

KIC 008622268

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})
008622268-01	OBS	No	4.668230	132.271348	24.2	10.193	11.5	9.6	1.57	6302	0.86	1071.48
008622268-02	OBS	No	9.336371	137.369984	56.2	56.183	8.1	12.4	1.57	6302	1.57	425.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008622268-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
008622268-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—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.

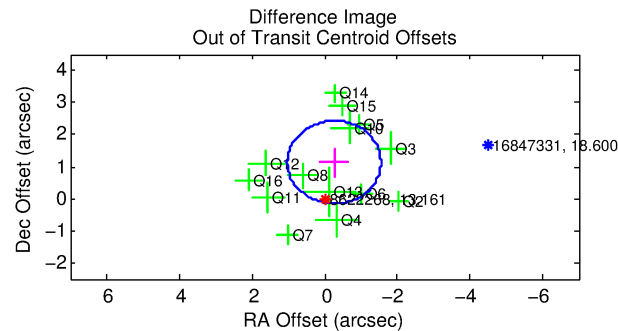
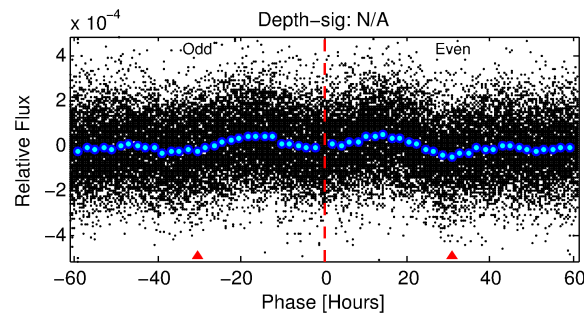
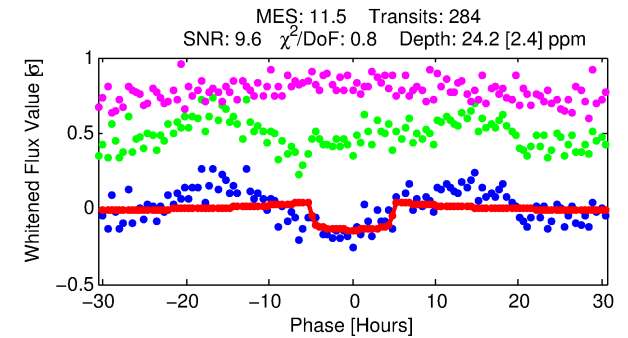
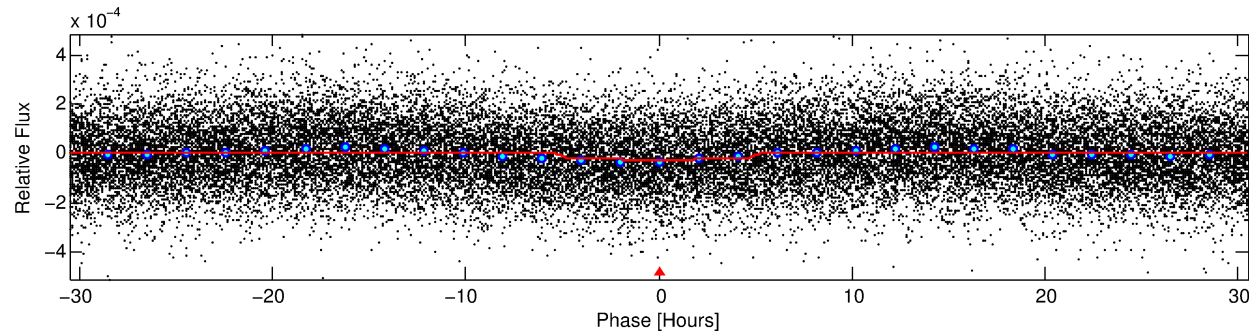
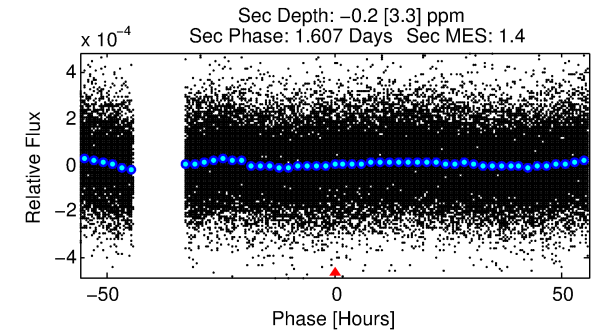
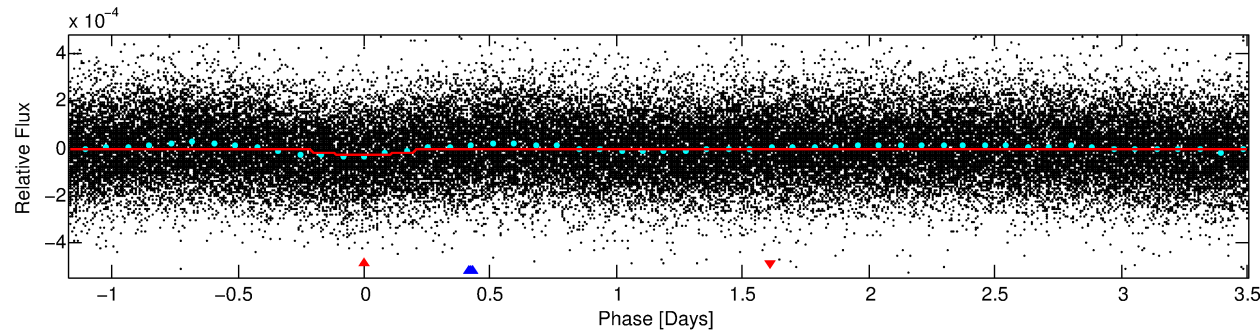
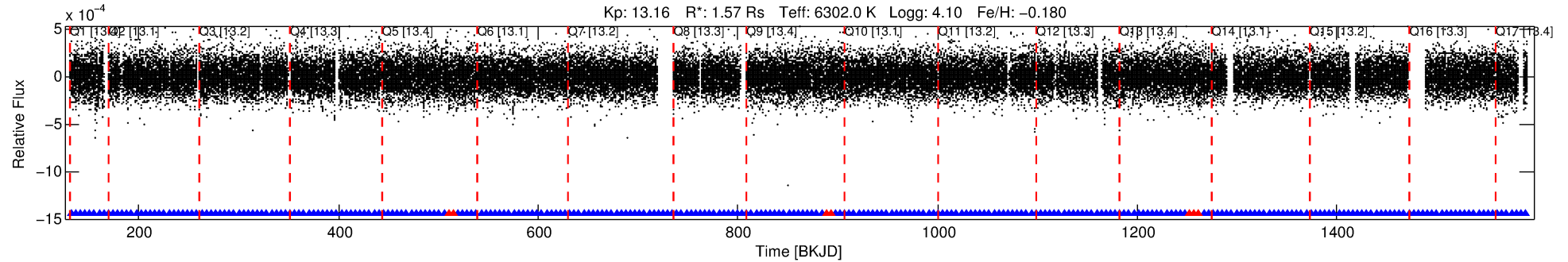
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008622268-01

No Significant Match Found

DV One-Page Summary

KIC: 8622268 Candidate: 1 of 2 Period: 4.668 d



DV Fit Results:

Period = 4.66823 [0.00006] d
Epoch = 132.2713 [0.0097] BKJD
Rp/R* = 0.0050 [0.0012]
a/R* = 2.21 [2.26]
b = 0.82 [0.51]
Seff = 1071.48 [349.75]
Teff = 1459 [119] K
Rp = 0.86 [0.28] Re
a = 0.0569 [0.0116] AU
Ag = N/A
Teffp = N/A

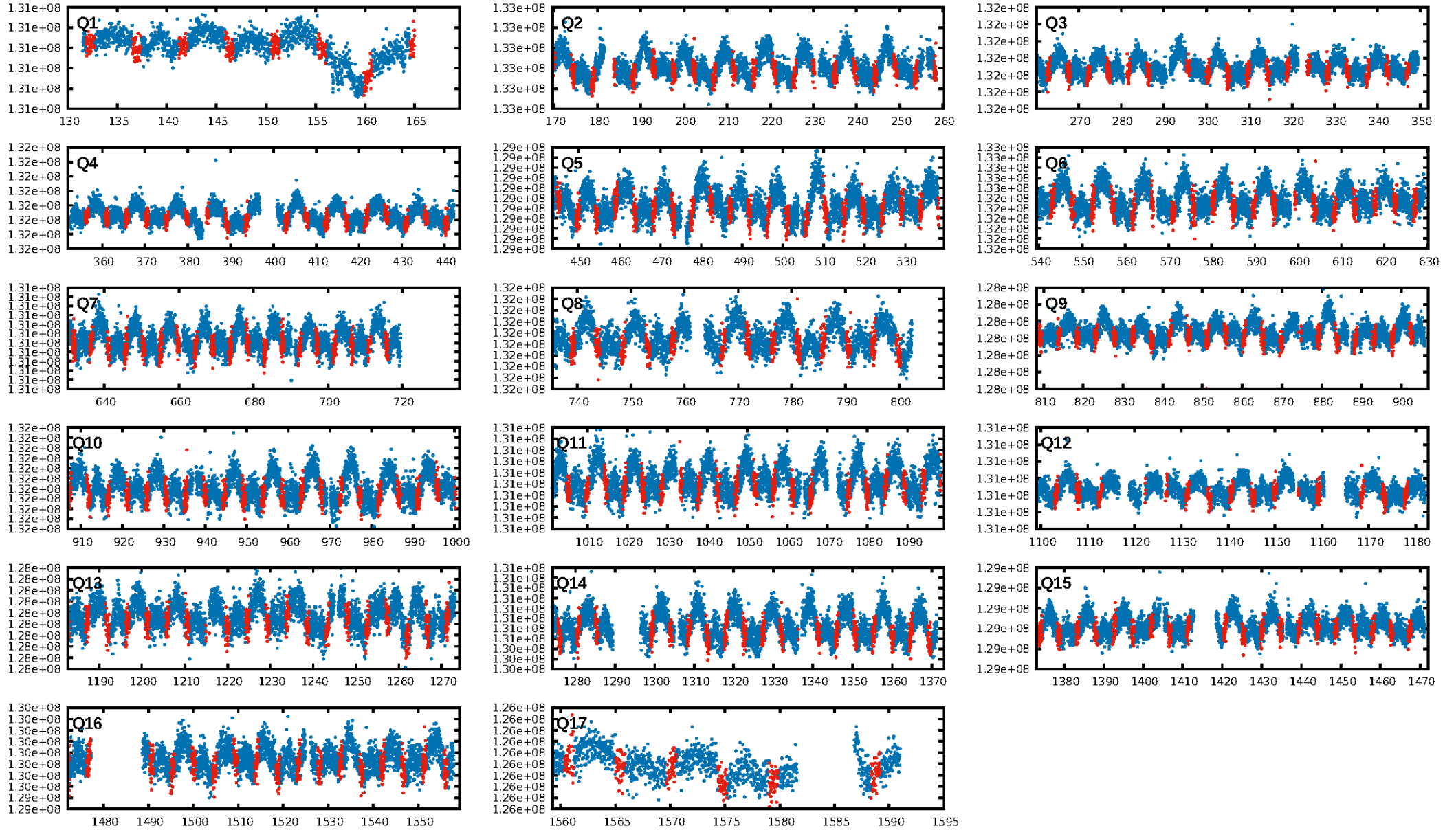
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 95.0% [1.96σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.29e-26
RollingBand-fgt: 0.97 [263/270]
GhostDiagnostic-chr: 3.227
Centroid-sig: 3.2%
Centroid-so: 1.559 arcsec [1.25σ]
OotOffset-rm: 1.165 arcsec [2.71σ]
KicOffset-rm: 1.295 arcsec [2.98σ]
OotOffset-st: 4/4/4/2 [14]
KicOffset-st: 4/4/4/2 [14]
DiffImageQuality-fgm: 0.86 [12/14]
DiffImageOverlap-fno: 1.00 [17/17]

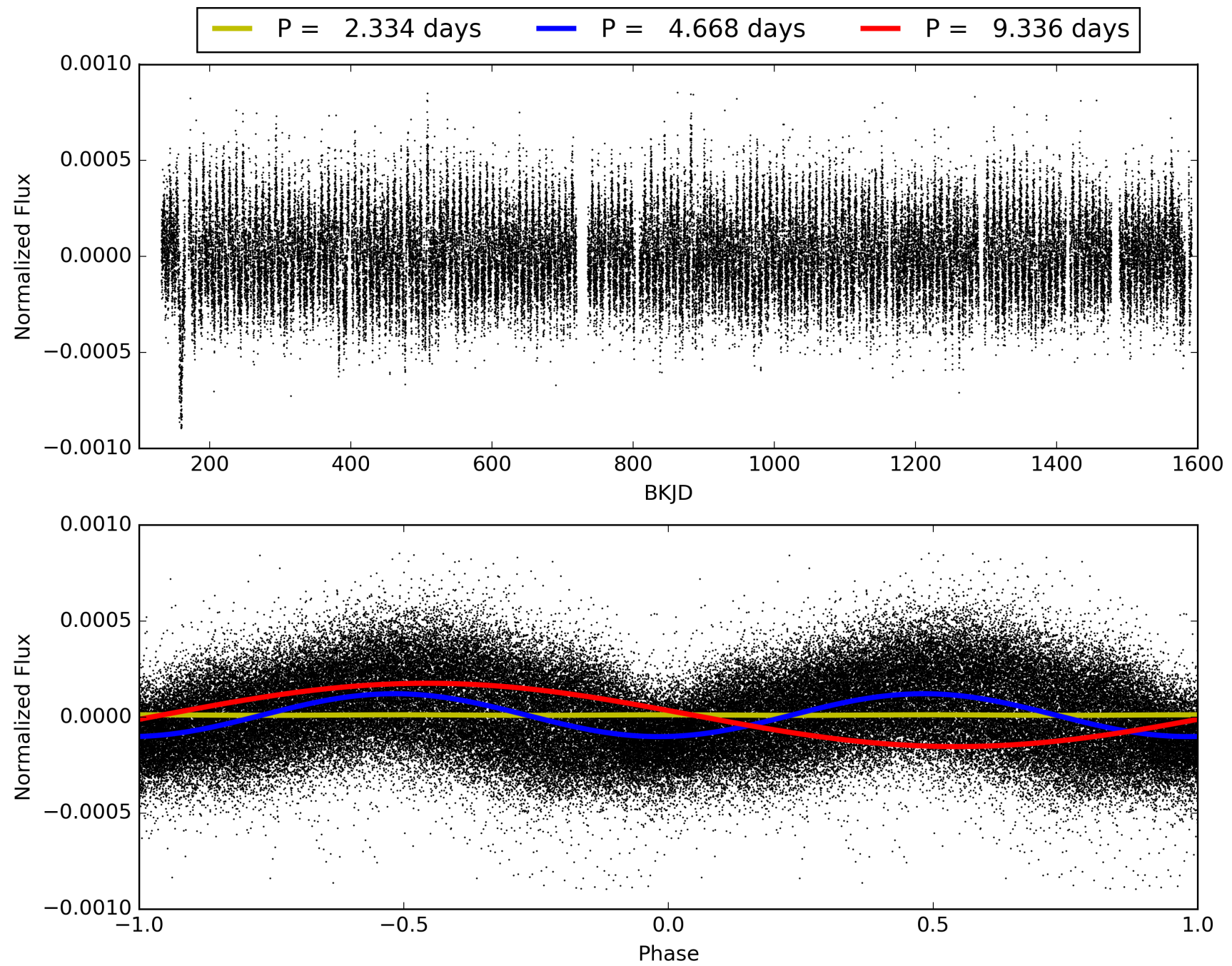
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:54:23 Z

