

KIC 005206128

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})
005206128-01	OBS	No	0.659798	131.912817	56.4	3.900	10.1	12.5	0.93	5616	0.84	3664.93
005206128-02	OBS	No	518.597771	263.552706	780.6	3.611	9.1	8.3	0.93	5616	2.76	0.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005206128-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
005206128-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

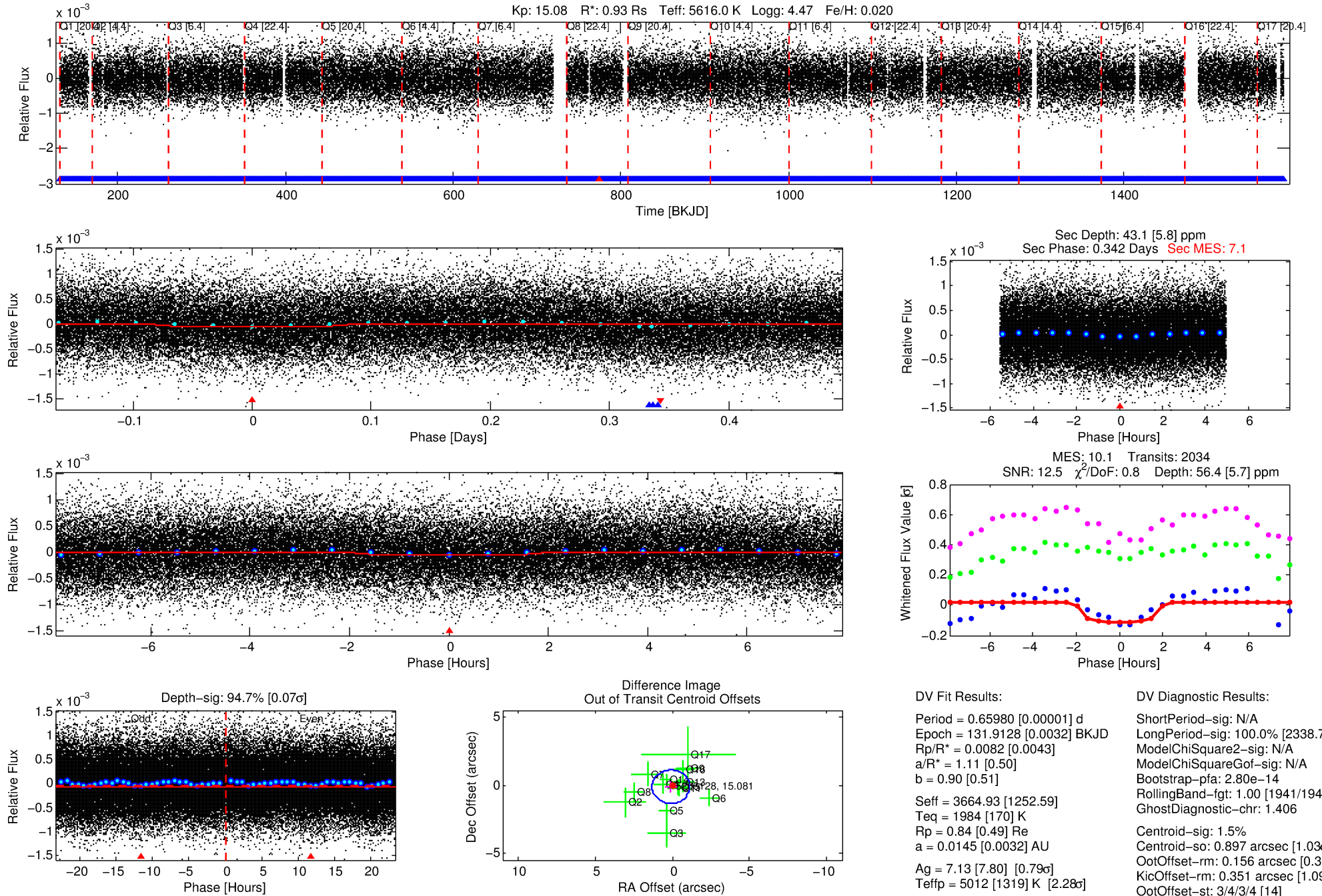
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005206128-01

No Significant Match Found

DV One-Page Summary

KIC: 5206128 Candidate: 1 of 2 Period: 0.660 d



DV Fit Results:

Period = 0.65980 [0.00001] d
Epoch = 131.9128 [0.0032] BKJD
Rp/R* = 0.0082 [0.0043]
a/R* = 1.11 [0.50]
b = 0.90 [0.51]
Seff = 3664.93 [1252.59]
Teff = 1984 [170] K
Rp = 0.84 [0.49] Re
a = 0.0145 [0.0032] AU
Ag = 7.13 [7.80] [0.79 σ]
Teffp = 5012 [1319] K [2.28 σ]

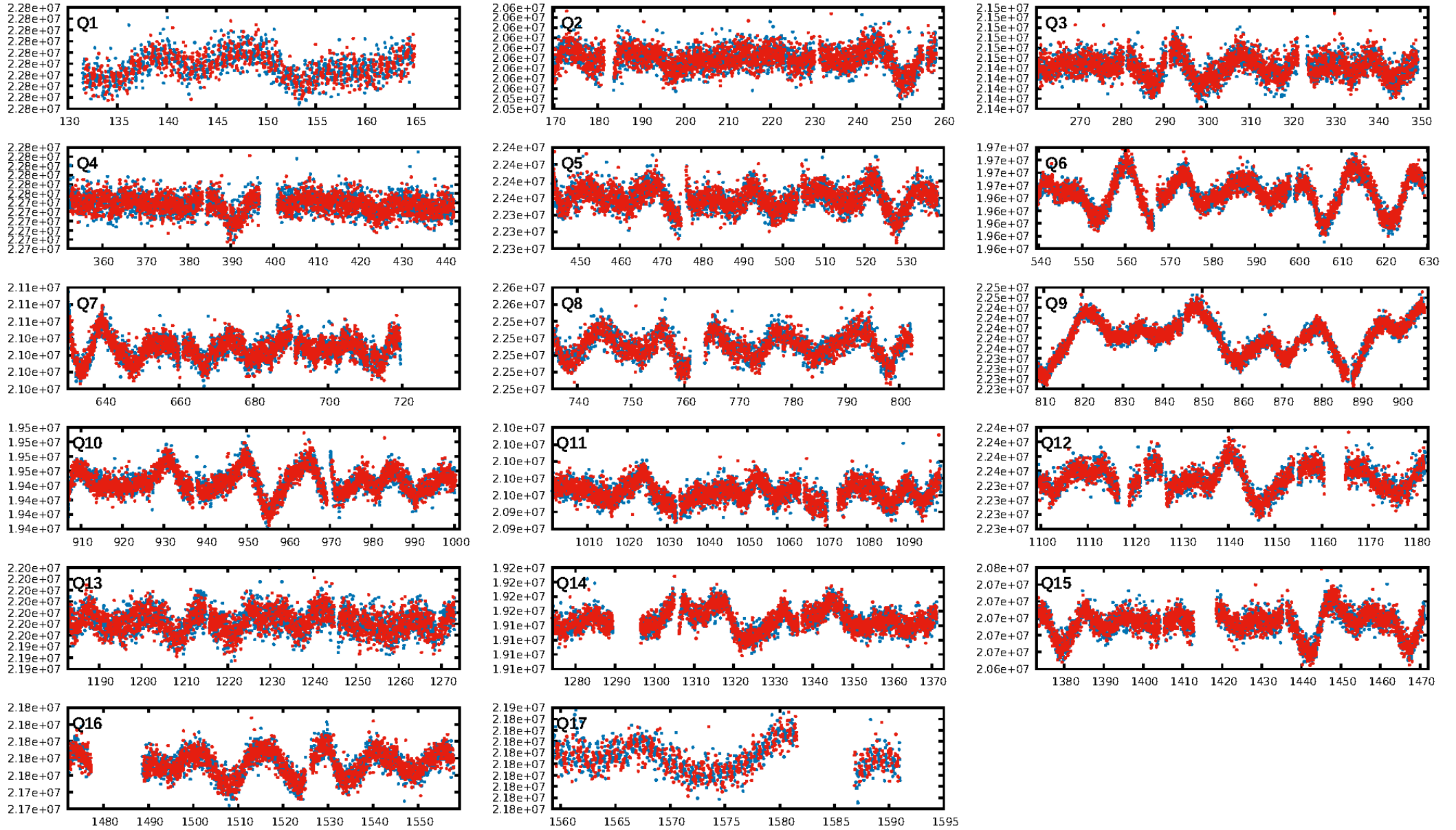
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [2338.70 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.80e-14
RollingBand-fgt: 1.00 [1941/1942]
GhostDiagnostic-chr: 1.406
Centroid-sig: 1.5%
Centroid-so: 0.897 arcsec [1.03 σ]
OotOffset-rm: 0.156 arcsec [0.38 σ]
KicOffset-rm: 0.351 arcsec [1.09 σ]
OotOffset-st: 3/4/3/4 [14]
KicOffset-st: 3/4/3/4 [14]
DiffImageQuality-fgm: 0.57 [8/14]
DiffImageOverlap-fno: 1.00 [17/17]

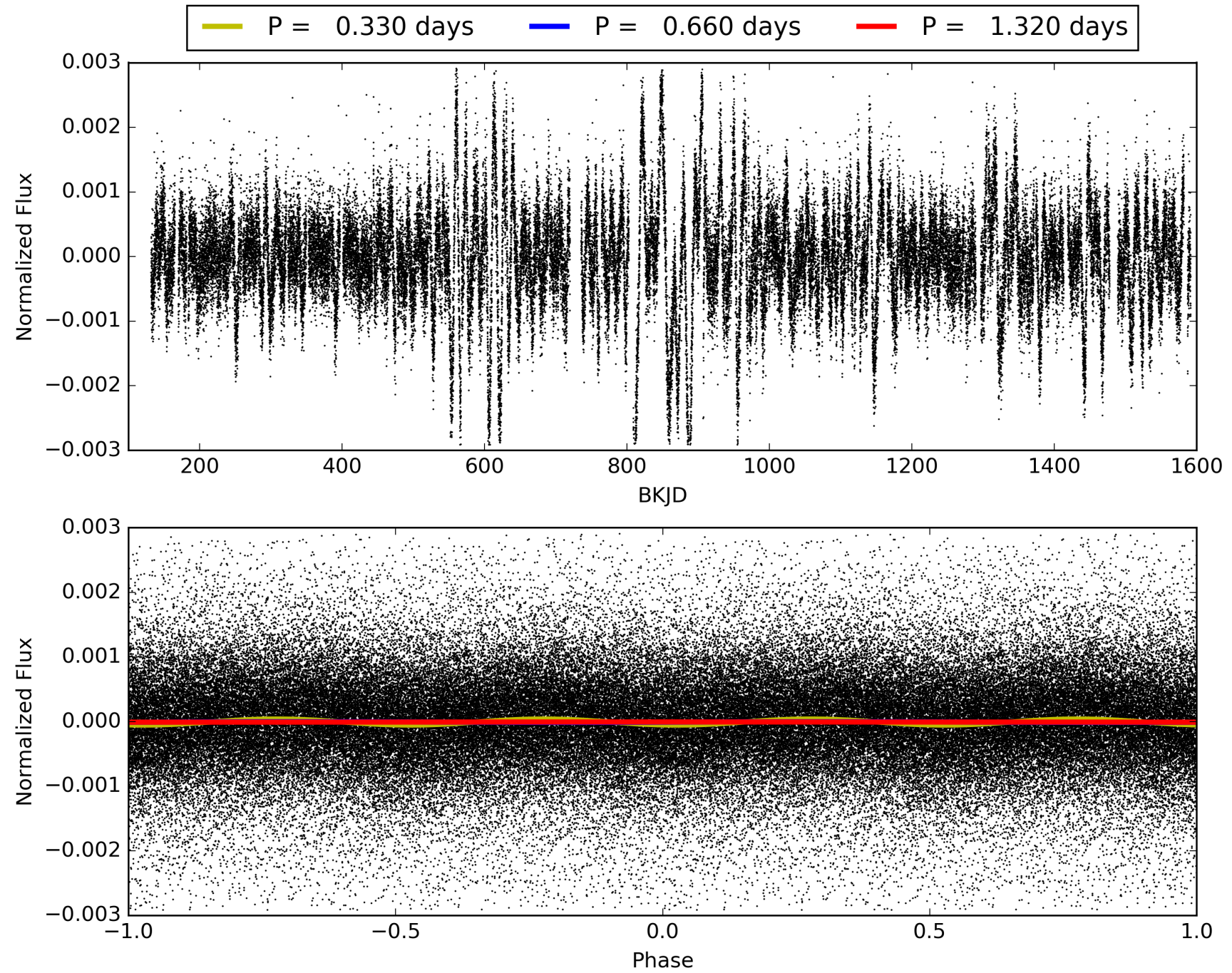
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 12:35:45 Z

