

KIC 005196646

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})
005196646-01	OBS	No	1.042277	131.950017	0.0	0.675	13.3	0.0	2.67	6362	0.01	20095.06
005196646-02	OBS	No	0.521166	131.754007	16.8	4.307	12.6	14.6	2.67	6362	1.11	50632.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005196646-01	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—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005196646-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

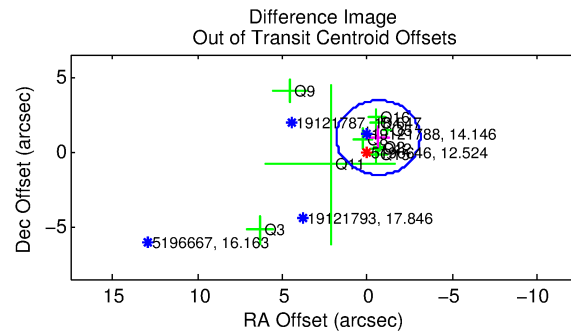
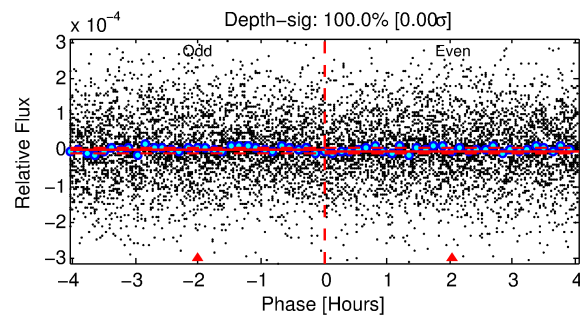
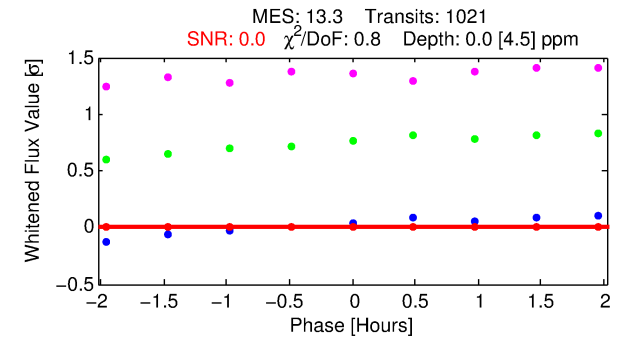
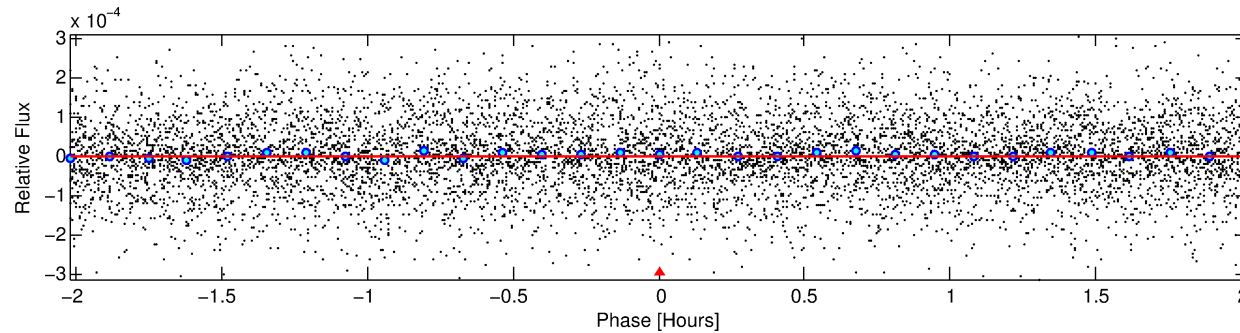
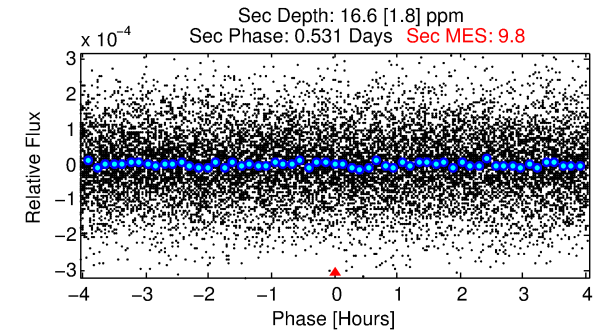
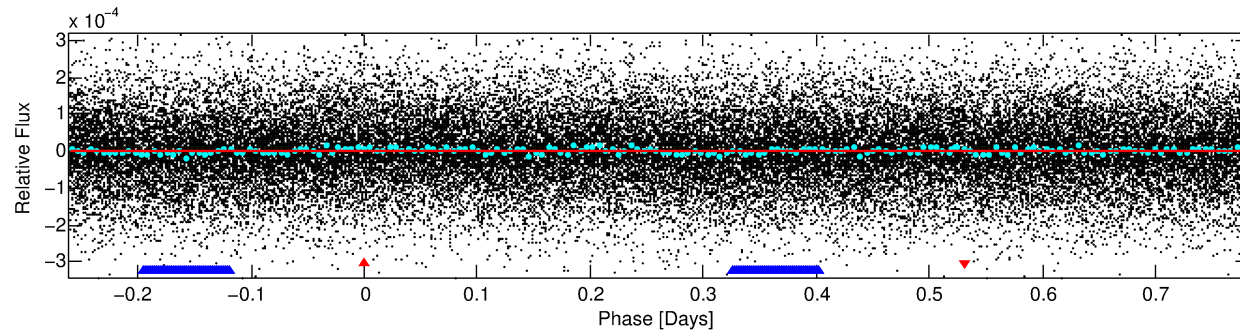
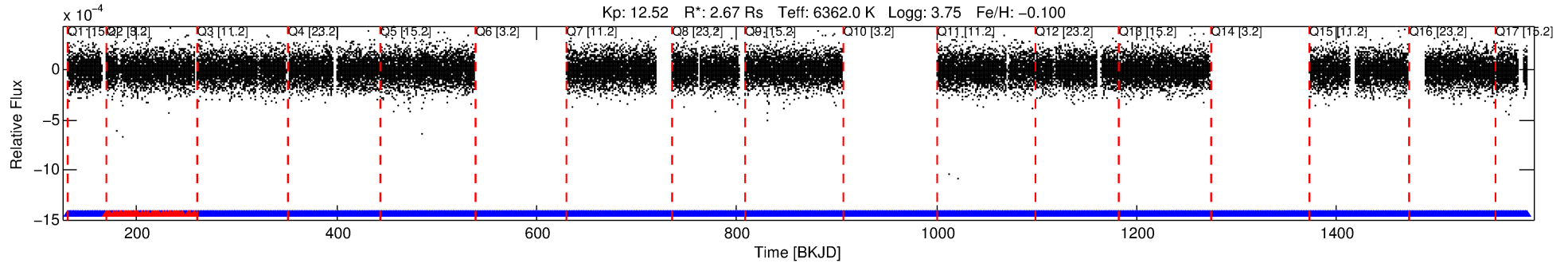
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005196646-01

No Significant Match Found

DV One-Page Summary

KIC: 5196646 Candidate: 1 of 2 Period: 1.042 d



DV Fit Results:

Period = 1.04228 [0.25010] d
Epoch = 131.9500 [33.3017] BKJD
Rp/R* = 0.0000 [0.0683]
a/R* = 5.01 [1201.30]
b = 0.91 [129.00]
Seff = 20095.06 [12331.64]
Teq = 3036 [466] K
Rp = 0.01 [19.86] Re
a = 0.0228 [0.0084] AU
Ag = 34560.85 [117311585.79] [0.00σ]
Teffp = 64001 [54313553] K [0.00σ]

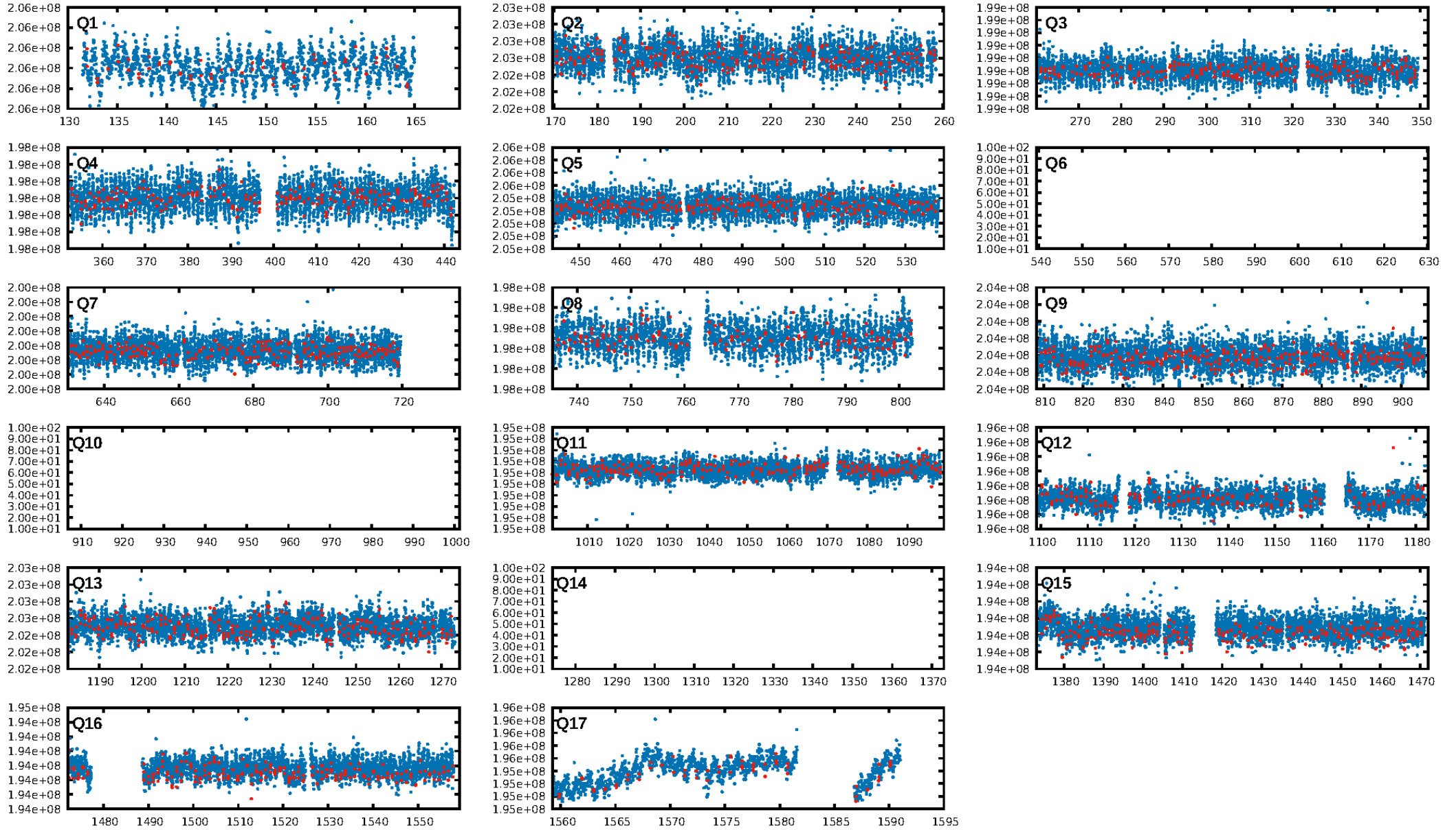
DV Diagnostic Results:

ShortPeriod-sig: 99.6% [2.87σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.95 [919/965]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 1.148 arcsec [1.39σ]
KicOffset-rm: 1.341 arcsec [1.52σ]
OotOffset-st: 1/3/4/2 [10]
KicOffset-st: 1/3/4/2 [10]
DiffImageQuality-fgm: 0.20 [2/10]
DiffImageOverlap-fno: 0.00 [0/14]

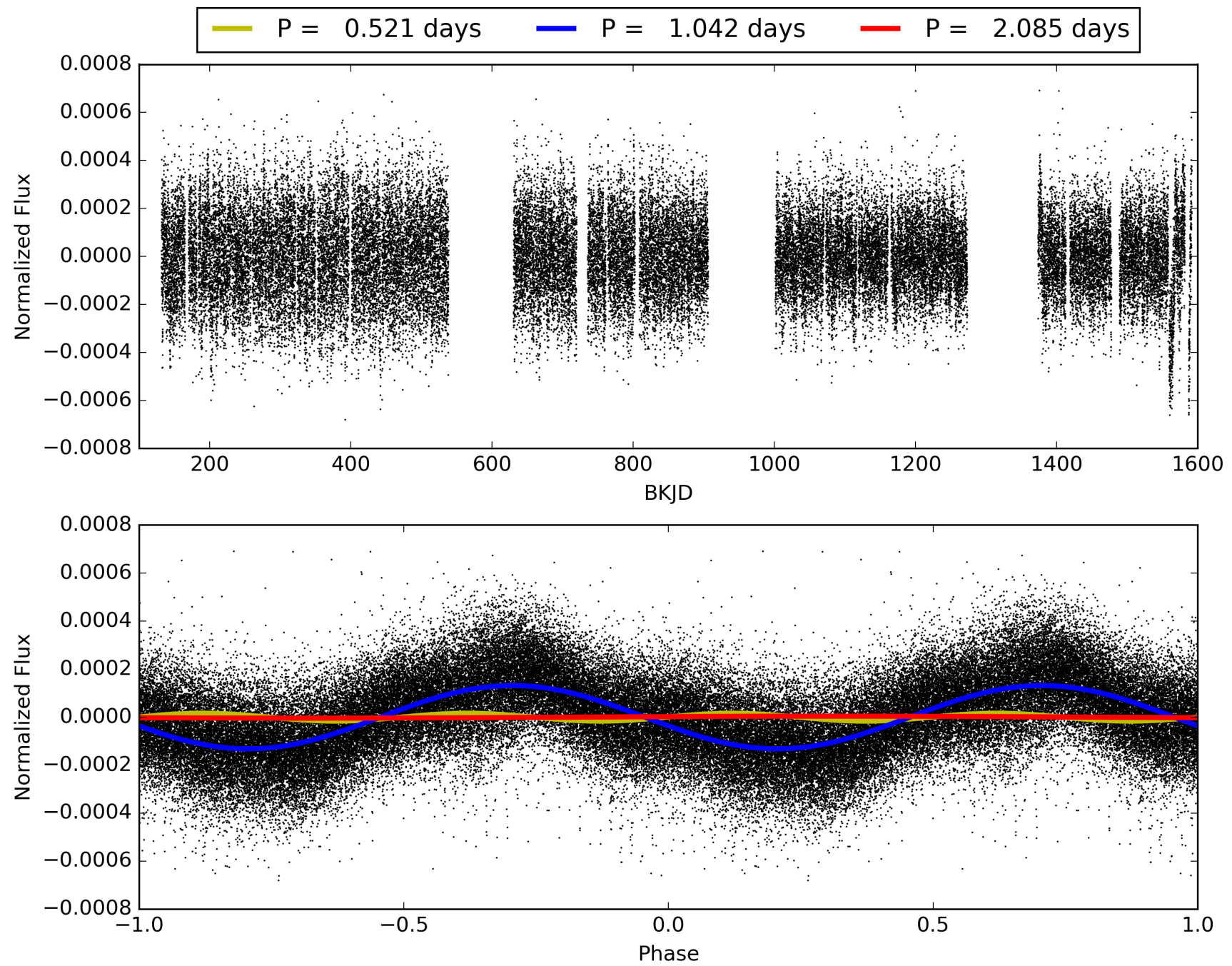
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005196646-01, PDC Light Curves