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

TCE 008622268-01, PDC Light Curves

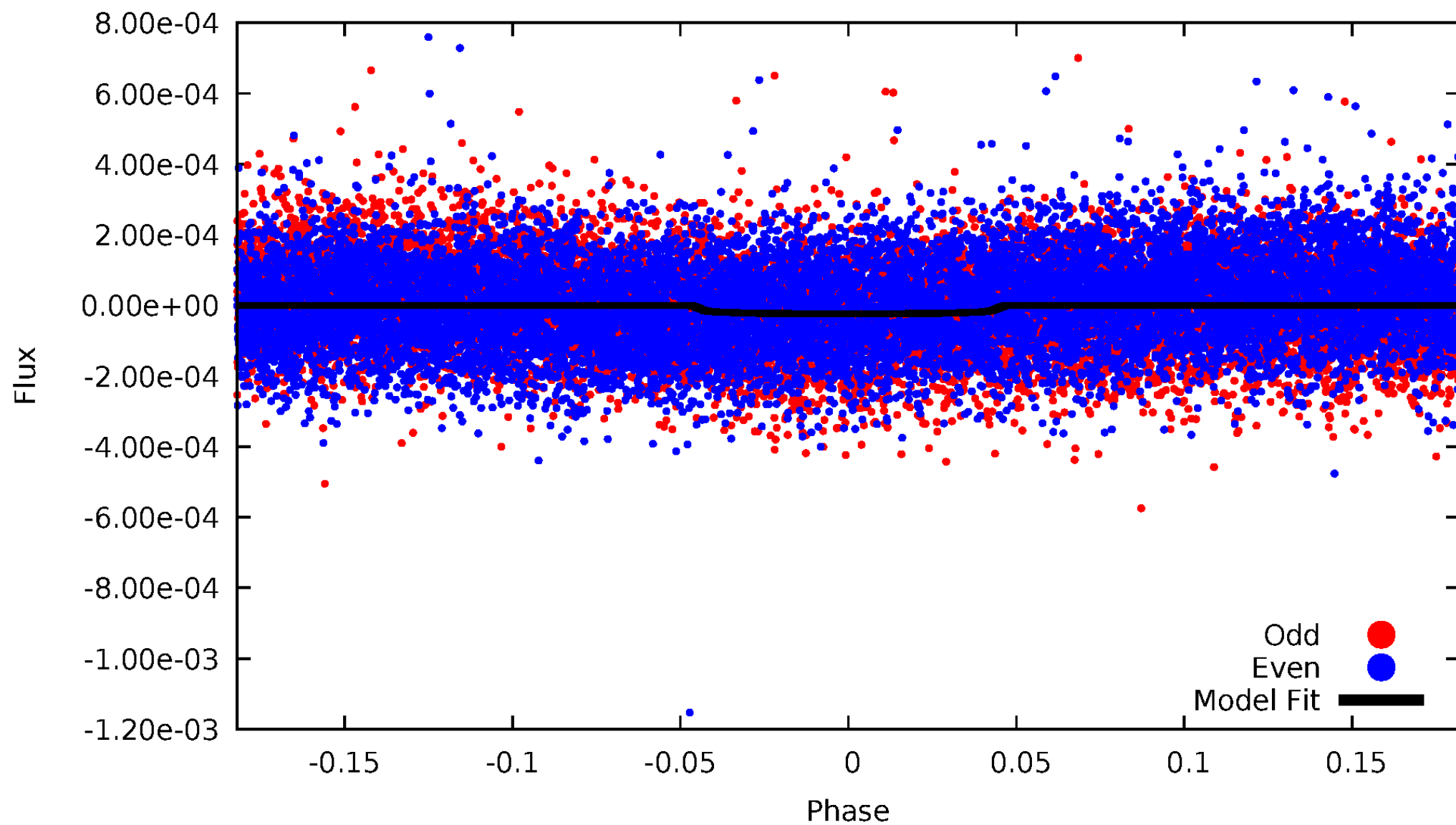


TCE 008622268-01



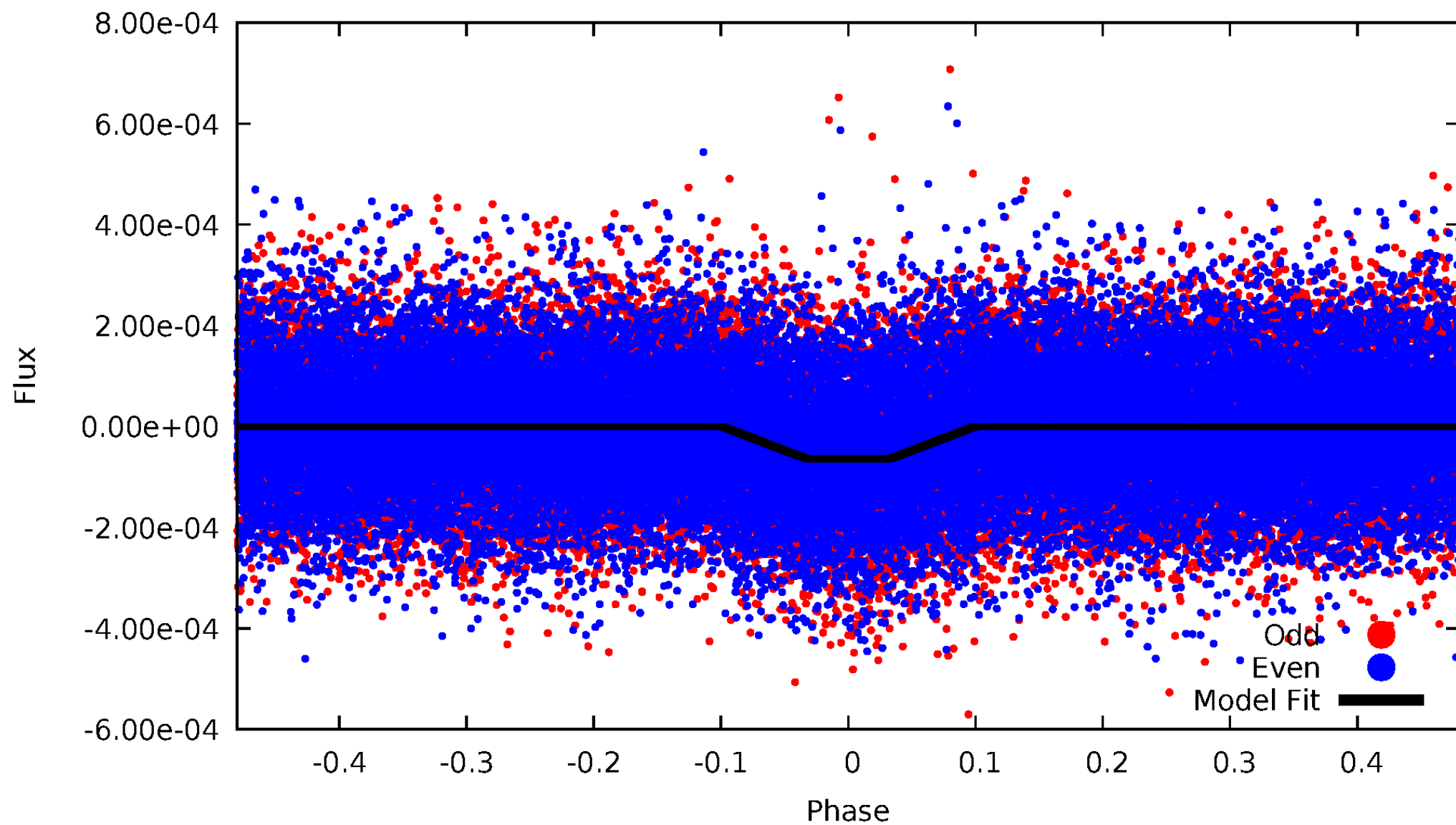
DV Odd/Even

TCE 008622268-01



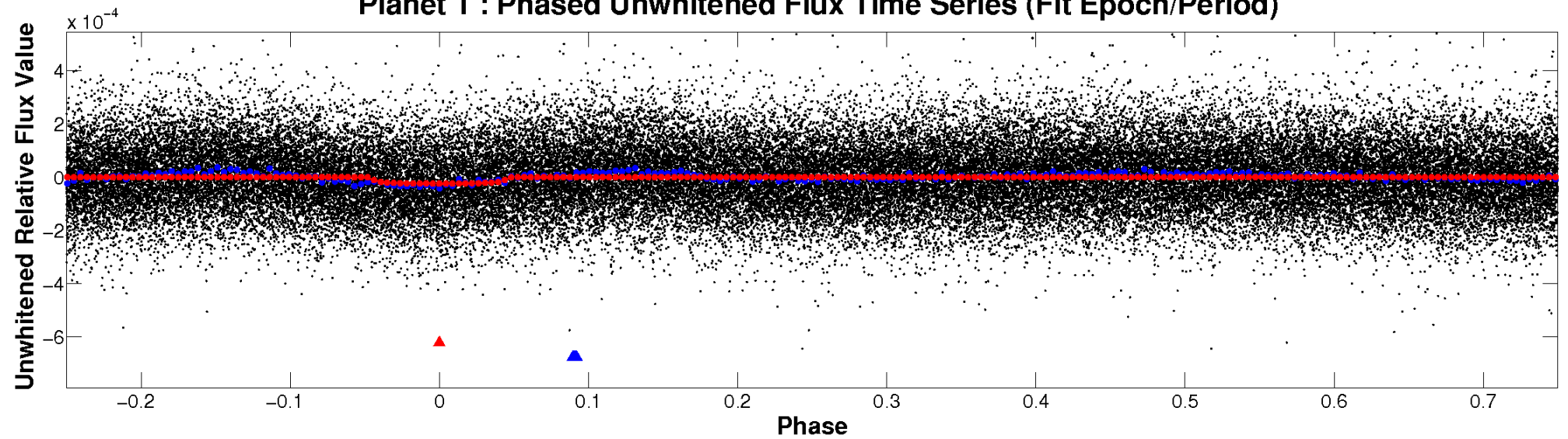
ALT Odd/Even

TCE 008622268-01

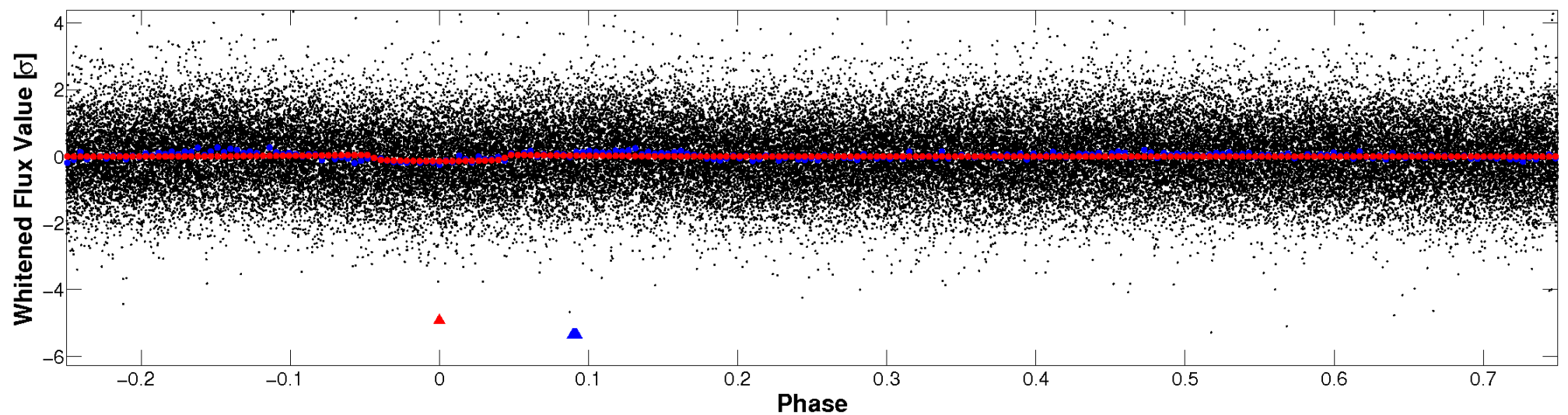


Non-Whitened Vs. Whitened Light Curve

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

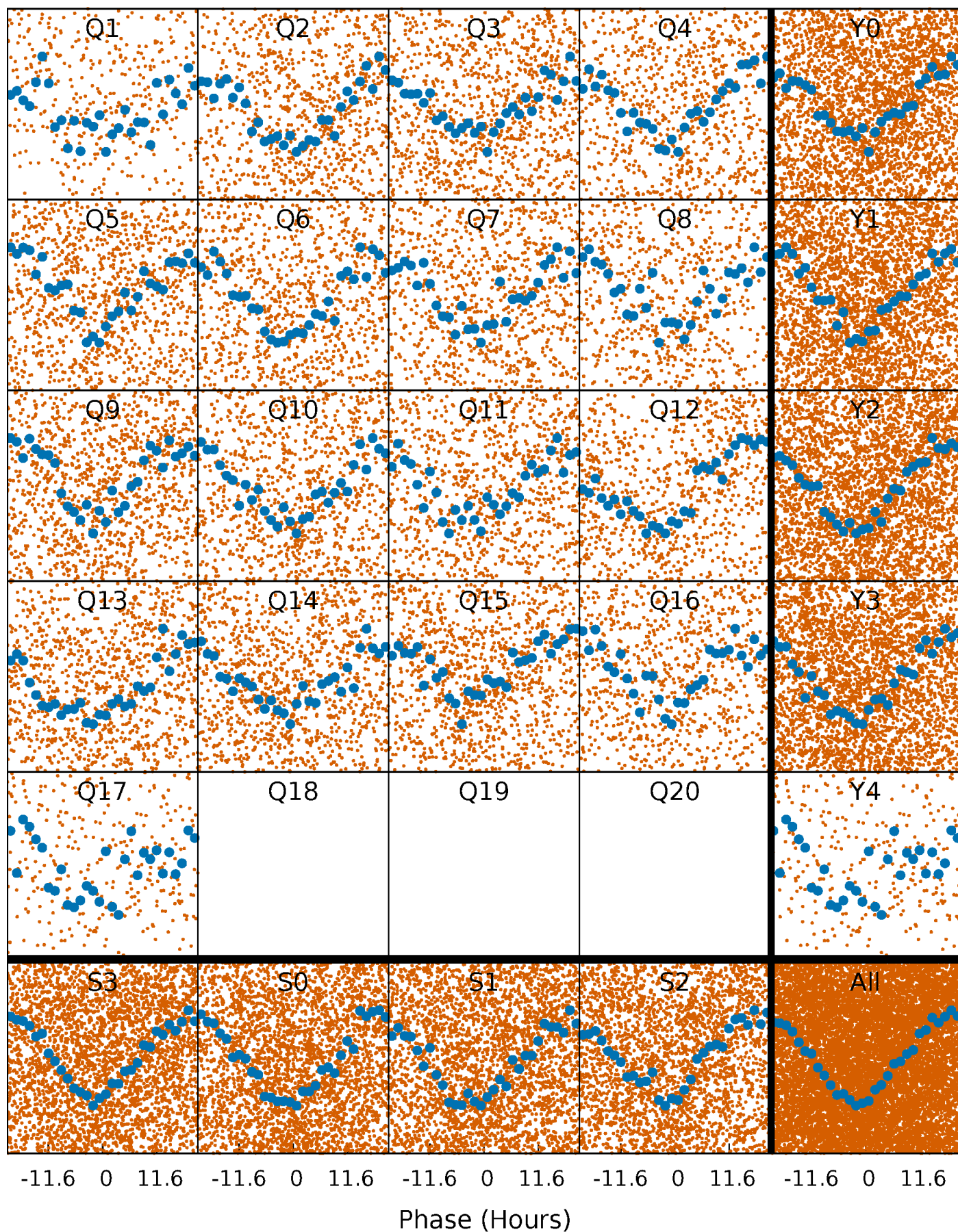


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



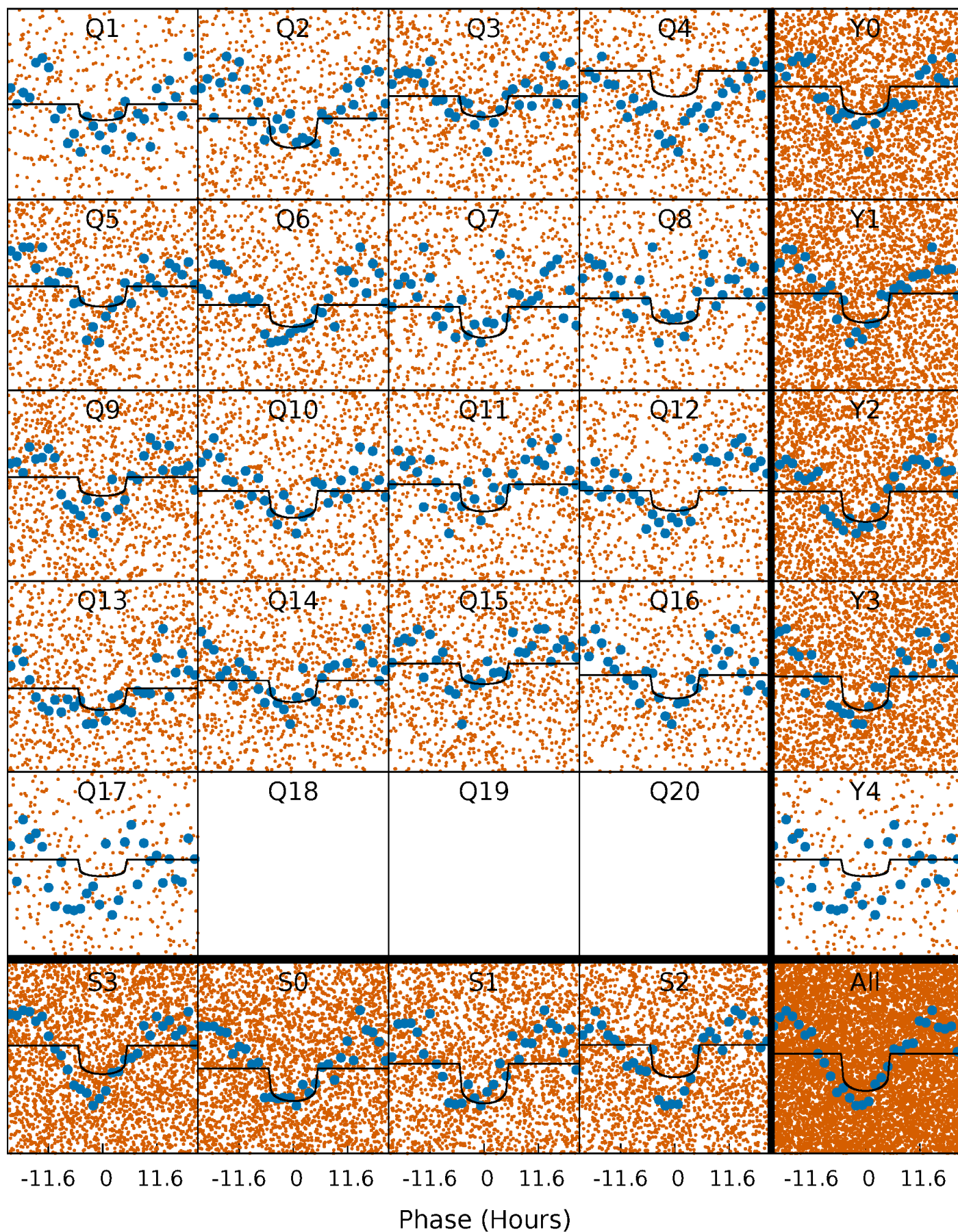
PDC Quarter-Phased Transit Curves

TCE 008622268-01 P= 4.668230 Days $T_0=132.271348$ (BKJD)



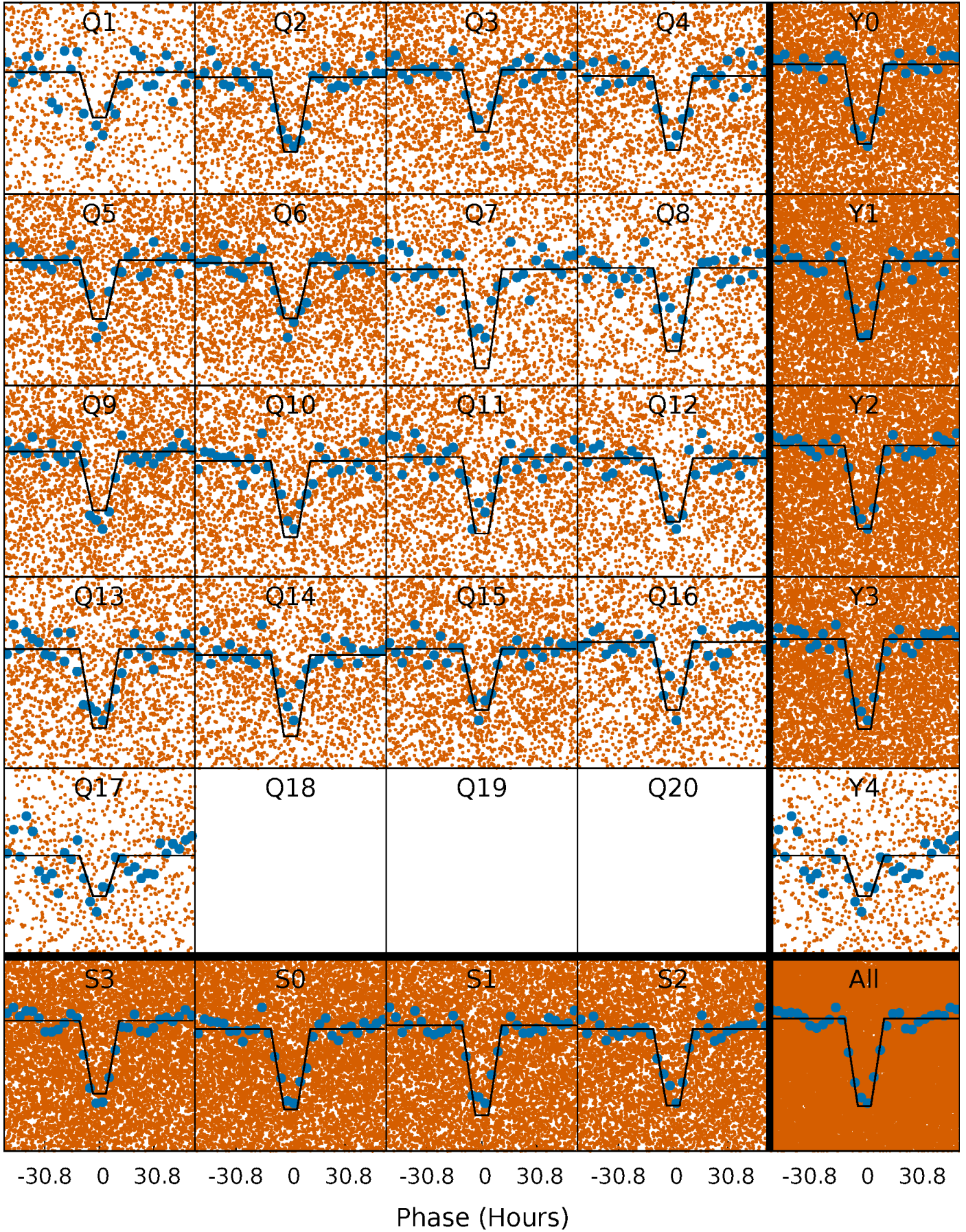
DV Quarter-Phased Transit Curves

TCE 008622268-01 P= 4.668230 Days $T_0=132.271348$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

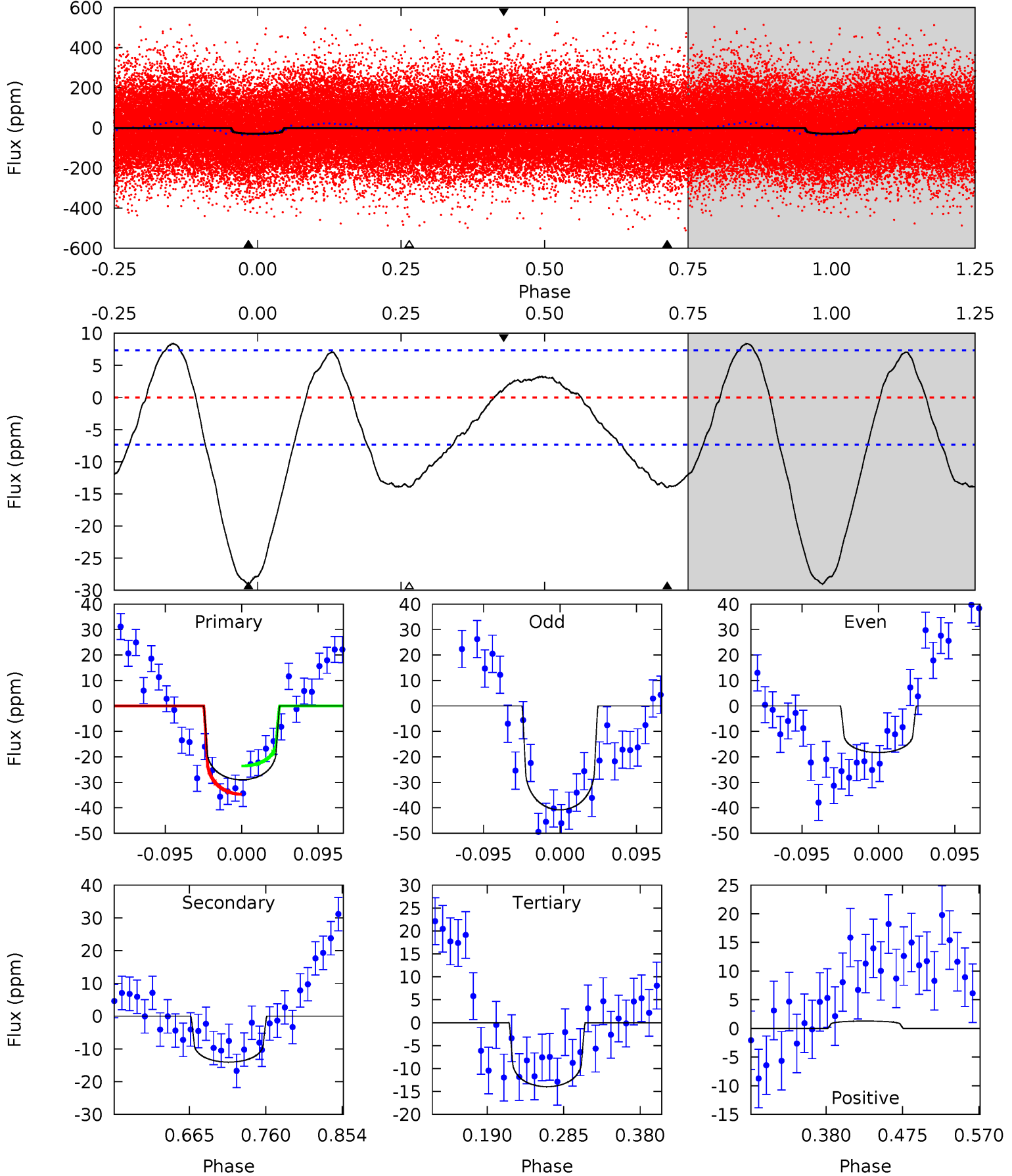
TCE 008622268-01 P= 4.667893 Days $T_0=132.251160$ (BKJD)



DV Model-Shift Uniqueness Test

008622268-01, P = 4.668230 Days, E = 127.603118 Days

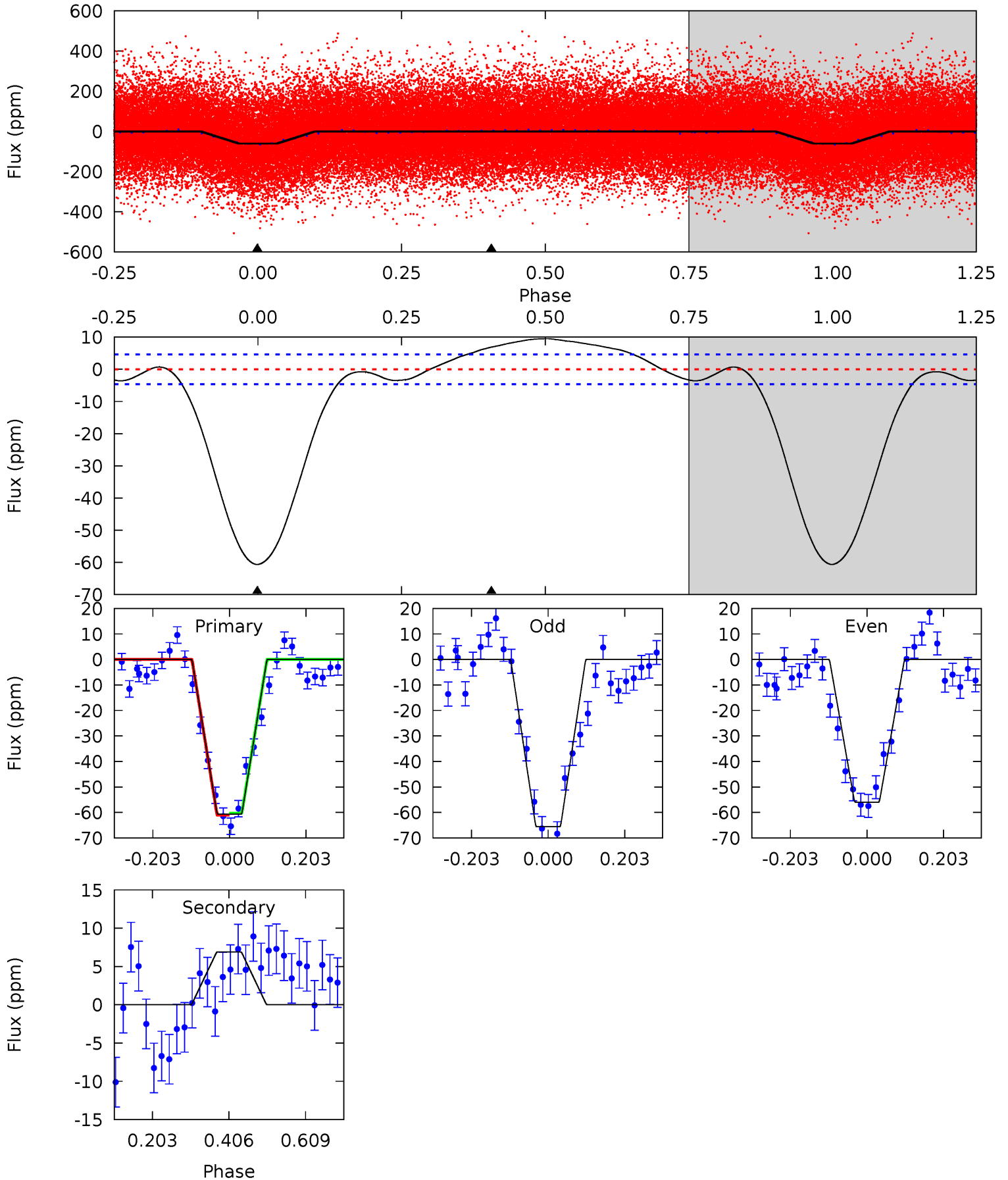
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	8.73	8.68	0.79	4.58	1.67	4.09	9.35	17.2	0.05	7.93	6.97	1.07	0.22	3.46