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

TCE 005206128-01, PDC Light Curves

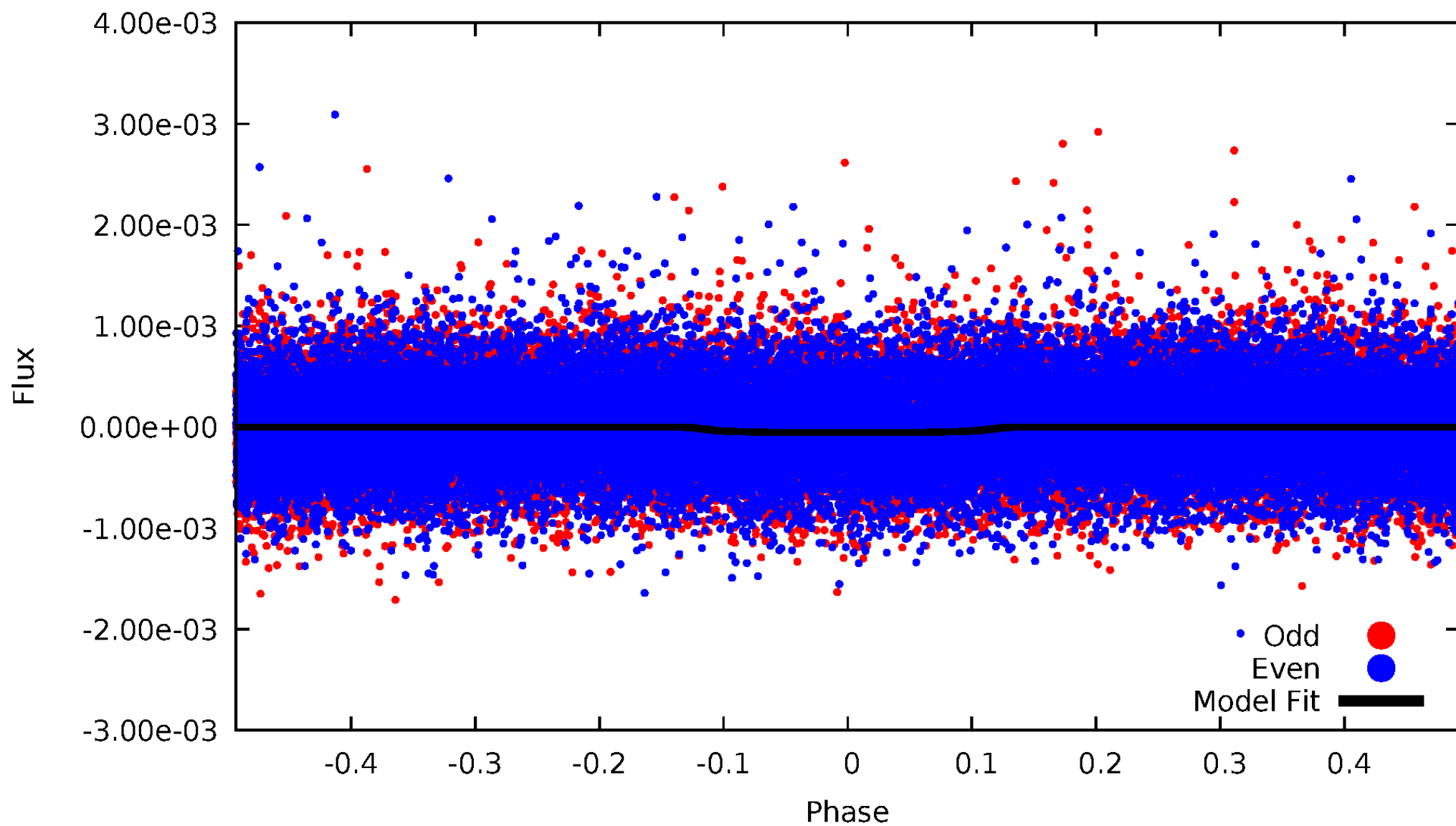


TCE 005206128-01



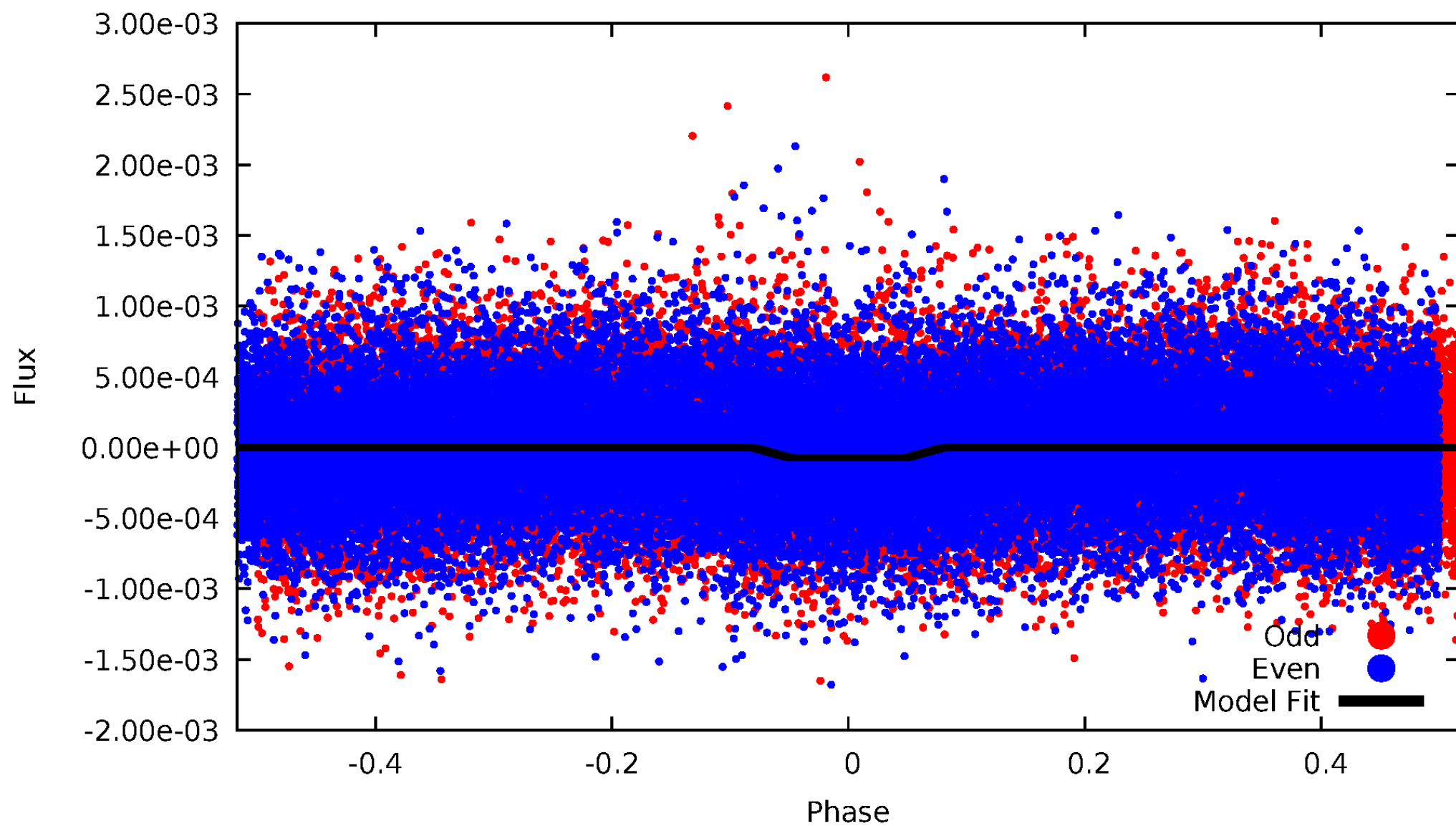
DV Odd/Even

TCE 005206128-01



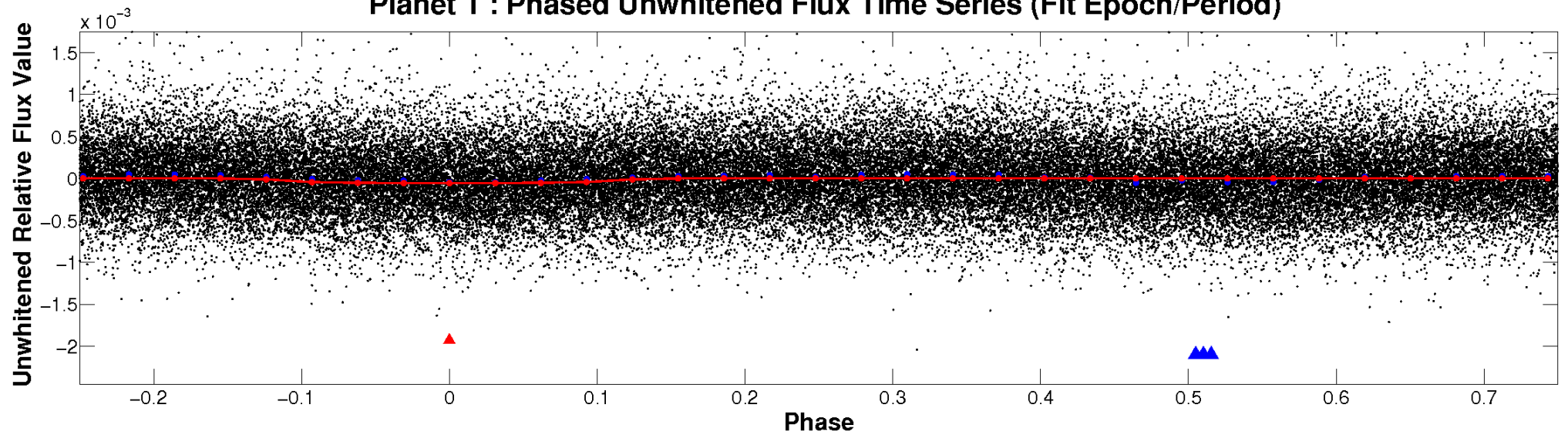
ALT Odd/Even

TCE 005206128-01

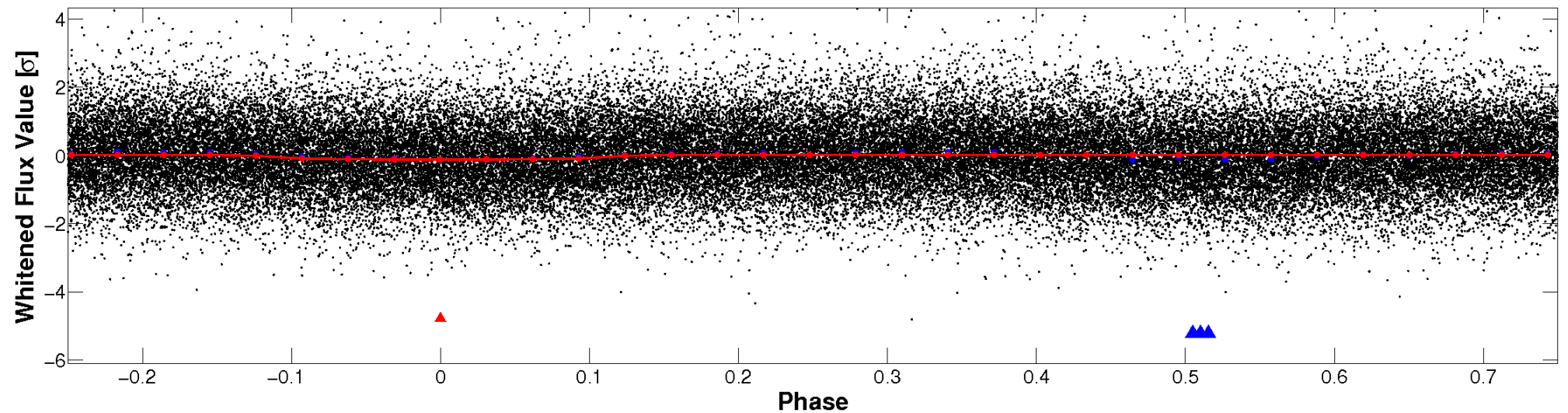


