

KIC 005272590

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})
005272590-01	OBS	No	1.382408	131.887178	0.6	4.626	7.8	0.4	1.61	7247	0.16	8353.00
005272590-02	OBS	No	1.382177	131.680525	12.0	2.824	9.1	4.6	1.61	7247	0.65	8354.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005272590-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005272590-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD

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

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

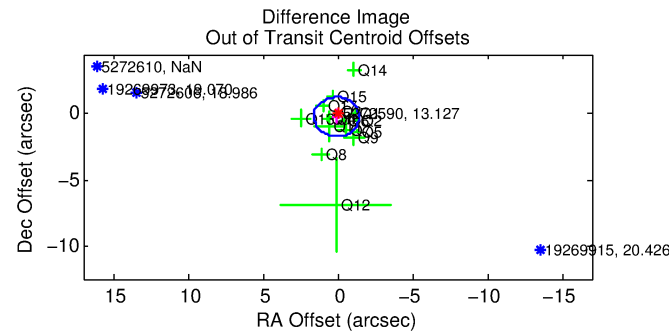
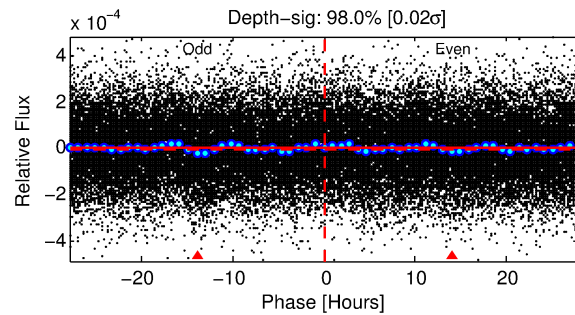
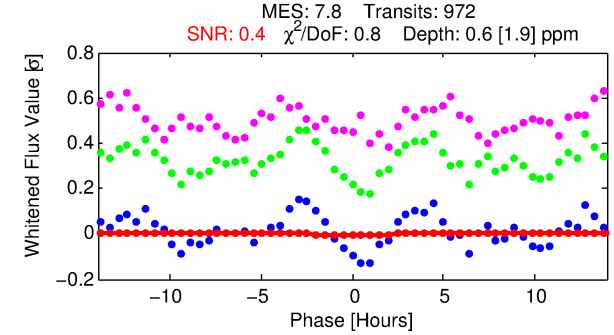
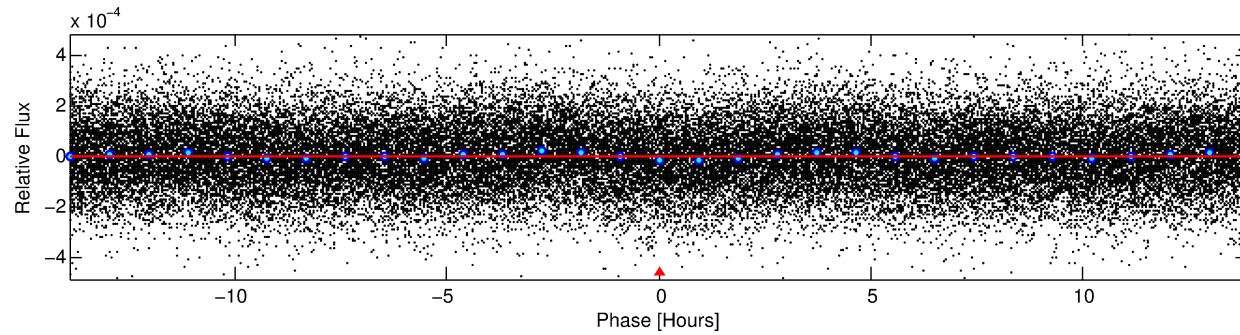
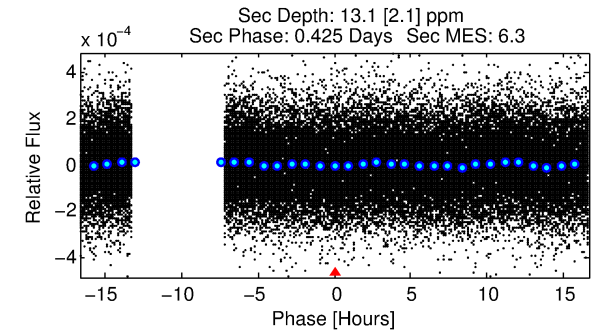
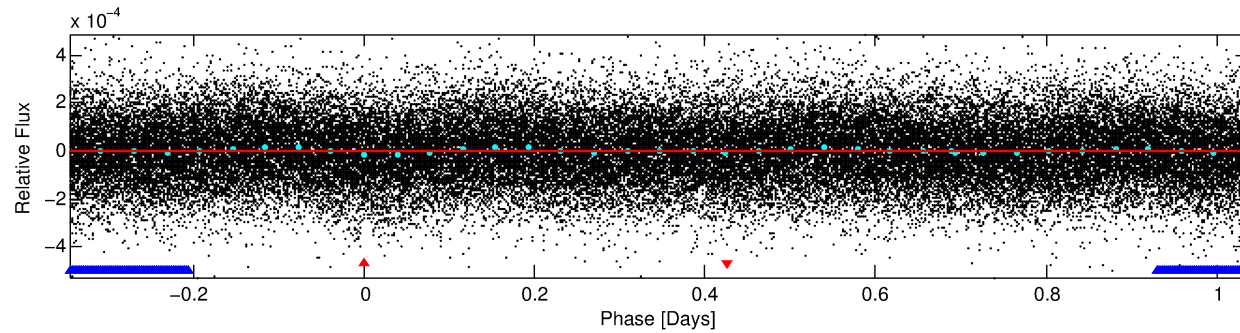
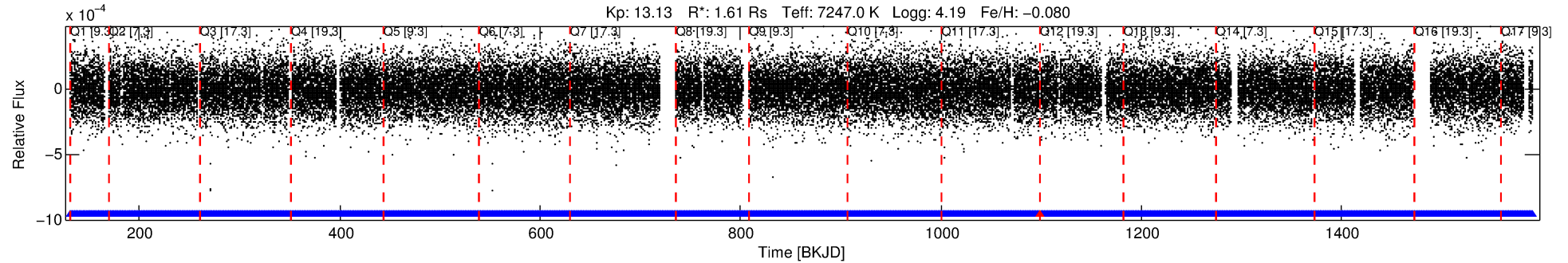
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005272590-01

No Significant Match Found

DV One-Page Summary

KIC: 5272590 Candidate: 1 of 2 Period: 1.382 d



DV Fit Results:

Period = 1.38241 [0.00043] d
Epoch = 131.8872 [0.1267] BKJD
Rp/R* = 0.0009 [0.0023]
a/R* = 1.15 [3.84]
b = 0.97 [0.99]
Seff = 8353.00 [3446.78]
Teq = 2438 [251] K
Rp = 0.16 [0.40] Re
a = 0.0276 [0.0074] AU
Ag = 215.98 [1074.96] [0.20σ]
Teffp = 14449 [17939] K [0.67σ]

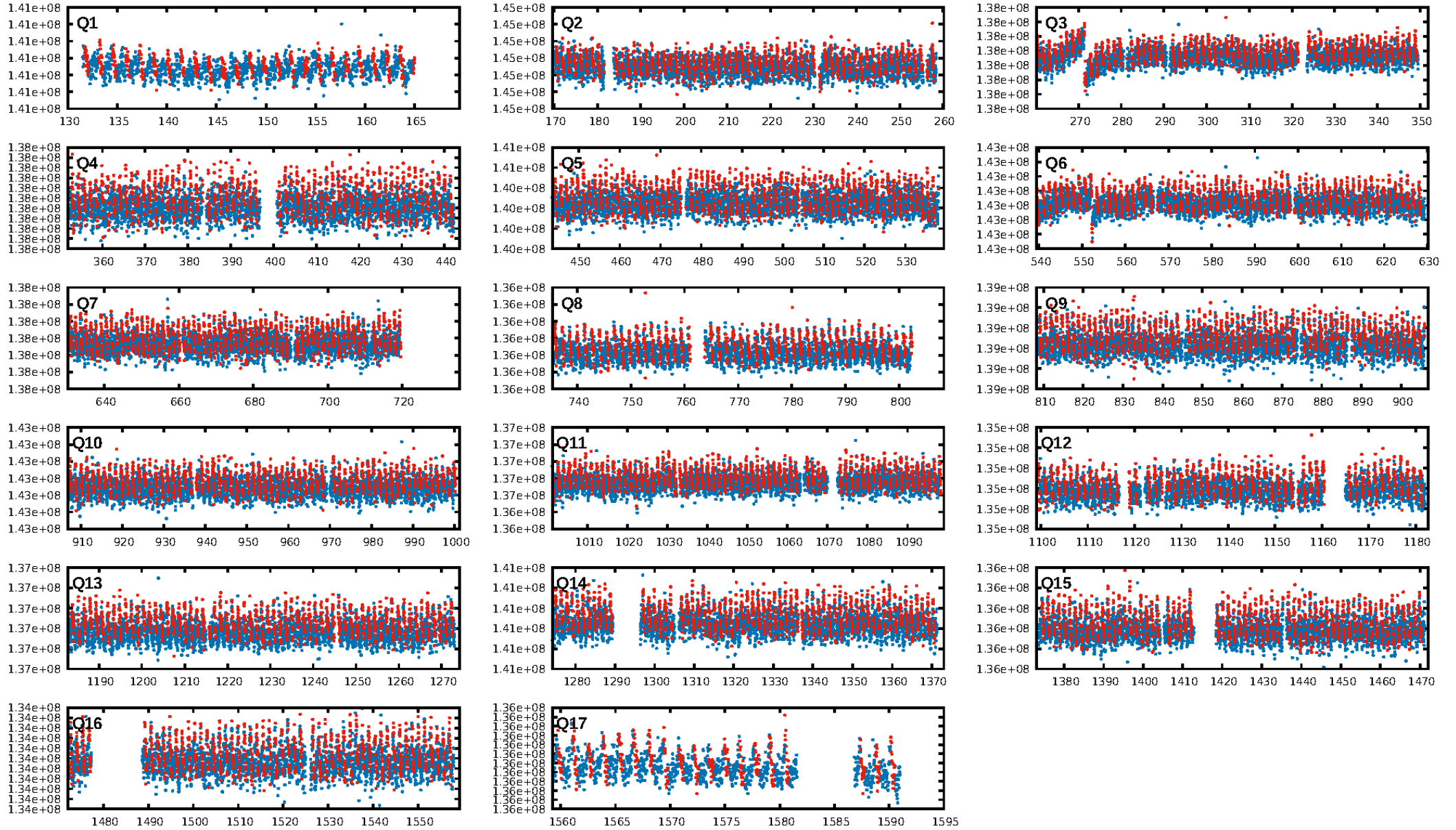
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.43e-11
RollingBand-fgt: 1.00 [927/928]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.248 arcsec [0.50σ]
KicOffset-rm: 0.198 arcsec [0.37σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.25 [4/16]
DiffImageOverlap-fno: 0.00 [0/17]

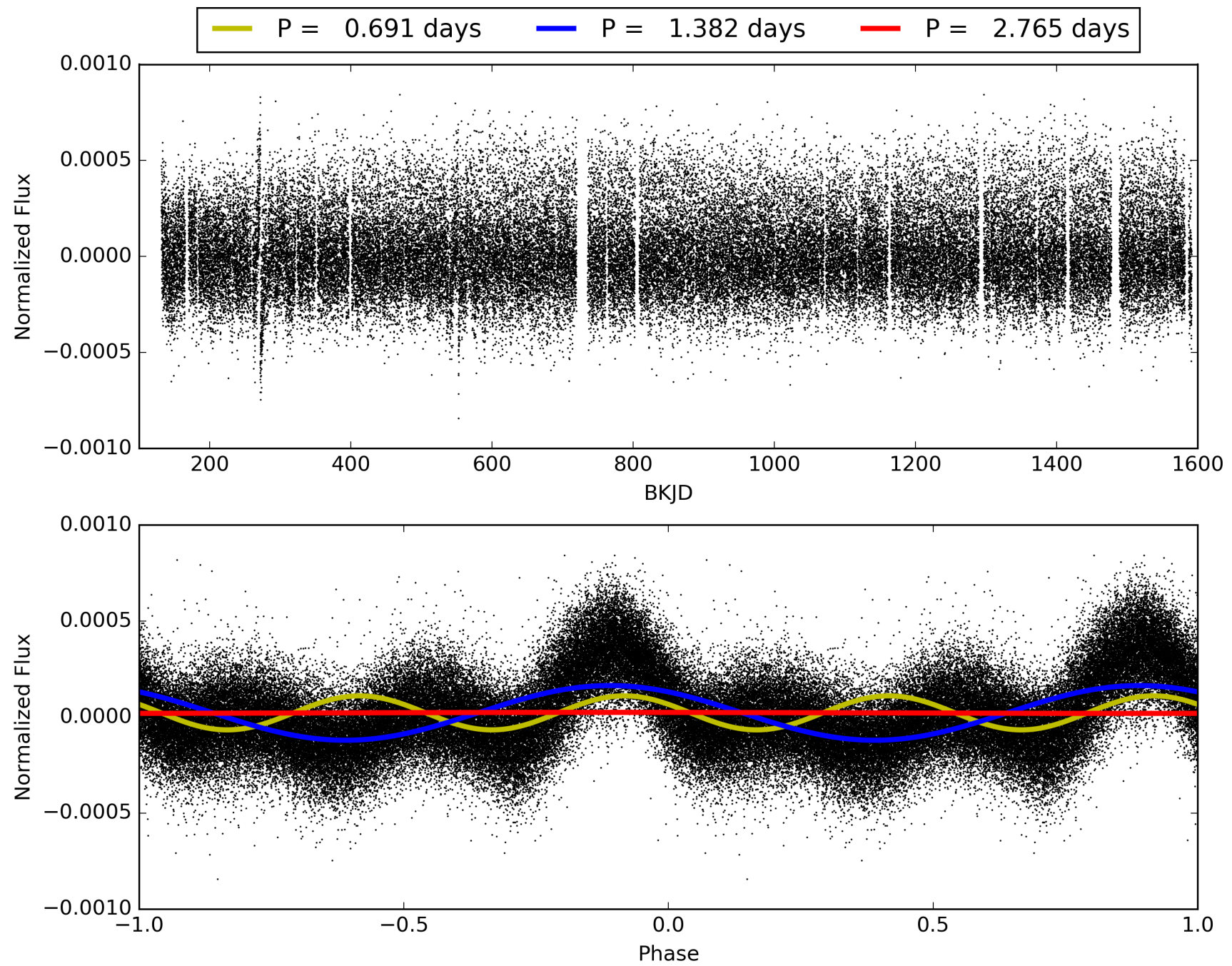
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:28:36 Z

