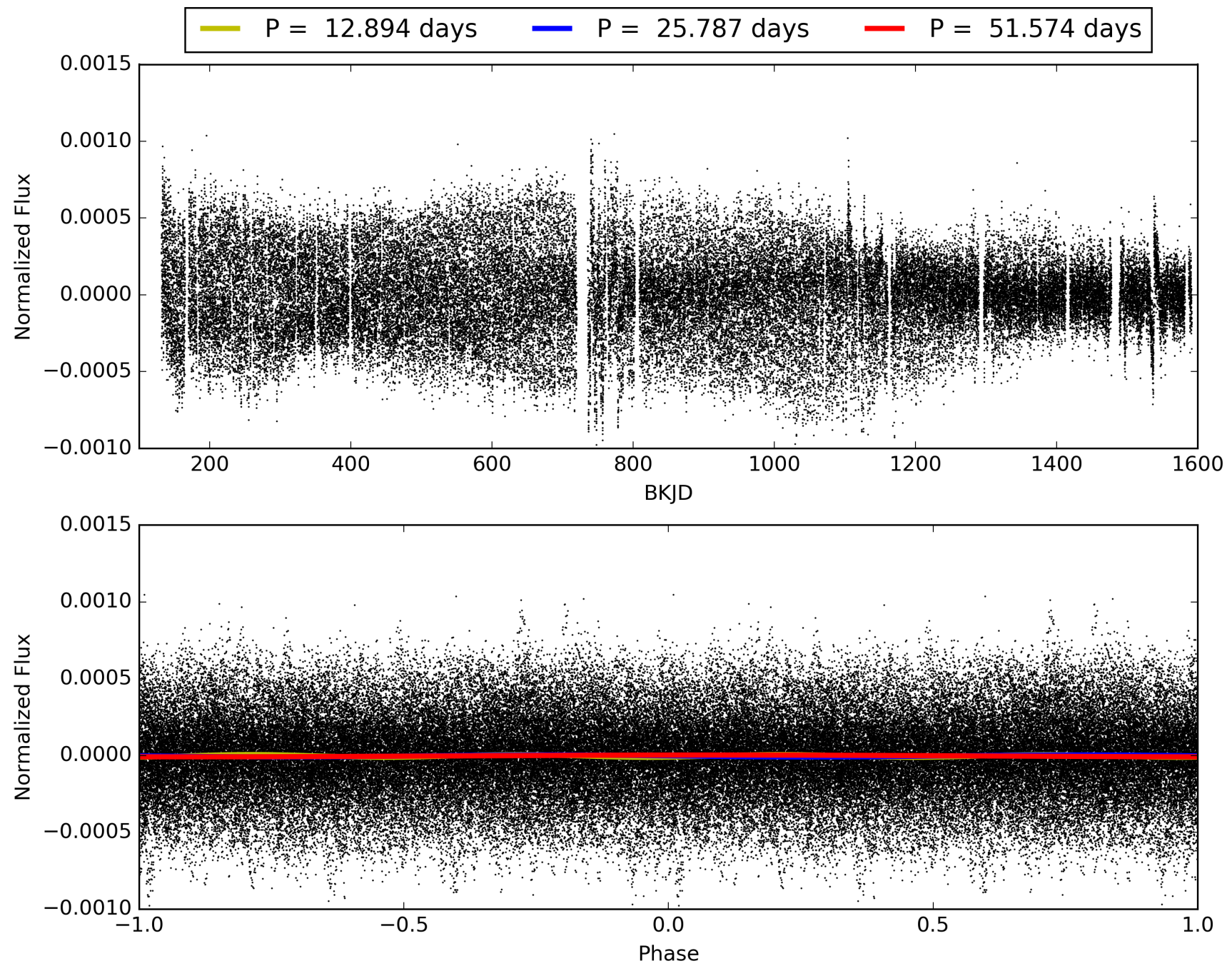
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:25:17 Z

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

TCE 005787972-08, PDC Light Curves

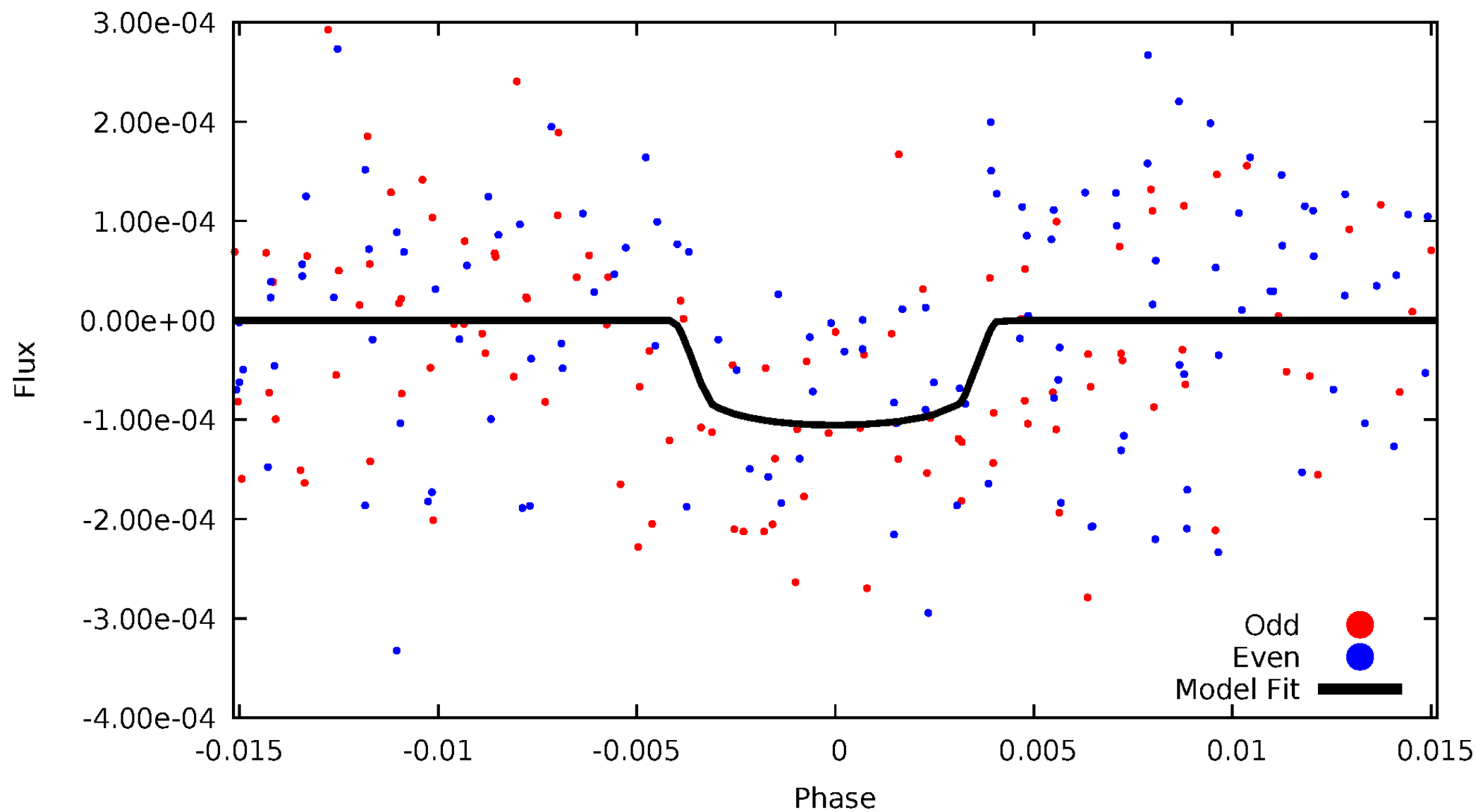


TCE 005787972-08



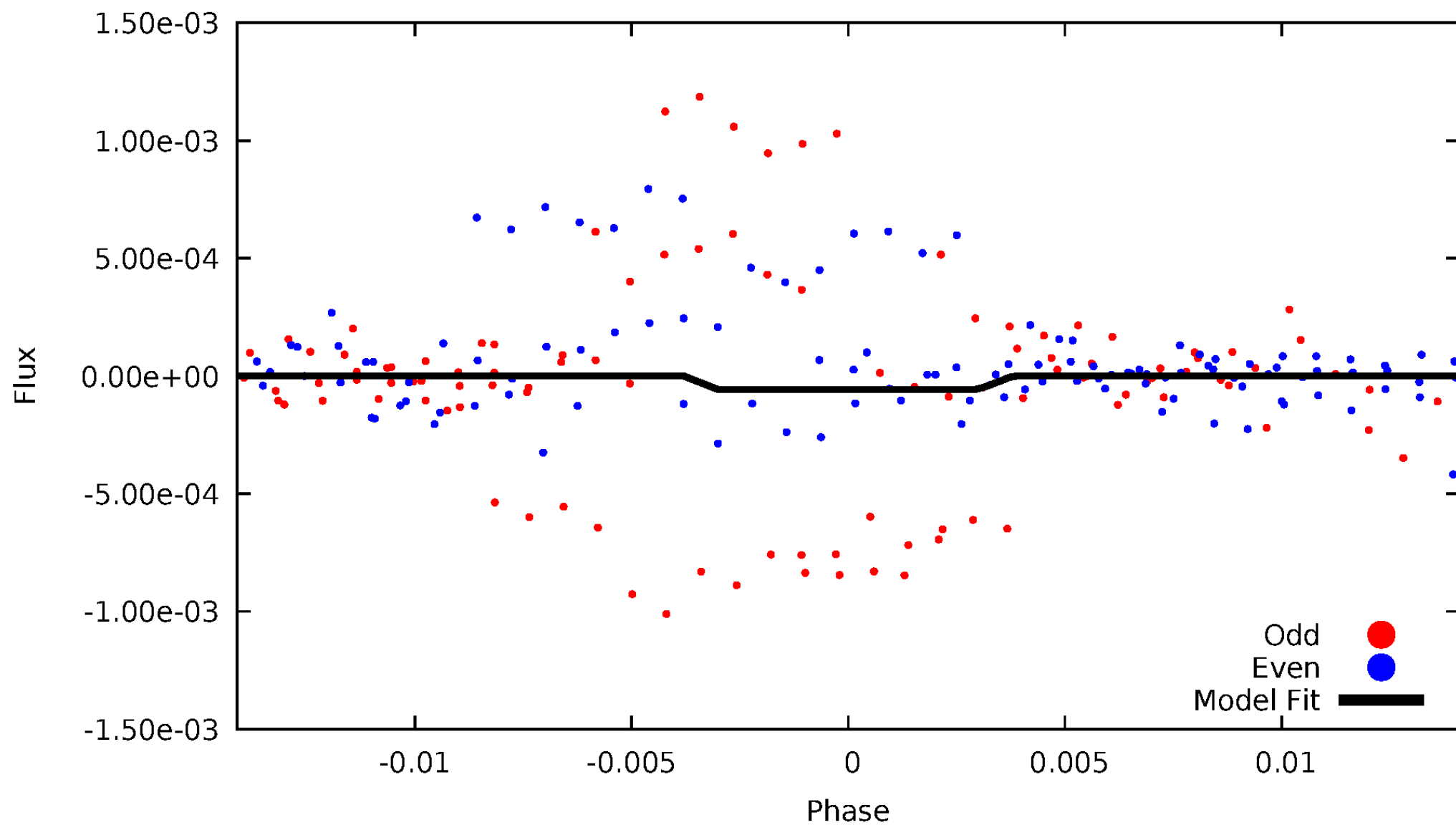
DV Odd/Even

TCE 005787972-08



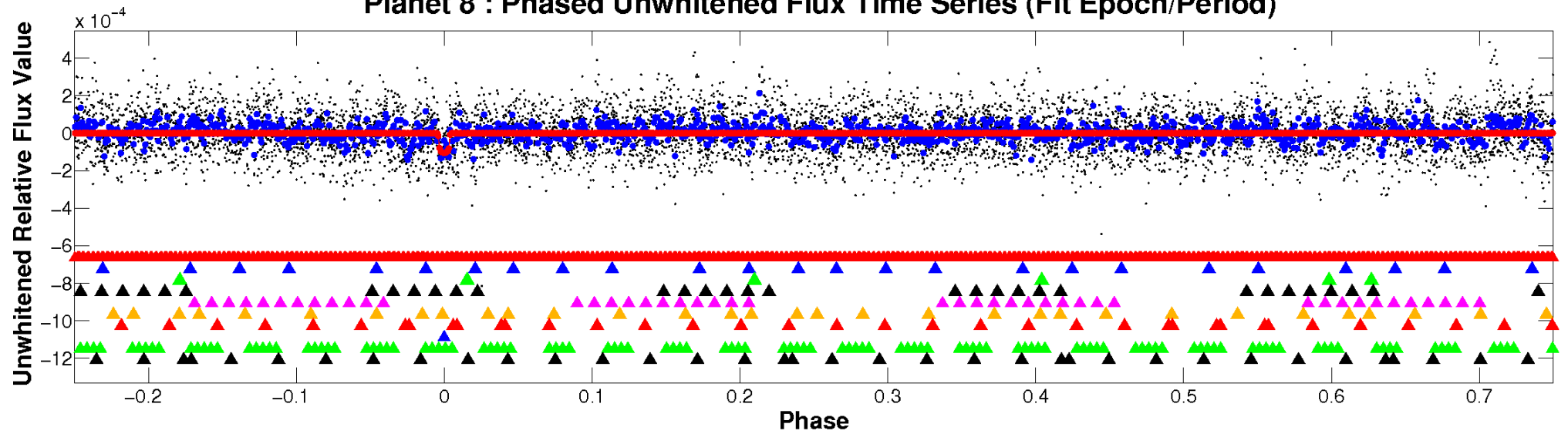
ALT Odd/Even

TCE 005787972-08

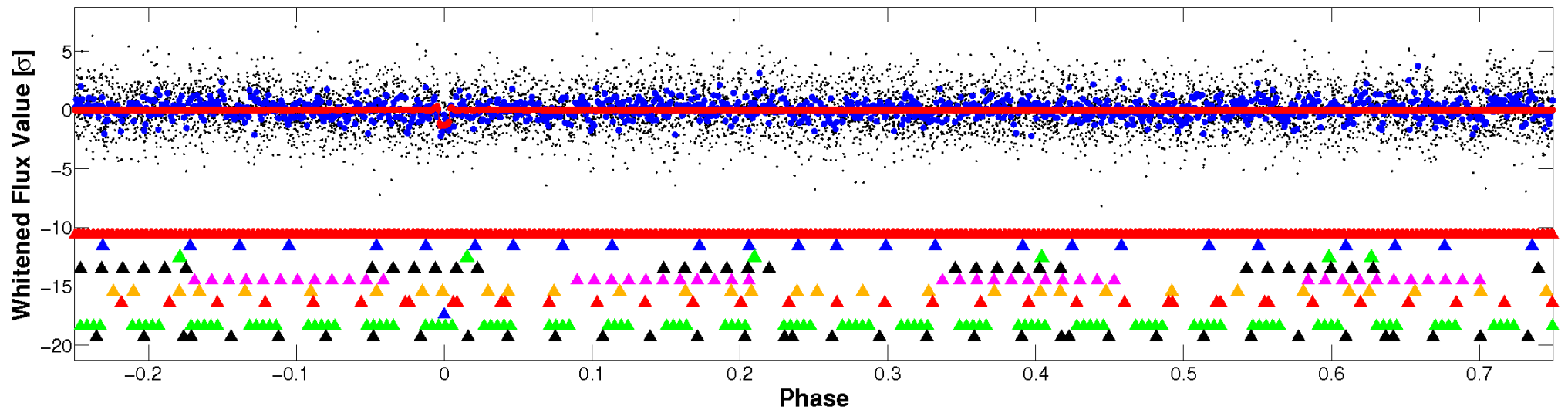


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

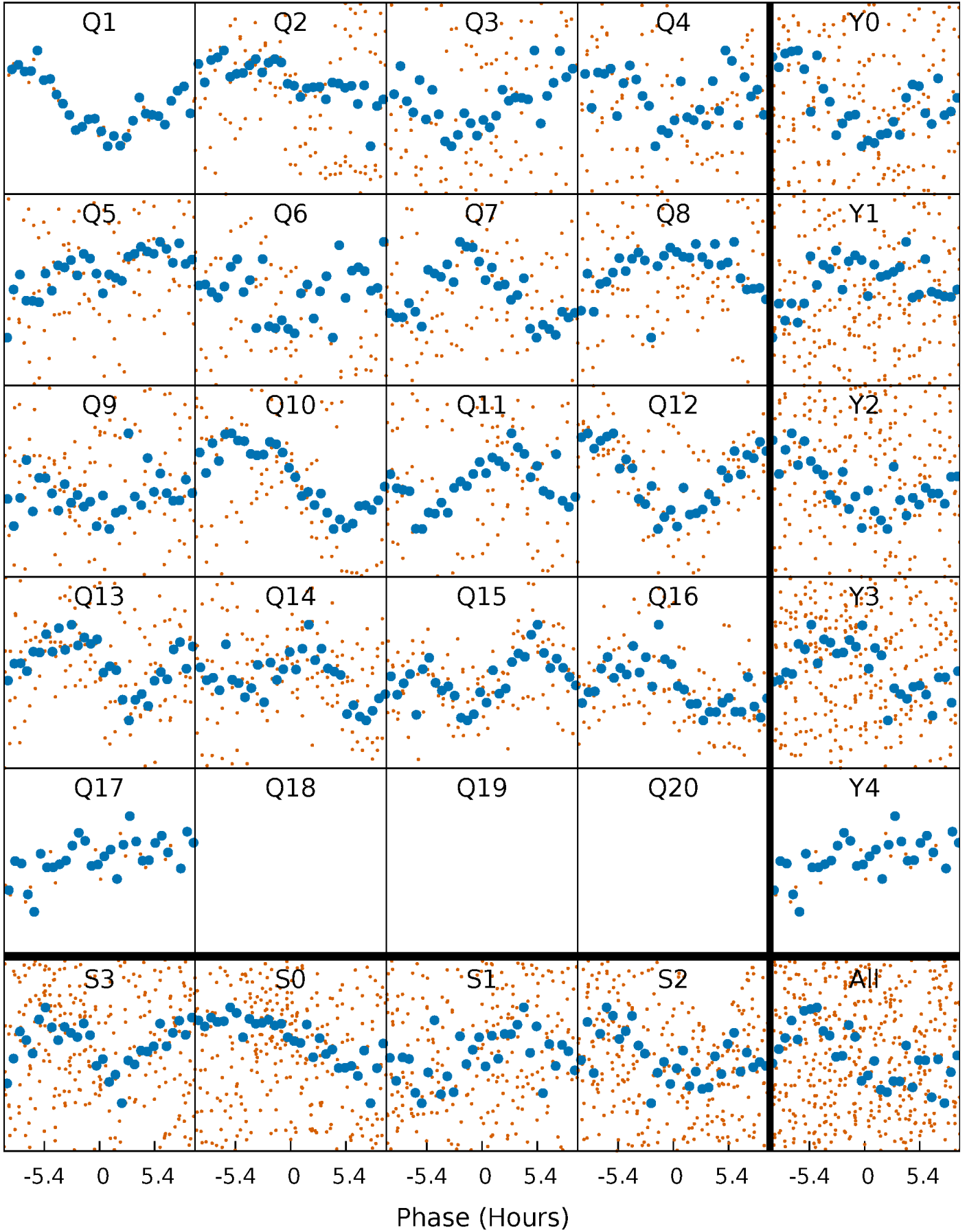


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



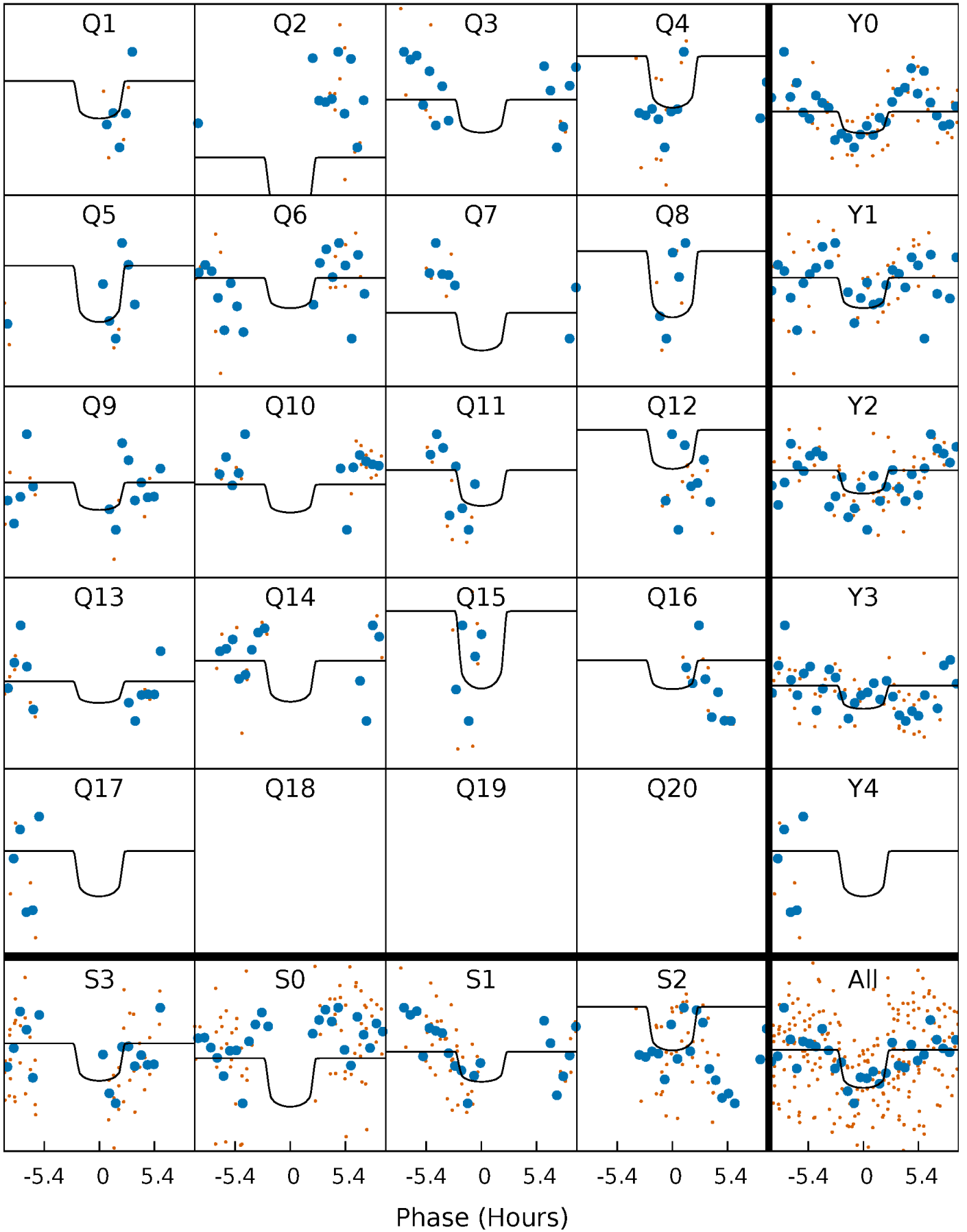
PDC Quarter-Phased Transit Curves

TCE 005787972-08 P= 25.787015 Days $T_0=154.054388$ (BKJD)



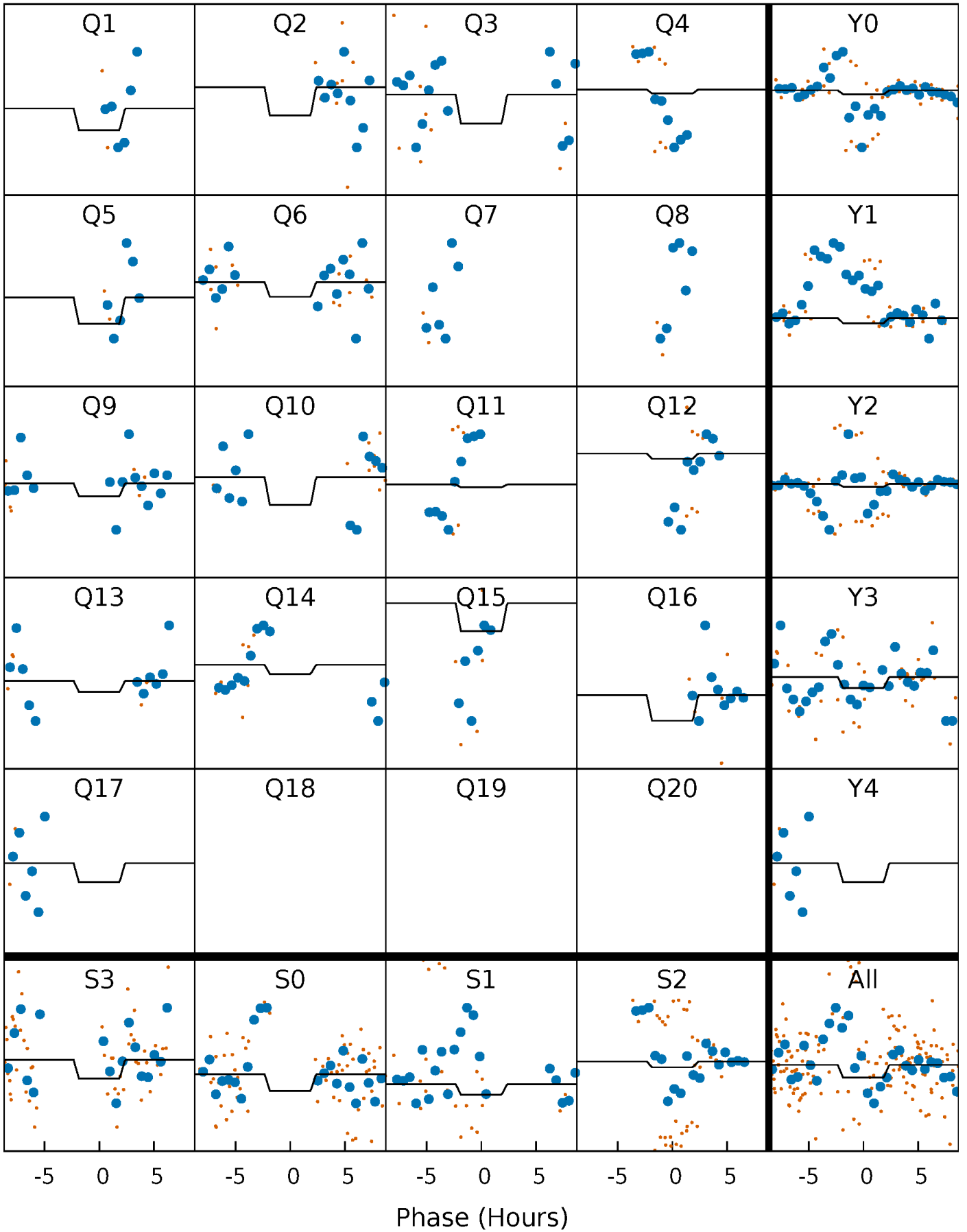
DV Quarter-Phased Transit Curves

TCE 005787972-08 P= 25.787015 Days $T_0=154.054388$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

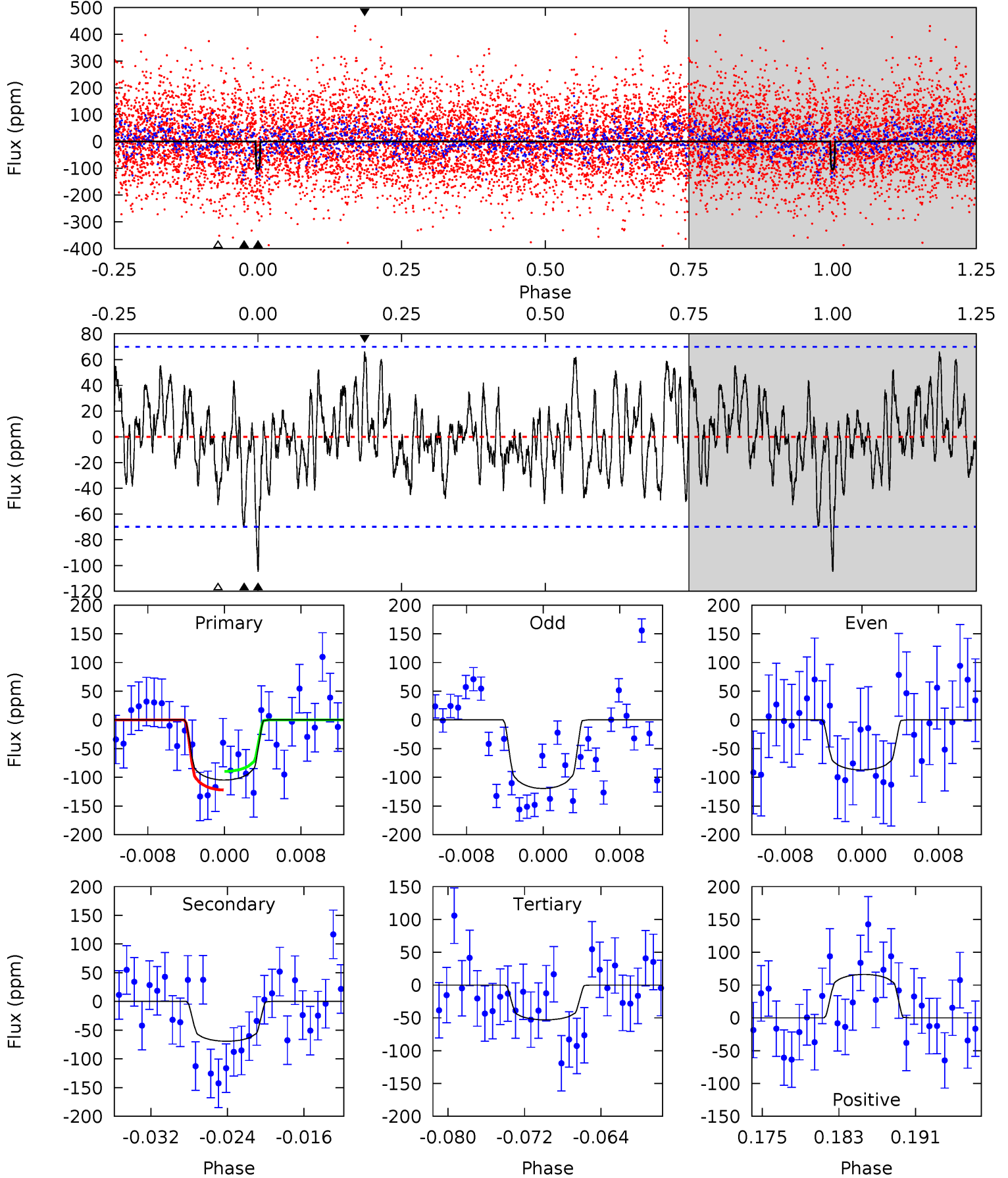
TCE 005787972-08 P= 25.786486 Days $T_0=154.061122$ (BKJD)