Non-Whitened Vs. Whitened Light Curve

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

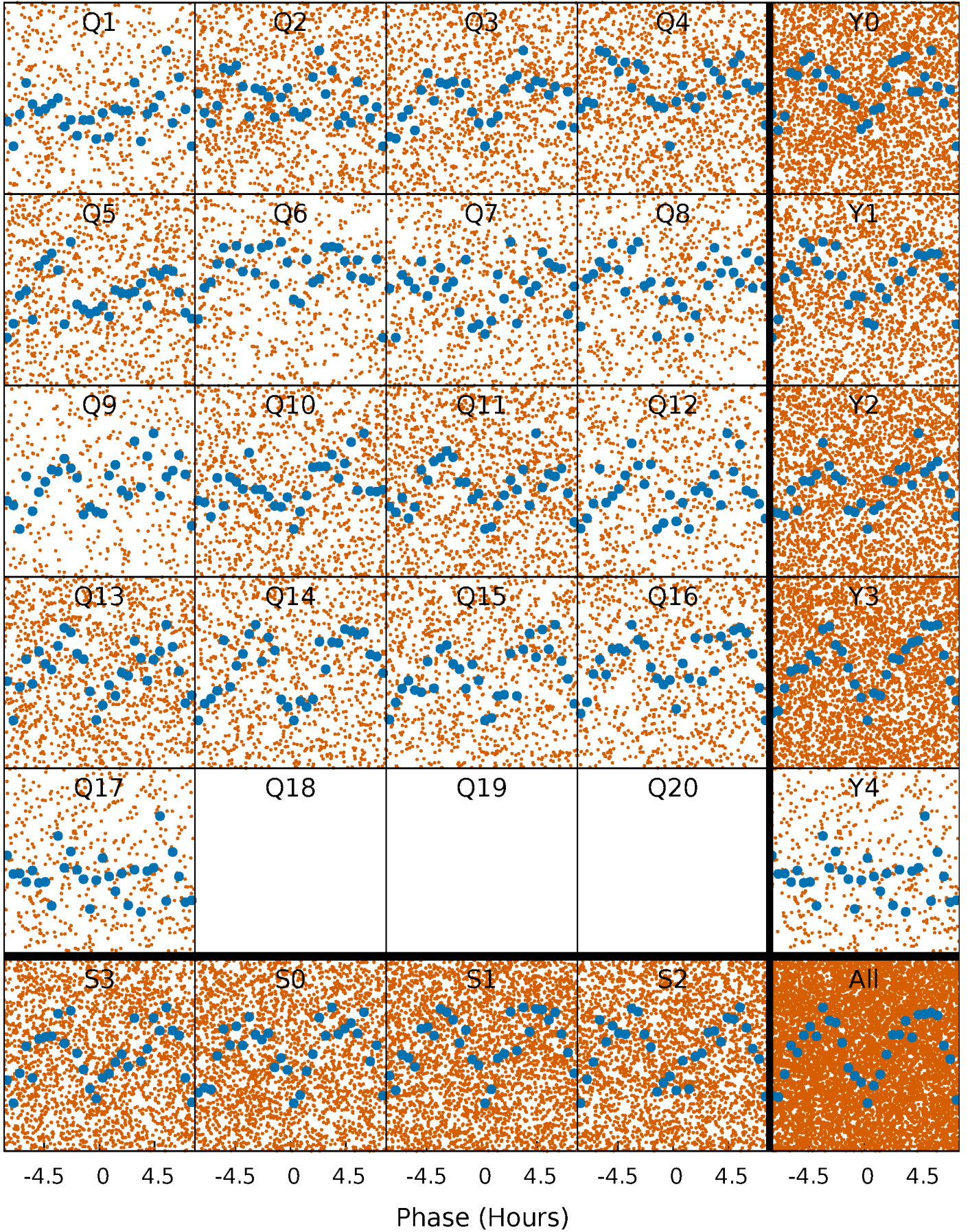


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



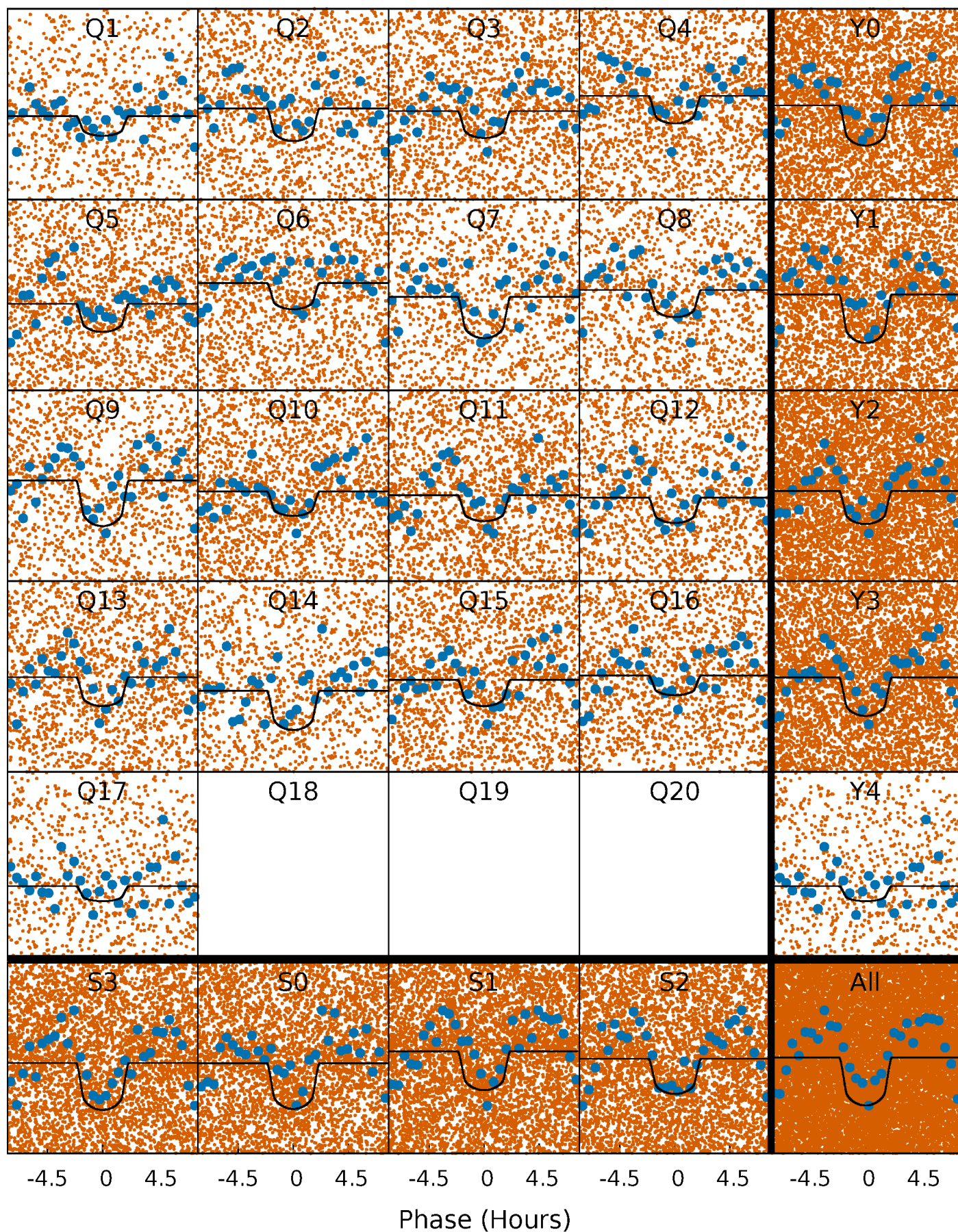
PDC Quarter-Phased Transit Curves

TCE 005206128-01 P= 0.659798 Days $T_0=131.912817$ (BKJD)