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

TCE 005272590-01, PDC Light Curves

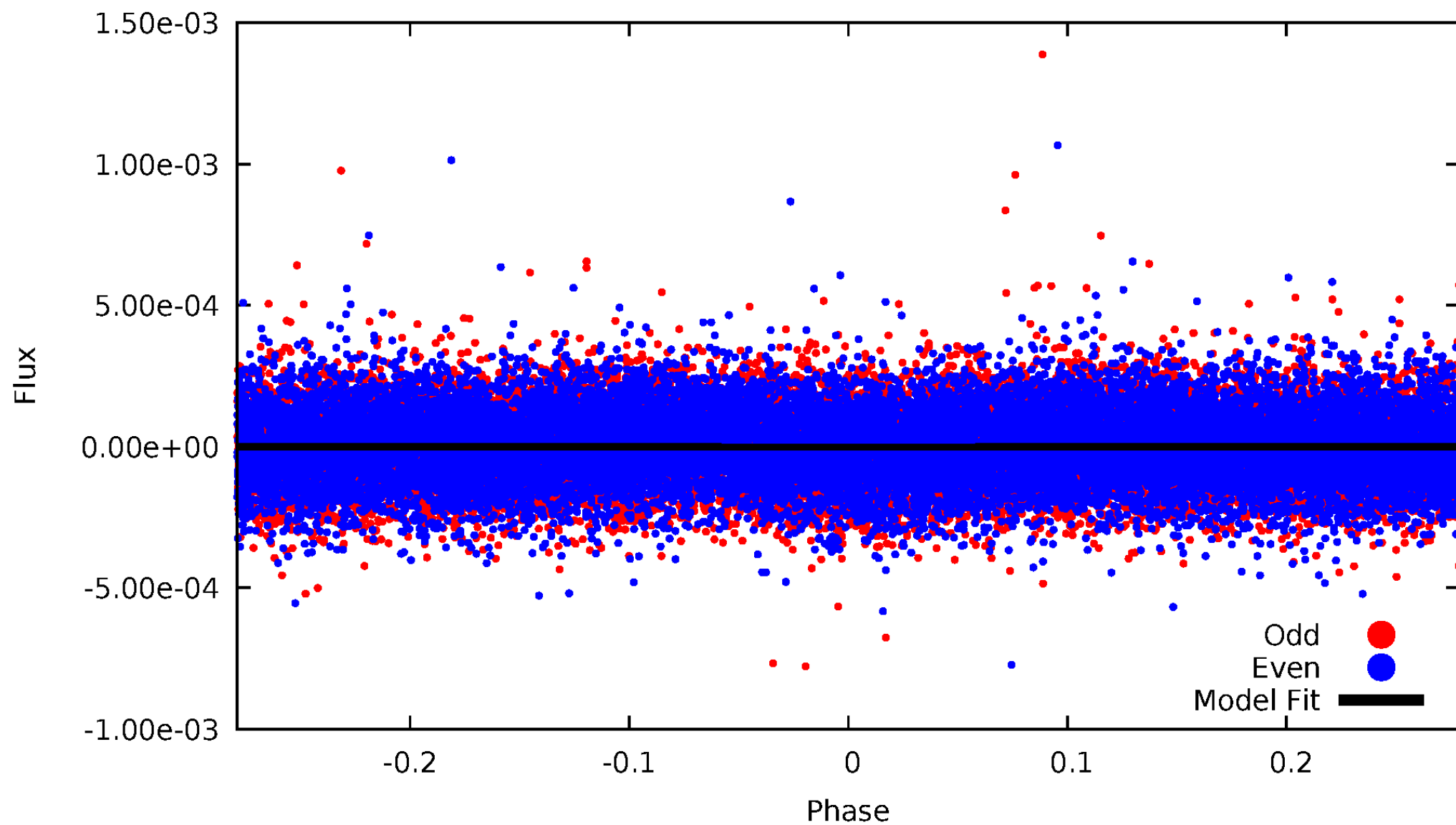


TCE 005272590-01



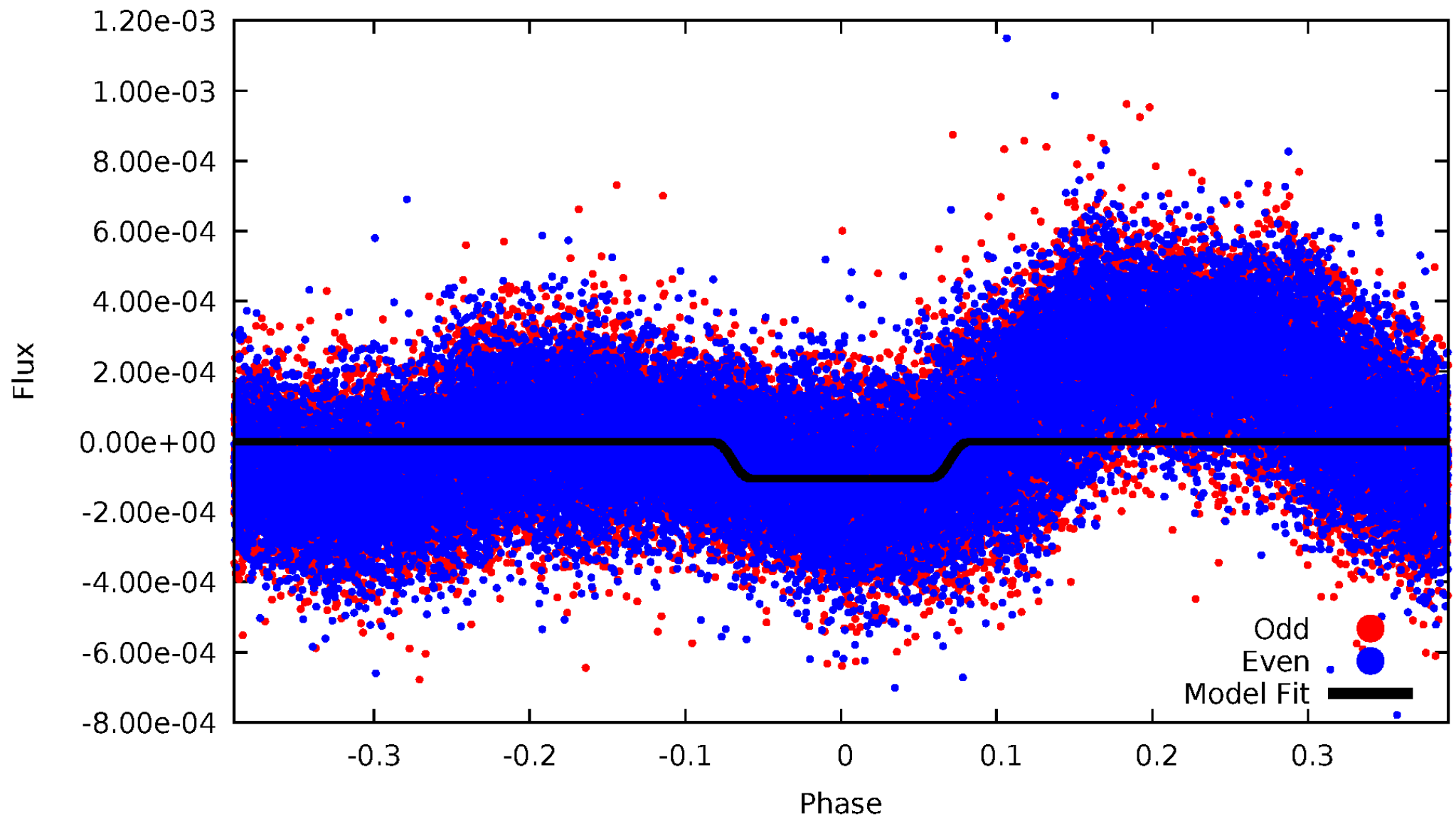
DV Odd/Even

TCE 005272590-01



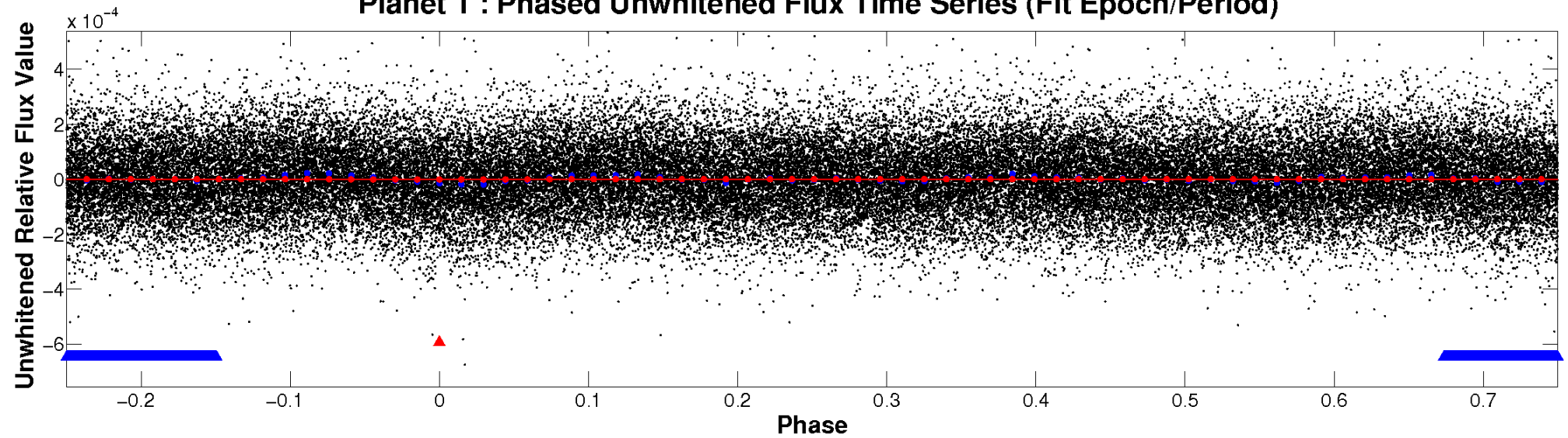
ALT Odd/Even

TCE 005272590-01

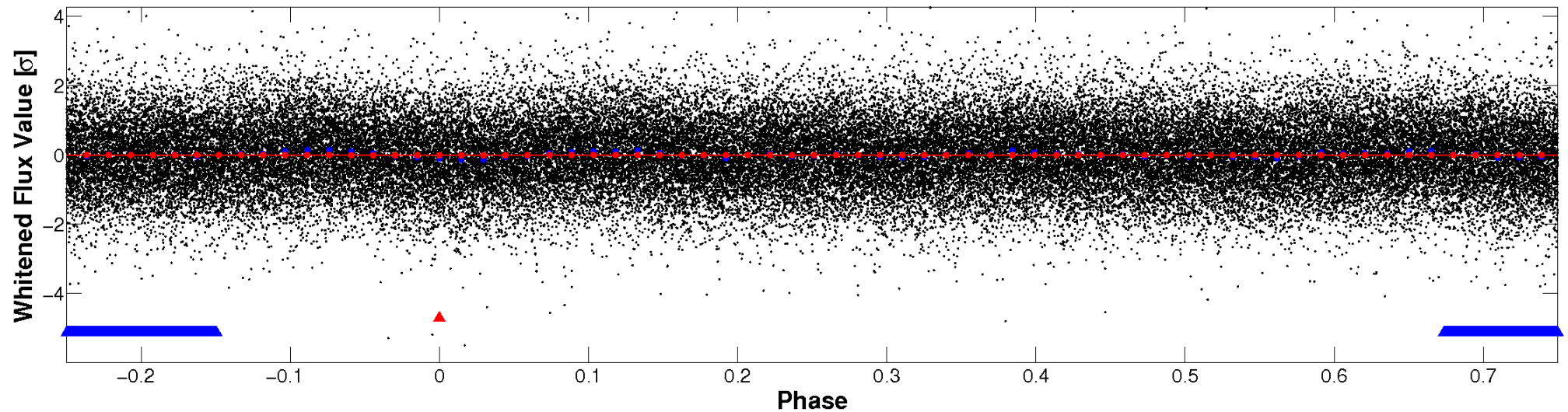


Non-Whitened Vs. Whitened Light Curve

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

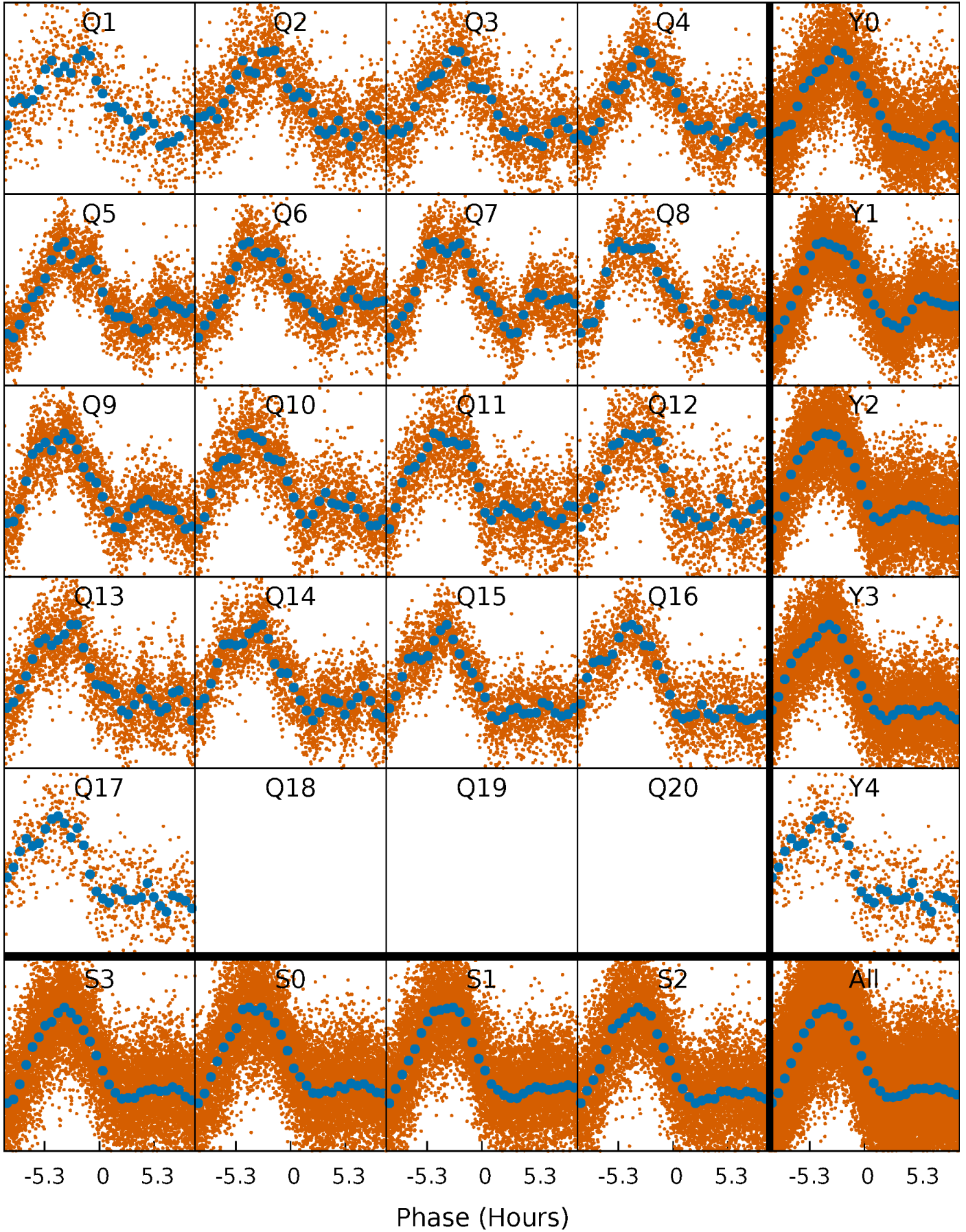


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



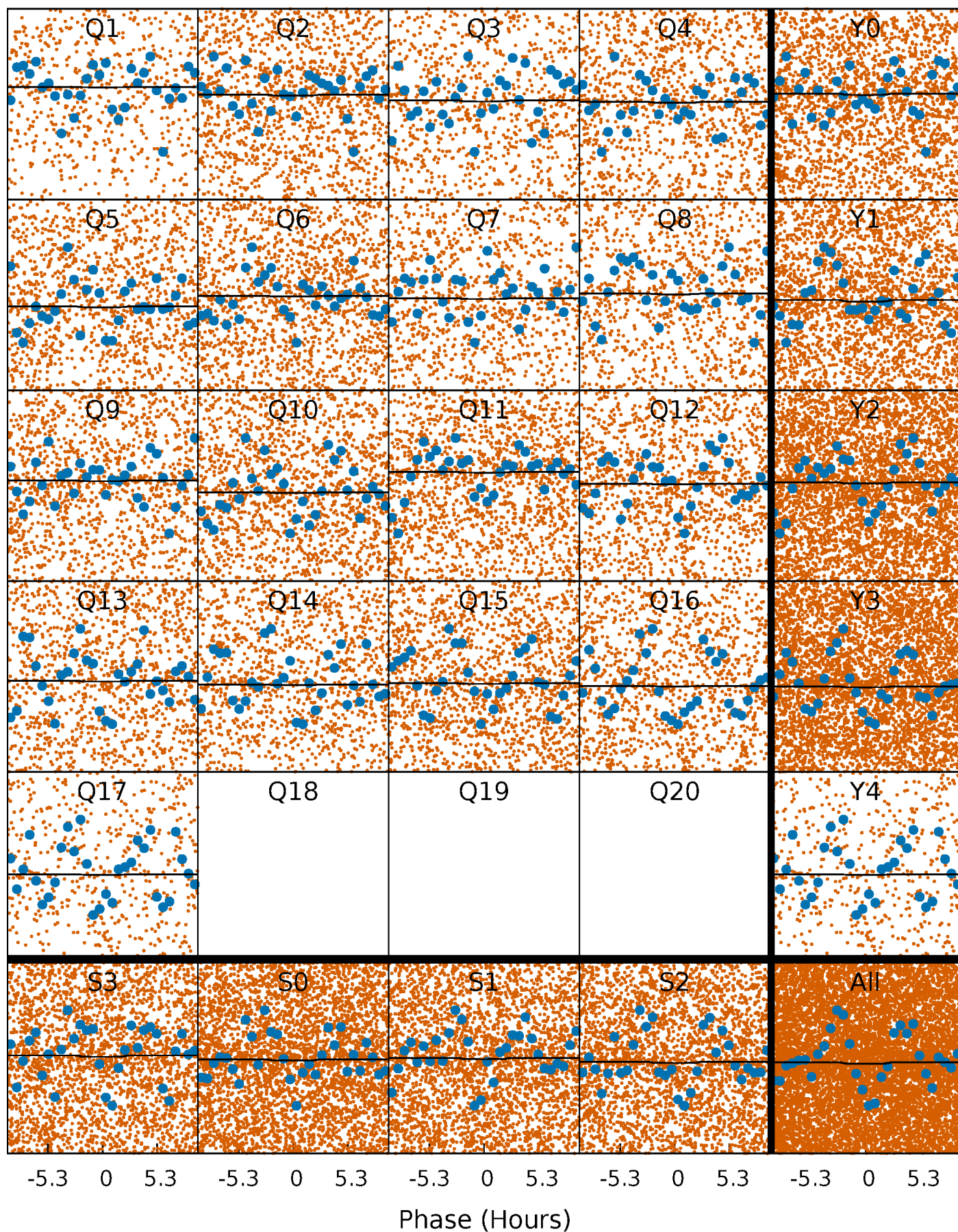
PDC Quarter-Phased Transit Curves

TCE 005272590-01 P= 1.382408 Days $T_0=131.887178$ (BKJD)



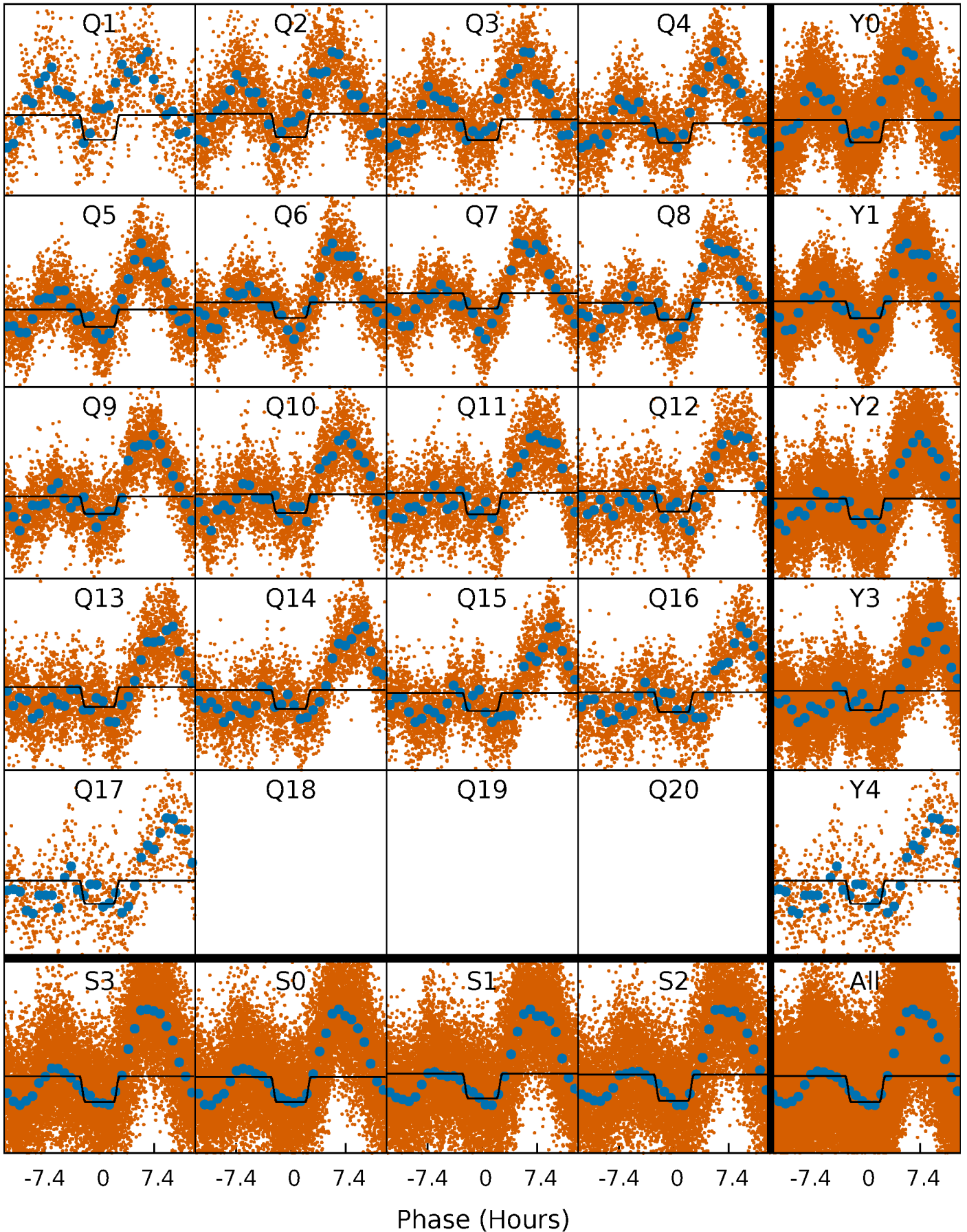
DV Quarter-Phased Transit Curves

TCE 005272590-01 P= 1.382408 Days $T_0=131.887178$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

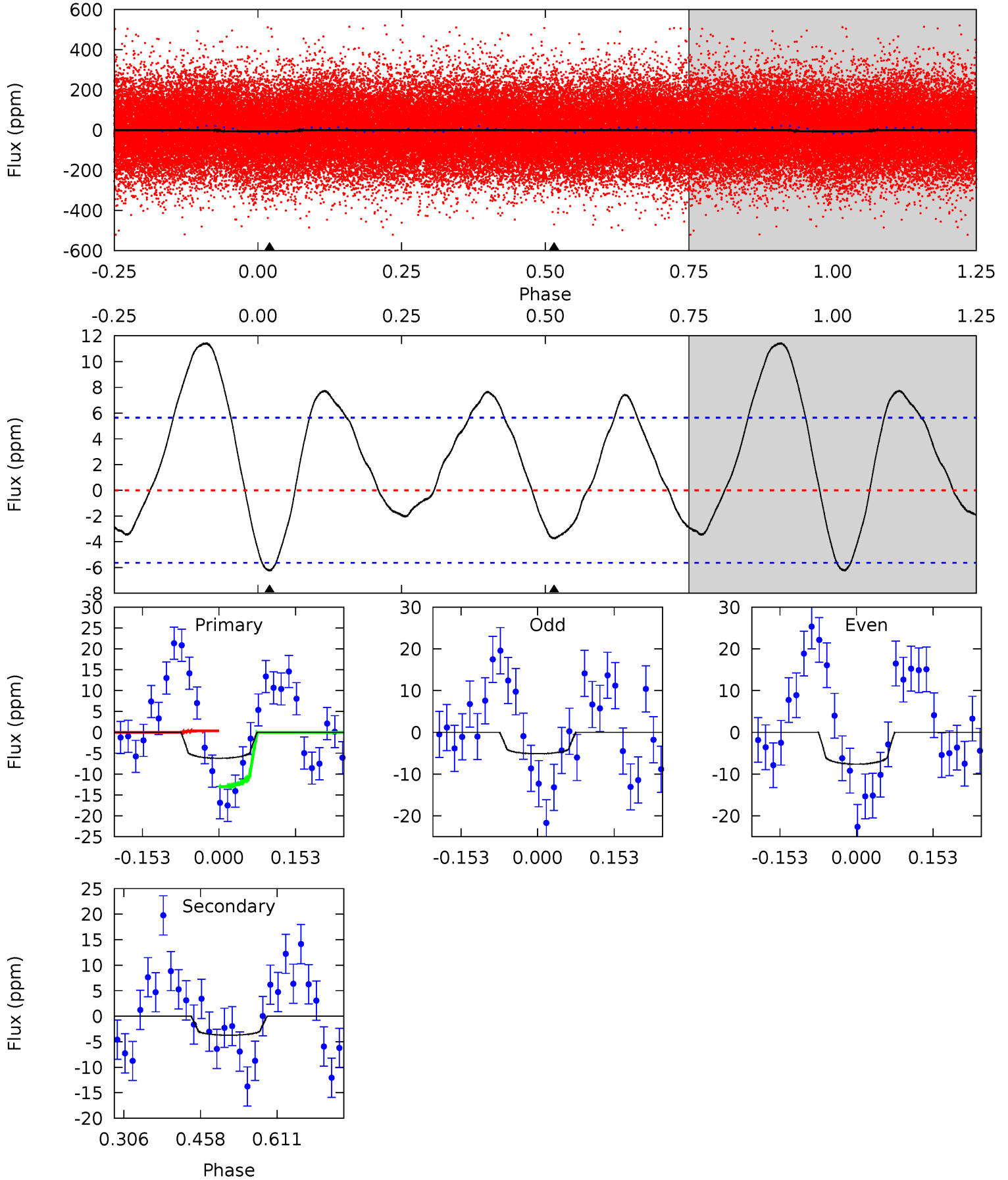
TCE 005272590-01 P= 1.382167 Days $T_0=131.569841$ (BKJD)



DV Model-Shift Uniqueness Test

005272590-01, P = 1.382408 Days, E = 130.504770 Days

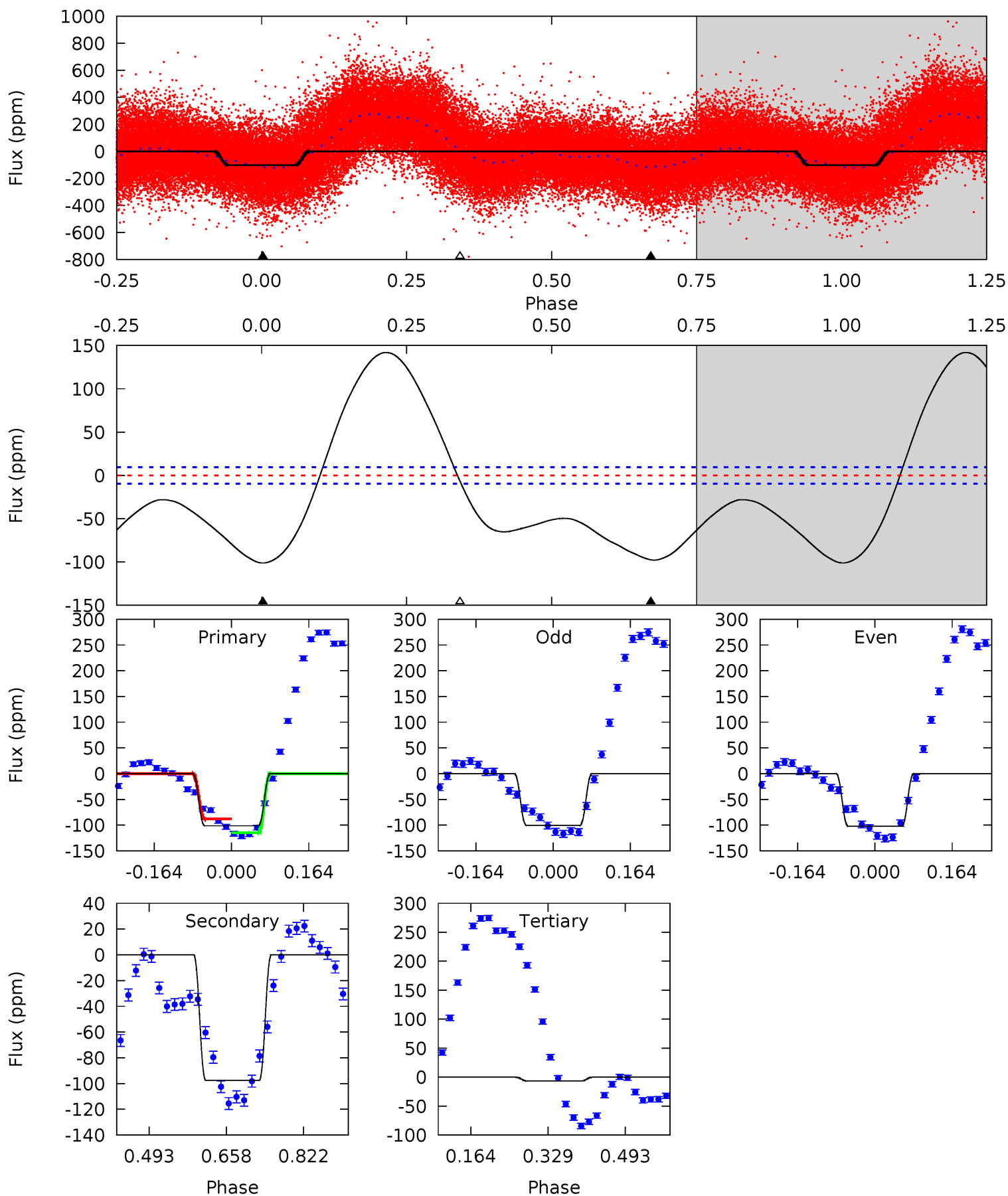
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.94	2.96	0	0	4.48	1.43	2.11	4.94	4.94	2.96	2.96	1.00	1.38	0.65	5.10