DV Model-Shift Uniqueness Test

005787972-08, P = 25.787015 Days, E = 128.267373 Days

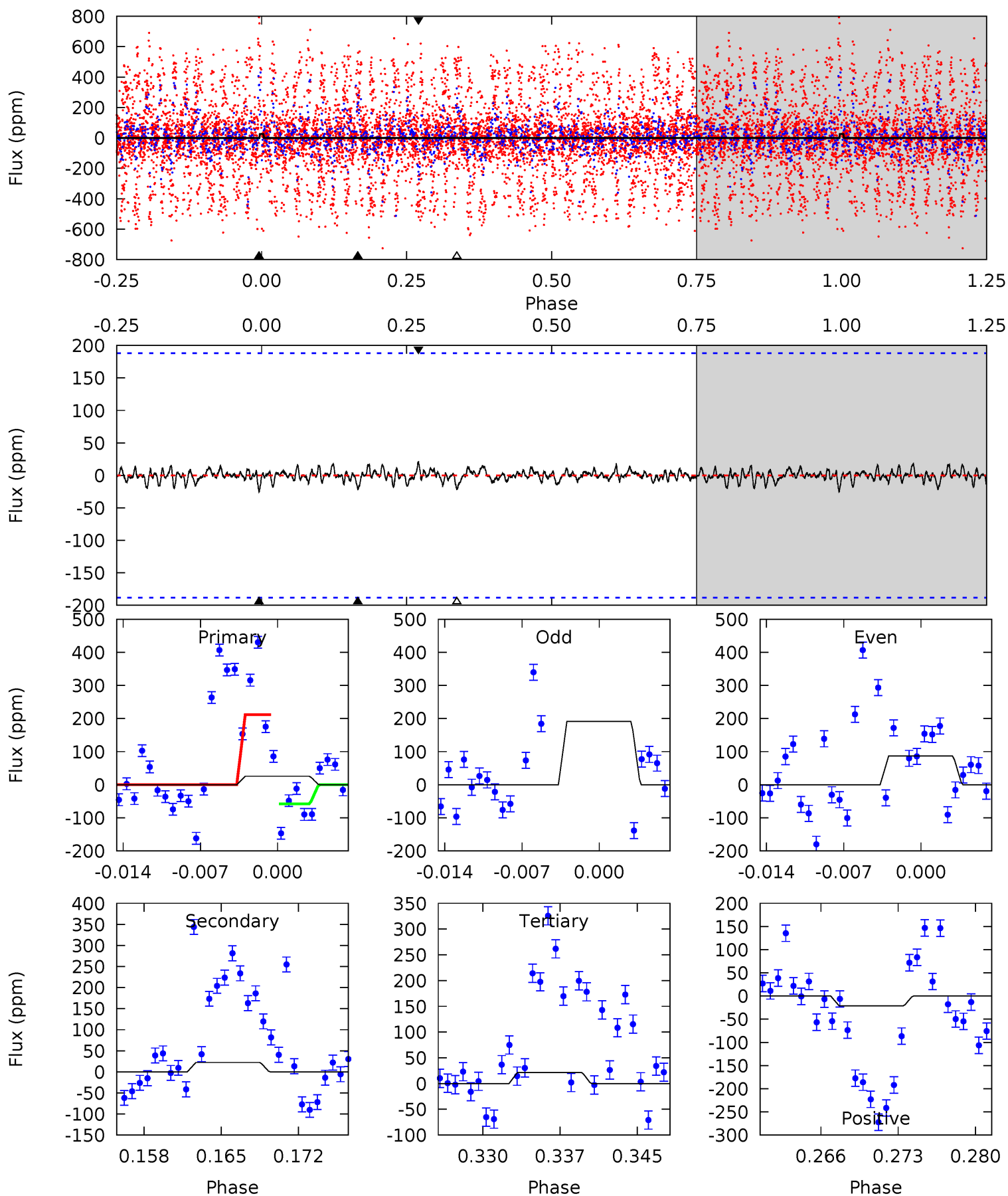
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.60	5.02	3.85	4.80	5.07	2.65	1.69	3.75	2.80	1.17	0.22	1.17	0.95	0.39	1.16



Alt Model-Shift Uniqueness Test

005787972-08, P = 25.786486 Days, E = 128.274636 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.69	0.60	0.59	0.58	5.09	2.69	0.17	0.11	0.11	0.01	0.02	1.60	-5.32	0.46	0



Stellar Parameters For KIC 005787972

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6726^{+70}_{-90}	$4.131^{+0.130}_{-0.130}$	$-0.200^{+0.150}_{-0.150}$	$1.634^{+0.312}_{-0.284}$	$1.328^{+0.098}_{-0.122}$	$0.428^{+0.262}_{-0.163}$
	+1%/-1%	+3%/-3%	+75%/-75%	+19%/-17%	+7%/-9%	+61%/-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 005787972-08 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-69 ± 14	$2.09^{+1.17}_{-1.15}$	1226^{+62}_{-62}	5659^{+3092}_{-1034}	310^{+1088}_{-193}
Alt.	-22 ± 37	$1.53^{+1.20}_{-0.92}$	1230^{+62}_{-57}	4716^{+3485}_{-9116}	135^{+1056}_{-222}

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 $A_{obs} \gg 1.0$

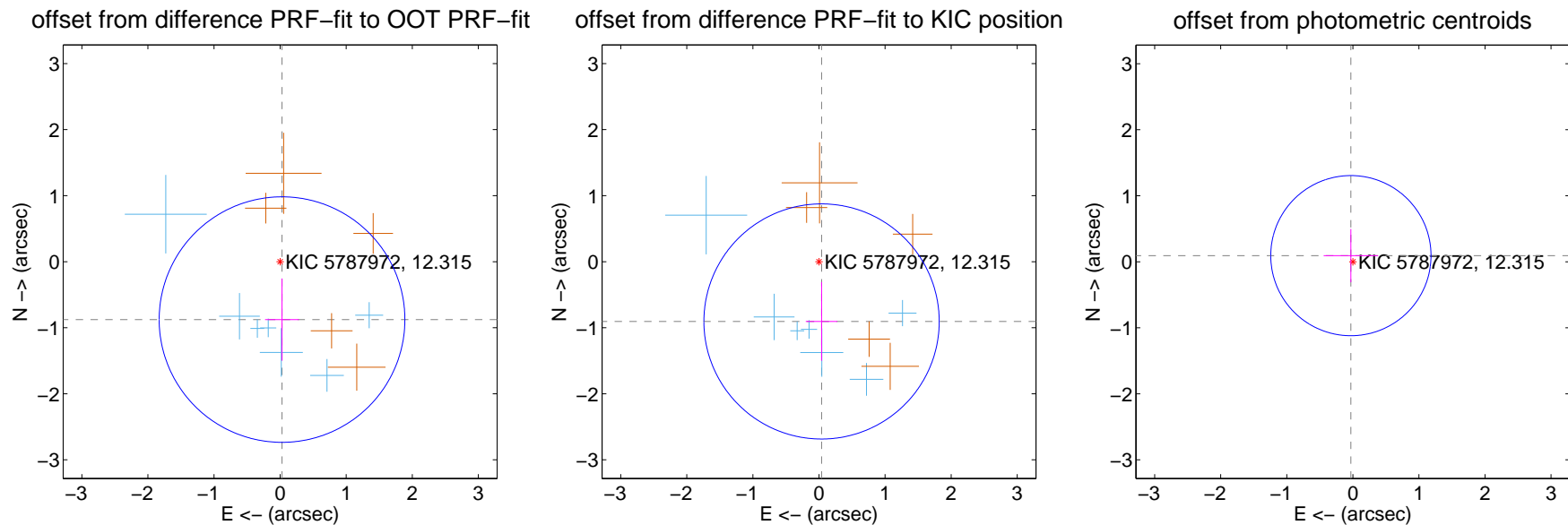
DV Centroid Data

Supplemental centroid analysis for 005787972-08. Kepler magnitude: 12.31. Transit SNR 9.34

There are 7 quarters with good PRF difference image offsets

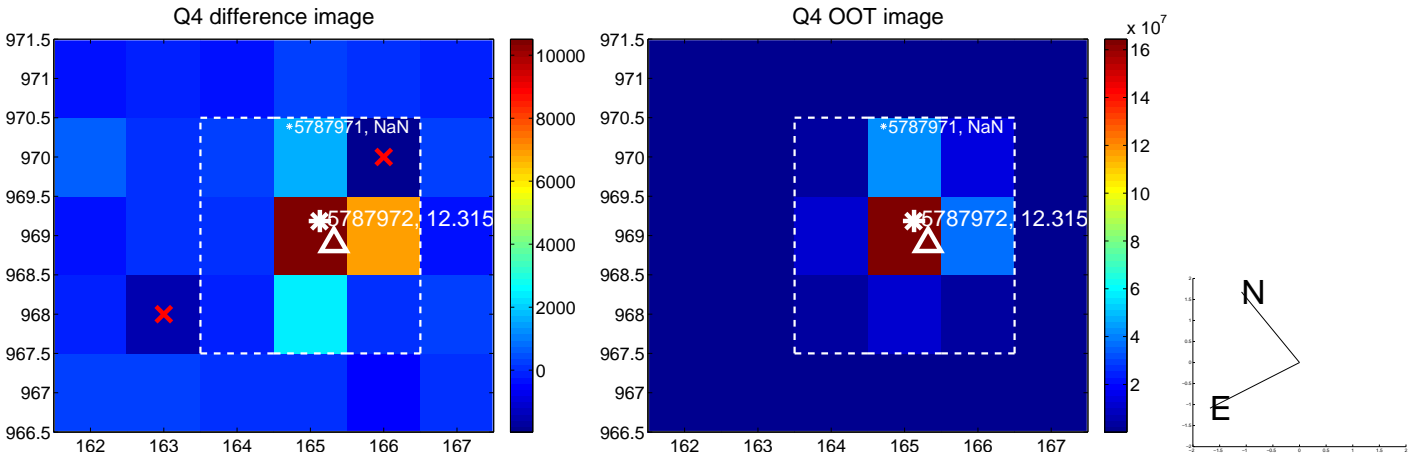
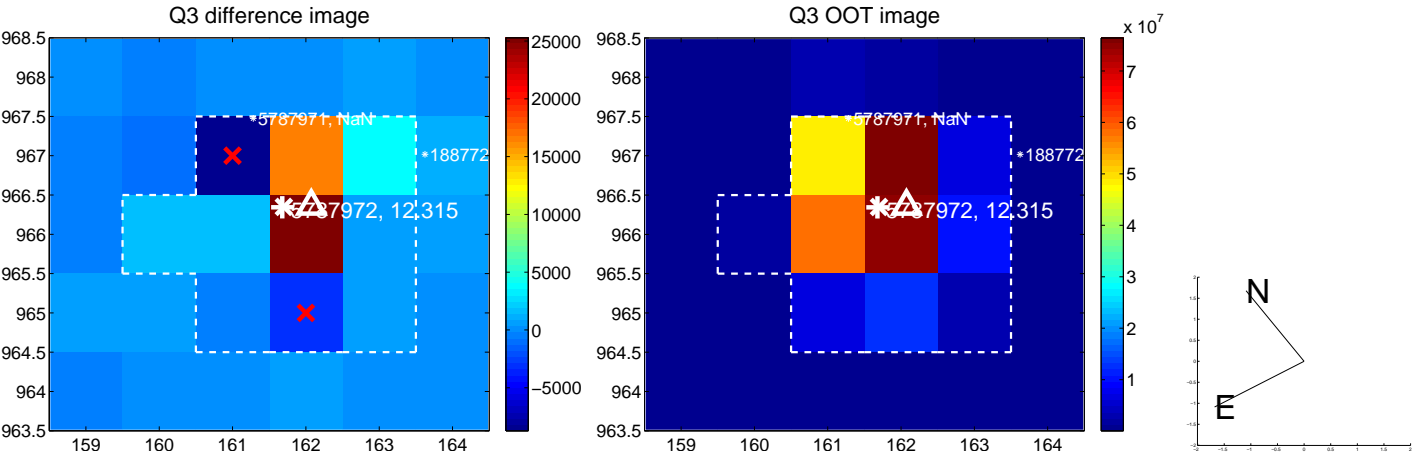
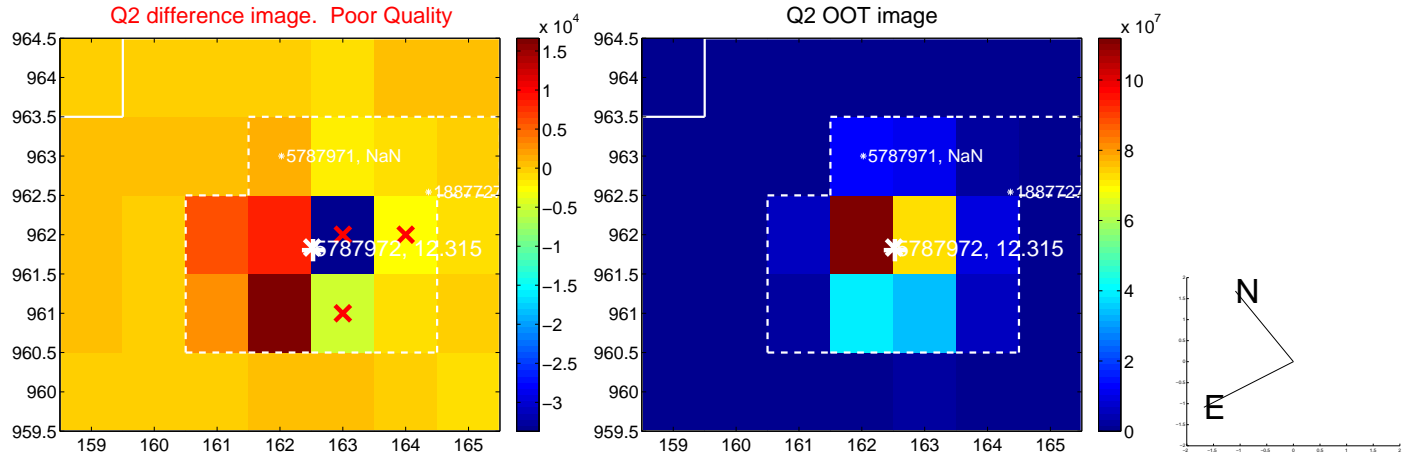
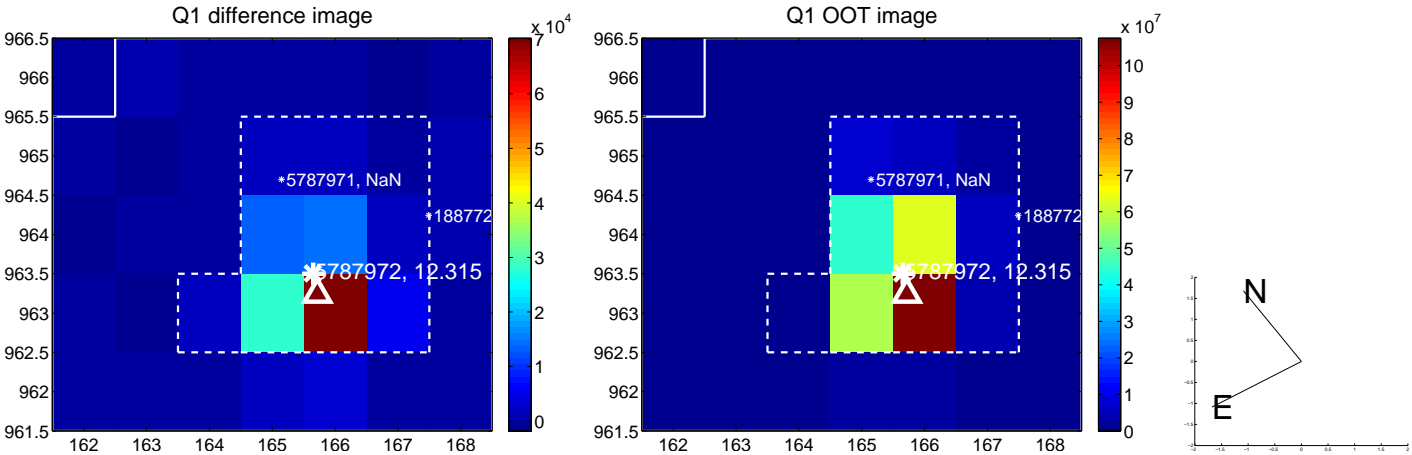
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.877 ± 0.620	1.42	-0.029 ± 0.257	-0.876 ± 0.622
PRF-fit source offset from KIC position	0.906 ± 0.593	1.53	-0.039 ± 0.238	-0.905 ± 0.596
photometric centroid source offset	0.10 ± 0.40	0.24	0.03 ± 0.41	0.09 ± 0.40

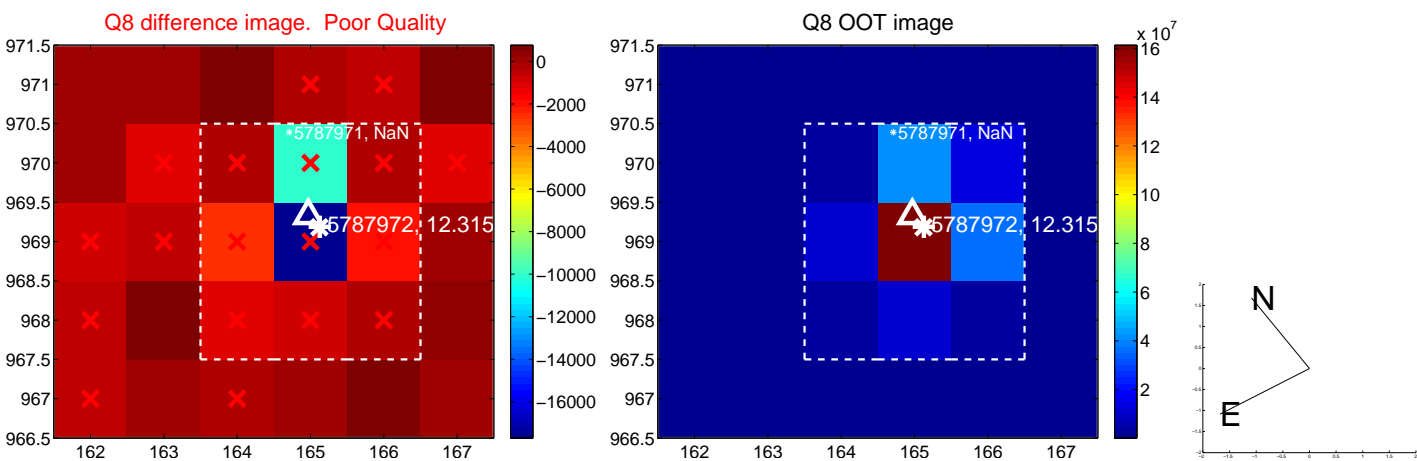
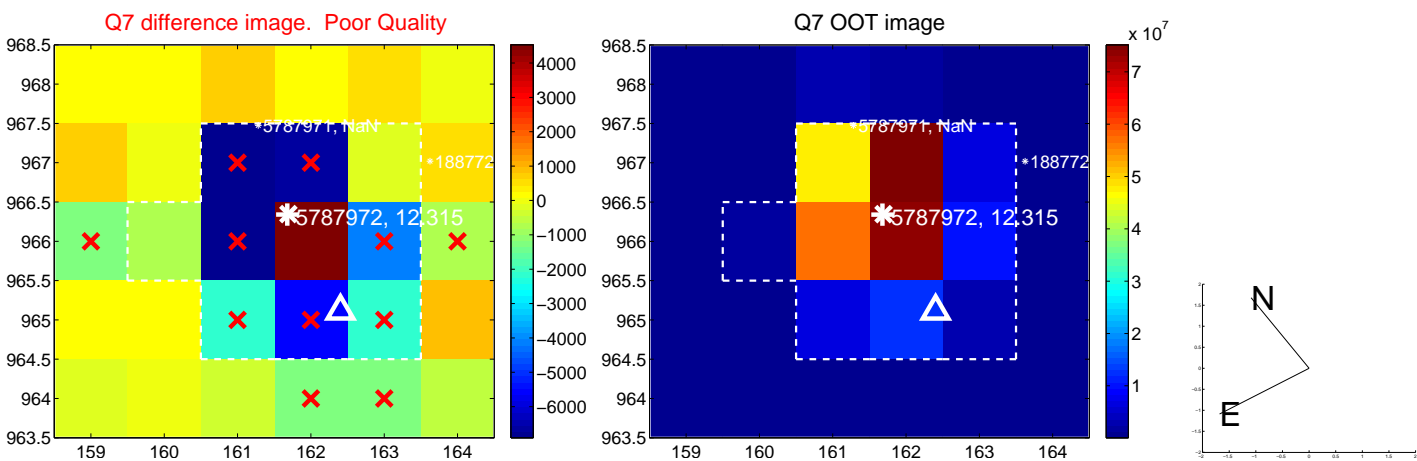
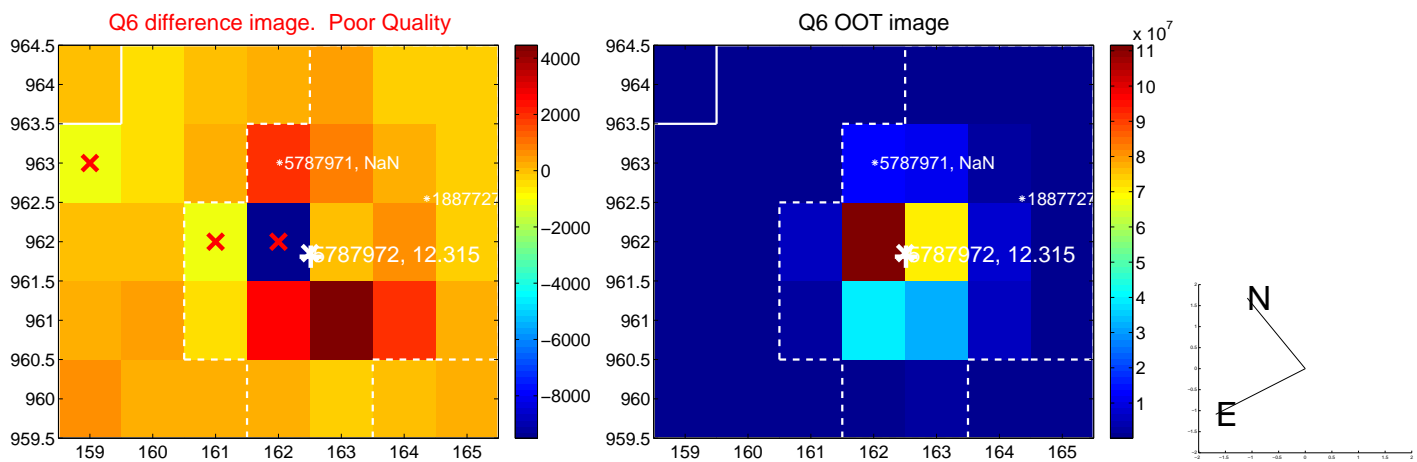
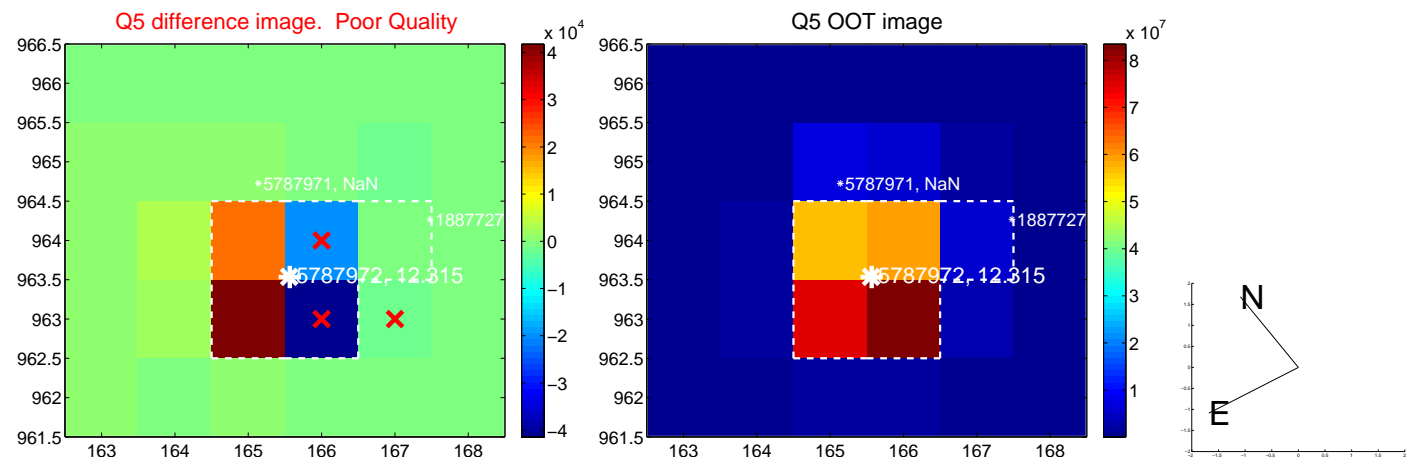


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

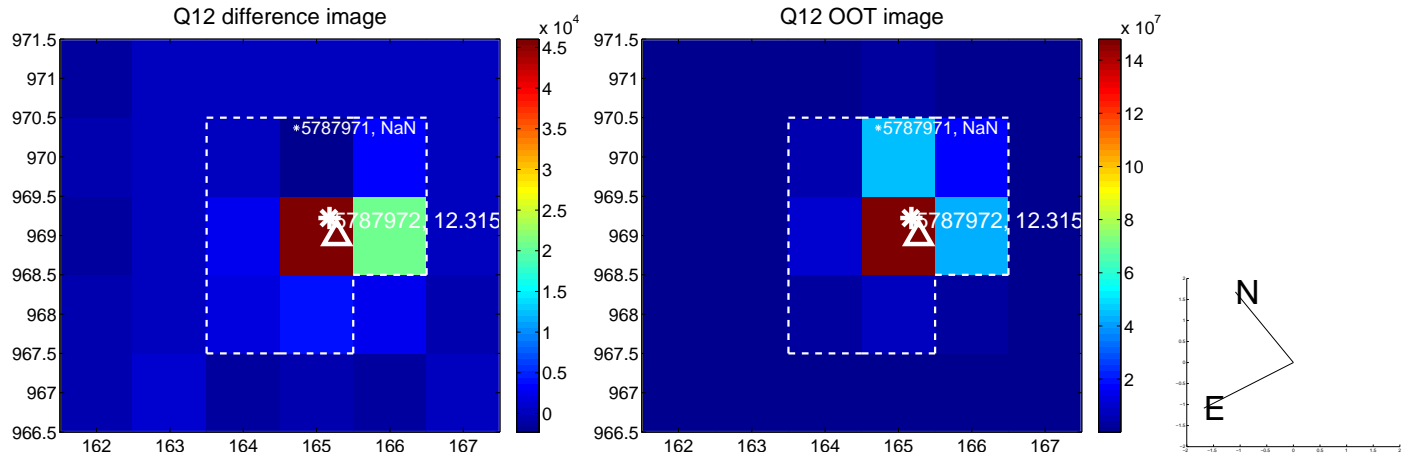
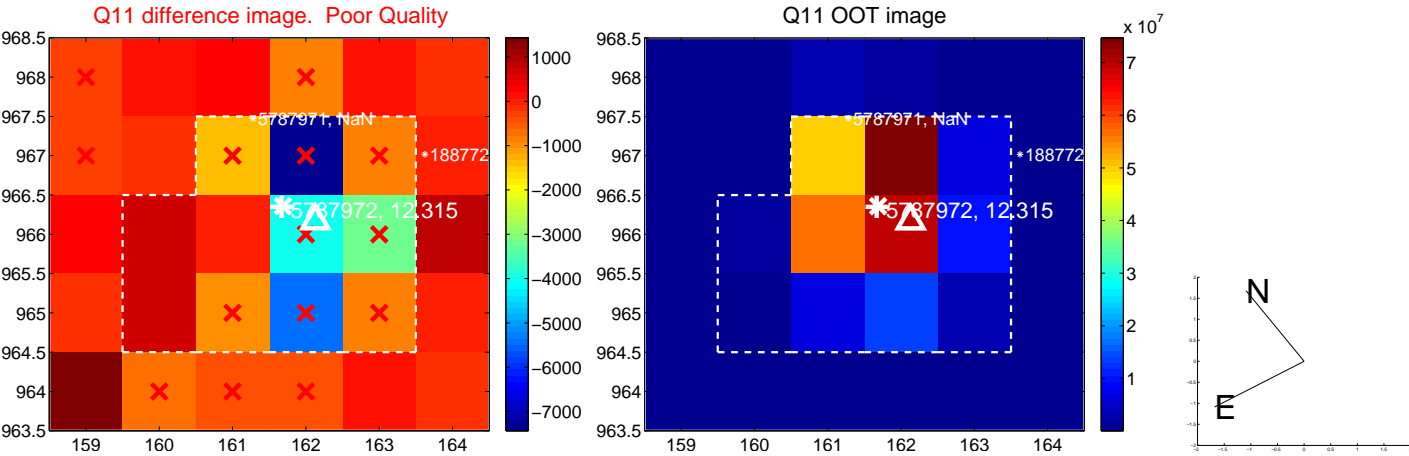
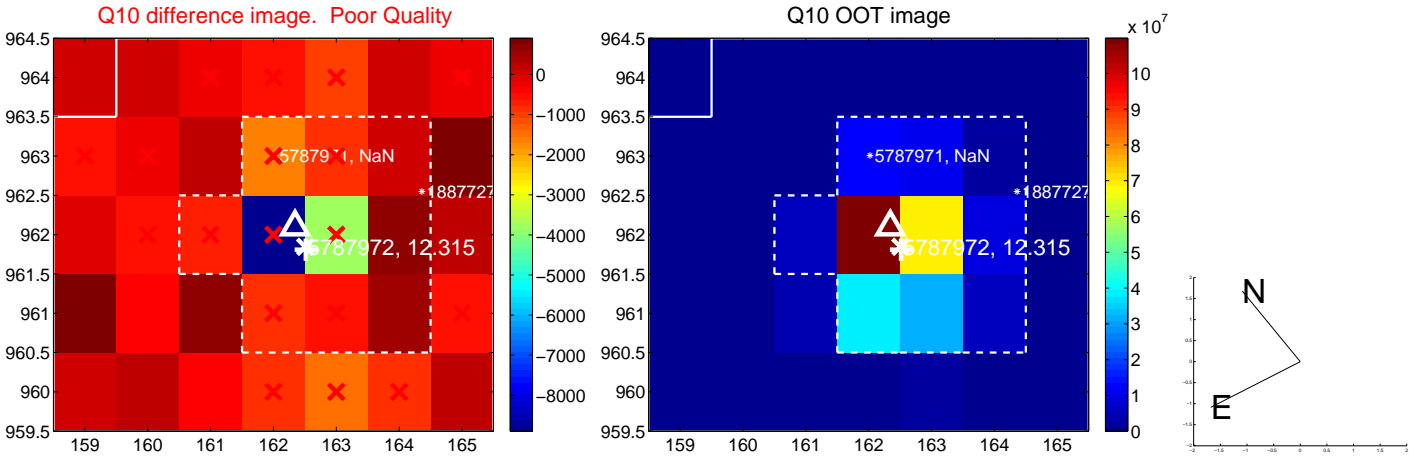
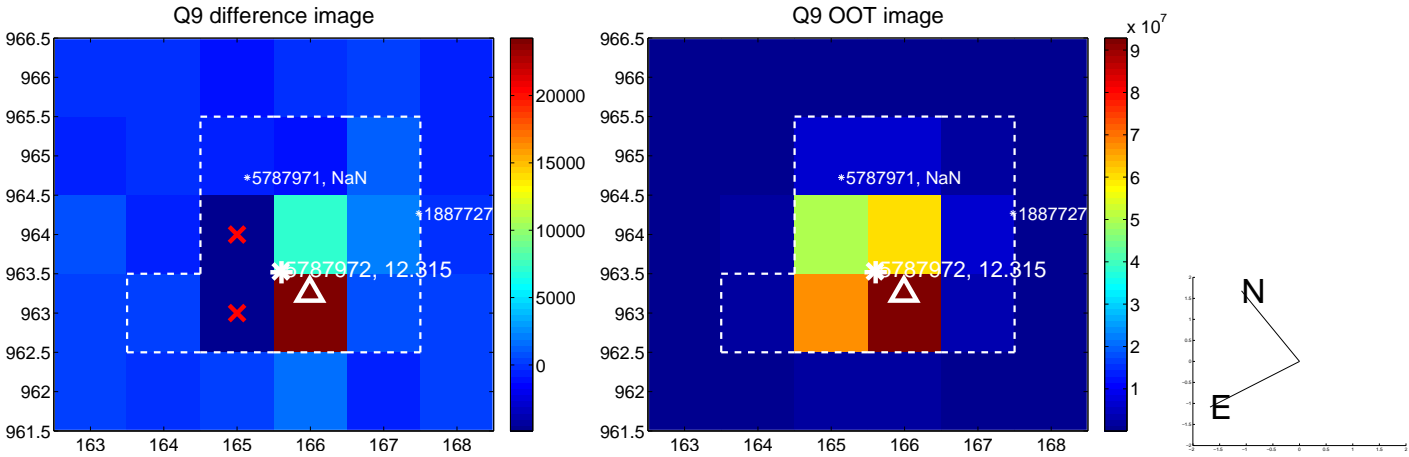
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