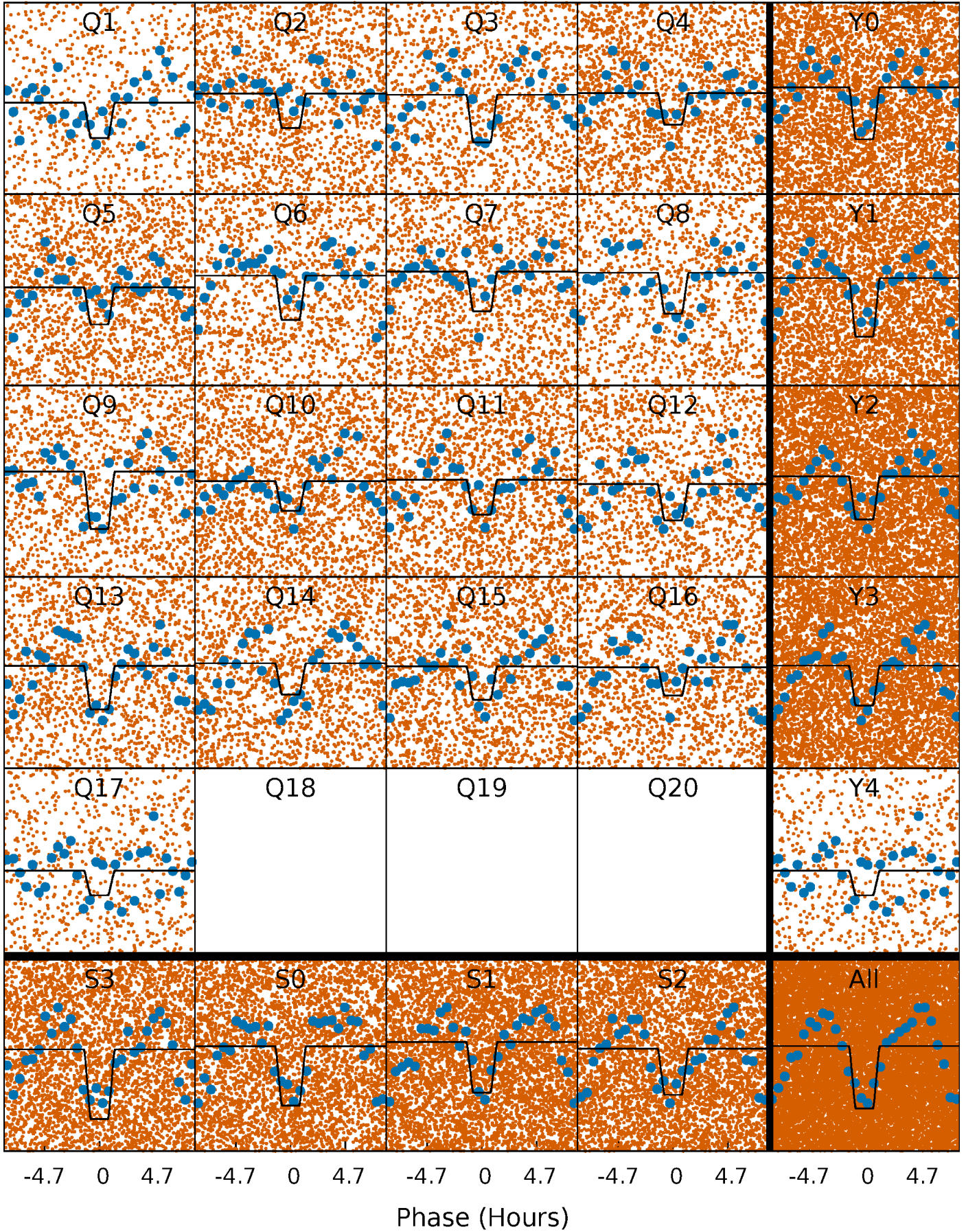
DV Quarter-Phased Transit Curves

TCE 005206128-01 P= 0.659798 Days $T_0=131.912817$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

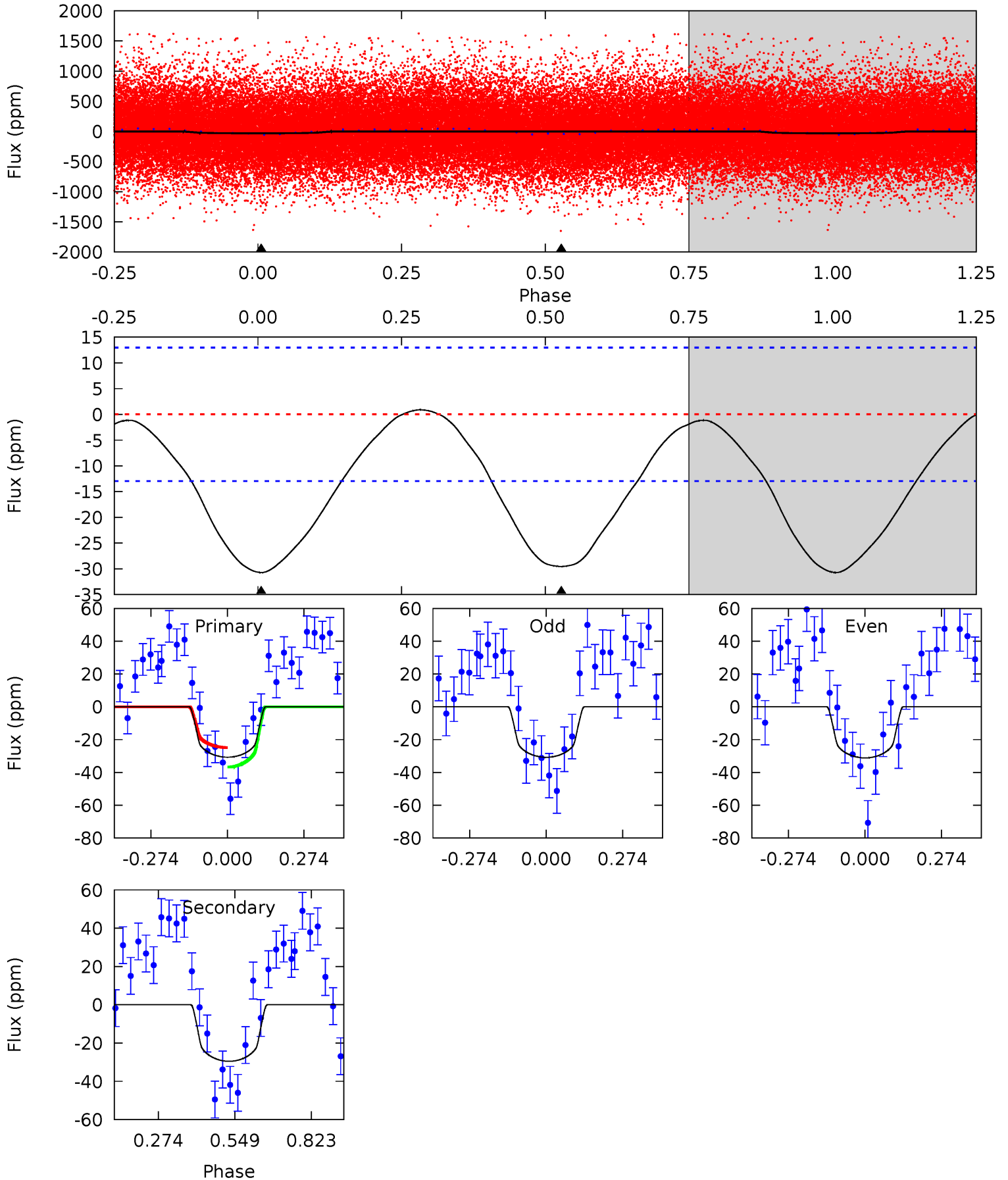
TCE 005206128-01 P= 0.659806 Days $T_0=131.912297$ (BKJD)



DV Model-Shift Uniqueness Test

005206128-01, P = 0.659798 Days, E = 131.253019 Days

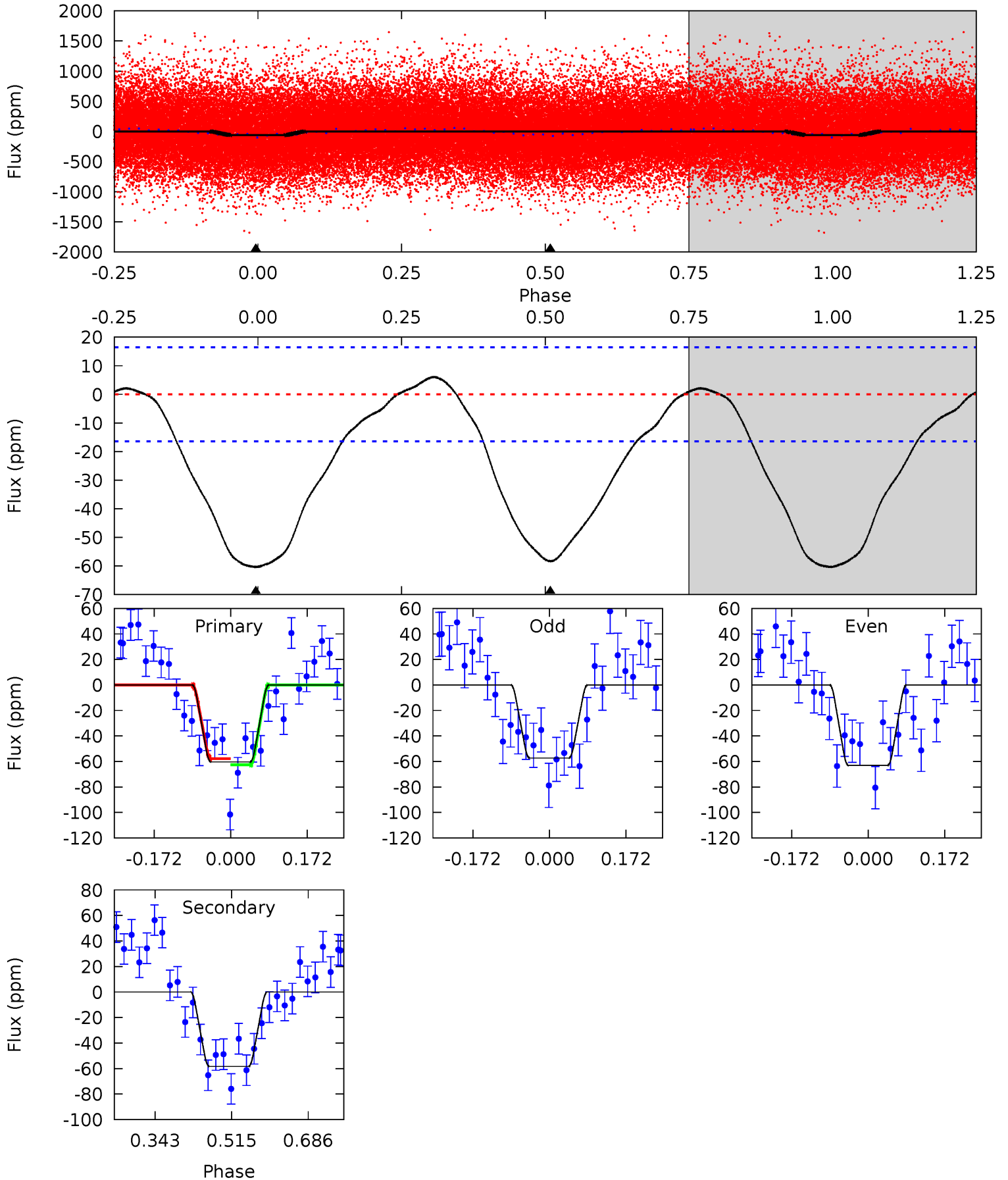
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	9.91	0	0	4.35	1.09	0.31	10.3	10.3	9.91	9.91	0.06	0.81	0.03	1.99



Alt Model-Shift Uniqueness Test

005206128-01, P = 0.659806 Days, E = 131.252491 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.4	15.8	0	0	4.45	1.37	1.36	16.4	16.4	15.8	15.8	0.78	1.04	0.09	0.66



Stellar Parameters For KIC 005206128

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R \text{ (R}_{\odot})$	$M(\text{M}_{\odot})$	$p_{\star} \text{ (g}\cdot\text{cm}^{-3})$
	5616^{+169}_{-169}	$4.471^{+0.075}_{-0.175}$	$0.020^{+0.250}_{-0.300}$	$0.929^{+0.242}_{-0.104}$	$0.932^{+0.104}_{-0.094}$	$1.636^{+0.524}_{-0.774}$
	+3%/-3%	+2%/-4%	+1250%/-1500%	+26%/-11%	+11%/-10%	+32%/-47%
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 005206128-01 / KOI

Detrend	Depth (ppm)	$R_p \text{ (R}_{\oplus})$	$T_{\text{max}} \text{ (K)}$	$T_{\text{obs}} \text{ (K)}$	A_{obs}
DV	-30 ± 3	$0.87^{+0.49}_{-0.42}$	2814^{+154}_{-135}	4617^{+1653}_{-800}	$4.400^{+11.952}_{-2.550}$
Alt.	-58 ± 4	$0.89^{+0.45}_{-0.42}$	2808^{+177}_{-138}	5305^{+2212}_{-893}	$8.542^{+22.354}_{-4.805}$