Alt Model-Shift Uniqueness Test

005272590-01, P = 1.382167 Days, E = 130.187674 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.1	45.4	3.14	0	4.46	1.39	38.2	44.0	47.1	42.2	45.4	0.38	1.03	0.58	6.51



Stellar Parameters For KIC 005272590

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7247^{+230}_{-316}	$4.194^{+0.105}_{-0.195}$	$-0.080^{+0.250}_{-0.350}$	$1.606^{+0.540}_{-0.291}$	$1.472^{+0.221}_{-0.221}$	$0.501^{+0.254}_{-0.250}$
	+3%/-4%	+3%/-5%	+312%/-438%	+34%/-18%	+15%/-15%	+51%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005272590-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-4 ± 1	$0.33^{+0.38}_{-0.22}$	3430^{+267}_{-220}	7111^{+10527}_{-2166}	13^{+113}_{-10}
Alt.	-97 ± 2	$1.83^{+0.52}_{-0.47}$	3443^{+256}_{-222}	7009^{+1326}_{-776}	12^{+10}_{-4}

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 $A_{obs} \gg 1.0$

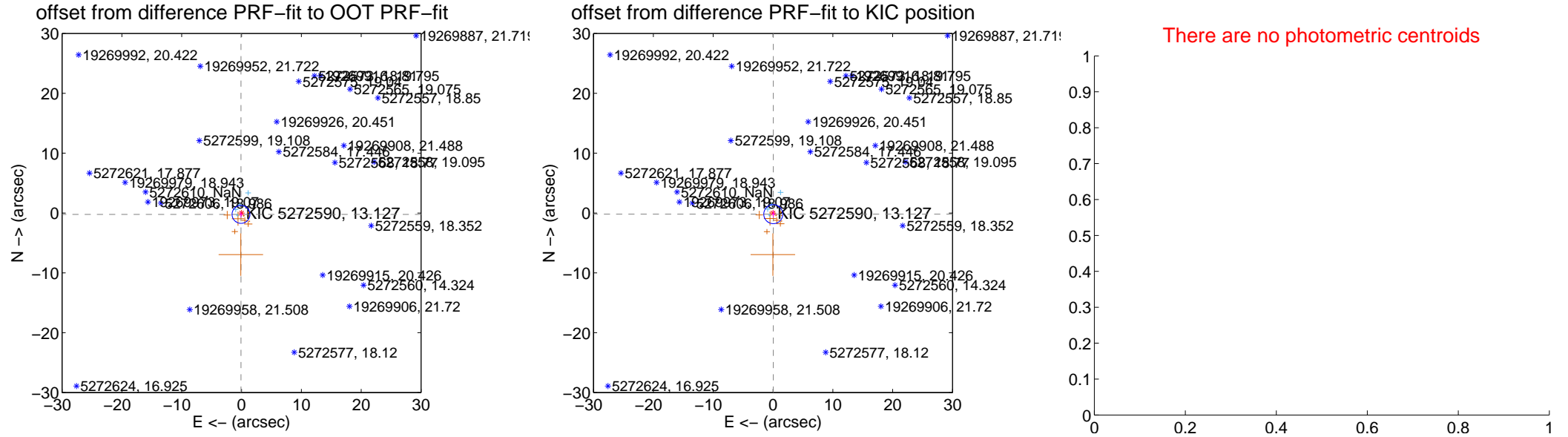
DV Centroid Data

Supplemental centroid analysis for 005272590-01. Kepler magnitude: 13.13. Transit SNR 0.36

There are 4 quarters with good PRF difference image offsets

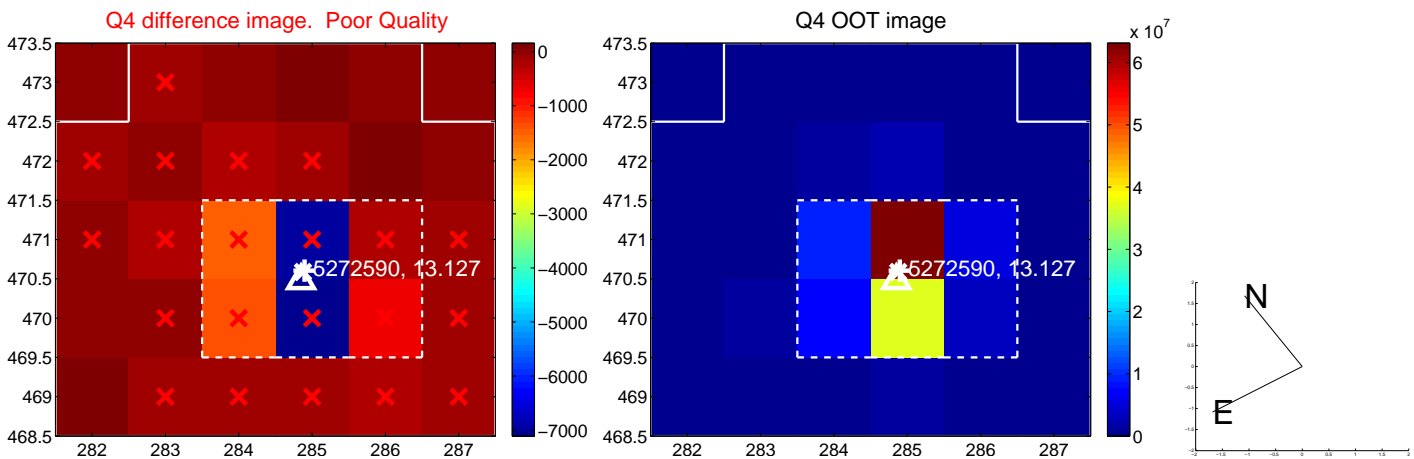
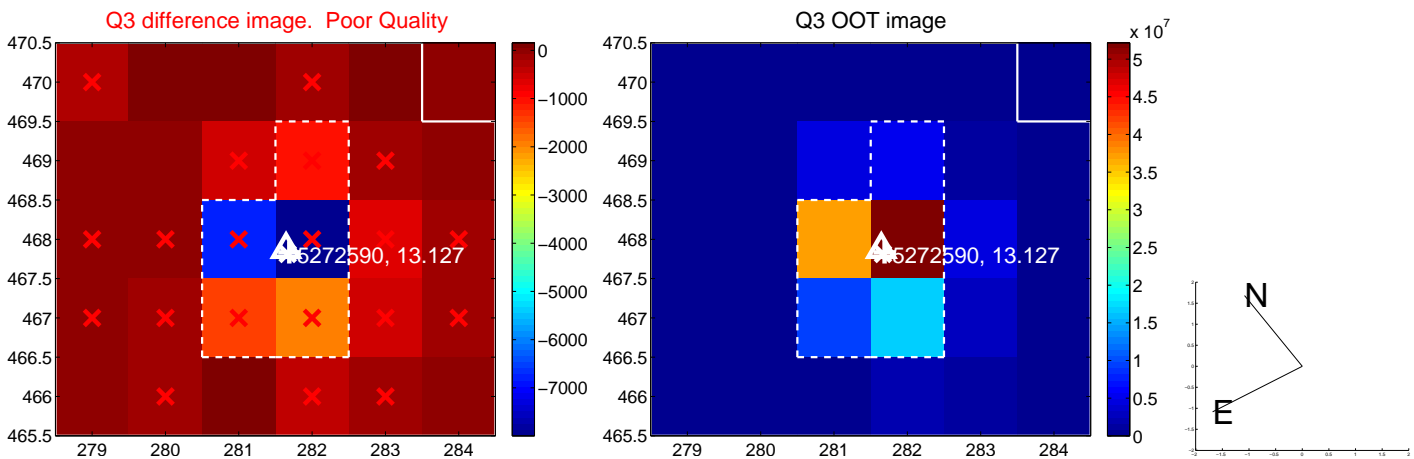
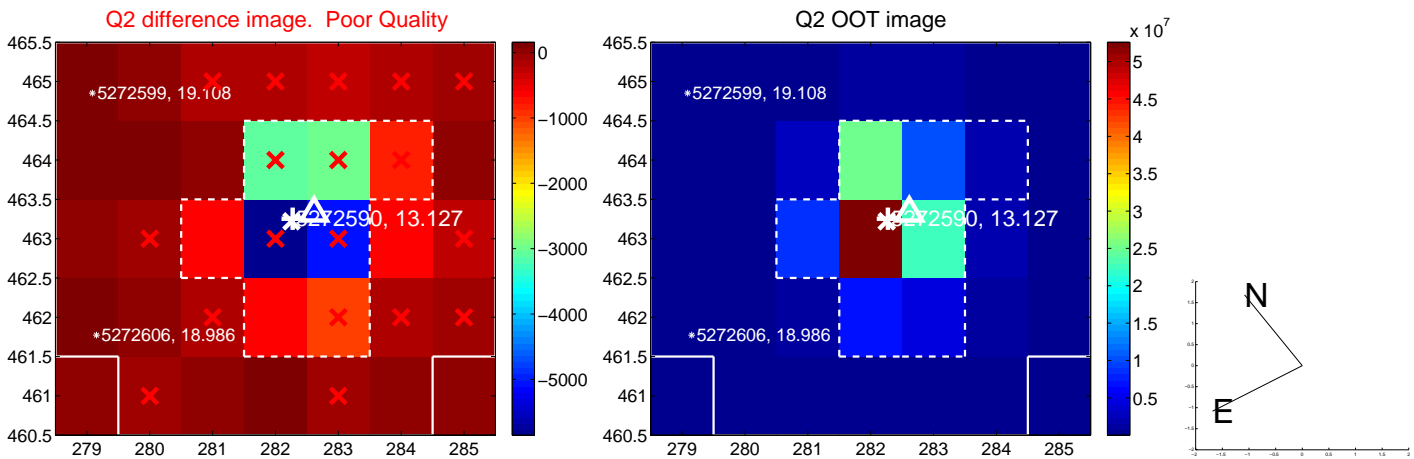
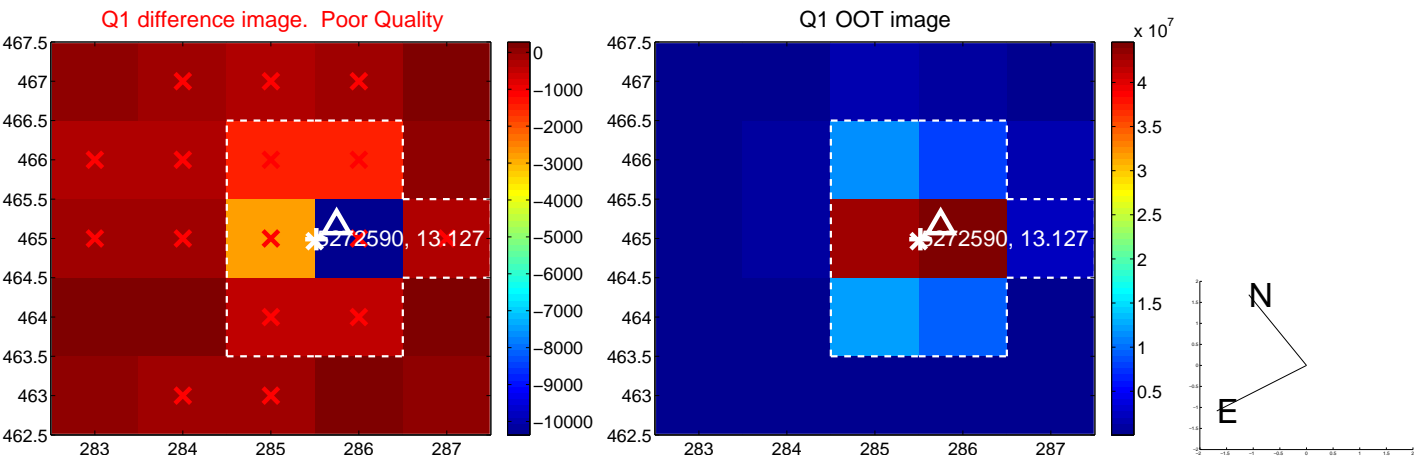
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.248 ± 0.498	0.50	0.089 ± 0.251	-0.232 ± 0.508
PRF-fit source offset from KIC position	0.198 ± 0.529	0.37	-0.044 ± 0.271	-0.193 ± 0.550
photometric centroid source offset	—	—	—	—

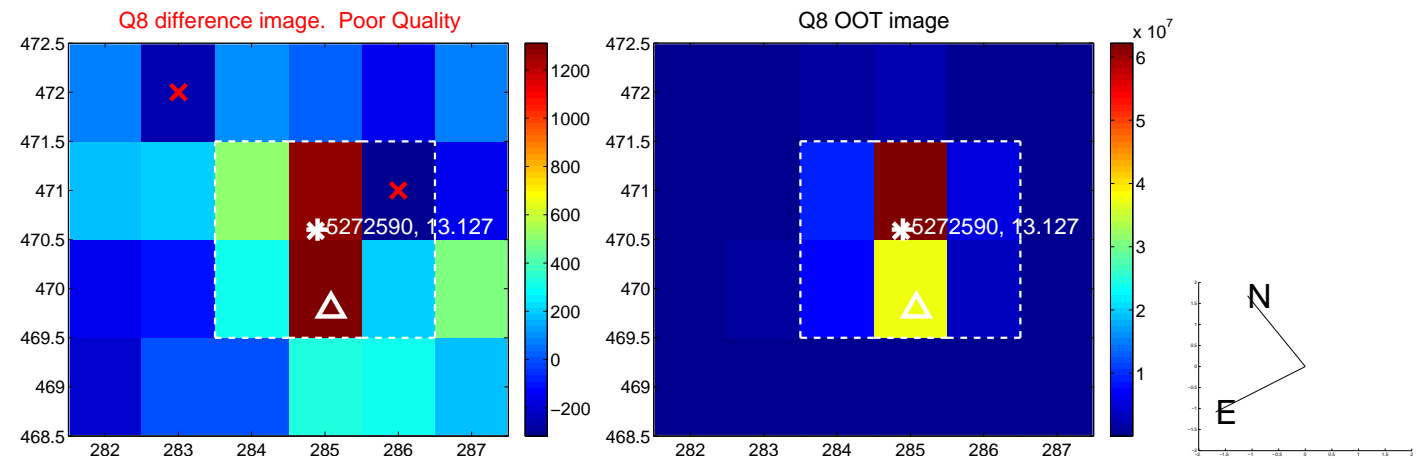
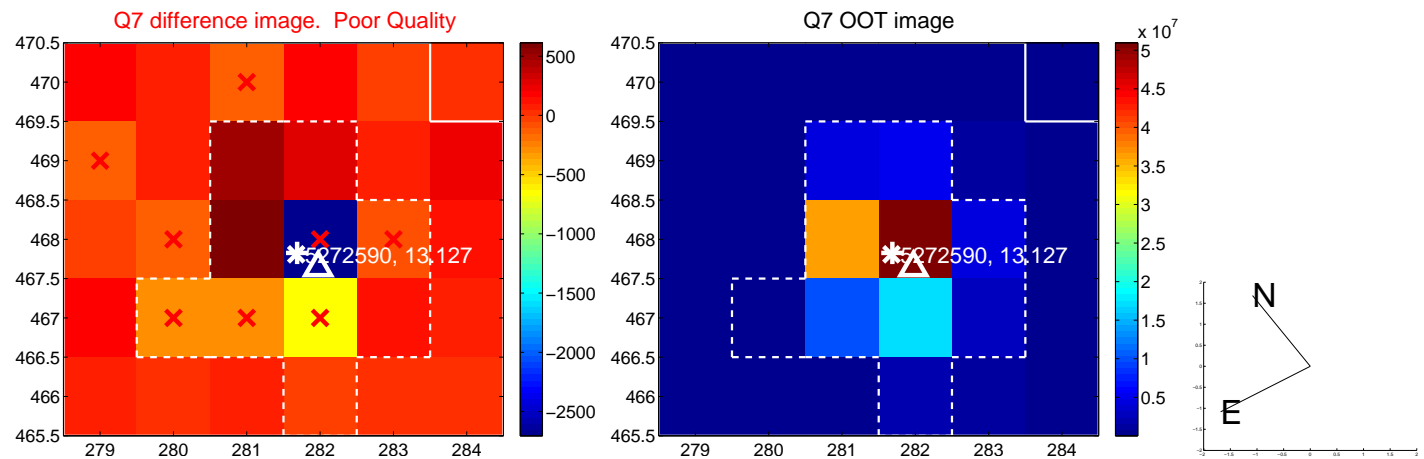
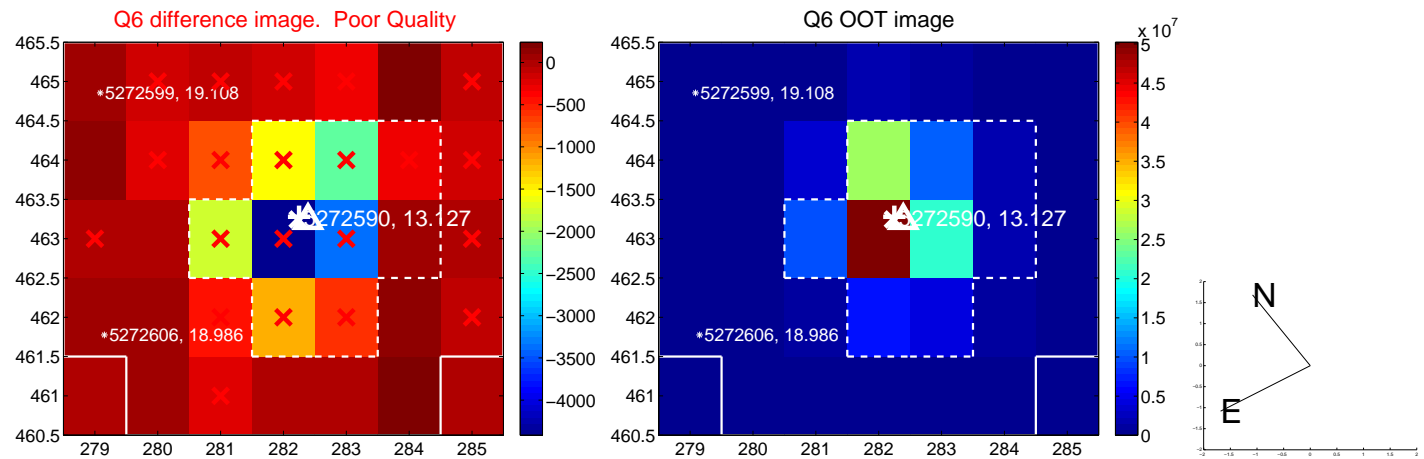
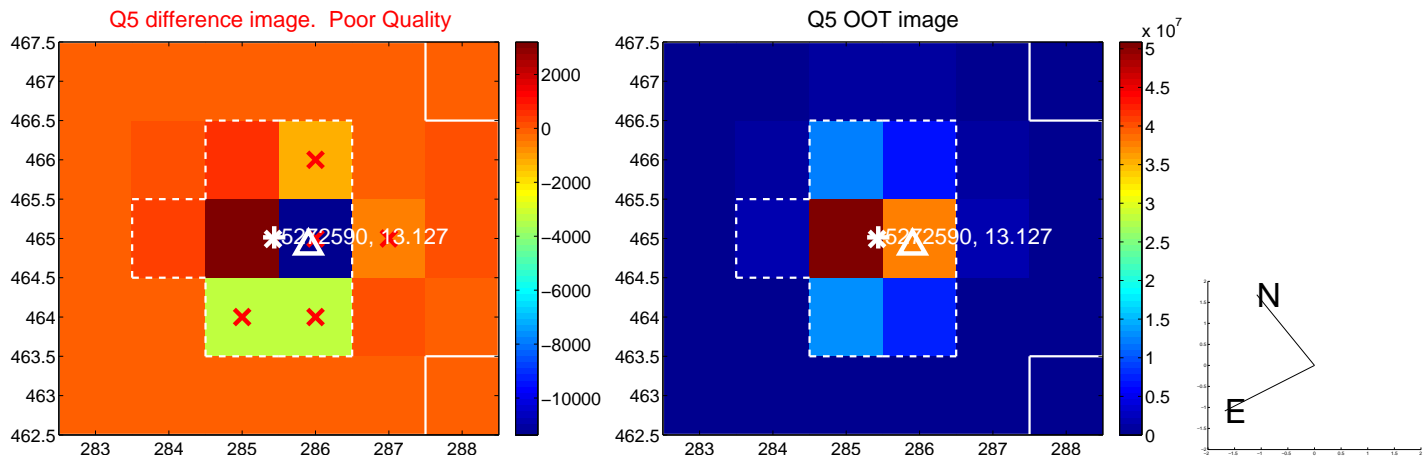