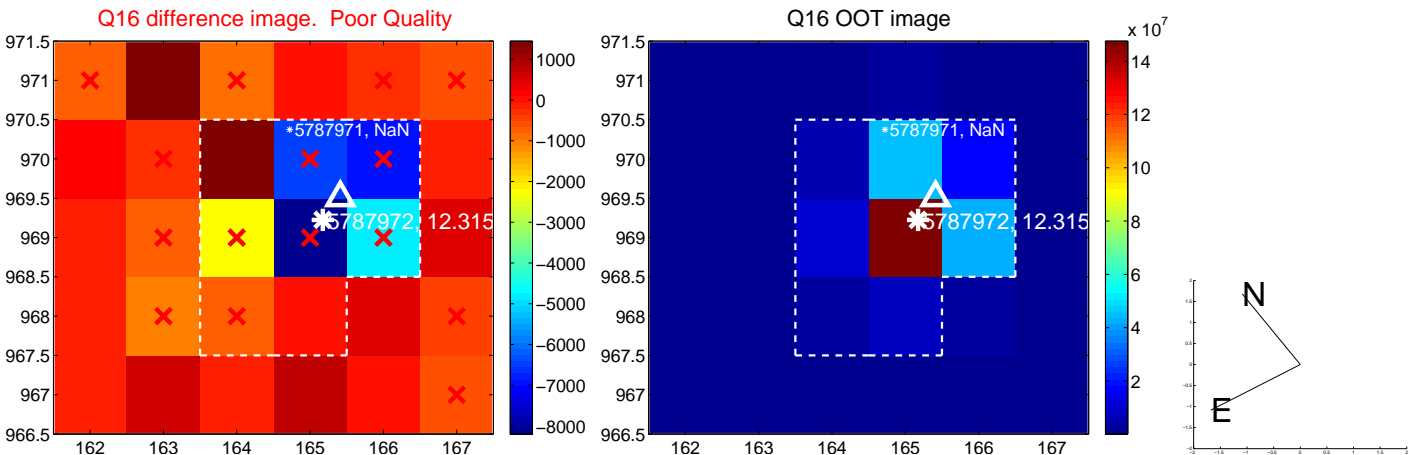
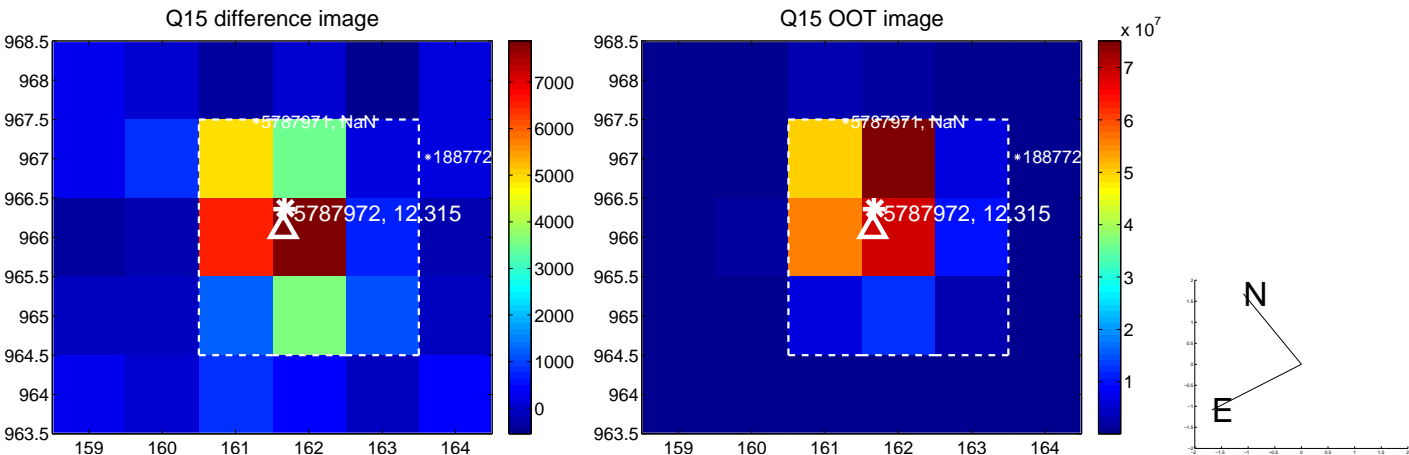
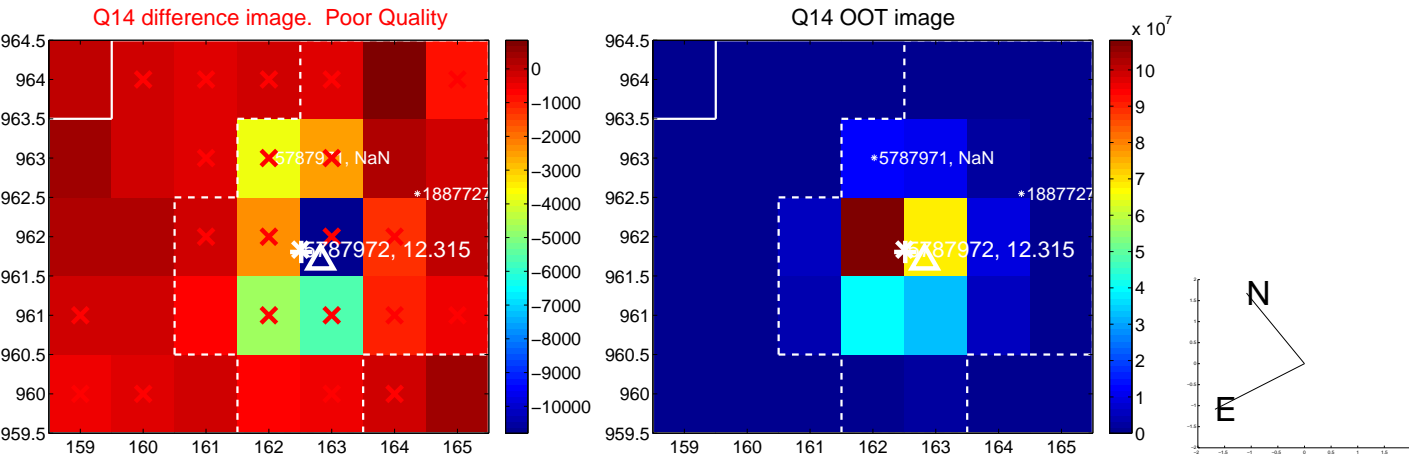
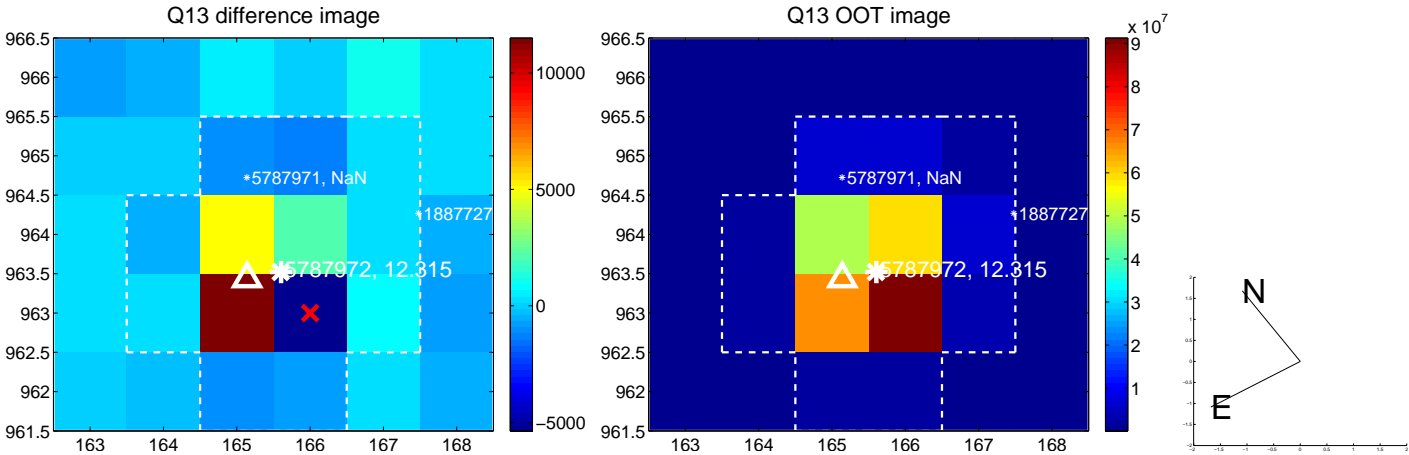
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



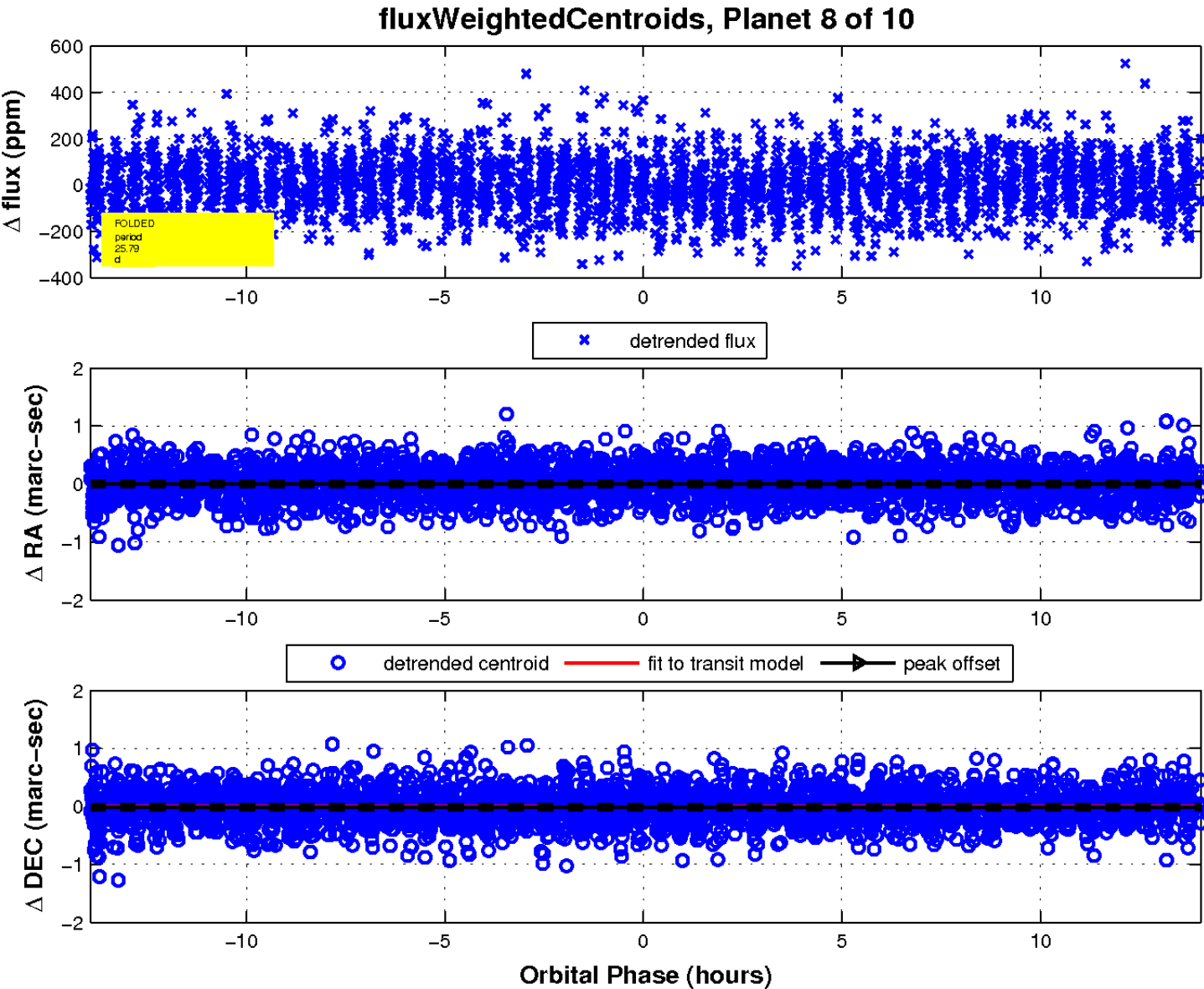
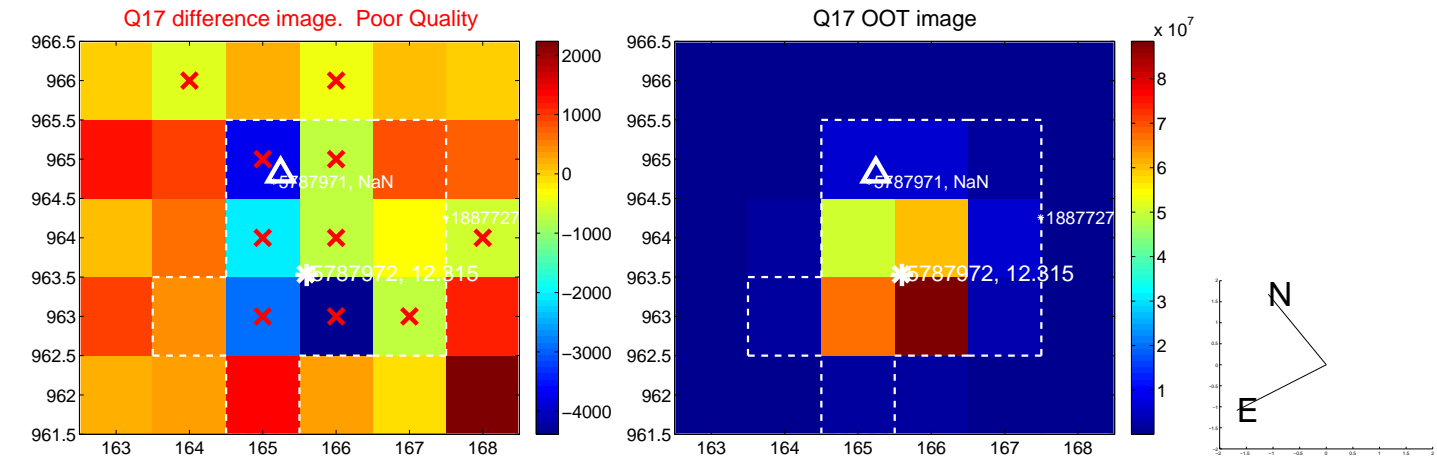
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

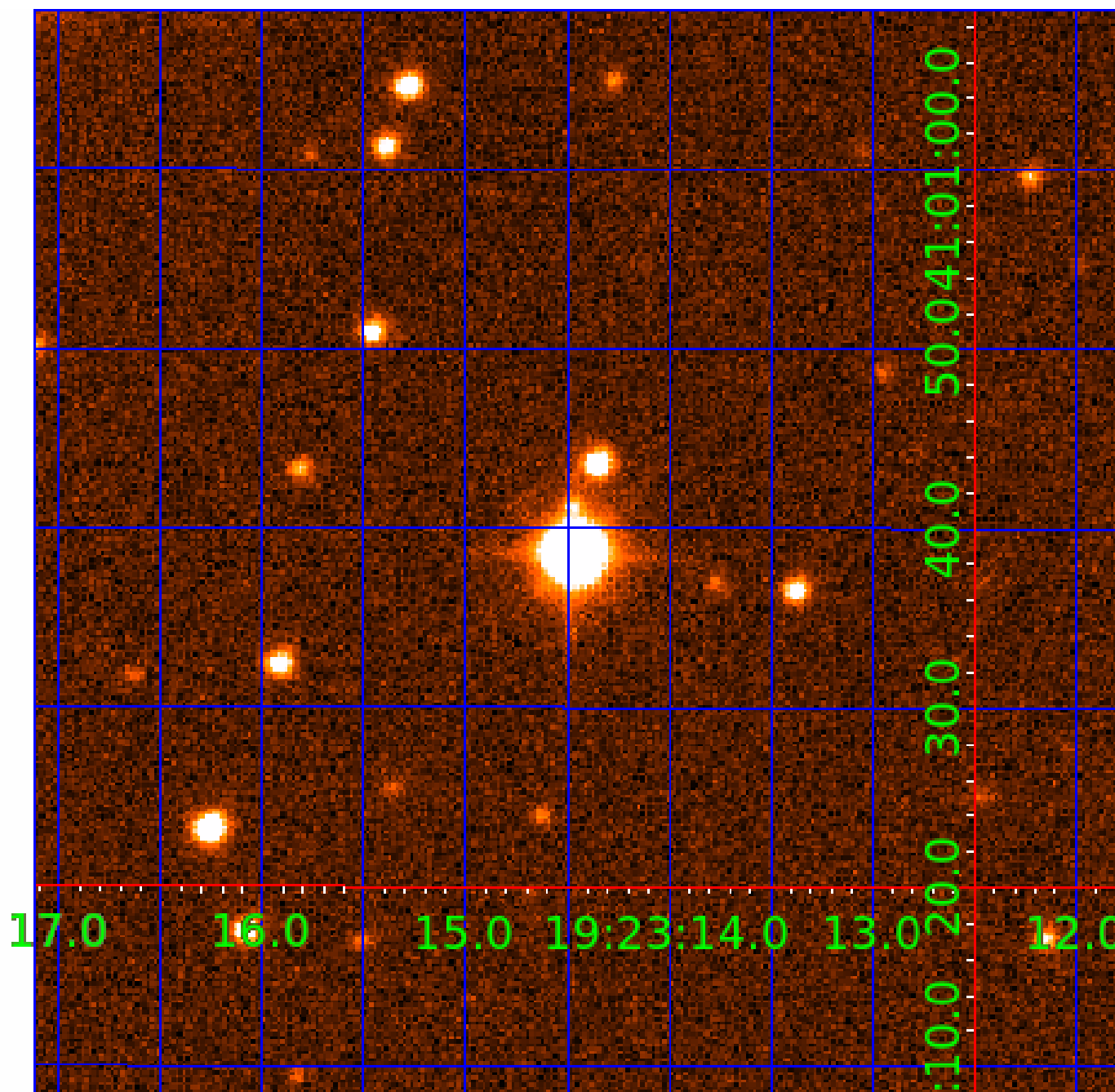


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005787972

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})
005787972-01	OBS	No	1.099151	132.692479	3.2	7.513	8.9	2.8	1.63	6726	0.30	9375.91
005787972-02	OBS	No	57.208769	180.383070	159.0	3.963	12.3	10.1	1.63	6726	2.25	48.25
005787972-03	OBS	No	252.860410	272.632577	232.3	7.104	11.0	12.5	1.63	6726	2.71	6.65
005787972-04	OBS	No	46.490157	147.345820	197.2	1.772	11.2	10.1	1.63	6726	2.32	63.62
005787972-05	OBS	No	32.158912	152.995453	108.7	4.803	9.1	8.3	1.63	6726	1.79	104.00
005787972-06	OBS	No	46.187137	134.771064	173.7	3.448	9.4	10.5	1.63	6726	2.48	64.18
005787972-07	OBS	No	39.098565	153.376700	139.5	3.412	9.6	9.4	1.63	6726	2.14	80.14
005787972-08	OBS	No	25.787015	154.054388	105.4	4.687	8.7	9.3	1.63	6726	1.91	139.60
005787972-09	OBS	No	12.382392	142.368262	70.6	4.369	9.5	8.6	1.63	6726	1.56	371.26
005787972-10	OBS	No	41.093899	144.818289	211.9	2.500	9.1	-1.0	1.63	6726	2.40	75.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005787972-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
005787972-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005787972-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
005787972-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005787972-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNRESOLVED_OFFSET
005787972-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_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.

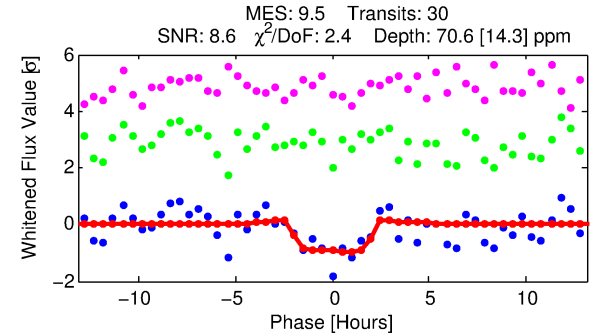
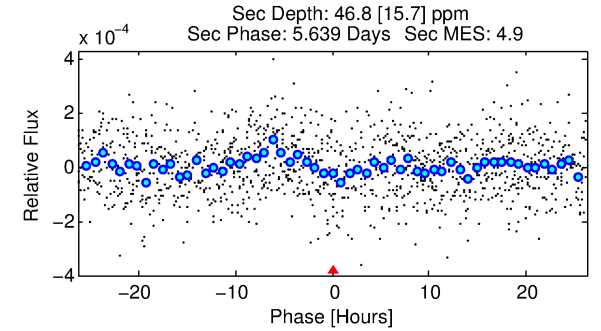
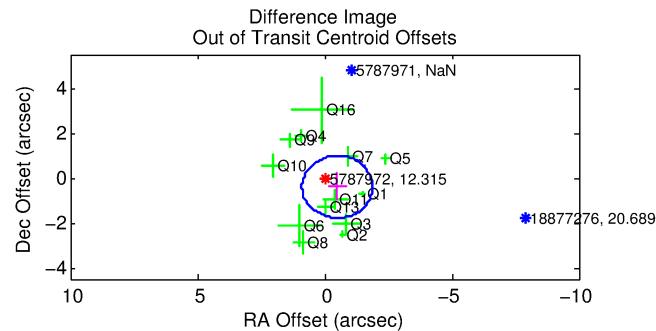
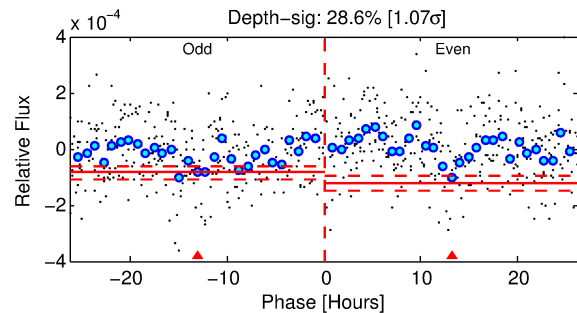
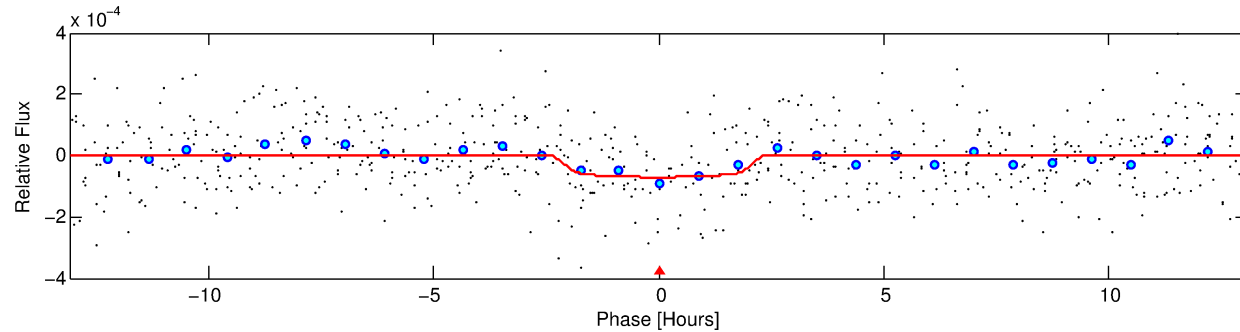
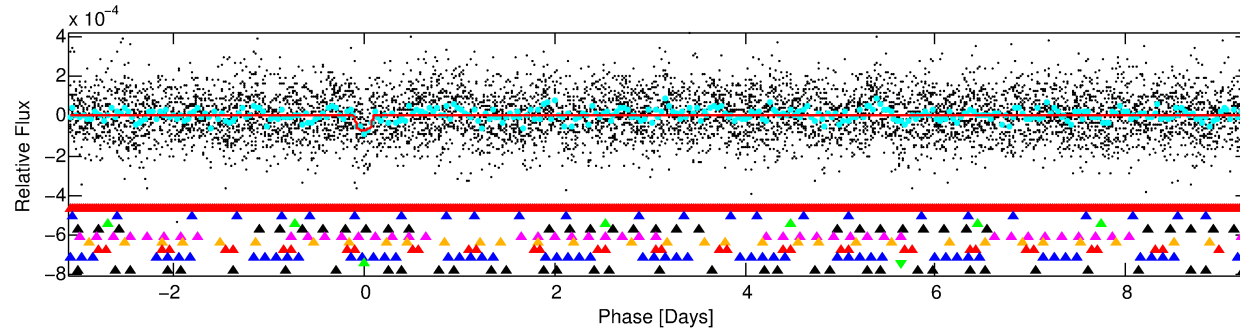
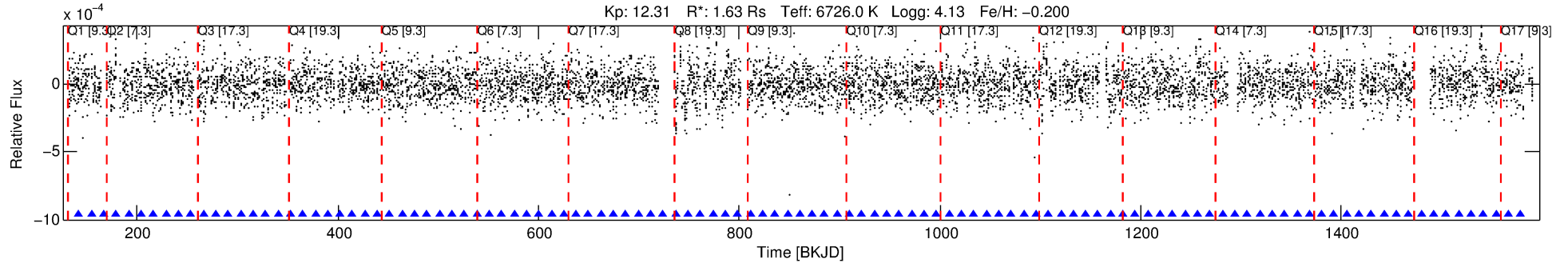
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005787972-09

No Significant Match Found

DV One-Page Summary

KIC: 5787972 Candidate: 9 of 10 Period: 12.382 d



DV Fit Results:

Period = 12.38239 [0.00023] d
Epoch = 142.3683 [0.0148] BKJD
Rp/R* = 0.0088 [0.0083]
a/R* = 11.33 [62.60]
b = 0.86 [1.66]
Seff = 371.26 [90.10]
Teq = 1119 [68] K
Rp = 1.56 [1.51] Re
a = 0.1148 [0.0186] AU
Ag = 139.26 [270.32] [0.51 σ]
Teffp = 5945 [2865] K [1.68 σ]

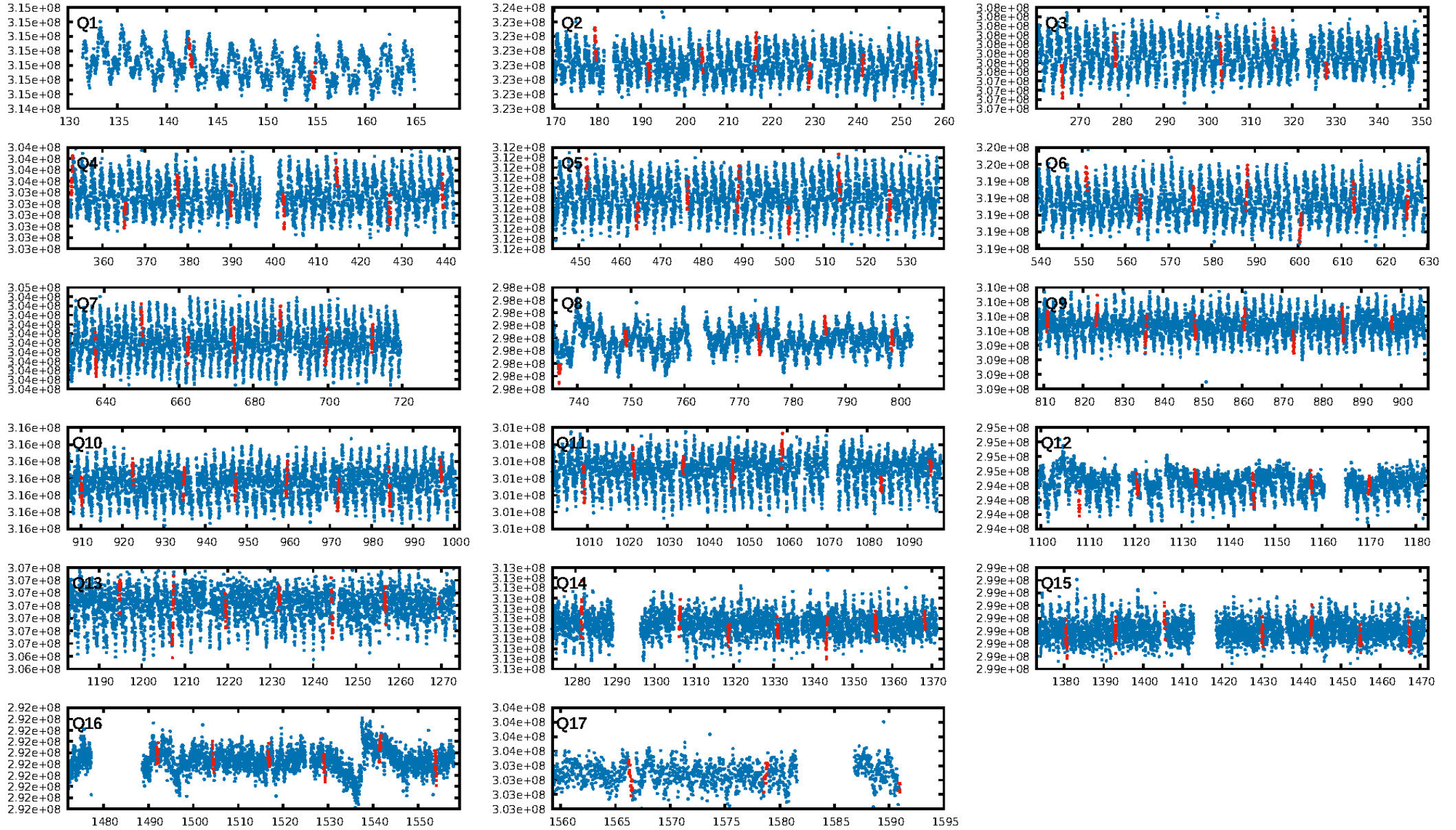
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [31.16 σ]
LongPeriod-sig: 100.0% [50.21 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [29/29]
GhostDiagnostic-chr: 0.5331
Centroid-sig: 18.1%
Centroid-so: 0.524 arcsec [1.18 σ]
OotOffset-rm: 0.632 arcsec [1.37 σ]
OotOffset-st: 3/3/3/4 [13]
KicOffset-rm: 0.487 arcsec [1.00 σ]
KicOffset-st: 3/3/3/4 [13]
DiffImageQuality-fgm: 0.62 [8/13]
DiffImageOverlap-fno: 0.00 [0/17]

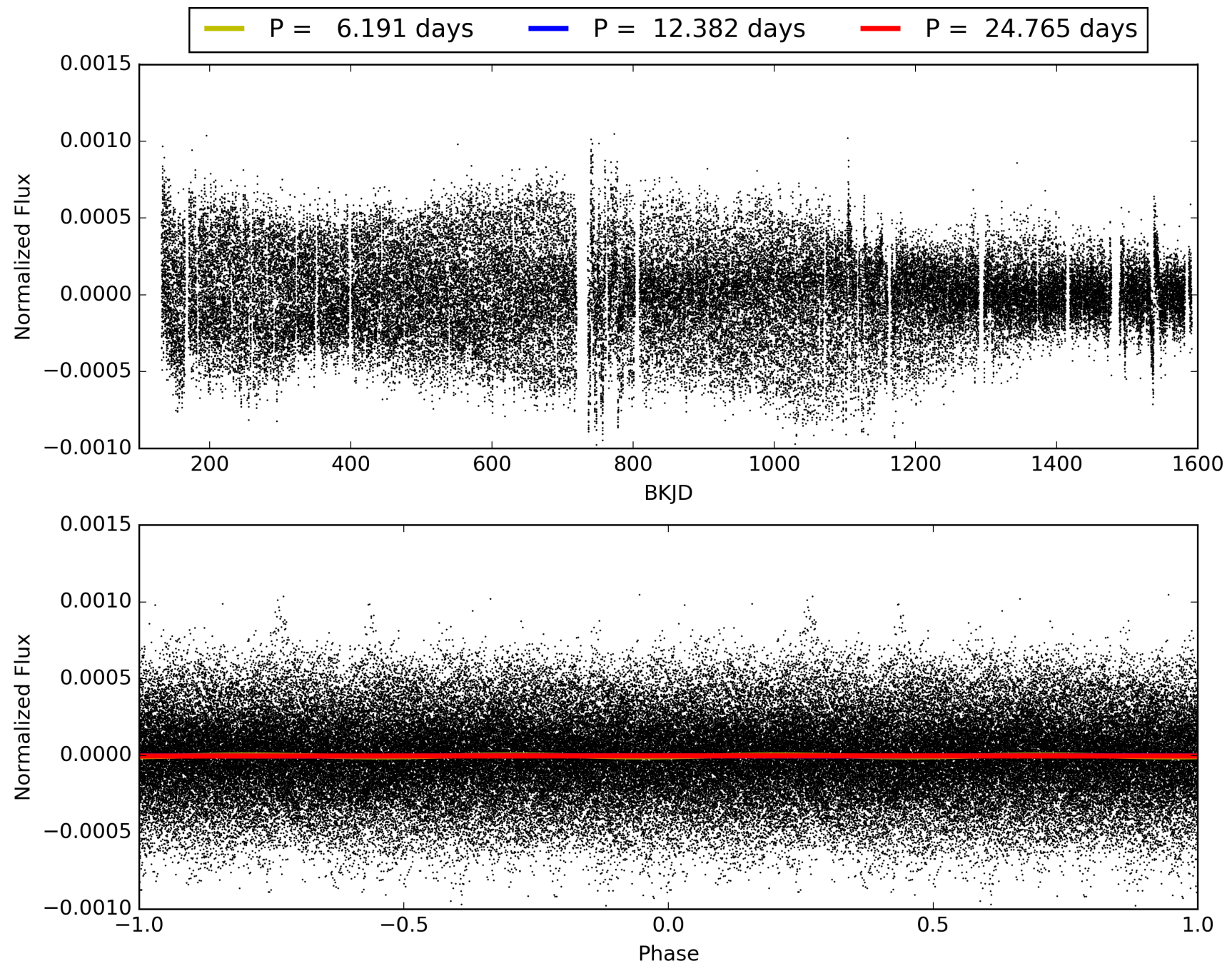
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:25:20 Z