Alt Model-Shift Uniqueness Test

008622268-01, P = 4.667893 Days, E = 127.583267 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
58.0	-6.60	0	0	4.41	1.27	3.43	58.0	58.0	-6.60	-6.60	4.59	1.09	0.14	0.36



Stellar Parameters For KIC 008622268

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6302^{+82}_{-75}	$4.100^{+0.188}_{-0.087}$	$-0.180^{+0.150}_{-0.150}$	$1.567^{+0.245}_{-0.337}$	$1.126^{+0.112}_{-0.090}$	$0.412^{+0.416}_{-0.130}$
	+1%/-1%	+5%/-2%	+83%/-83%	+16%/-22%	+10%/-8%	+101%/-32%
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 008622268-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-14 ± 2	$0.82^{+0.26}_{-0.21}$	2020^{+93}_{-111}	5476^{+785}_{-535}	37^{+30}_{-15}
Alt.	7 ± 1	$1.34^{+0.25}_{-0.24}$	2019^{+81}_{-113}	-3971^{+224}_{-268}	$-6.870^{+2.155}_{-3.675}$

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

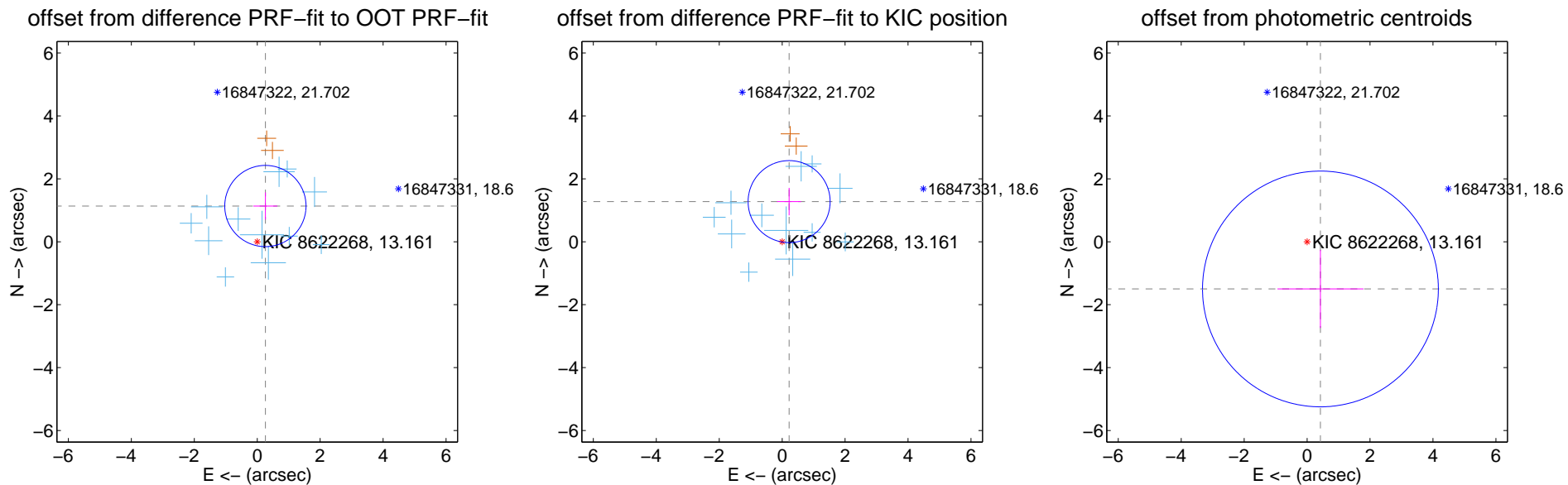
DV Centroid Data

Supplemental centroid analysis for 008622268-01. Kepler magnitude: 13.16. Transit SNR 9.59

There are 12 quarters with good PRF difference image offsets

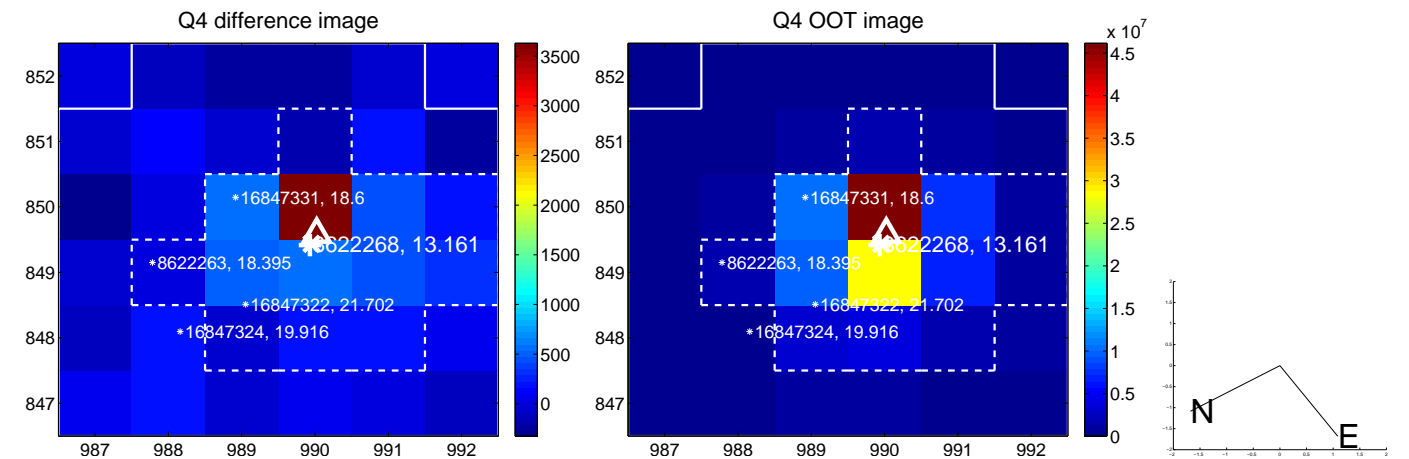
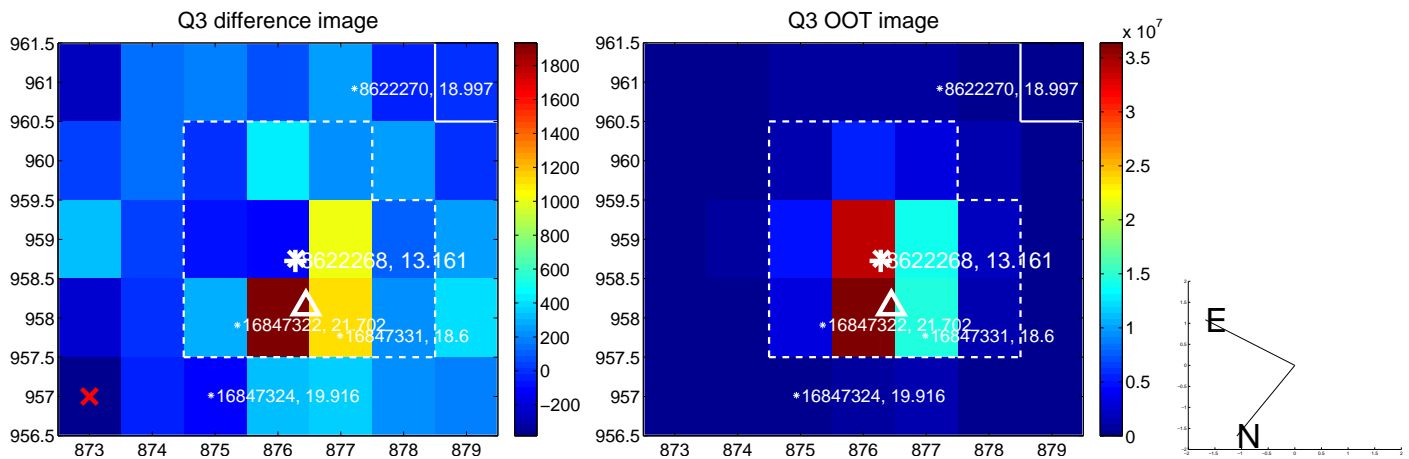
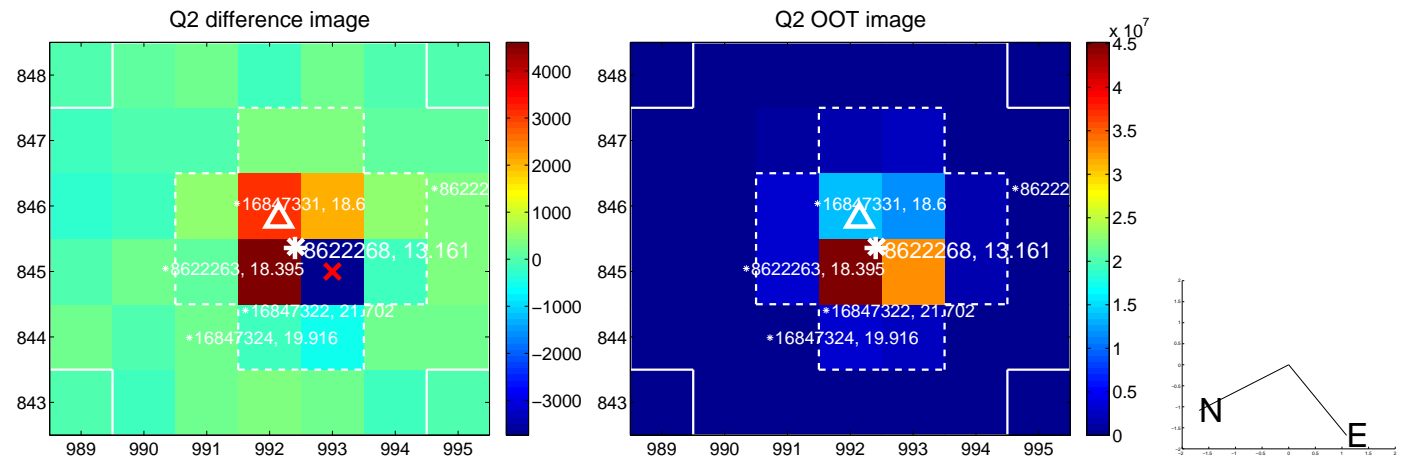
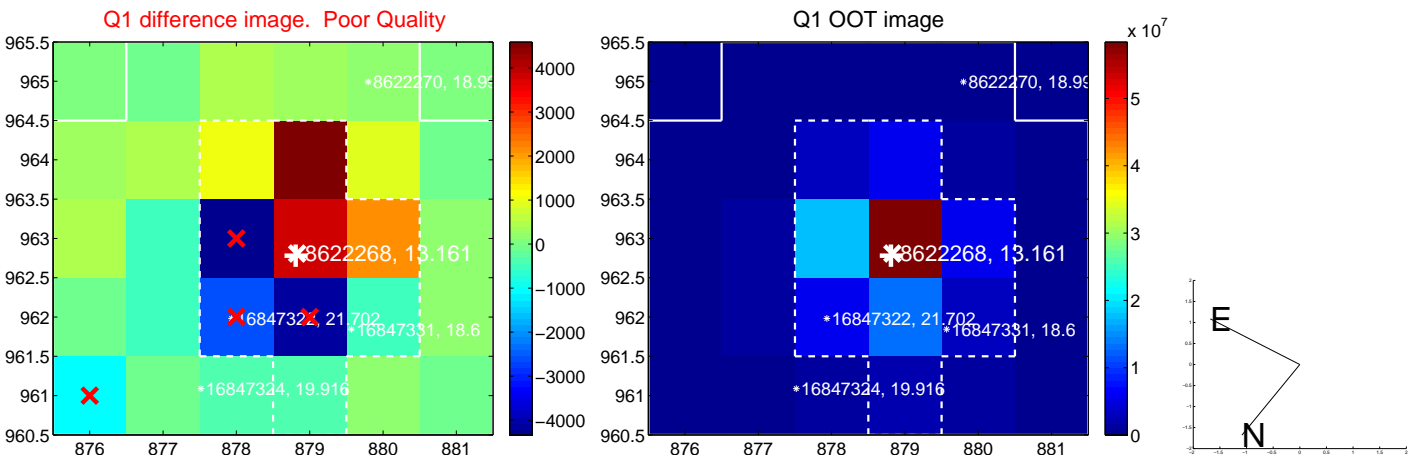
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.165 ± 0.430	2.71	-0.259 ± 0.381	1.135 ± 0.433
PRF-fit source offset from KIC position	1.295 ± 0.434	2.98	-0.221 ± 0.384	1.276 ± 0.436
photometric centroid source offset	1.56 ± 1.25	1.25	-0.42 ± 1.37	-1.50 ± 1.24

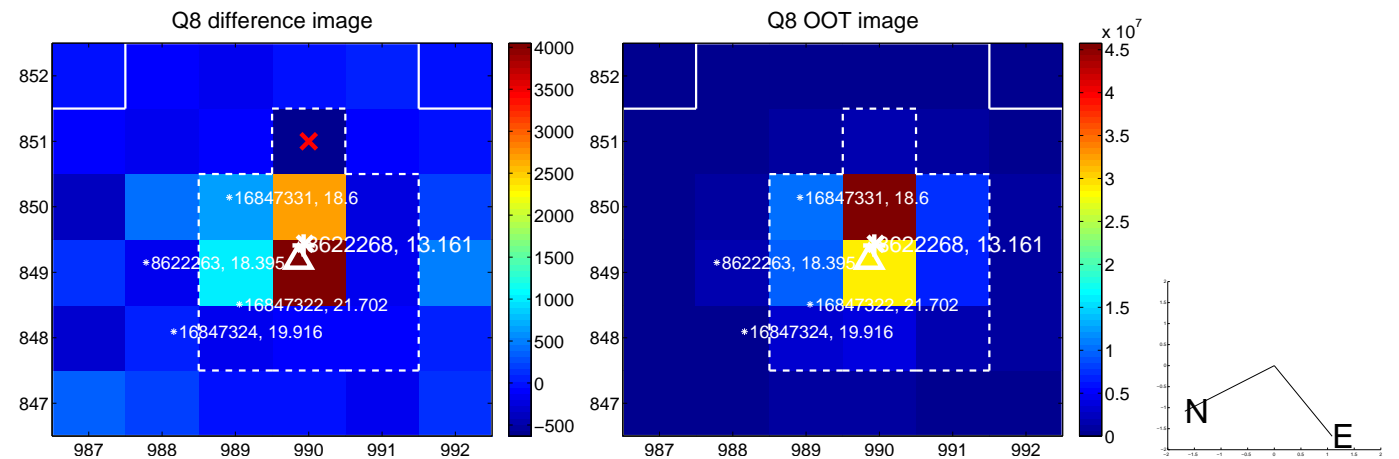
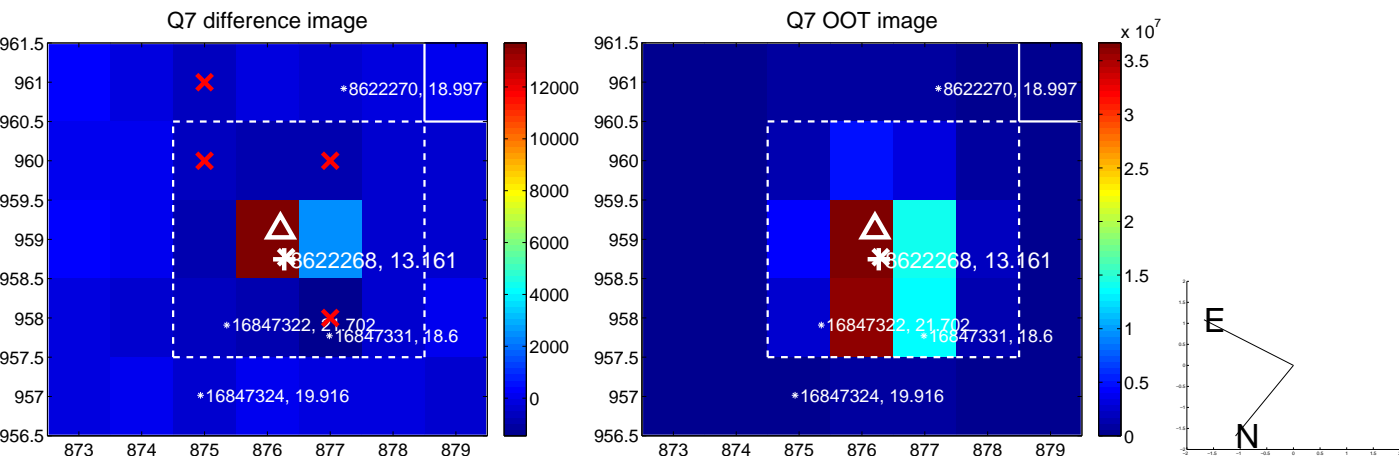
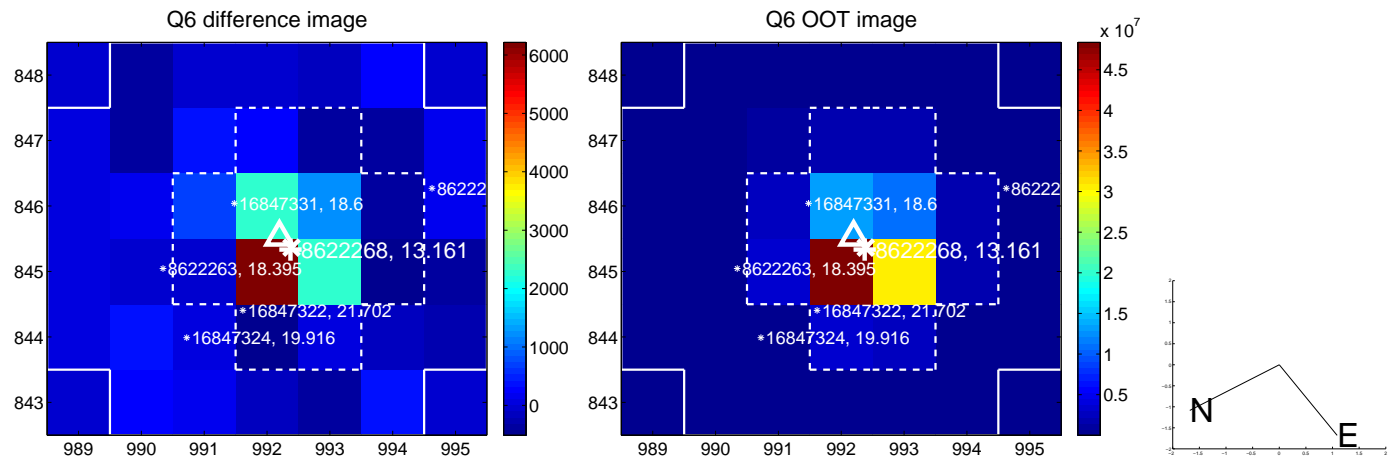
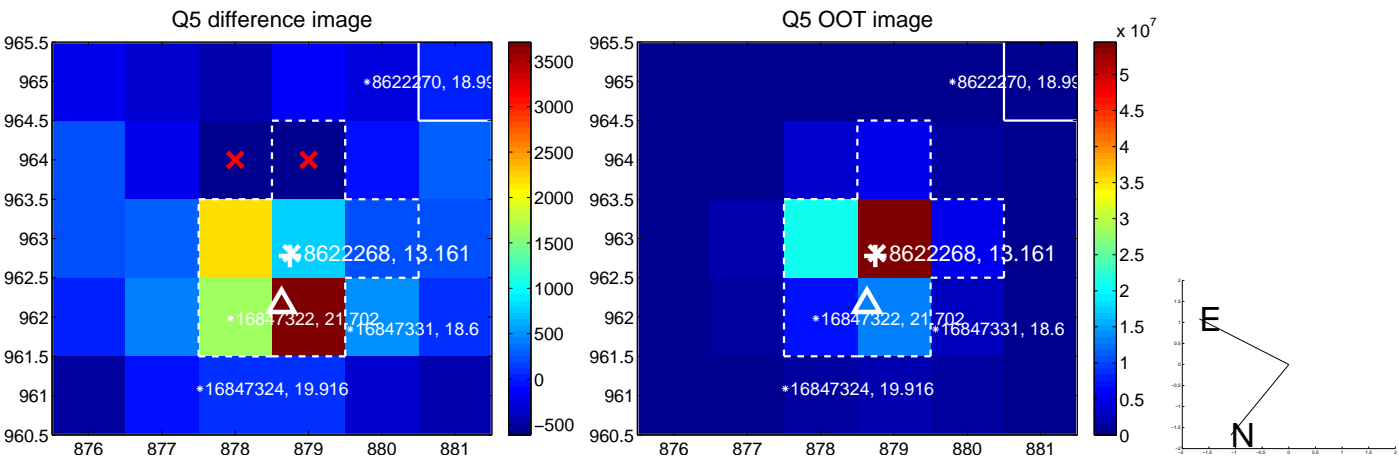