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

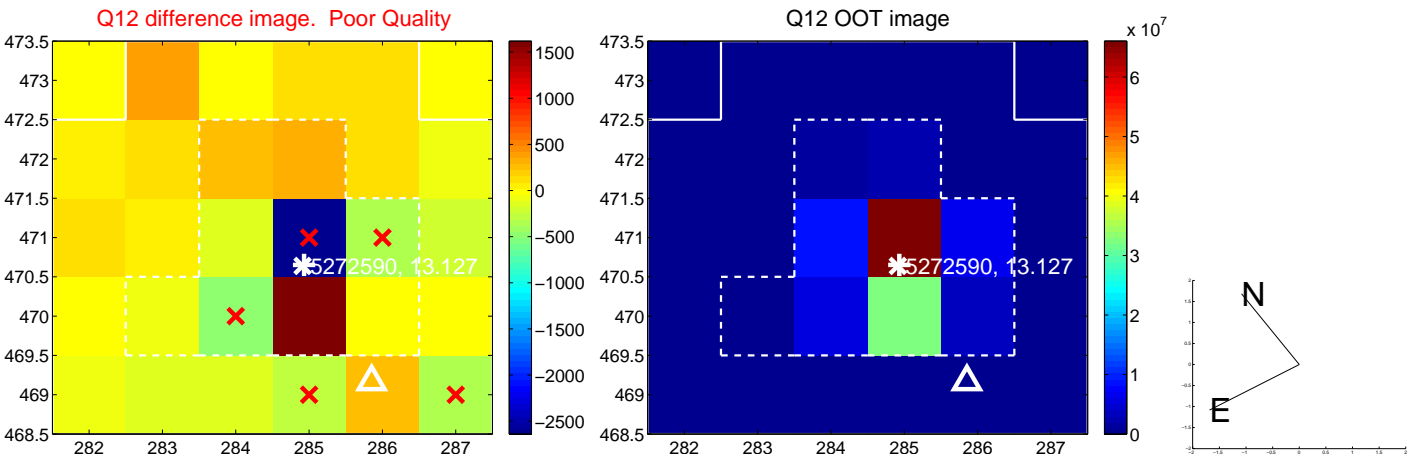
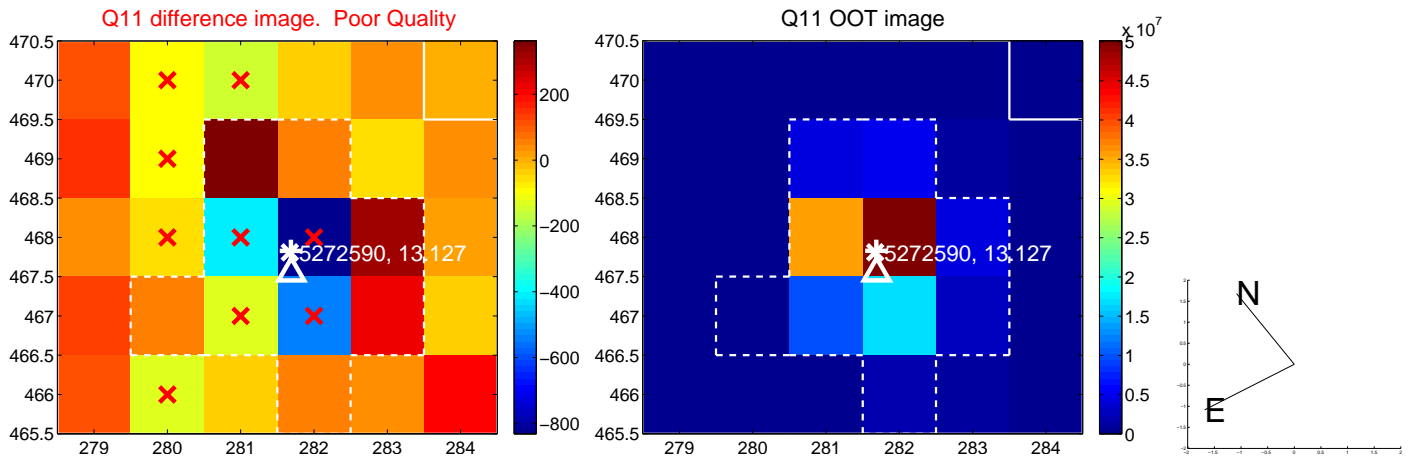
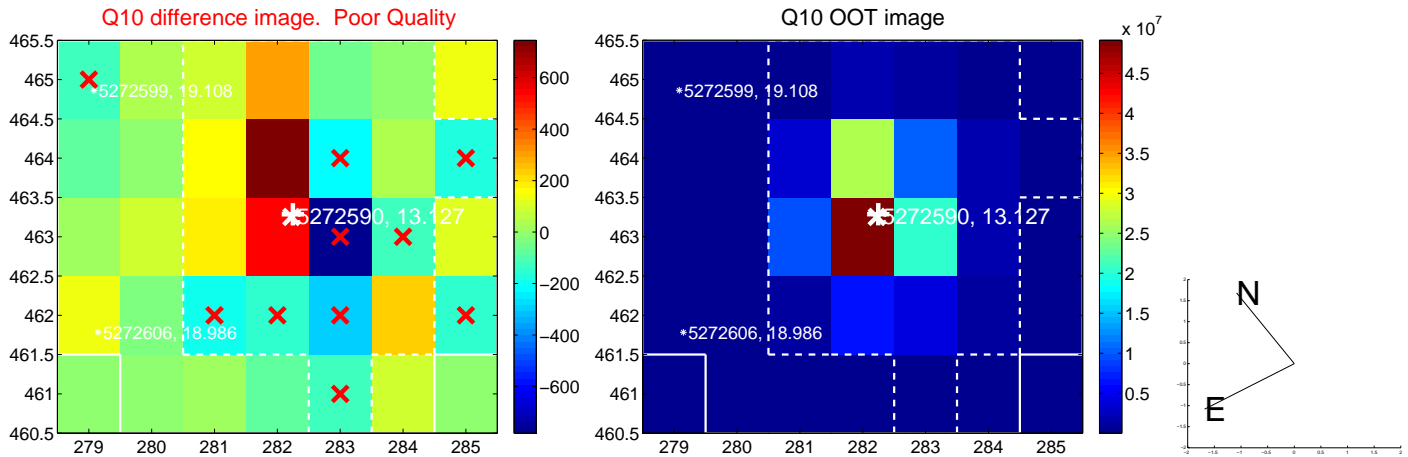
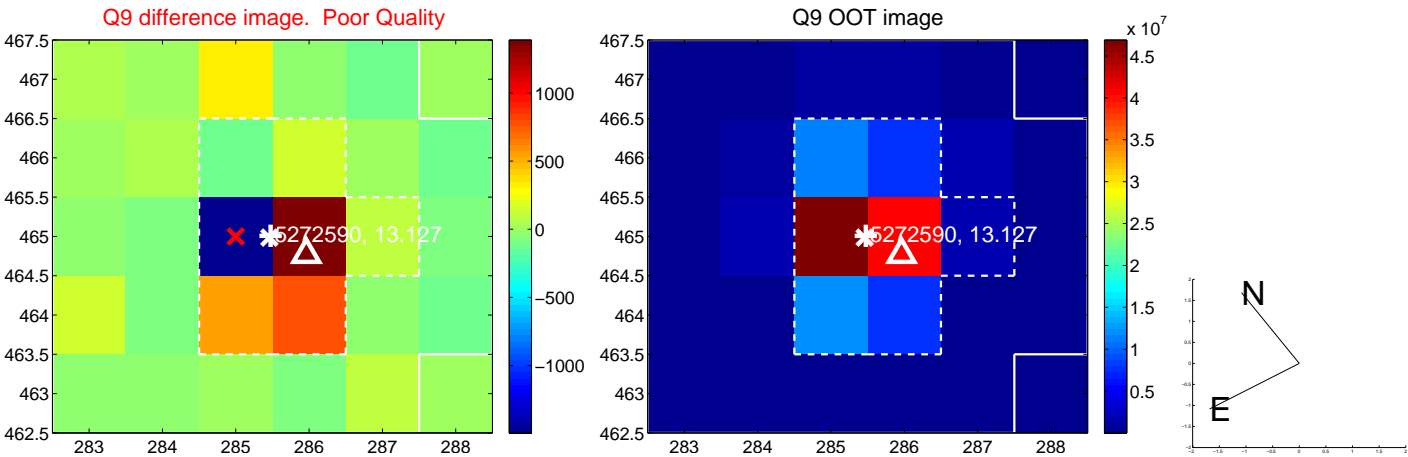
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



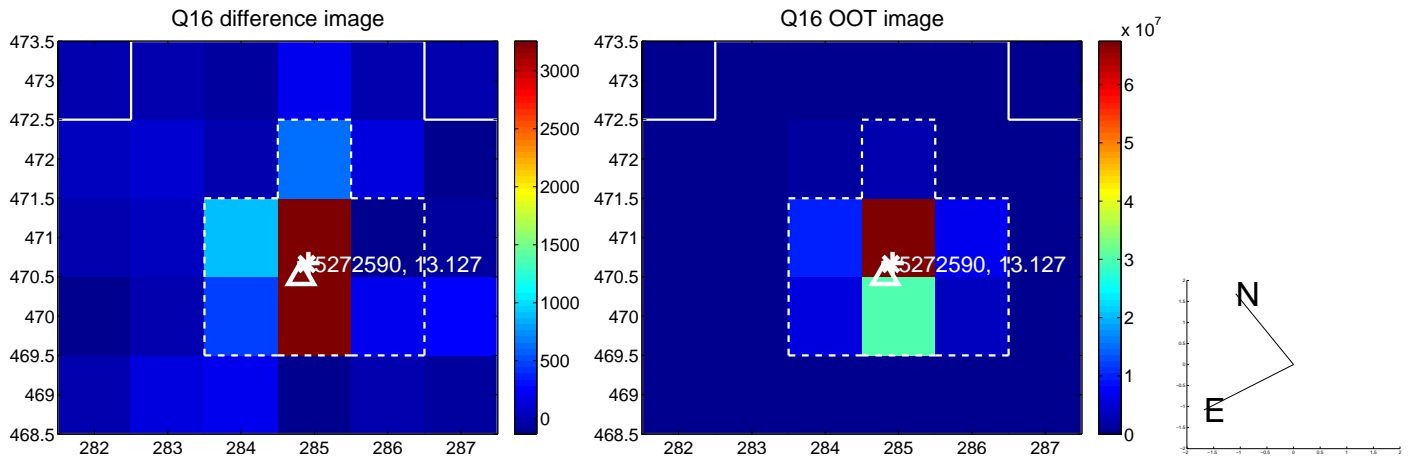
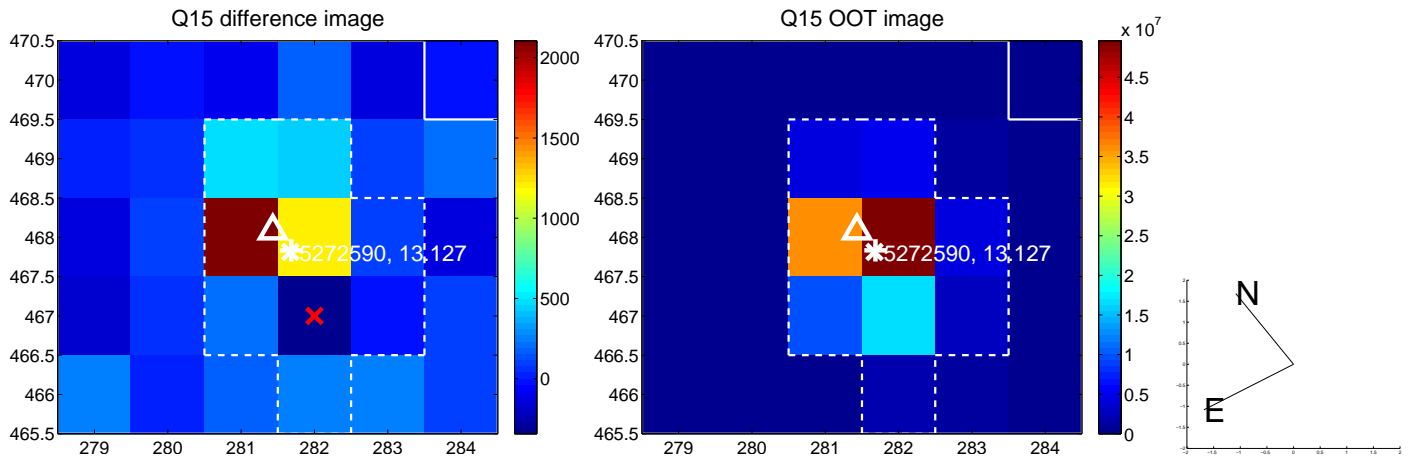
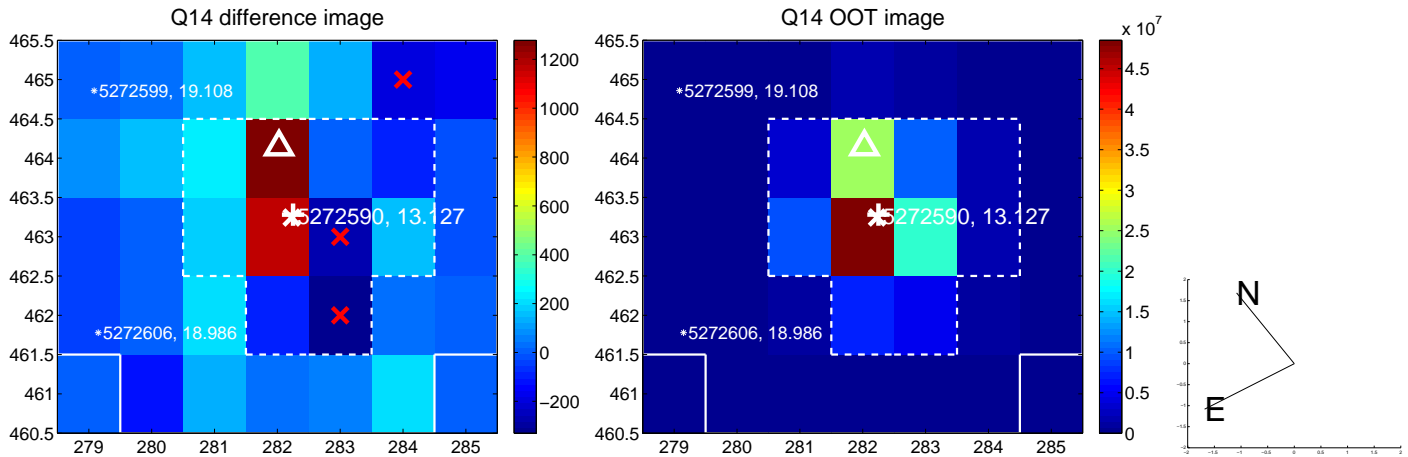
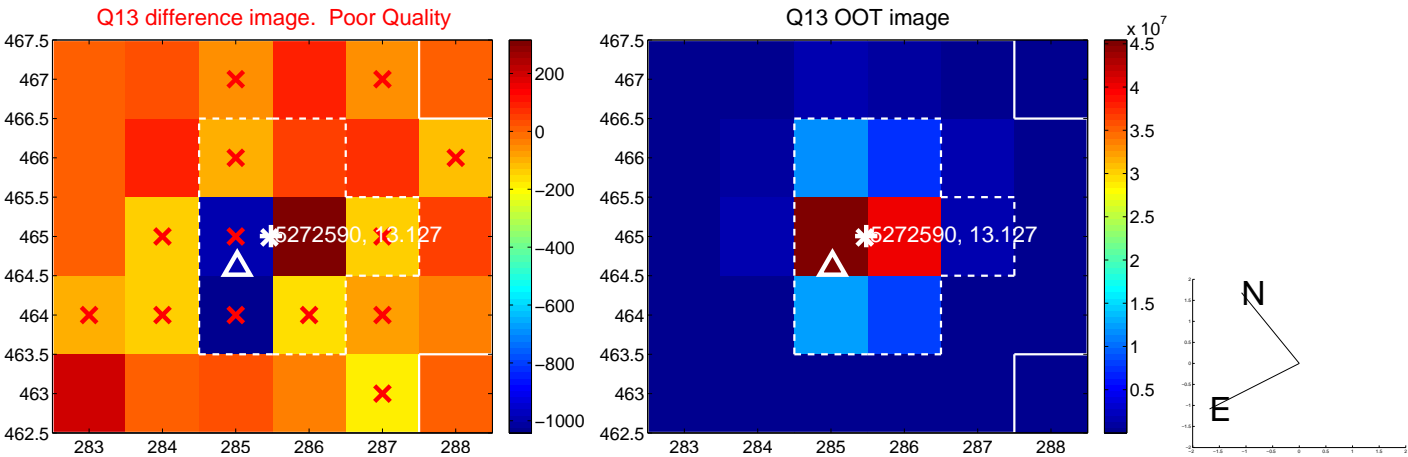
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



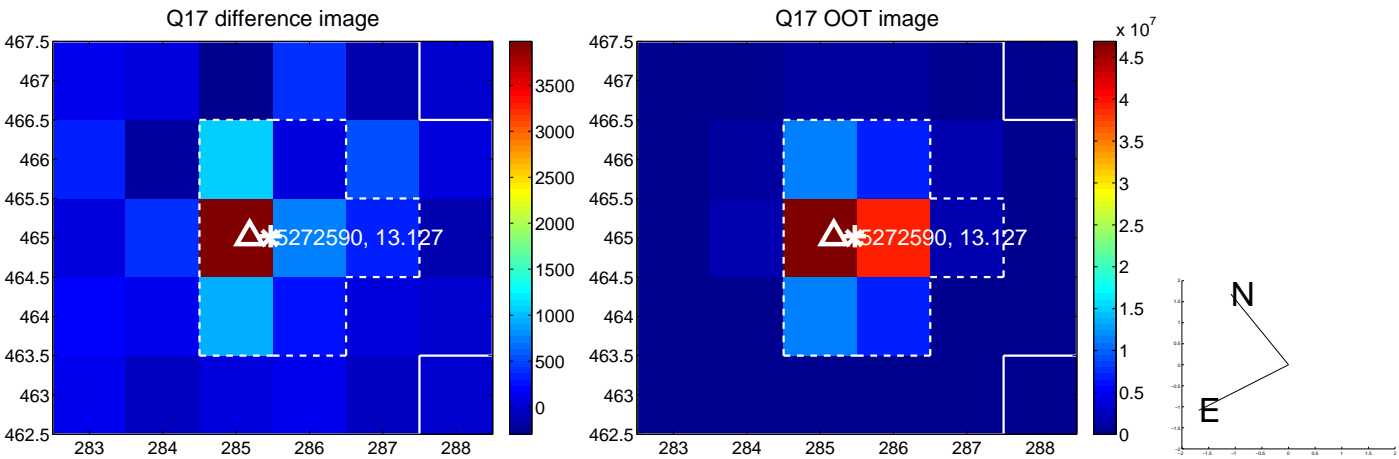
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



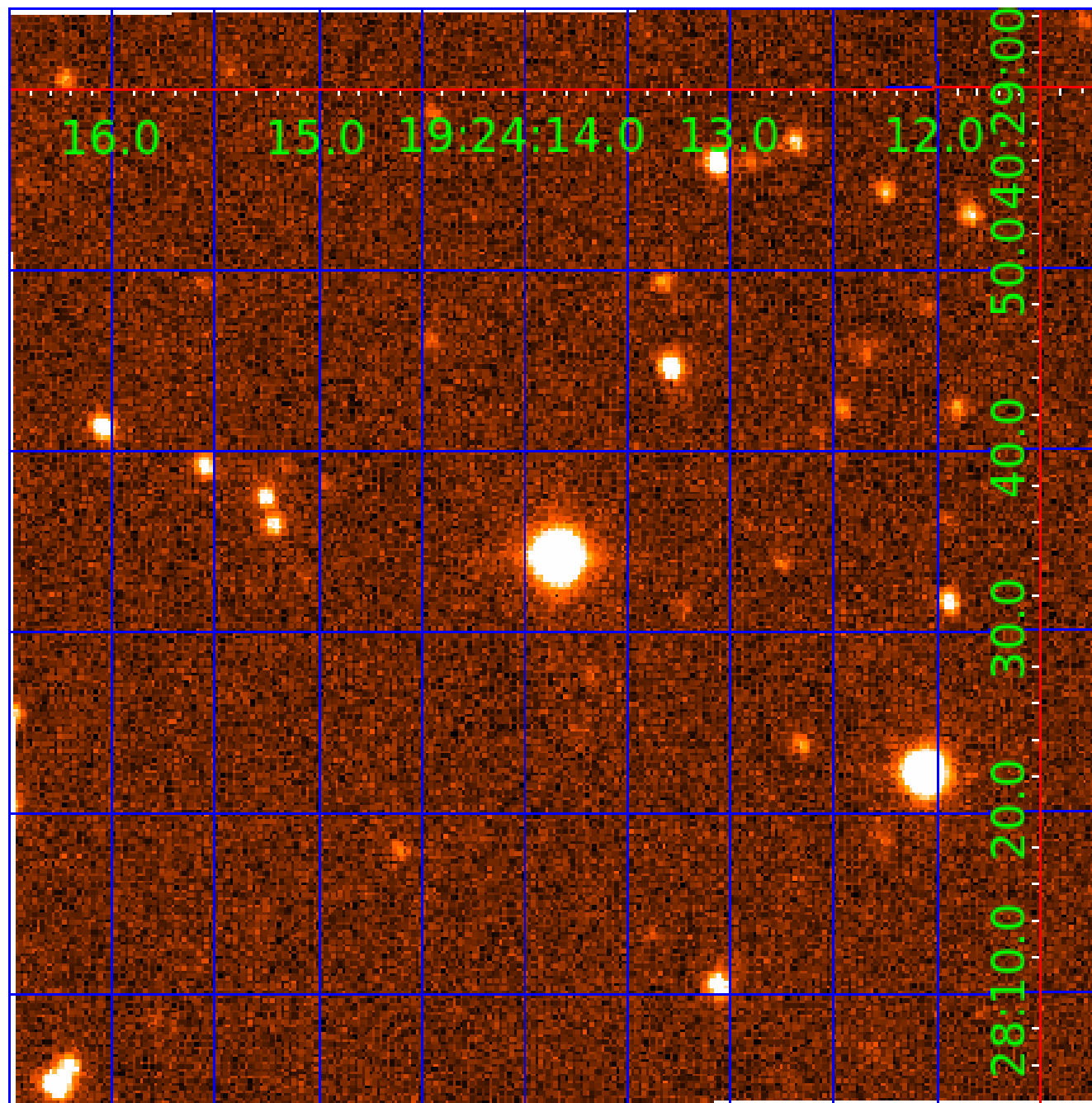
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 005272590

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})
005272590-01	OBS	No	1.382408	131.887178	0.6	4.626	7.8	0.4	1.61	7247	0.16	8353.00
005272590-02	OBS	No	1.382177	131.680525	12.0	2.824	9.1	4.6	1.61	7247	0.65	8354.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005272590-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005272590-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD