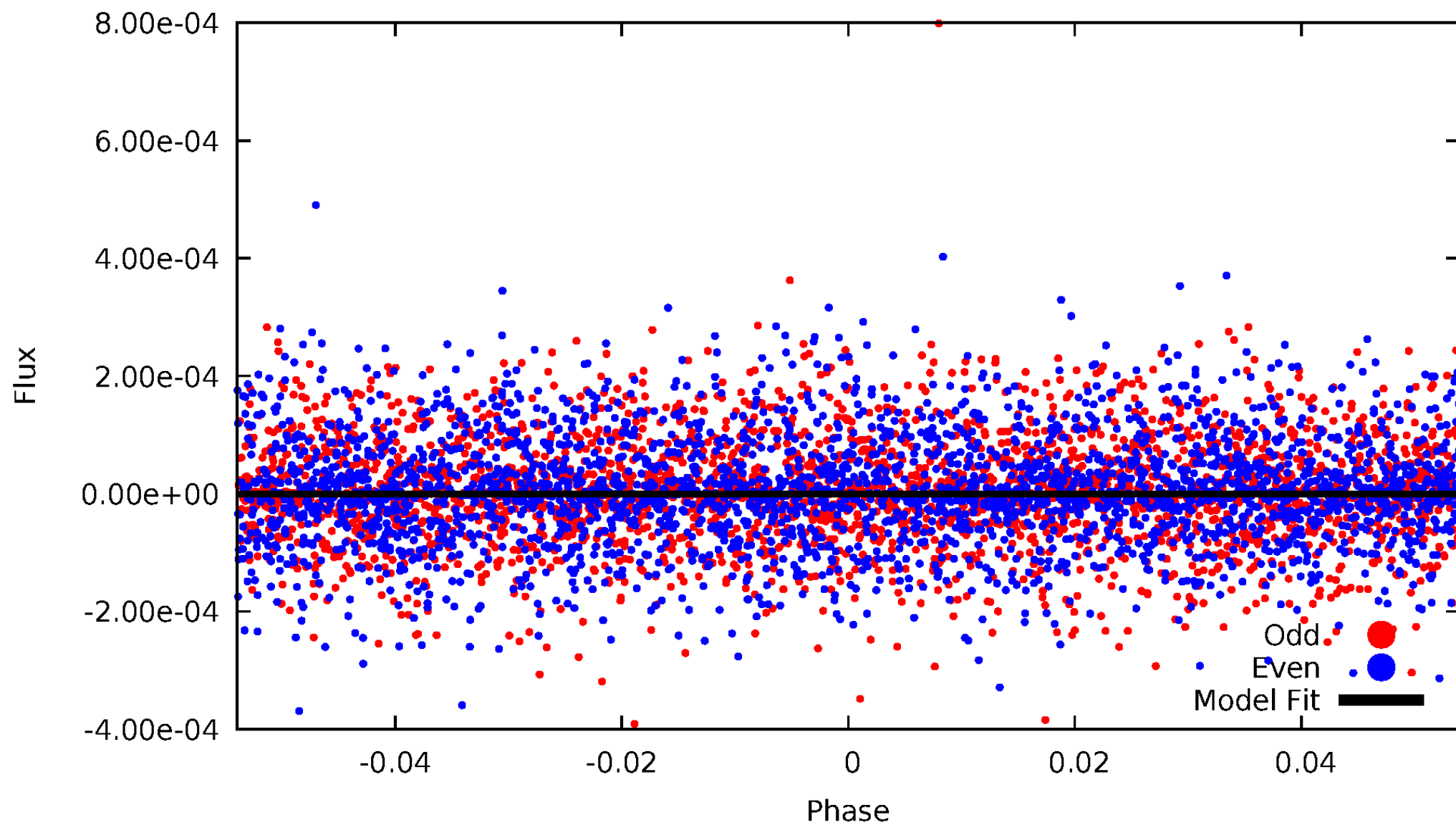


TCE 005196646-01



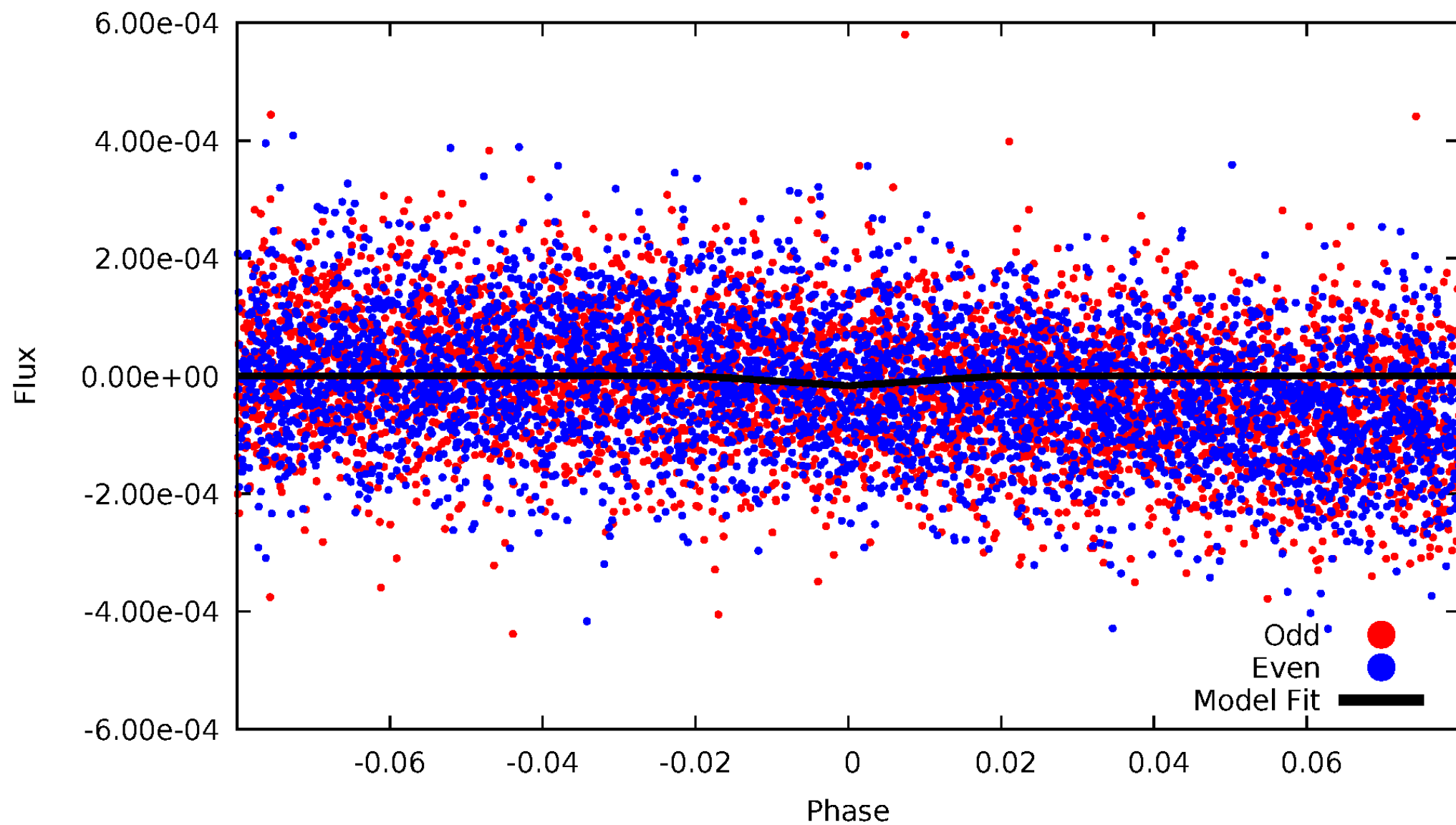
DV Odd/Even

TCE 005196646-01



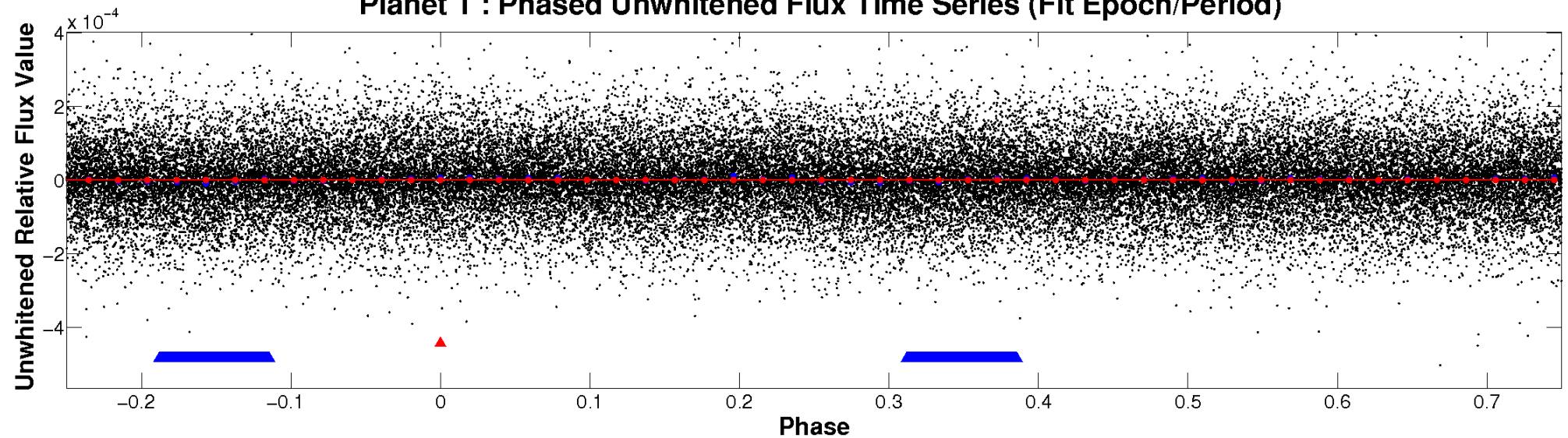
ALT Odd/Even

TCE 005196646-01

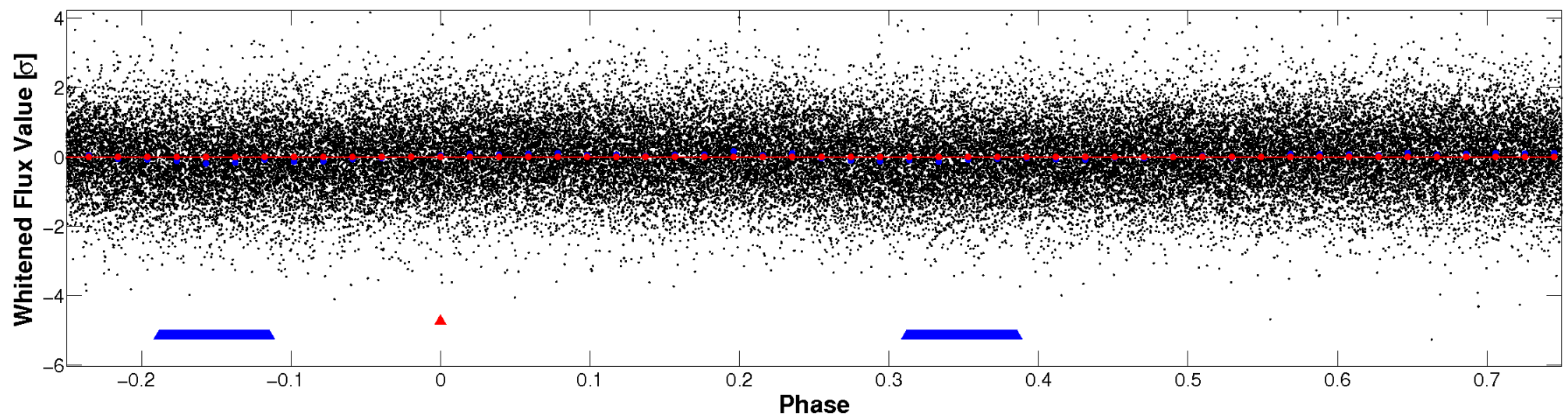


Non-Whitened Vs. Whitened Light Curve

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

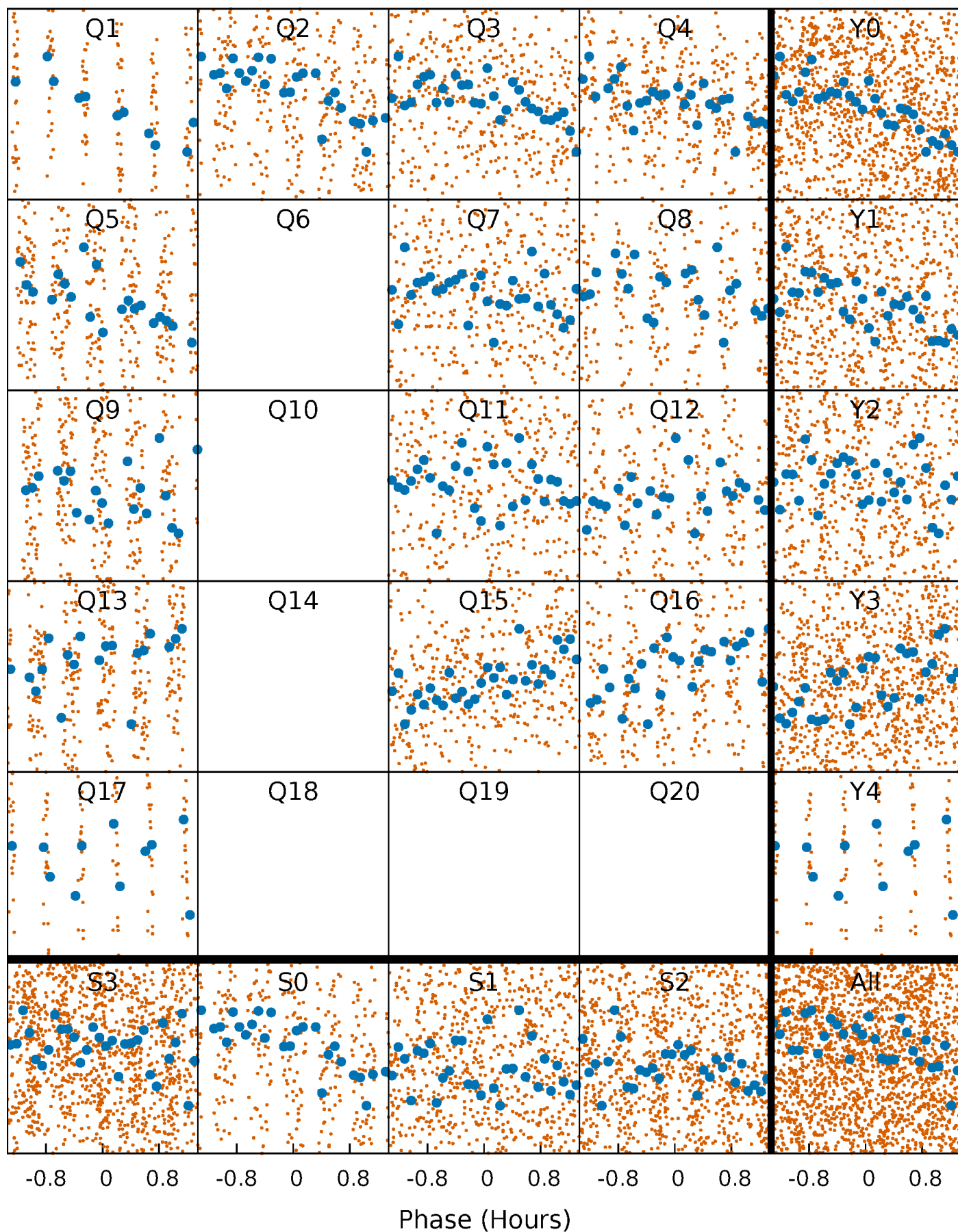


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



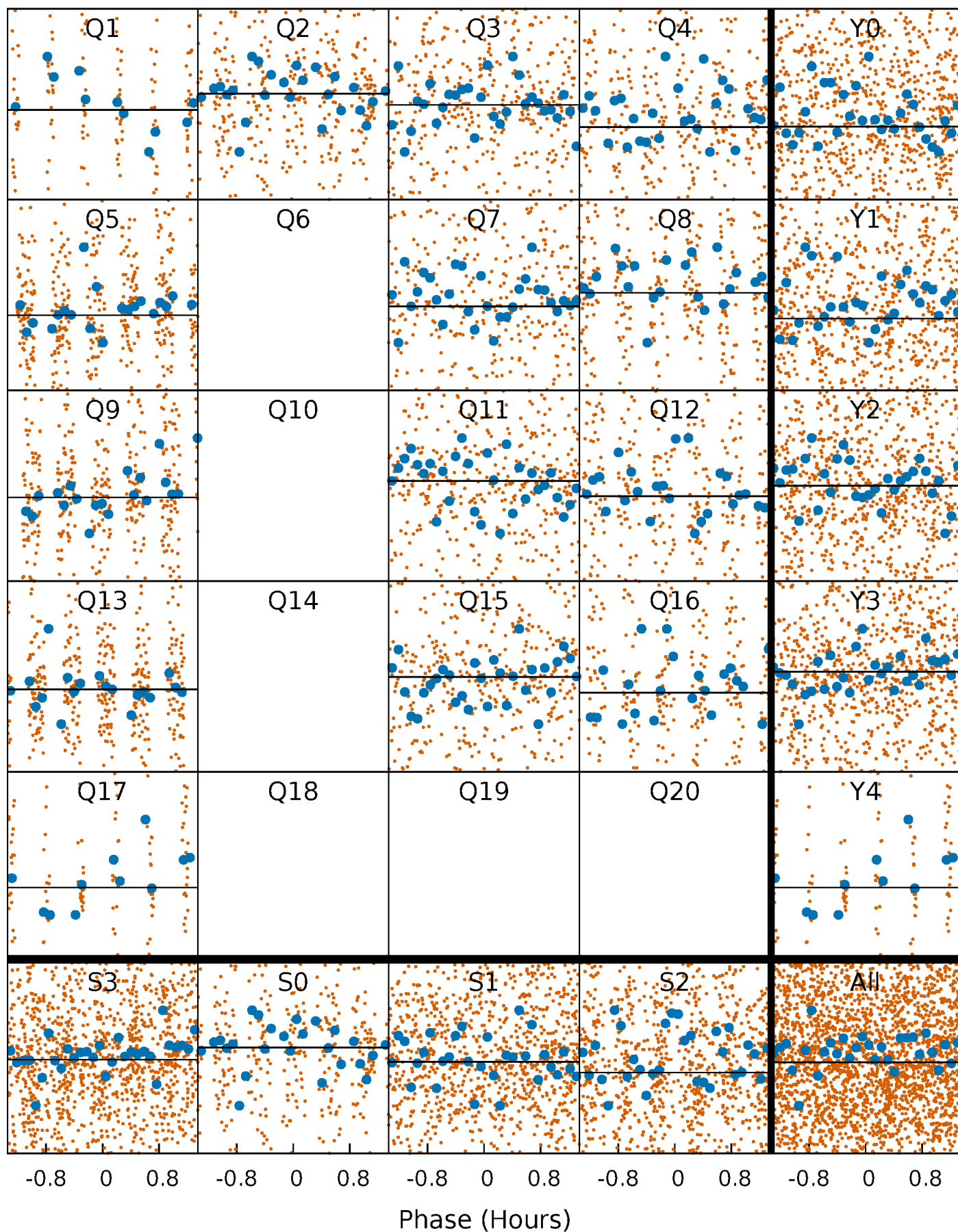
PDC Quarter-Phased Transit Curves

TCE 005196646-01 P= 1.042277 Days $T_0=131.950017$ (BKJD)



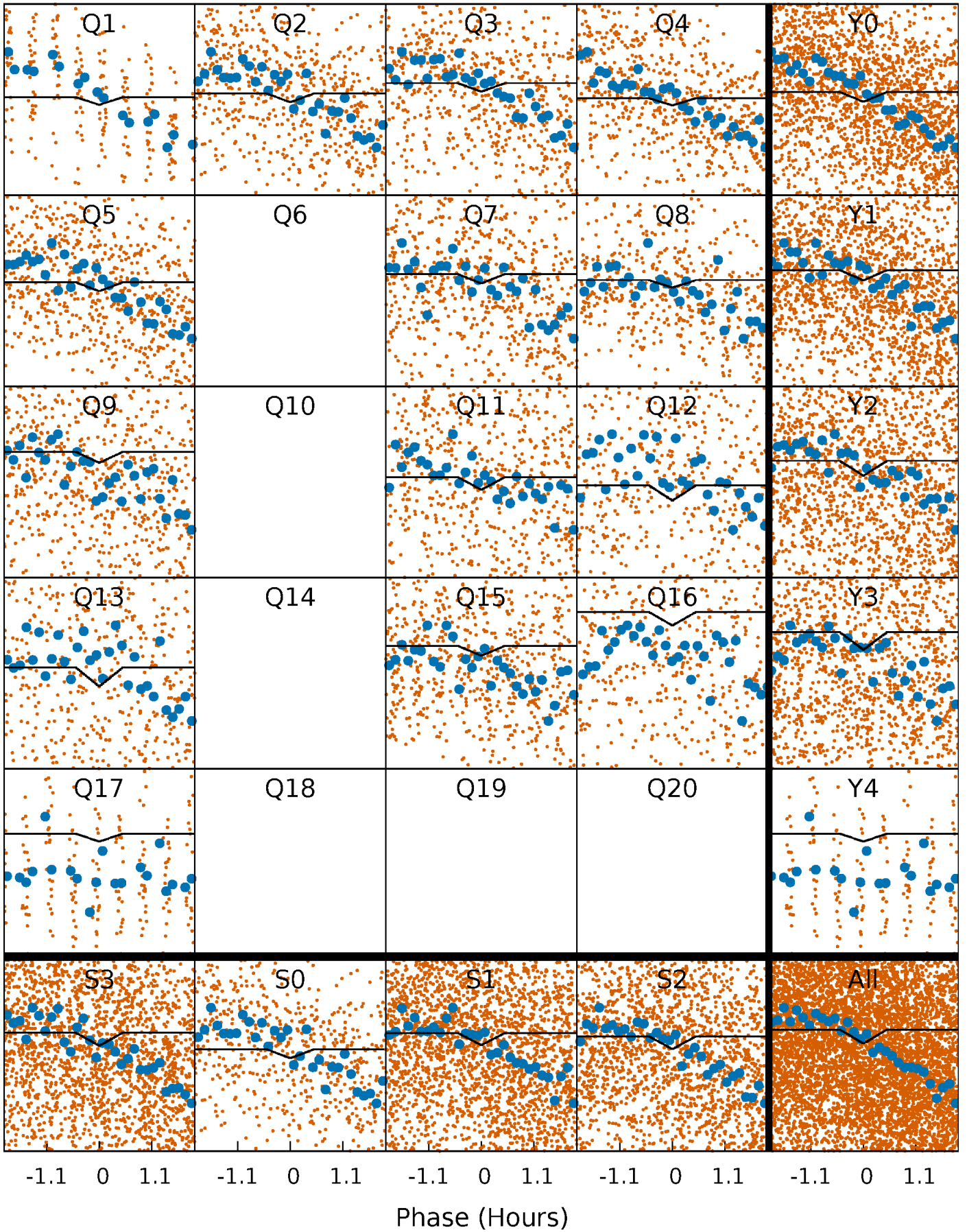
DV Quarter-Phased Transit Curves

TCE 005196646-01 P= 1.042277 Days $T_0=131.950017$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

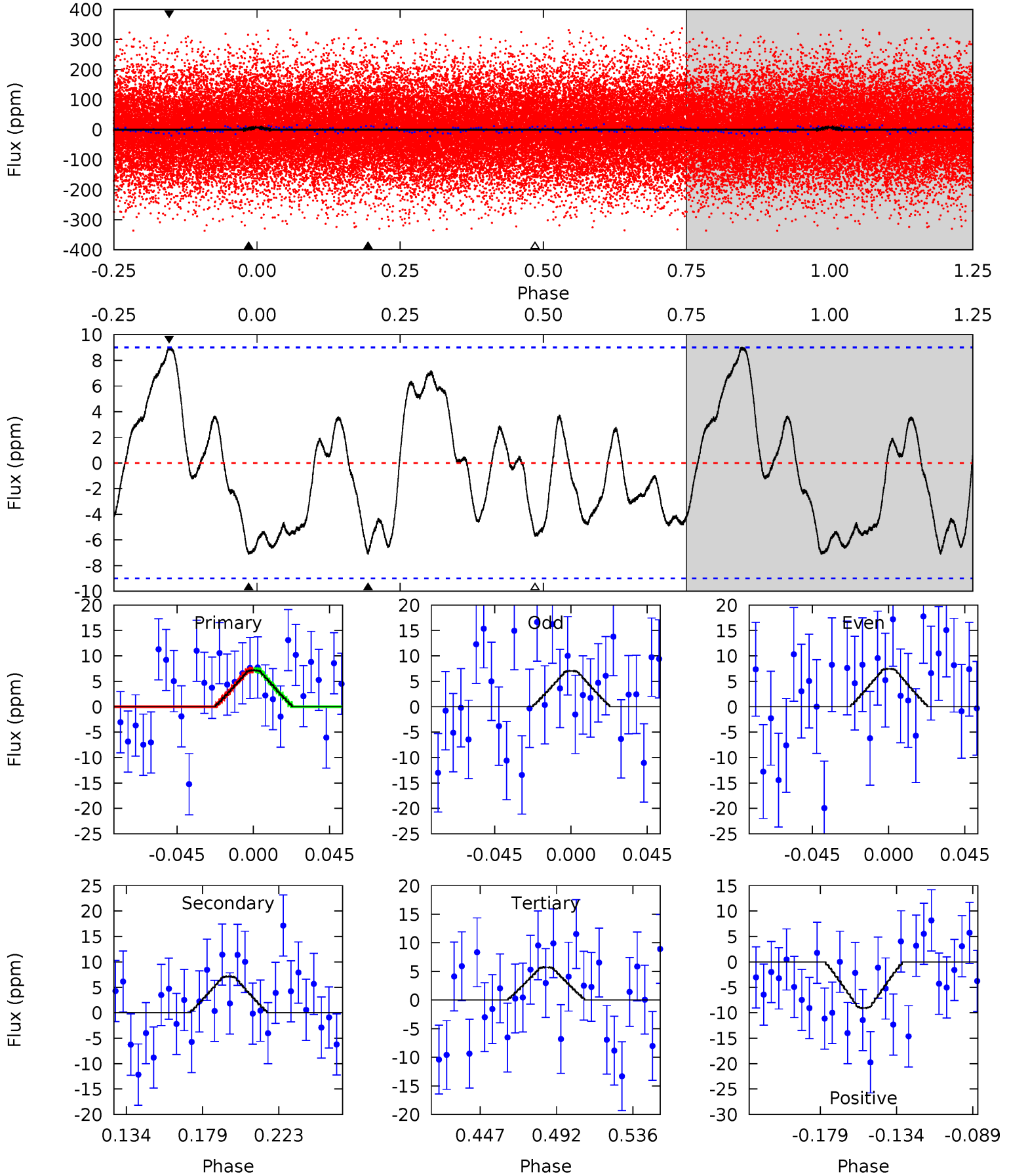
TCE 005196646-01 P= 1.042369 Days $T_0=131.955827$ (BKJD)