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

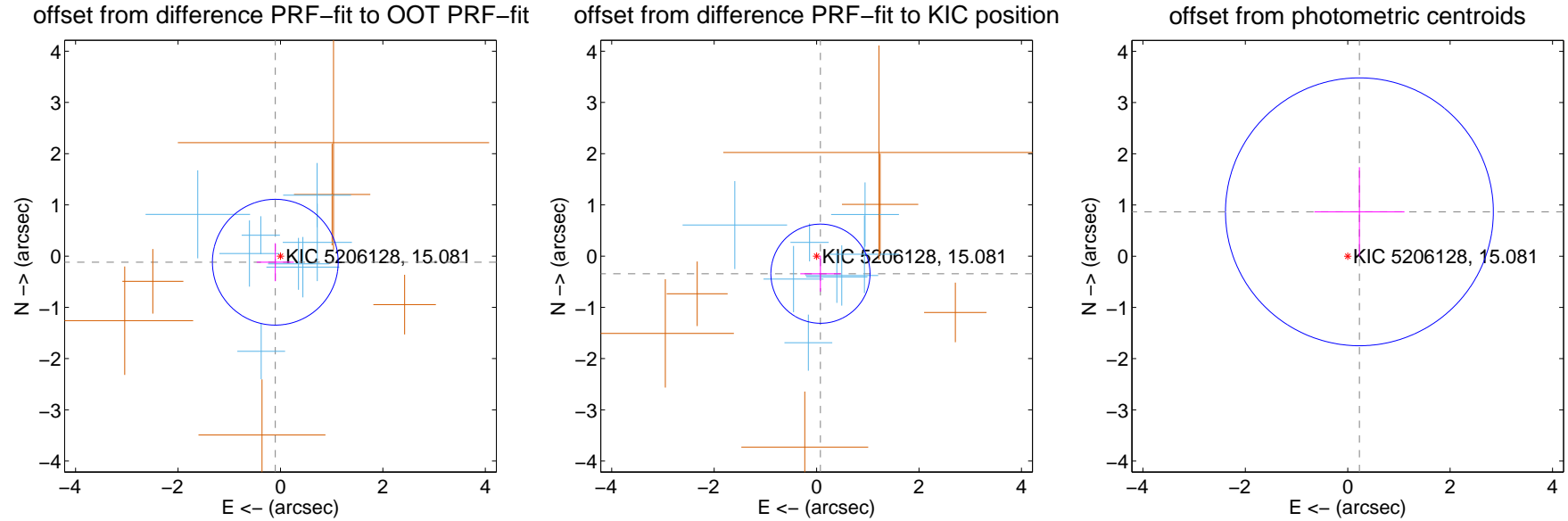
DV Centroid Data

Supplemental centroid analysis for 005206128-01. Kepler magnitude: 15.08. Transit SNR 12.54

There are 8 quarters with good PRF difference image offsets

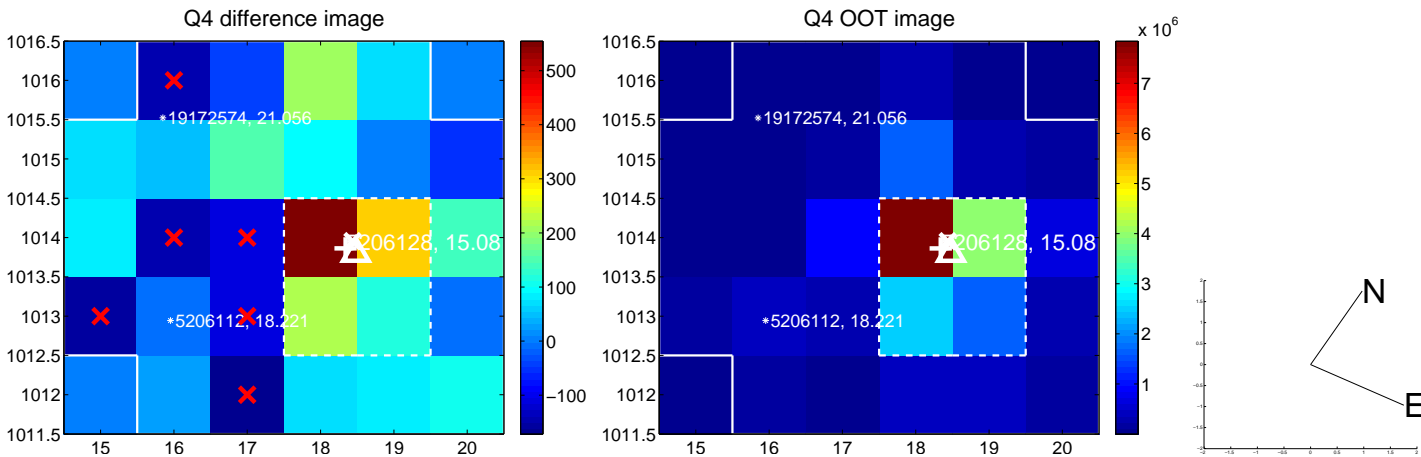
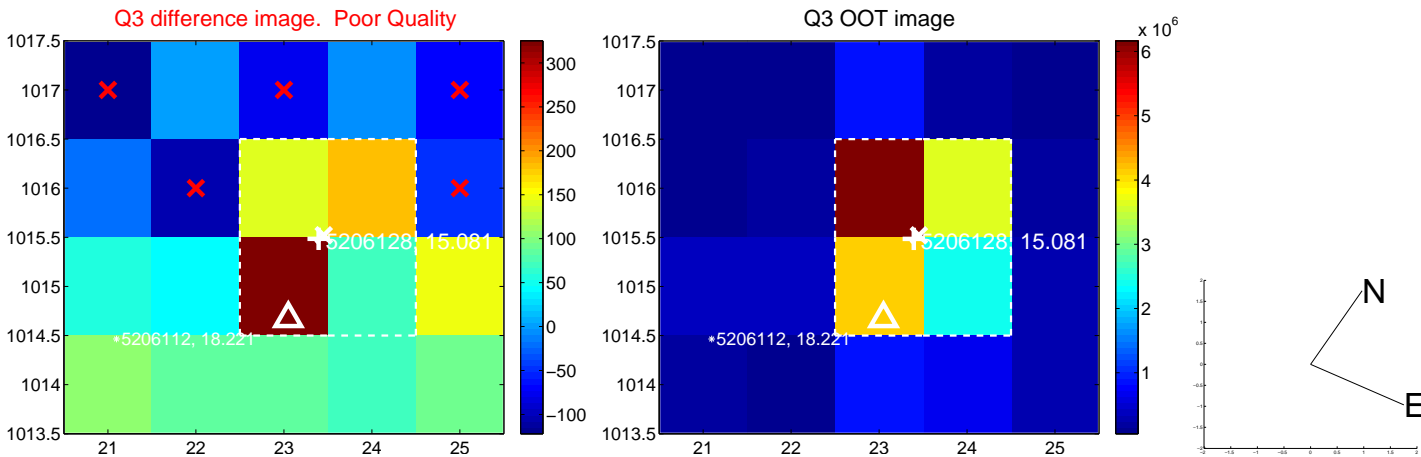
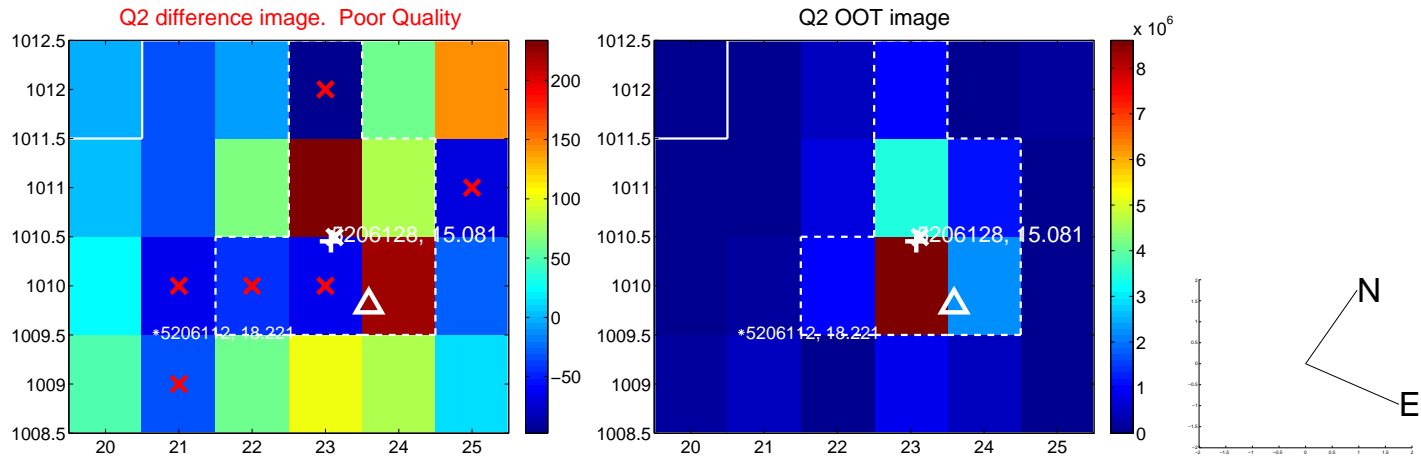
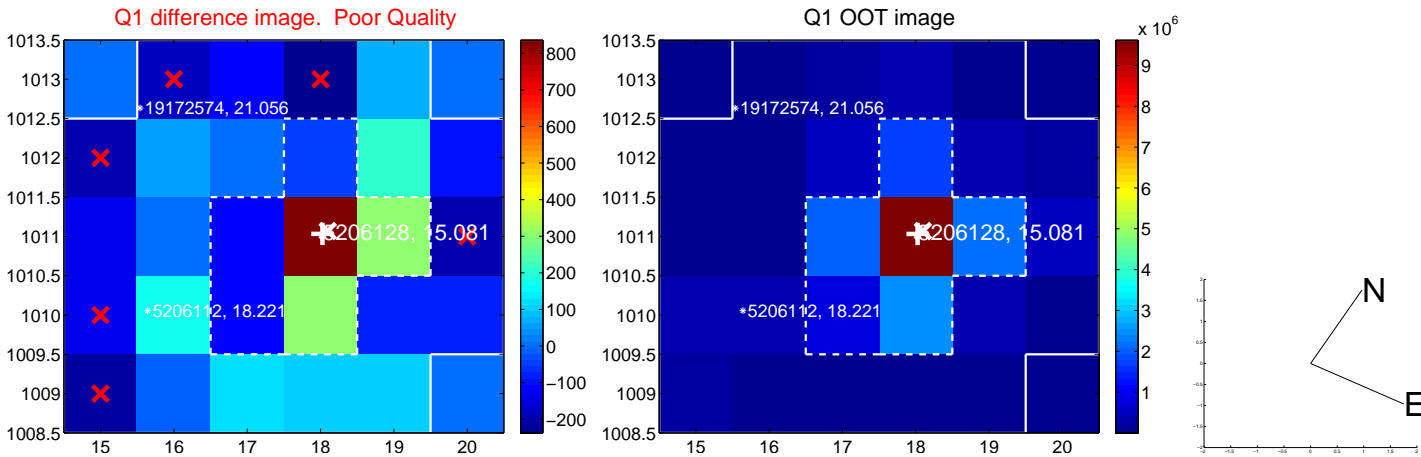
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.156 ± 0.409	0.38	0.101 ± 0.364	-0.119 ± 0.371
PRF-fit source offset from KIC position	0.351 ± 0.323	1.09	-0.076 ± 0.394	-0.343 ± 0.349
photometric centroid source offset	0.90 ± 0.87	1.03	-0.23 ± 0.88	0.87 ± 0.87