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

TCE 005787972-09, PDC Light Curves

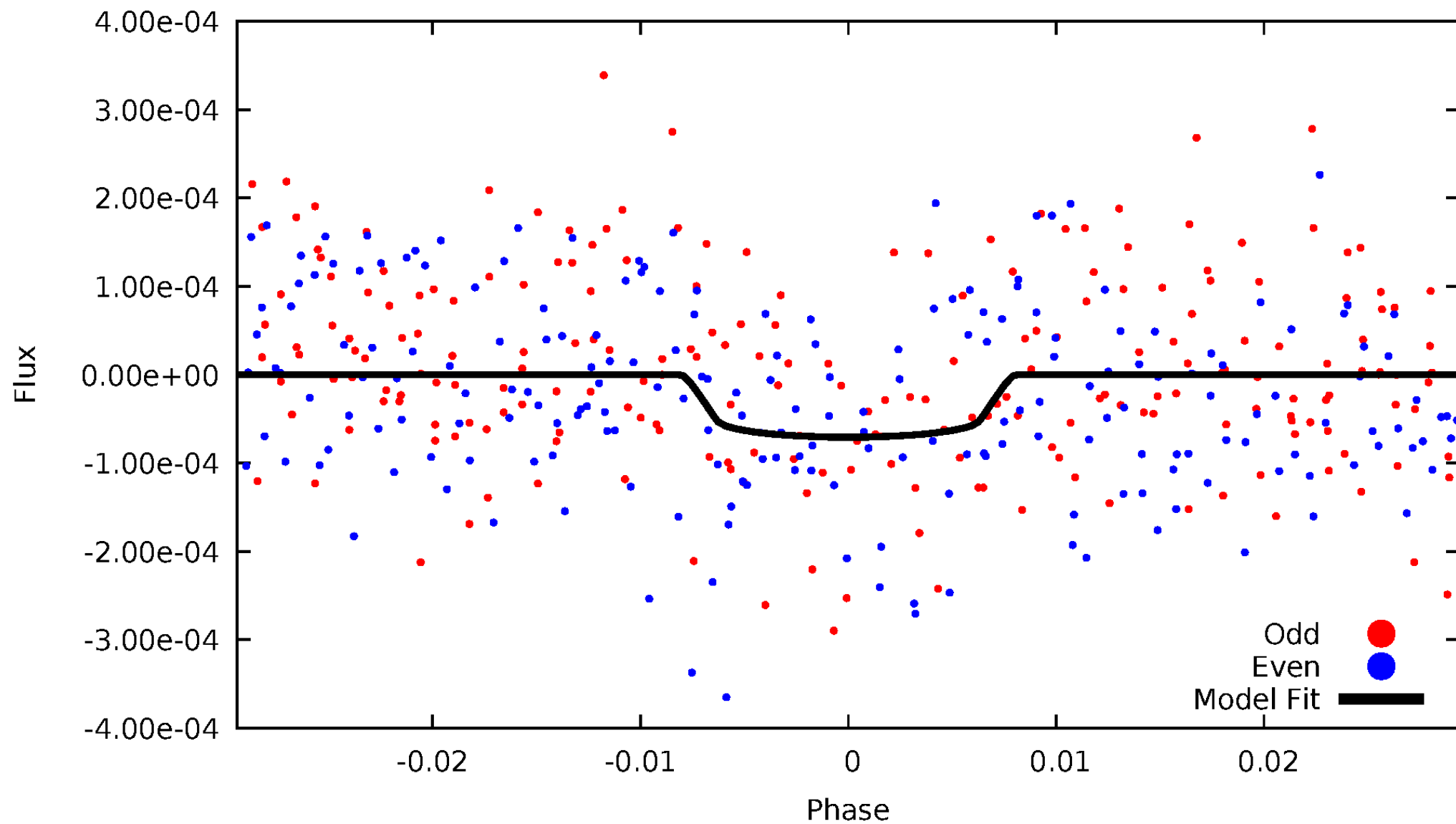


TCE 005787972-09



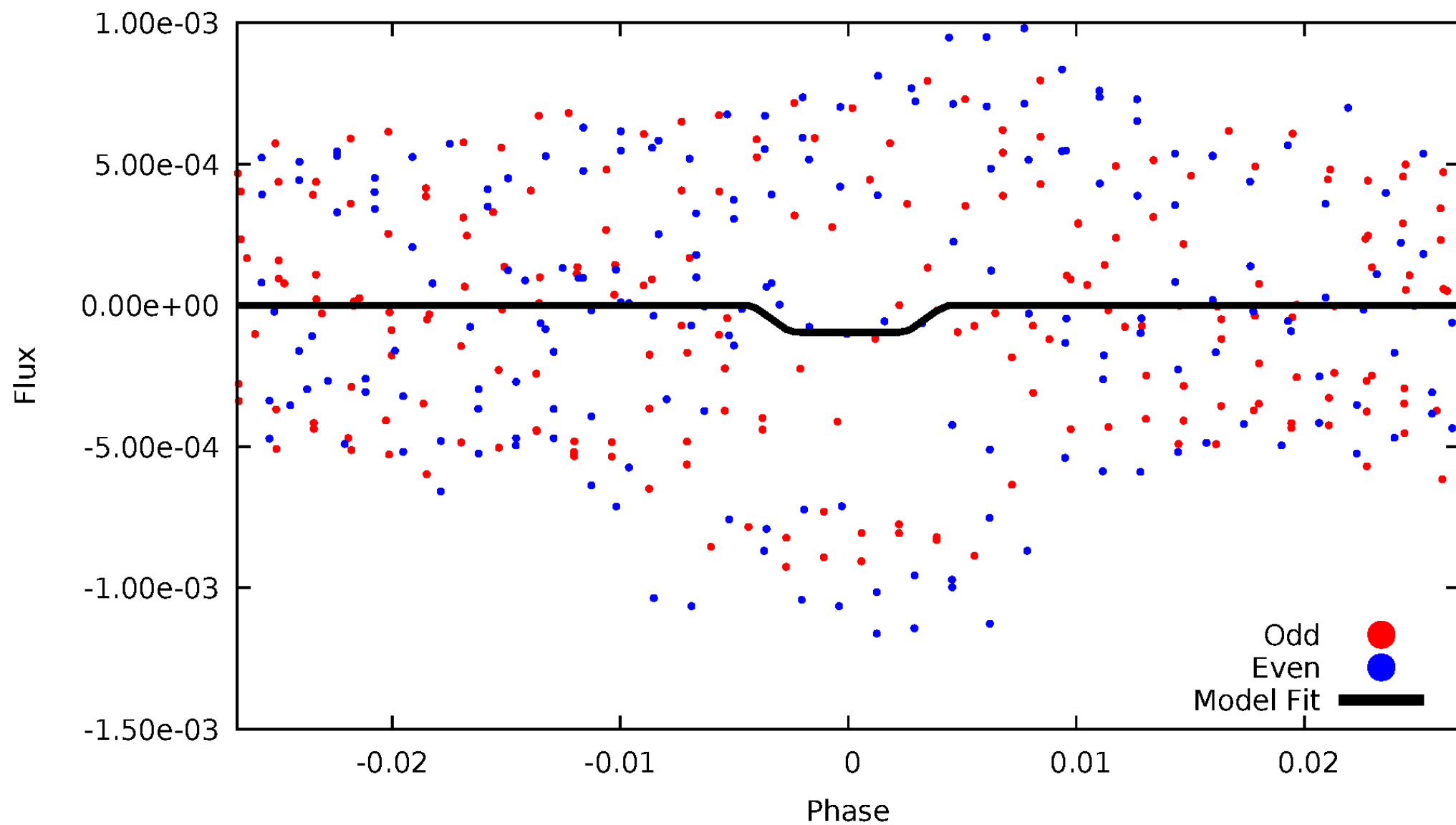
DV Odd/Even

TCE 005787972-09



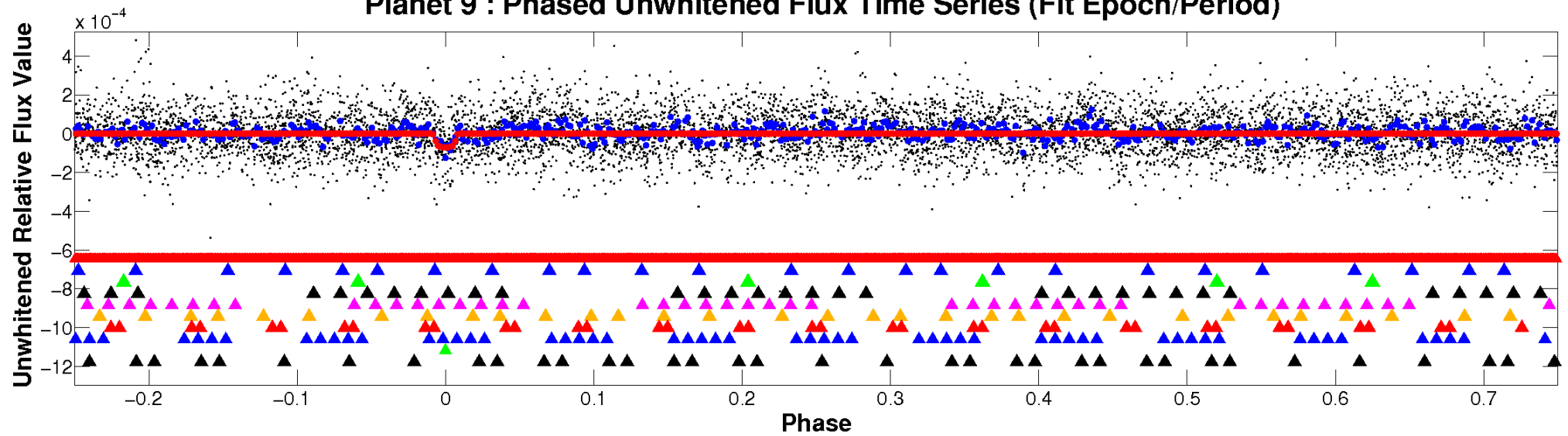
ALT Odd/Even

TCE 005787972-09

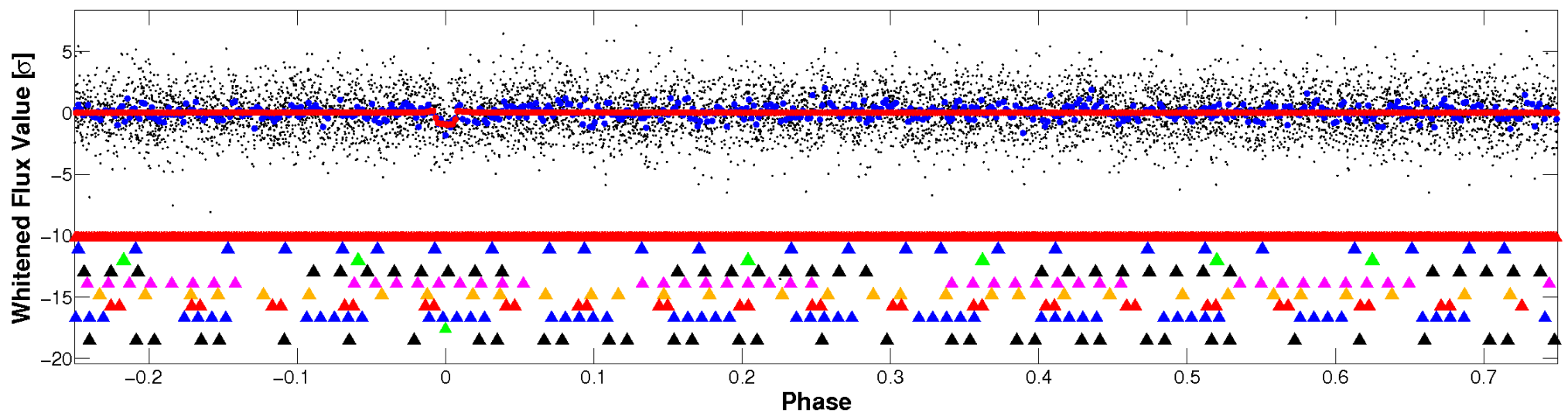


Non-Whitened Vs. Whitened Light Curve

Planet 9 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

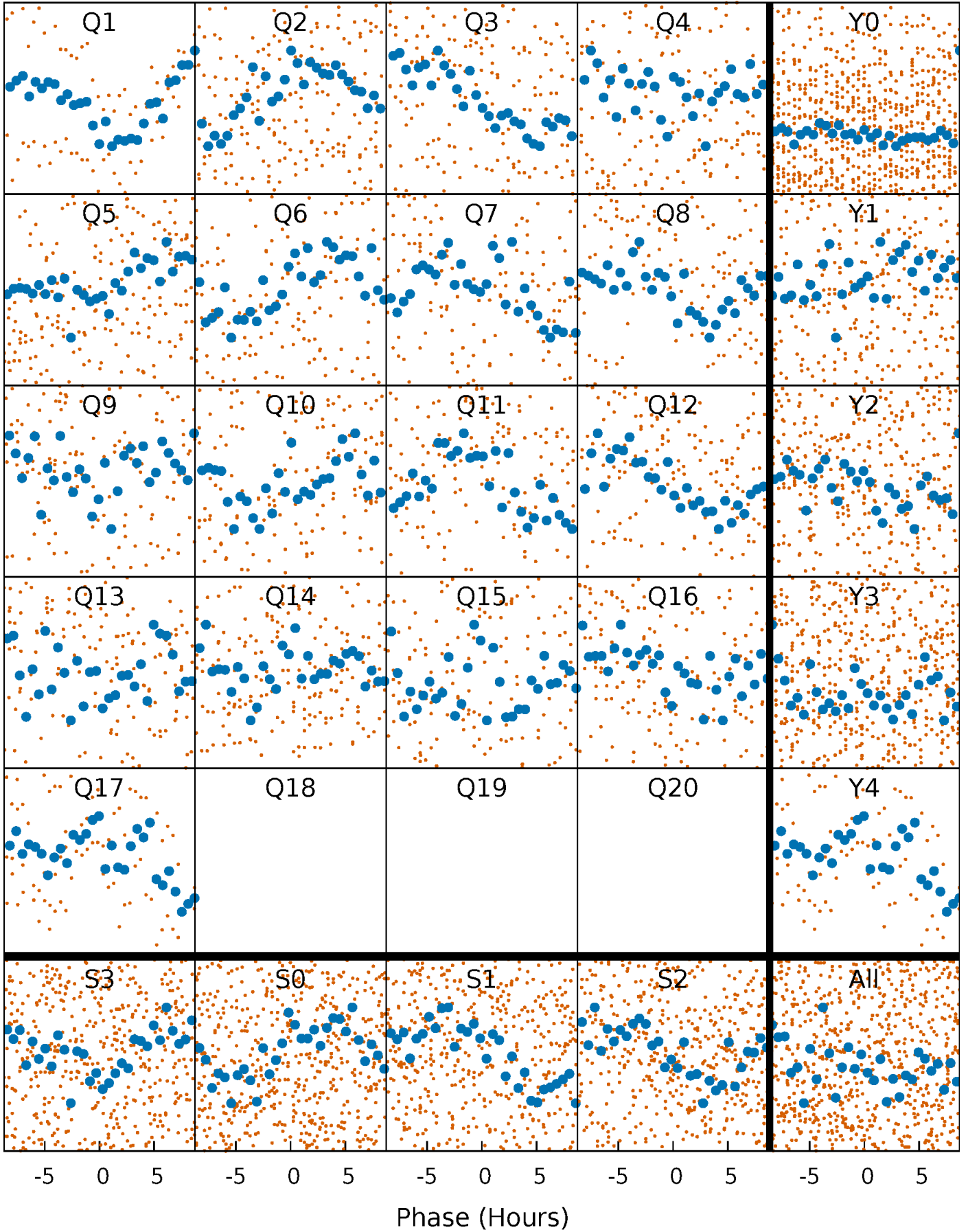


Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



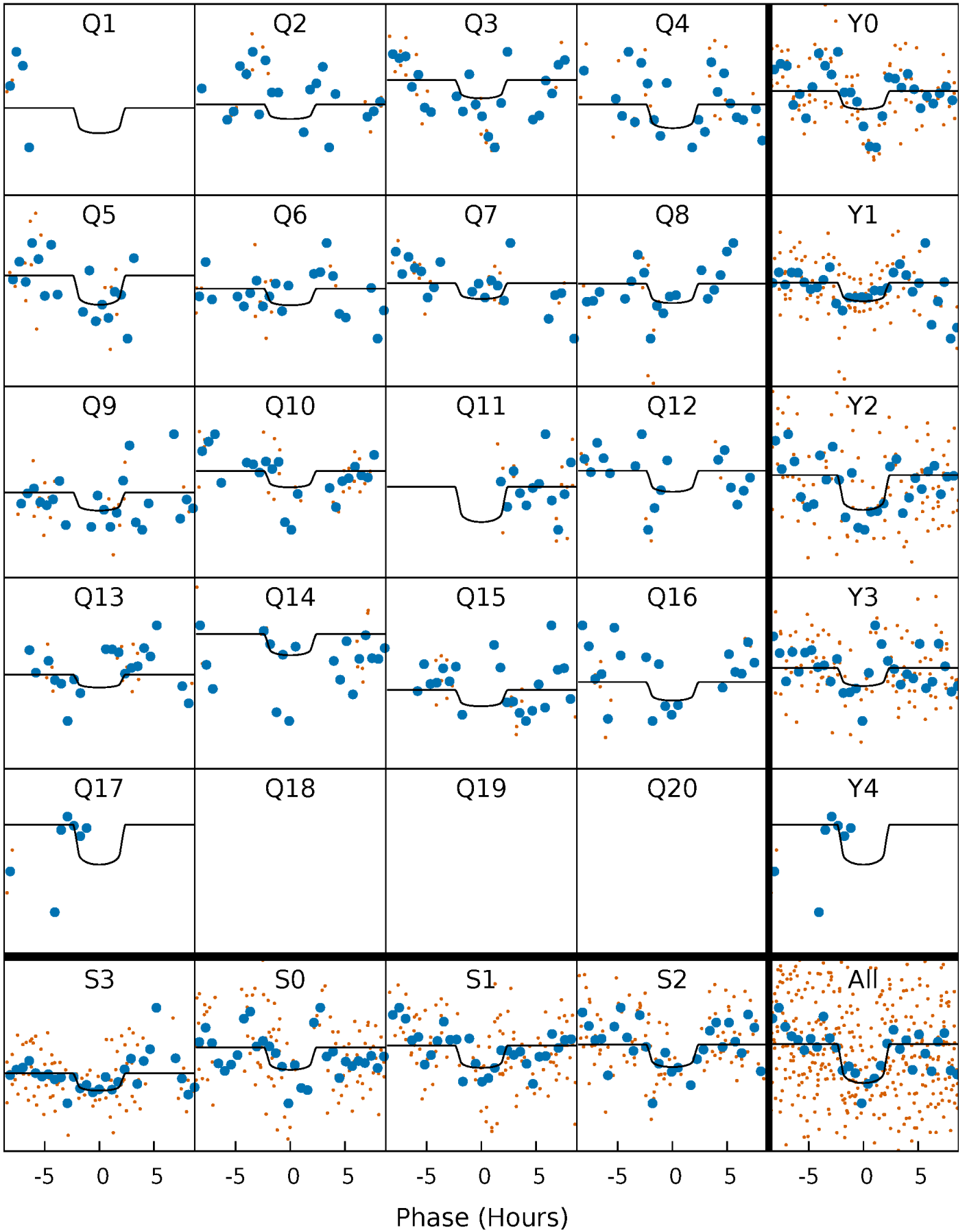
PDC Quarter-Phased Transit Curves

TCE 005787972-09 P= 12.382392 Days $T_0=142.368262$ (BKJD)



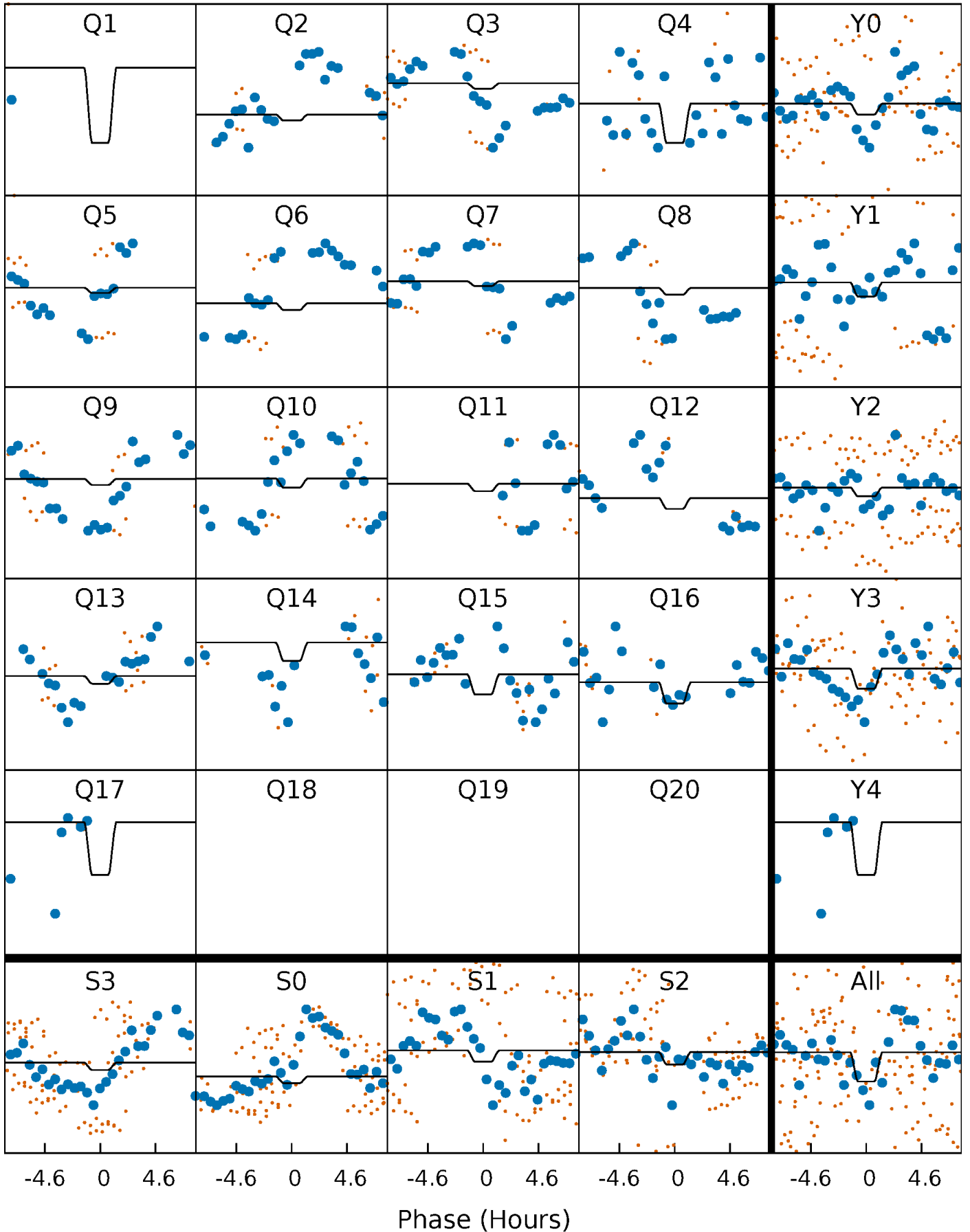
DV Quarter-Phased Transit Curves

TCE 005787972-09 P= 12.382392 Days $T_0=142.368262$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

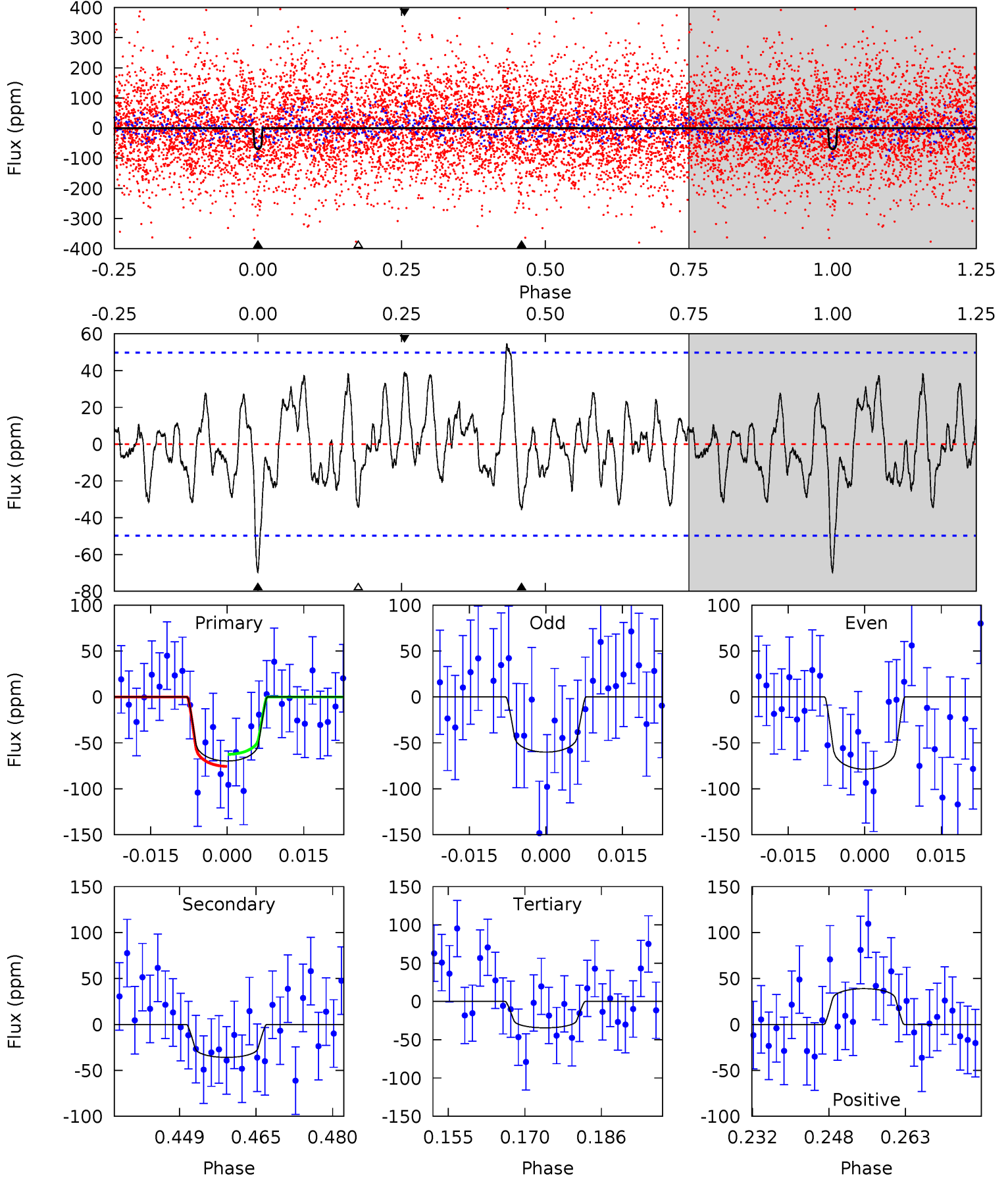
TCE 005787972-09 P= 12.382077 Days $T_0=142.395920$ (BKJD)



DV Model-Shift Uniqueness Test

005787972-09, P = 12.382392 Days, E = 129.985870 Days

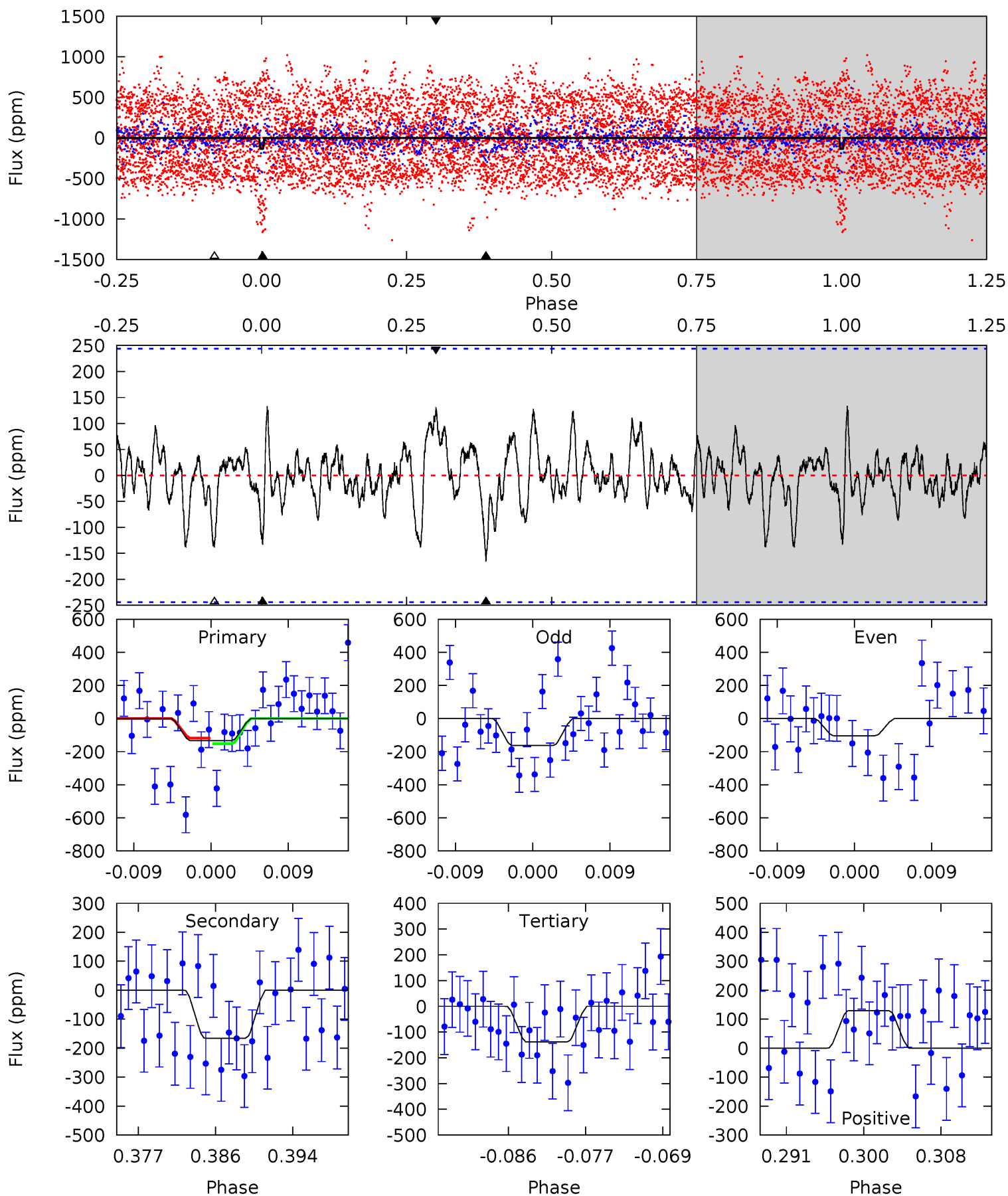
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.92	3.56	3.42	3.86	4.94	2.42	1.64	3.51	3.06	0.14	-0.30	0.92	0.71	0.44	0.64



Alt Model-Shift Uniqueness Test

005787972-09, P = 12.382077 Days, E = 130.013843 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.76	3.44	2.87	2.68	5.06	2.63	0.95	-0.10	0.08	0.57	0.75	0.61	14.5	0.45	0.34



Stellar Parameters For KIC 005787972

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6726^{+70}_{-90}	$4.131^{+0.130}_{-0.130}$	$-0.200^{+0.150}_{-0.150}$	$1.634^{+0.312}_{-0.284}$	$1.328^{+0.098}_{-0.122}$	$0.428^{+0.262}_{-0.163}$
	+1%/-1%	+3%/-3%	+75%/-75%	+19%/-17%	+7%/-9%	+61%/-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 005787972-09 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-36 ± 10	$1.81^{+1.49}_{-1.11}$	1564^{+79}_{-72}	5200^{+3121}_{-1131}	77^{+445}_{-54}
Alt.	-166 ± 48	$1.99^{+1.34}_{-1.22}$	1564^{+80}_{-69}	7279^{+7407}_{-1831}	299^{+1746}_{-203}