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

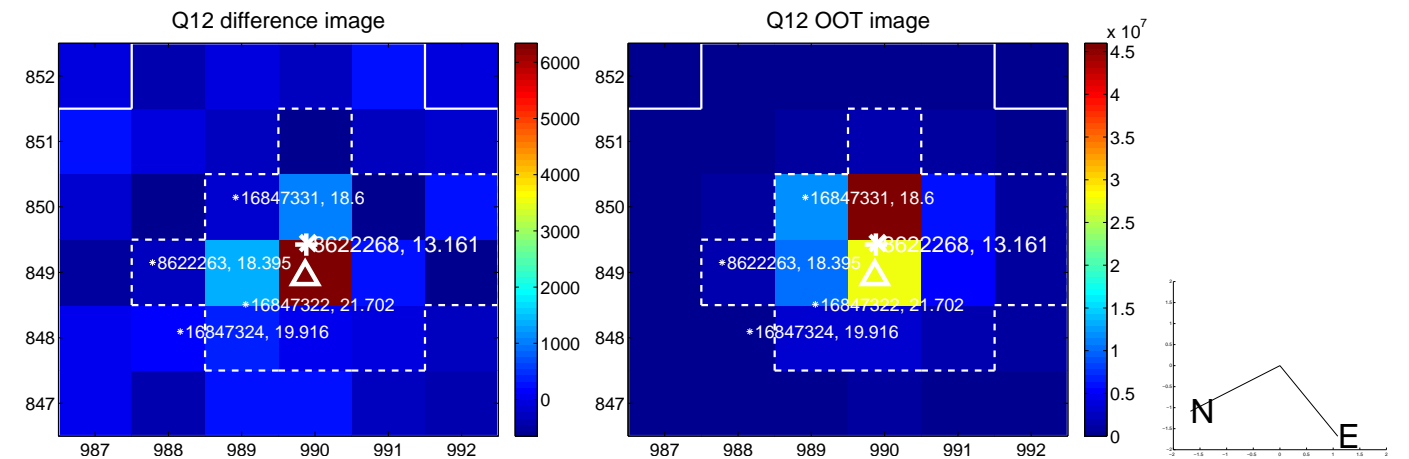
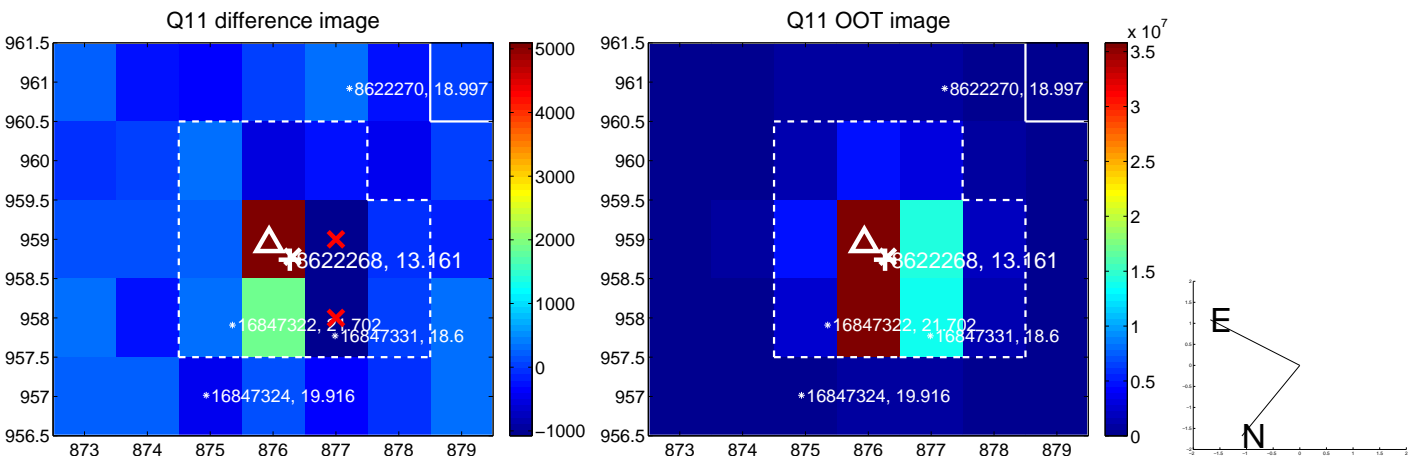
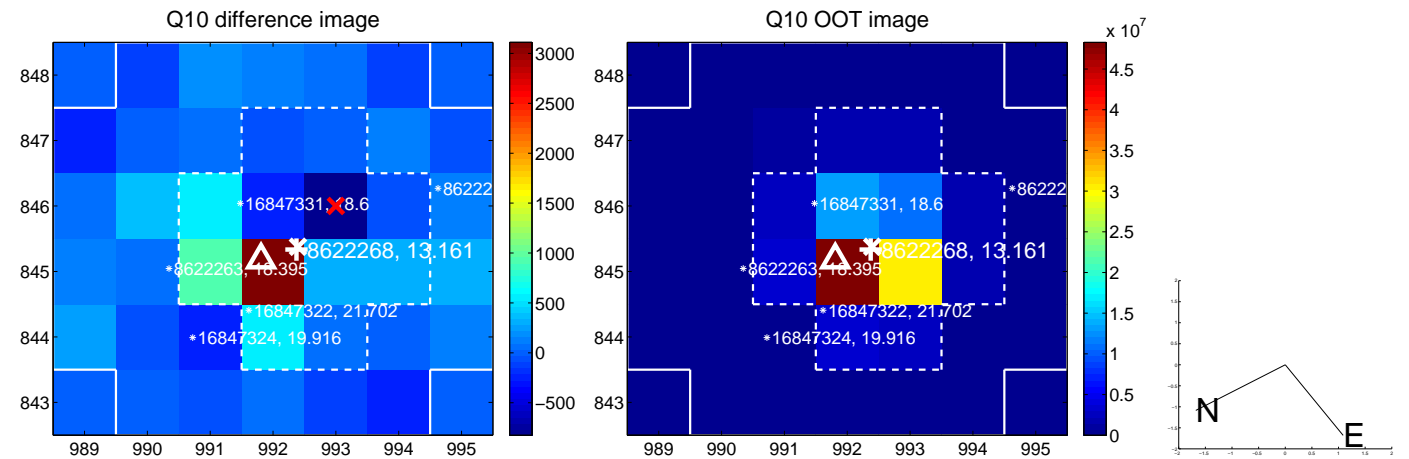
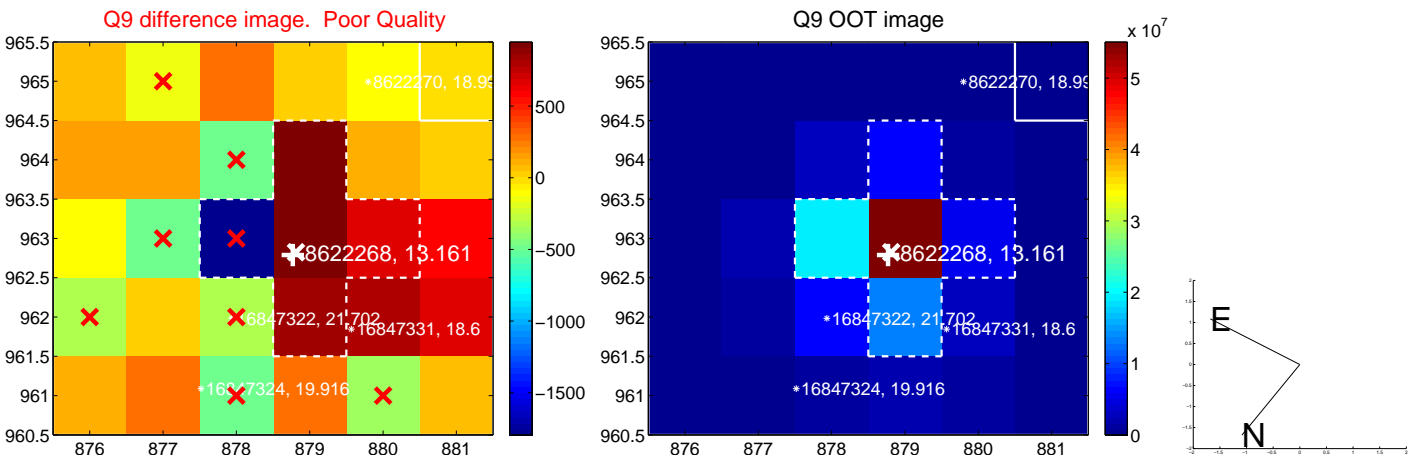
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



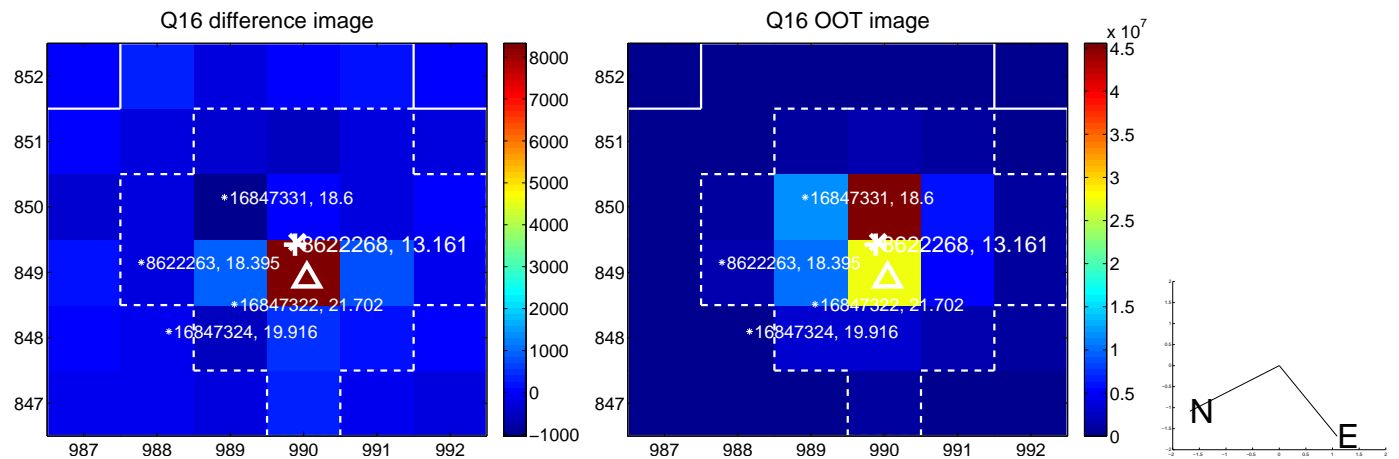
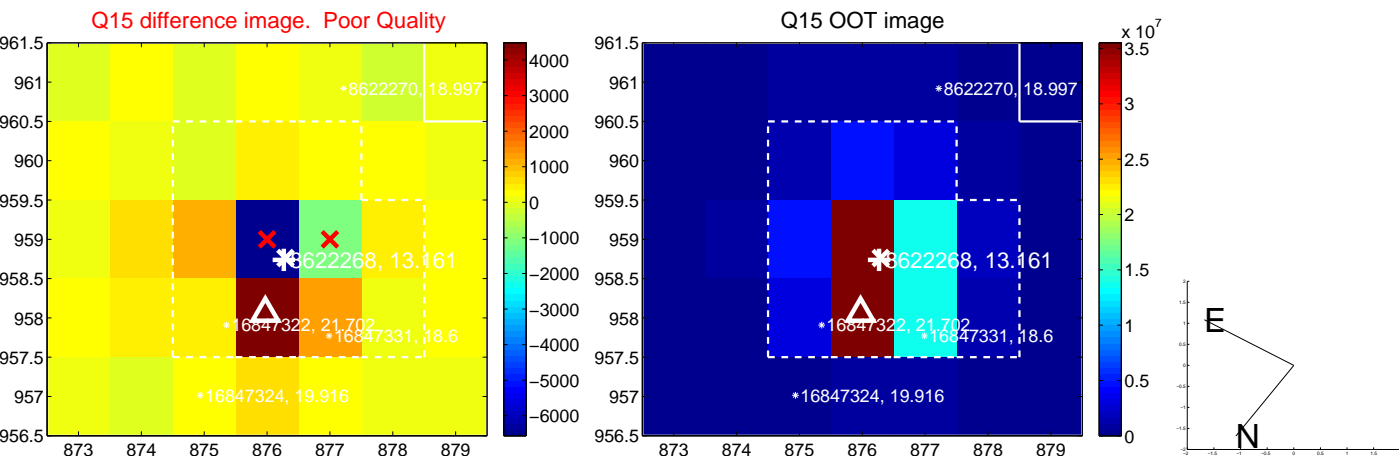
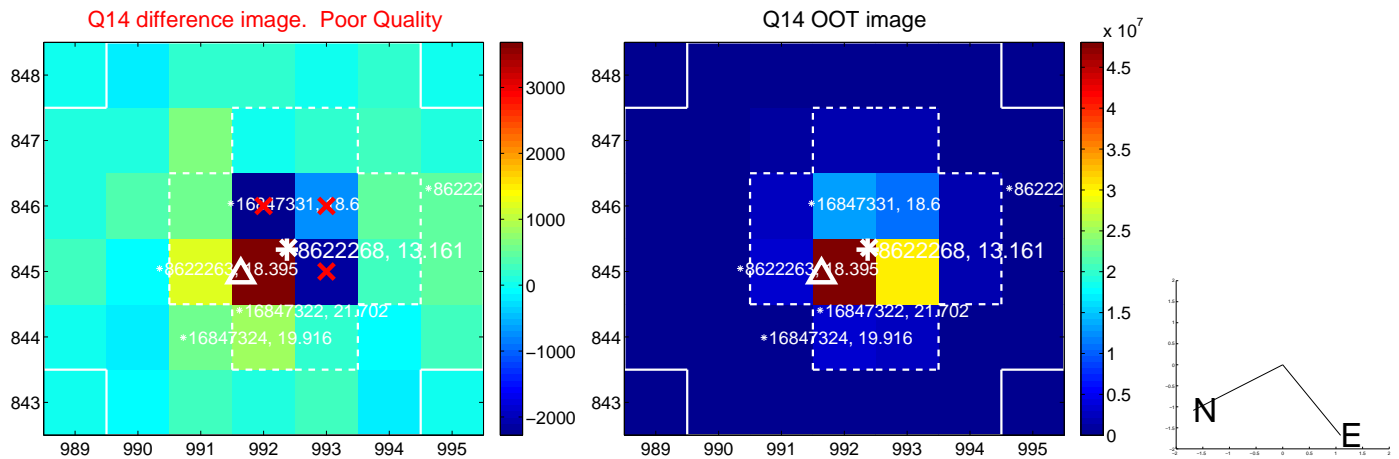
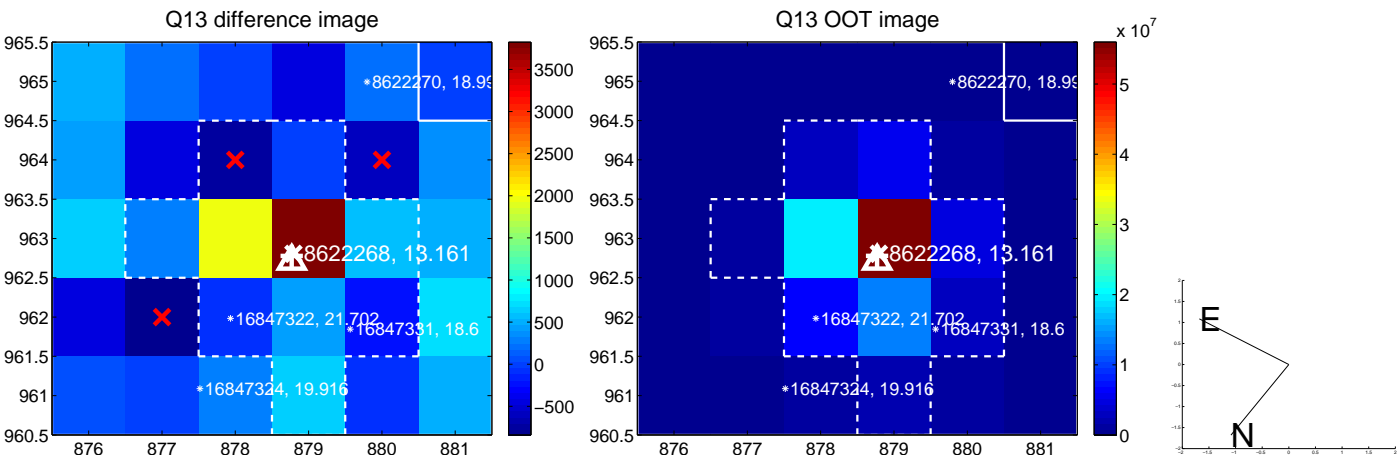
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



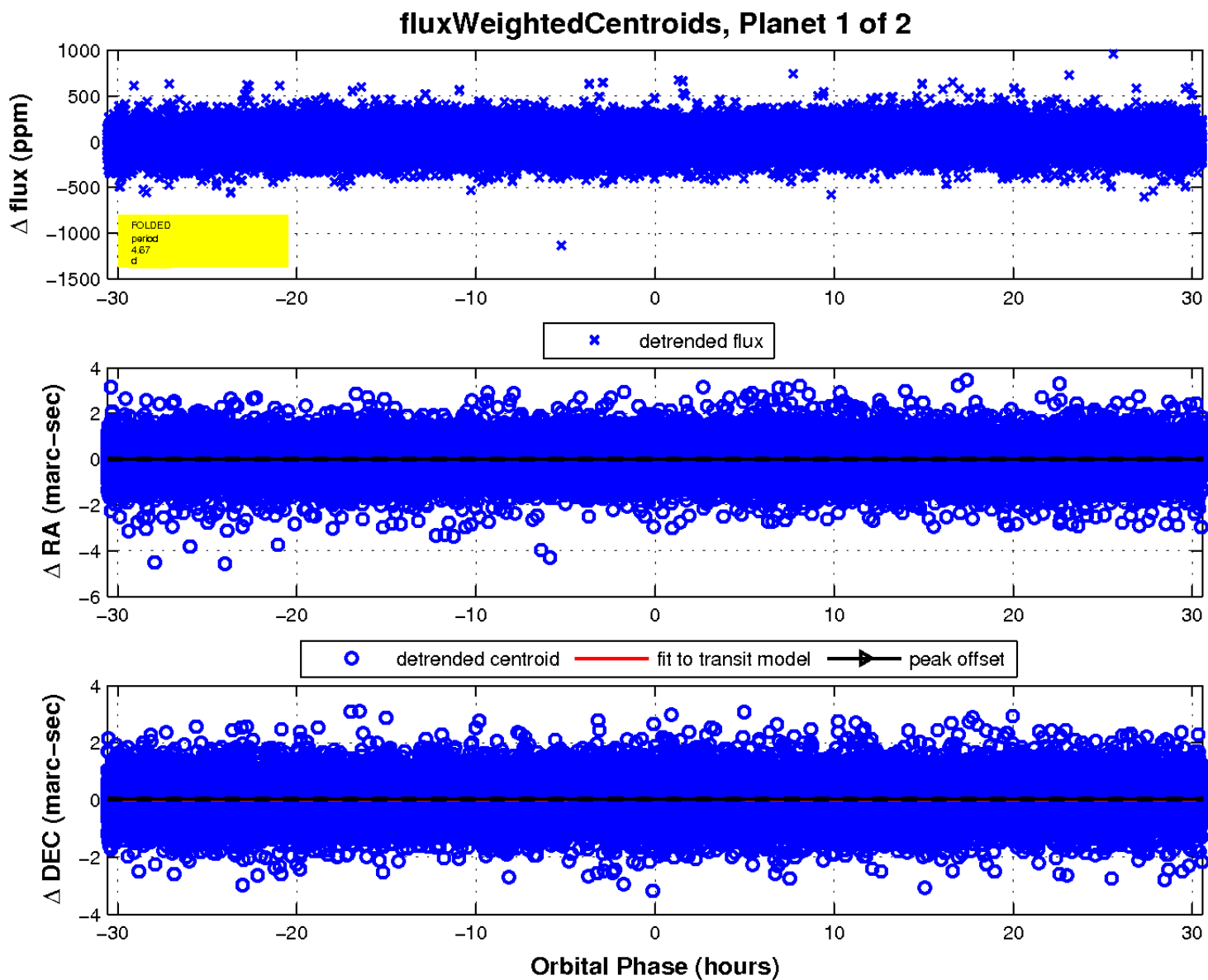
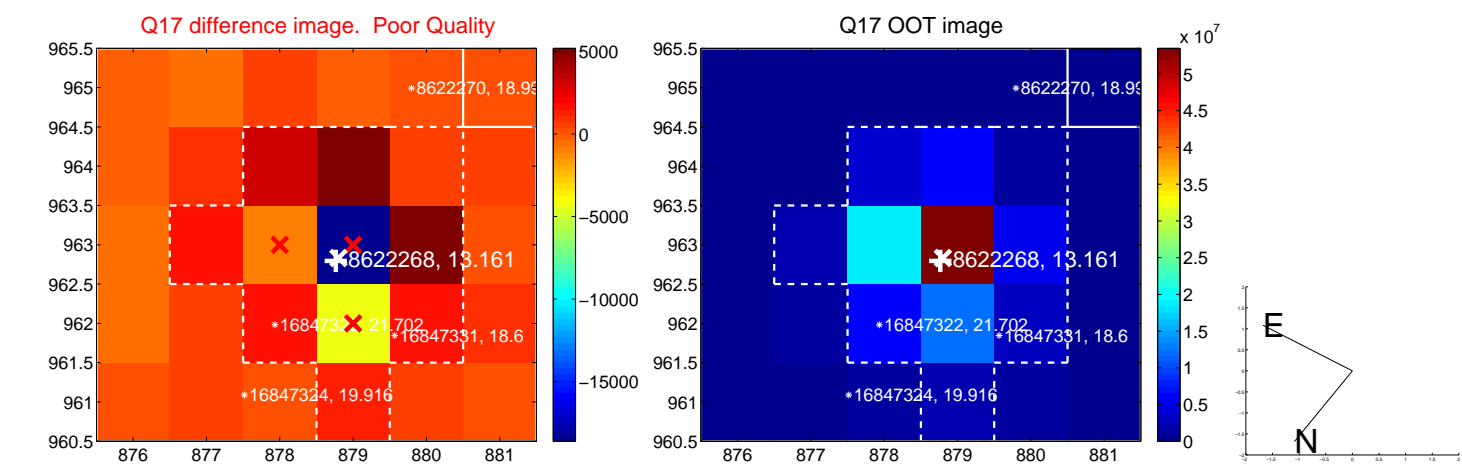
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

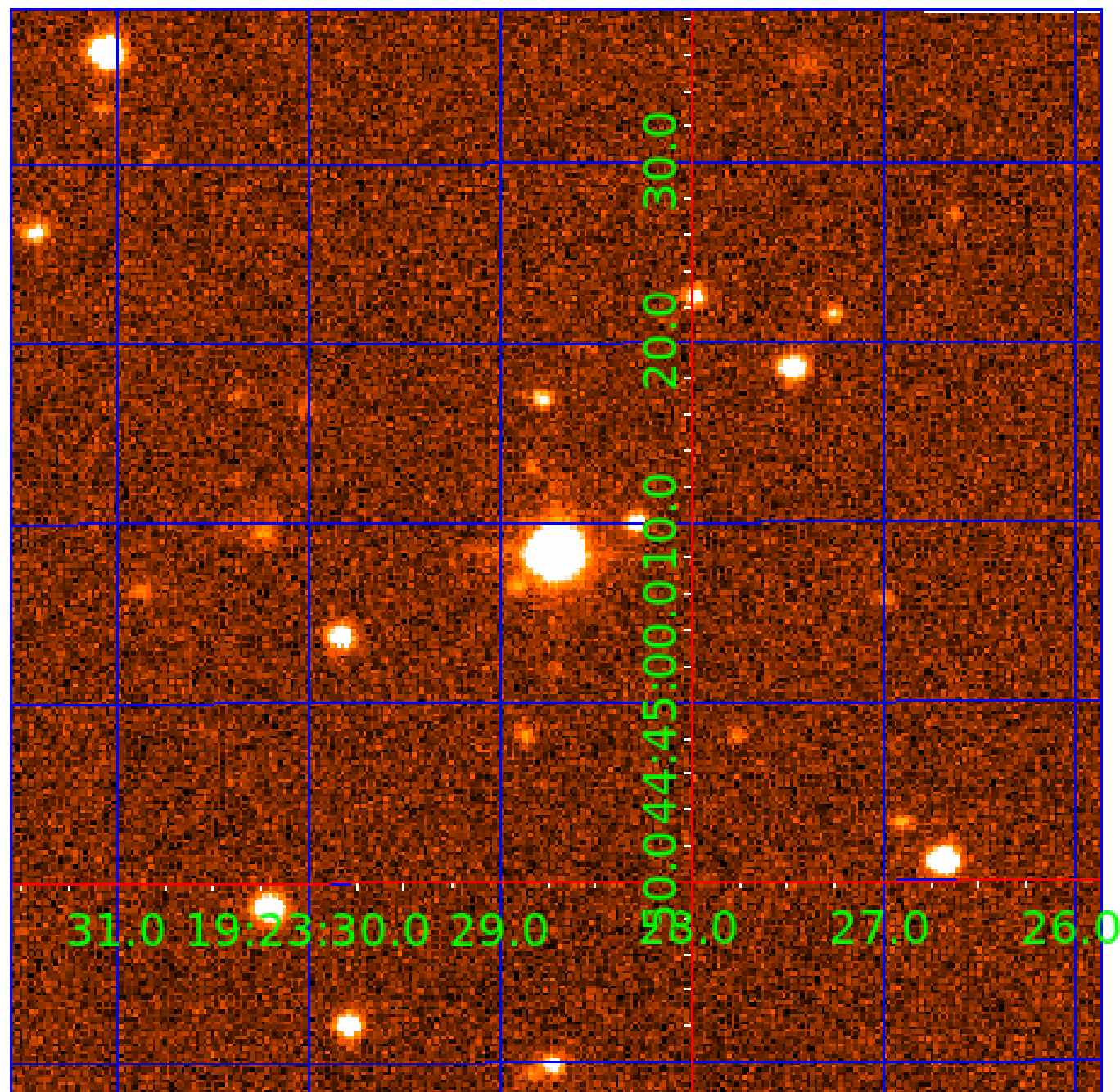


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008622268

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})
008622268-01	OBS	No	4.668230	132.271348	24.2	10.193	11.5	9.6	1.57	6302	0.86	1071.48
008622268-02	OBS	No	9.336371	137.369984	56.2	56.183	8.1	12.4	1.57	6302	1.57	425.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008622268-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
008622268-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—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.