DV Model-Shift Uniqueness Test

005196646-01, P = 1.042277 Days, E = 130.907740 Days

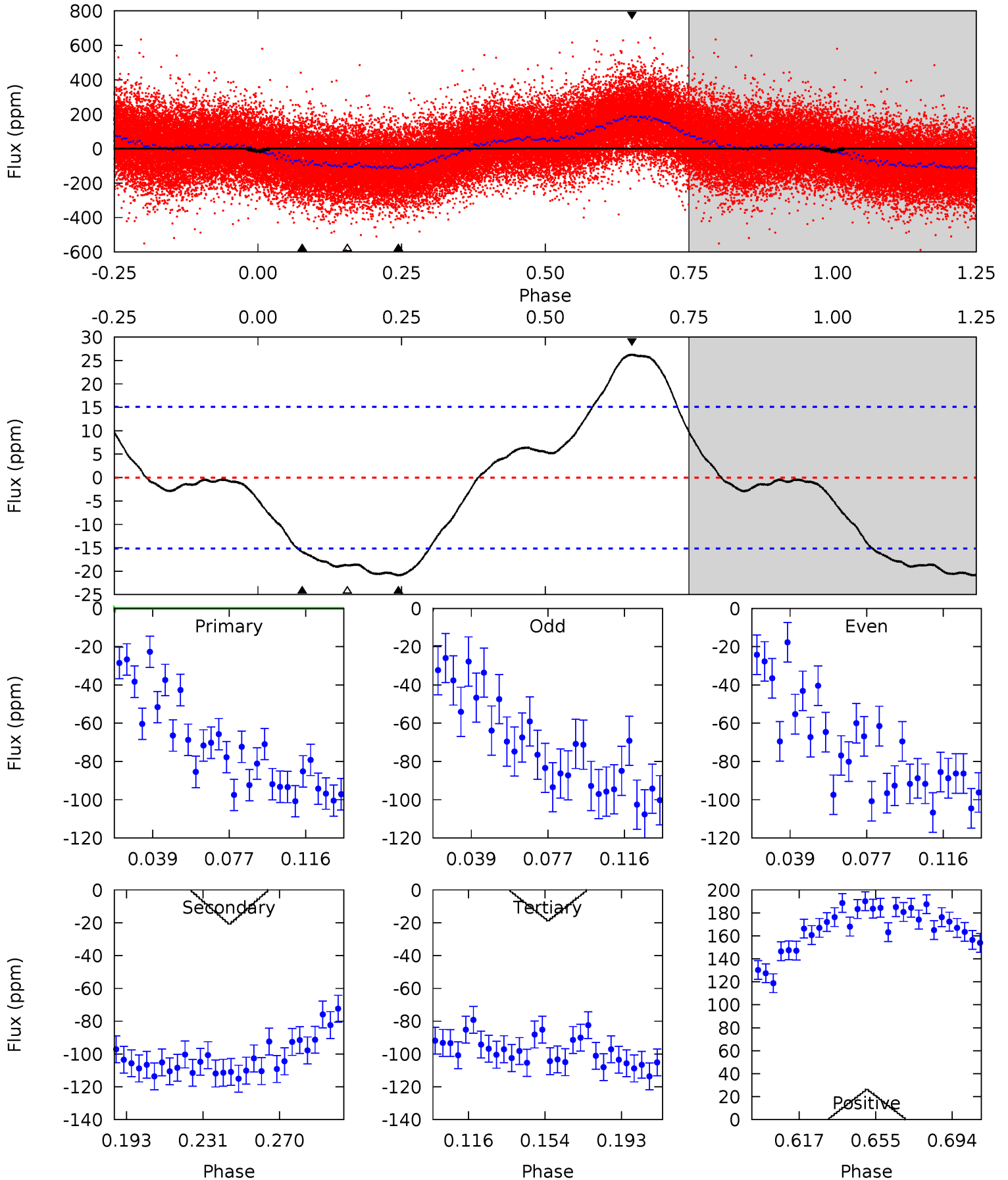
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.76	3.75	3.02	4.76	4.73	2.01	2.03	0.74	-1.01	0.73	-1.01	0.11	1.23	0.56	0.01



Alt Model-Shift Uniqueness Test

005196646-01, P = 1.042369 Days, E = 130.913458 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.00	6.57	5.91	8.26	4.76	2.07	3.95	-0.91	-3.26	0.66	-1.69	1.87	0.74	0.56	2.86



Stellar Parameters For KIC 005196646

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6362^{+173}_{-173}	$3.748^{+0.293}_{-0.078}$	$-0.100^{+0.300}_{-0.250}$	$2.665^{+0.490}_{-0.980}$	$1.451^{+0.241}_{-0.294}$	$0.108^{+0.224}_{-0.034}$
	+3%/-3%	+8%/-2%	+300%/-250%	+18%/-37%	+17%/-20%	+207%/-31%
Source	PHO1	FLK73	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 005196646-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-7 ± 2	$12.26^{+14.72}_{-8.59}$	4148^{+449}_{-448}	-3699^{+553}_{-304}	$0.013^{+0.136}_{-0.011}$
Alt.	-21 ± 3	$12.90^{+14.49}_{-9.23}$	4112^{+501}_{-396}	-3575^{+6655}_{-379}	$0.035^{+0.365}_{-0.028}$

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

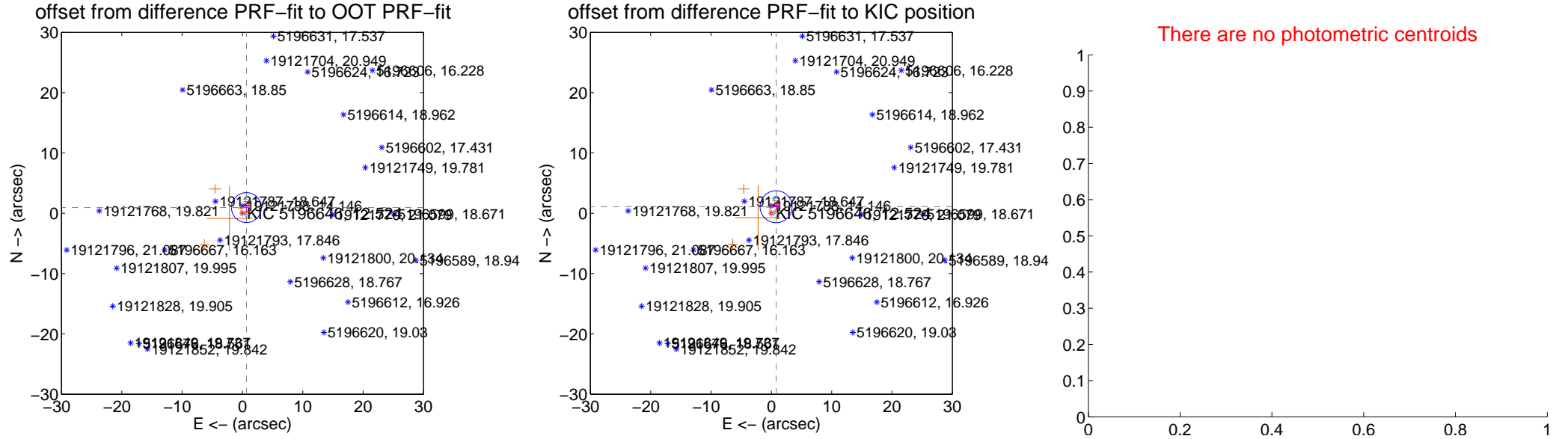
DV Centroid Data

Supplemental centroid analysis for 005196646-01. Kepler magnitude: 12.52. Transit SNR 0.00

There are 2 quarters with good PRF difference image offsets

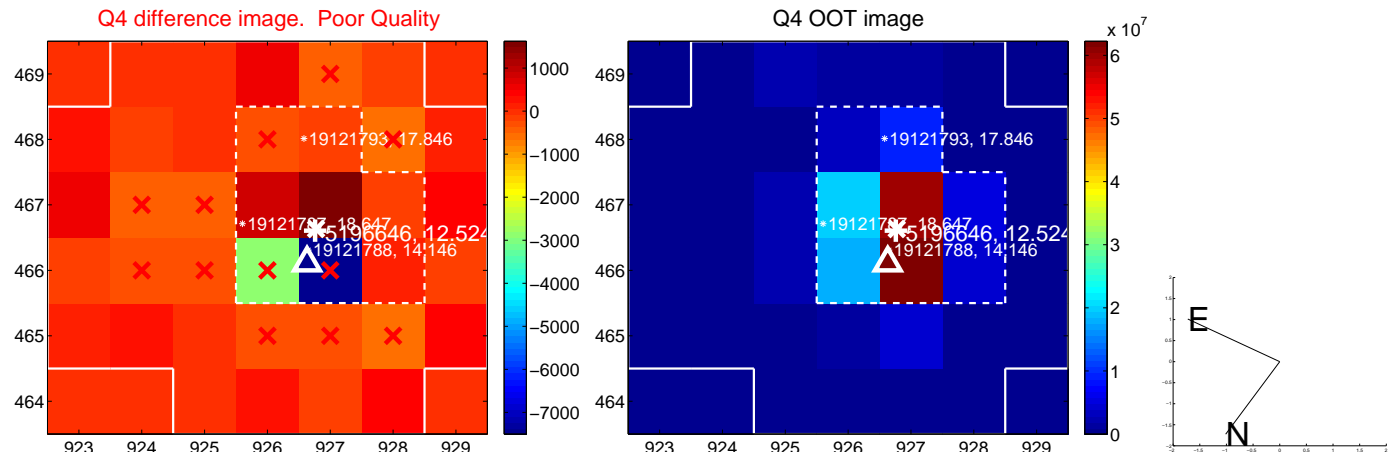
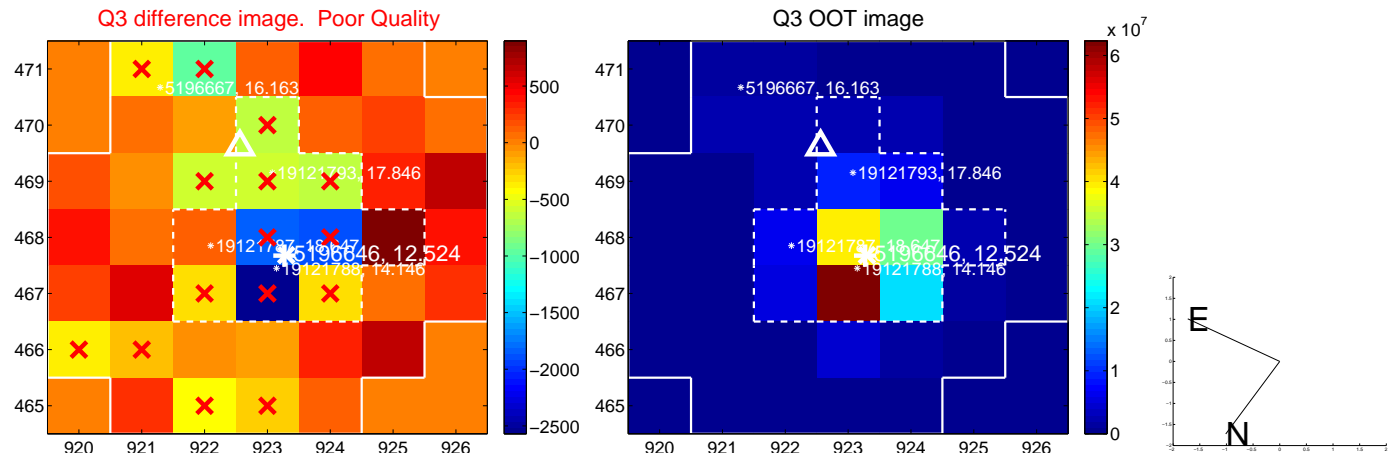
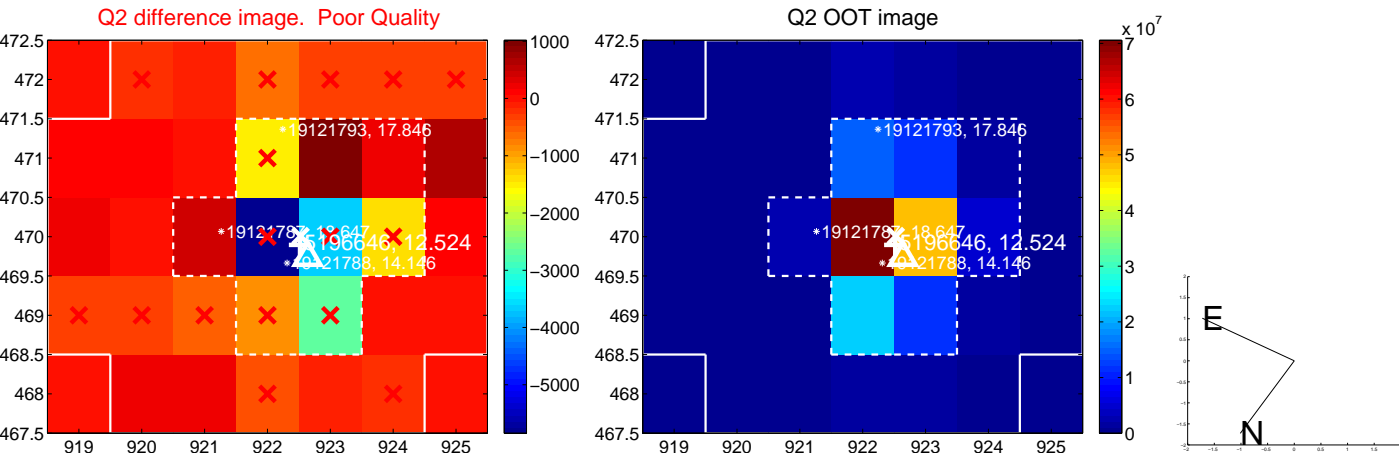
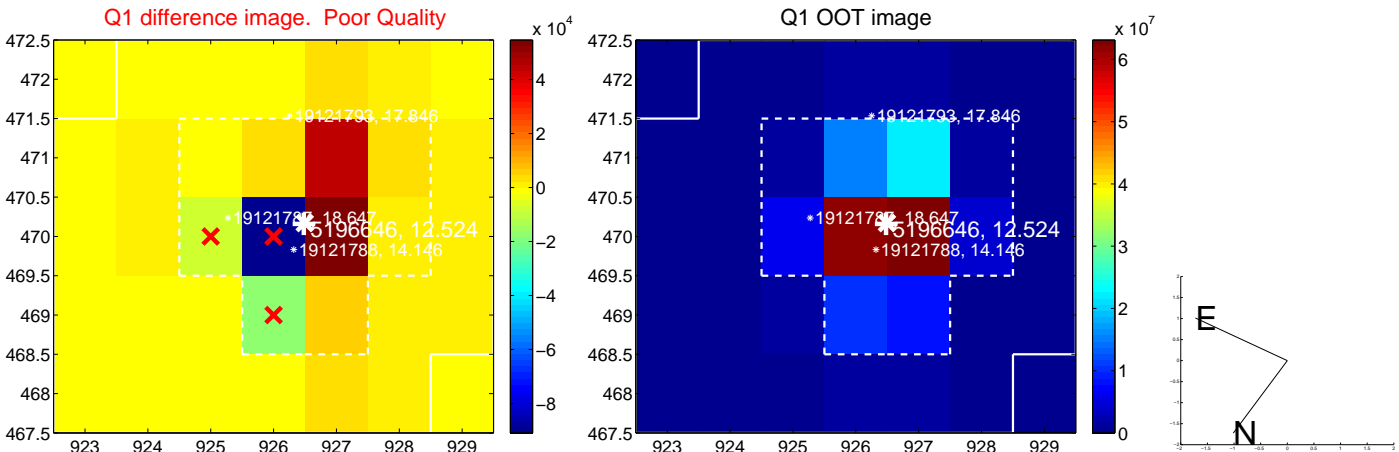
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.148 ± 0.826	1.39	-0.655 ± 0.653	0.942 ± 0.690
PRF-fit source offset from KIC position	1.341 ± 0.884	1.52	-0.785 ± 0.737	1.087 ± 0.751
photometric centroid source offset	—	—	—	—

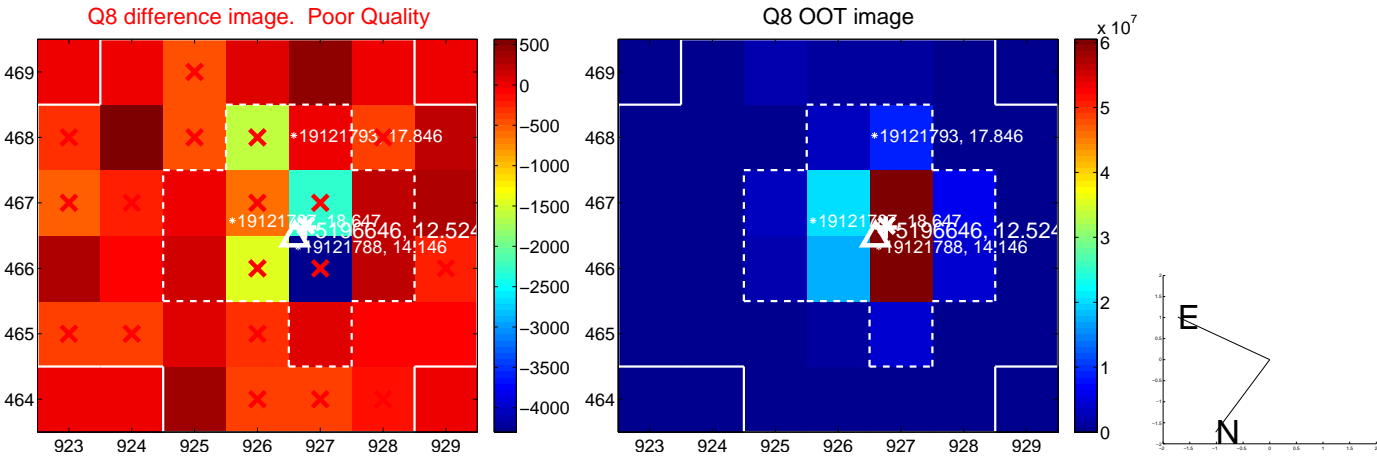
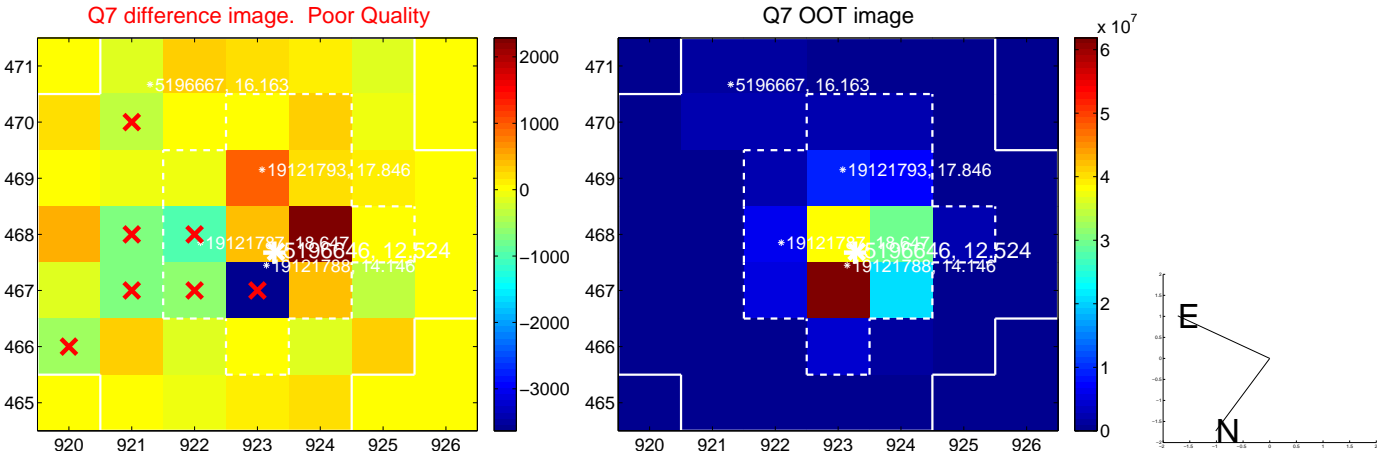
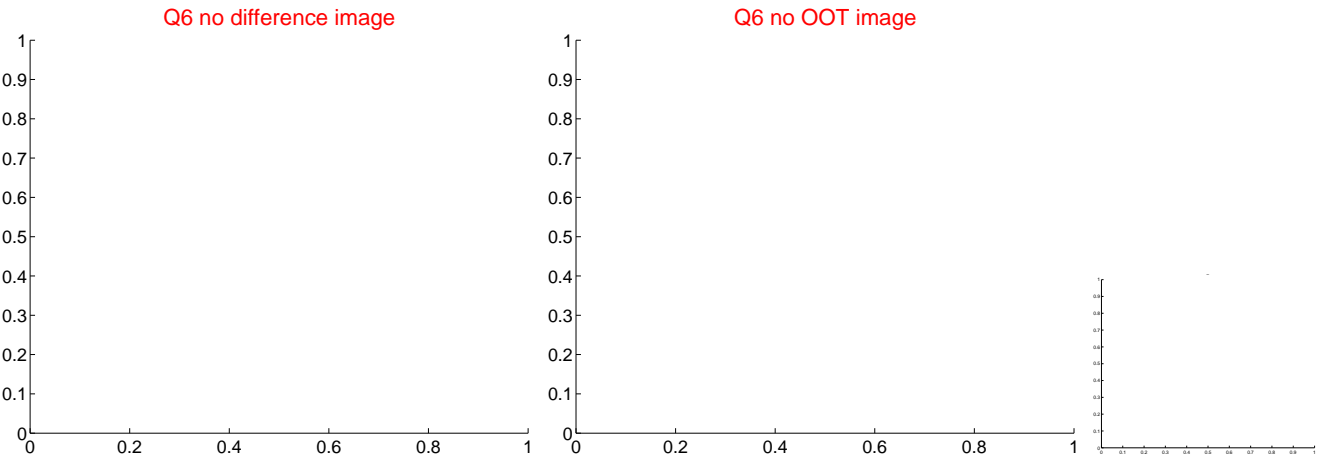
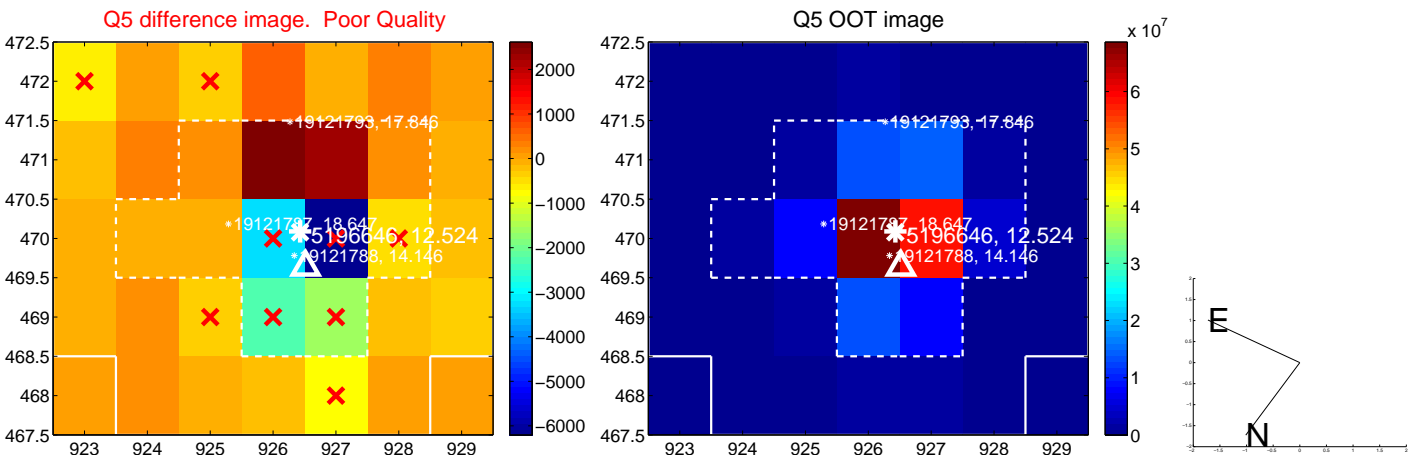