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 $A_{obs} \gg 1.0$

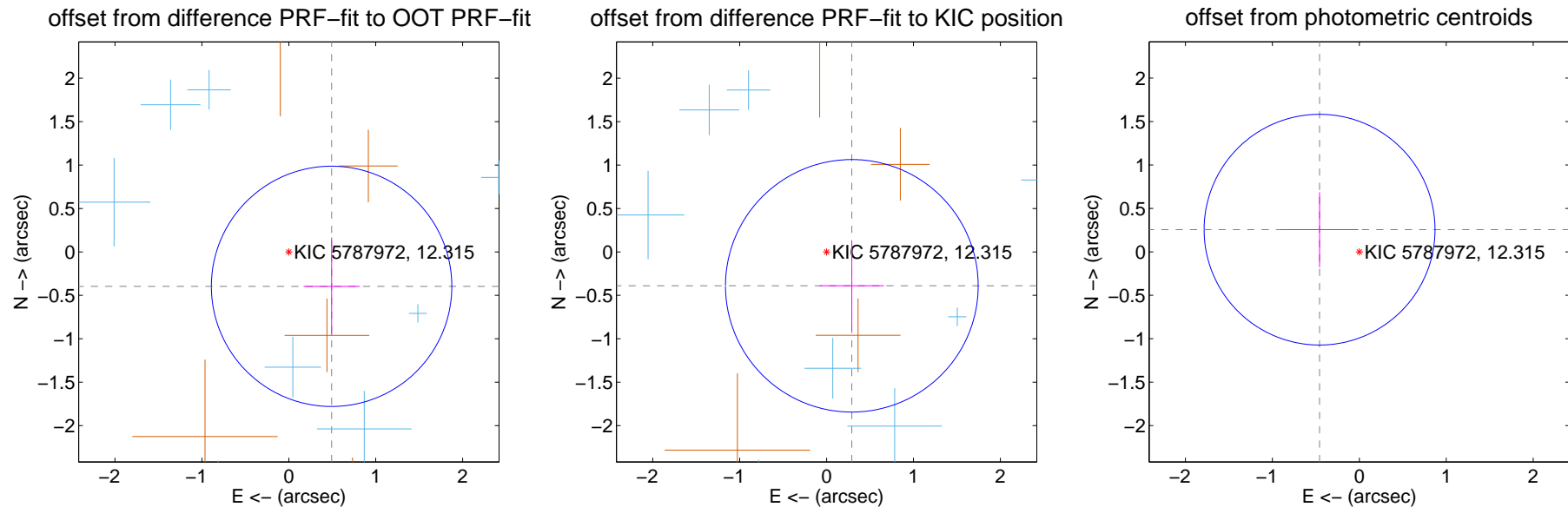
DV Centroid Data

Supplemental centroid analysis for 005787972-09. Kepler magnitude: 12.31. Transit SNR 8.59

There are 8 quarters with good PRF difference image offsets

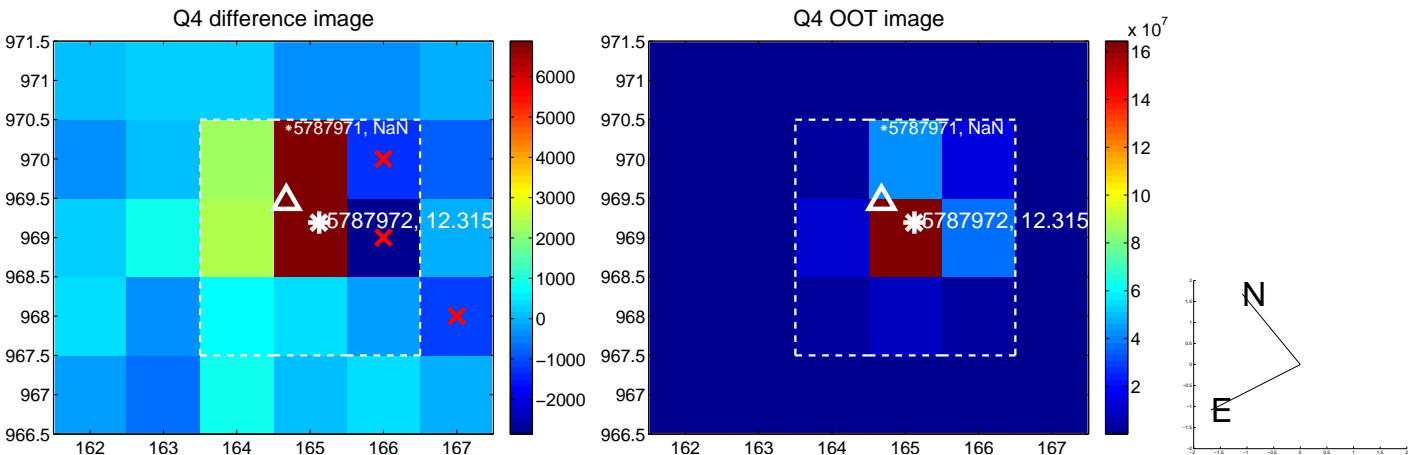
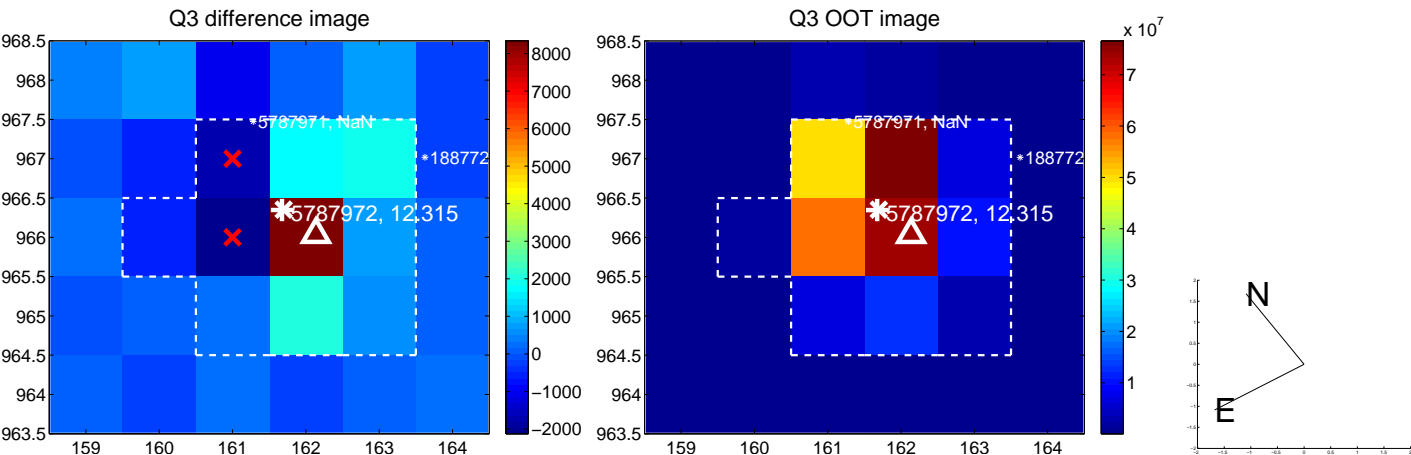
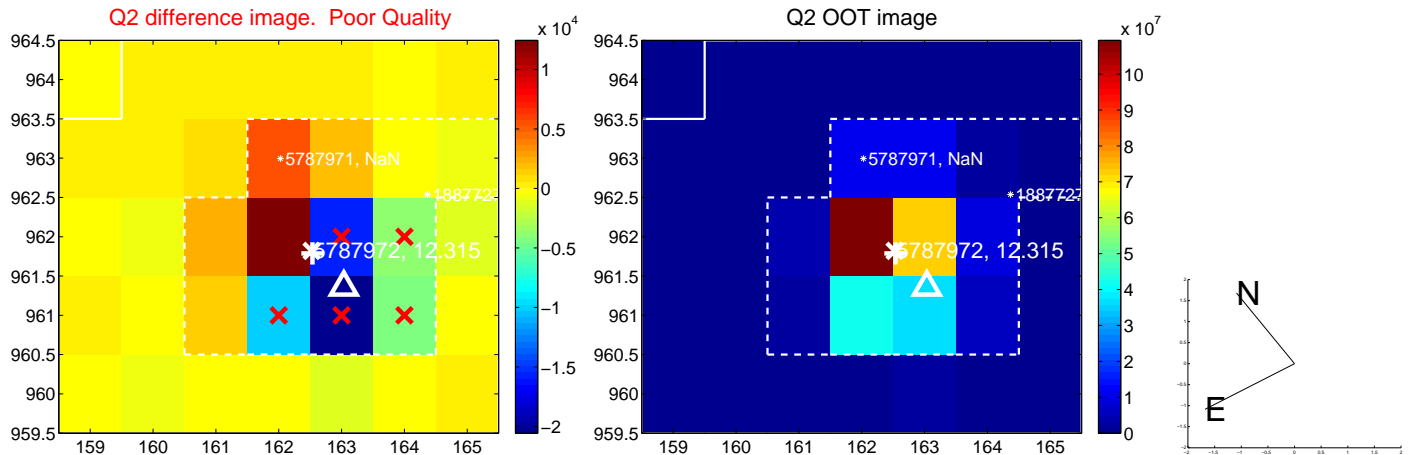
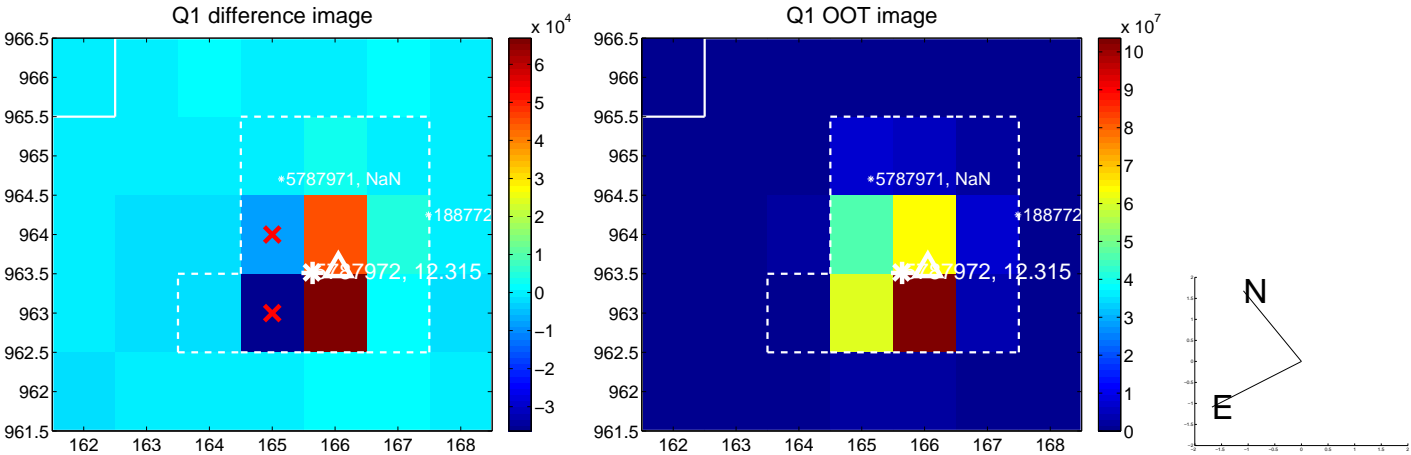
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.632 ± 0.461	1.37	-0.492 ± 0.322	-0.396 ± 0.563
PRF-fit source offset from KIC position	0.487 ± 0.485	1.00	-0.291 ± 0.369	-0.390 ± 0.518
photometric centroid source offset	0.52 ± 0.44	1.18	0.46 ± 0.45	0.26 ± 0.43

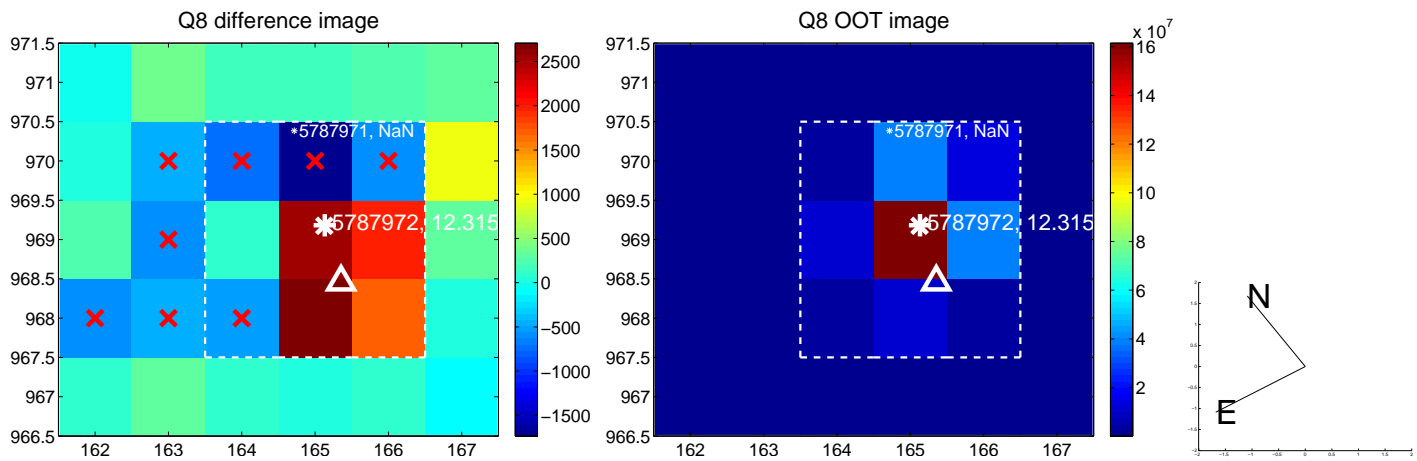
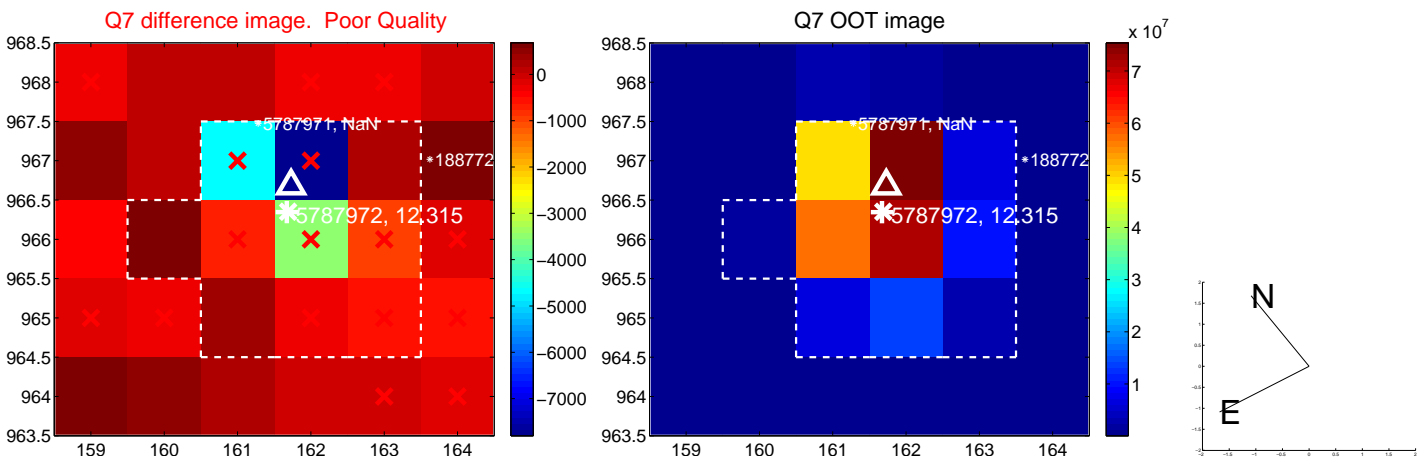
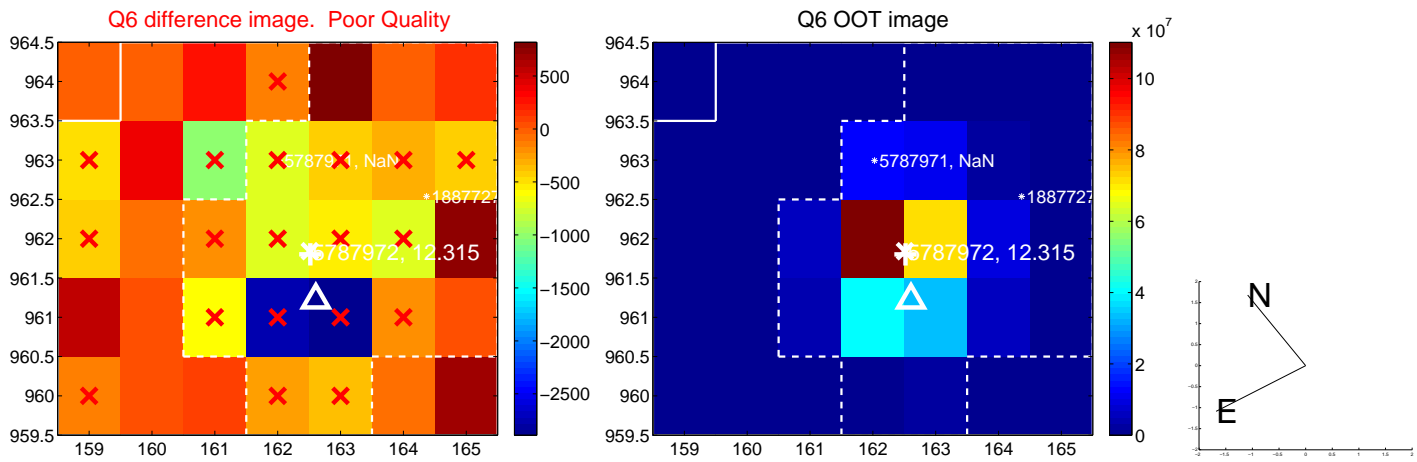
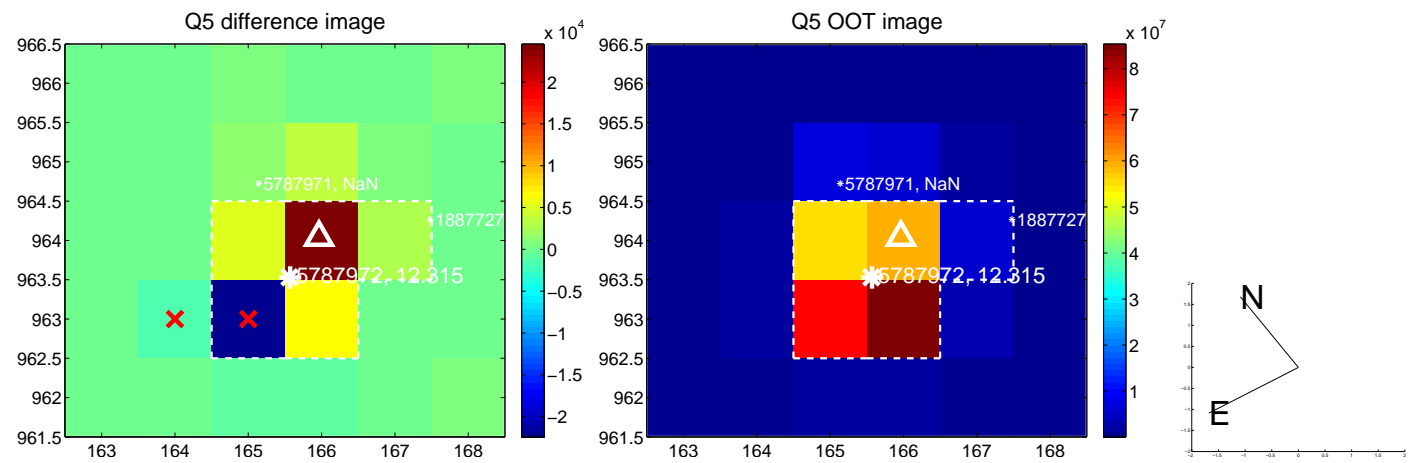


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

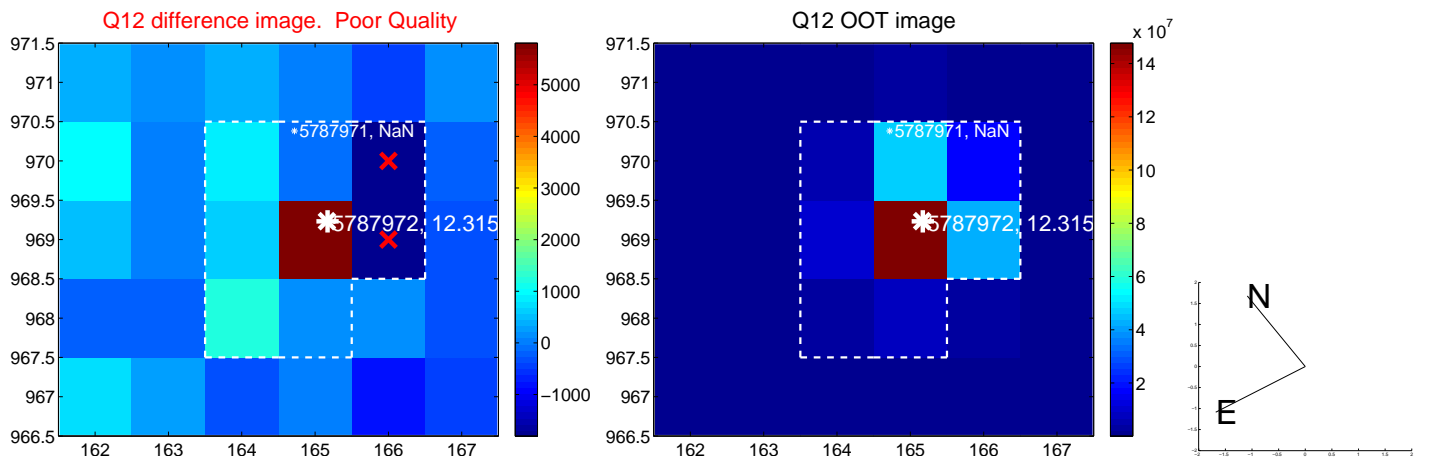
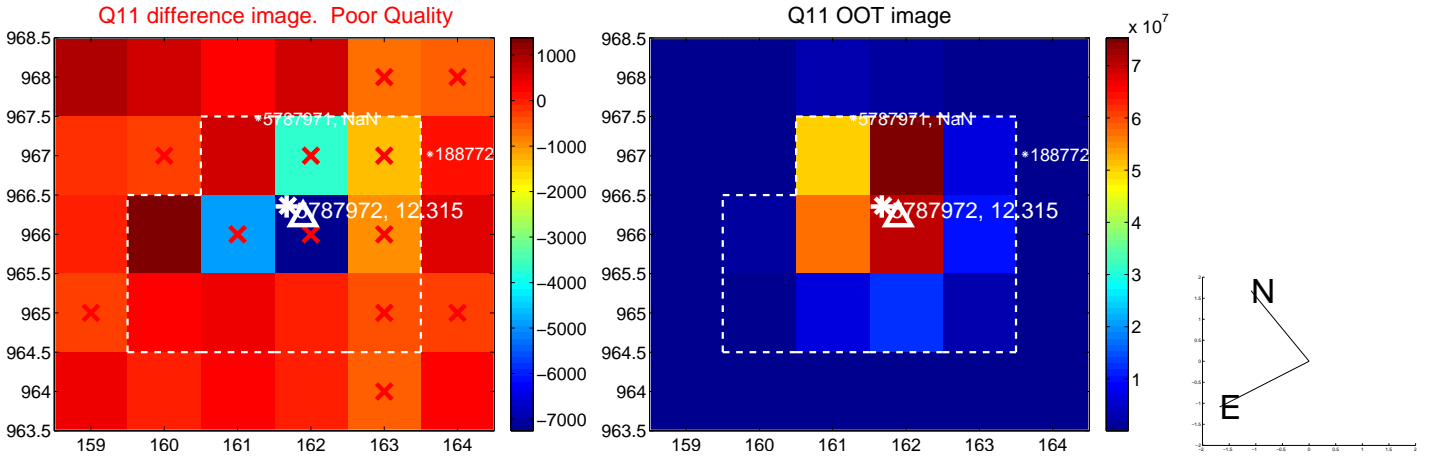
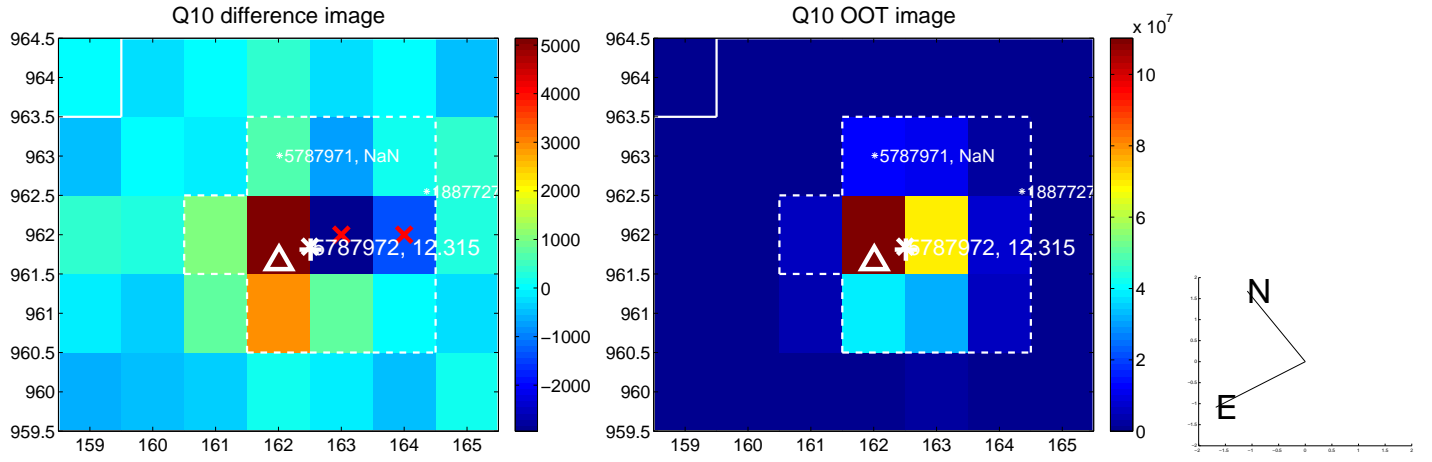
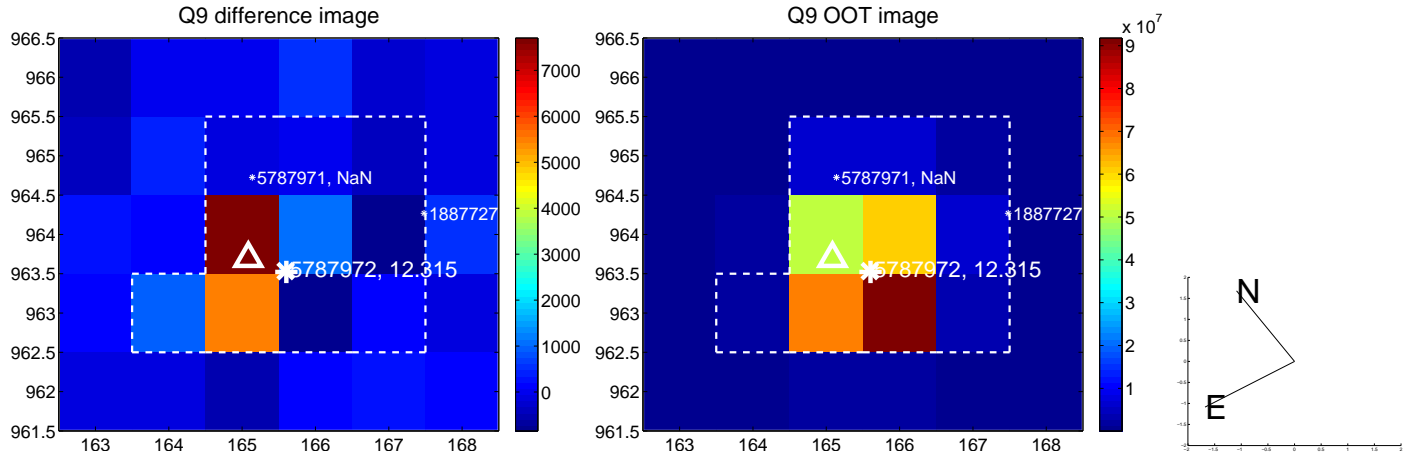
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



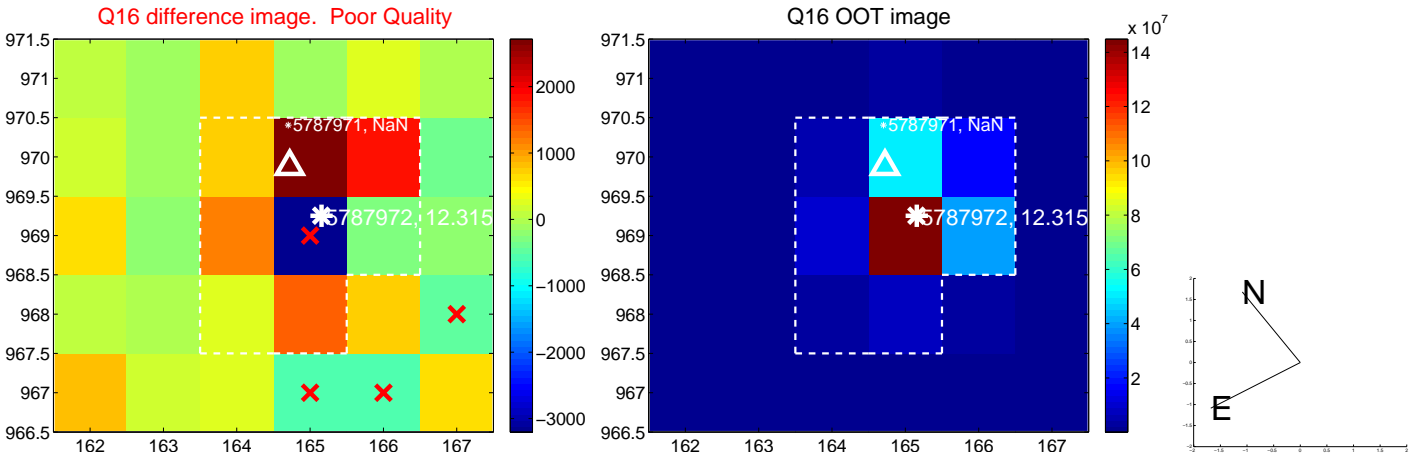
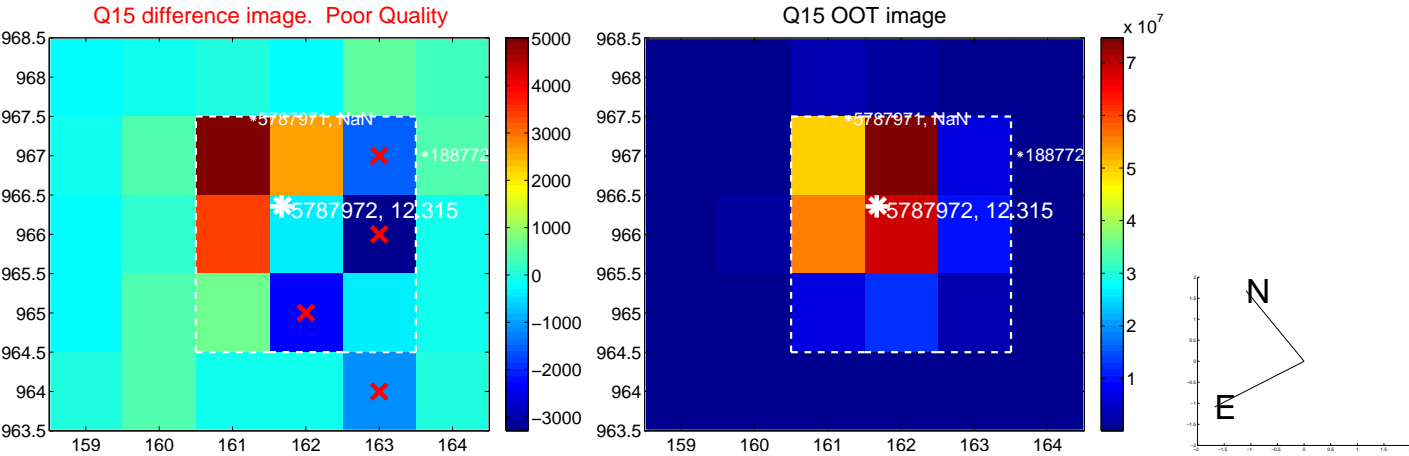
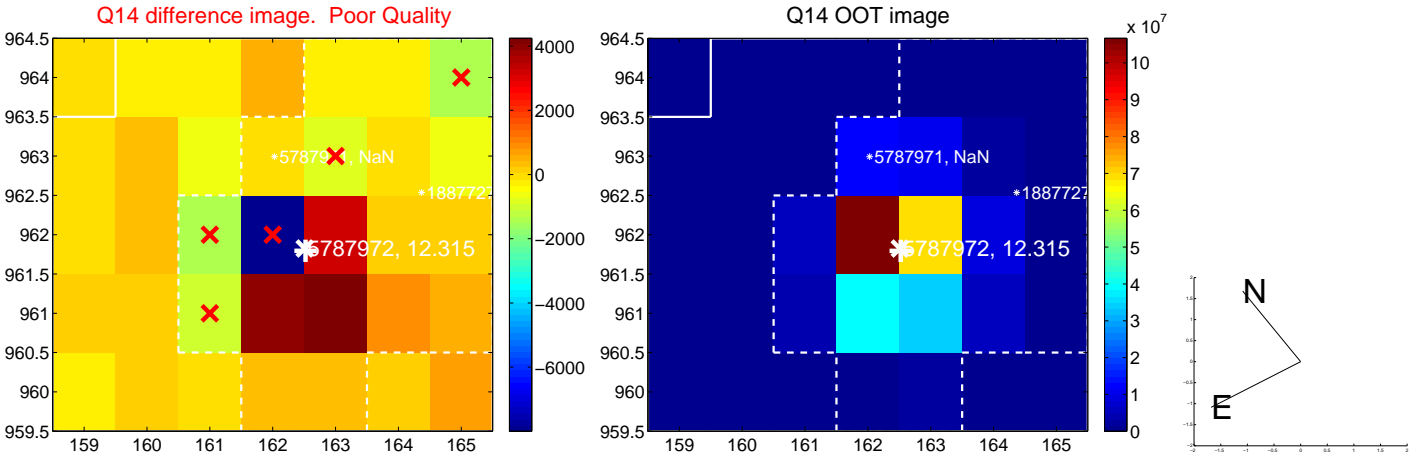
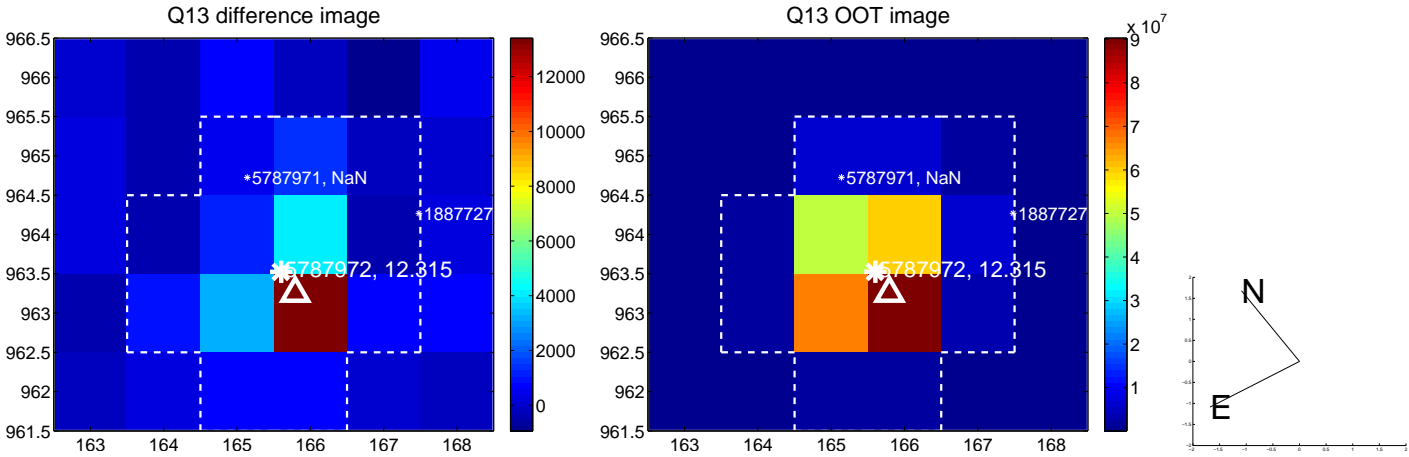
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