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

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

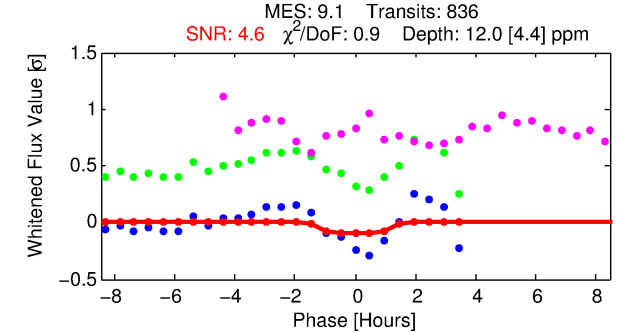
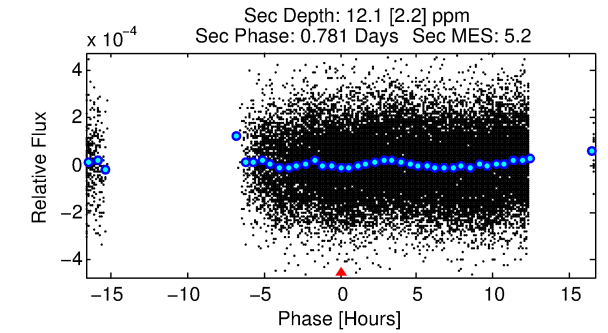
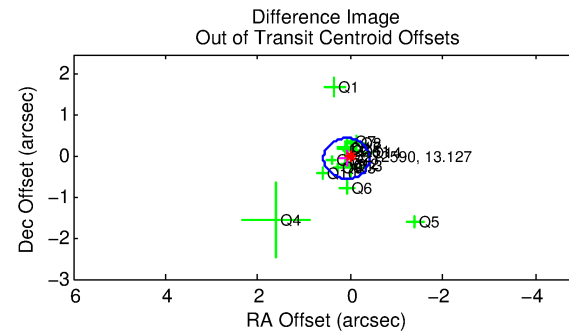
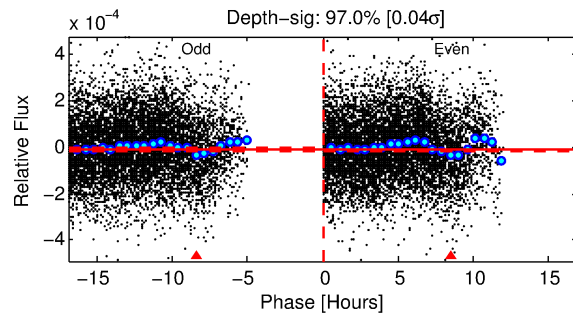
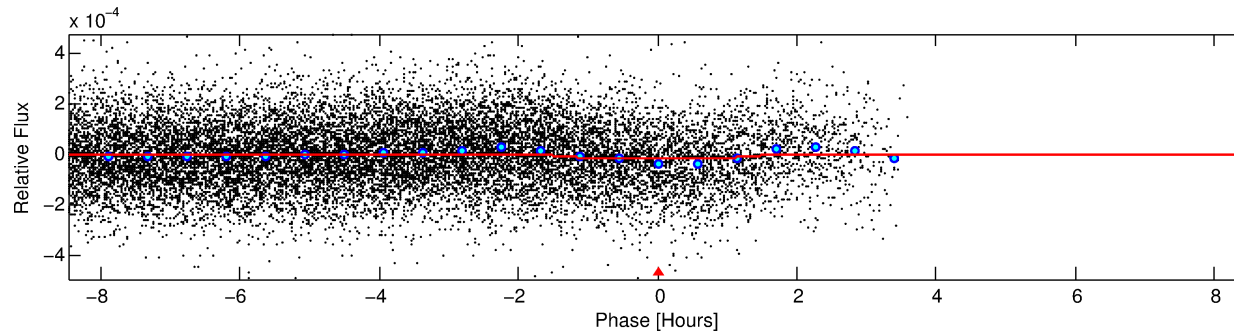
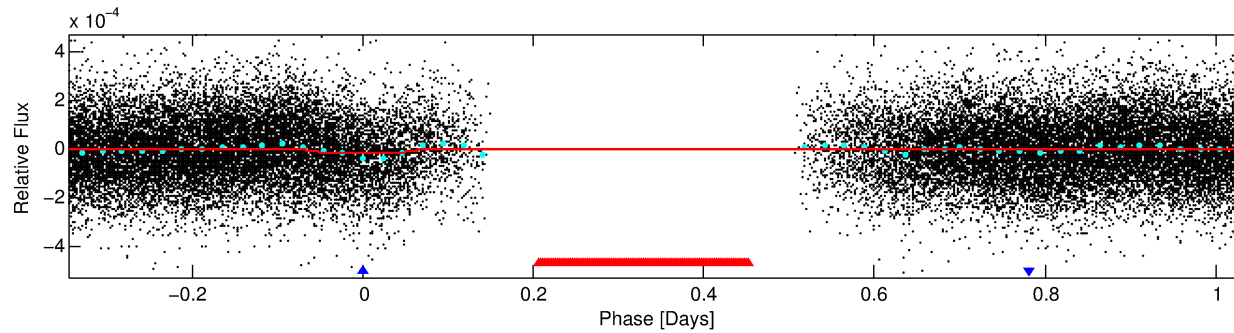
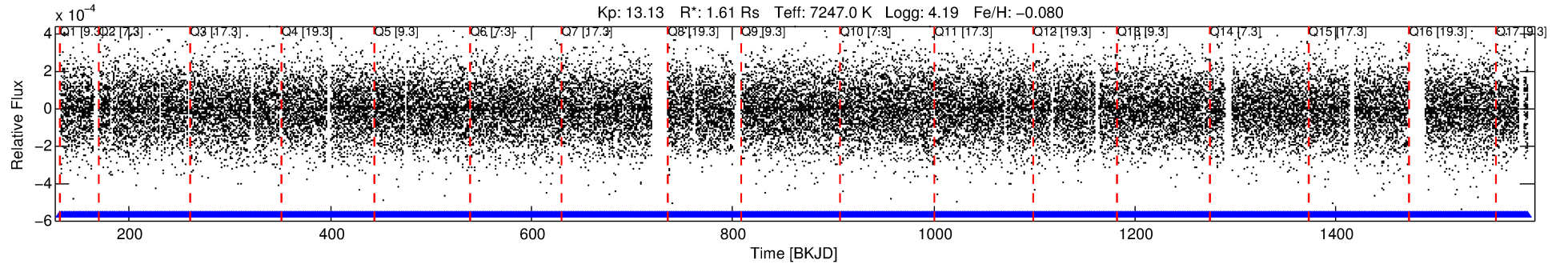
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005272590-02

No Significant Match Found

DV One-Page Summary

KIC: 5272590 Candidate: 2 of 2 Period: 1.382 d



DV Fit Results:

Period = 1.38218 [0.00004] d
Epoch = 131.6805 [0.0089] BKJD
Rp/R* = 0.0037 [0.0019]
a/R* = 1.91 [4.36]
b = 0.90 [0.67]
Seff = 8354.87 [3447.54]
Teq = 2438 [251] K
Rp = 0.65 [0.40] Re
a = 0.0276 [0.0074] AU
Ag = 12.15 [13.70] [0.81σ]
Teffp = 7037 [1896] K [2.40σ]

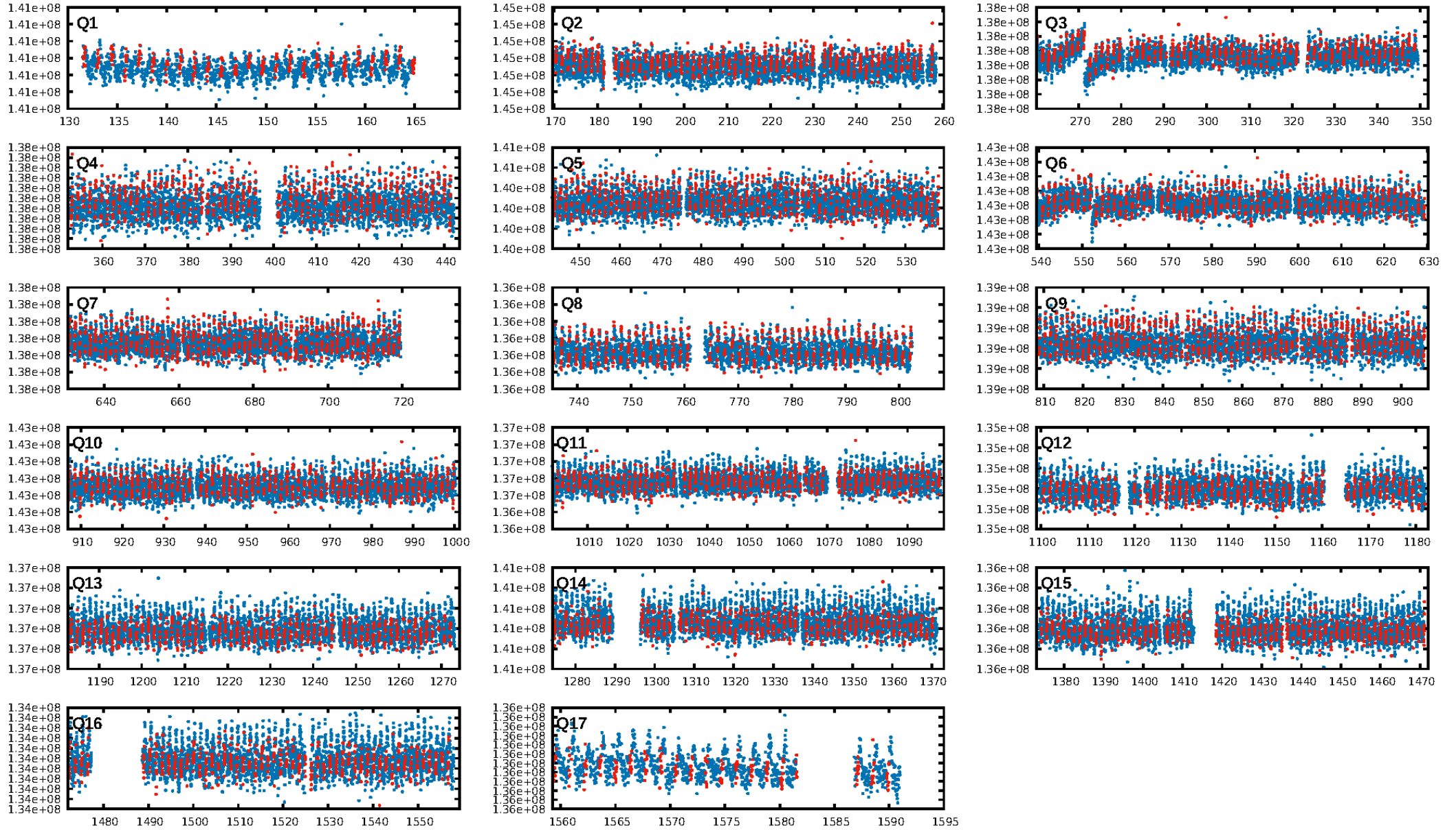
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.54e-15
RollingBand-fgt: 1.00 [816/816]
GhostDiagnostic-chr: 5.17
Centroid-sig: 87.0%
Centroid-so: 0.537 arcsec [0.34σ]
OotOffset-rm: 0.103 arcsec [0.62σ]
KicOffset-rm: 0.021 arcsec [0.11σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.76 [13/17]
DiffImageOverlap-fno: 0.24 [4/17]

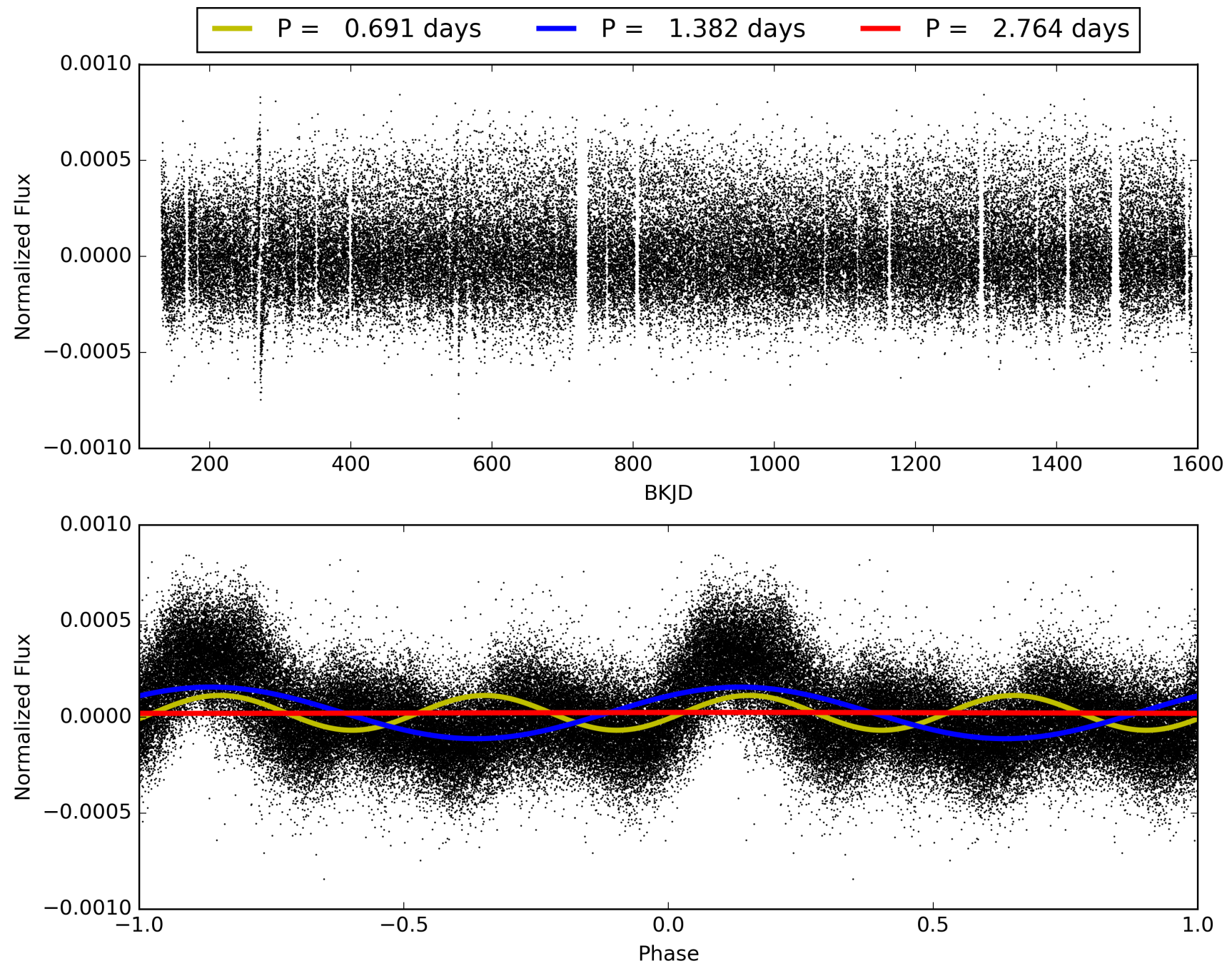
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:28:47 Z