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

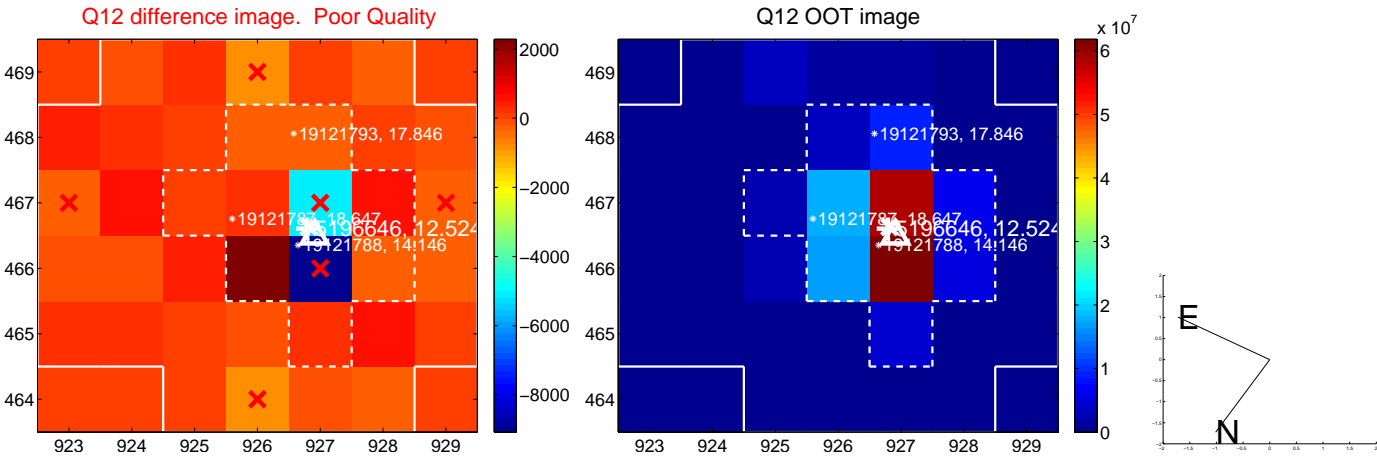
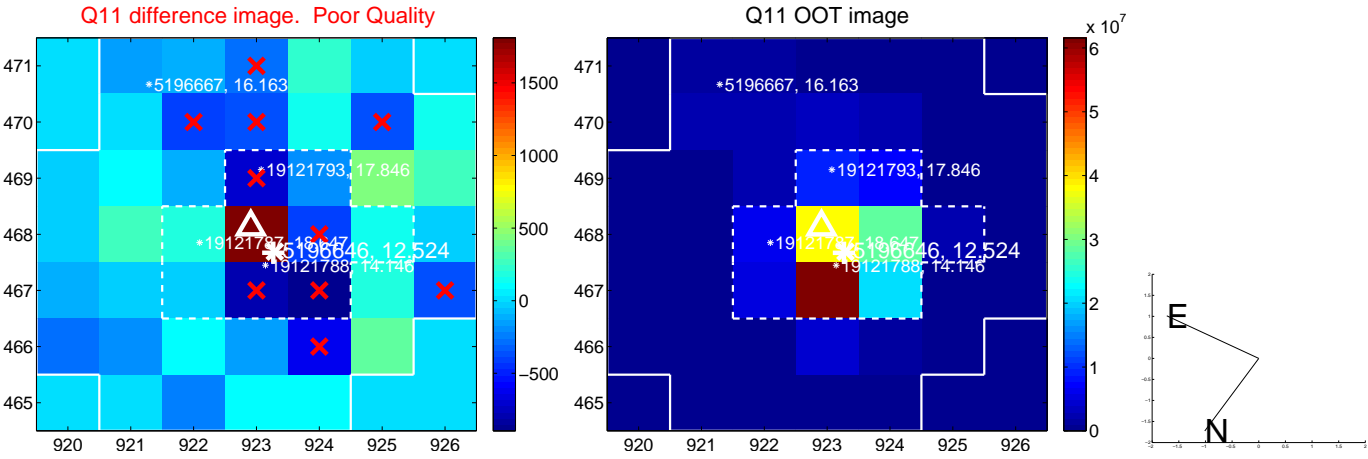
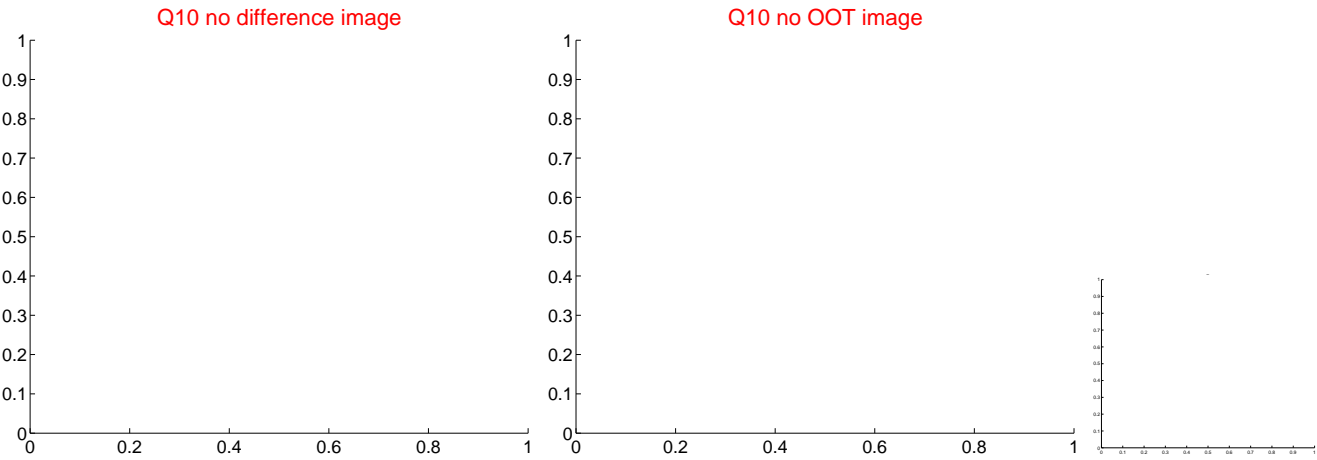
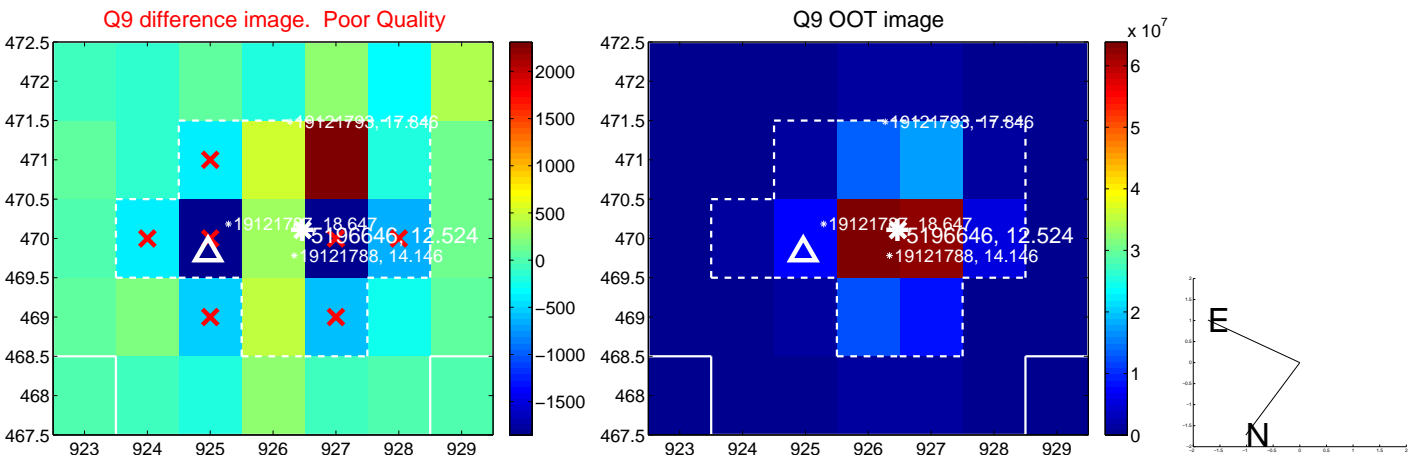
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



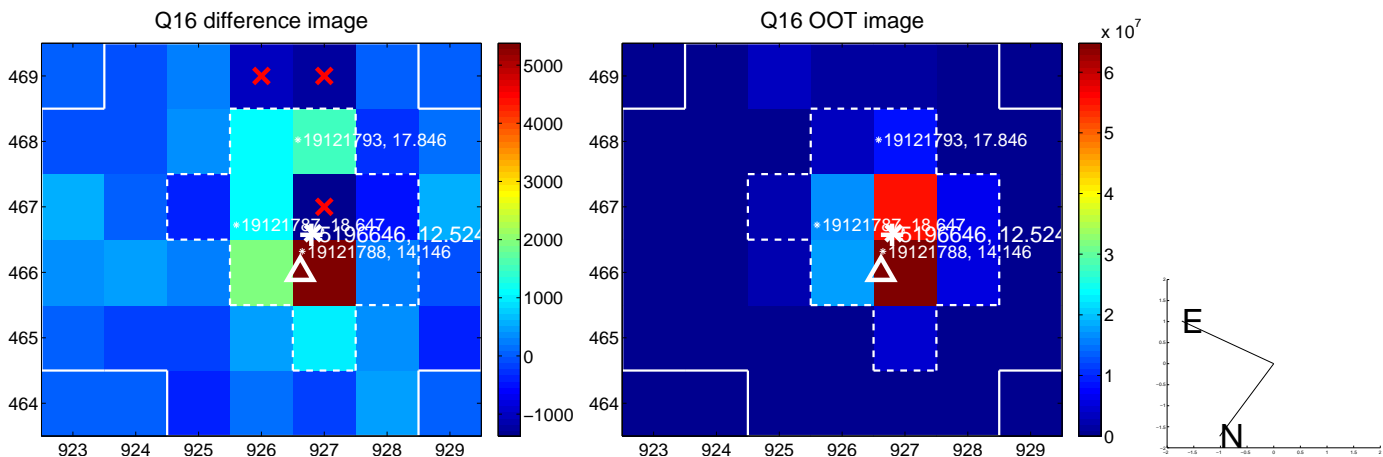
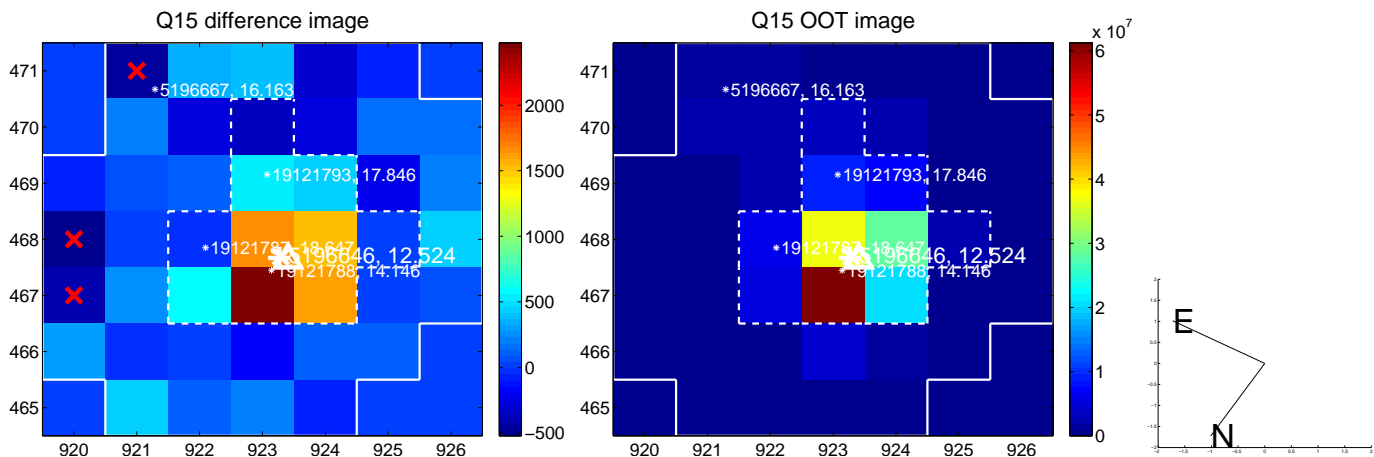
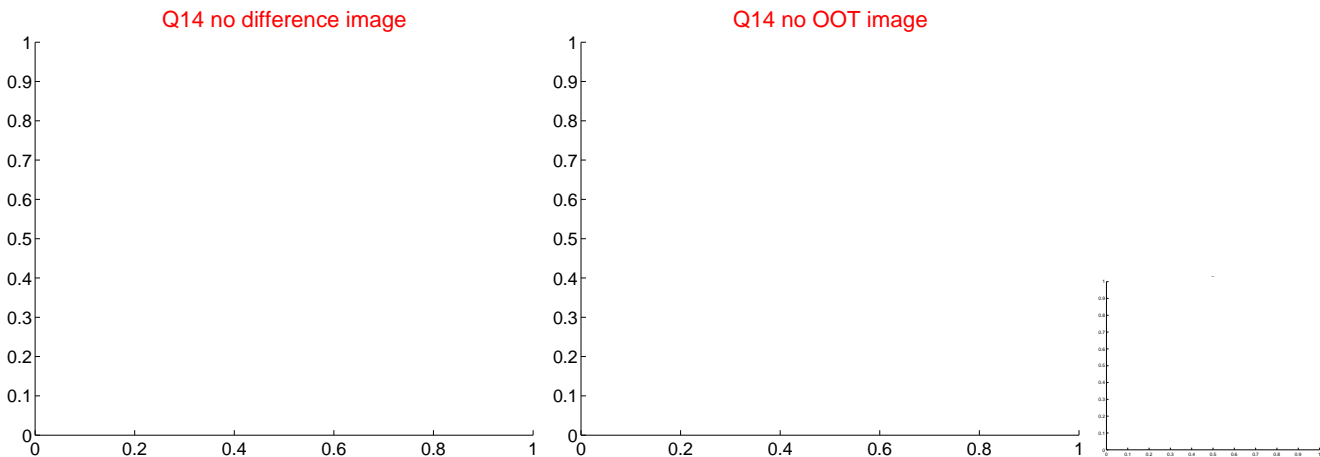
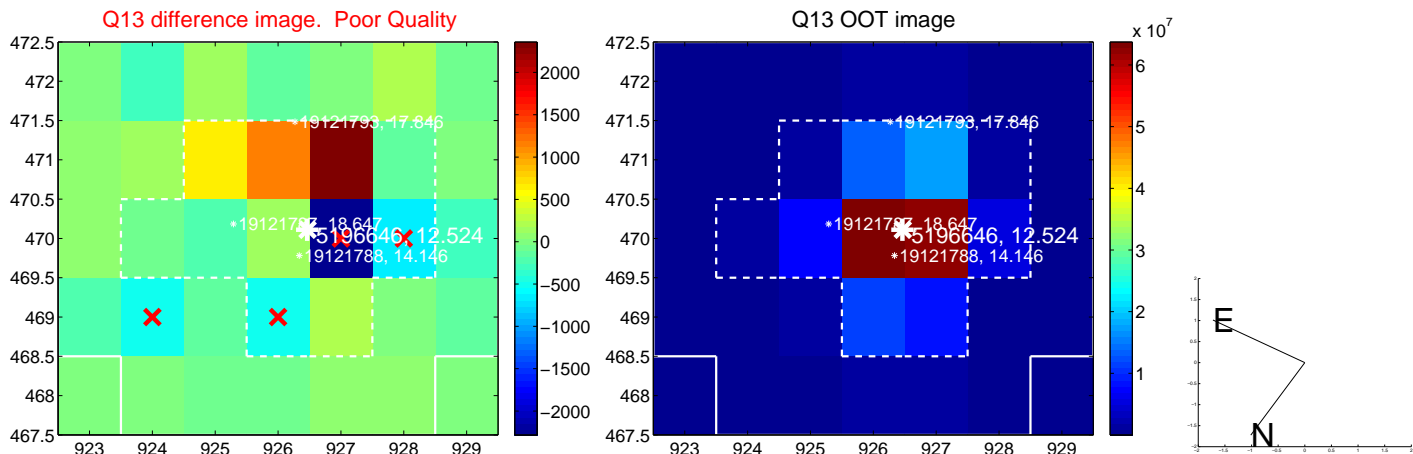
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



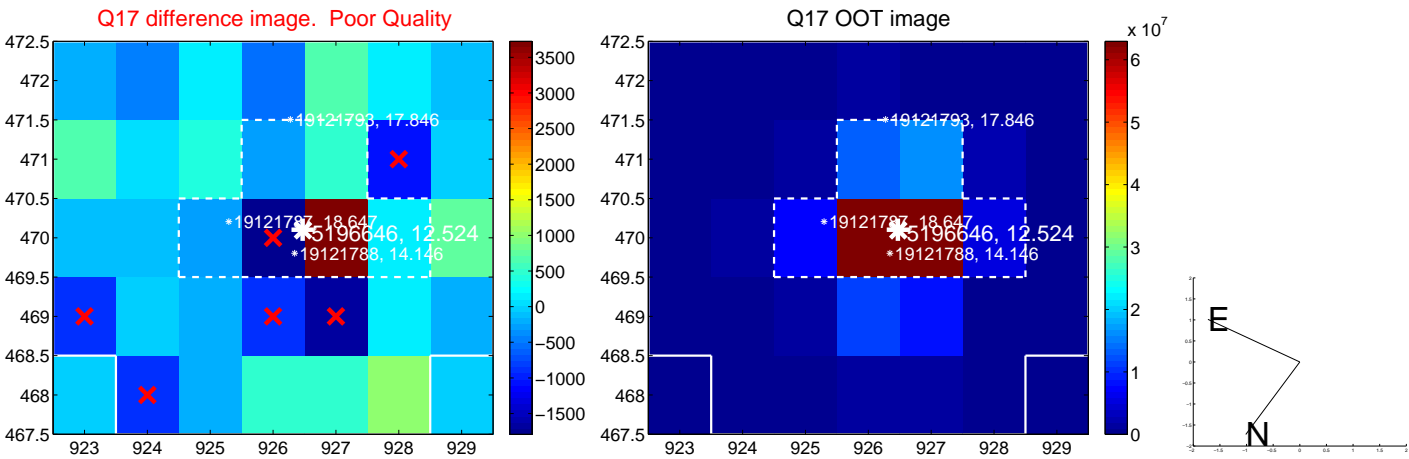
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