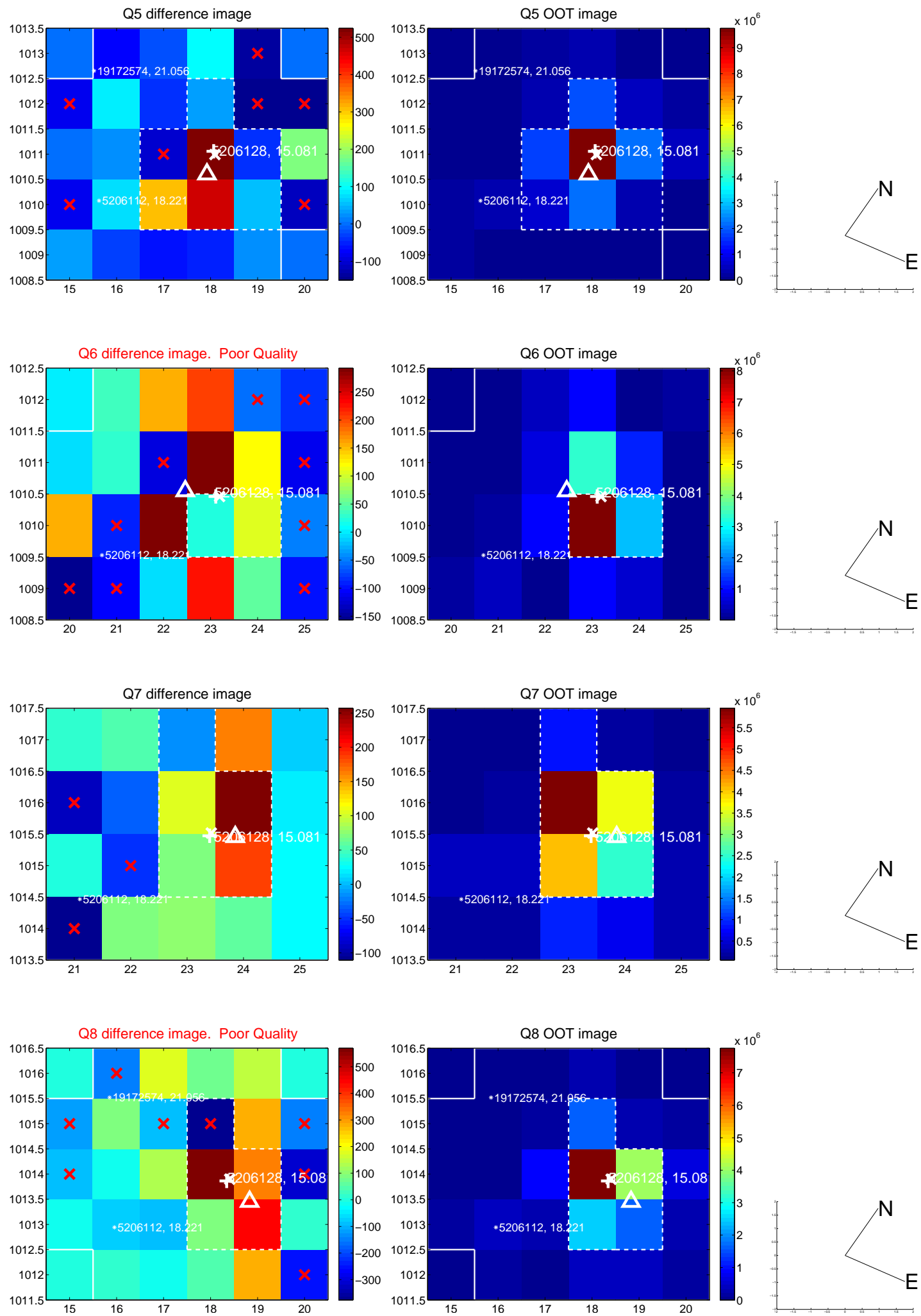


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

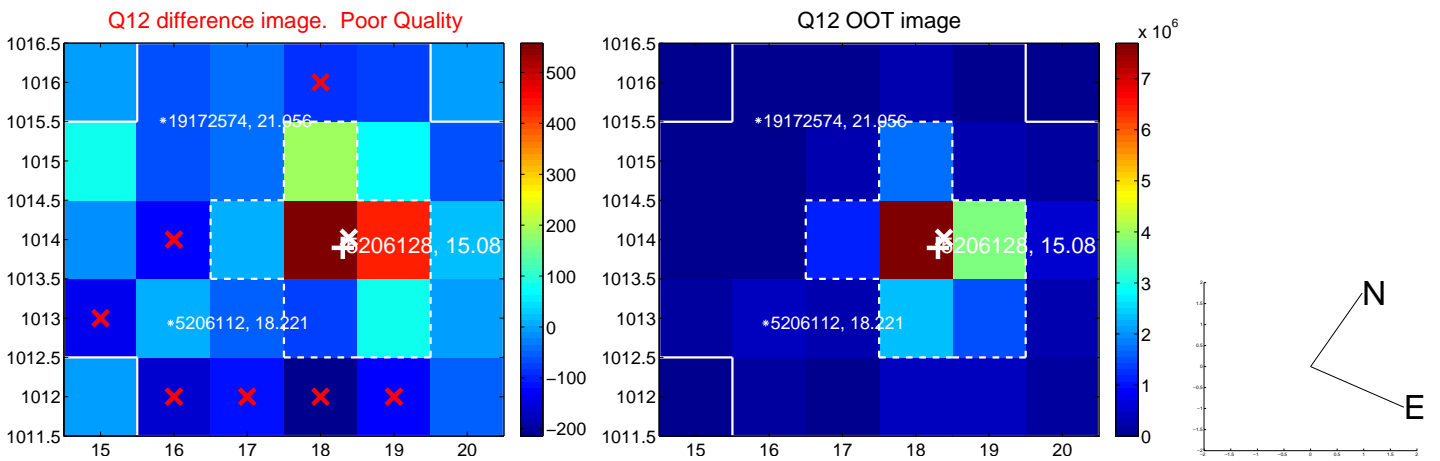
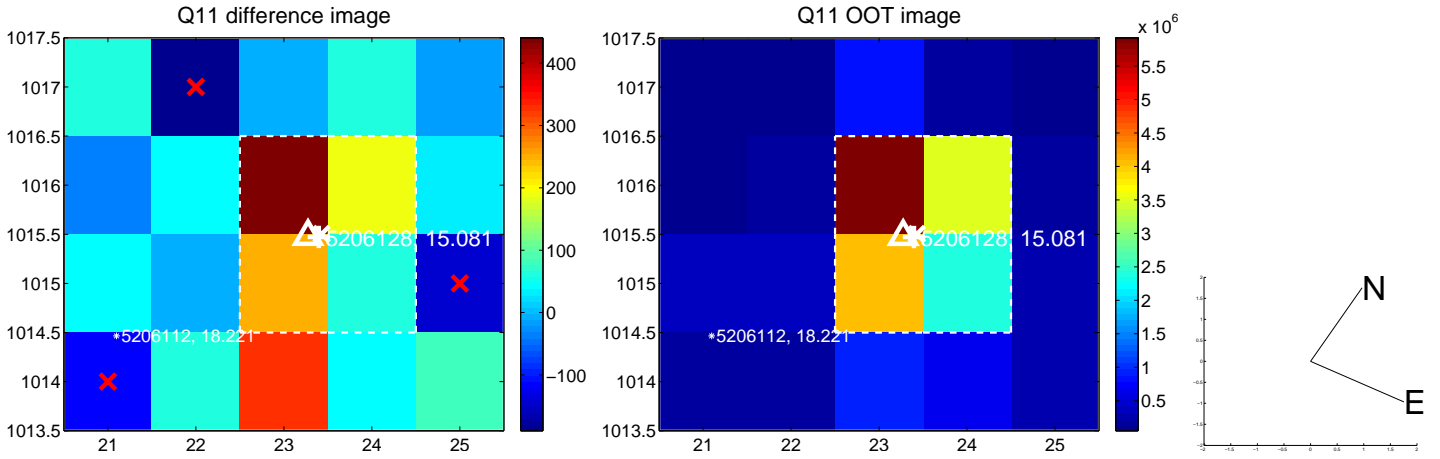
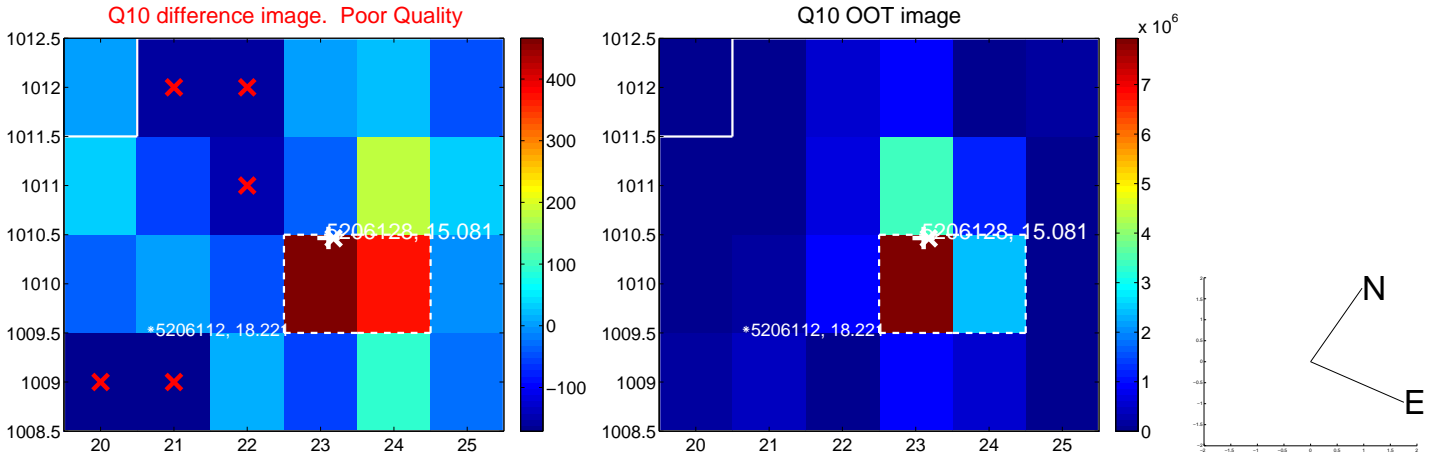
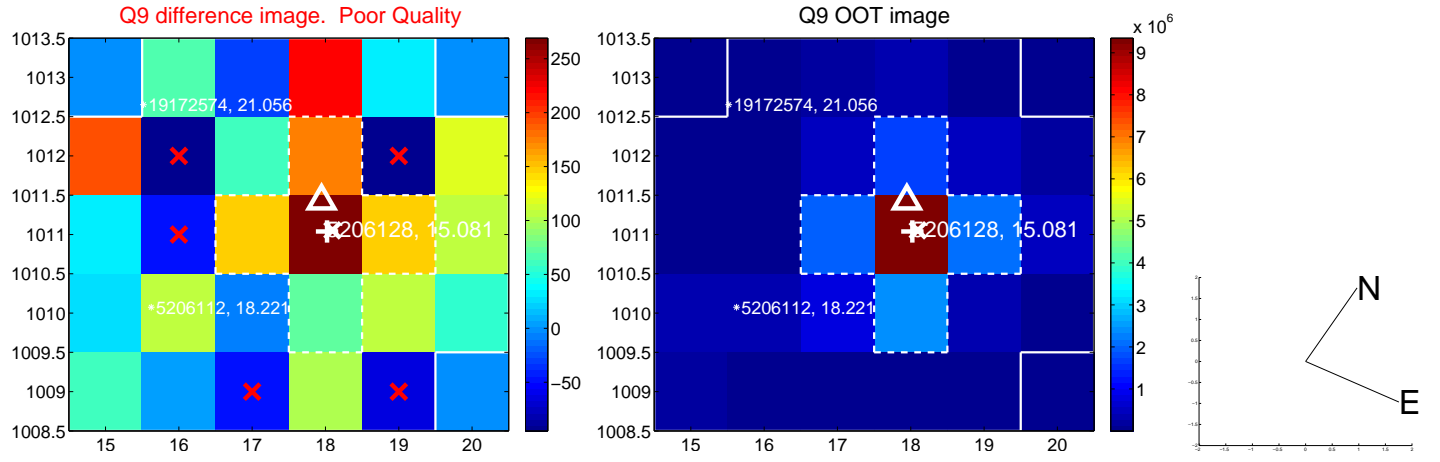
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