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

TCE 005272590-02, PDC Light Curves

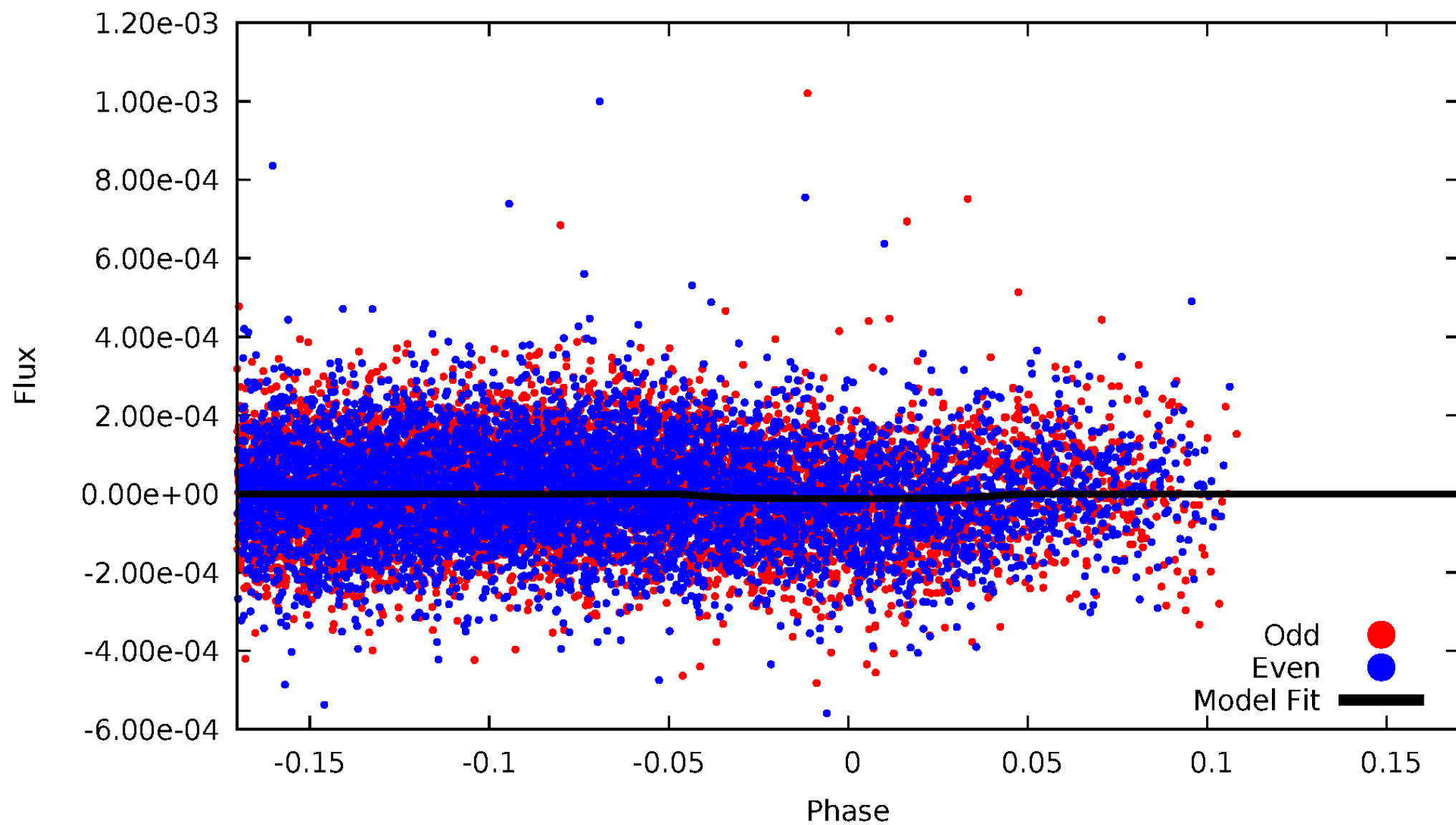


TCE 005272590-02



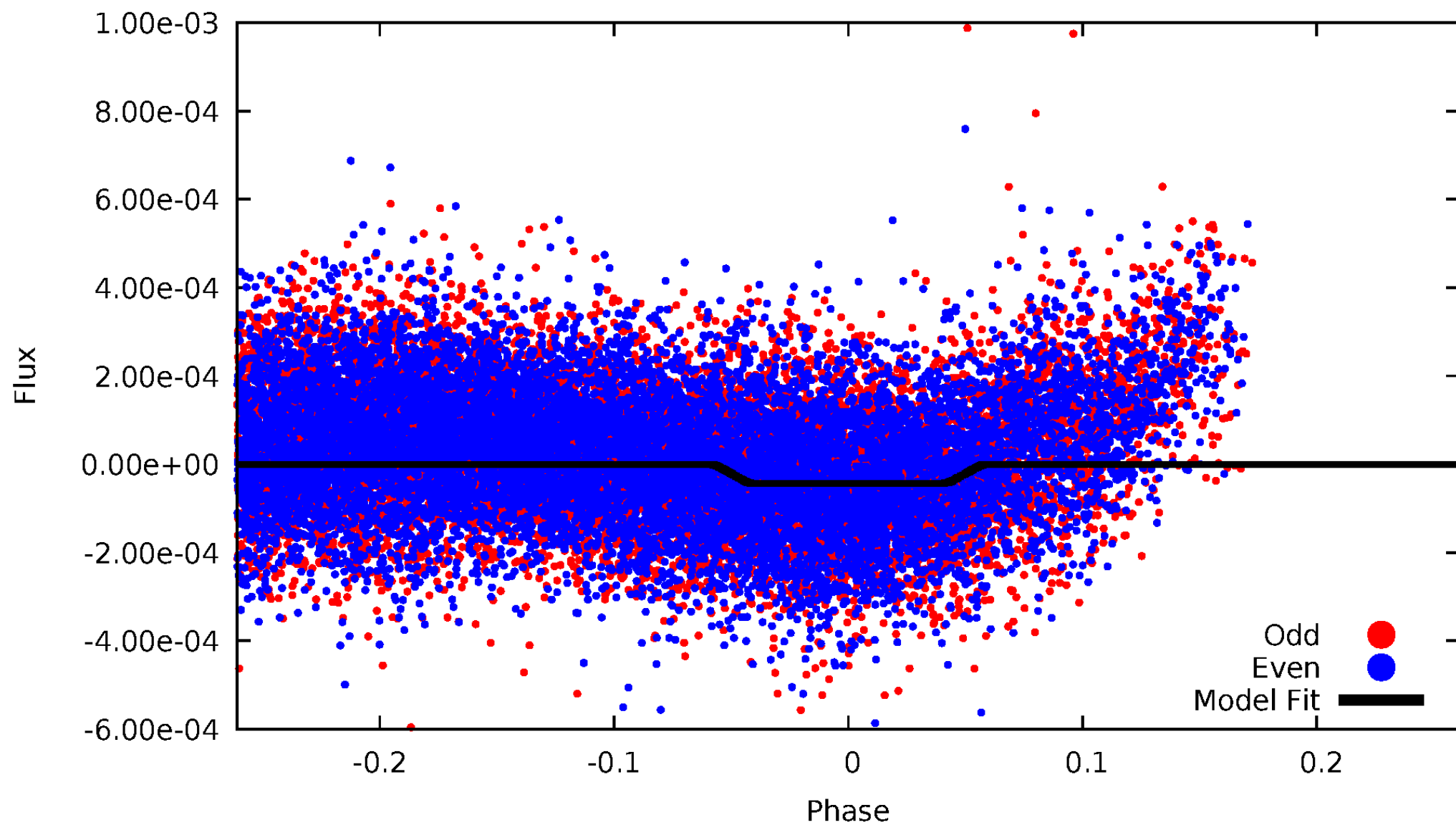
DV Odd/Even

TCE 005272590-02



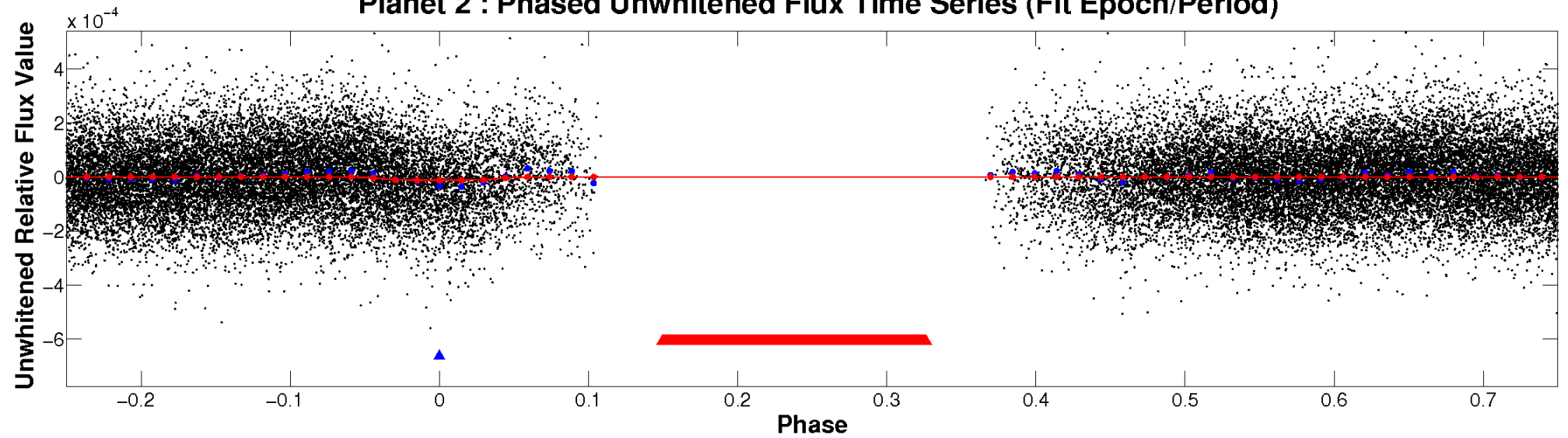
ALT Odd/Even

TCE 005272590-02

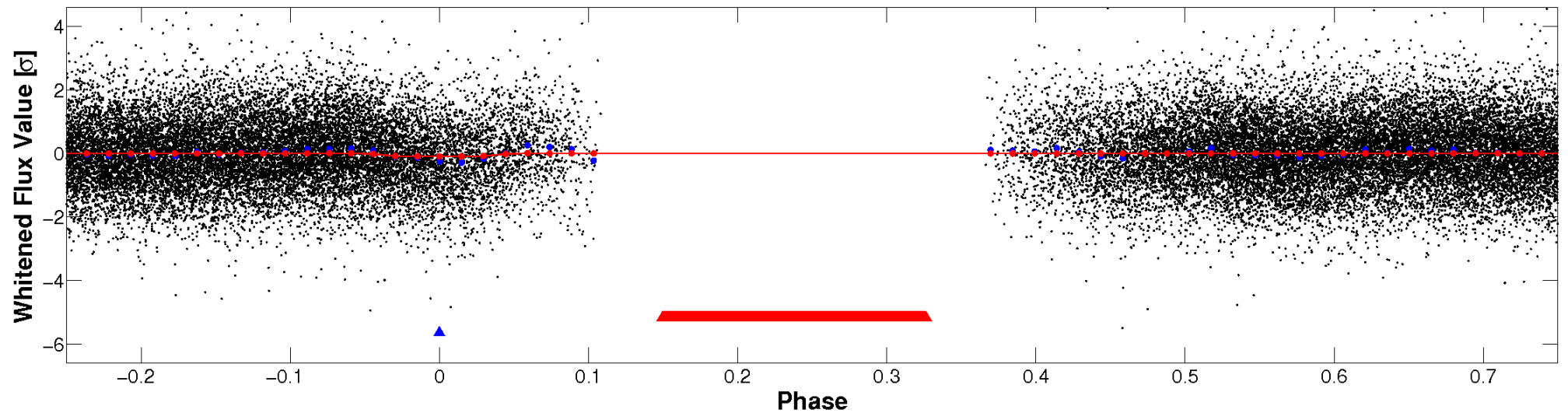


Non-Whitened Vs. Whitened Light Curve

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

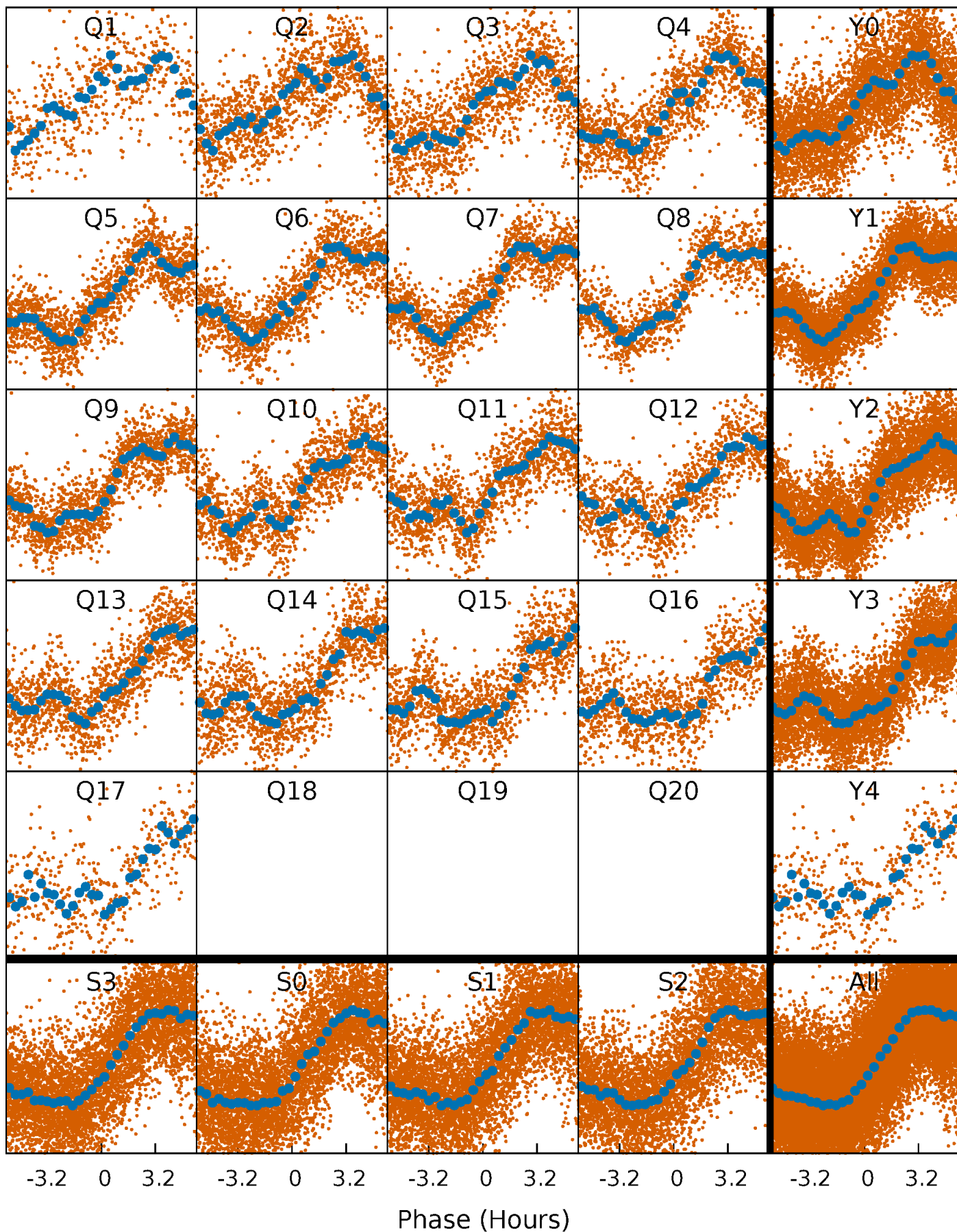


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



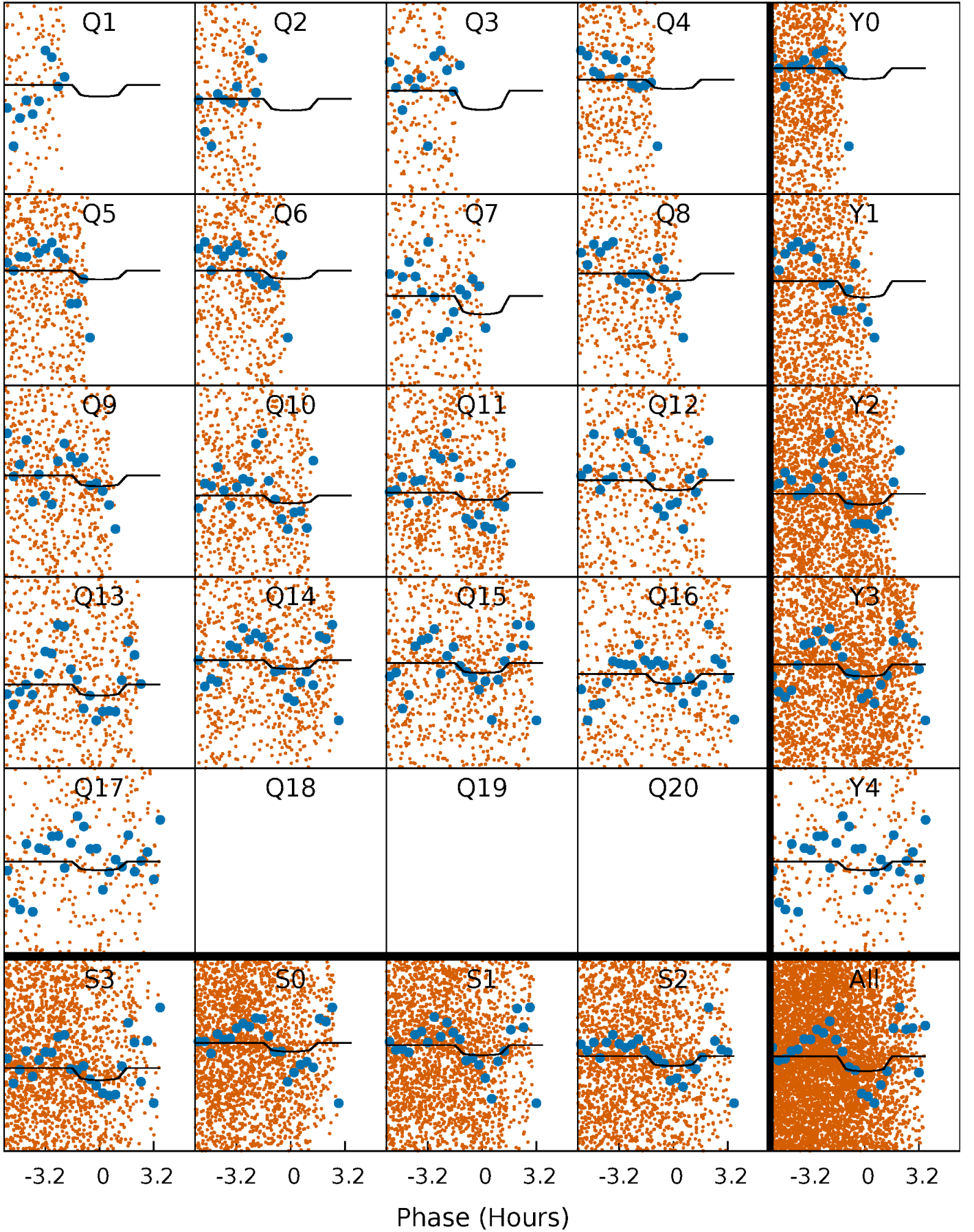
PDC Quarter-Phased Transit Curves

TCE 005272590-02 P= 1.382177 Days $T_0=131.680525$ (BKJD)



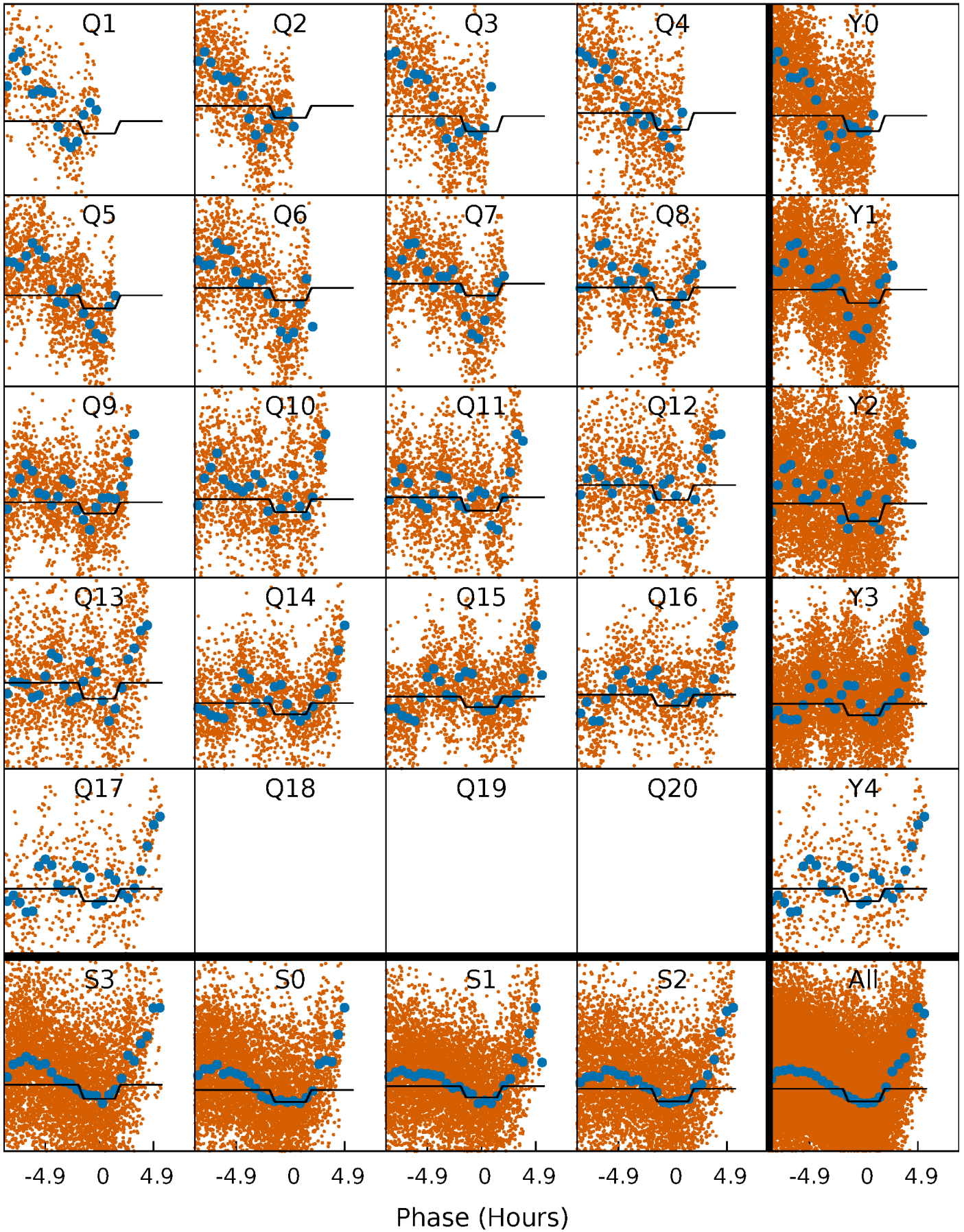
DV Quarter-Phased Transit Curves

TCE 005272590-02 P= 1.382177 Days $T_0=131.680525$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

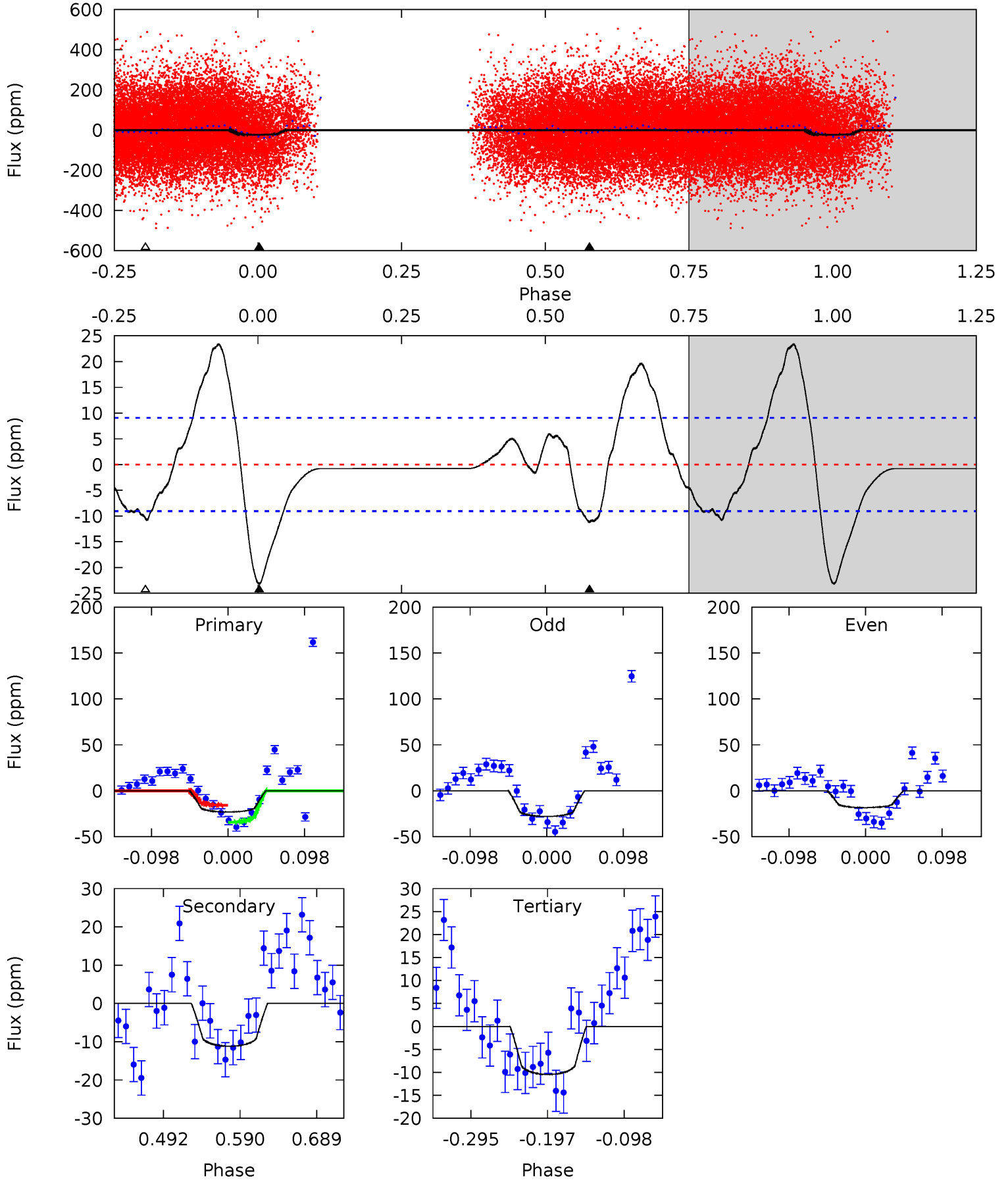
TCE 005272590-02 P= 1.382172 Days $T_0=131.596468$ (BKJD)



DV Model-Shift Uniqueness Test

005272590-02, P = 1.382177 Days, E = 130.298348 Days

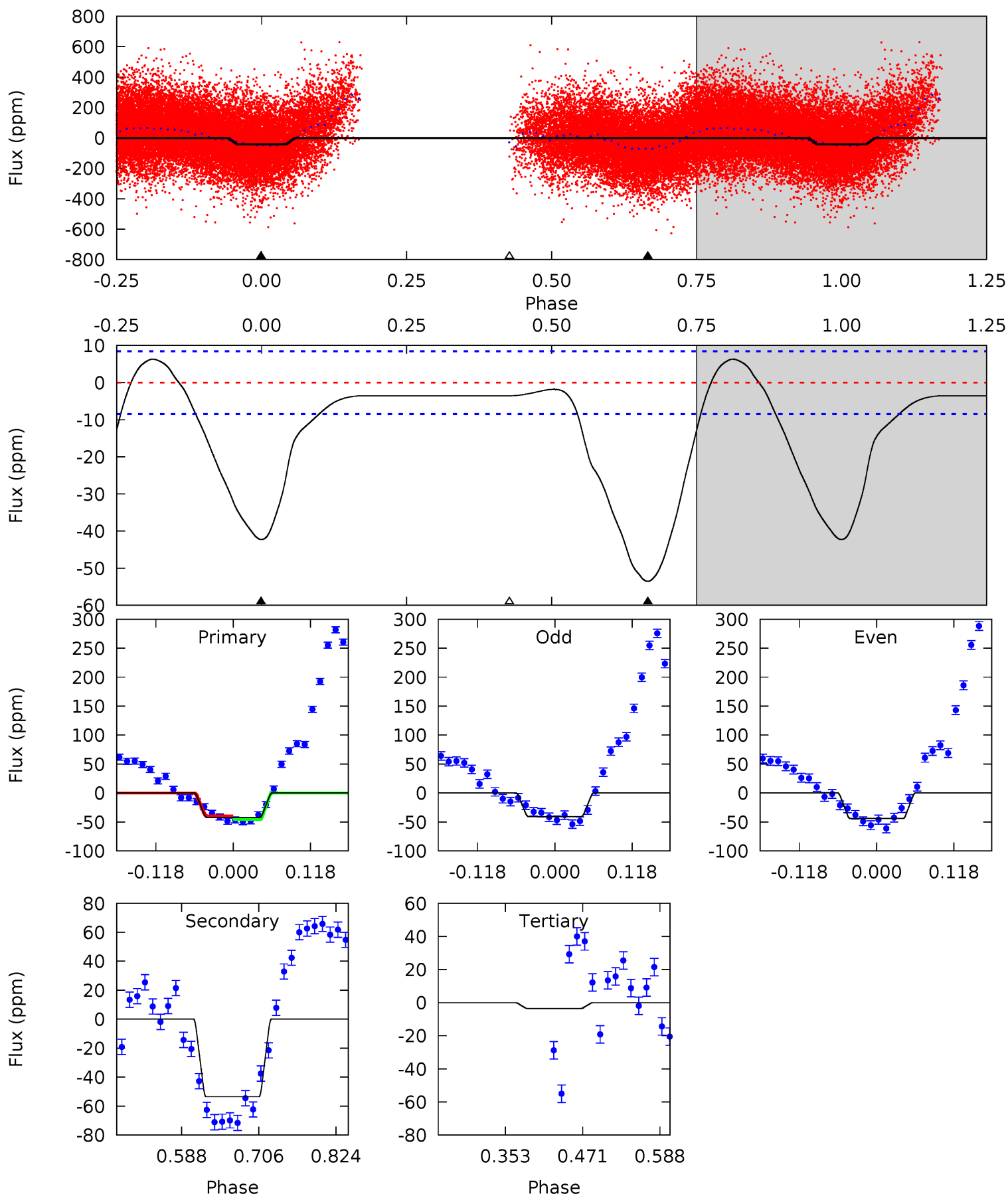
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	5.64	5.28	0	4.57	1.65	3.94	6.40	11.7	0.36	5.64	2.43	0.91	0.50	4.45