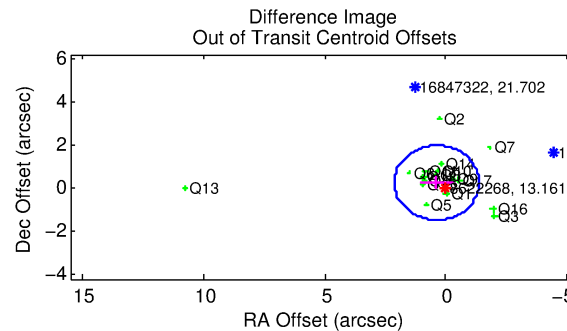
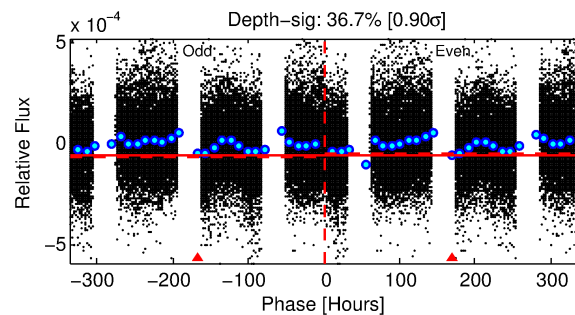
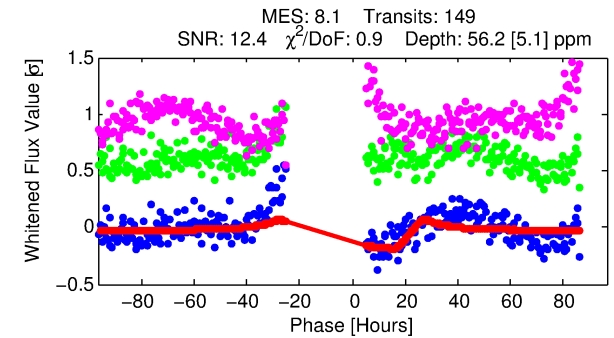
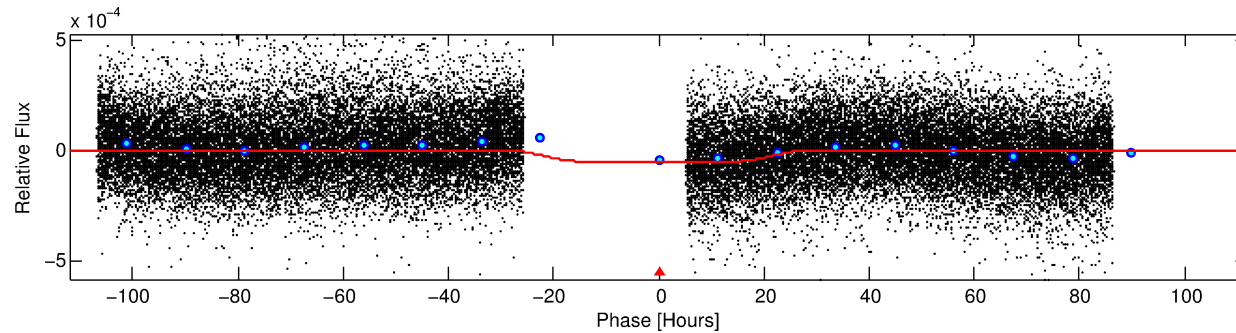
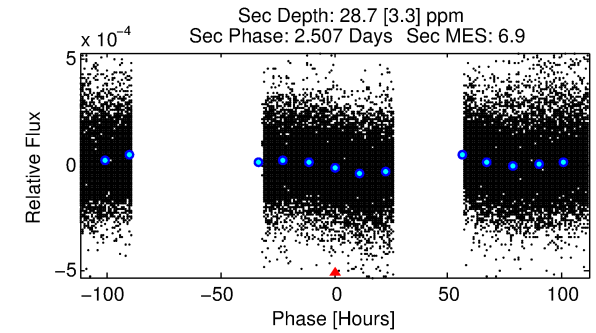
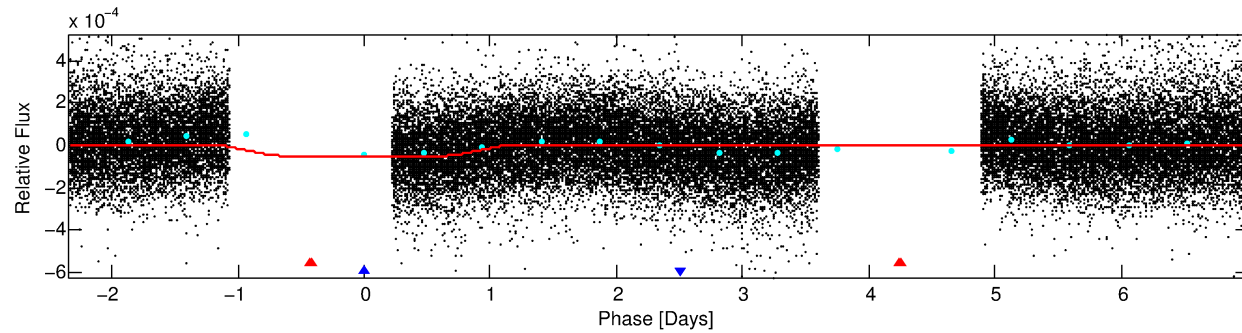
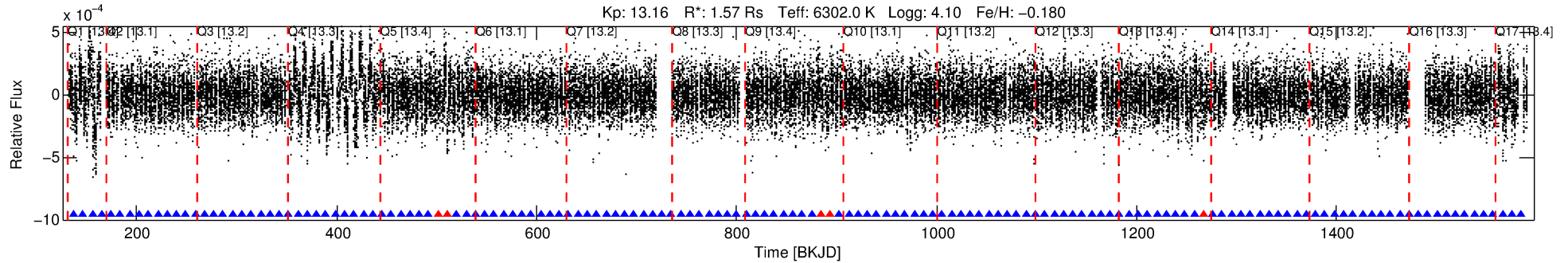
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008622268-02

No Significant Match Found

DV One-Page Summary

KIC: 8622268 Candidate: 2 of 2 Period: 9.336 d



DV Fit Results:

Period = 9.33637 [0.00067] d
Epoch = 137.3700 [0.0727] BKJD
Rp/R* = 0.0092 [0.0005]
a/R* = 1.04 [0.01]
b = 0.98 [0.00]
Seff = 425.22 [138.80]
Teq = 1158 [94] K
Rp = 1.57 [0.35] Re
a = 0.0903 [0.0184] AU
Ag = 52.19 [18.74] [2.73σ]
Teffp = 4812 [200] K [16.49σ]

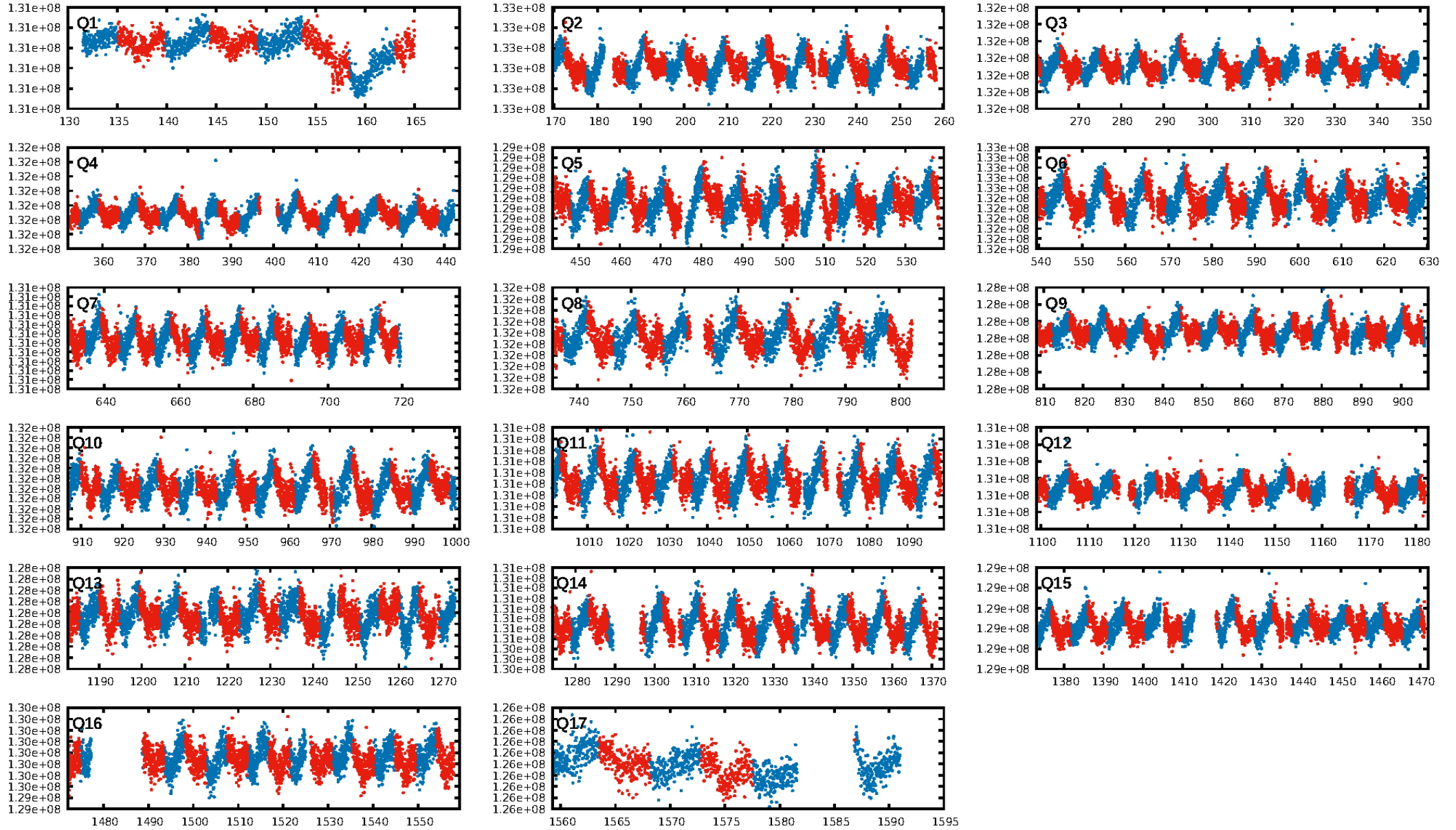
DV Diagnostic Results:

ShortPeriod-sig: 95.0% [1.96σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 57.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.33e-14
RollingBand-fgt: 0.97 [138/143]
GhostDiagnostic-chr: 3.377
Centroid-sig: 39.7%
Centroid-so: 0.443 arcsec [1.06σ]
OotOffset-rm: 0.455 arcsec [0.78σ]
KicOffset-rm: 0.582 arcsec [1.08σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.71 [12/17]
DiffImageOverlap-fno: 0.00 [0/17]

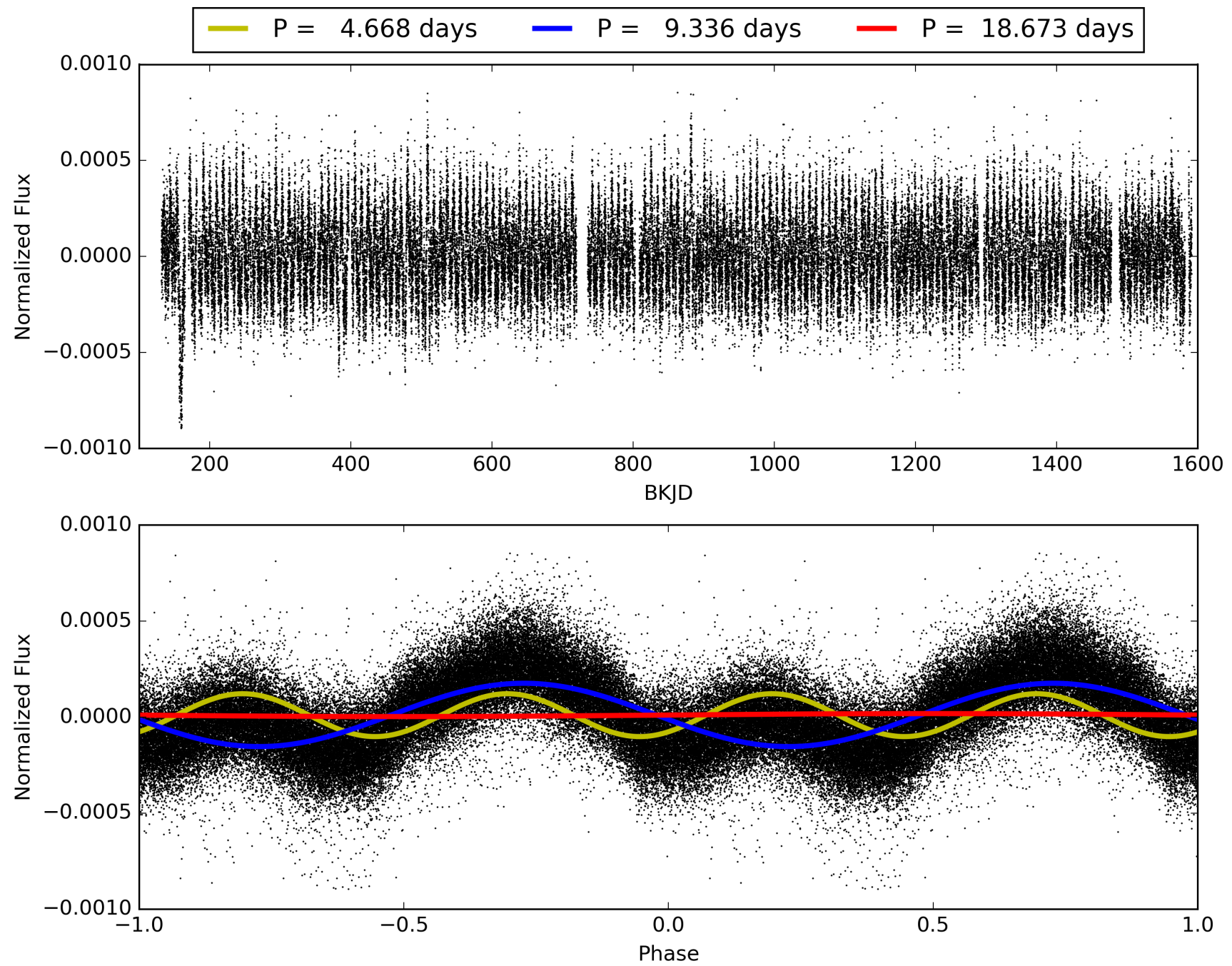
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:54:36 Z