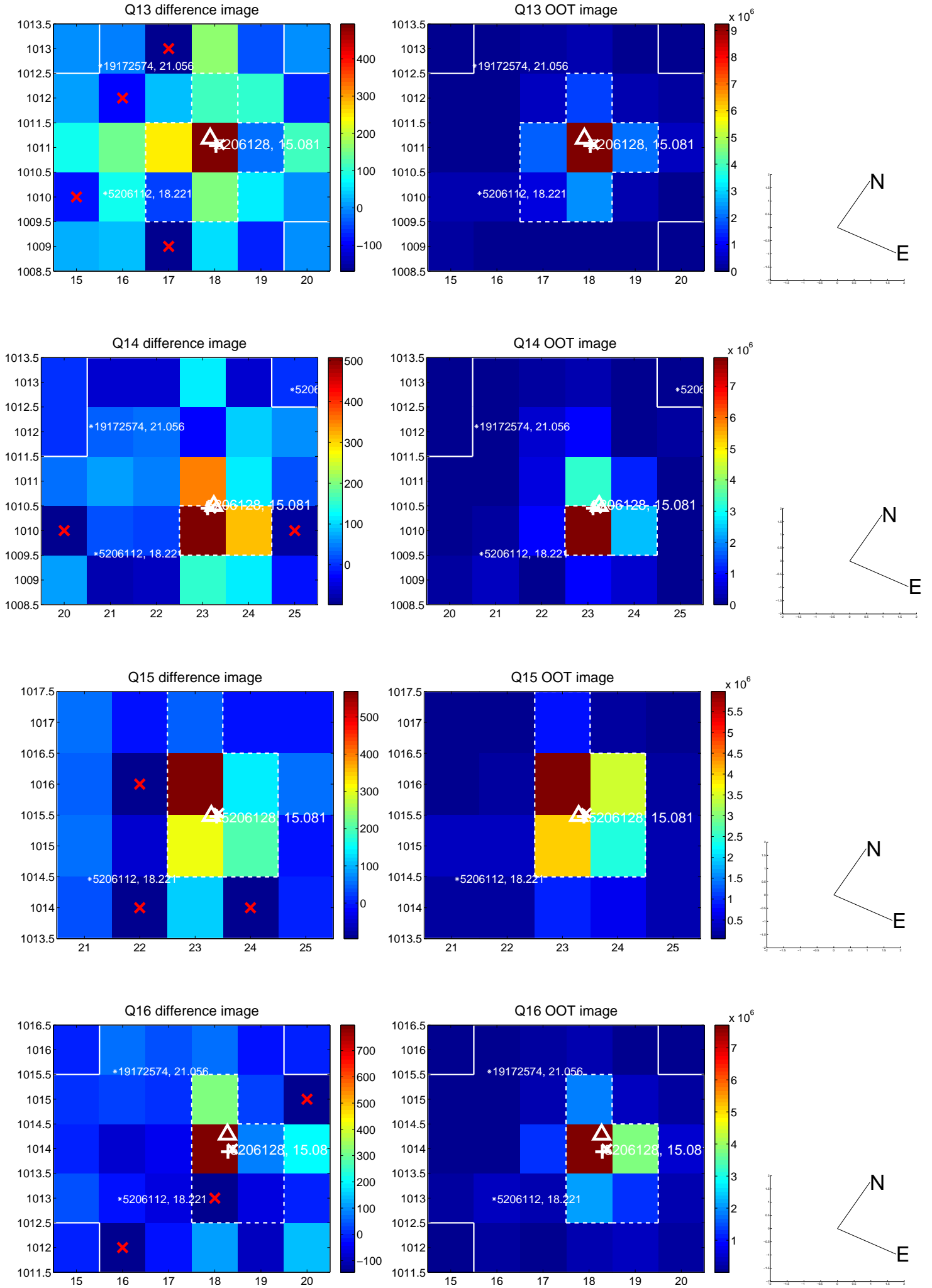
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



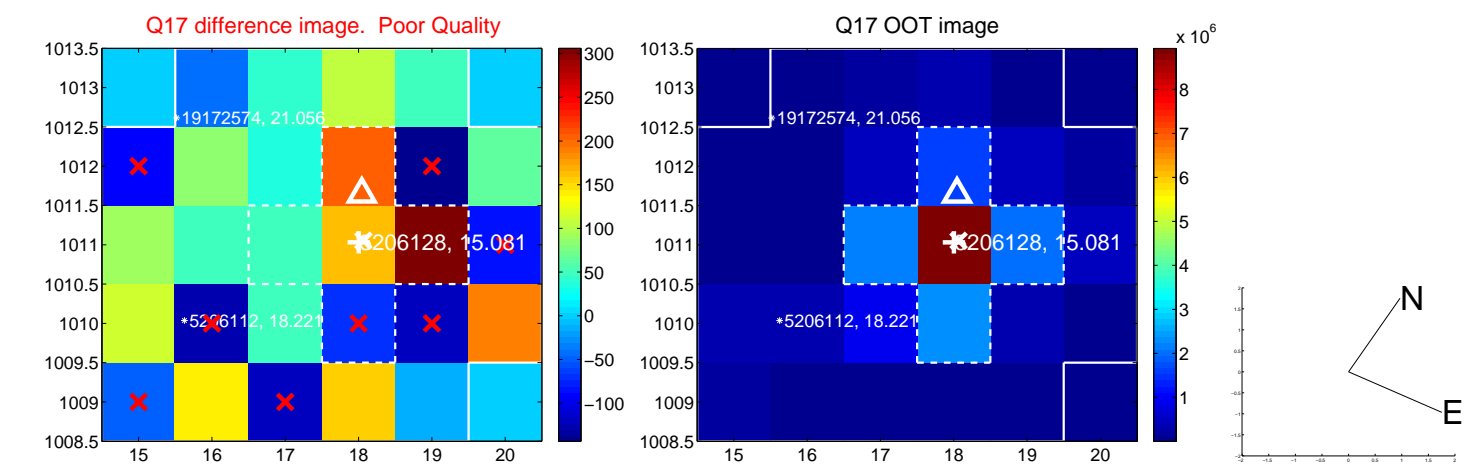
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



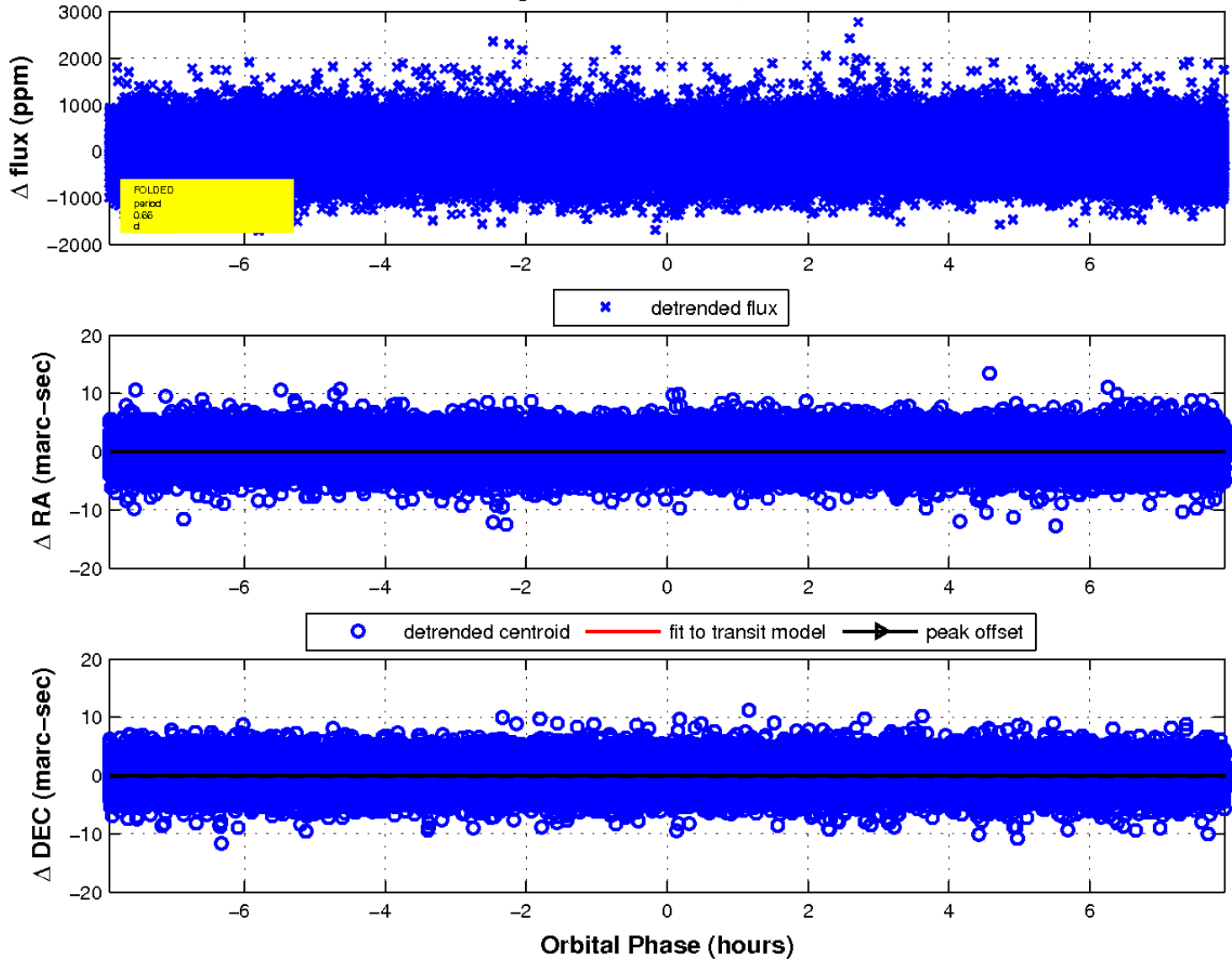
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