Alt Model-Shift Uniqueness Test

005272590-02, P = 1.382172 Days, E = 130.214296 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.6	28.6	1.90	0	4.53	1.56	2.38	20.7	22.6	26.7	28.6	0.87	0.97	0.11	1.30



Stellar Parameters For KIC 005272590

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7247^{+230}_{-316}	$4.194^{+0.105}_{-0.195}$	$-0.080^{+0.250}_{-0.350}$	$1.606^{+0.540}_{-0.291}$	$1.472^{+0.221}_{-0.221}$	$0.501^{+0.254}_{-0.250}$
	+3%/-4%	+3%/-5%	+312%/-438%	+34%/-18%	+15%/-15%	+51%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005272590-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-11 ± 2	$0.70^{+0.36}_{-0.35}$	3436^{+292}_{-219}	6597^{+3629}_{-1277}	$9.593^{+27.005}_{-5.549}$
Alt.	-54 ± 2	$1.20^{+0.38}_{-0.38}$	3431^{+266}_{-217}	7583^{+2072}_{-1096}	16^{+17}_{-7}

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

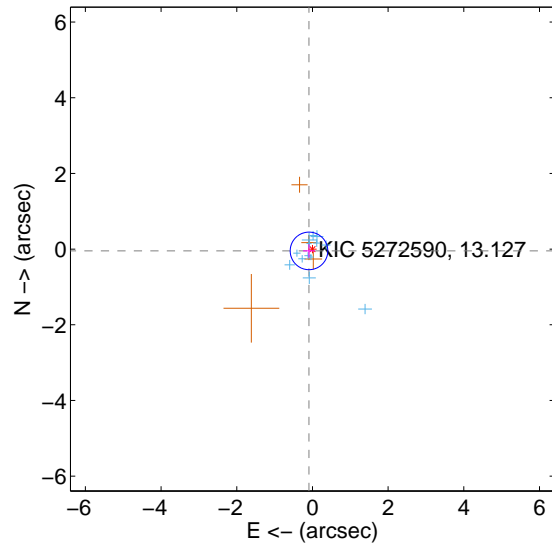
Supplemental centroid analysis for 005272590-02. Kepler magnitude: 13.13. Transit SNR 4.62

There are 13 quarters with good PRF difference image offsets

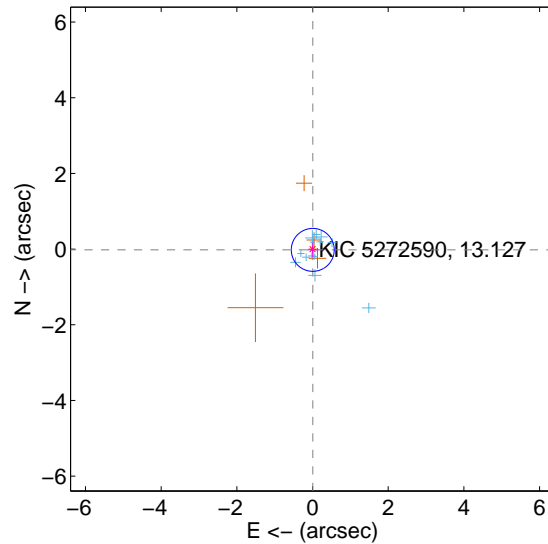
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.103 ± 0.166	0.62	0.091 ± 0.156	-0.048 ± 0.175
PRF-fit source offset from KIC position	0.021 ± 0.189	0.11	-0.006 ± 0.151	-0.020 ± 0.193
photometric centroid source offset	0.54 ± 1.60	0.34	-0.08 ± 1.72	0.53 ± 1.59

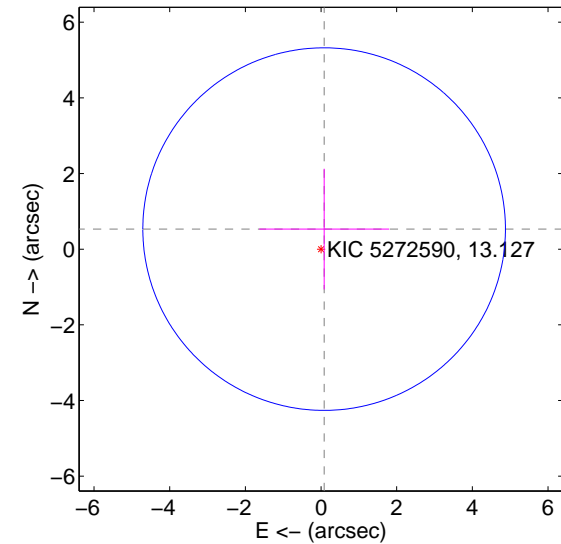
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

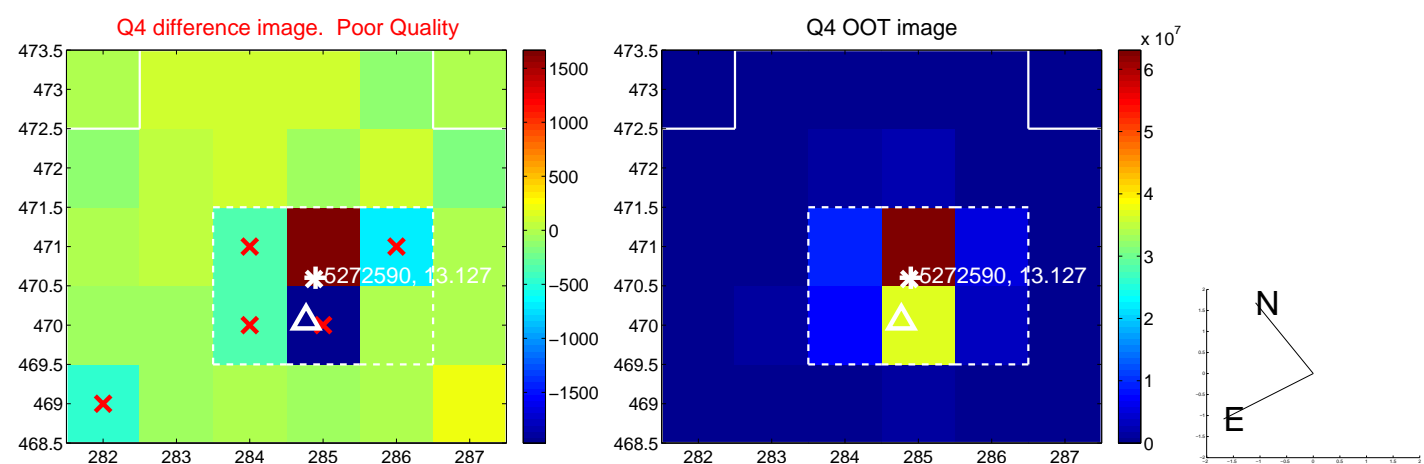
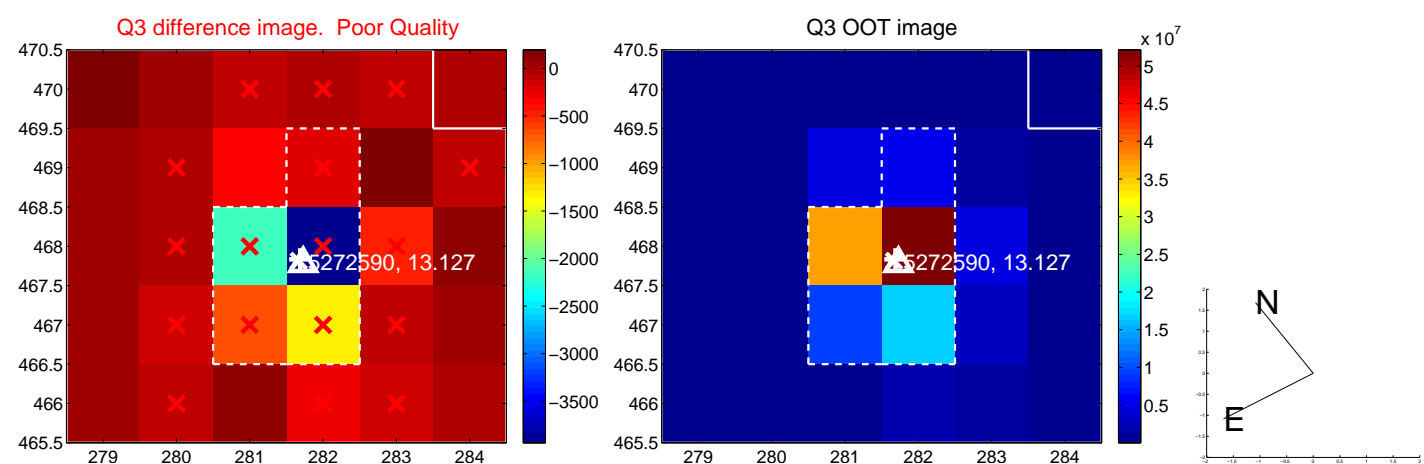
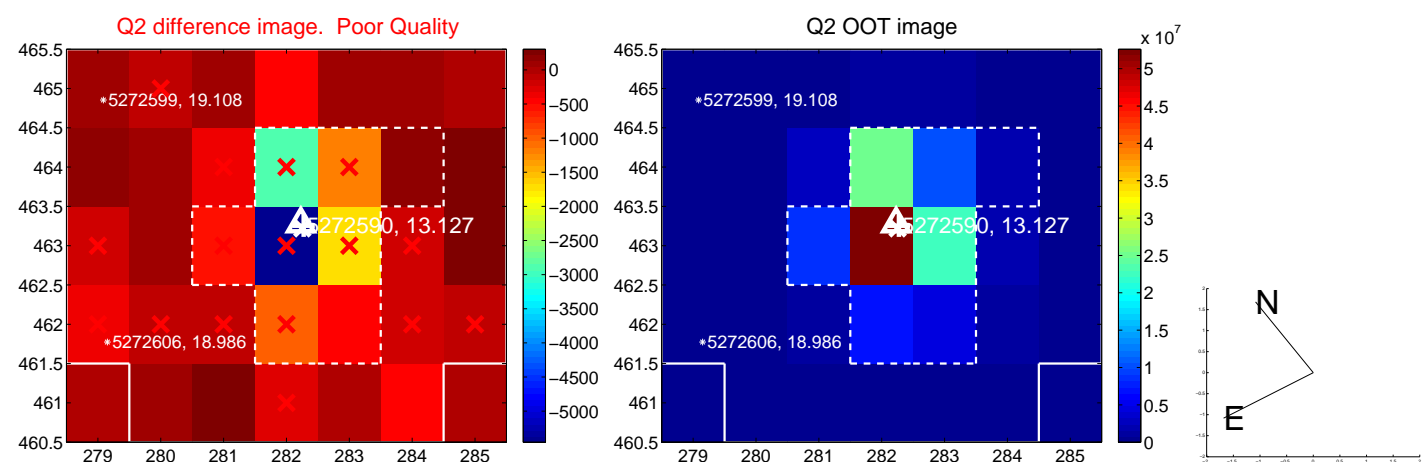
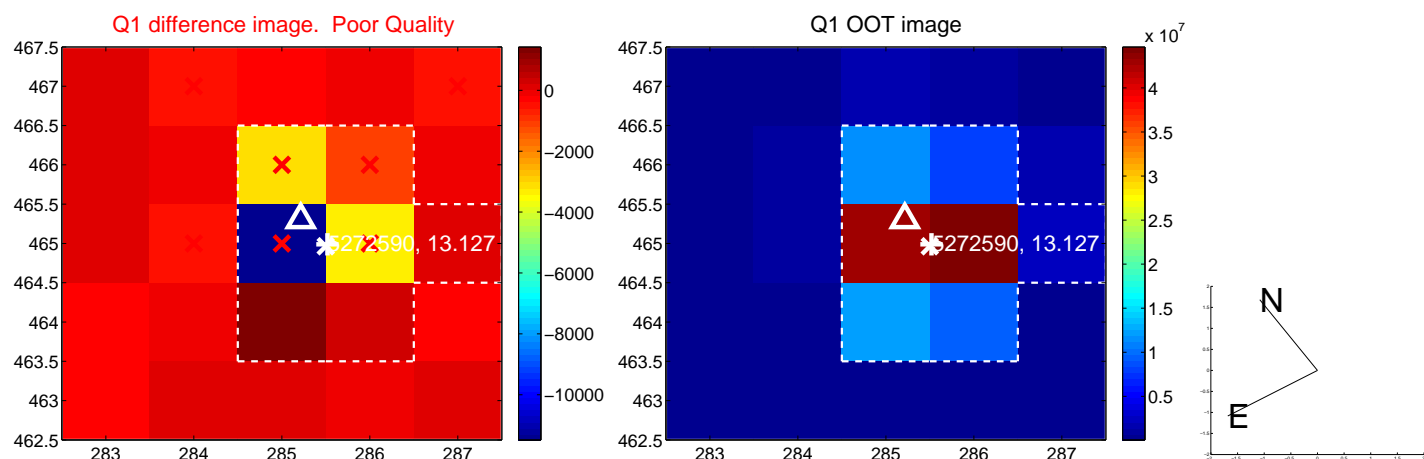


offset from photometric centroids

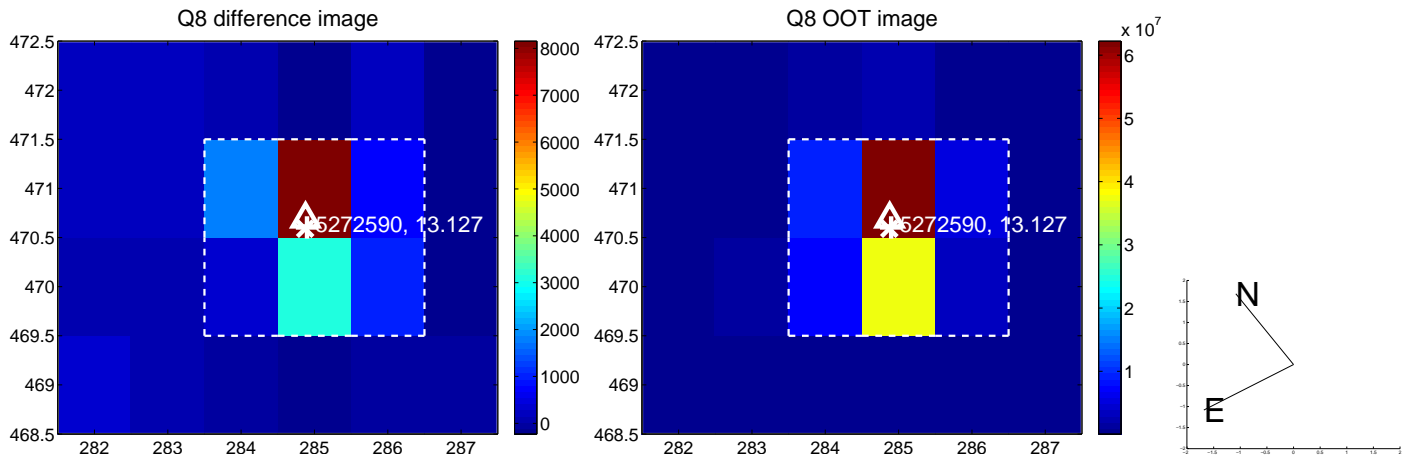
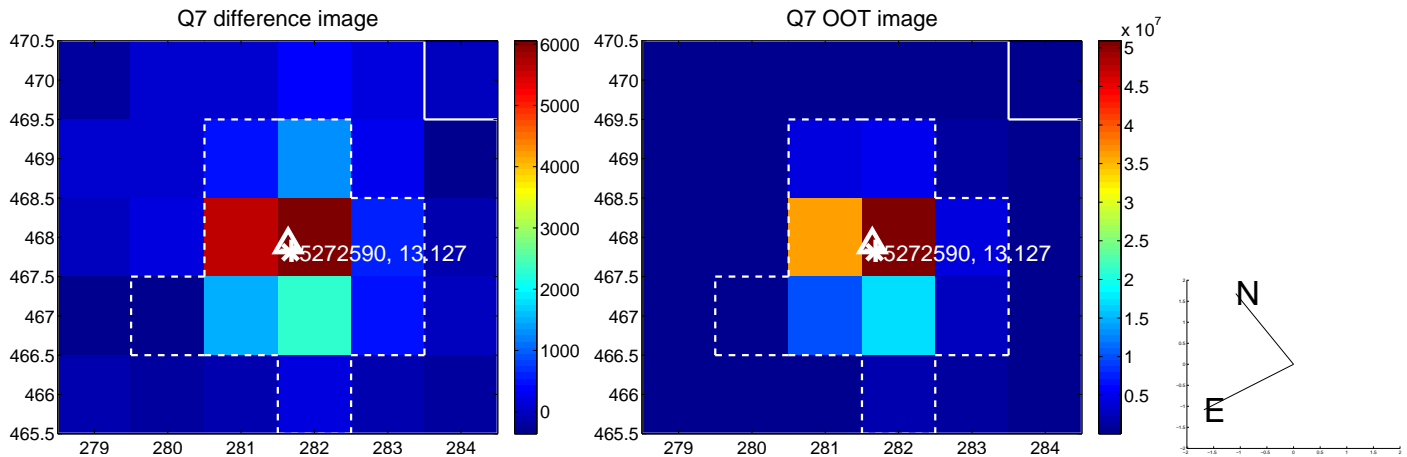
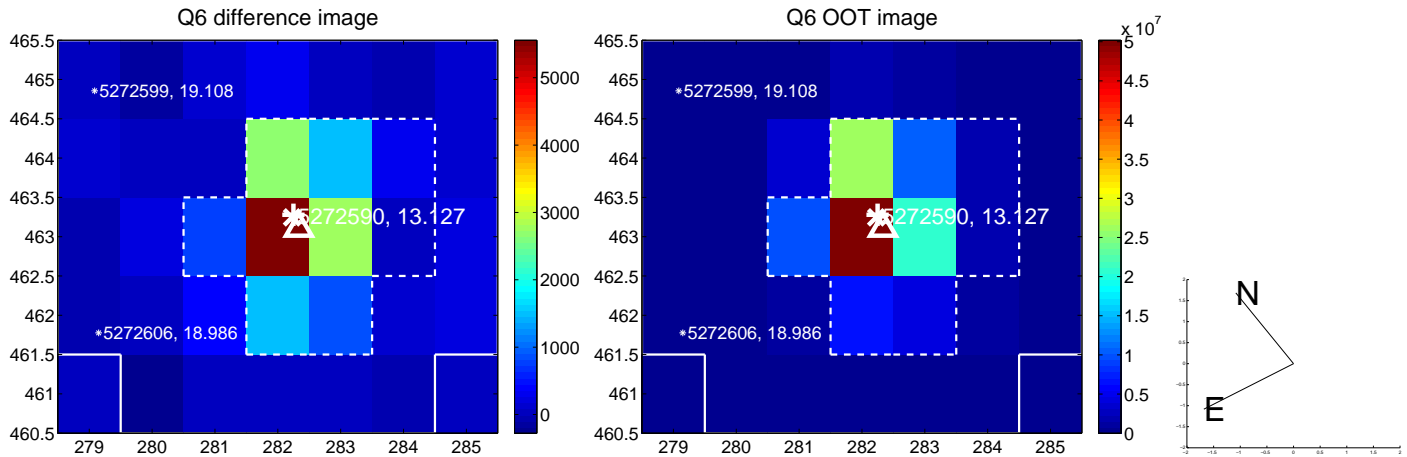
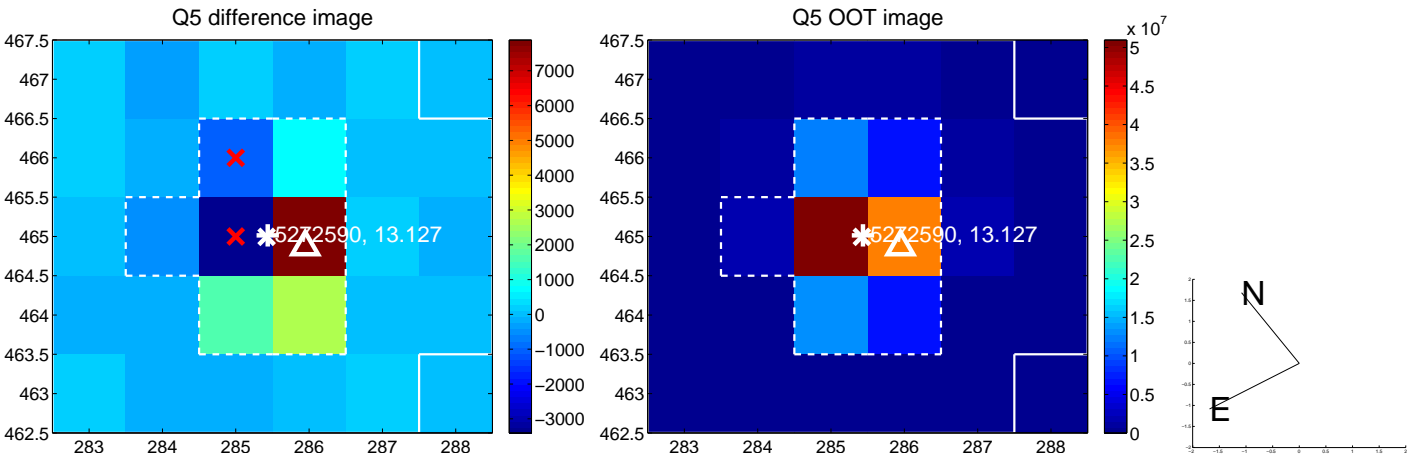