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

TCE 008622268-02, PDC Light Curves

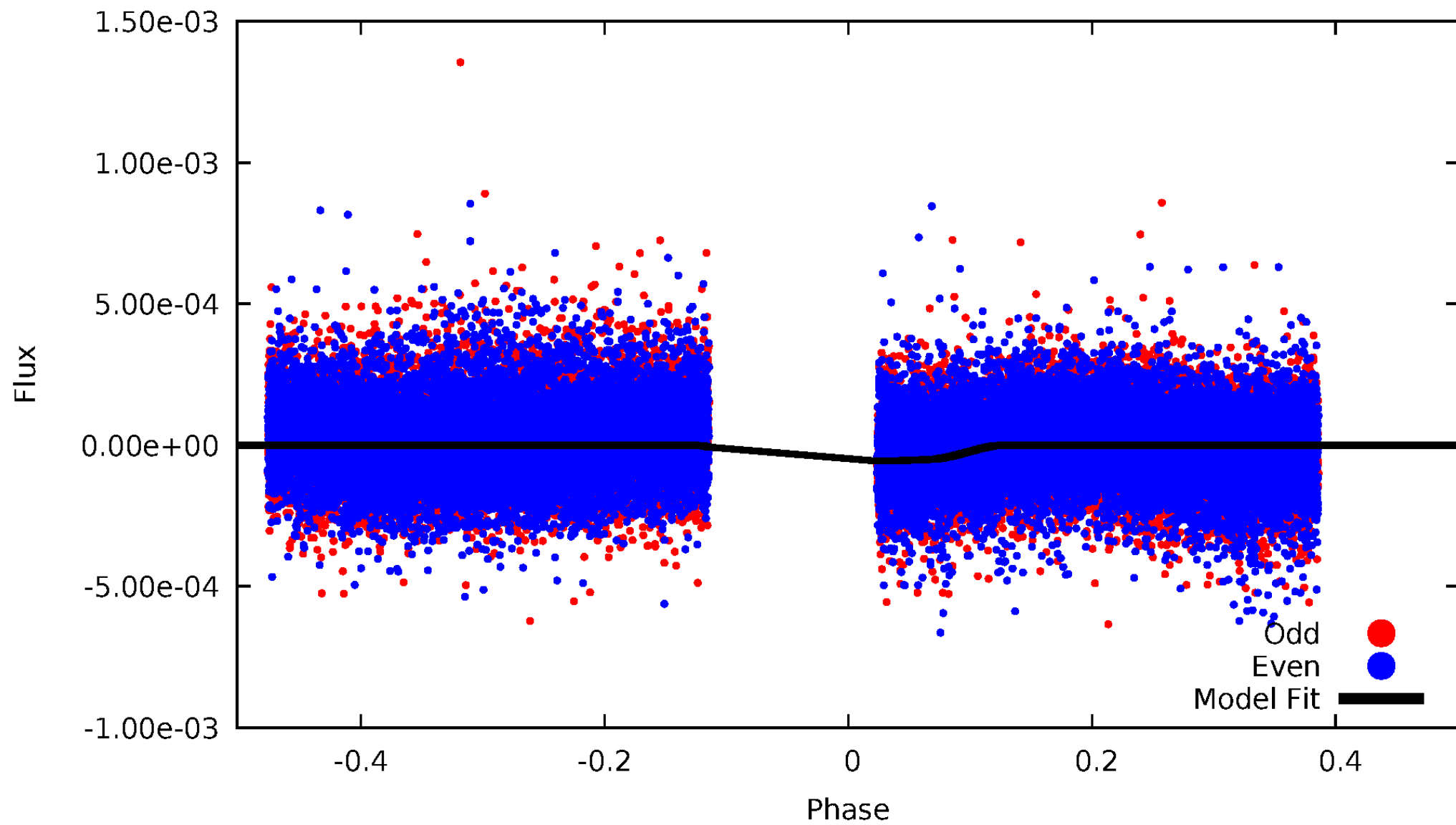


TCE 008622268-02



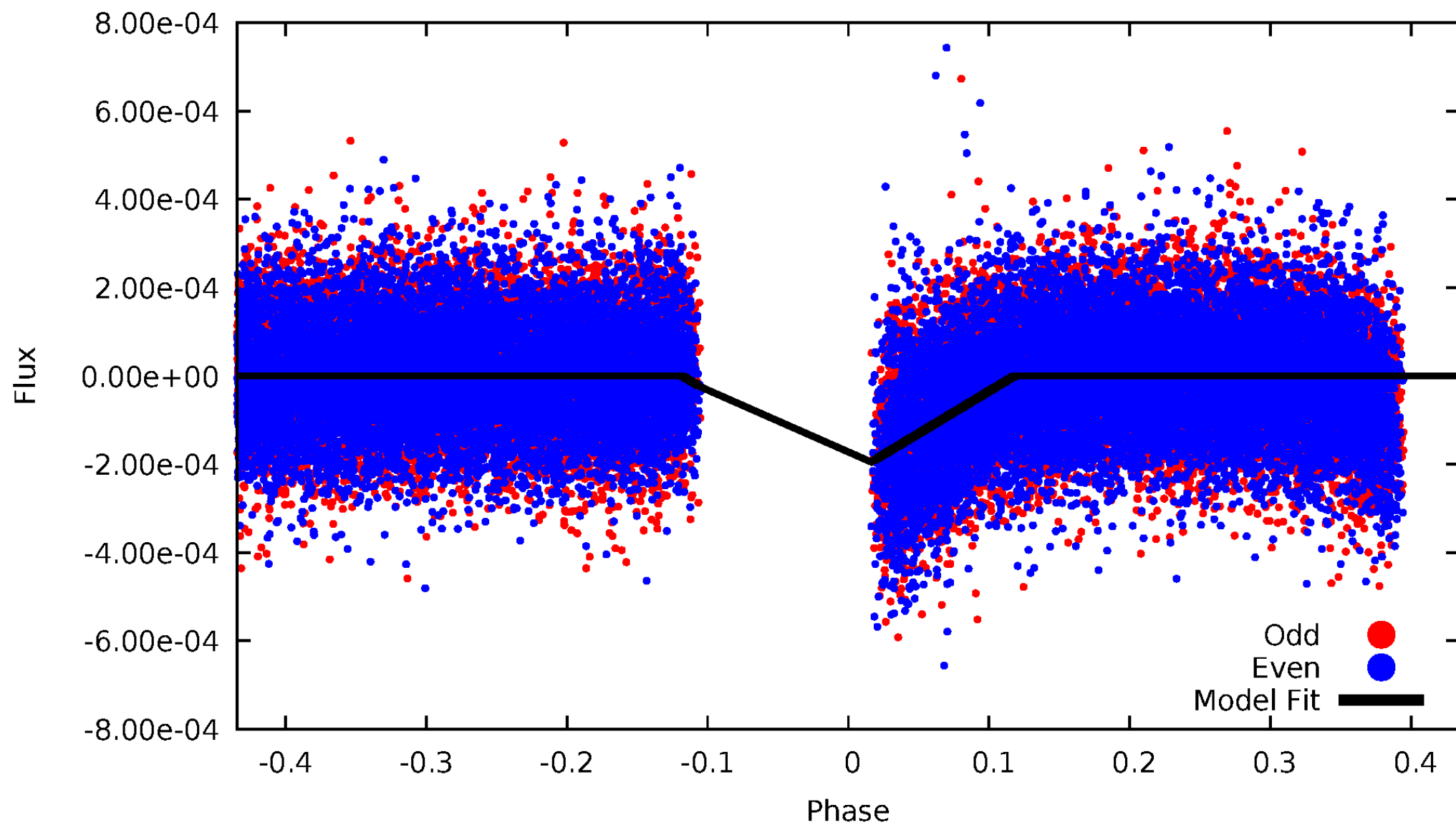
DV Odd/Even

TCE 008622268-02



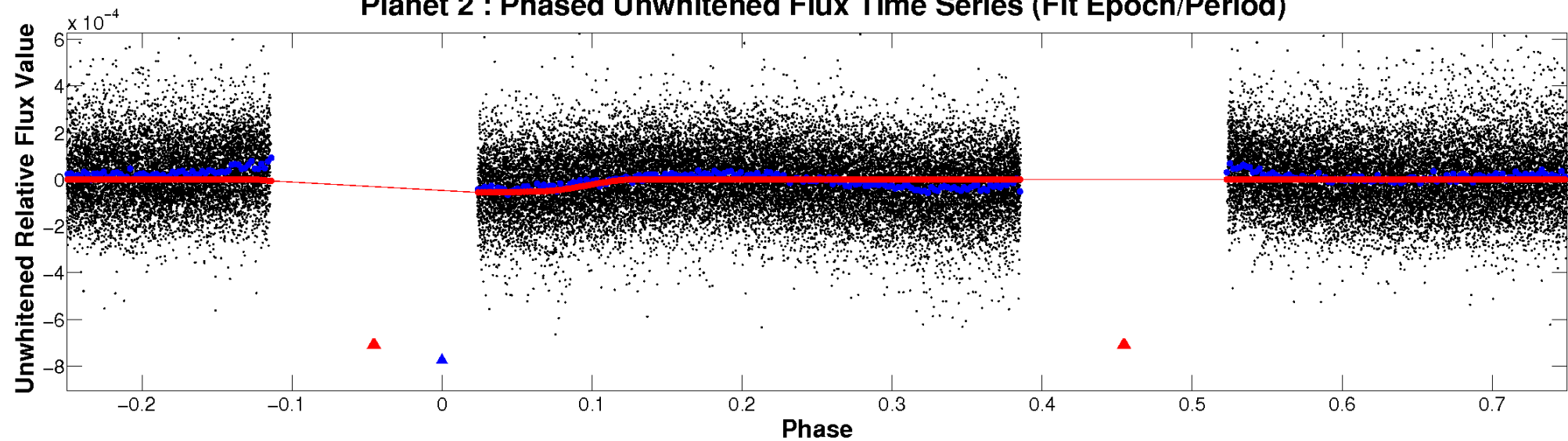
ALT Odd/Even

TCE 008622268-02

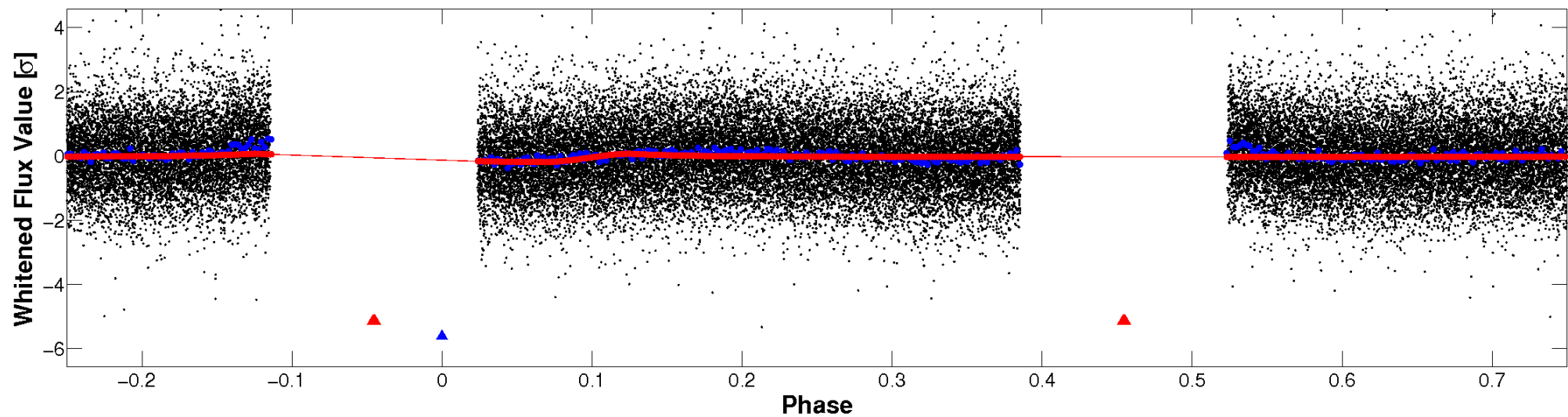


Non-Whitened Vs. Whitened Light Curve

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

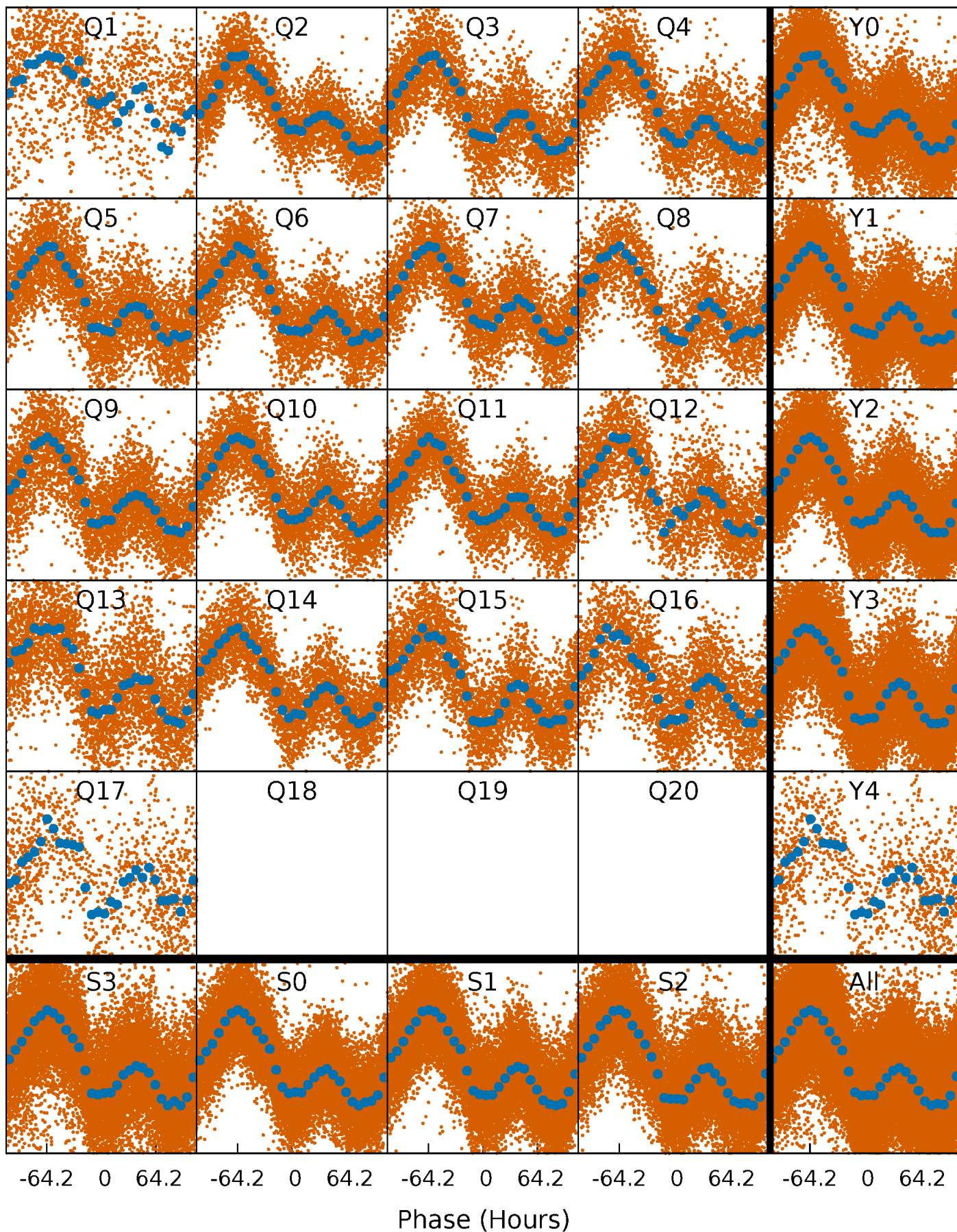


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



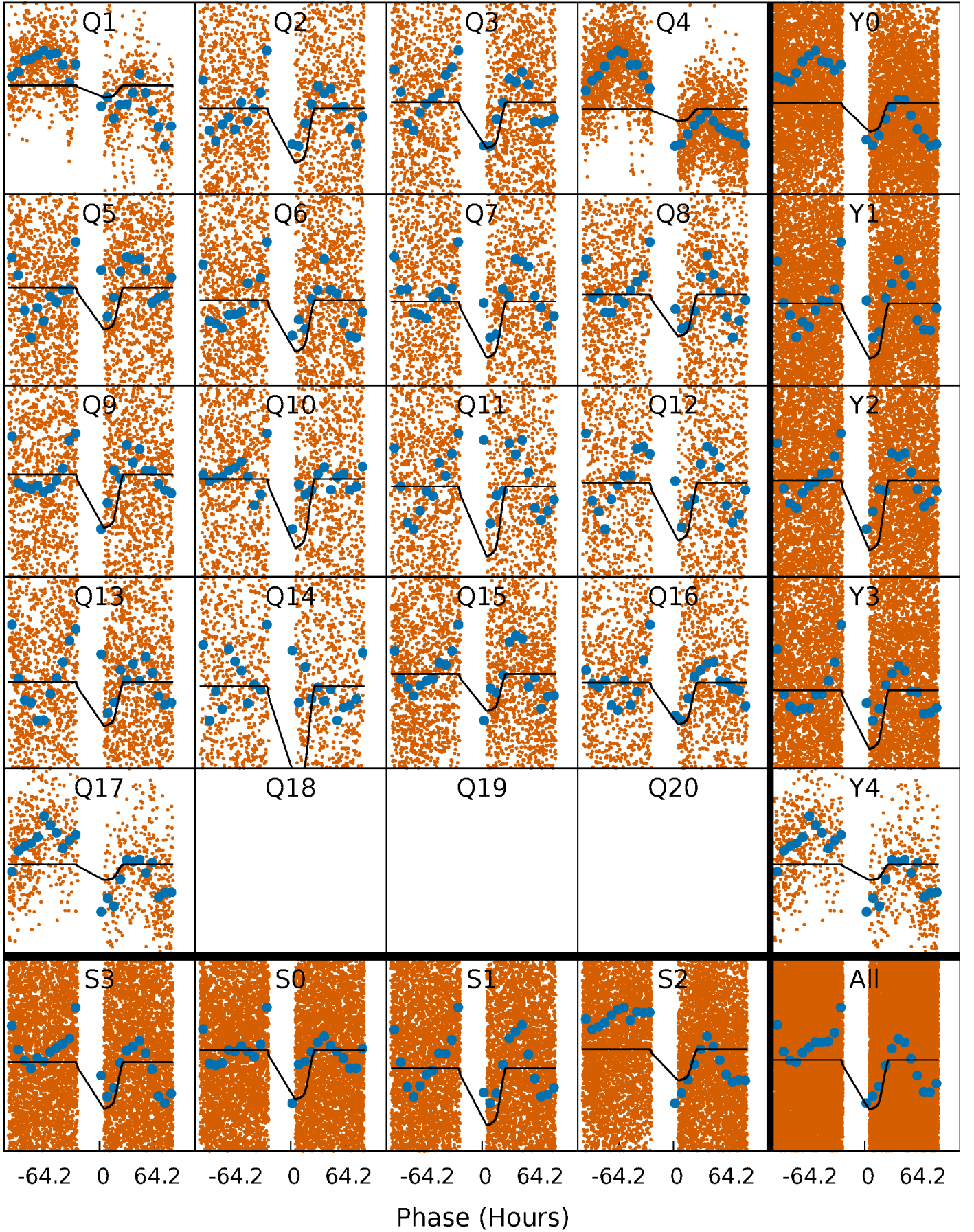
PDC Quarter-Phased Transit Curves

TCE 008622268-02 P= 9.336371 Days $T_0=137.369984$ (BKJD)



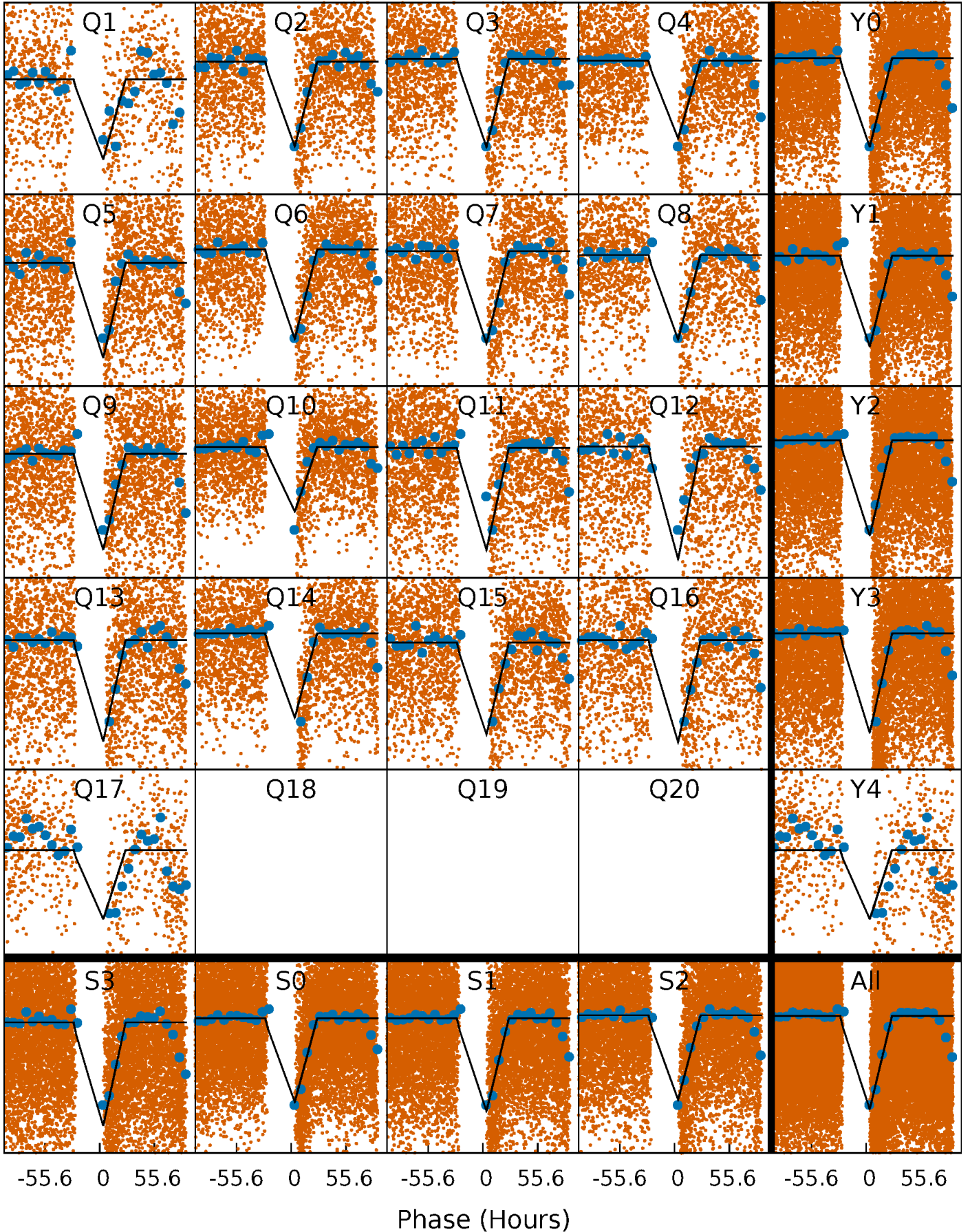
DV Quarter-Phased Transit Curves

TCE 008622268-02 P= 9.336371 Days $T_0=137.369984$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

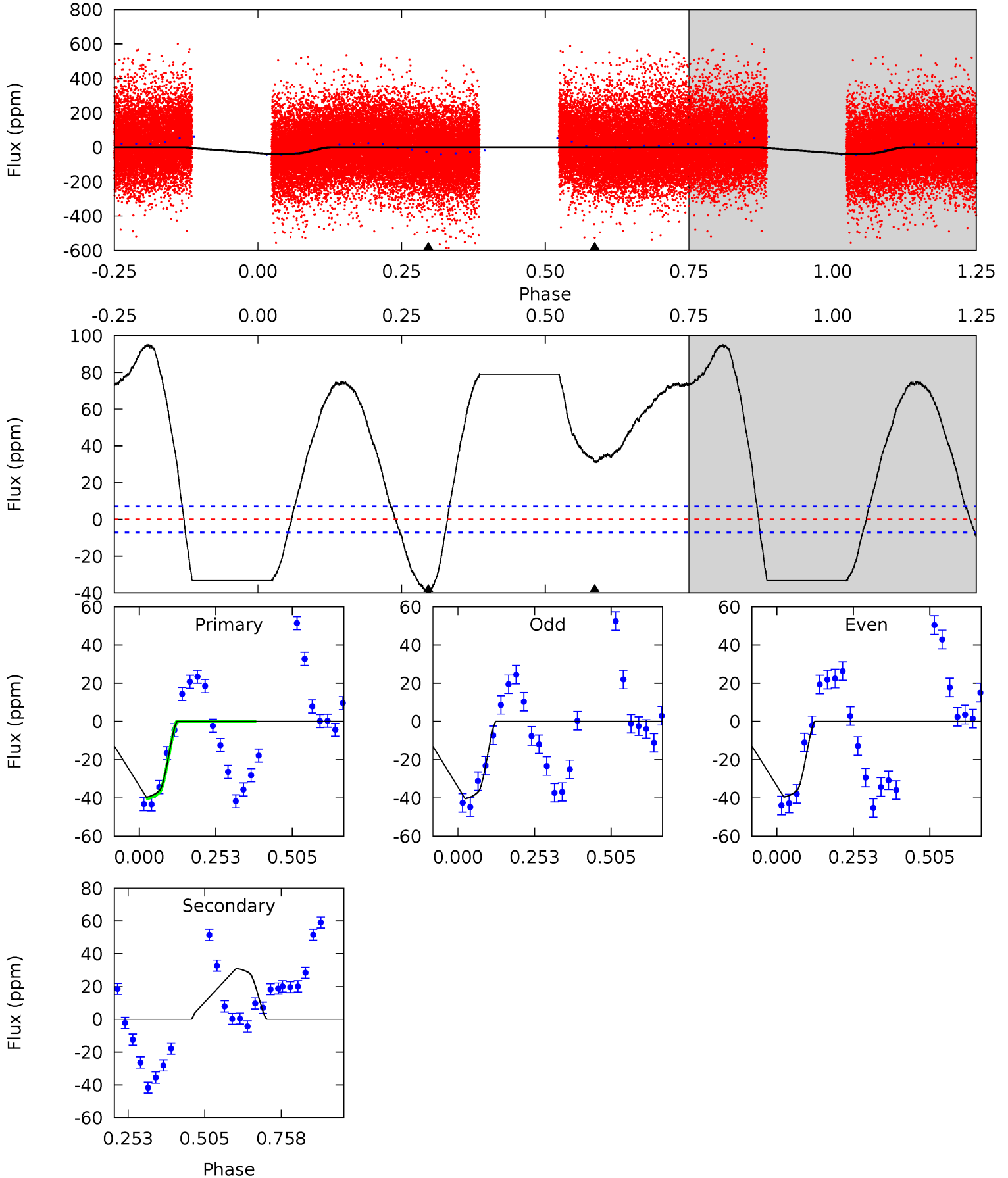
TCE 008622268-02 P= 9.335326 Days $T_0=137.441604$ (BKJD)