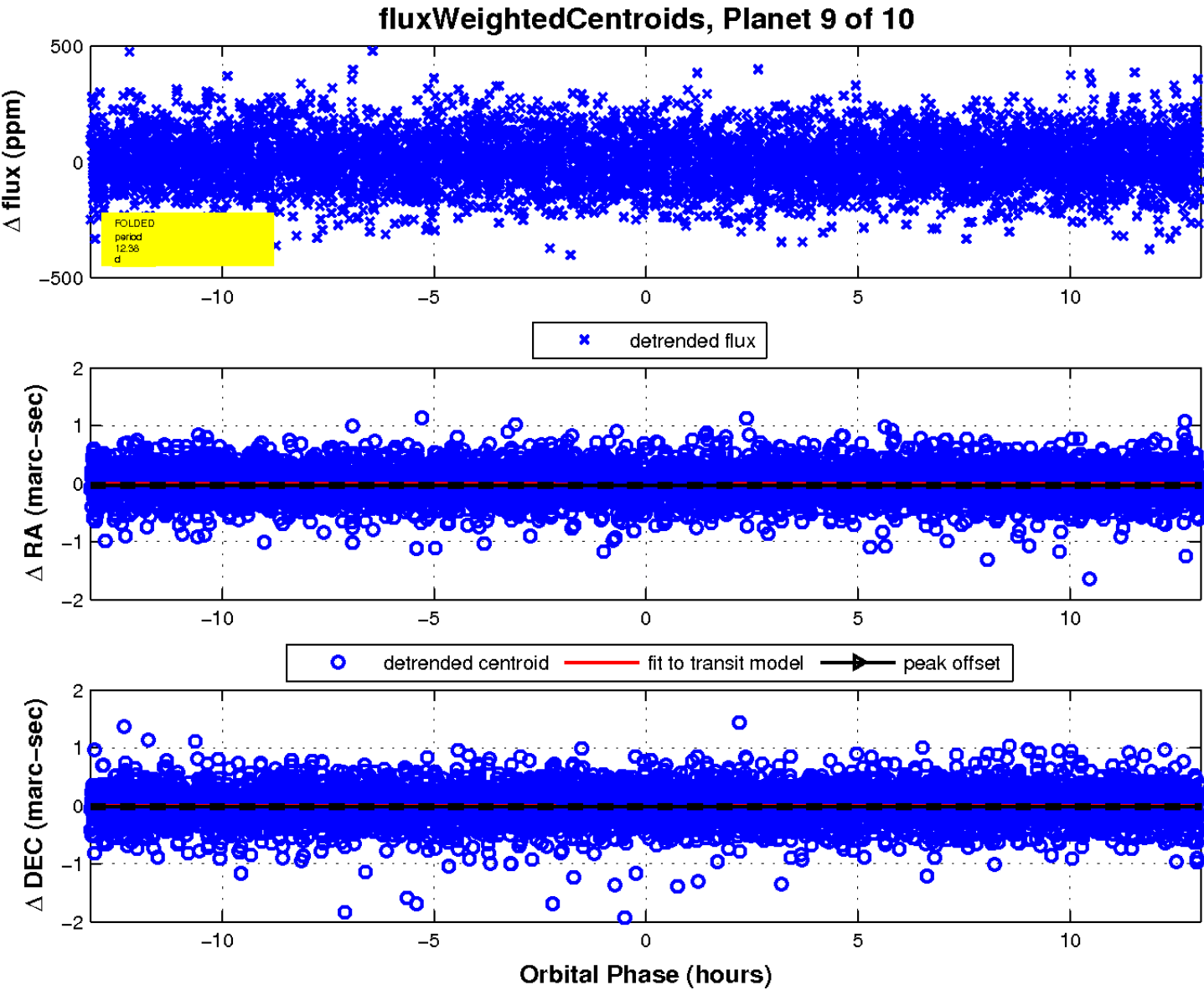
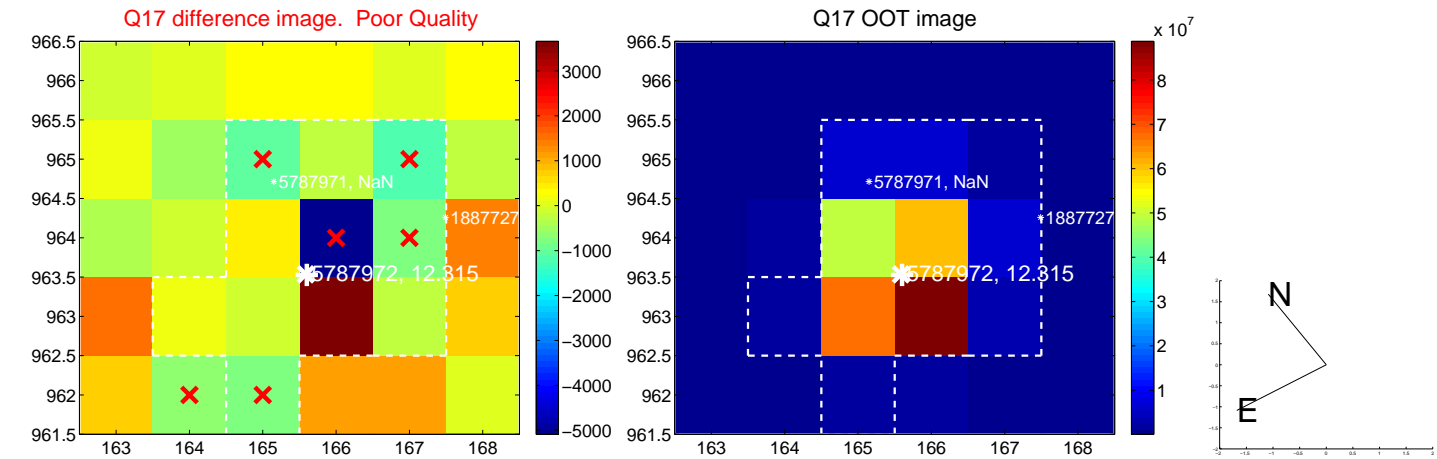
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

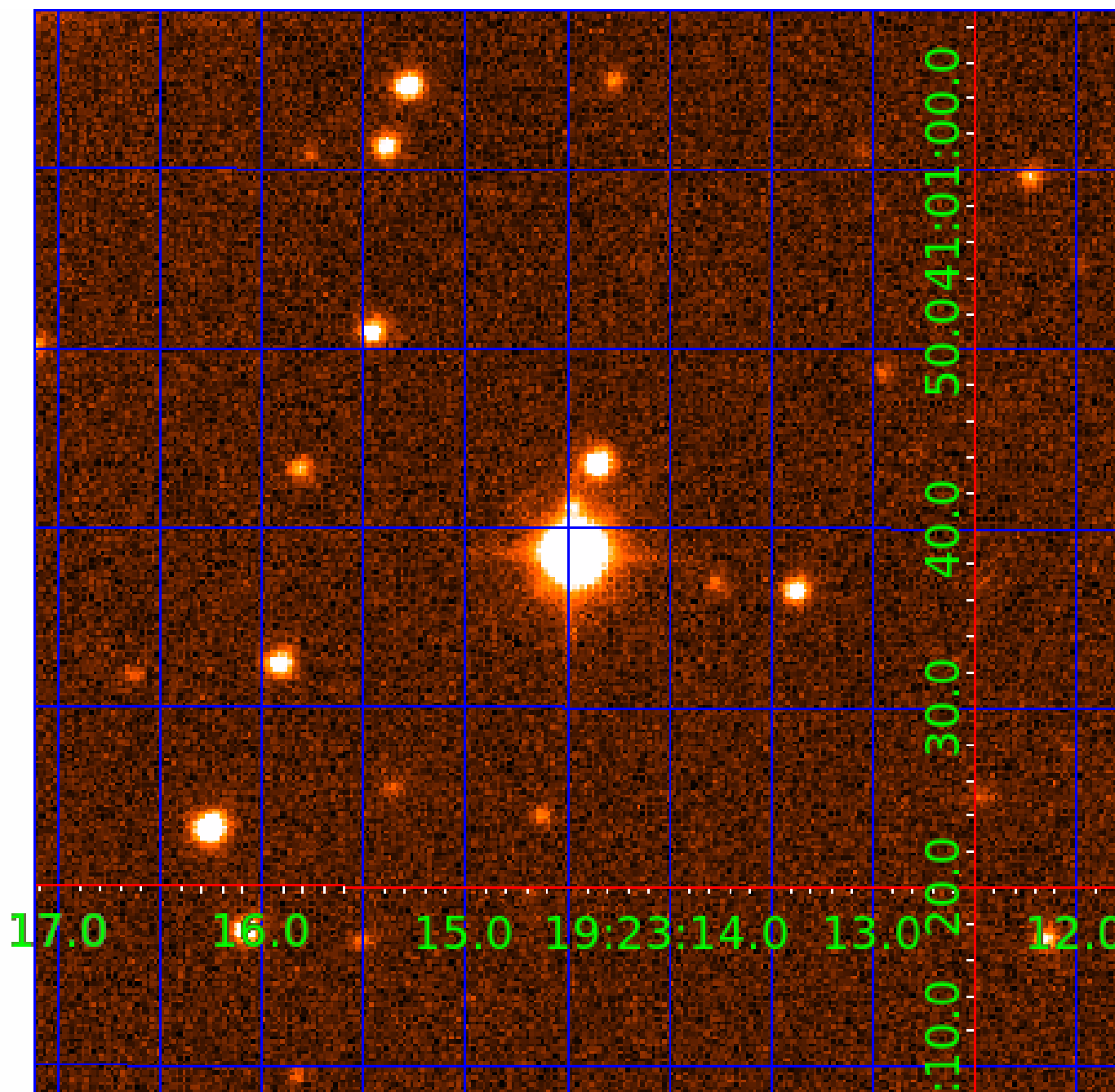


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
005787972-01	OBS	No	1.099151	132.692479	3.2	7.513	8.9	2.8	1.63	6726	0.30	9375.91
005787972-02	OBS	No	57.208769	180.383070	159.0	3.963	12.3	10.1	1.63	6726	2.25	48.25
005787972-03	OBS	No	252.860410	272.632577	232.3	7.104	11.0	12.5	1.63	6726	2.71	6.65
005787972-04	OBS	No	46.490157	147.345820	197.2	1.772	11.2	10.1	1.63	6726	2.32	63.62
005787972-05	OBS	No	32.158912	152.995453	108.7	4.803	9.1	8.3	1.63	6726	1.79	104.00
005787972-06	OBS	No	46.187137	134.771064	173.7	3.448	9.4	10.5	1.63	6726	2.48	64.18
005787972-07	OBS	No	39.098565	153.376700	139.5	3.412	9.6	9.4	1.63	6726	2.14	80.14
005787972-08	OBS	No	25.787015	154.054388	105.4	4.687	8.7	9.3	1.63	6726	1.91	139.60
005787972-09	OBS	No	12.382392	142.368262	70.6	4.369	9.5	8.6	1.63	6726	1.56	371.26
005787972-10	OBS	No	41.093899	144.818289	211.9	2.500	9.1	-1.0	1.63	6726	2.40	75.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005787972-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
005787972-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005787972-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
005787972-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005787972-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNRESOLVED_OFFSET
005787972-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005787972-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_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.

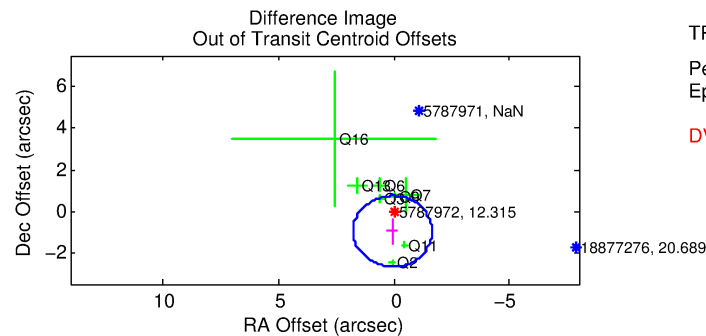
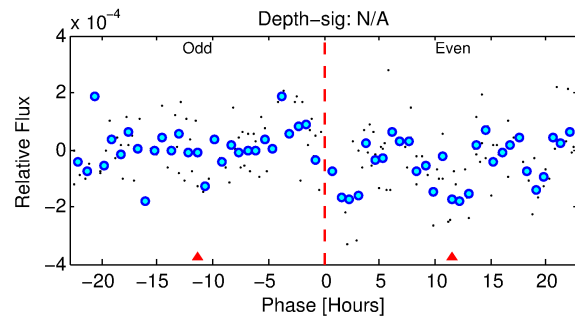
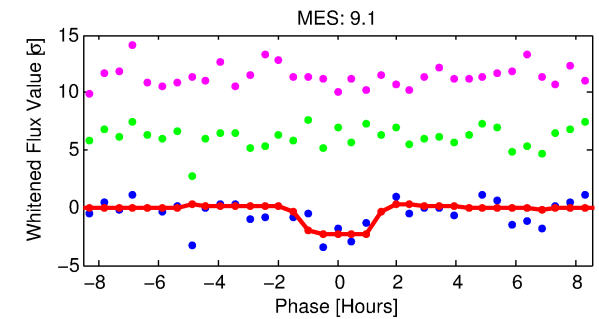
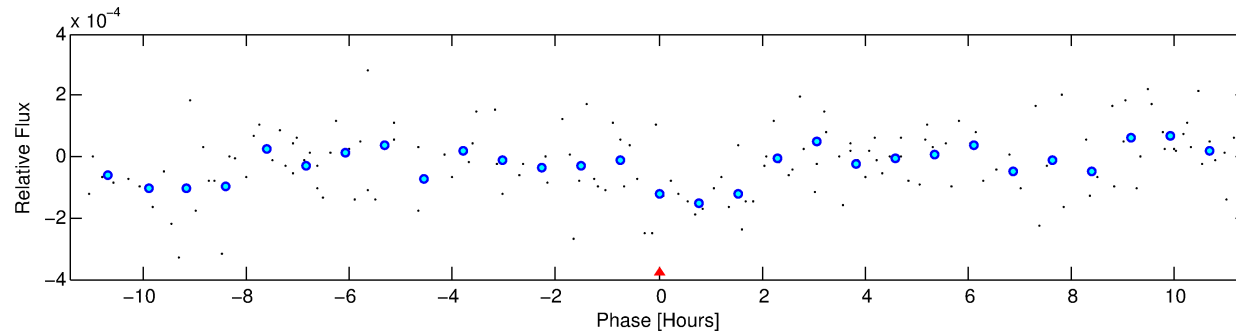
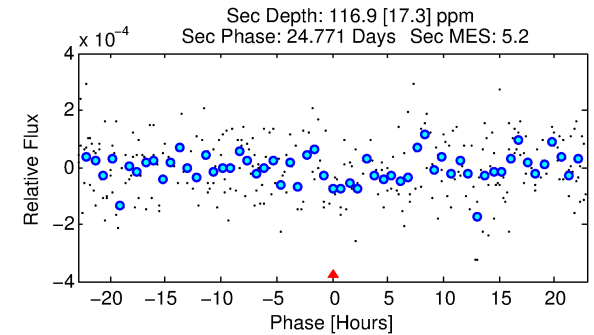
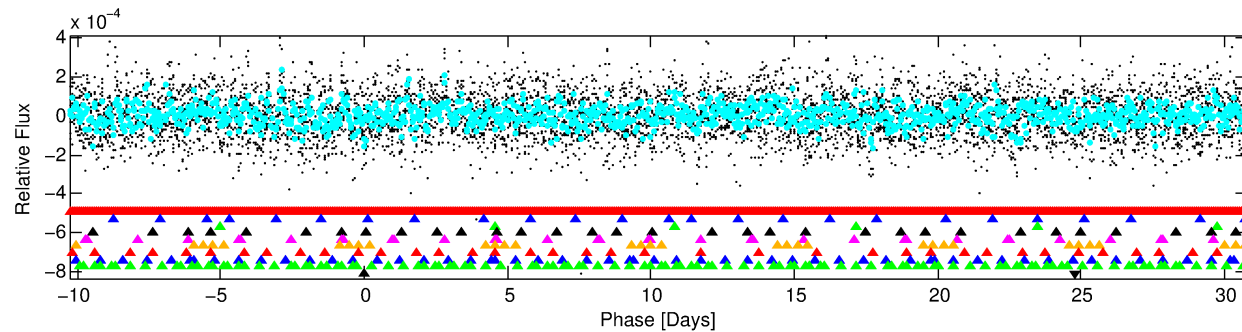
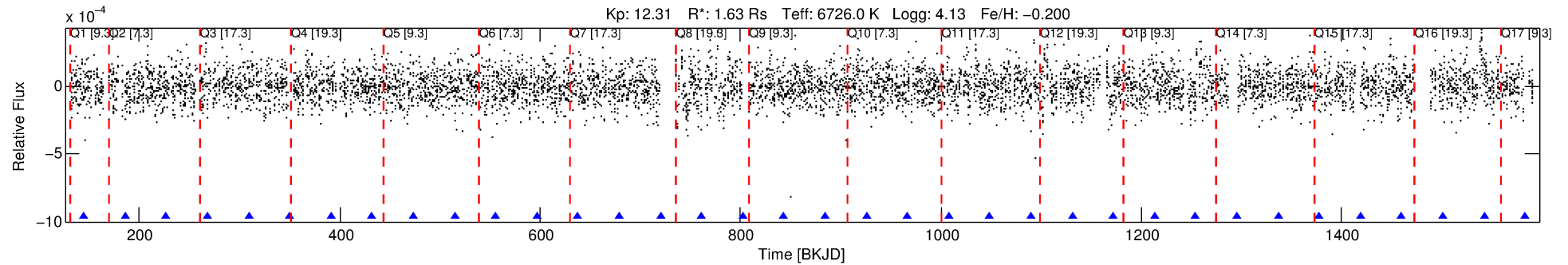
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005787972-10

No Significant Match Found

DV One-Page Summary

KIC: 5787972 Candidate: 10 of 10 Period: 41.094 d



TPS TCE Results:

Period = 41.09390 d
Epoch = 144.8183 BKJD

DV fit results are unavailable

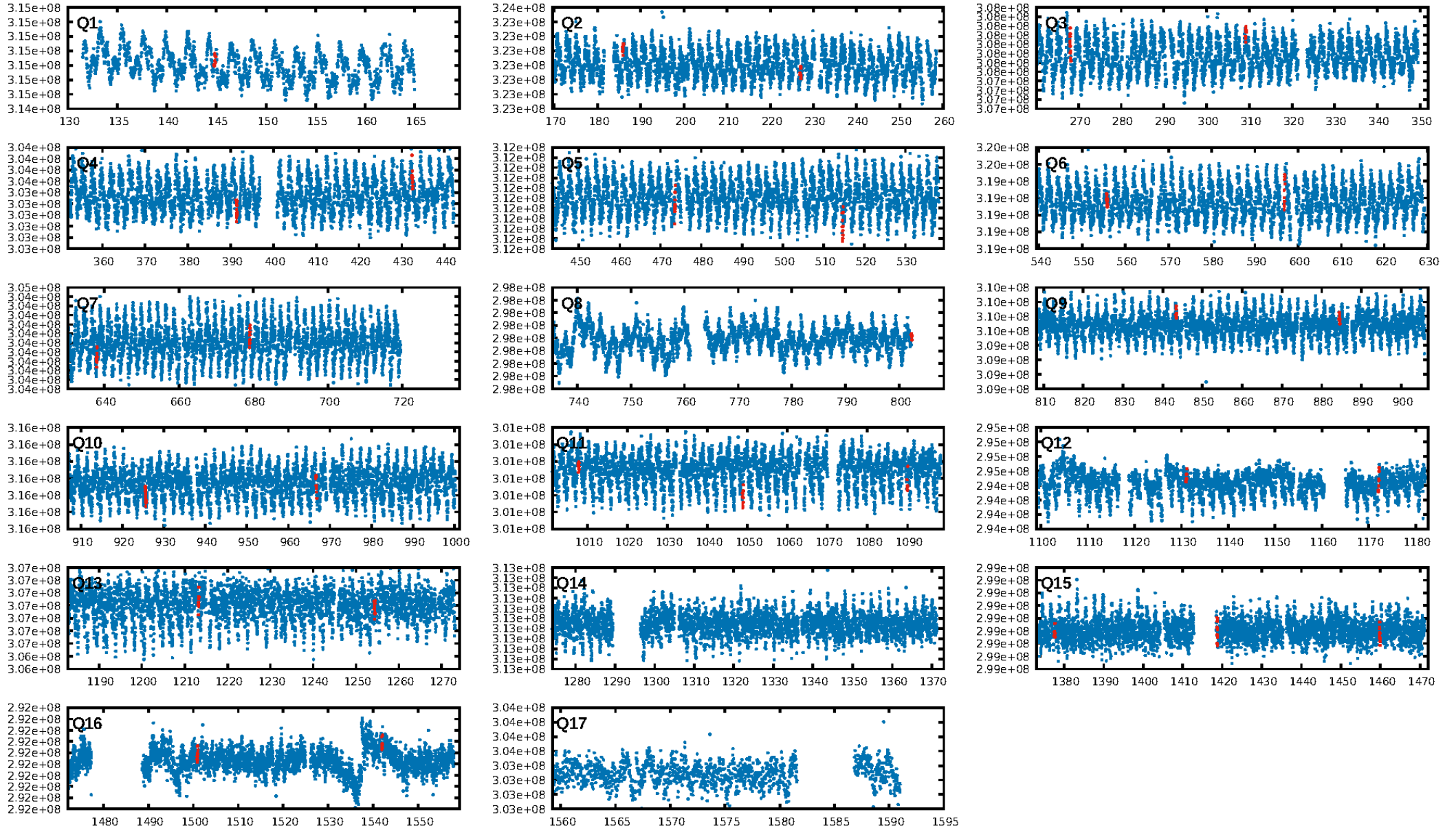
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [11.32σ]
LongPeriod-sig: 100.0% [28.70σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 0.5984
Centroid-sig: 10.2%
Centroid-so: 0.723 arcsec [1.24σ]
OotOffset-rm: 0.968 arcsec [1.70σ]
KicOffset-rm: 0.993 arcsec [1.70σ]
OotOffset-st: 2/3/1/2 [8]
KicOffset-st: 2/3/1/2 [8]
DiffImageQuality-fgm: 0.50 [4/8]
DiffImageOverlap-fno: 0.07 [1/14]

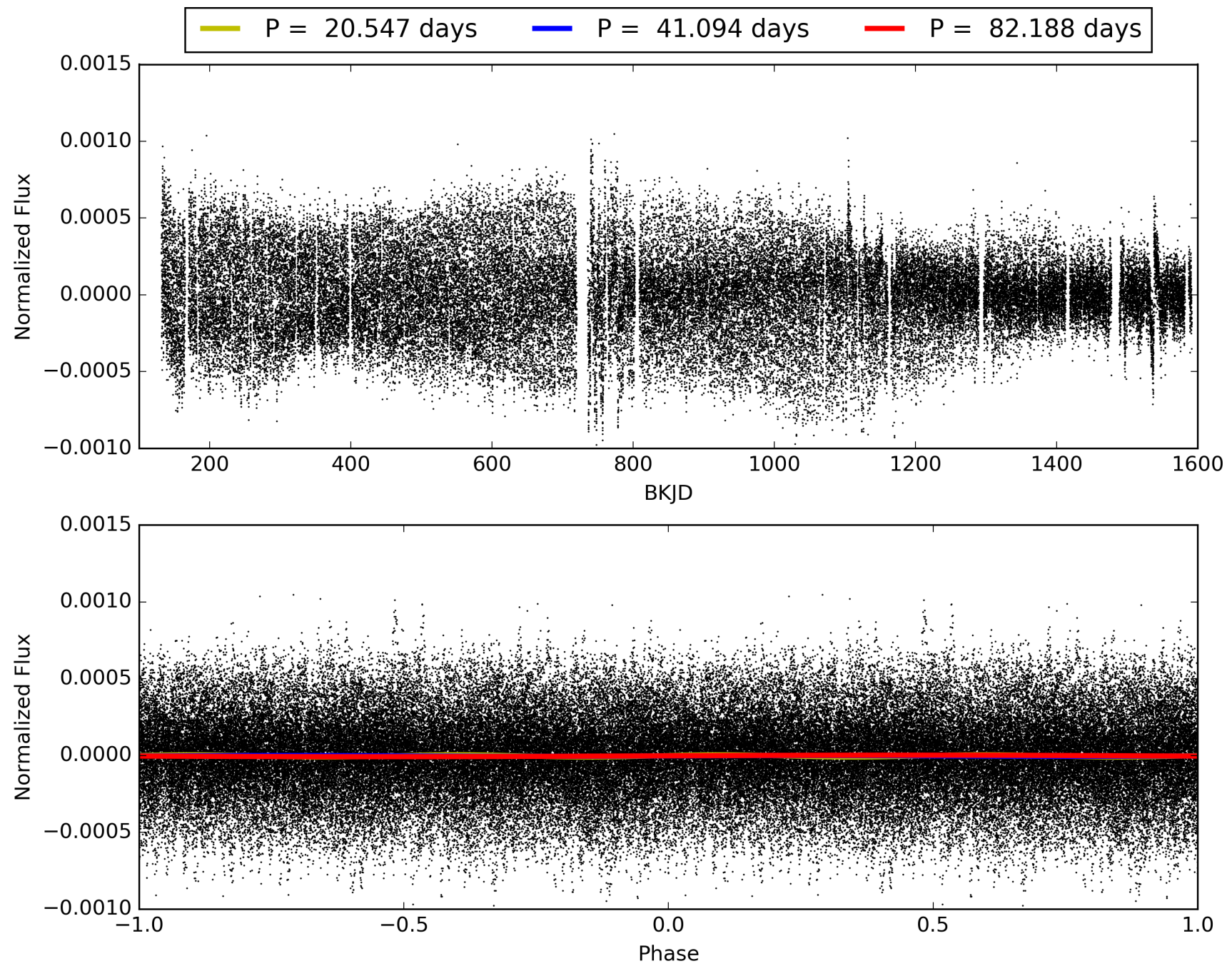
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:25:23 Z