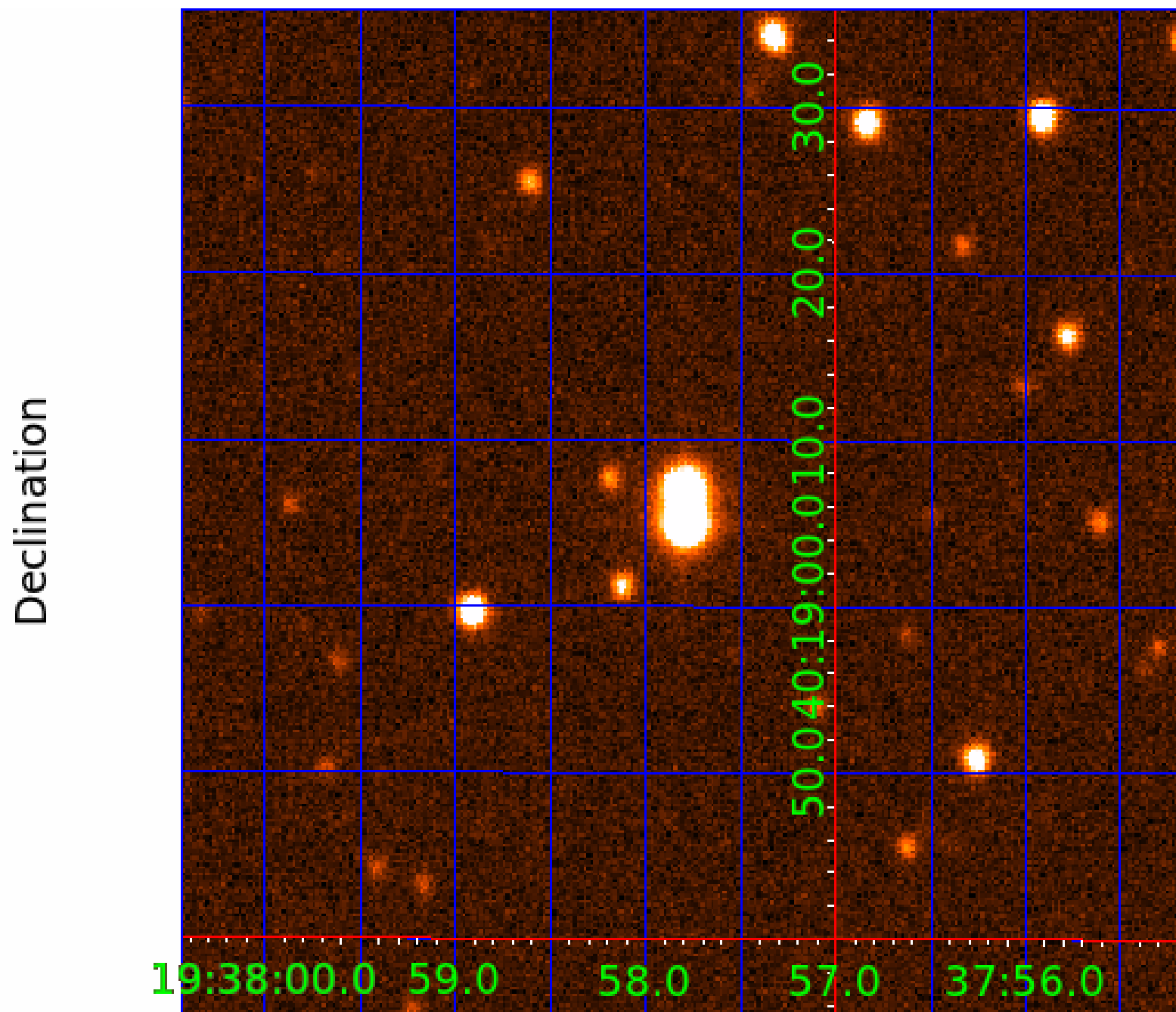


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image



KIC 005196646

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})
005196646-01	OBS	No	1.042277	131.950017	0.0	0.675	13.3	0.0	2.67	6362	0.01	20095.06
005196646-02	OBS	No	0.521166	131.754007	16.8	4.307	12.6	14.6	2.67	6362	1.11	50632.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005196646-01	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—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005196646-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

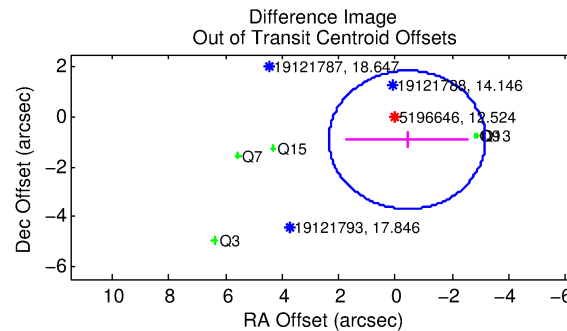
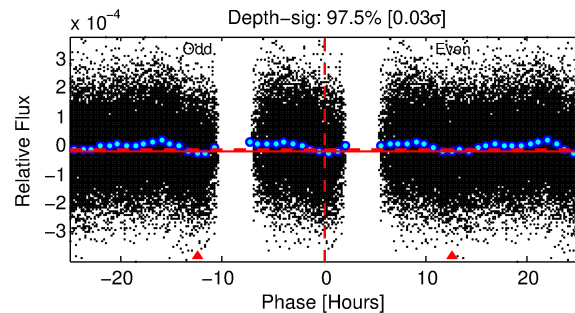
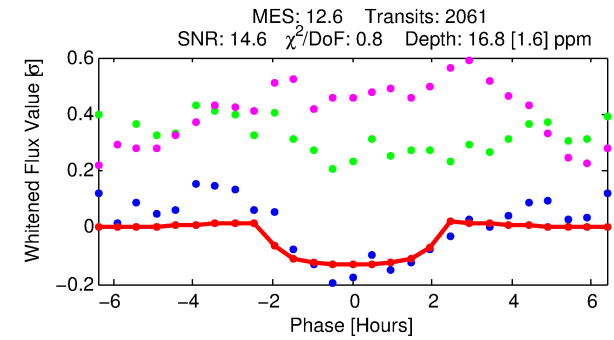
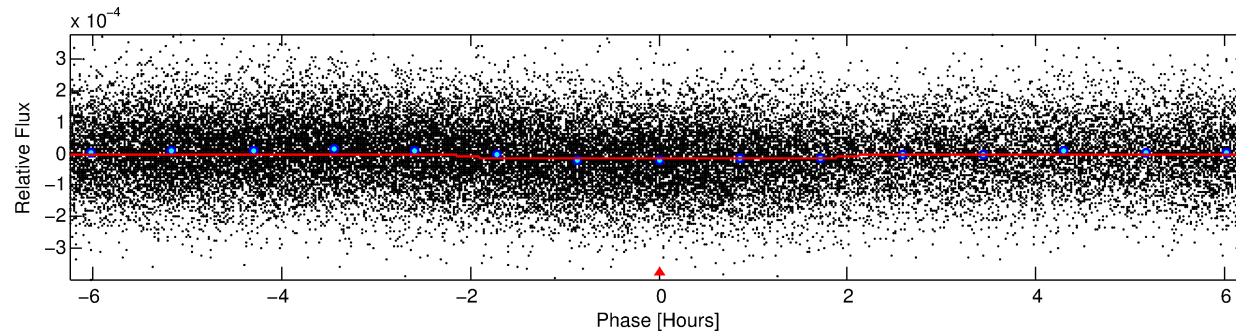
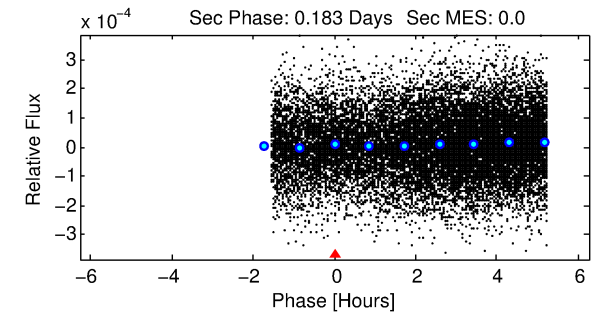
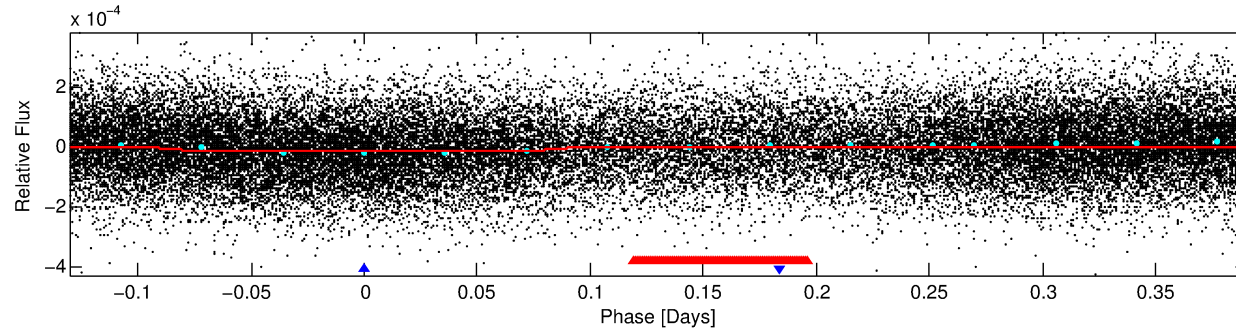
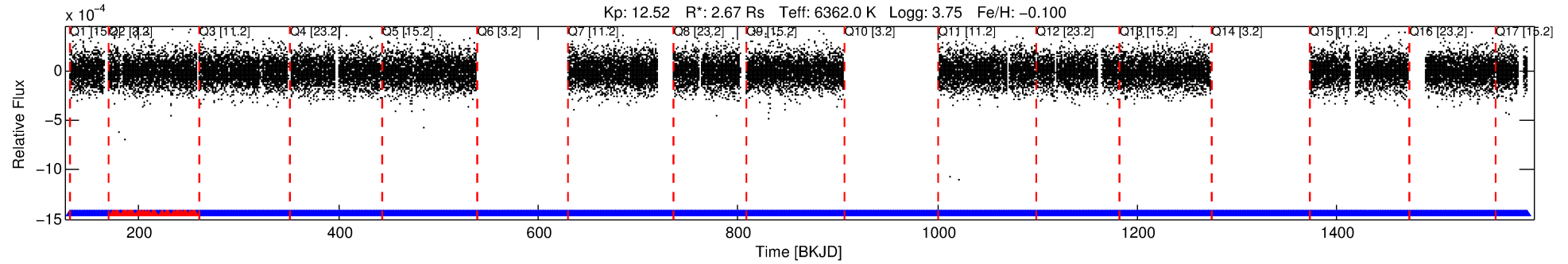
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005196646-02

No Significant Match Found

DV One-Page Summary

KIC: 5196646 Candidate: 2 of 2 Period: 0.521 d



DV Fit Results:

Period = 0.52117 [0.00001] d
Epoch = 131.7540 [0.0032] BKJD
Rp/R* = 0.0038 [0.0024]
a/R* = 1.12 [0.74]
b = 0.34 [8.53]
Seff = 50632.84 [26514.68]
Teq = 3825 [501] K
Rp = 1.11 [0.81] Re
a = 0.0143 [0.0048] AU
Ag = N/A
Teffp = N/A

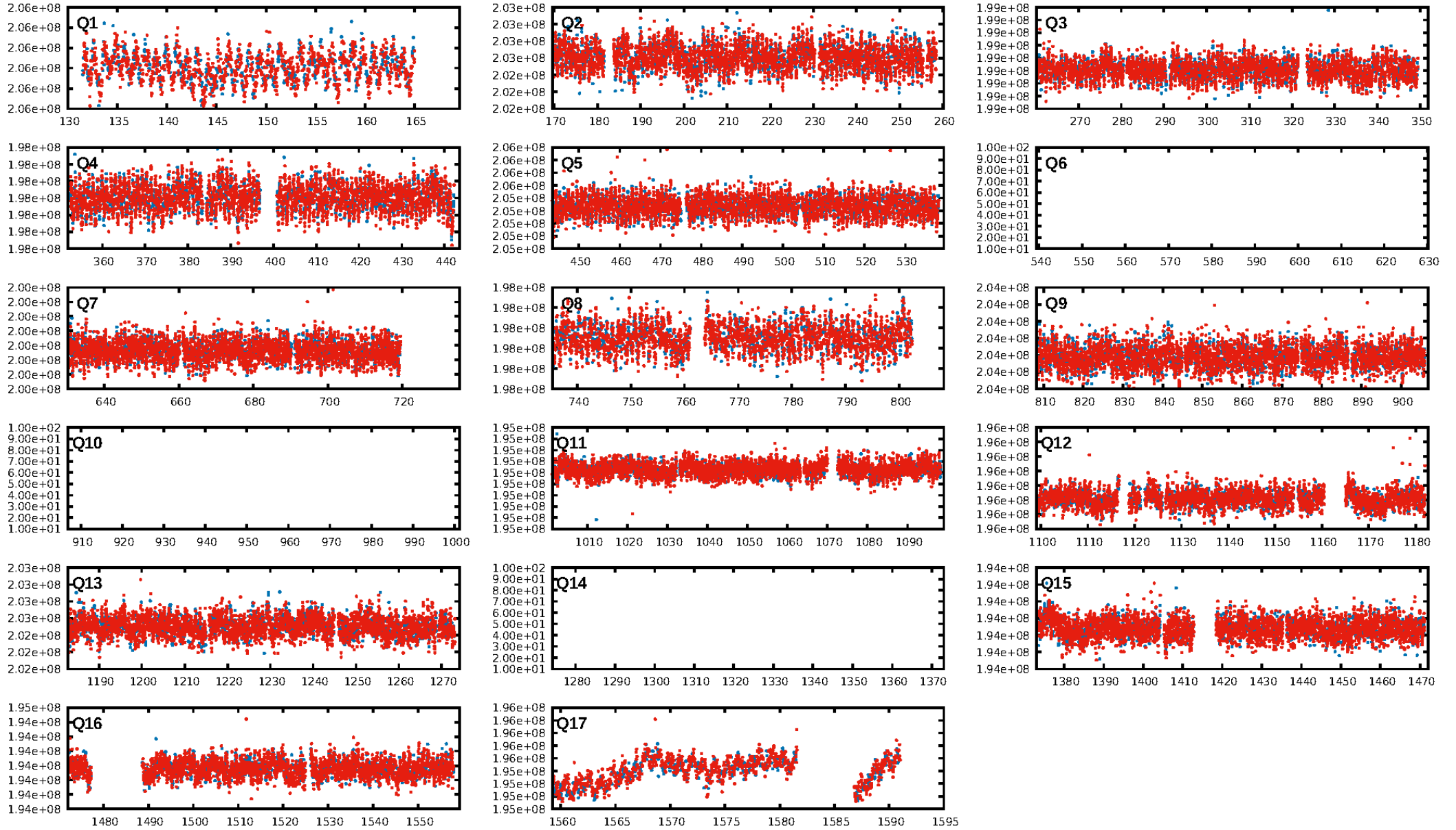
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 99.6% [2.87σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.98 [1906/1944]
GhostDiagnostic-chr: 2.983
Centroid-sig: 0.0%
Centroid-so: 2.623 arcsec [3.97σ]
OotOffset-rm: 1.015 arcsec [1.10σ]
KicOffset-rm: 0.969 arcsec [1.09σ]
OotOffset-st: 0/3/0/2 [5]
KicOffset-st: 0/3/0/2 [5]
DiffImageQuality-fgm: 0.40 [2/5]
DiffImageOverlap-fno: 0.00 [0/14]

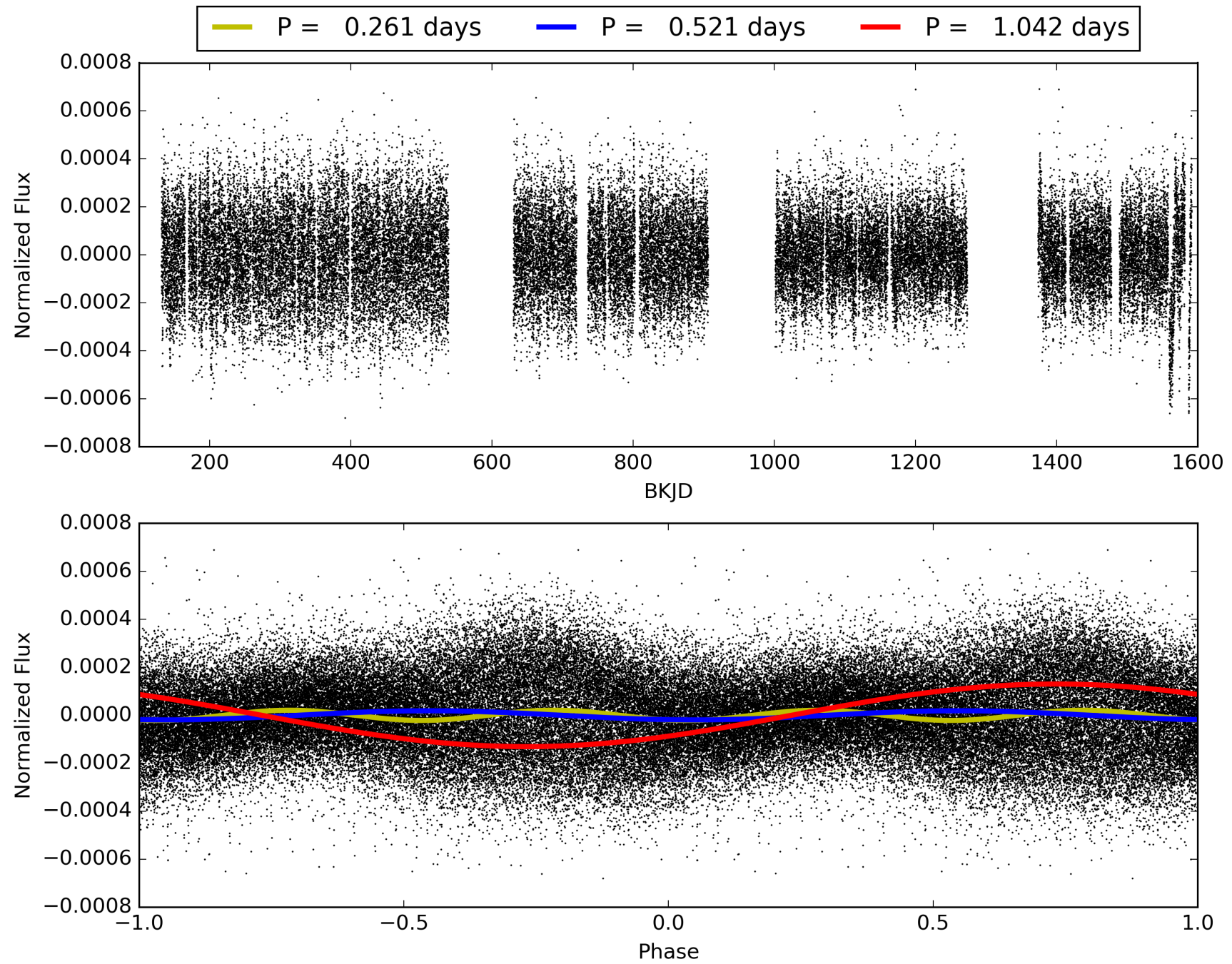
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:14:52 Z