DV Model-Shift Uniqueness Test

008622268-02, P = 9.336371 Days, E = 128.033613 Days

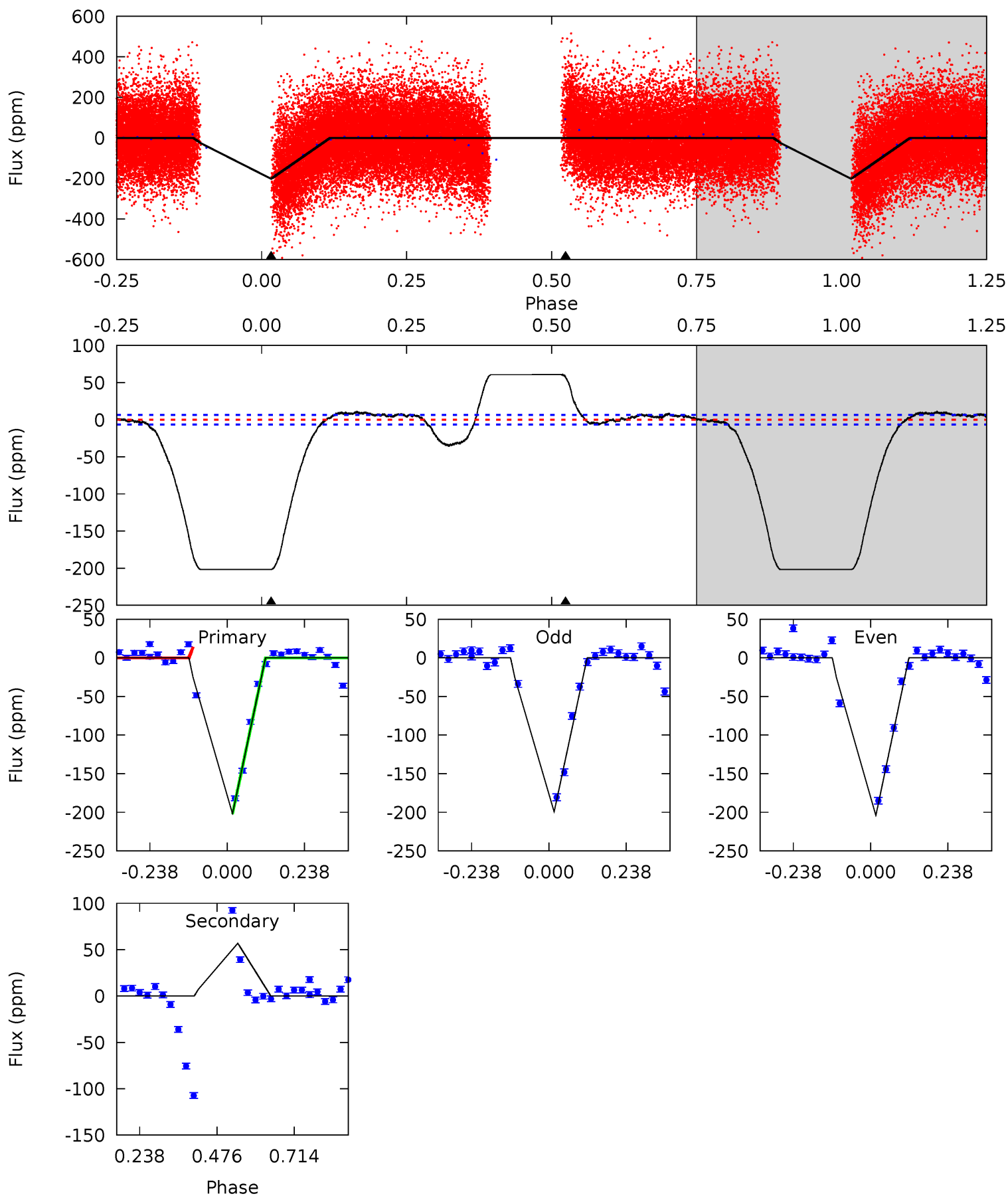
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.2	-18.9	0	0	4.37	1.14	21.8	24.2	24.2	-18.9	-18.9	0.27	-0.33	0.71	11.8



Alt Model-Shift Uniqueness Test

008622268-02, P = 9.335326 Days, E = 128.106278 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
136.2	-38.4	0	0	4.38	1.18	2.97	136.2	136.2	-38.4	-38.4	1.58	0.86	0.23	28.8



Stellar Parameters For KIC 008622268

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6302^{+82}_{-75}	$4.100^{+0.188}_{-0.087}$	$-0.180^{+0.150}_{-0.150}$	$1.567^{+0.245}_{-0.337}$	$1.126^{+0.112}_{-0.090}$	$0.412^{+0.416}_{-0.130}$
	+1%/-1%	+5%/-2%	+83%/-83%	+16%/-22%	+10%/-8%	+101%/-32%
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 008622268-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	31 ± 2	$1.54^{+0.16}_{-0.20}$	1603^{+65}_{-82}	-5001^{+127}_{-152}	$-59.522^{+11.640}_{-17.370}$
Alt.	57 ± 1	$2.39^{+0.25}_{-0.30}$	1600^{+76}_{-98}	-4733^{+83}_{-91}	$-45.132^{+7.888}_{-13.545}$

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

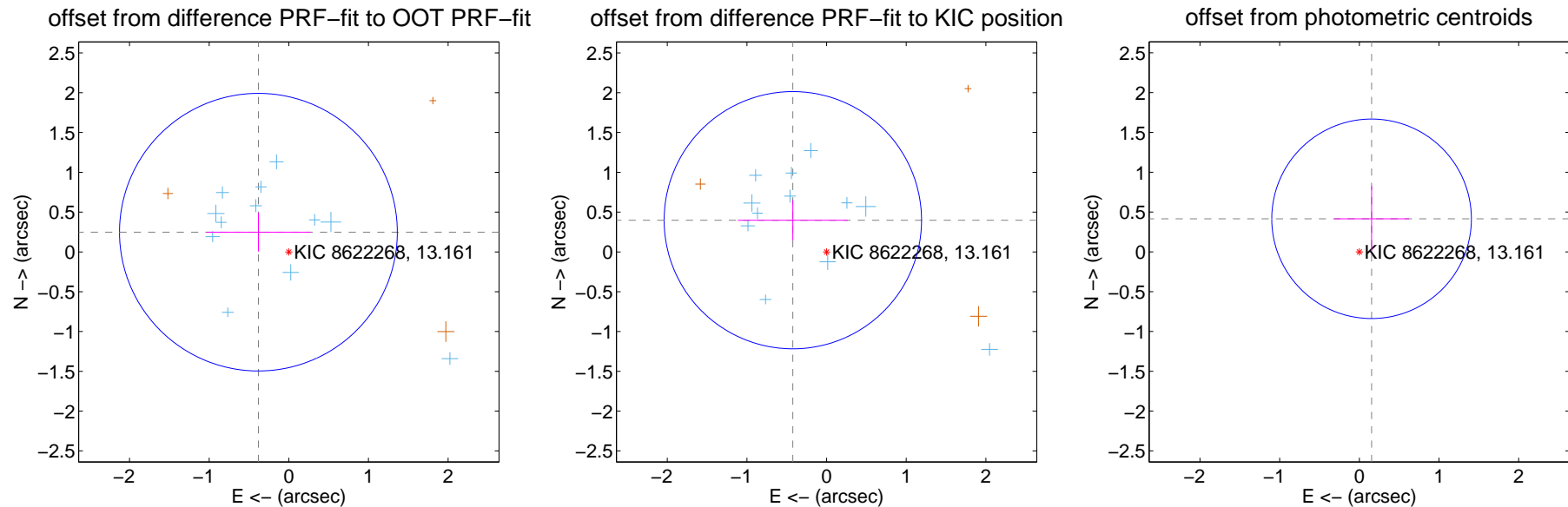
DV Centroid Data

Supplemental centroid analysis for 008622268-02. Kepler magnitude: 13.16. Transit SNR 12.38

There are 12 quarters with good PRF difference image offsets

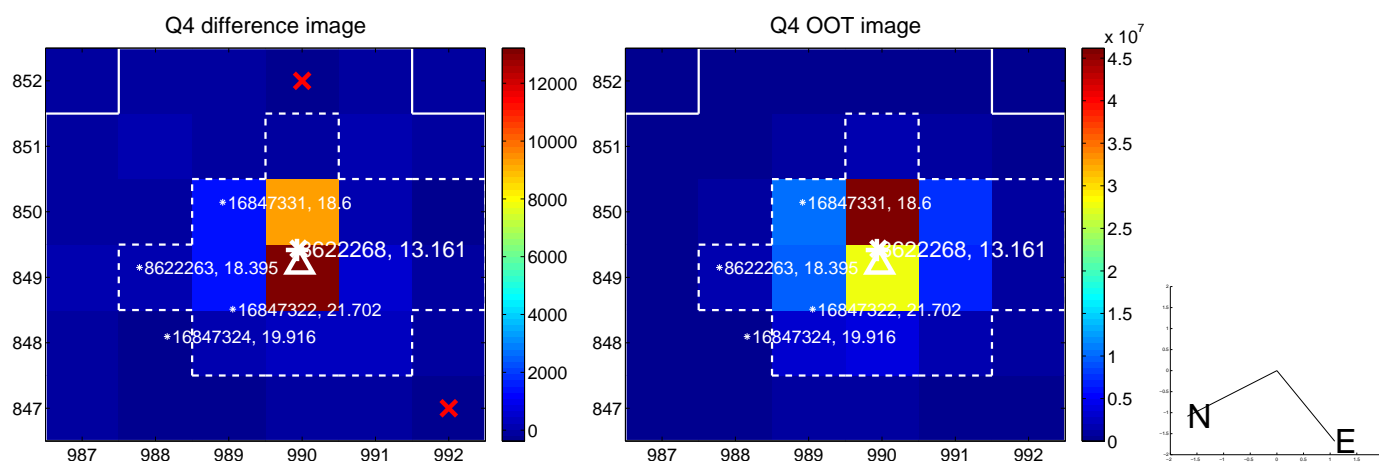
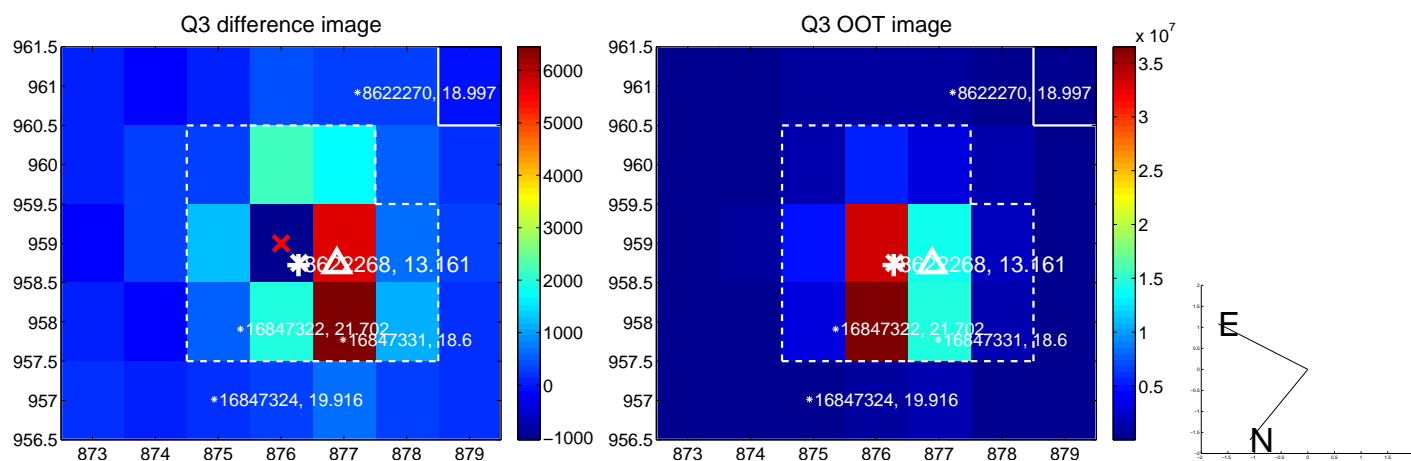
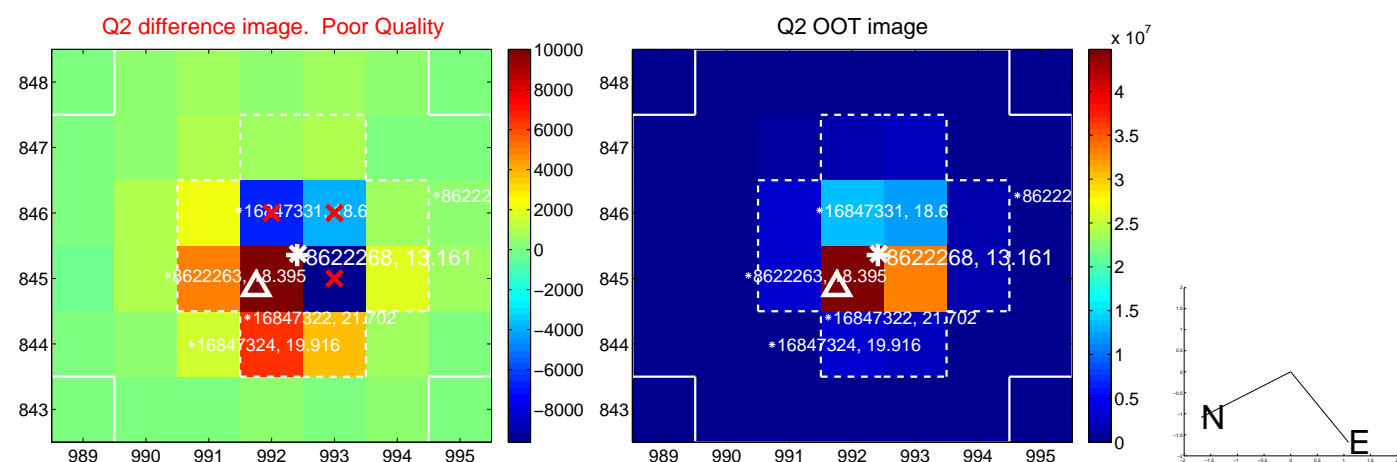
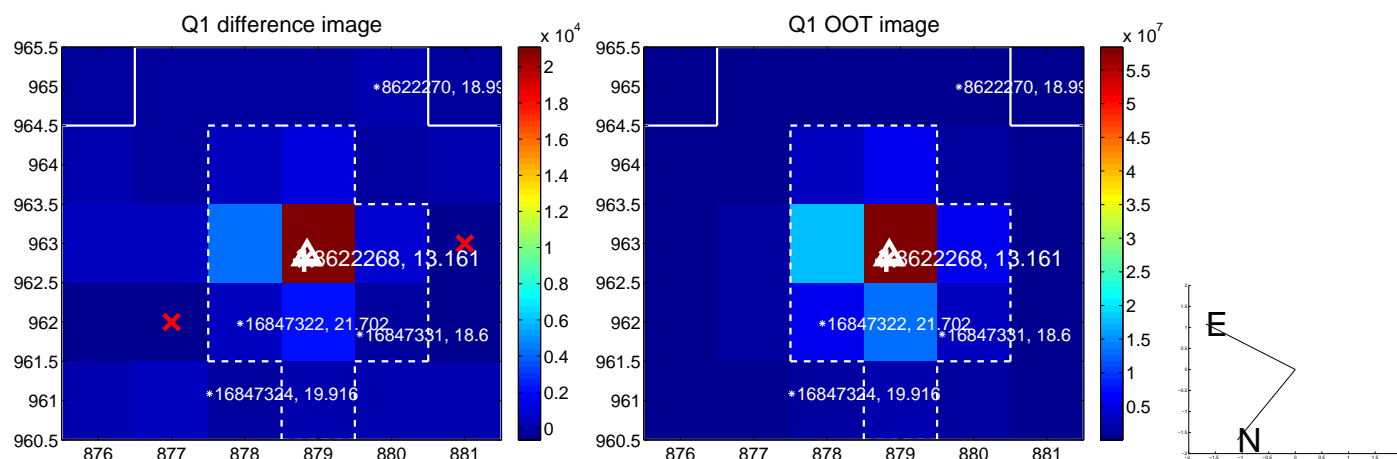
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.455 ± 0.581	0.78	0.382 ± 0.655	0.248 ± 0.244
PRF-fit source offset from KIC position	0.582 ± 0.539	1.08	0.424 ± 0.691	0.398 ± 0.253
photometric centroid source offset	0.44 ± 0.42	1.06	-0.15 ± 0.47	0.42 ± 0.41

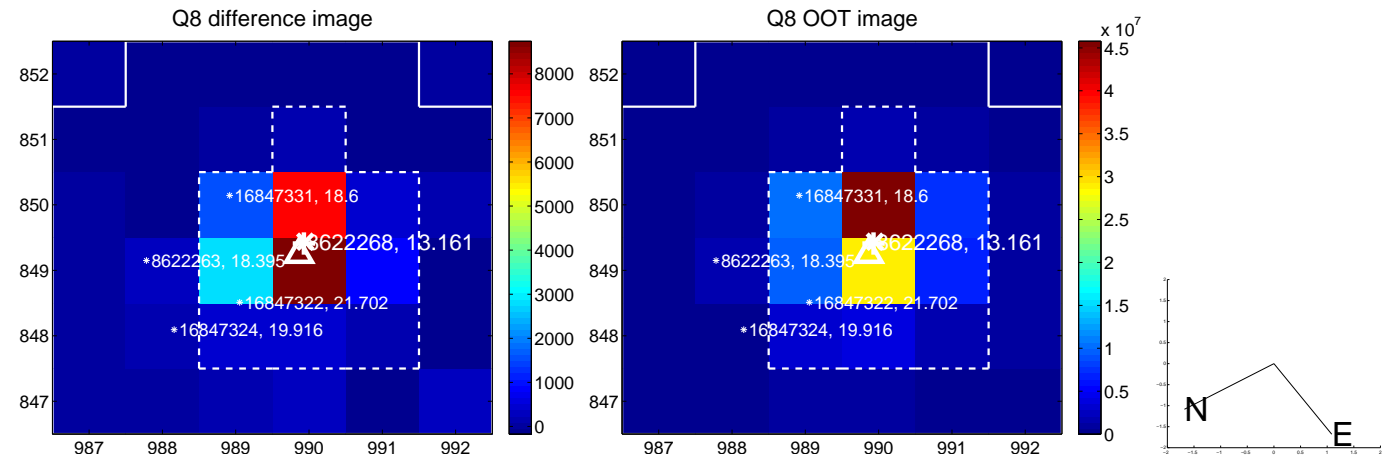
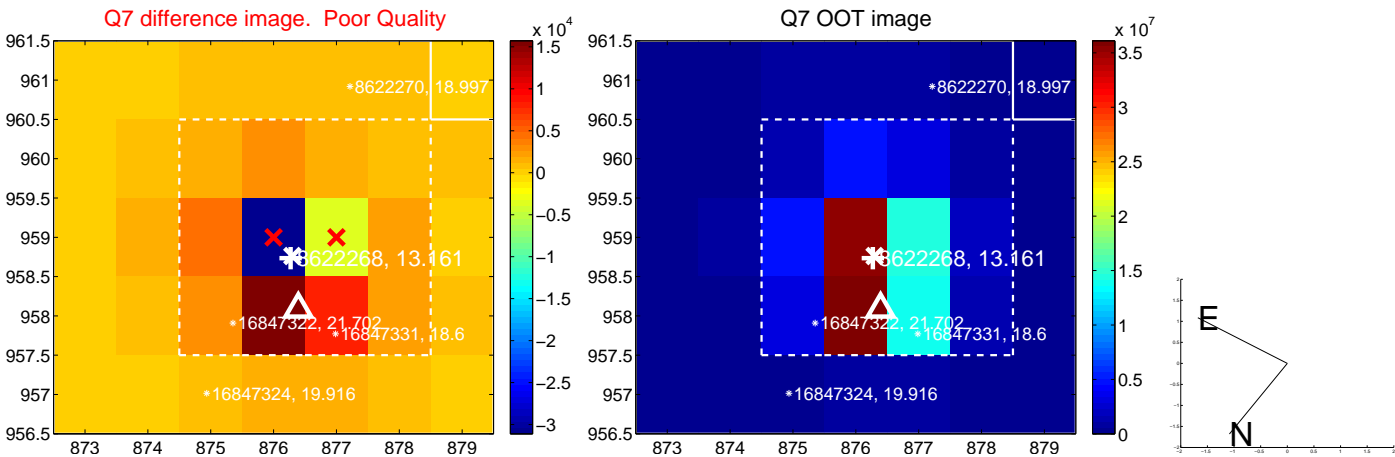
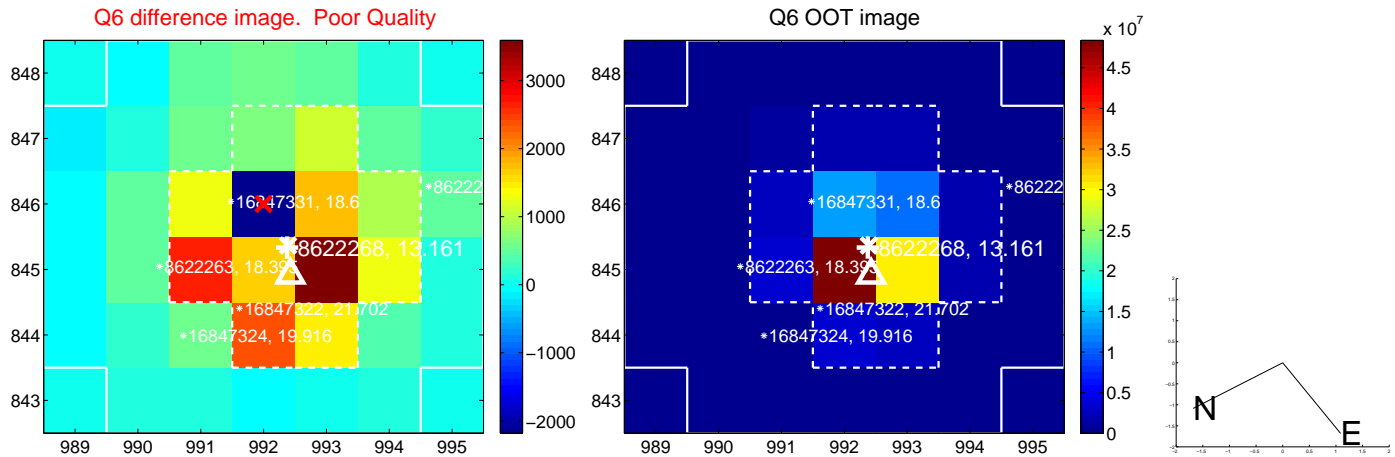
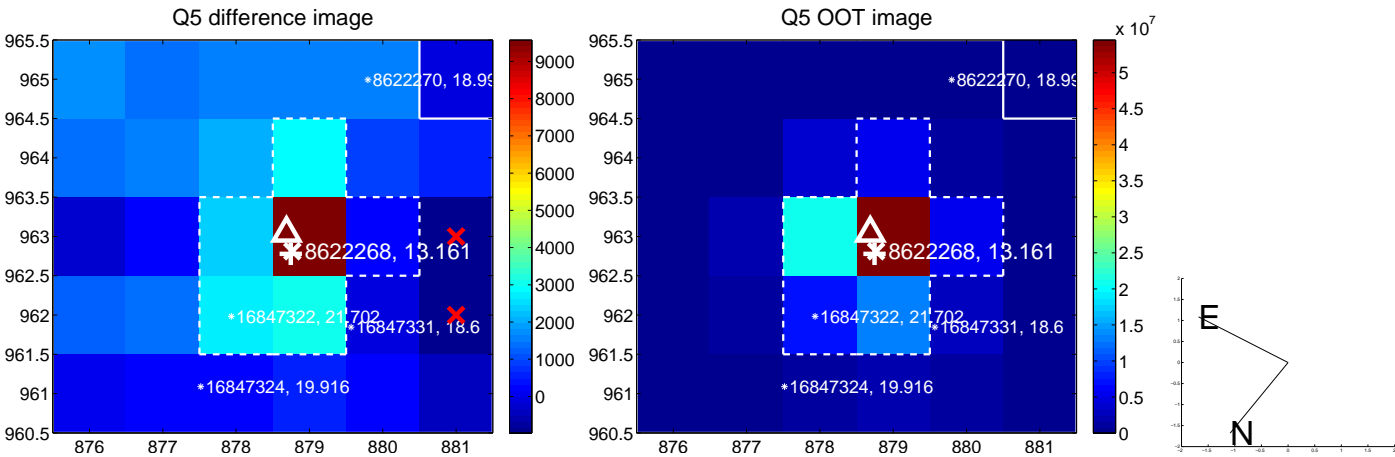