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

TCE 005787972-10, PDC Light Curves

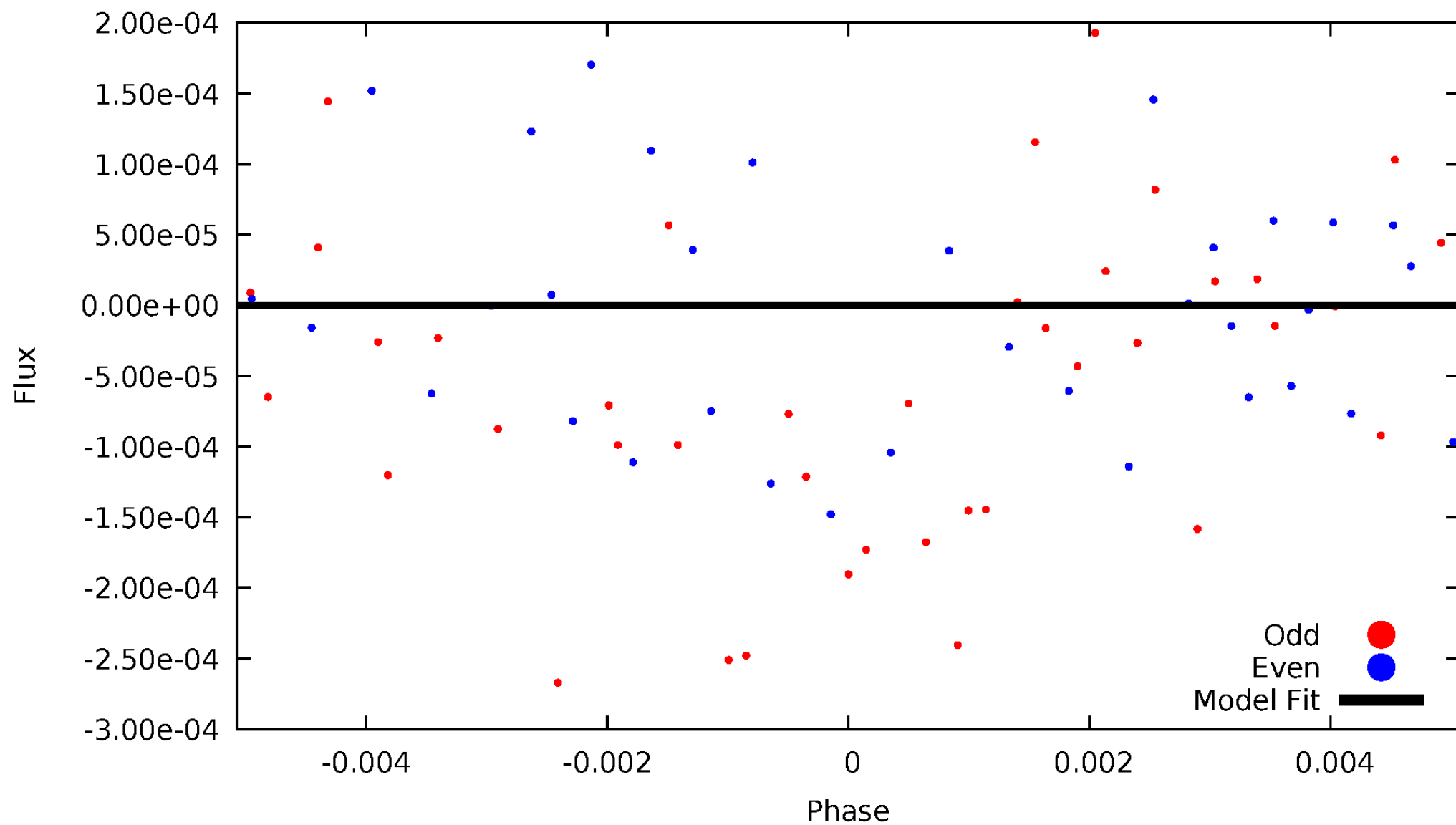


TCE 005787972-10



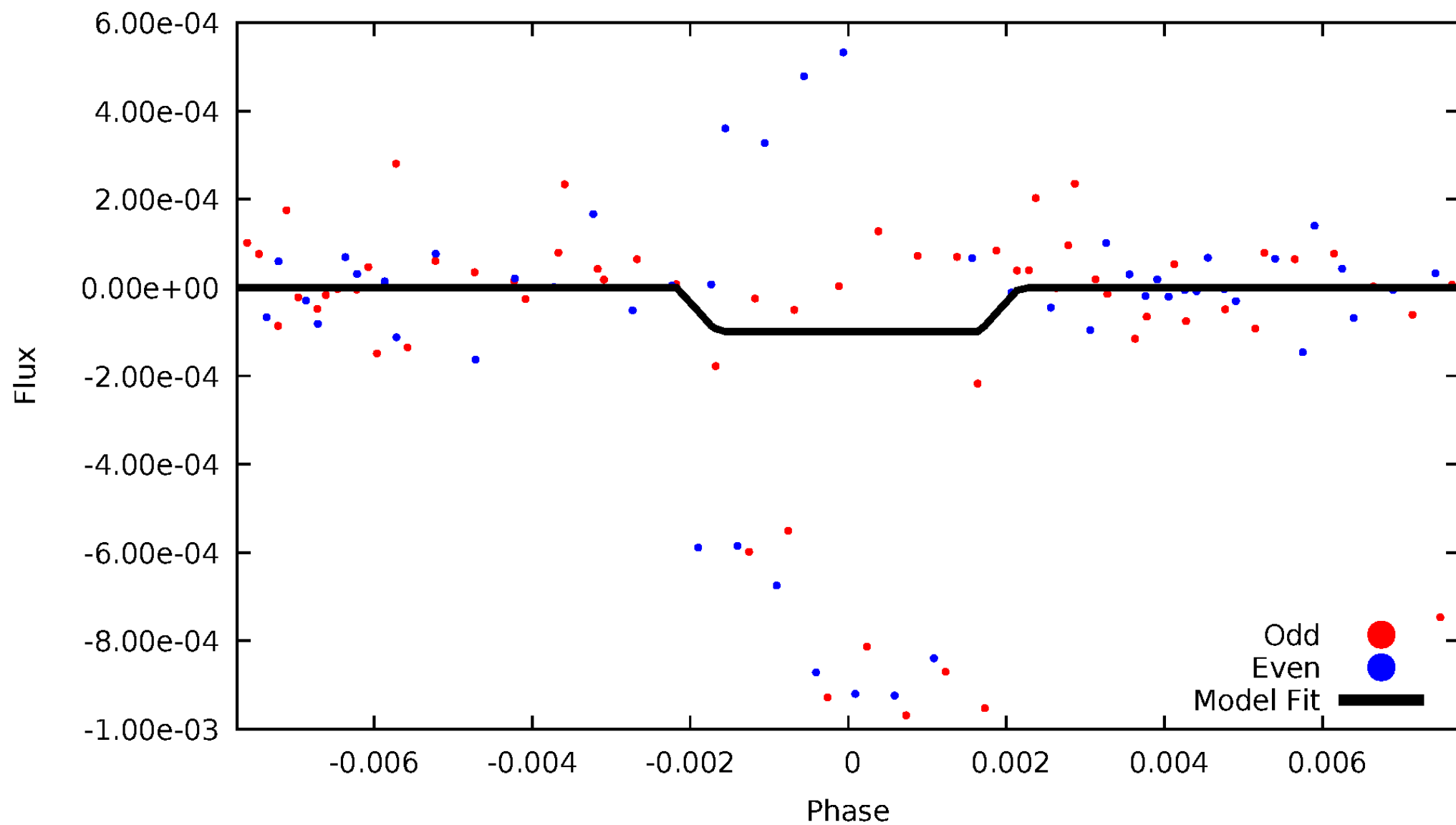
DV Odd/Even

TCE 005787972-10



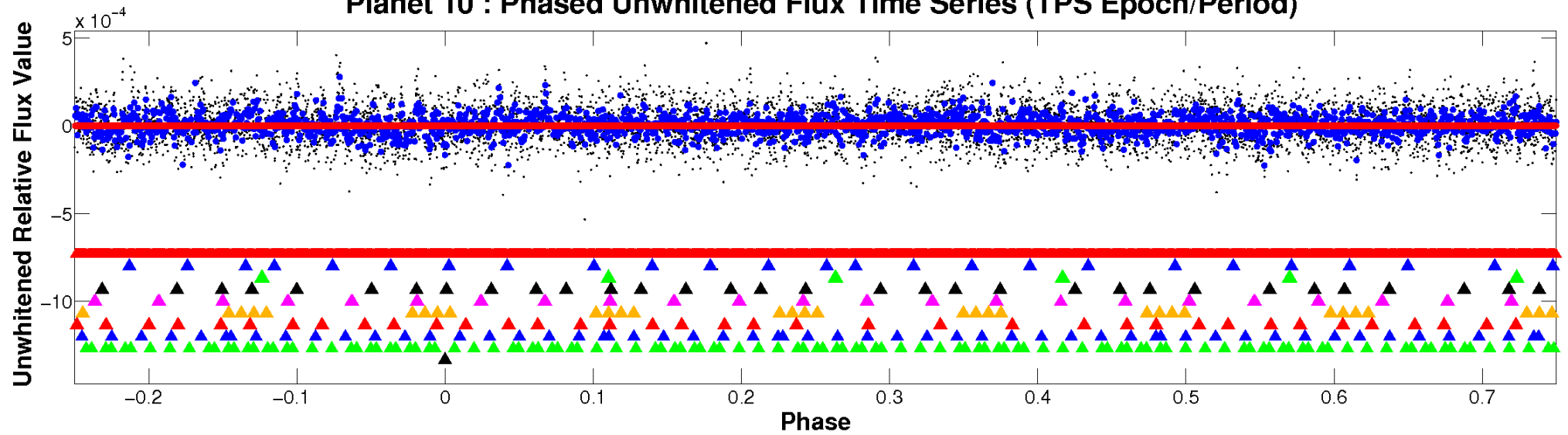
ALT Odd/Even

TCE 005787972-10

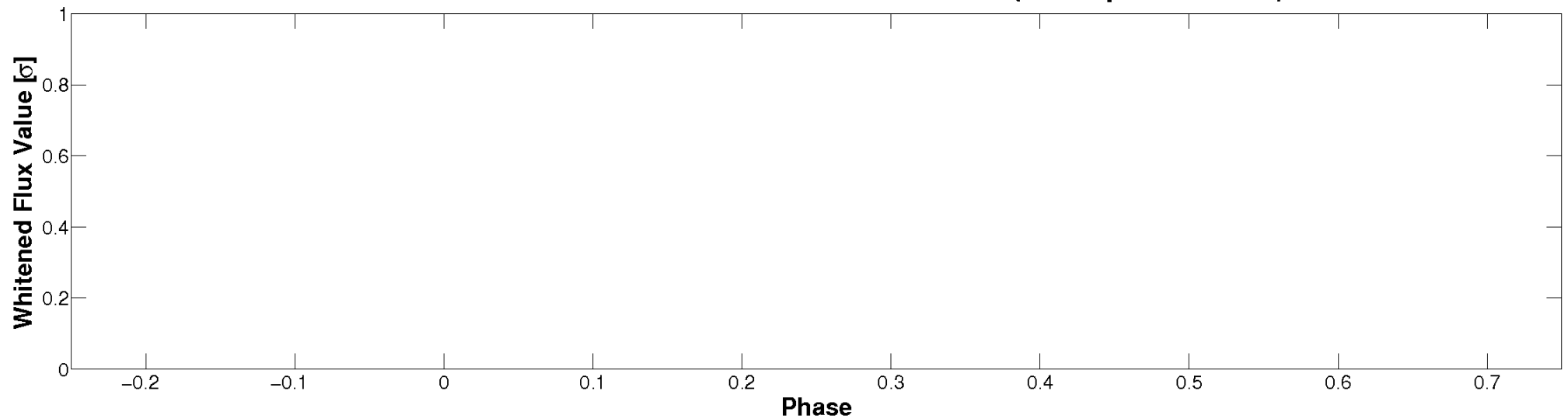


Non-Whitened Vs. Whitened Light Curve

Planet 10 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

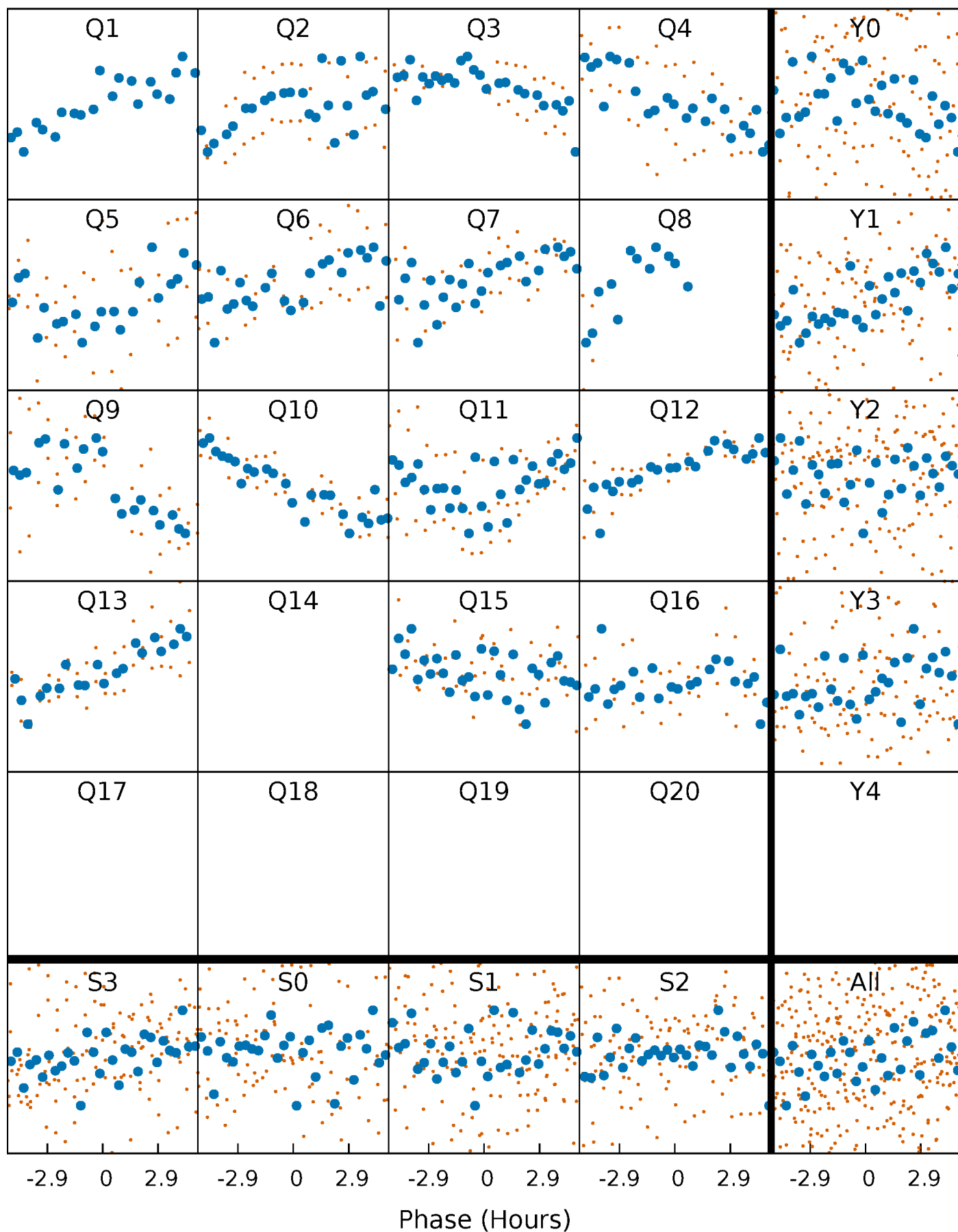


Planet 10 : Phased Whitened Flux Time Series (TPS Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 005787972-10 P= 41.093899 Days $T_0=144.818289$ (BKJD)



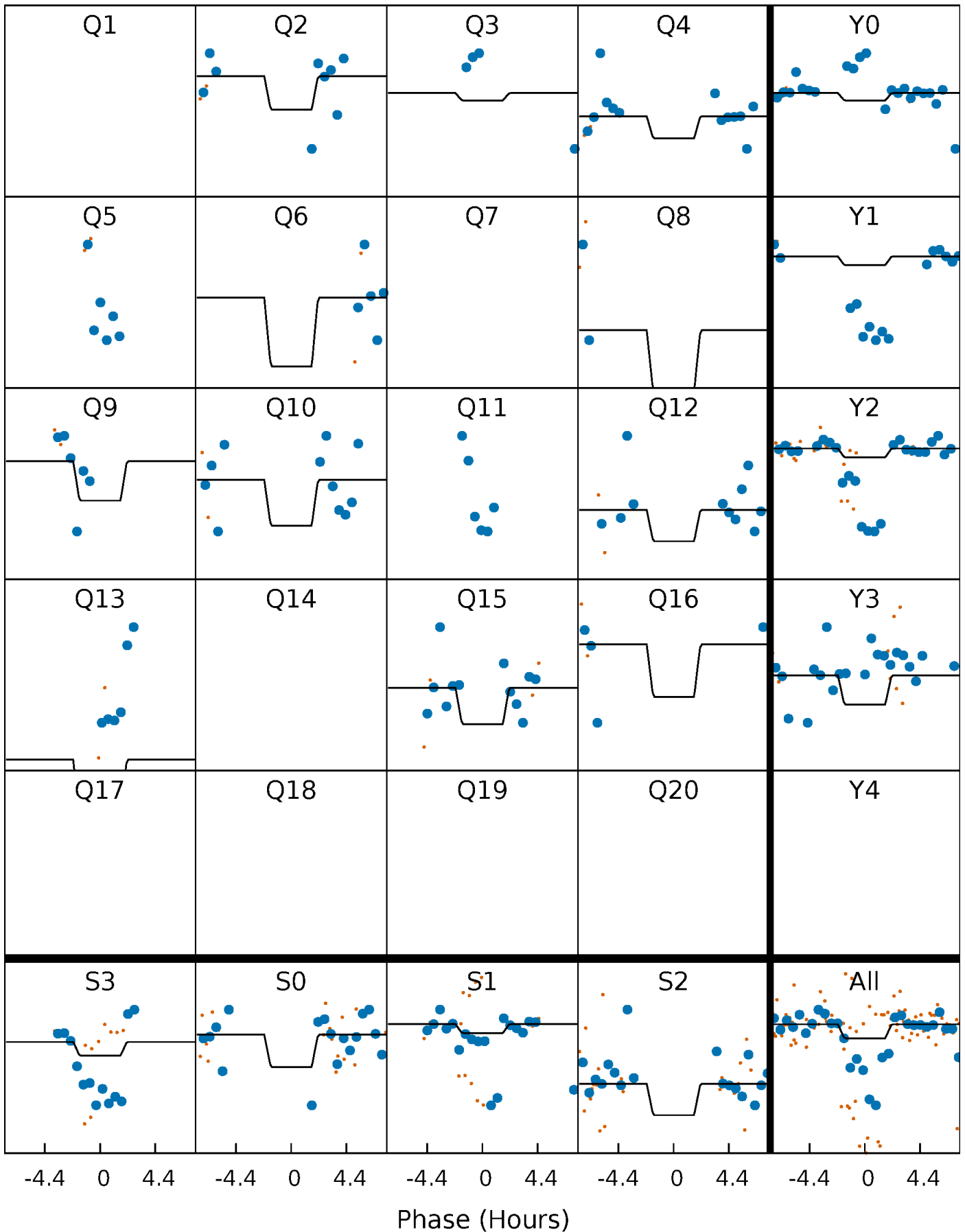
DV Quarter-Phased Transit Curves

TCE 005787972-10 $P = 41.093899$ Days $T_0 = 144.818289$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

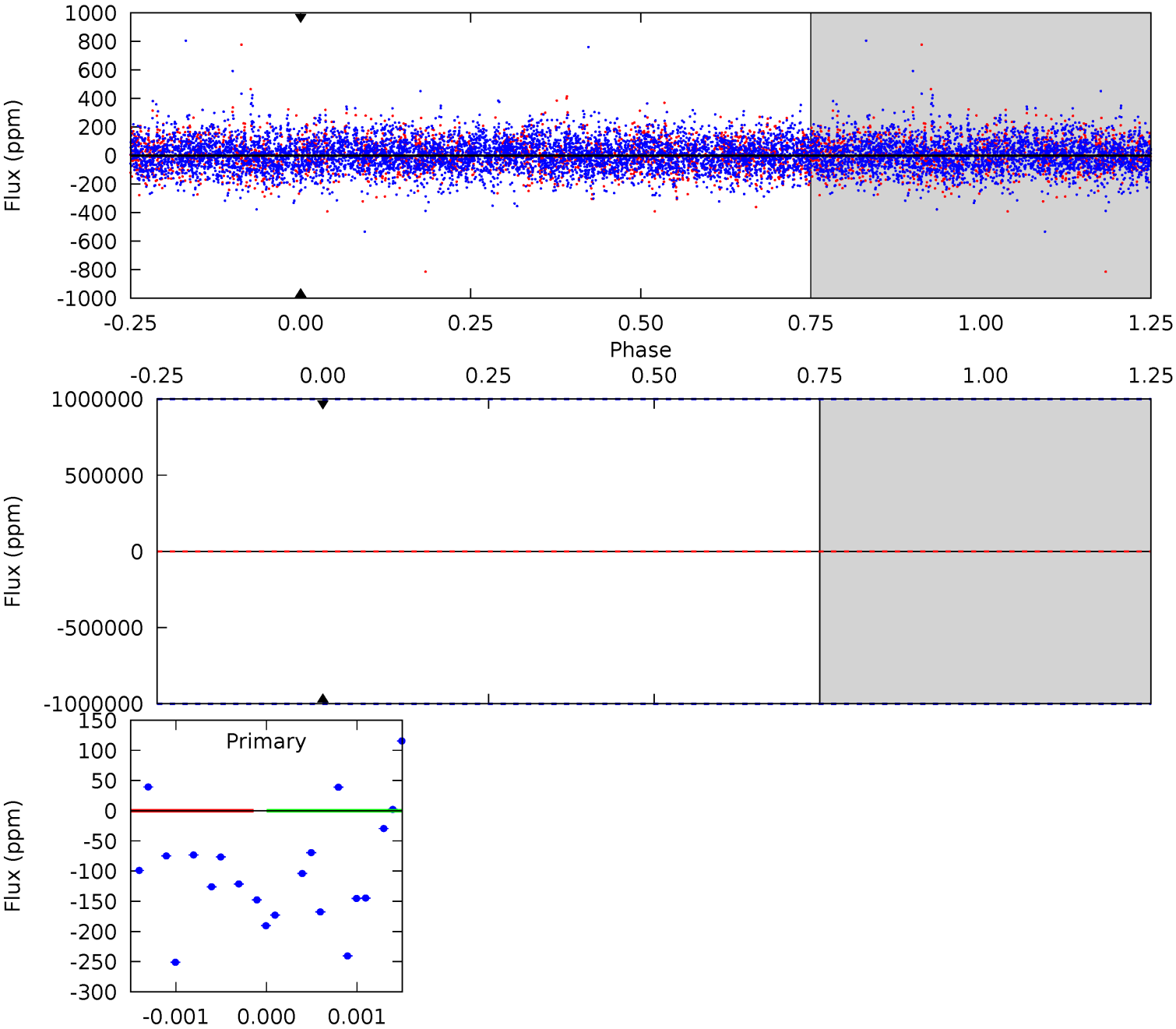
TCE 005787972-10 P= 41.093899 Days $T_0=144.788286$ (BKJD)



DV Model-Shift Uniqueness Test

005787972-10, P = 41.093899 Days, E = 103.724390 Days

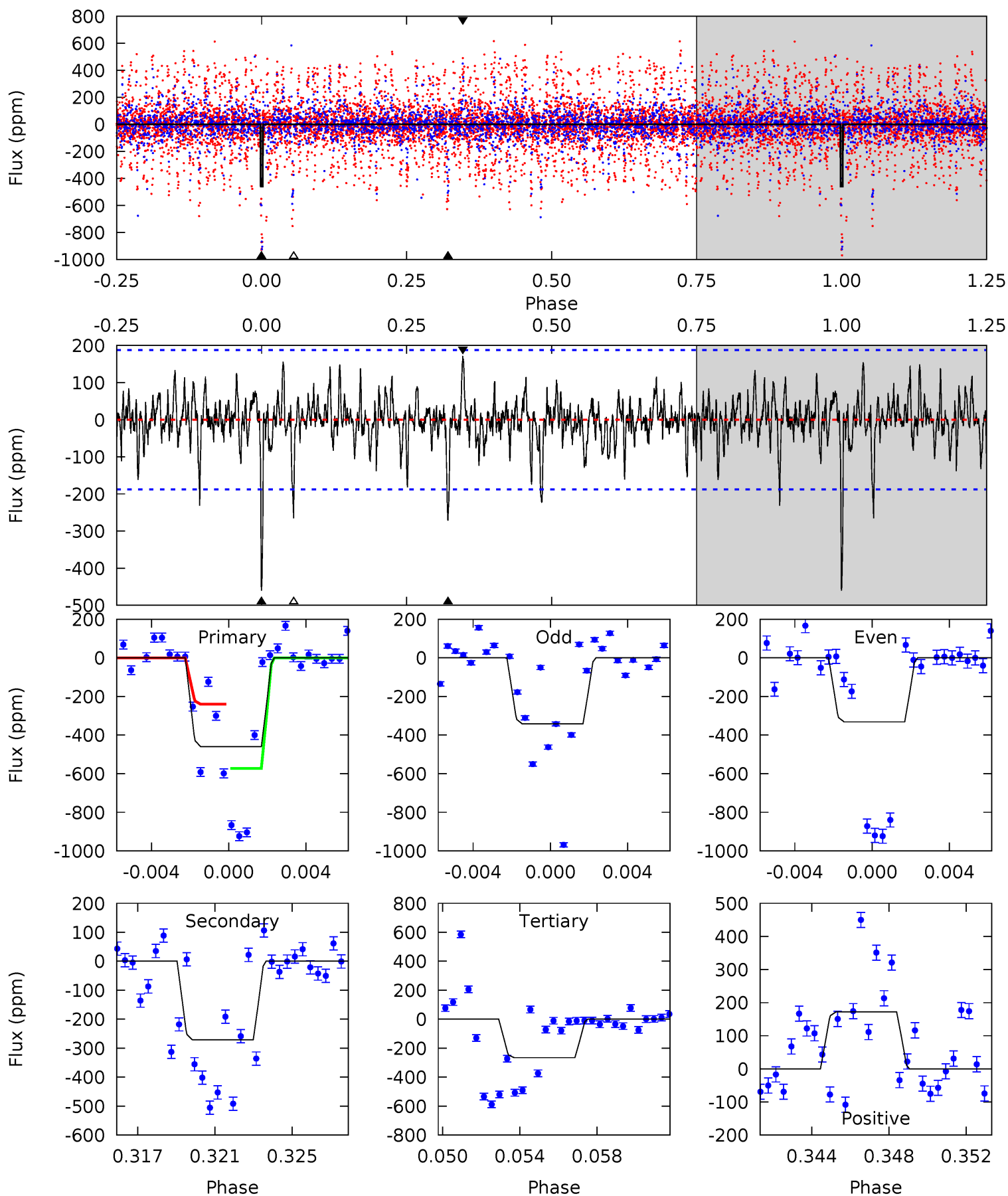
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005787972-10, P = 41.093899 Days, E = 103.694387 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	7.52	7.37	4.77	5.21	2.89	1.33	5.39	7.99	0.16	2.76	0.15	2.35	0.27	0



Stellar Parameters For KIC 005787972

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6726^{+70}_{-90}	$4.131^{+0.130}_{-0.130}$	$-0.200^{+0.150}_{-0.150}$	$1.634^{+0.312}_{-0.284}$	$1.328^{+0.098}_{-0.122}$	$0.428^{+0.262}_{-0.163}$
	+1%/-1%	+3%/-3%	+75%/-75%	+19%/-17%	+7%/-9%	+61%/-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 005787972-10 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$12.11^{+15.30}_{-8.34}$	1050^{+55}_{-48}	4189^{+37087}_{-33073}	162^{+56163}_{-34120}
Alt.	-271 ± 36	$12.57^{+13.57}_{-8.94}$	1046^{+56}_{-49}	3649^{+2363}_{-728}	60^{+645}_{-47}

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 $A_{obs} \gg 1.0$

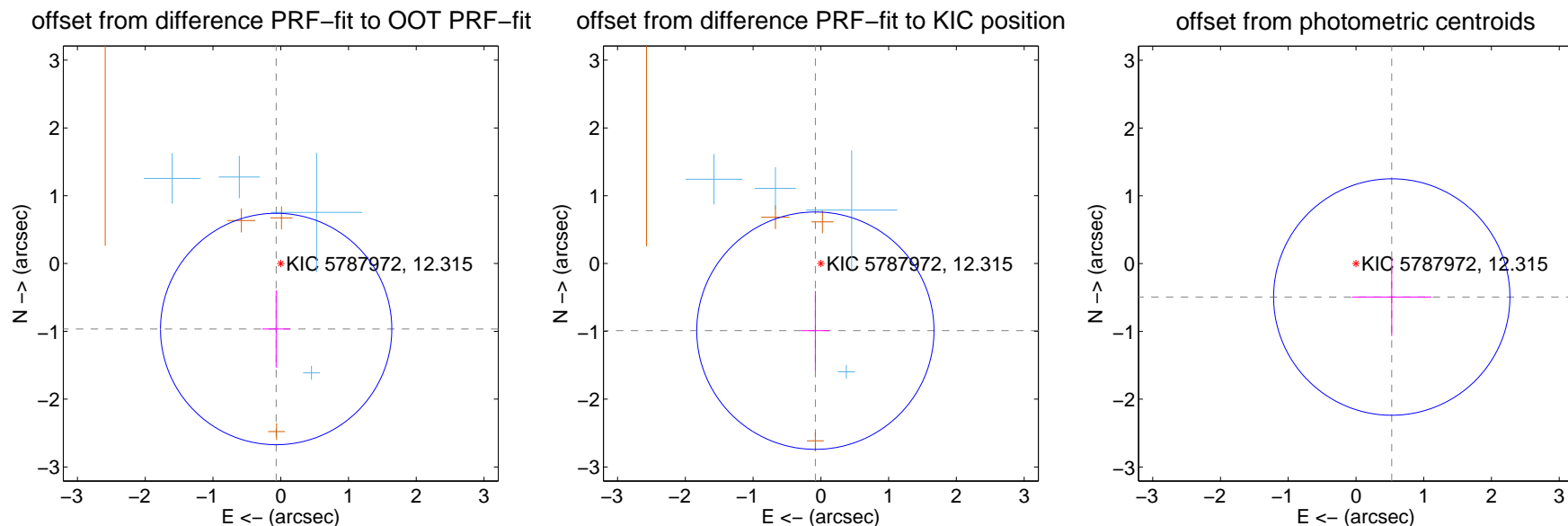
DV Centroid Data

Supplemental centroid analysis for 005787972-10. Kepler magnitude: 12.31. Transit SNR -1.00

There are 4 quarters with good PRF difference image offsets

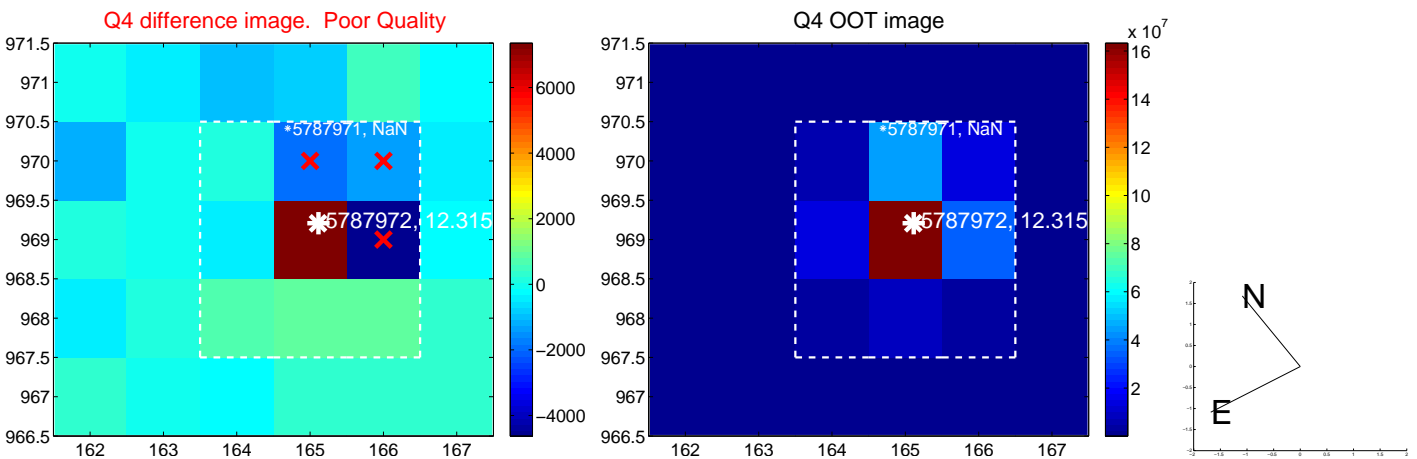
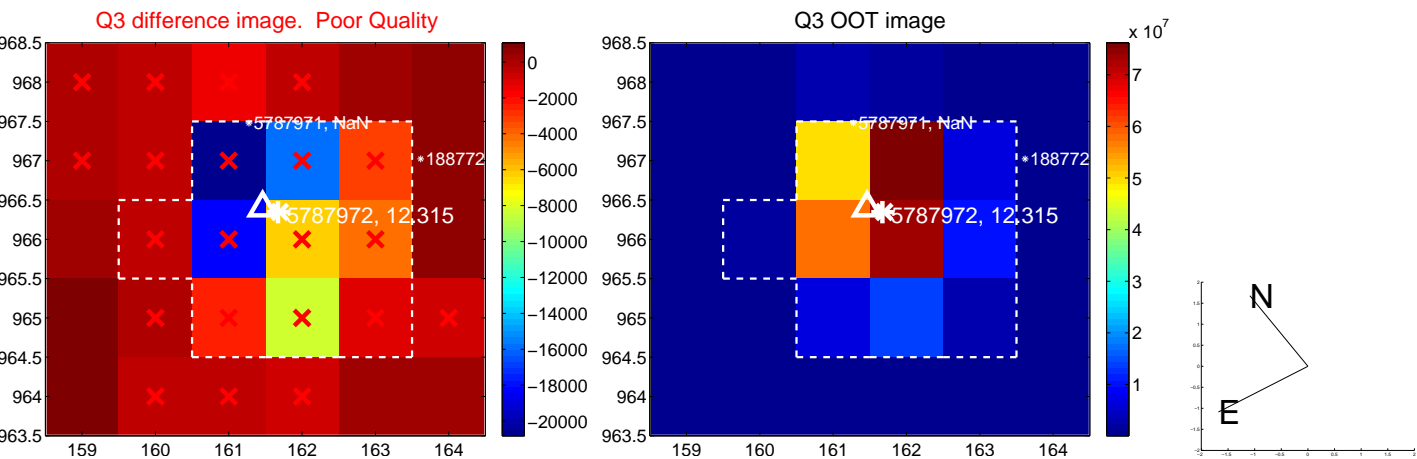
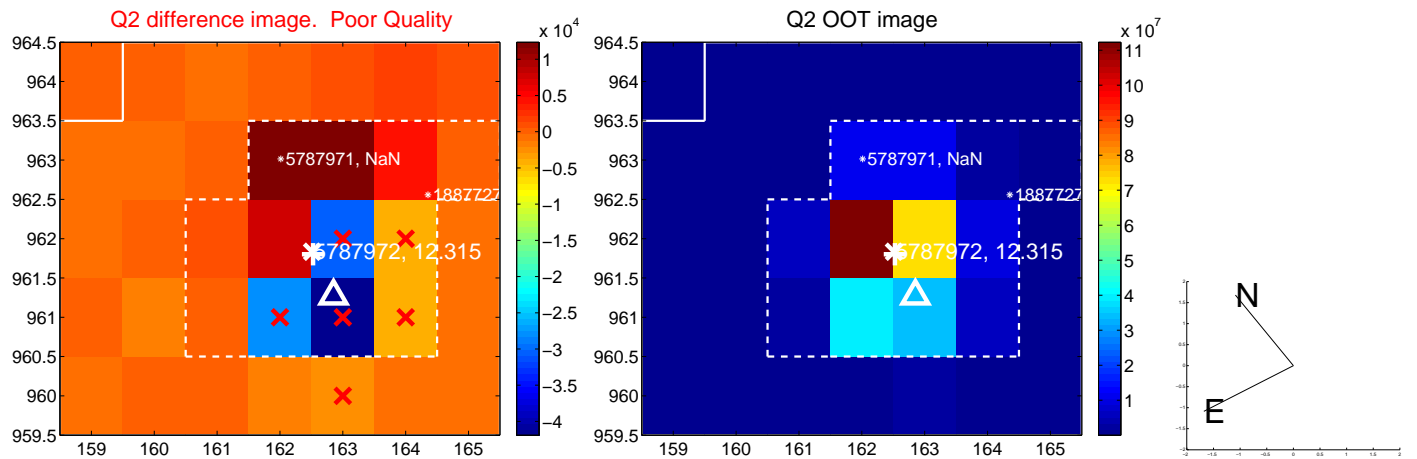
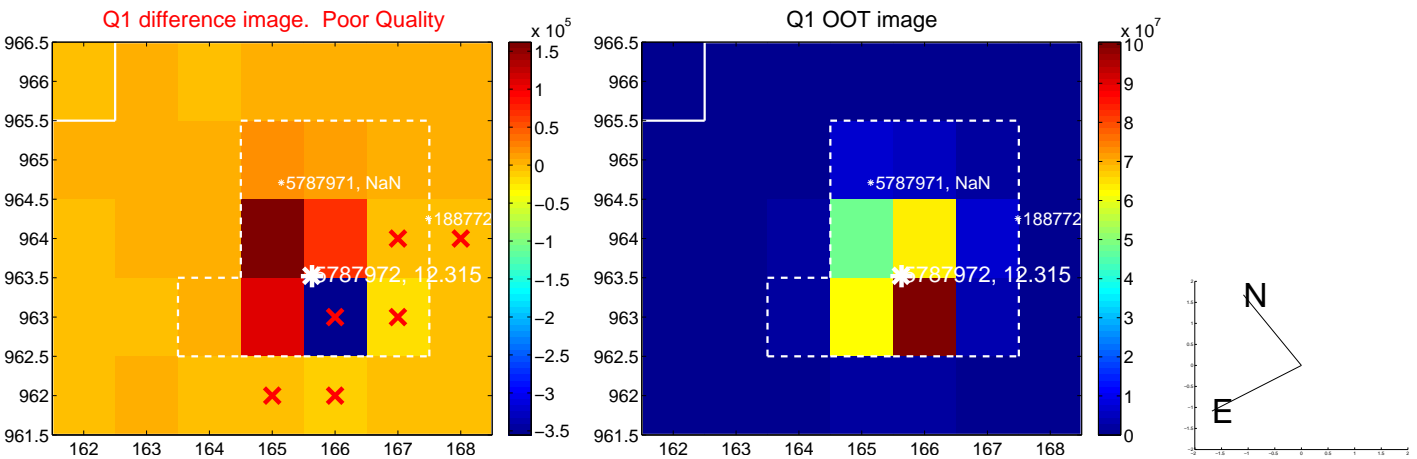
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.968 ± 0.569	1.70	0.068 ± 0.205	-0.965 ± 0.570
PRF-fit source offset from KIC position	0.993 ± 0.584	1.70	0.081 ± 0.206	-0.990 ± 0.585
photometric centroid source offset	0.72 ± 0.58	1.24	-0.53 ± 0.59	-0.49 ± 0.58