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

TCE 005196646-02, PDC Light Curves

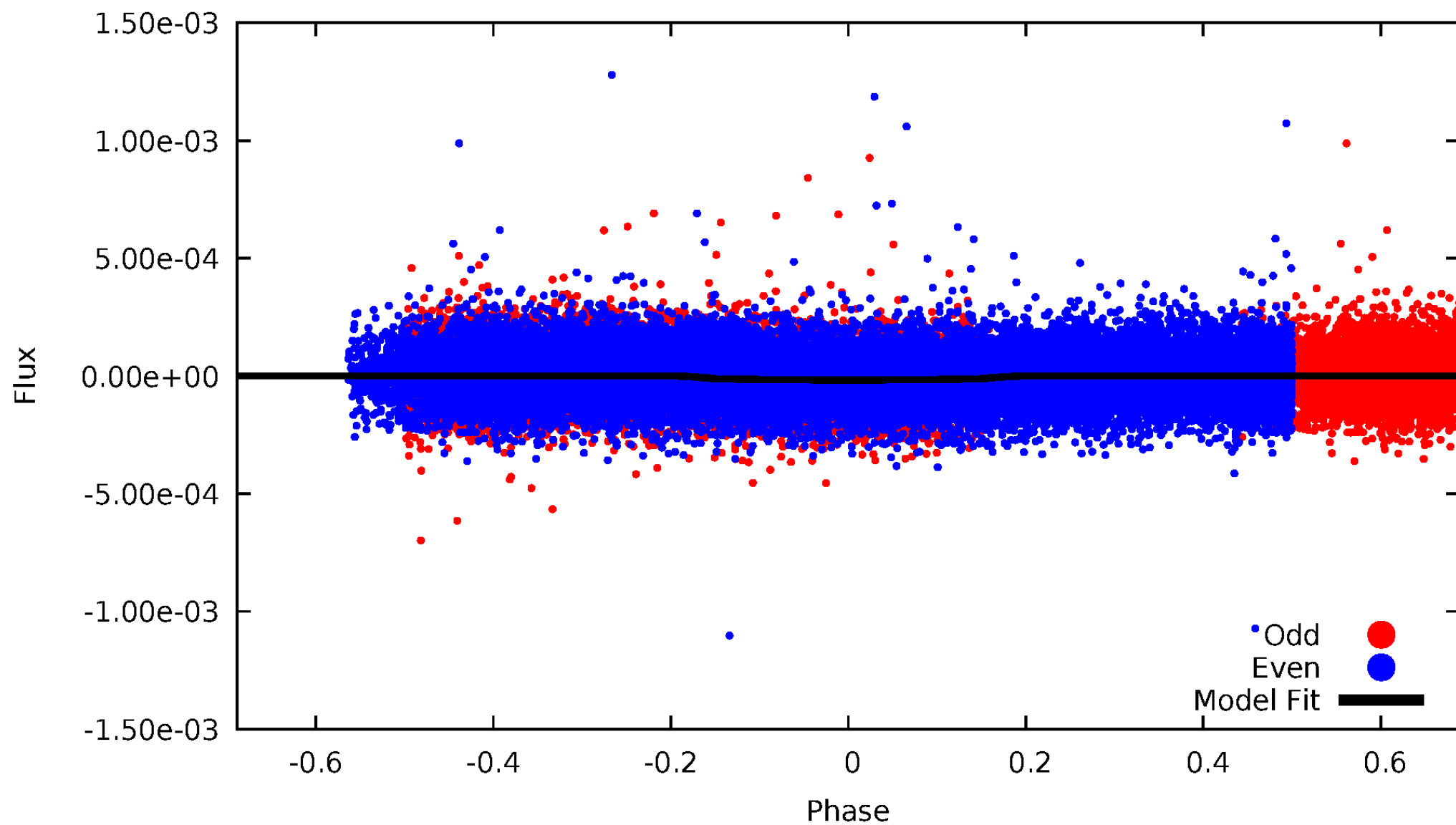


TCE 005196646-02



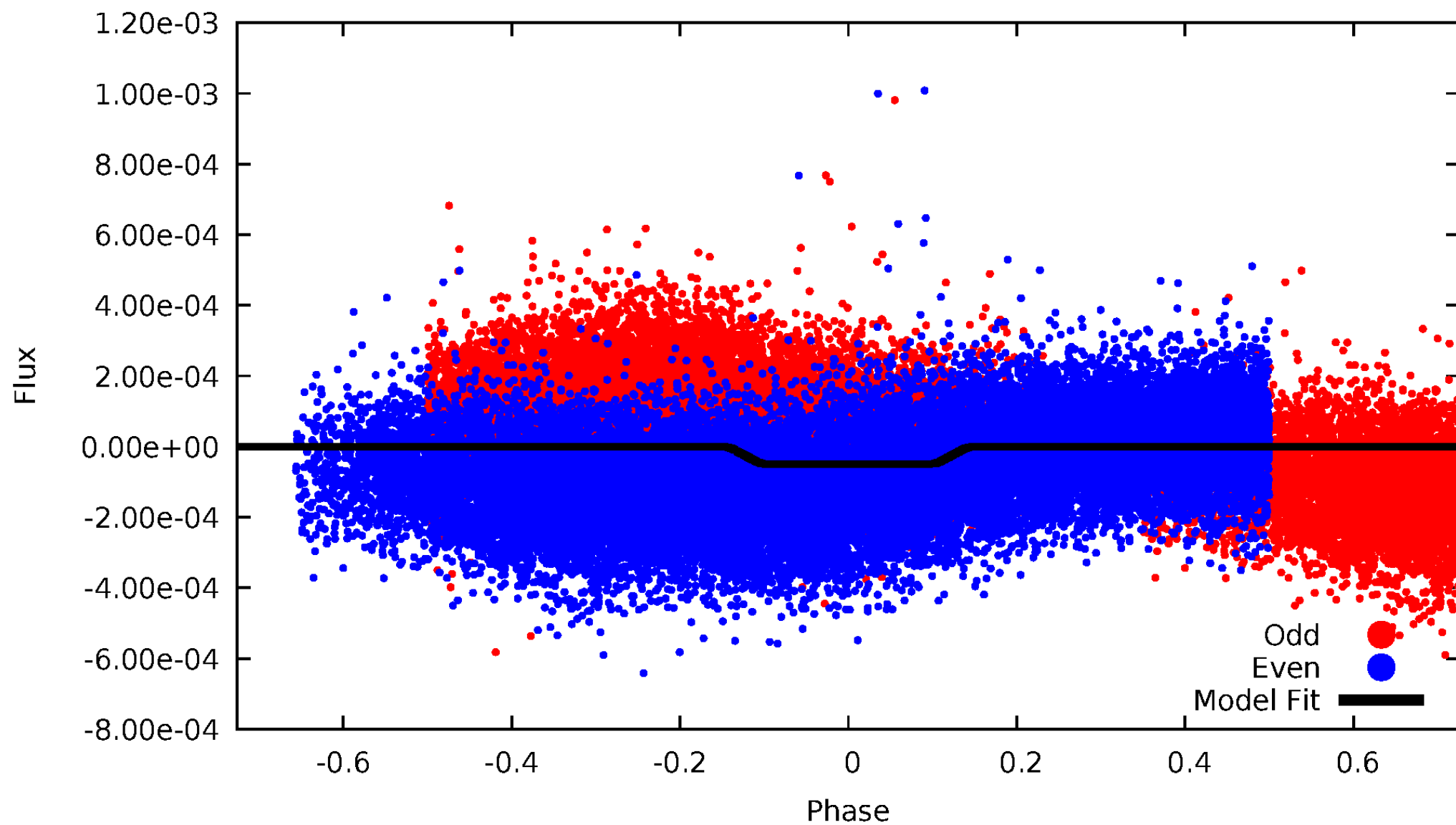
DV Odd/Even

TCE 005196646-02



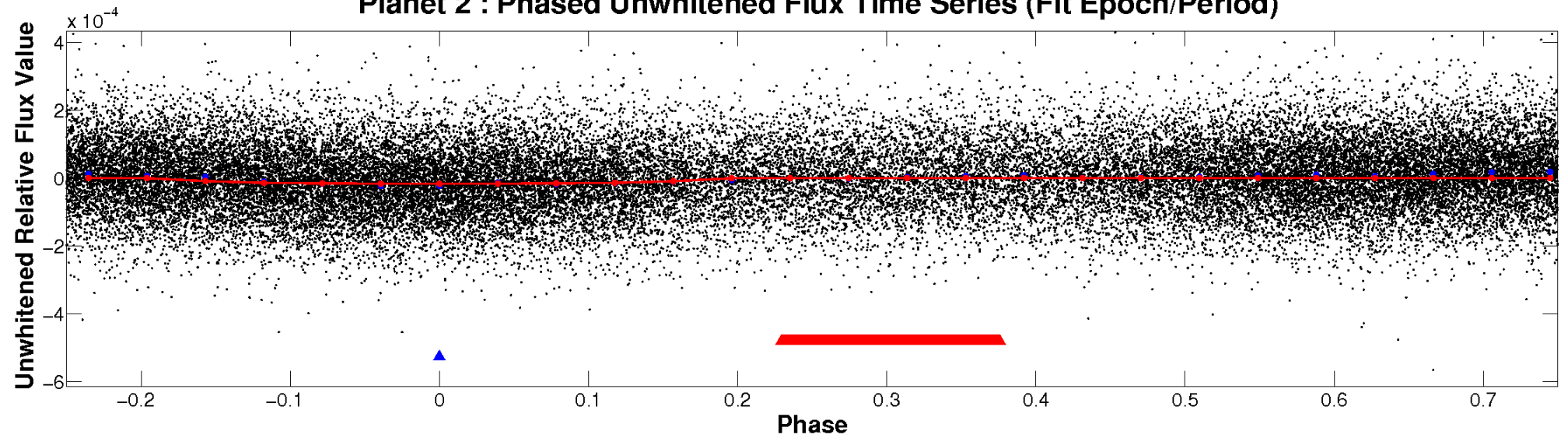
ALT Odd/Even

TCE 005196646-02

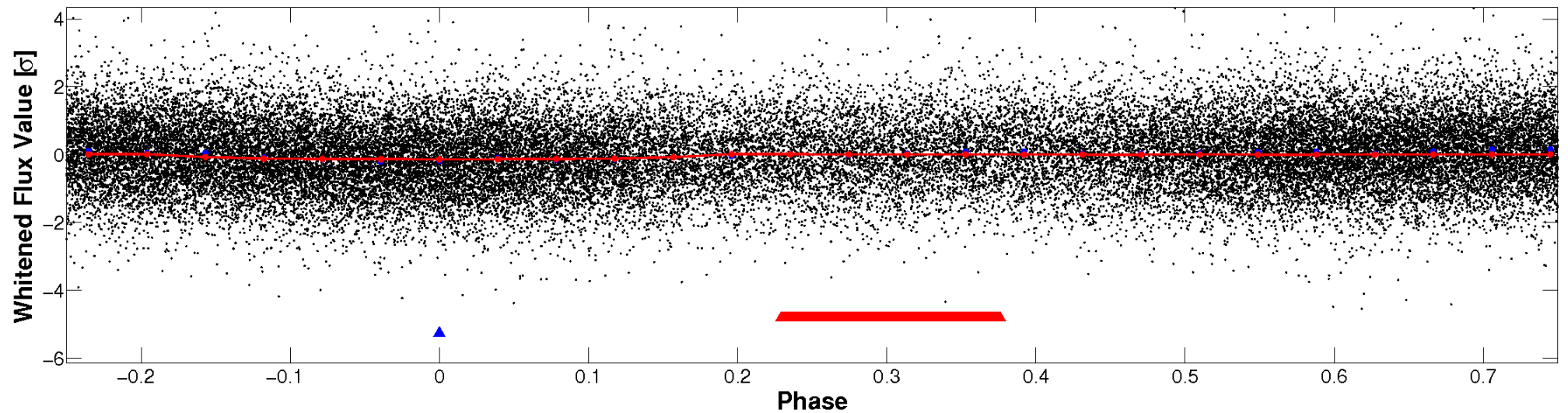


Non-Whitened Vs. Whitened Light Curve

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

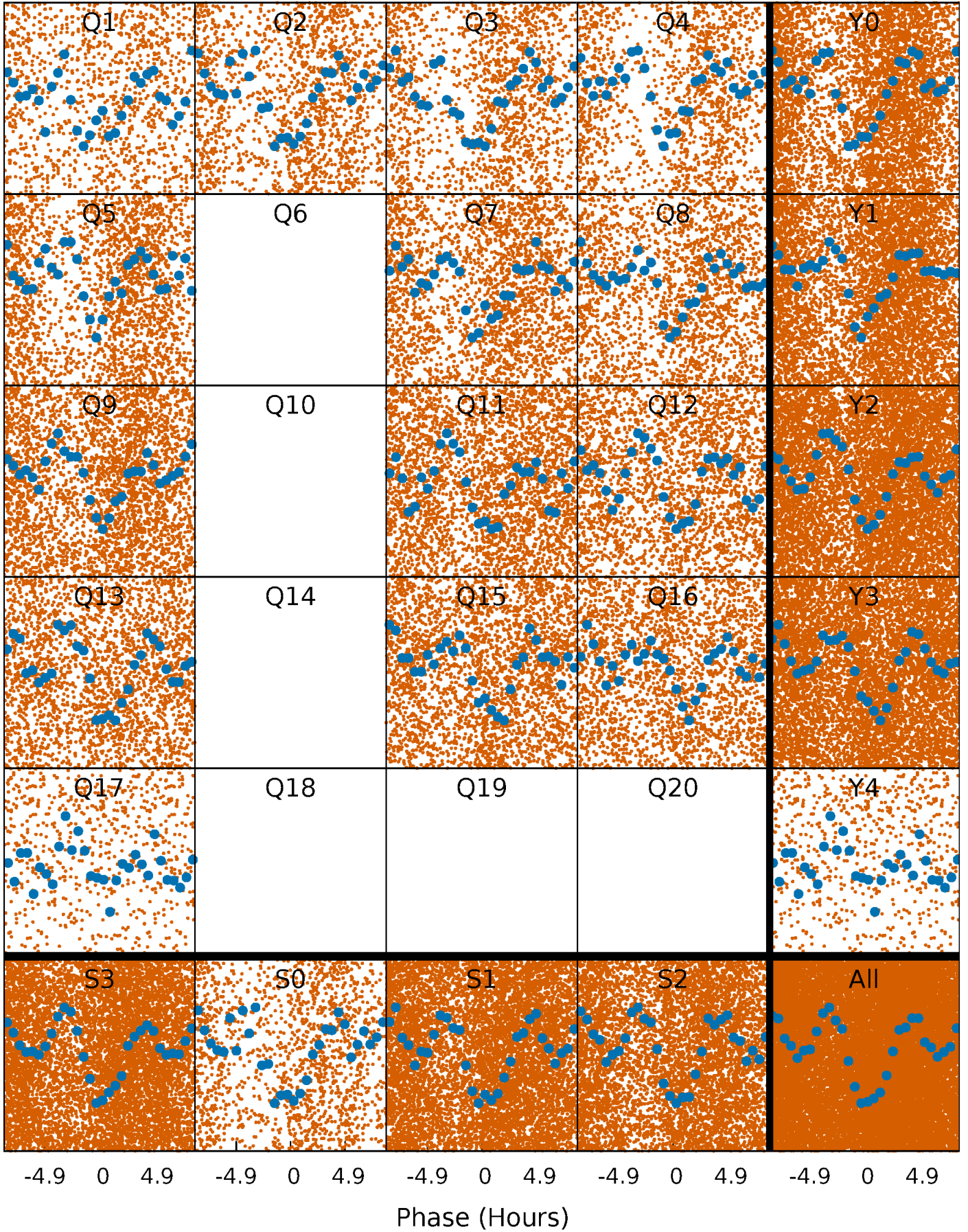


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



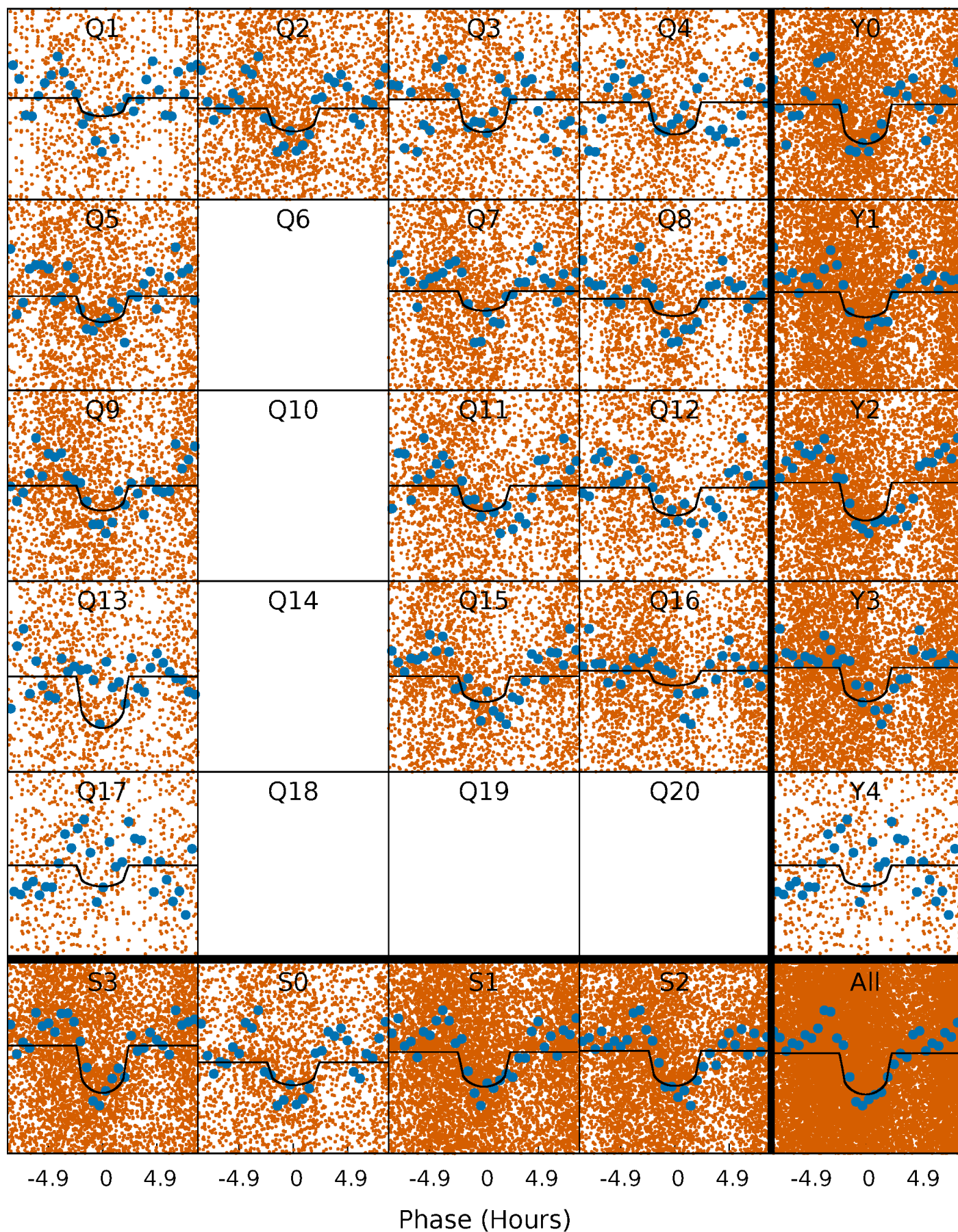
PDC Quarter-Phased Transit Curves

TCE 005196646-02 P= 0.521166 Days $T_0=131.754008$ (BKJD)



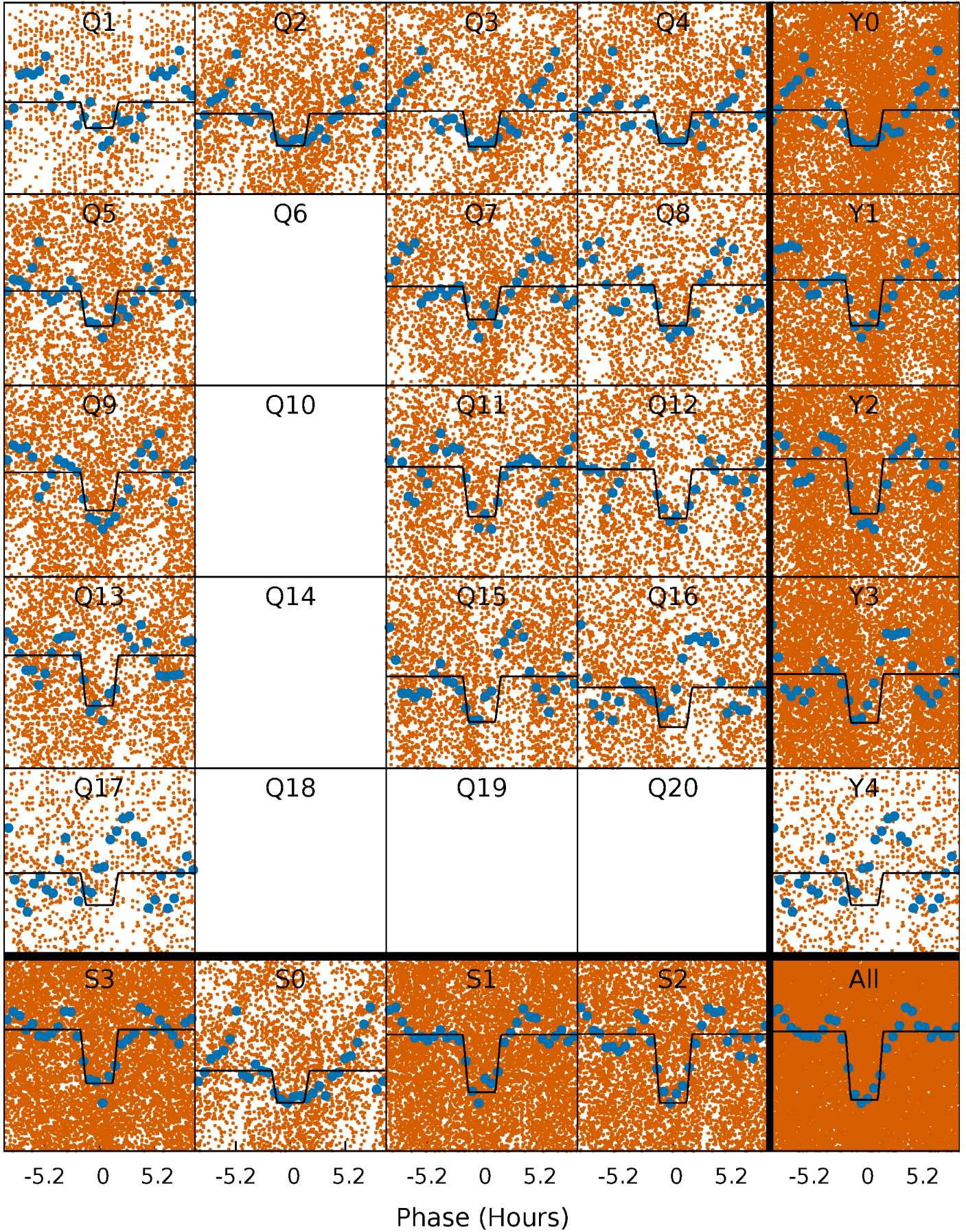
DV Quarter-Phased Transit Curves

TCE 005196646-02 P= 0.521166 Days $T_0=131.754008$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

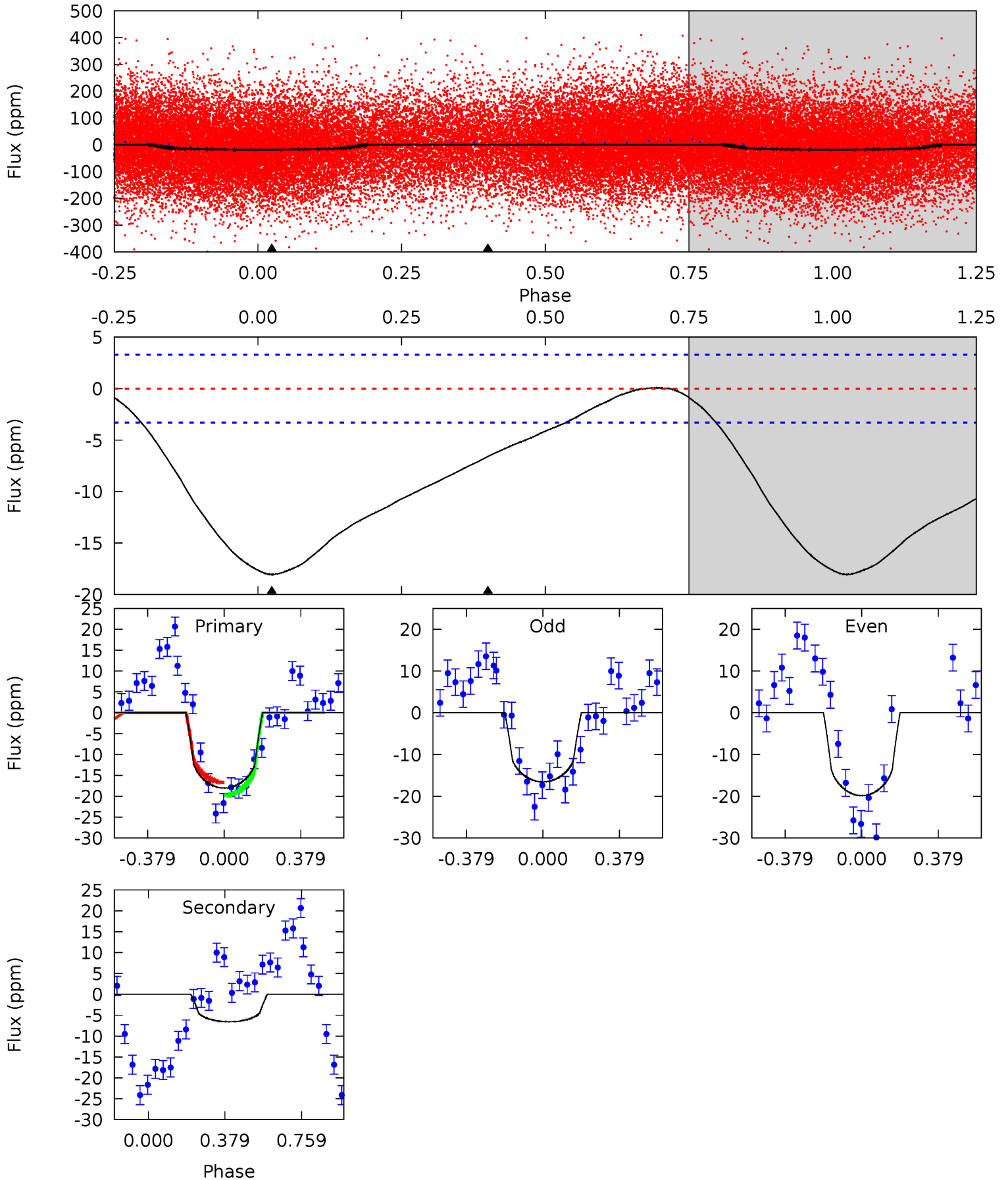
TCE 005196646-02 P= 0.521196 Days $T_0=131.718075$ (BKJD)