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

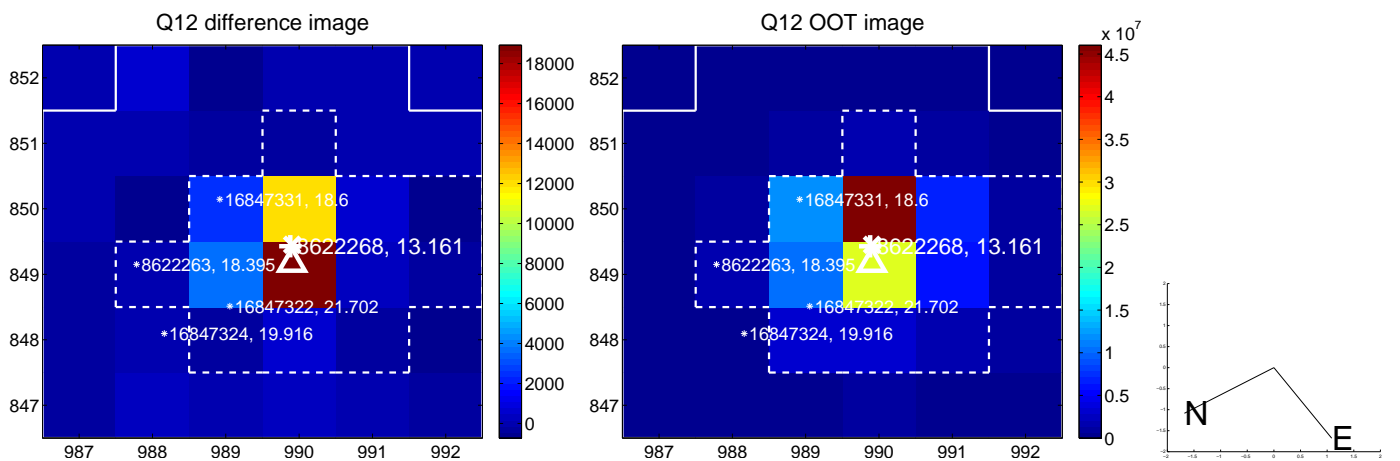
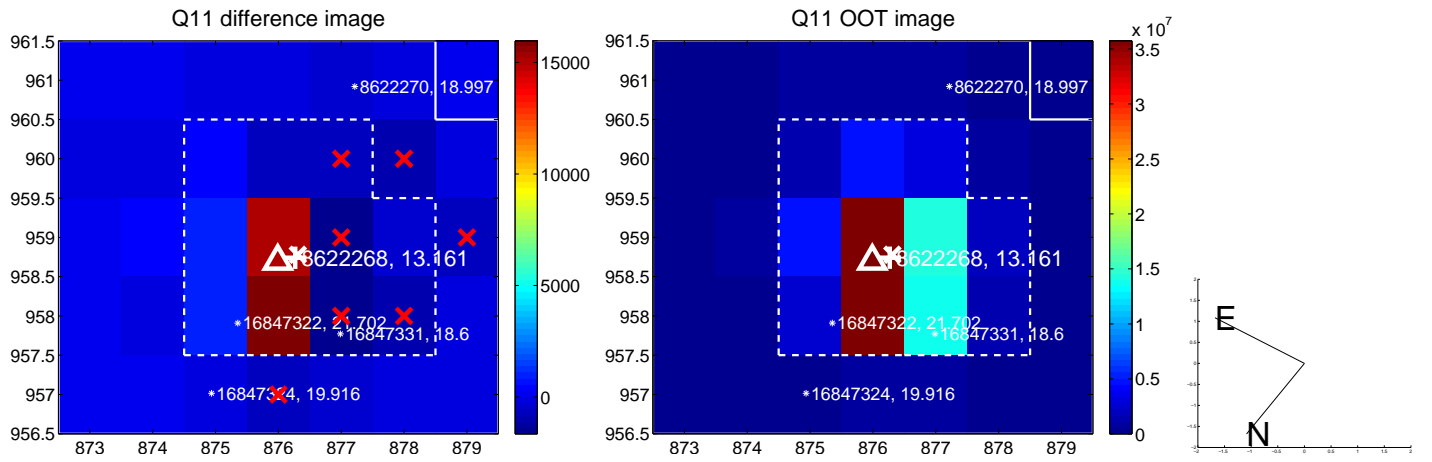
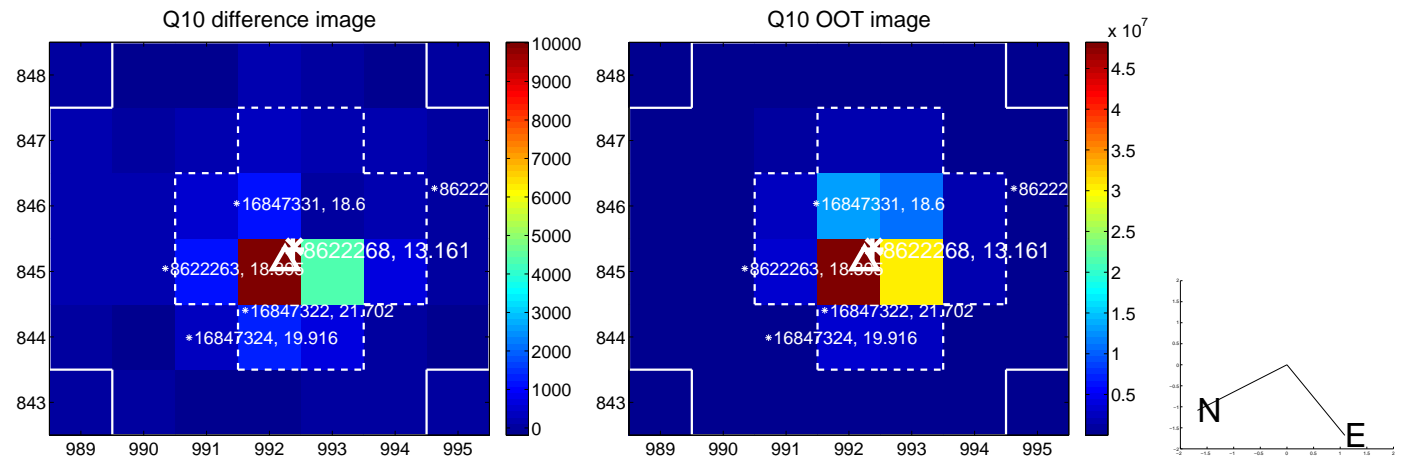
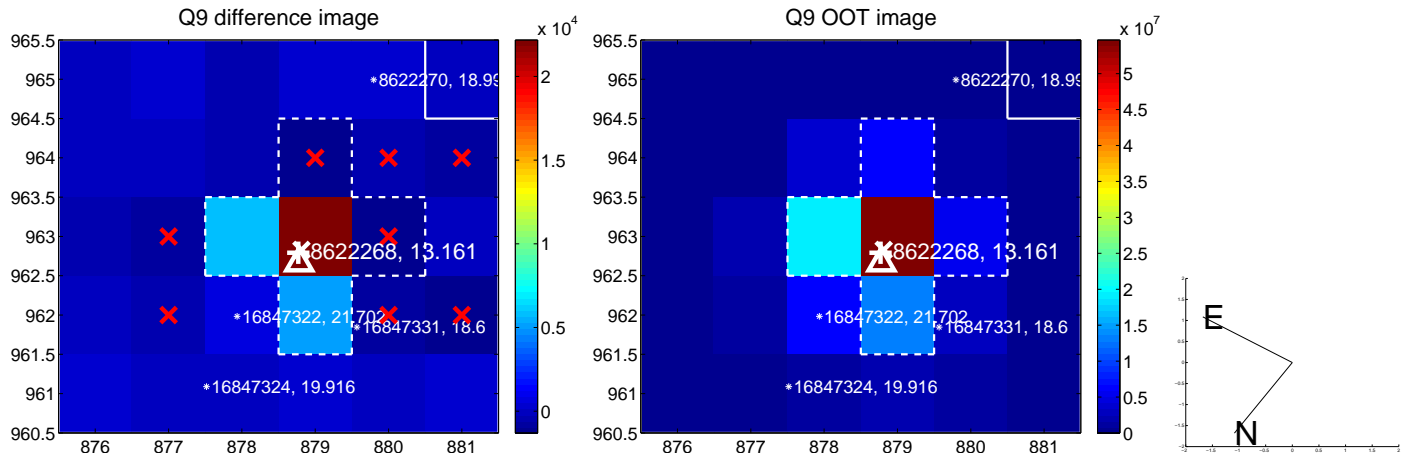
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



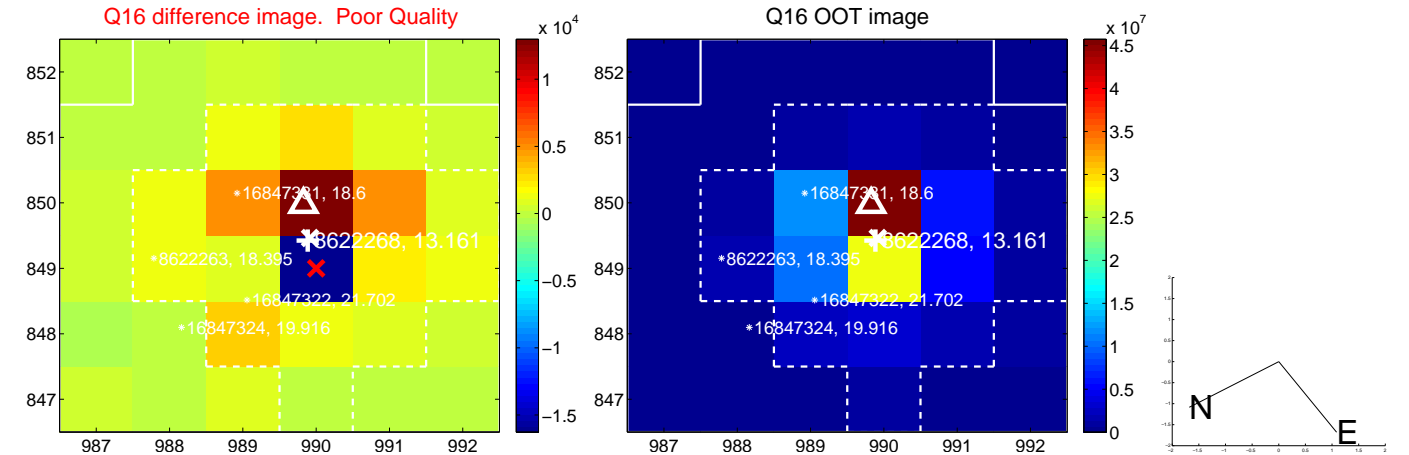
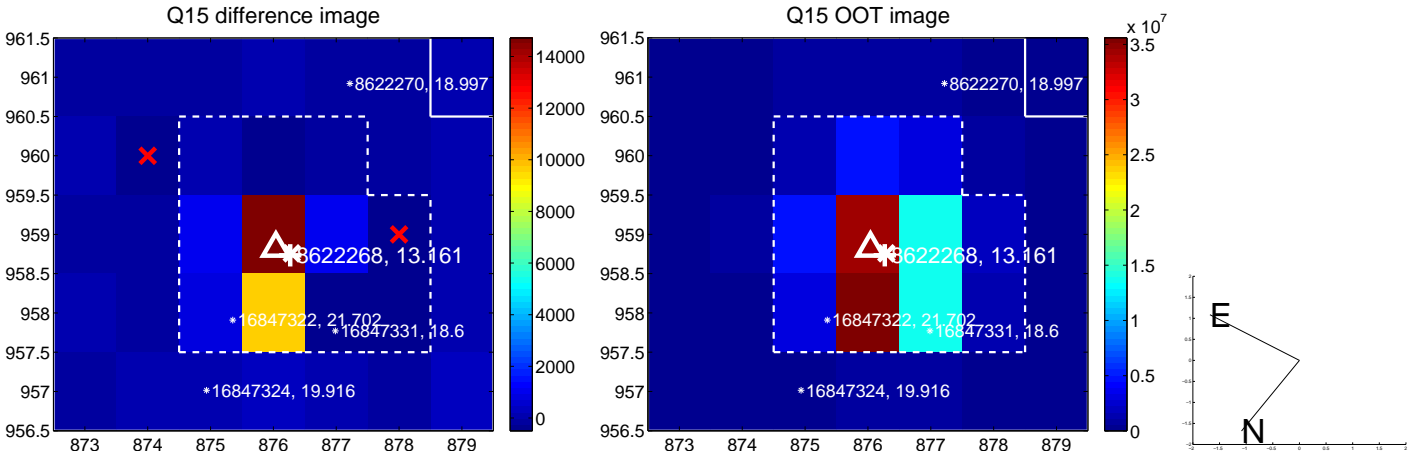
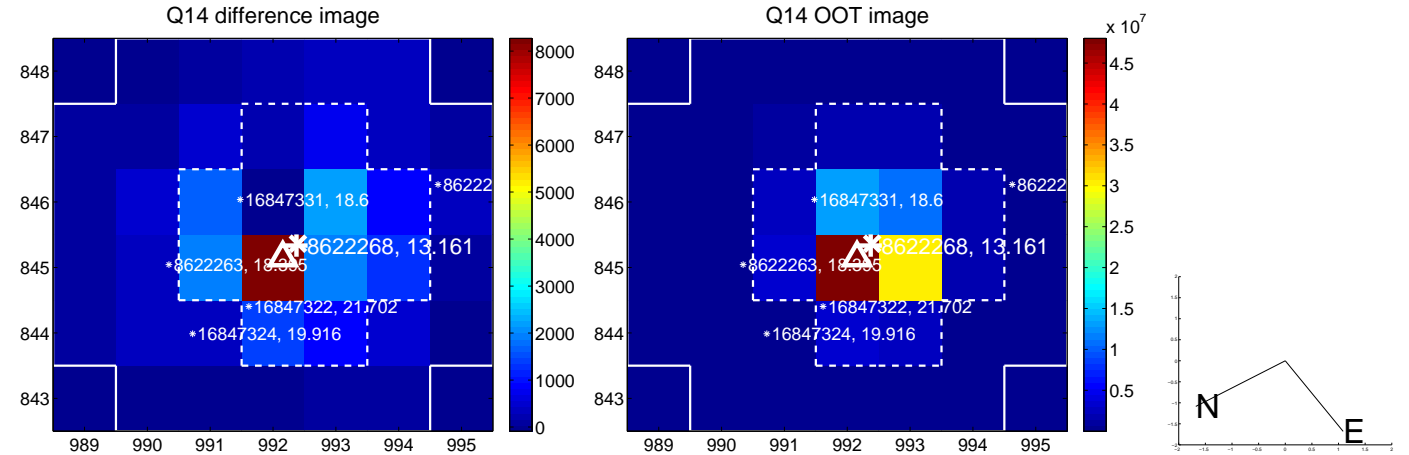
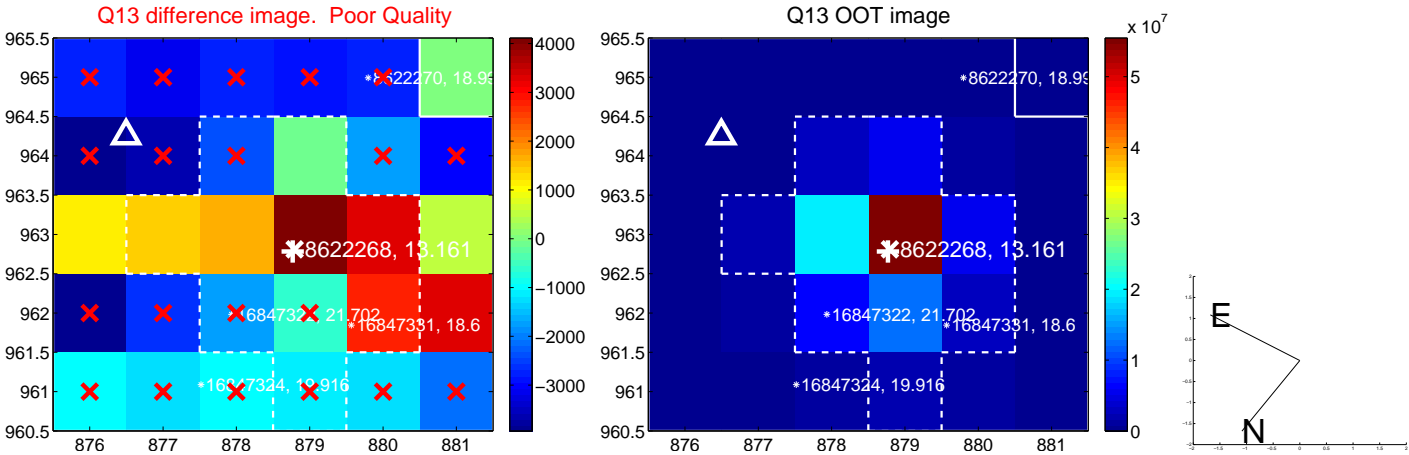
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



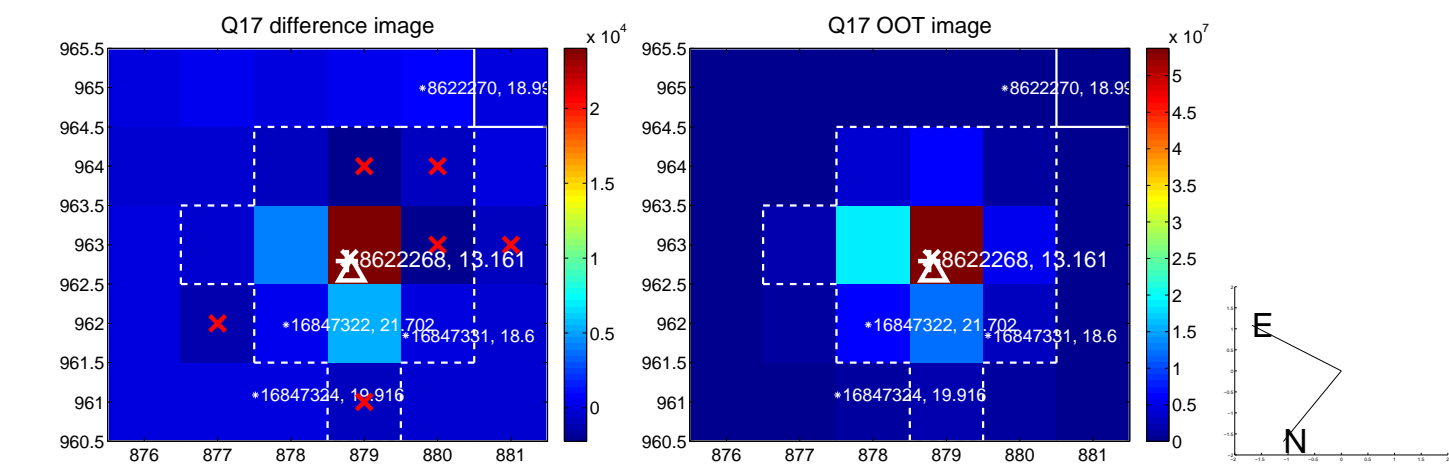
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



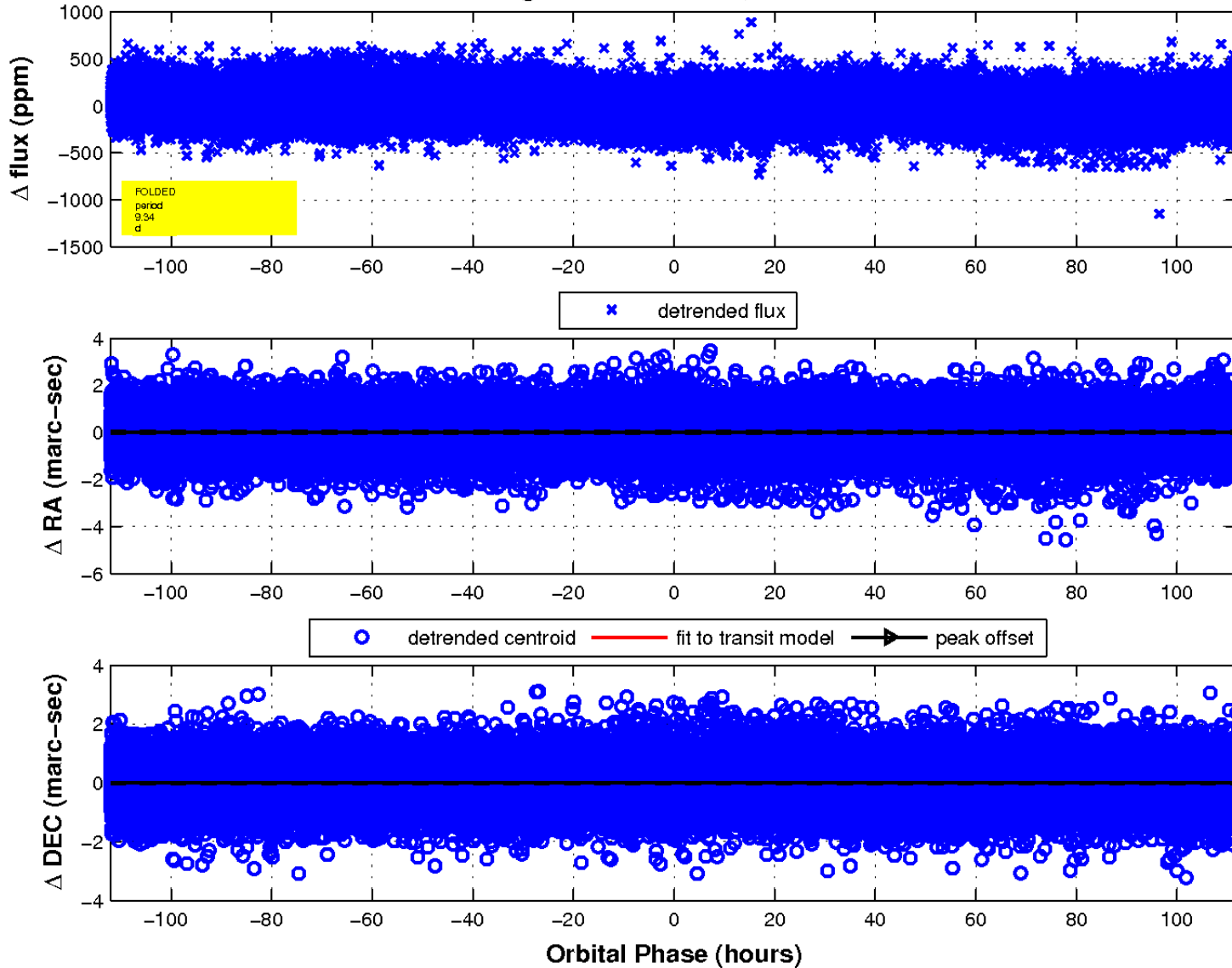
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