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

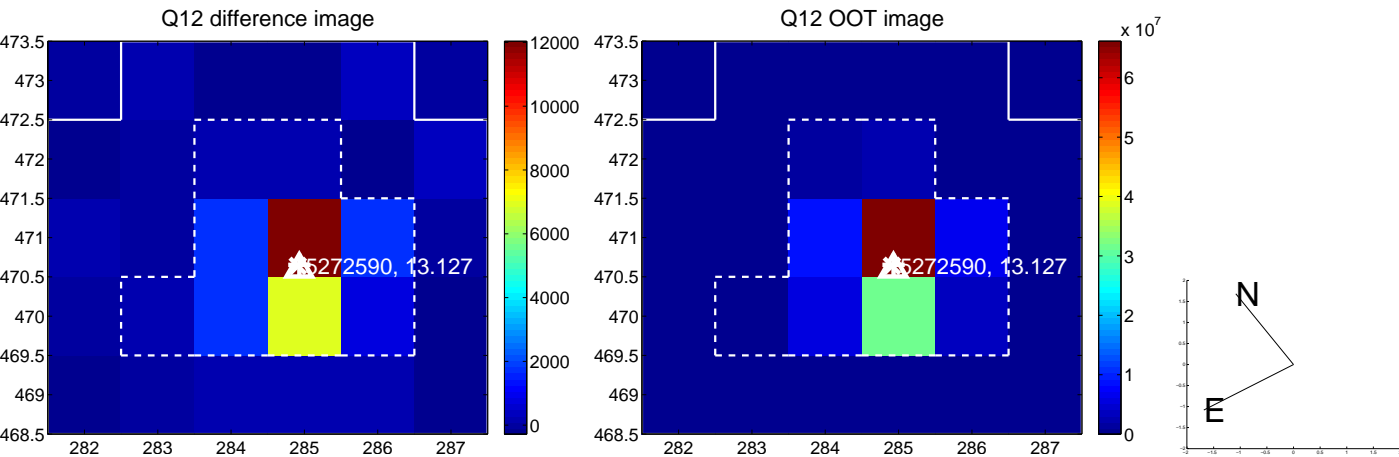
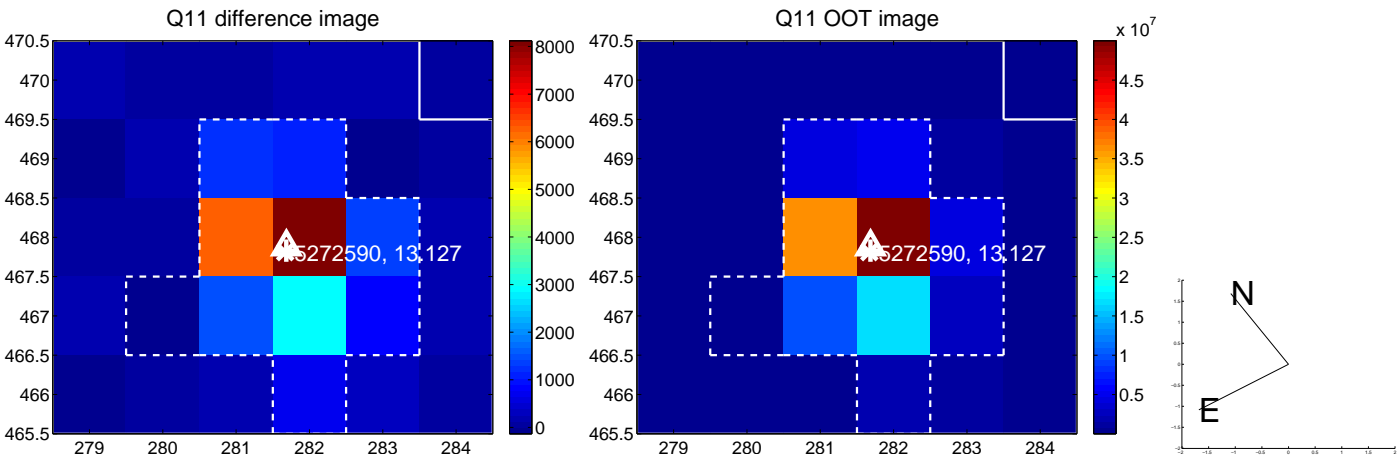
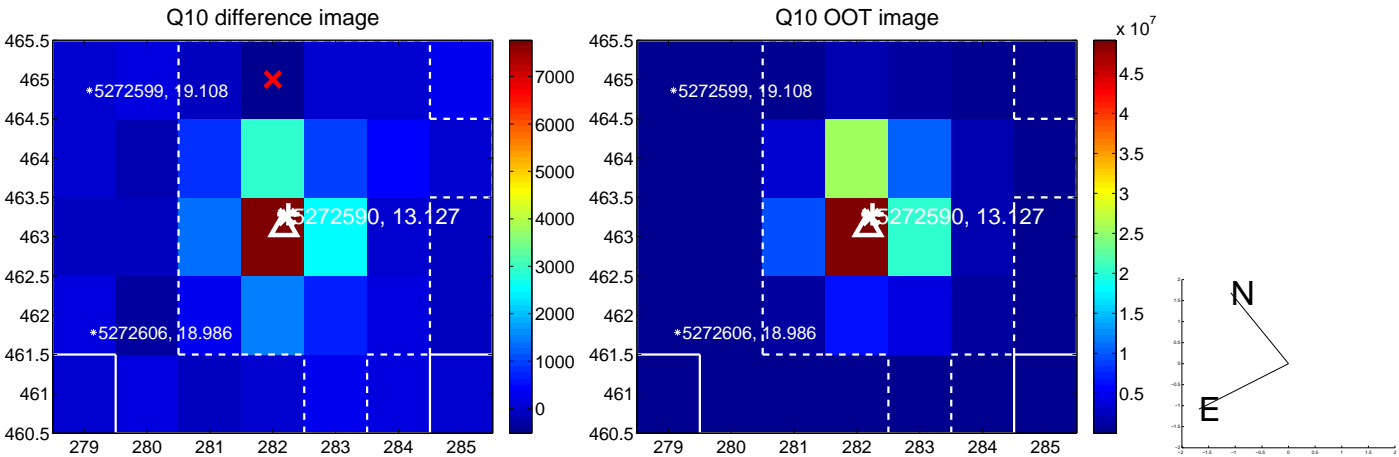
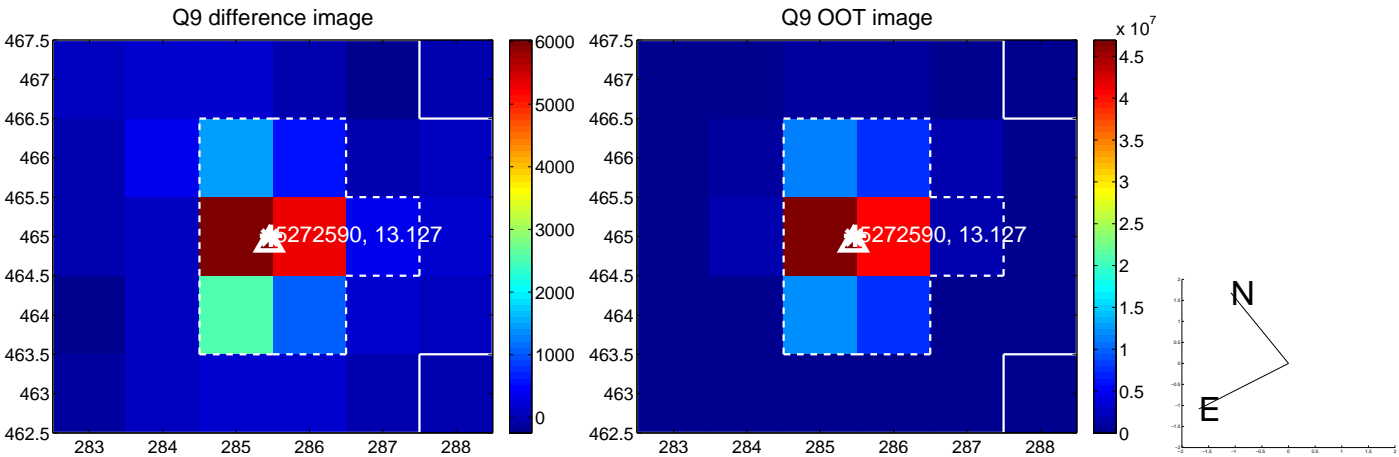
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



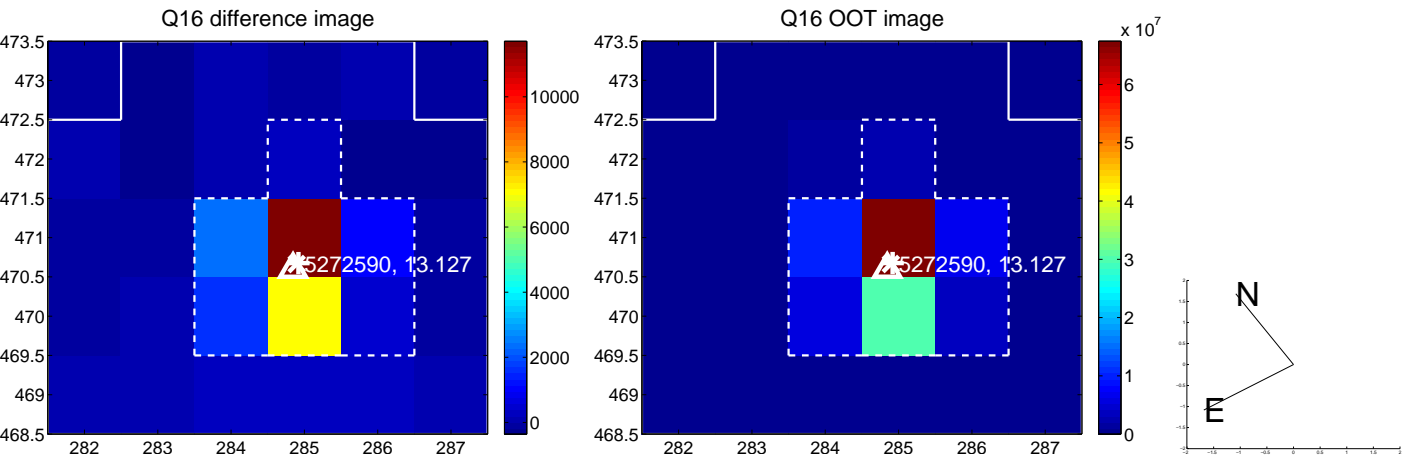
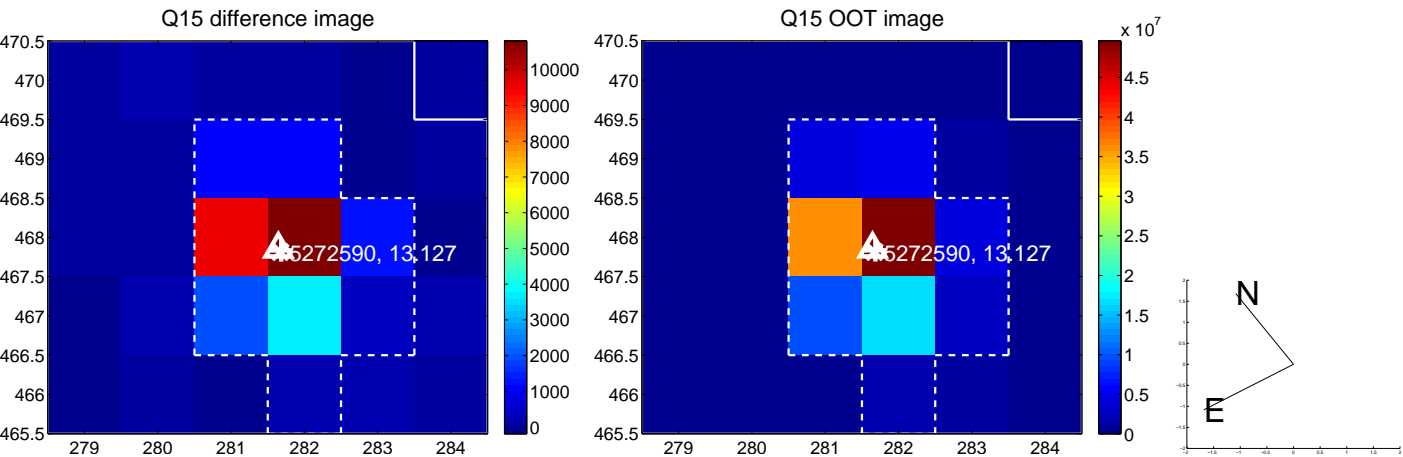
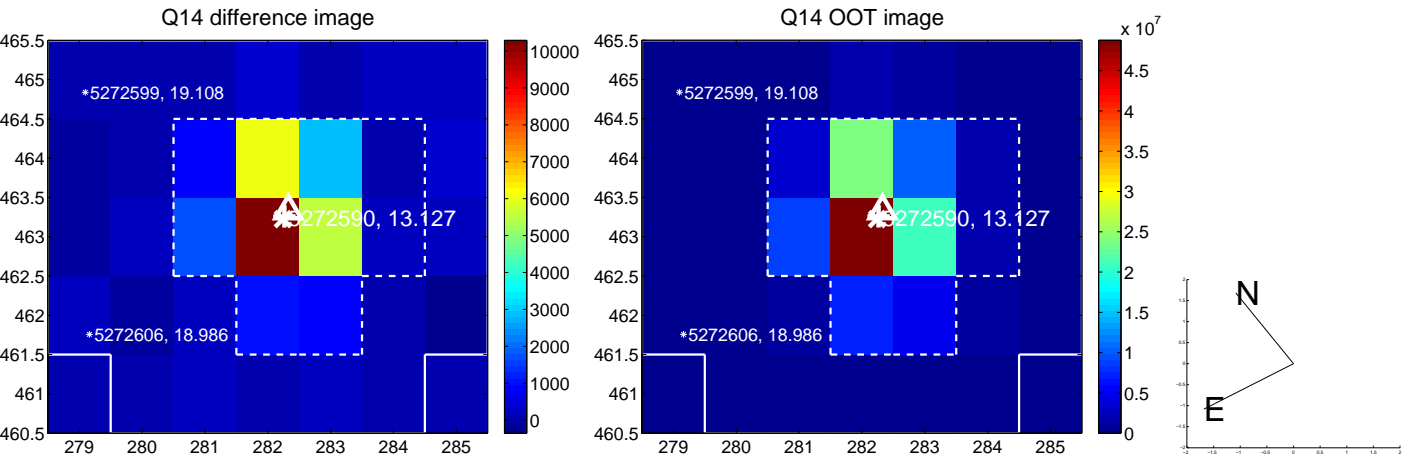
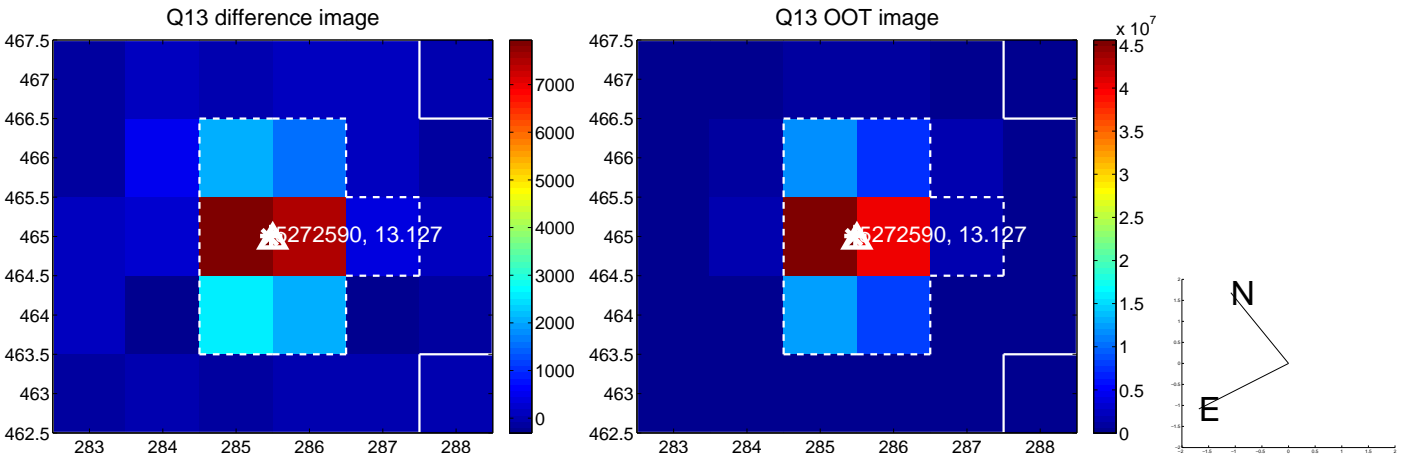
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



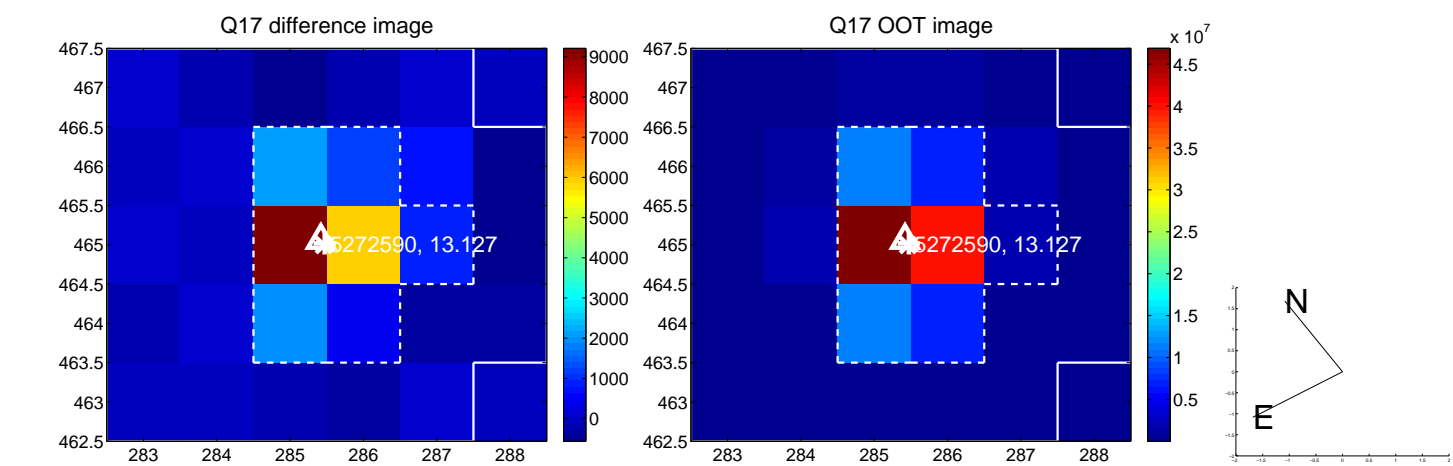
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



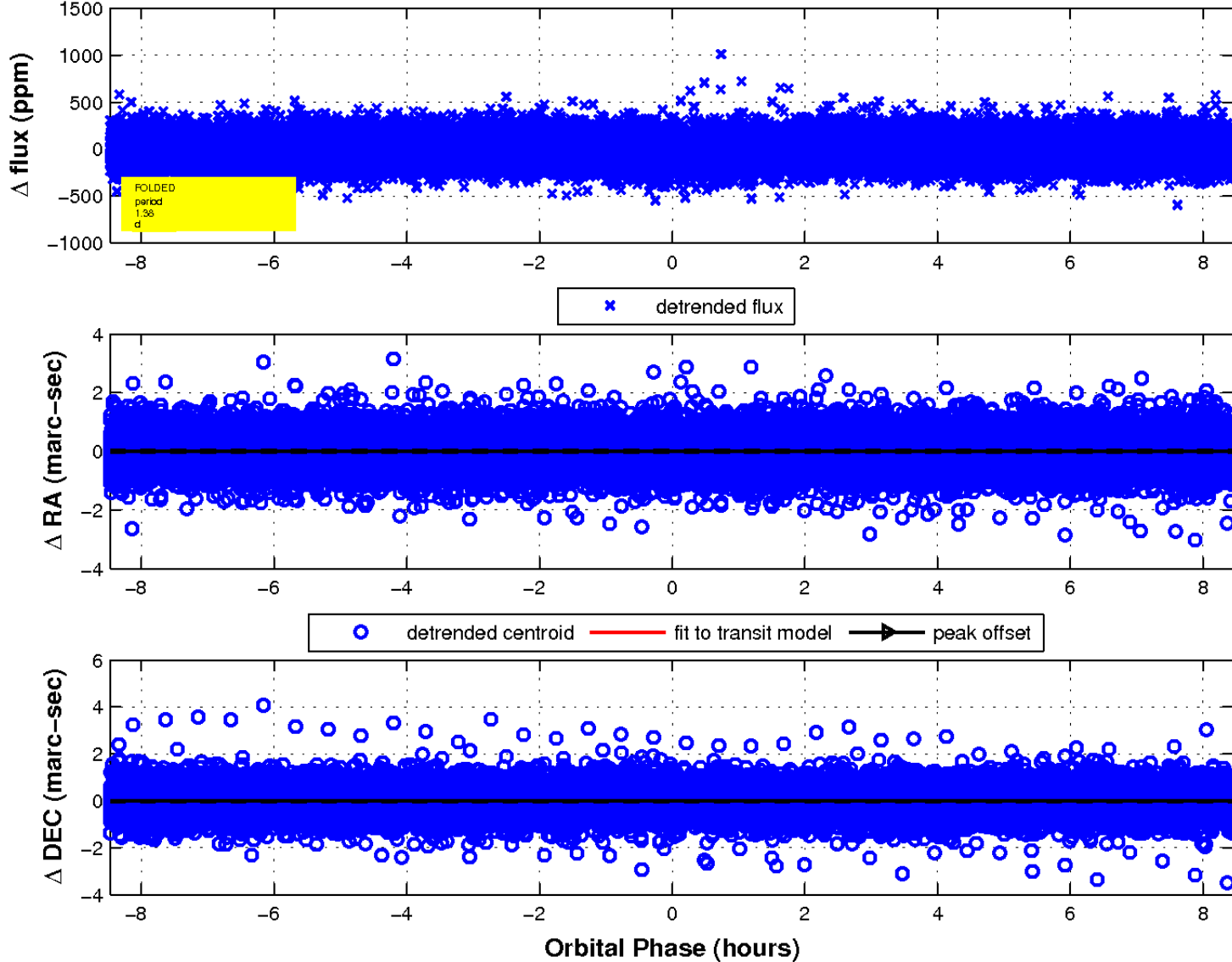
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