DV Model-Shift Uniqueness Test

005196646-02, P = 0.521166 Days, E = 131.232842 Days

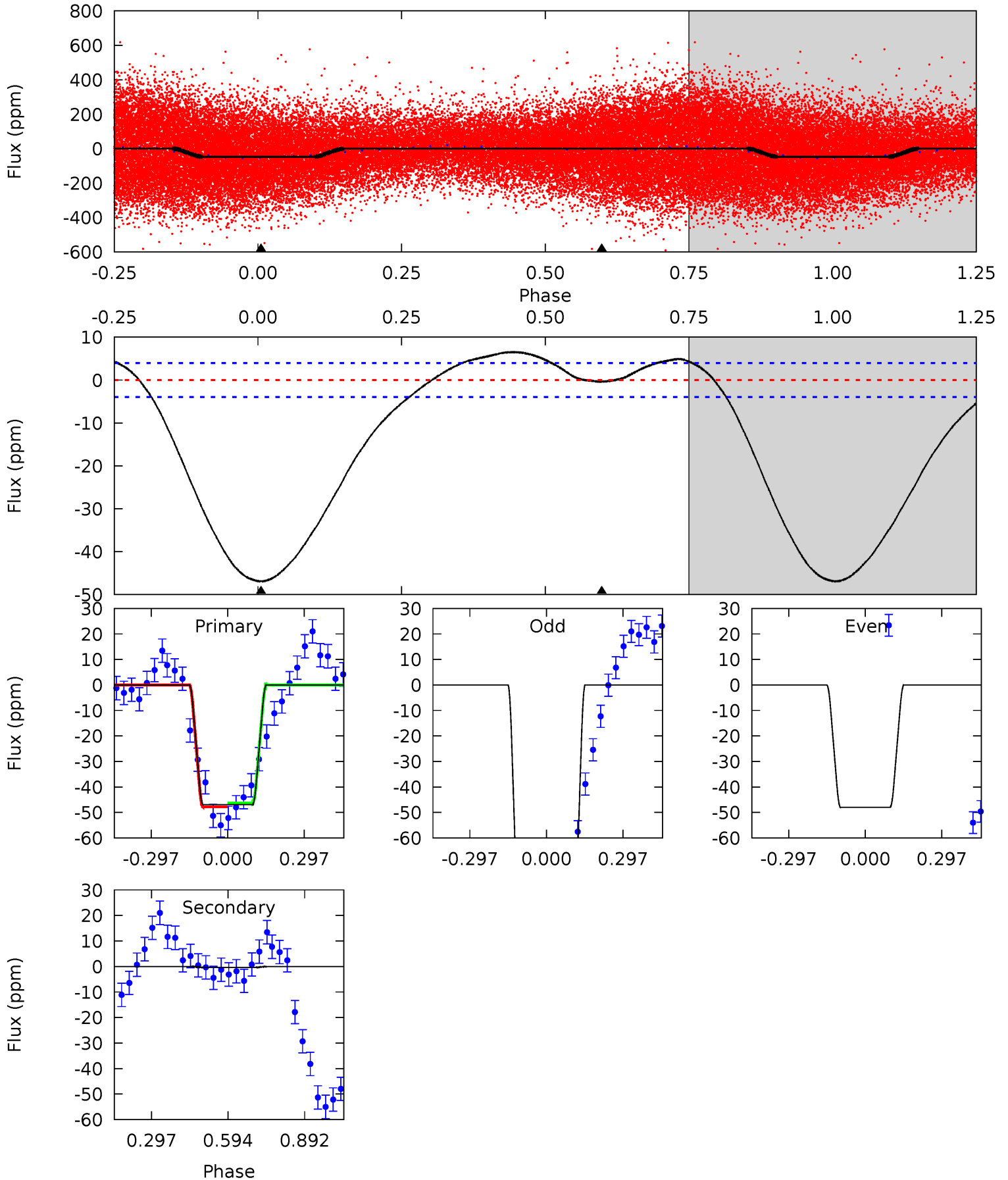
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.5	8.56	0	0	4.28	0.88	0.38	23.5	23.5	8.56	8.56	2.13	0.95	0.00	2.07



Alt Model-Shift Uniqueness Test

005196646-02, P = 0.521196 Days, E = 131.196879 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
51.3	0.44	0	0	4.33	1.04	4.46	51.3	51.3	0.44	0.44	37.6	1.08	0.12	0.59



Stellar Parameters For KIC 005196646

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6362^{+173}_{-173}	$3.748^{+0.293}_{-0.078}$	$-0.100^{+0.300}_{-0.250}$	$2.665^{+0.490}_{-0.980}$	$1.451^{+0.241}_{-0.294}$	$0.108^{+0.224}_{-0.034}$
	+3%/-3%	+8%/-2%	+300%/-250%	+18%/-37%	+17%/-20%	+207%/-31%
Source	PHO1	FLK73	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 005196646-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-7 ± 1	$1.07^{+0.74}_{-0.61}$	5221^{+304}_{-434}	4484^{+3028}_{-7954}	$0.651^{+2.675}_{-0.419}$
Alt.	-0 ± 1	$1.92^{+0.73}_{-0.68}$	5229^{+304}_{-451}	-4430^{+362}_{-235}	$0.012^{+0.040}_{-0.027}$

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 $A_{obs} \gg 1.0$

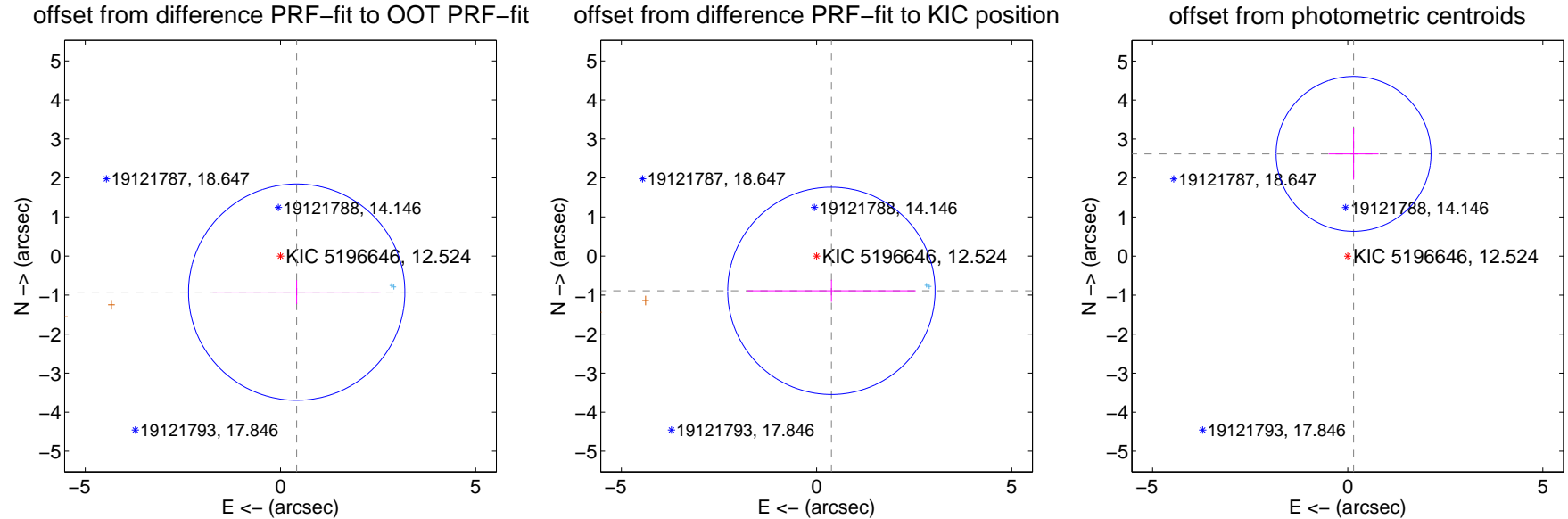
DV Centroid Data

Supplemental centroid analysis for 005196646-02. Kepler magnitude: 12.52. Transit SNR 14.61

There are 2 quarters with good PRF difference image offsets

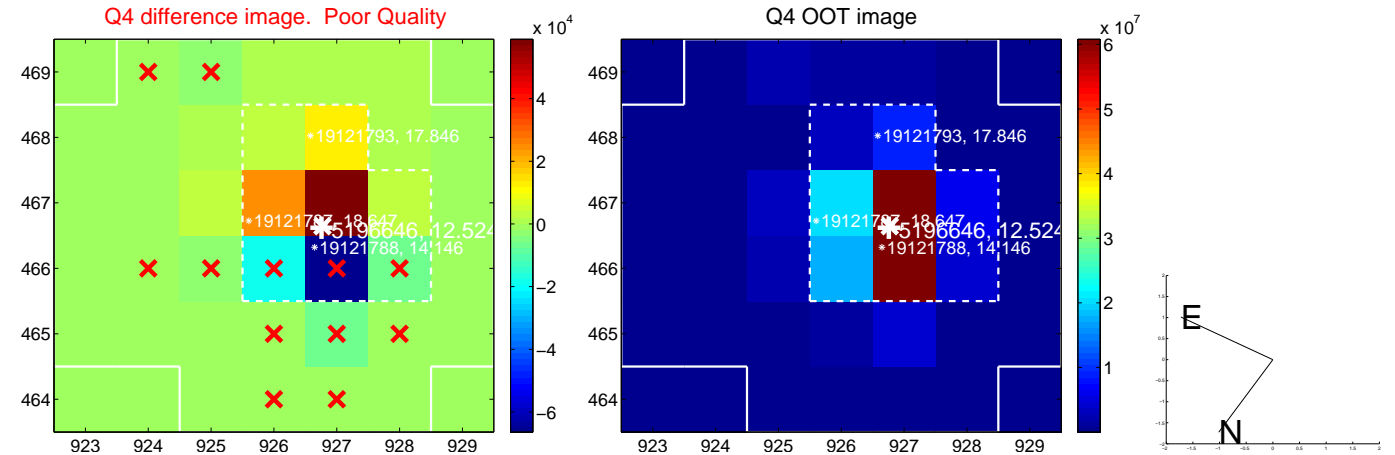
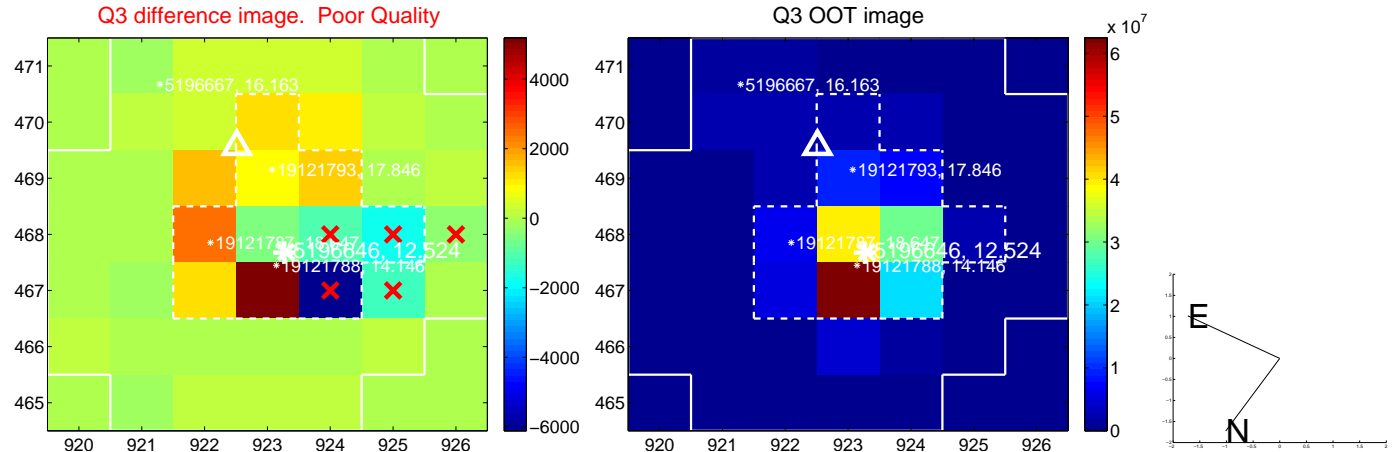
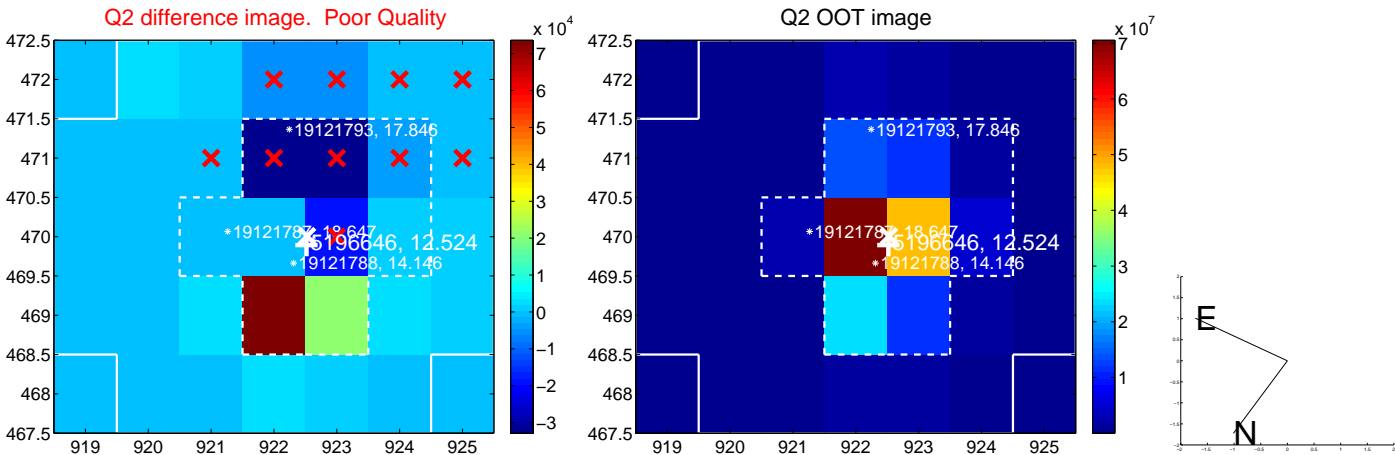
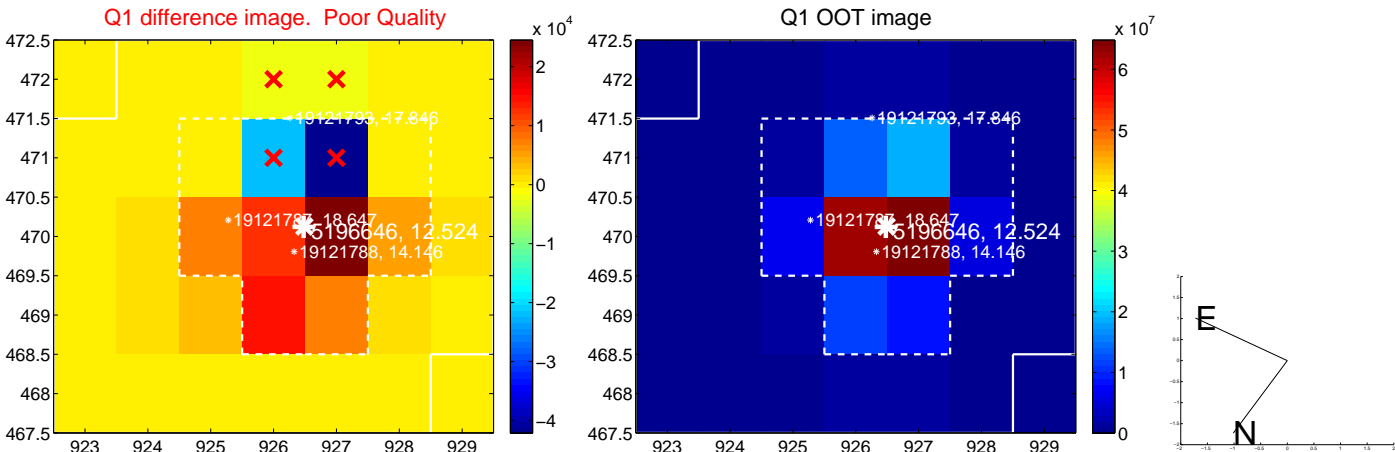
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.015 ± 0.924	1.10	-0.416 ± 2.150	-0.925 ± 0.303
PRF-fit source offset from KIC position	0.969 ± 0.885	1.09	-0.380 ± 2.160	-0.892 ± 0.282
photometric centroid source offset	2.62 ± 0.66	3.97	-0.15 ± 0.64	2.62 ± 0.66

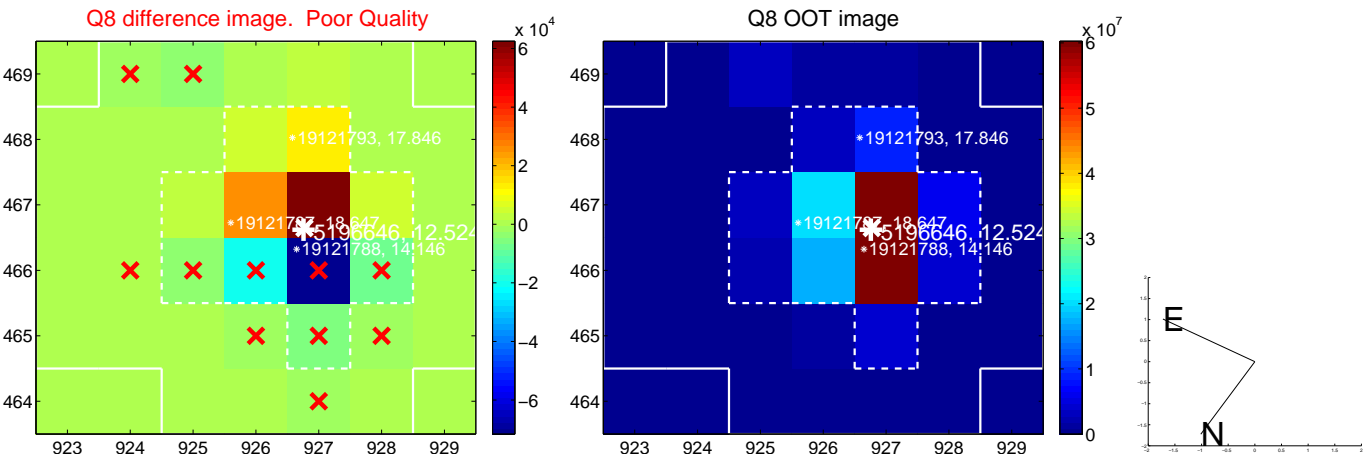
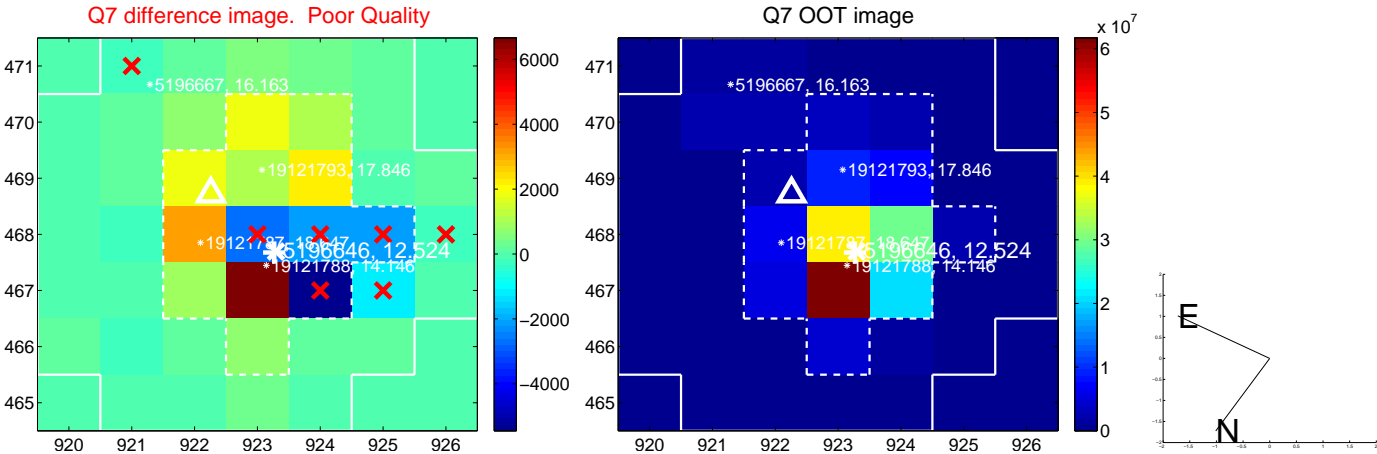
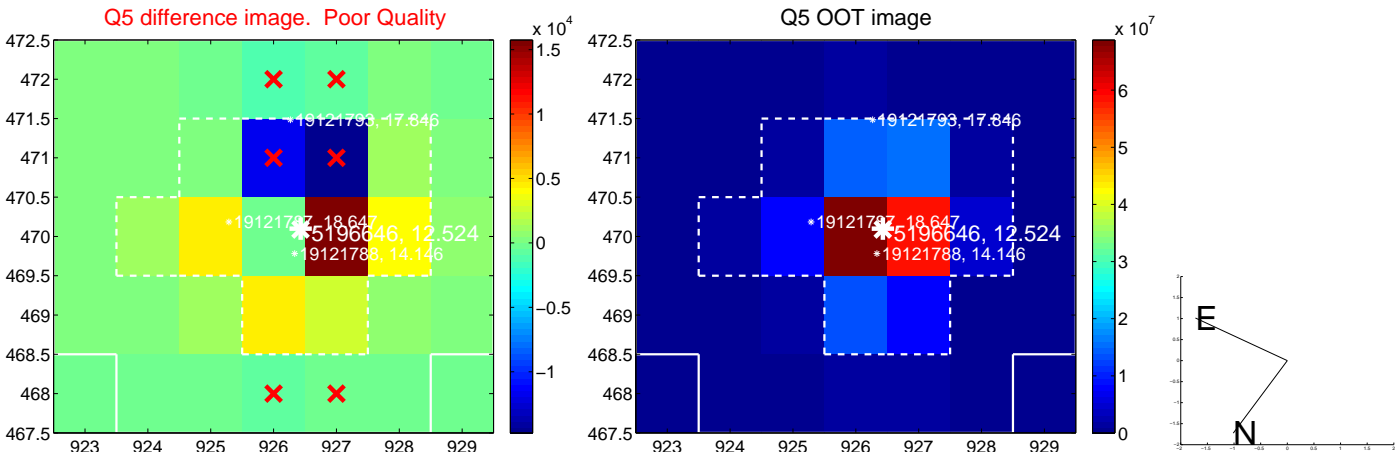