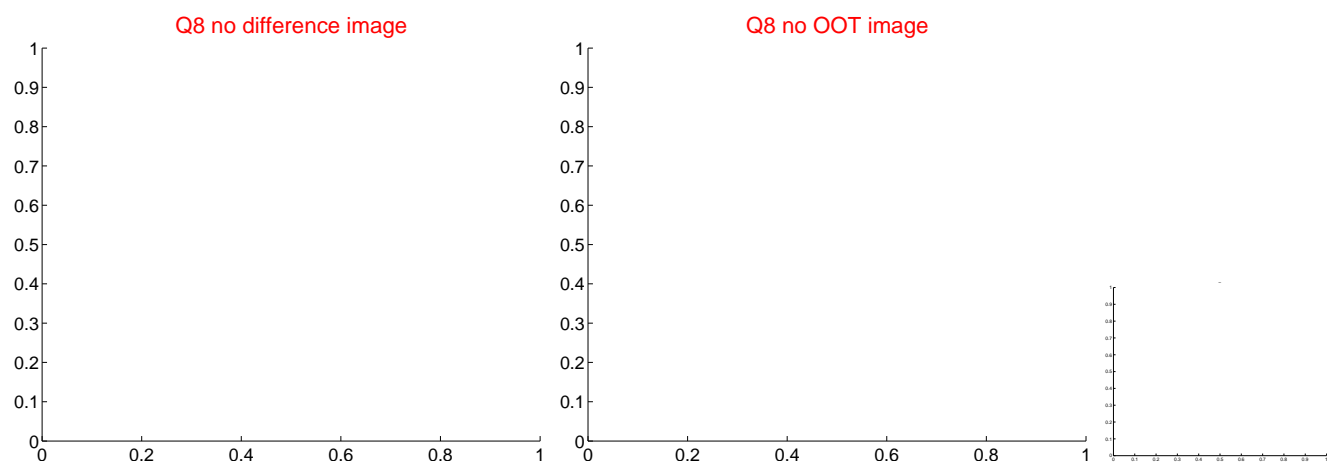
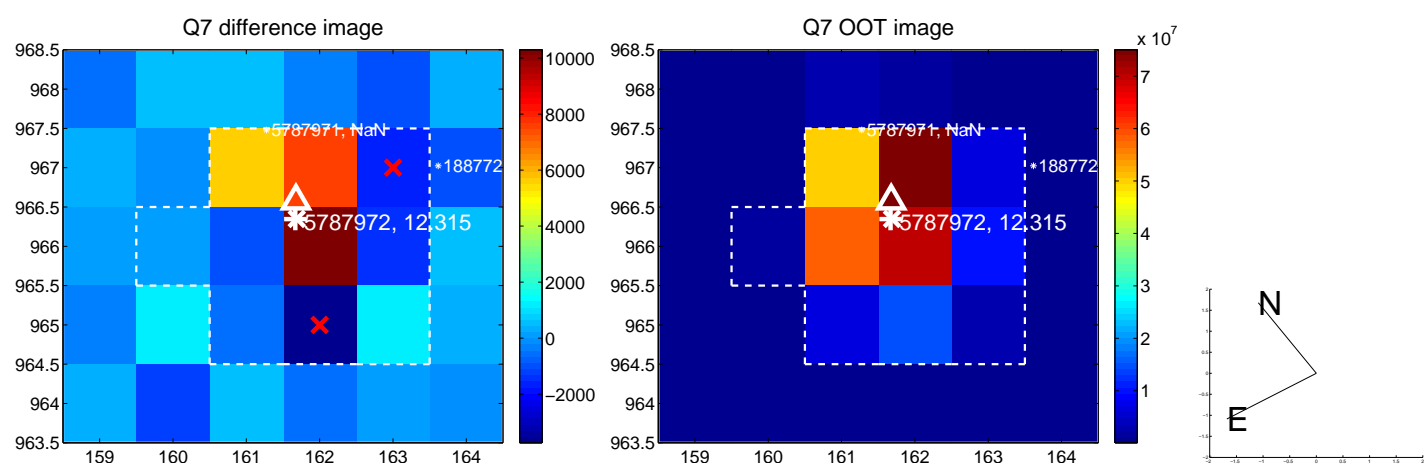
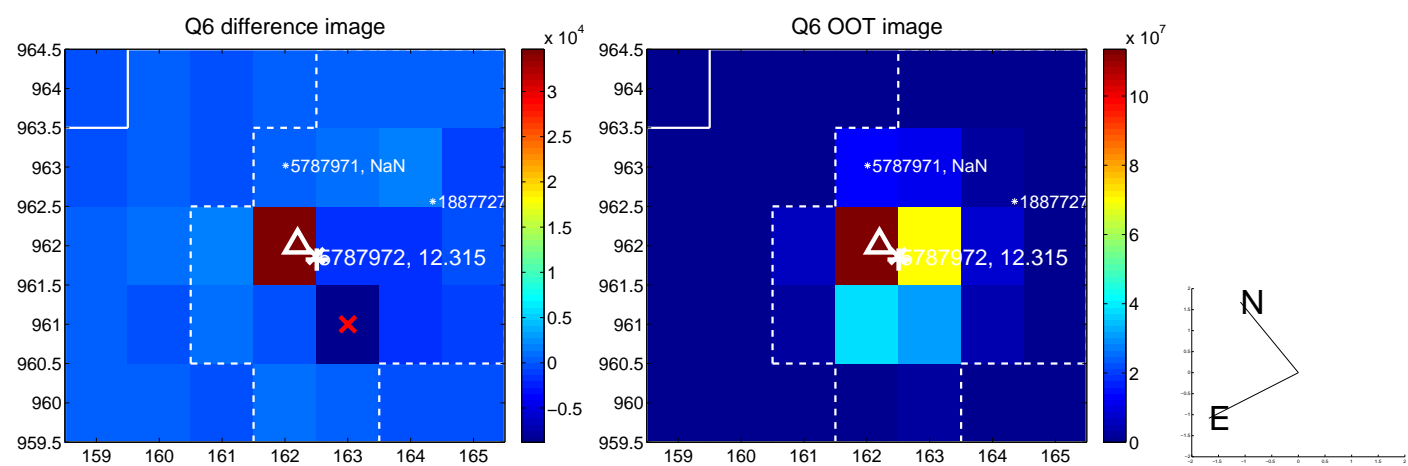
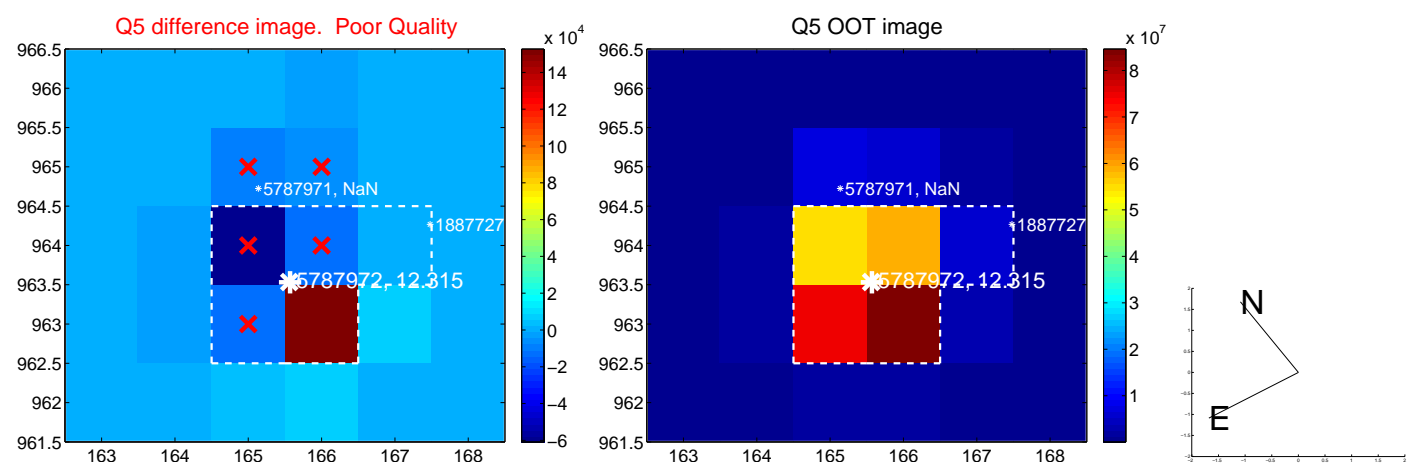


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

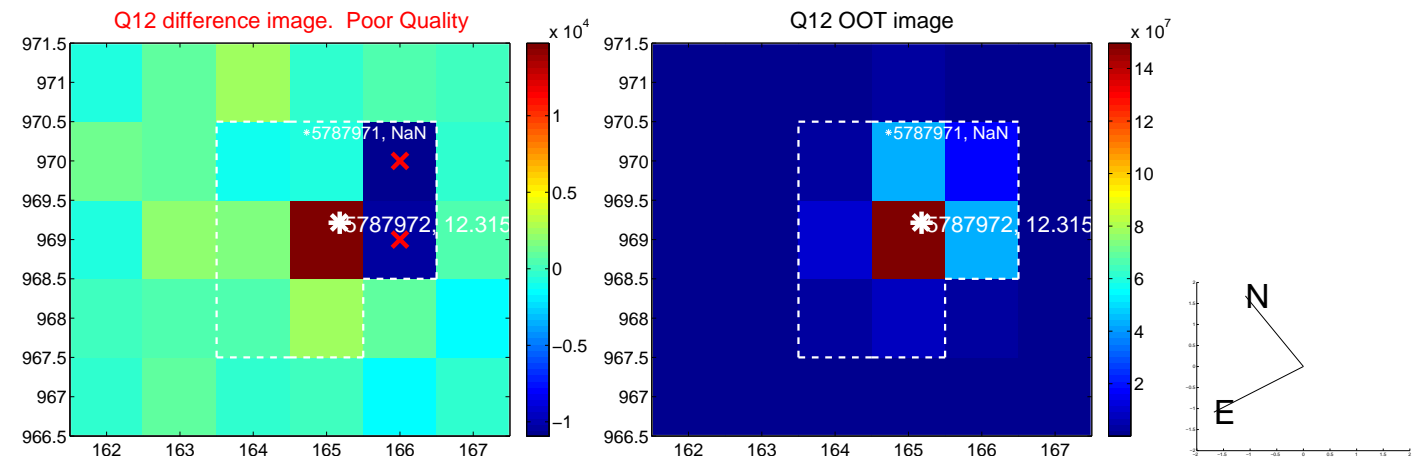
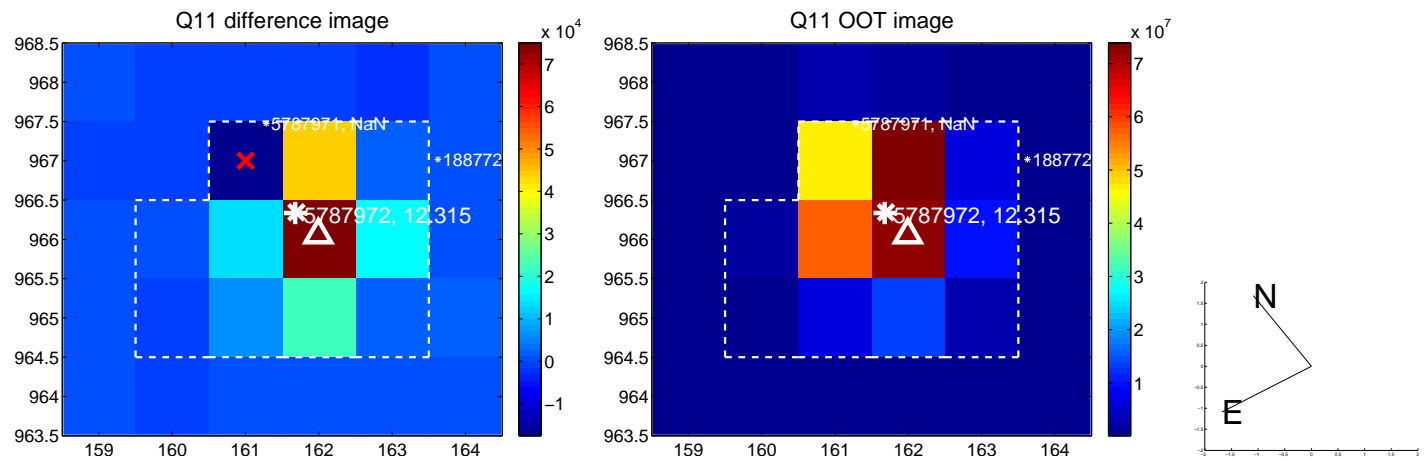
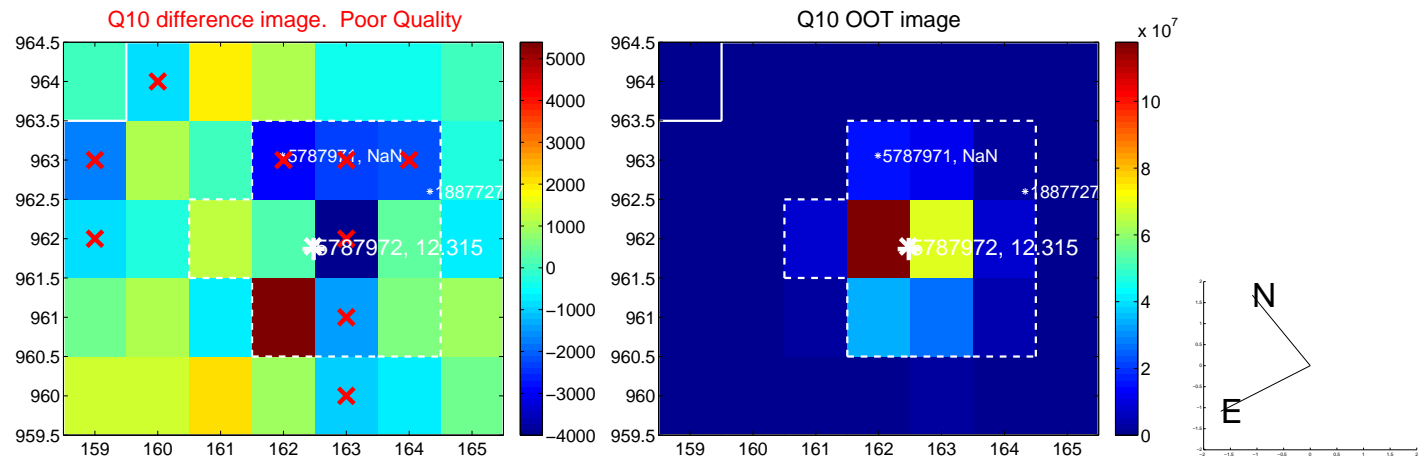
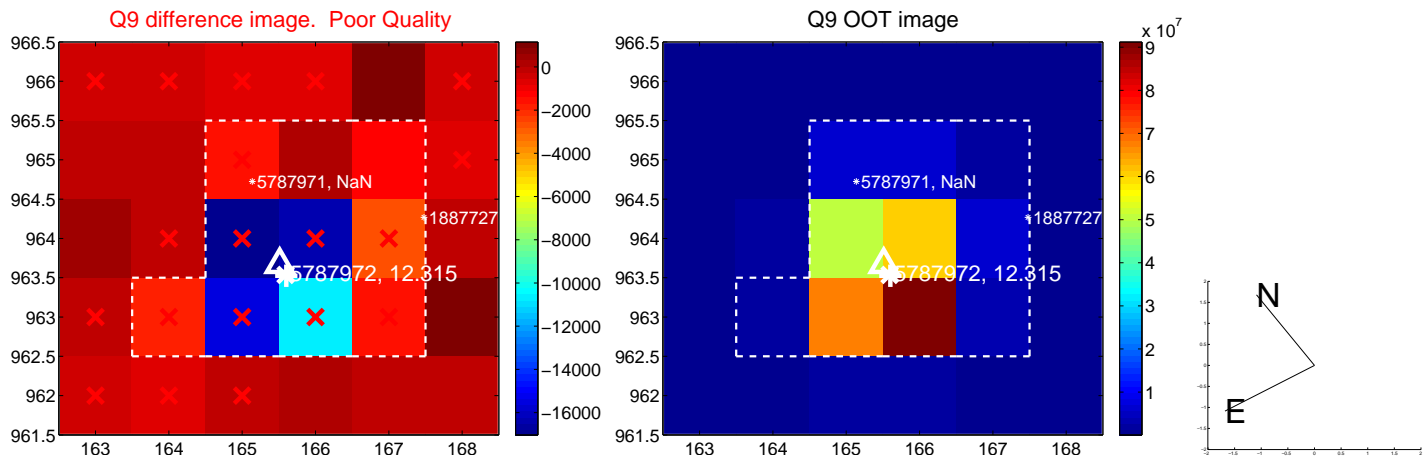
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



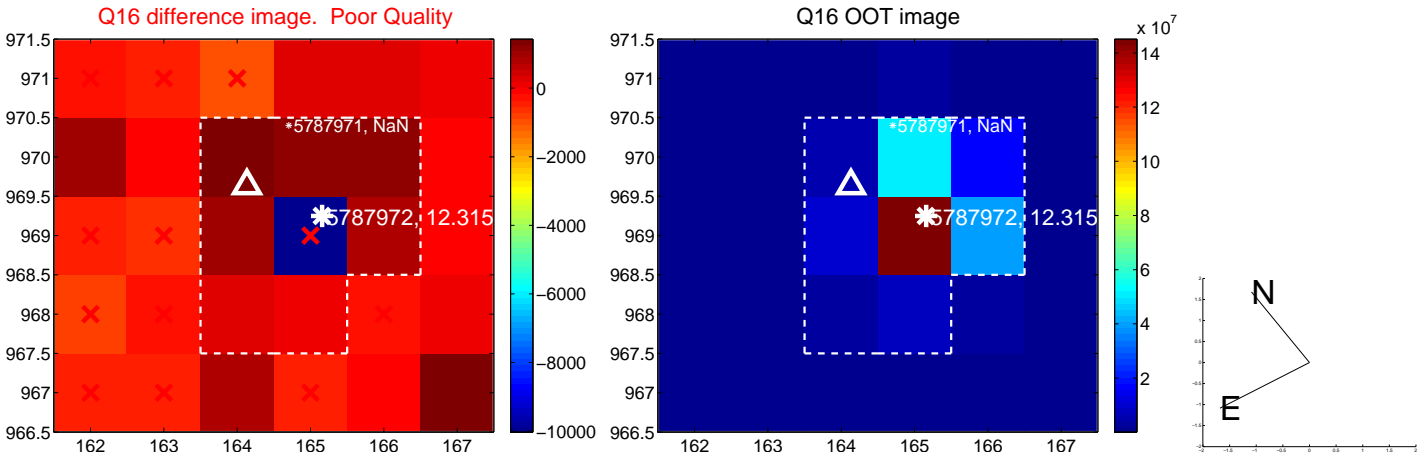
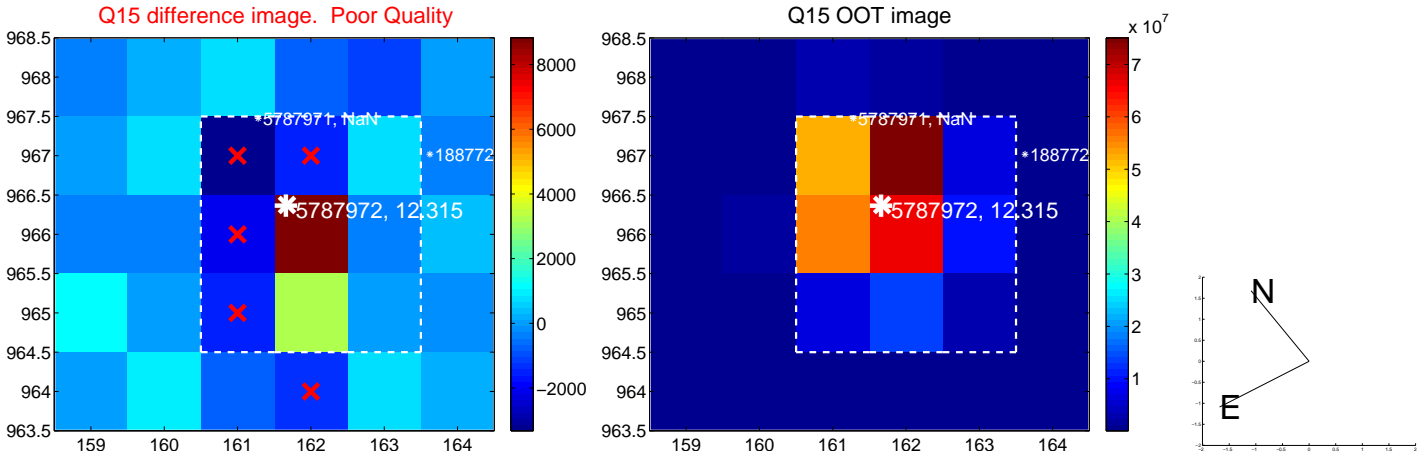
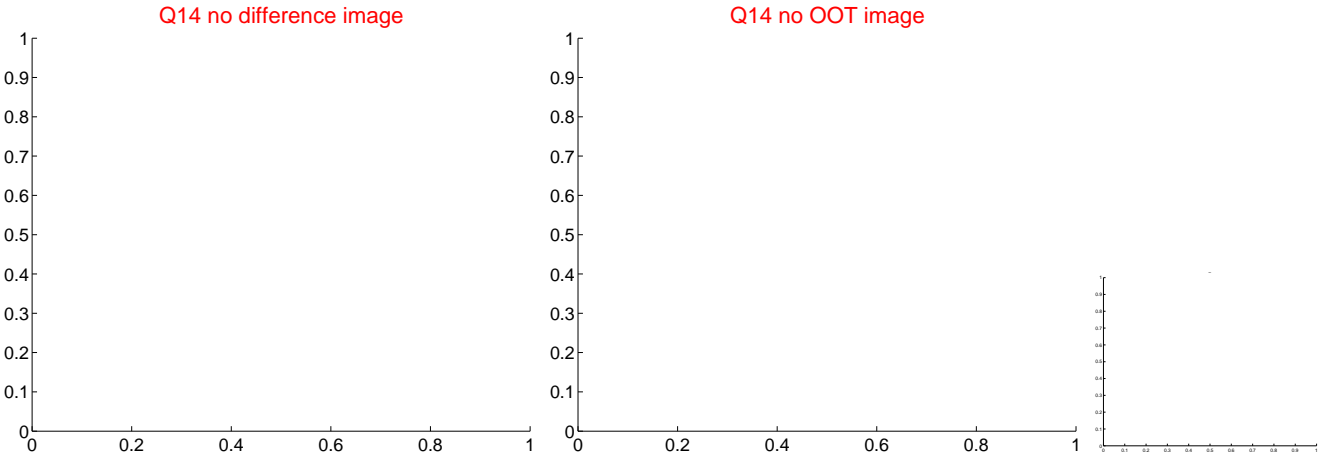
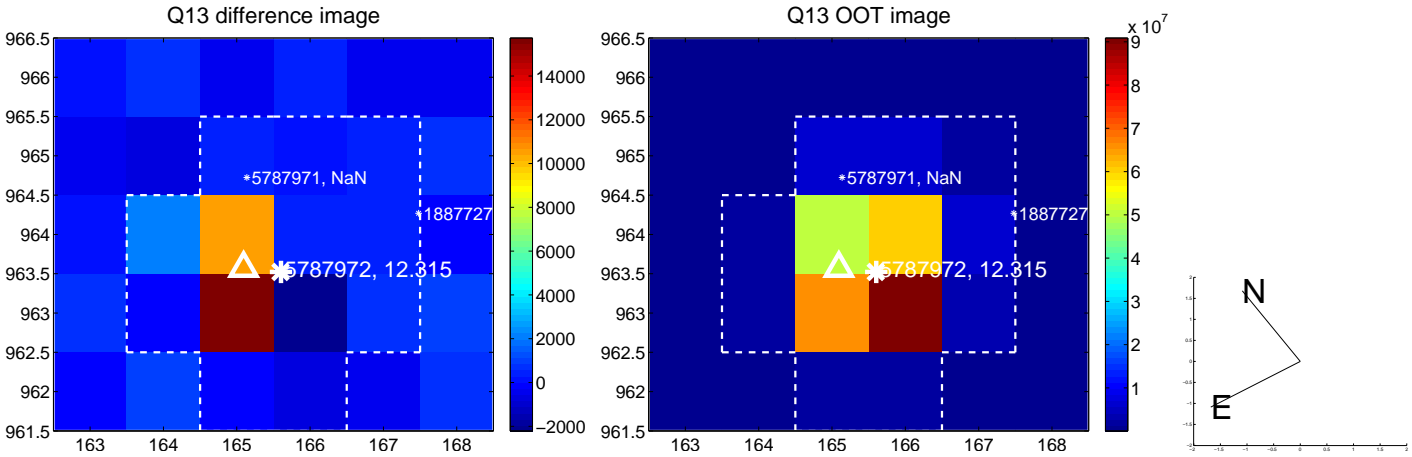
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



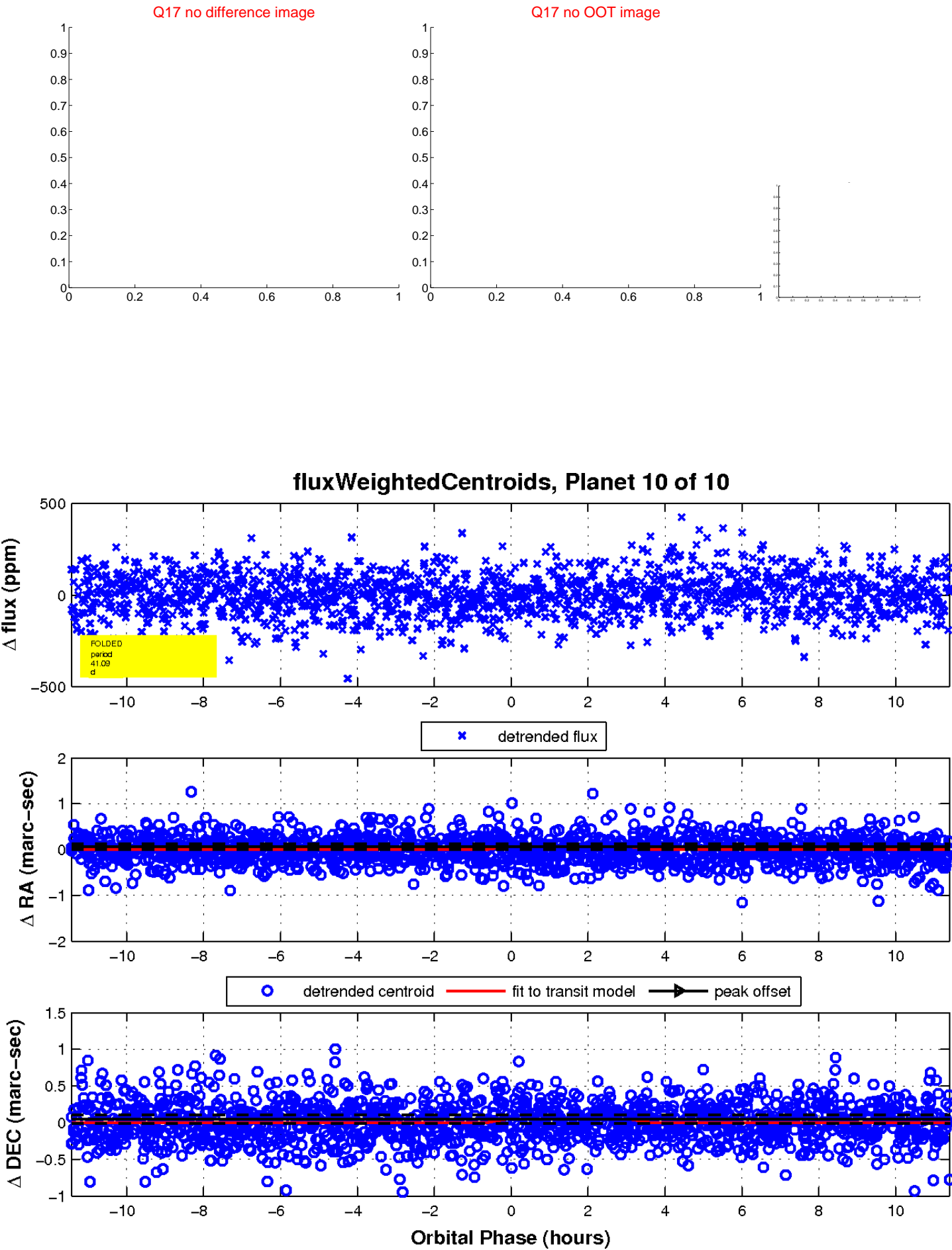
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