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

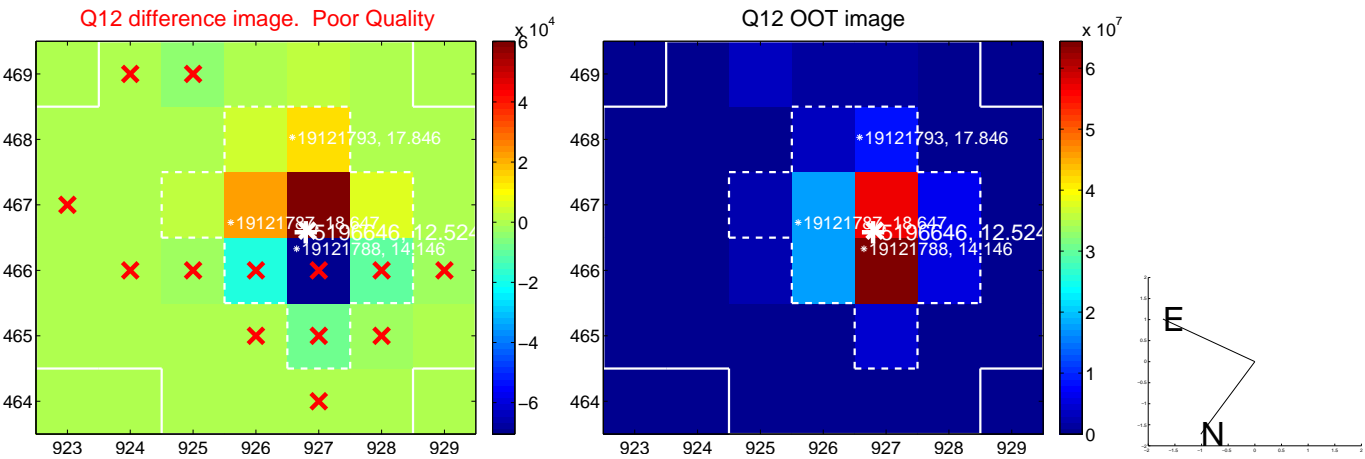
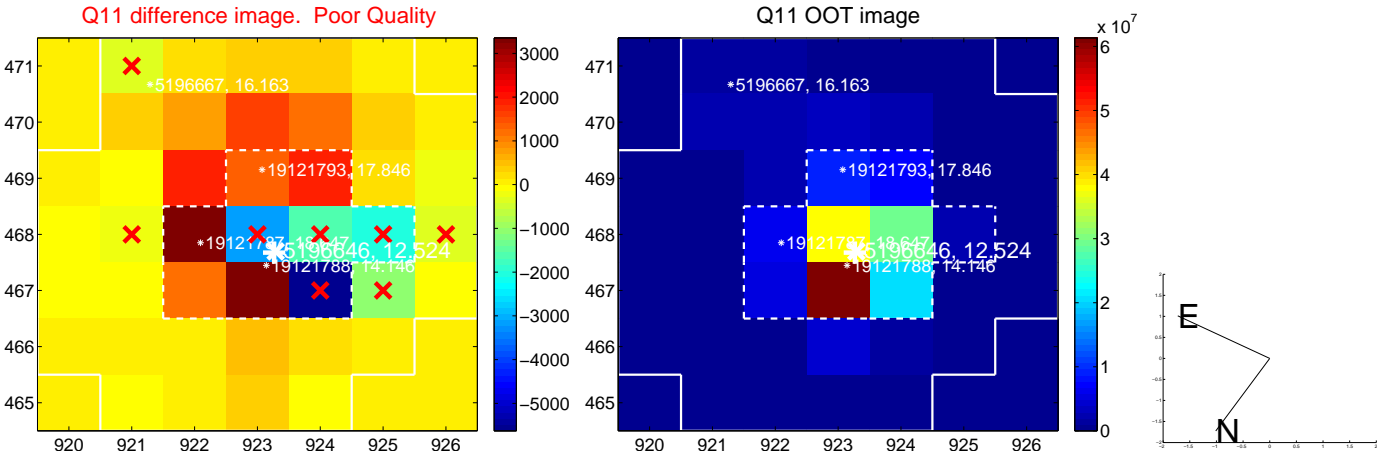
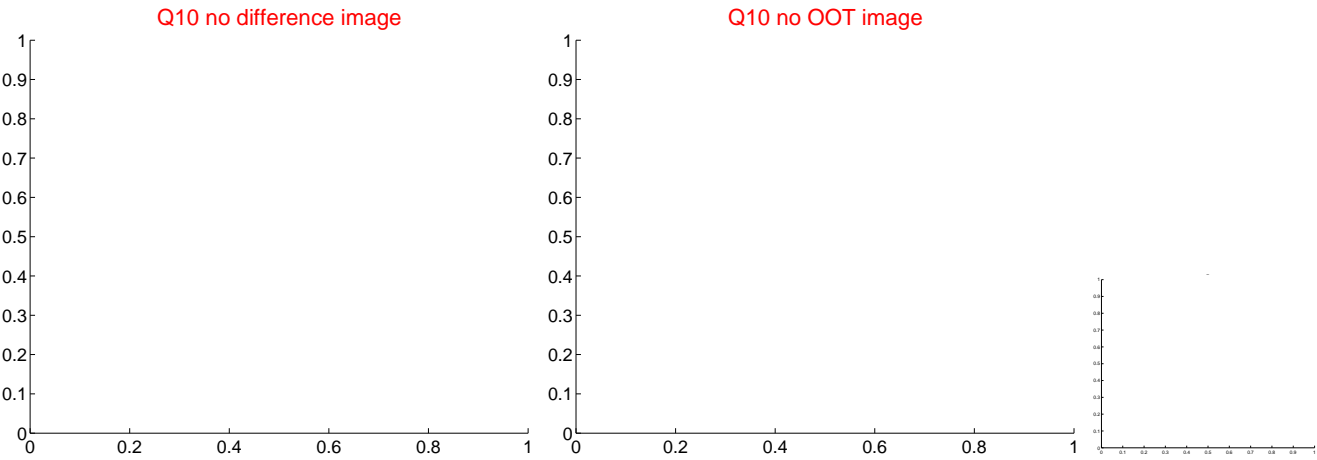
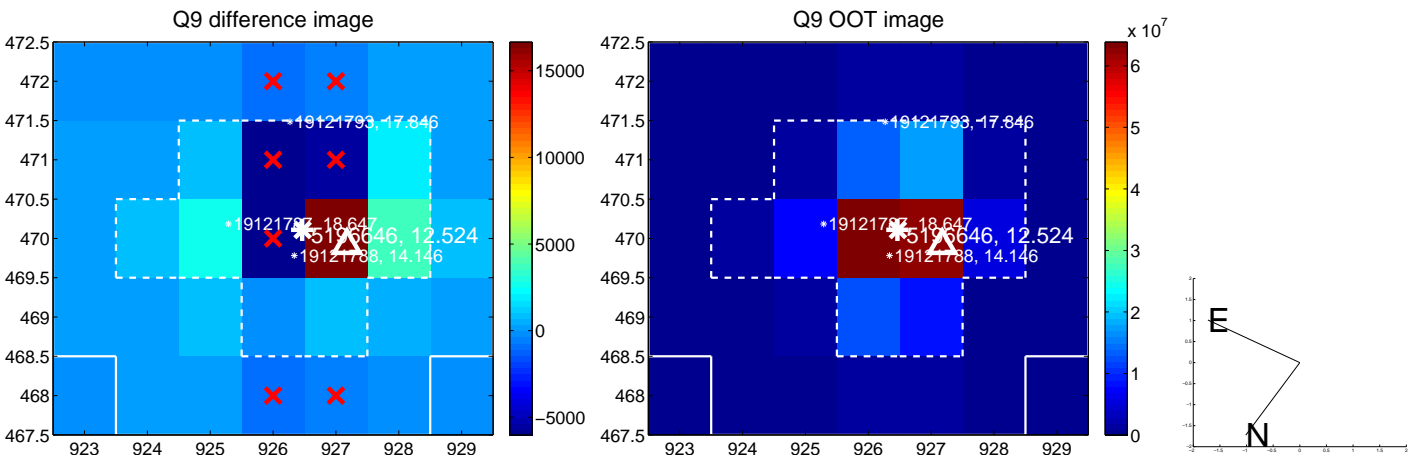
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



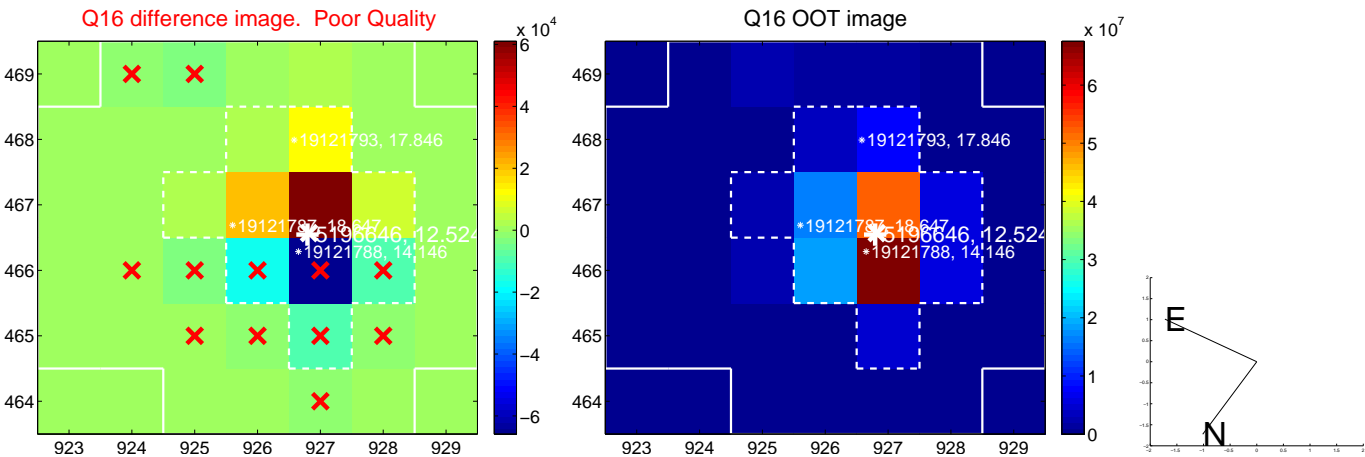
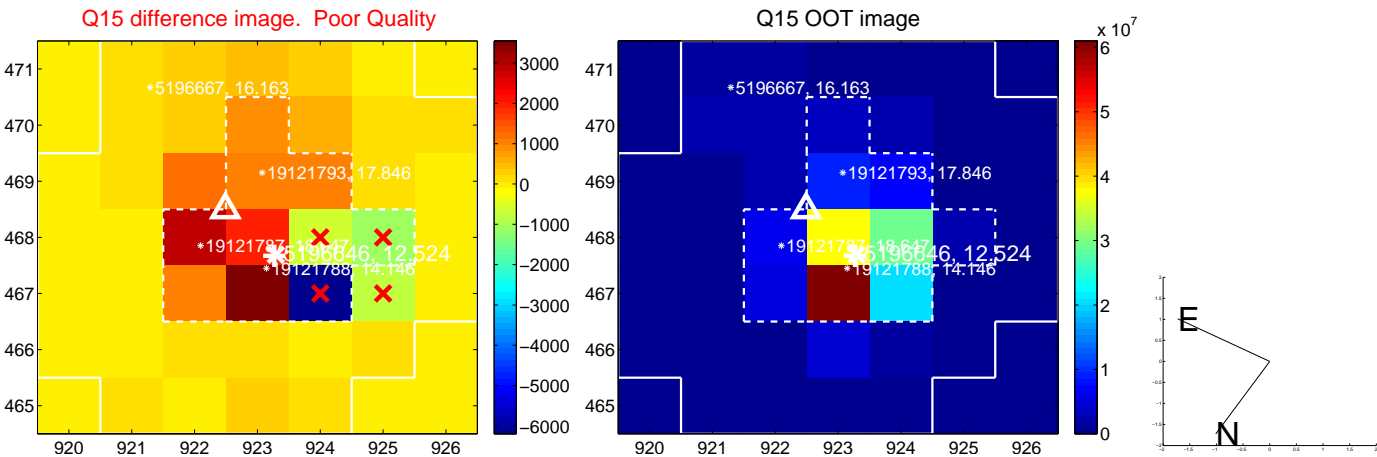
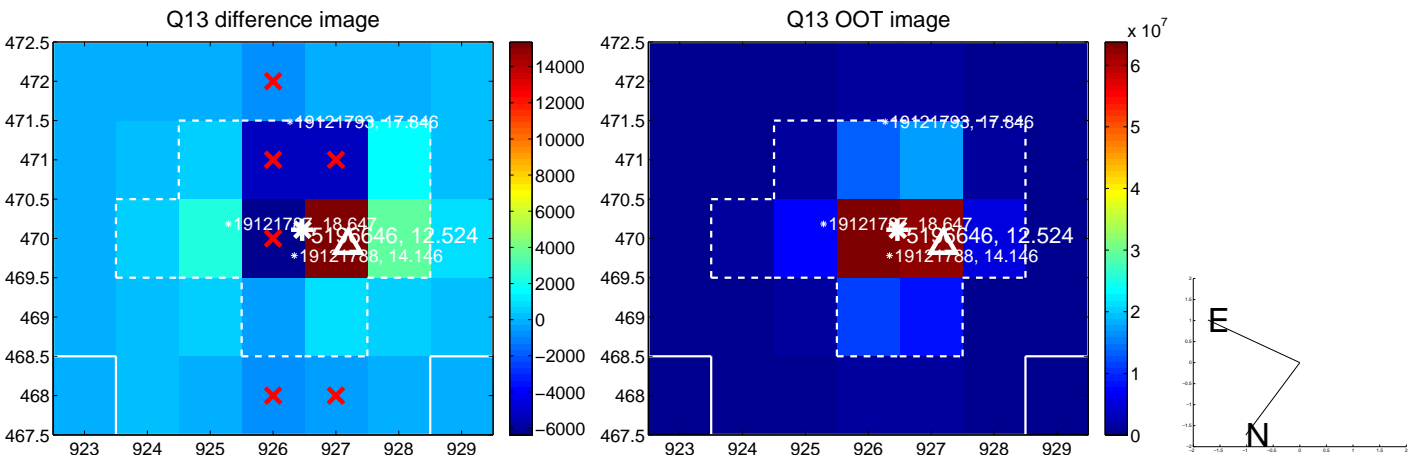
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



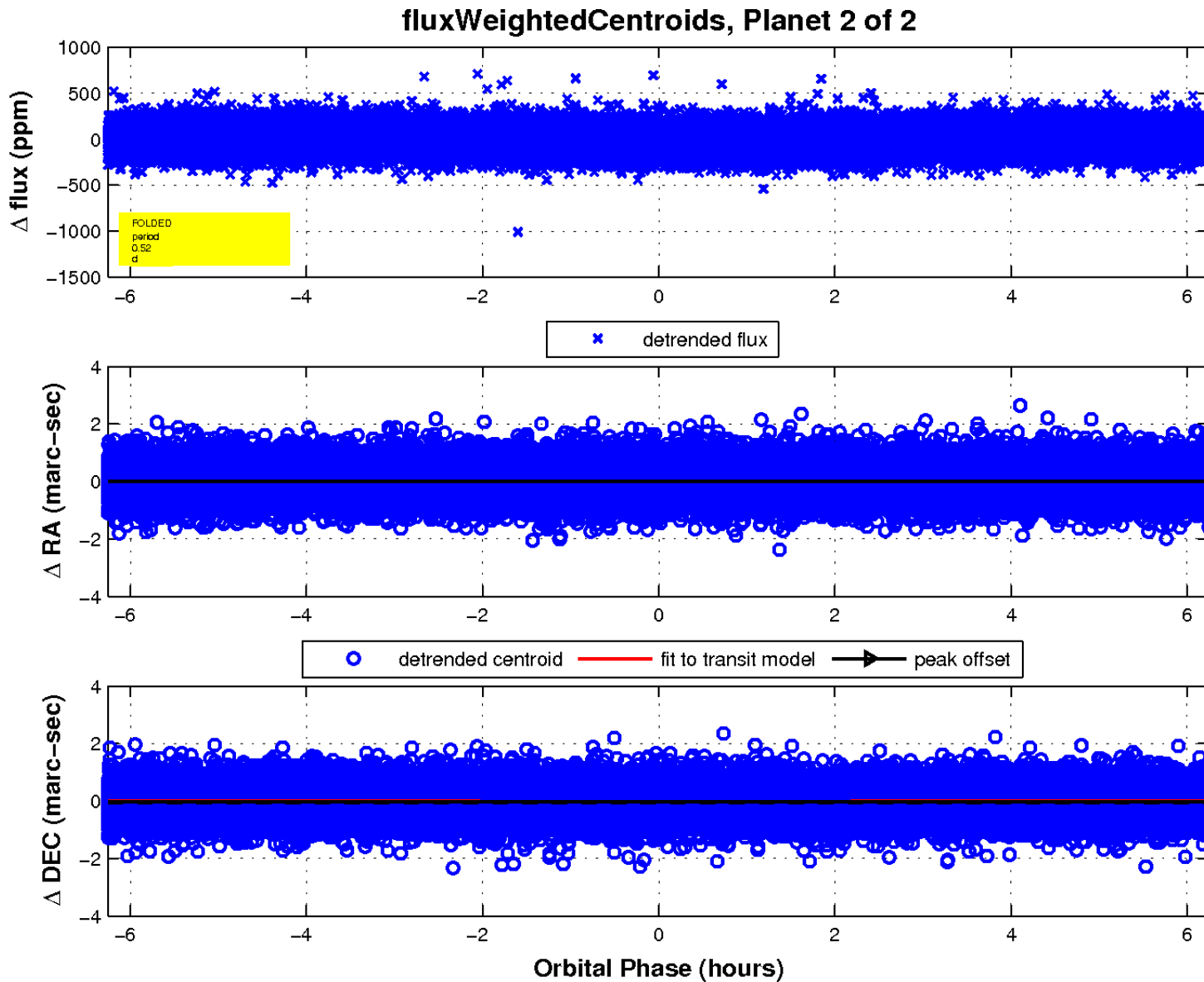
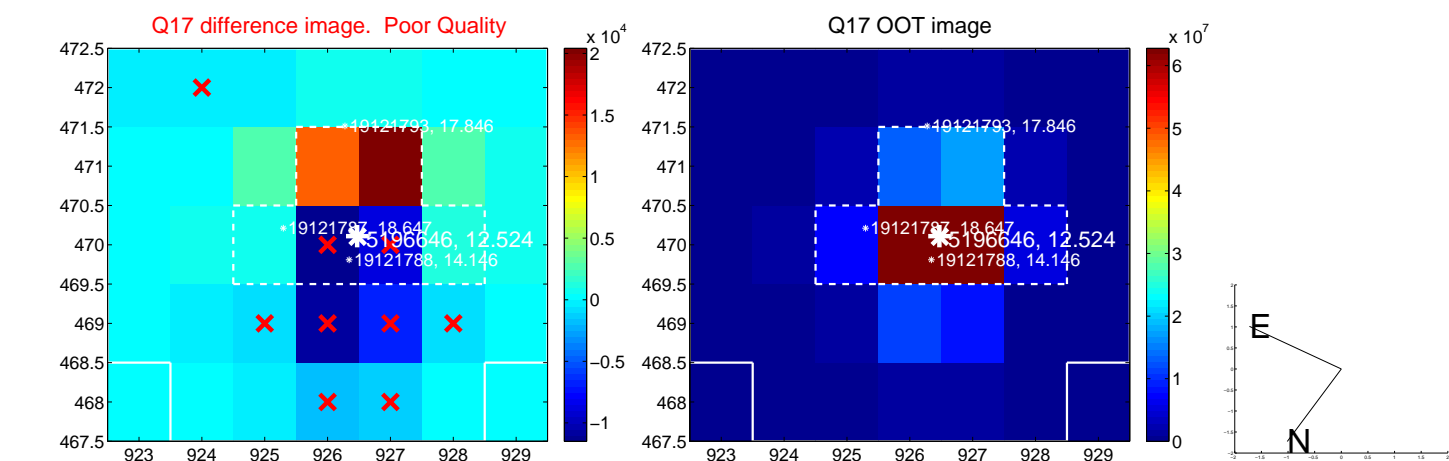
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