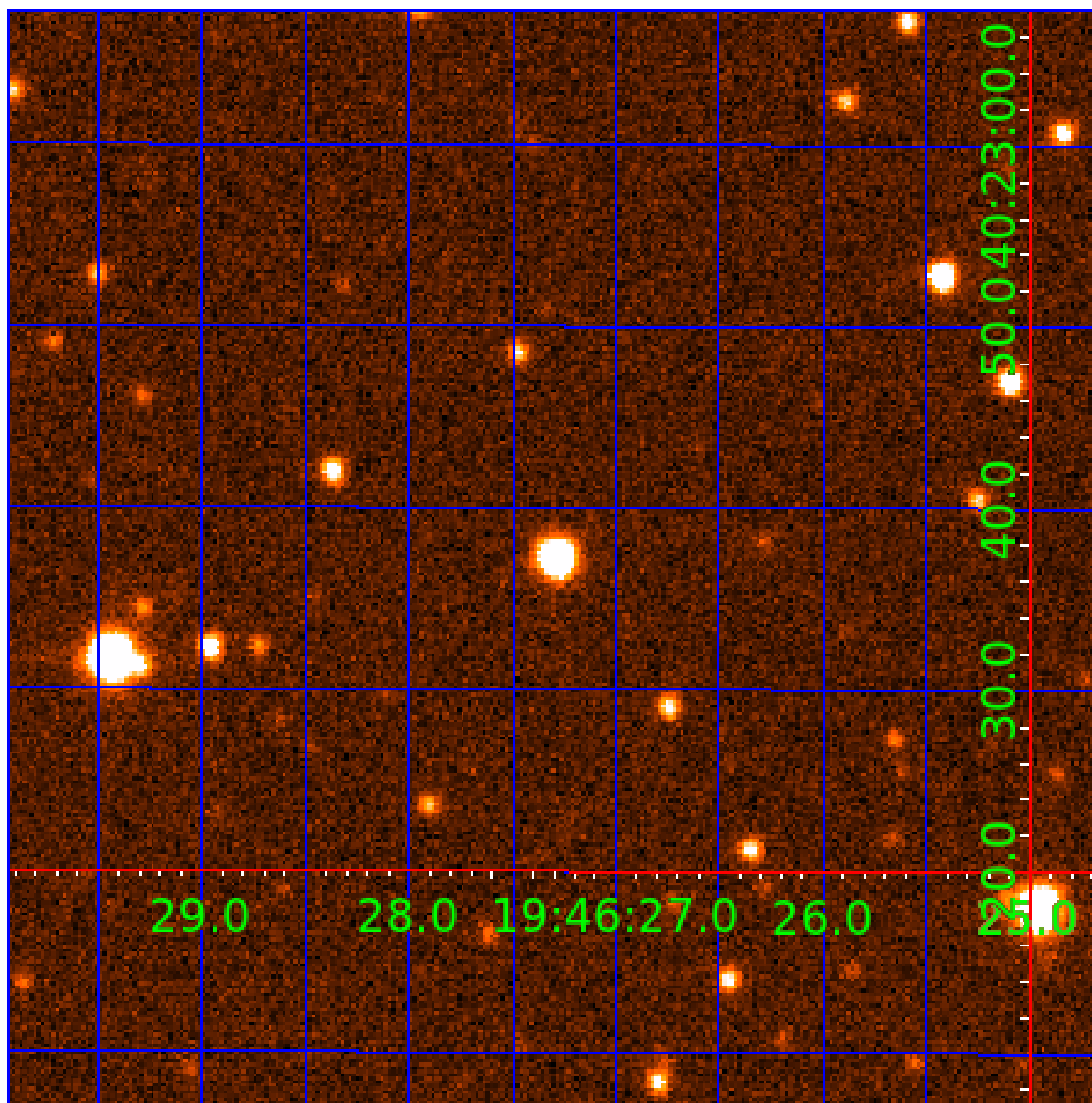


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005206128

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})
005206128-01	OBS	No	0.659798	131.912817	56.4	3.900	10.1	12.5	0.93	5616	0.84	3664.93
005206128-02	OBS	No	518.597771	263.552706	780.6	3.611	9.1	8.3	0.93	5616	2.76	0.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005206128-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
005206128-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

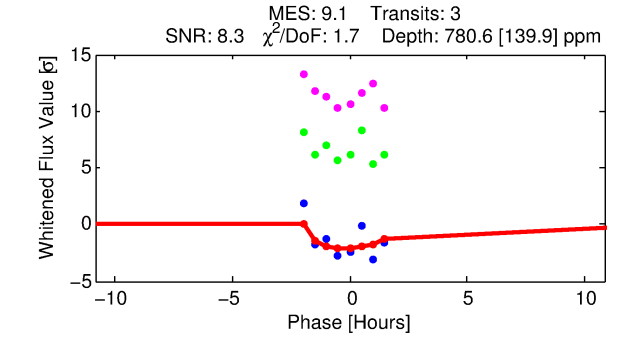
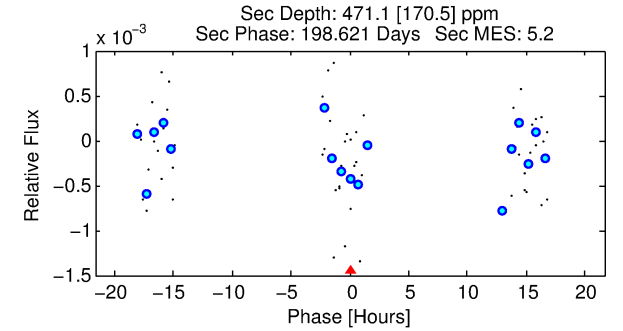
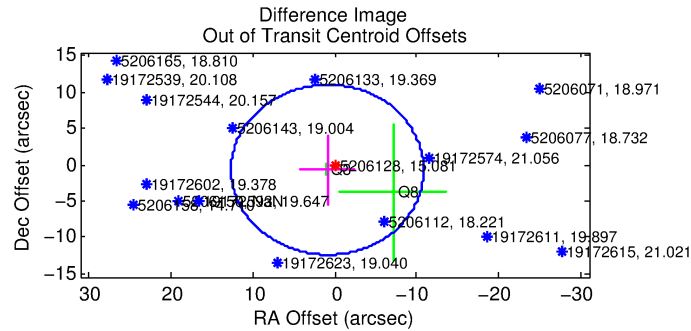
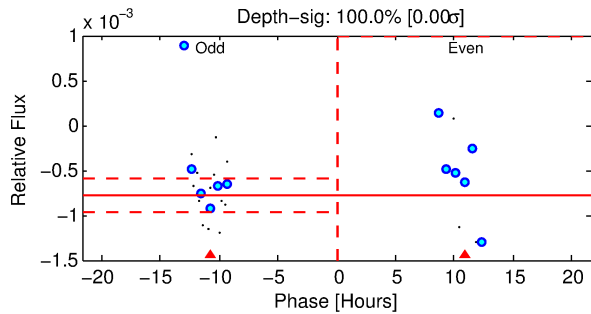
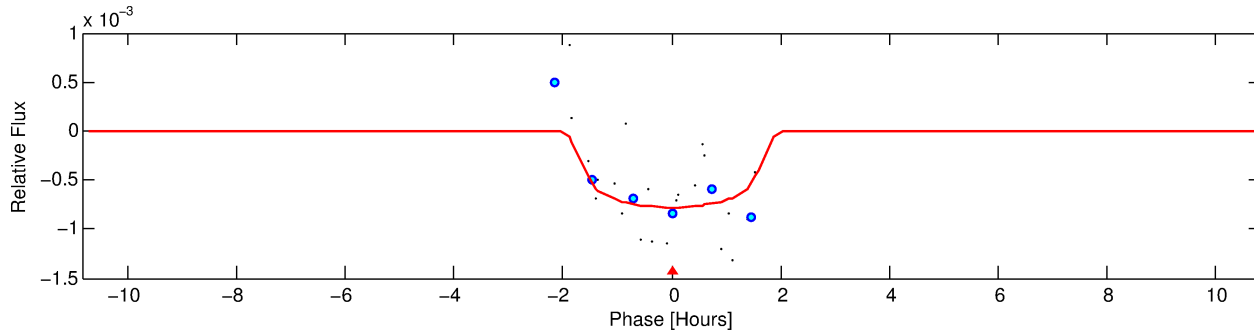
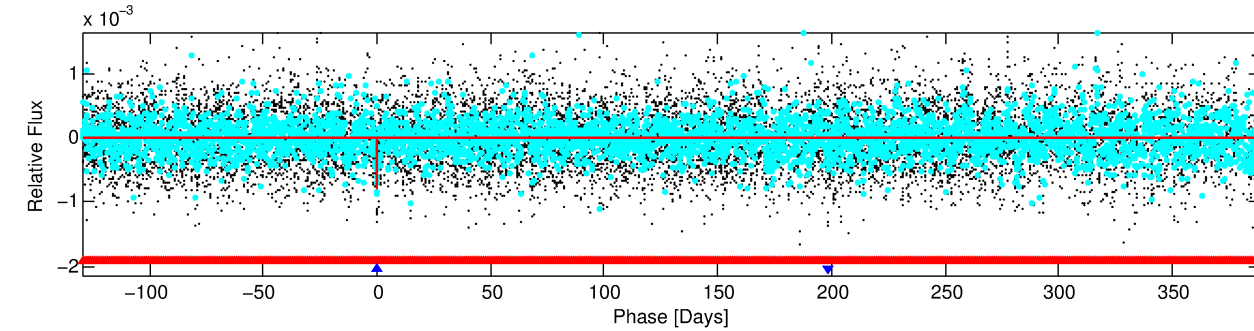
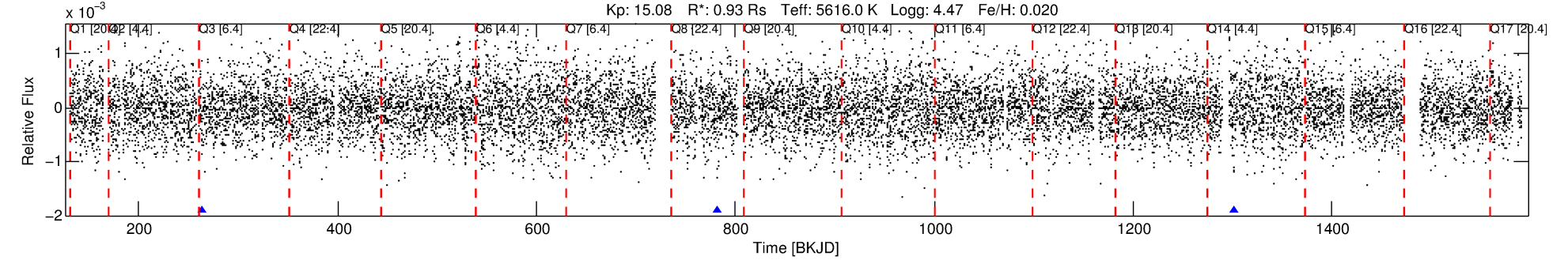
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005206128-02

No Significant Match Found

DV One-Page Summary

KIC: 5206128 Candidate: 2 of 2 Period: 518.598 d



DV Fit Results:

Period = 518.59777 [0.01508] d
Epoch = 263.5527 [0.0151] BKJD
Rp/R* = 0.0272 [0.1575]
a/R* = 837.67 [20054.27]
b = 0.69 [18.75]
Seff = 0.51 [0.17]
Teq = 215 [18] K
Rp = 2.76 [15.99] Re
a = 1.2338 [0.2709] AU
Ag = 51773.70 [599580.73] [0.09σ]
Teffp = 5014 [14511] K [0.33σ]

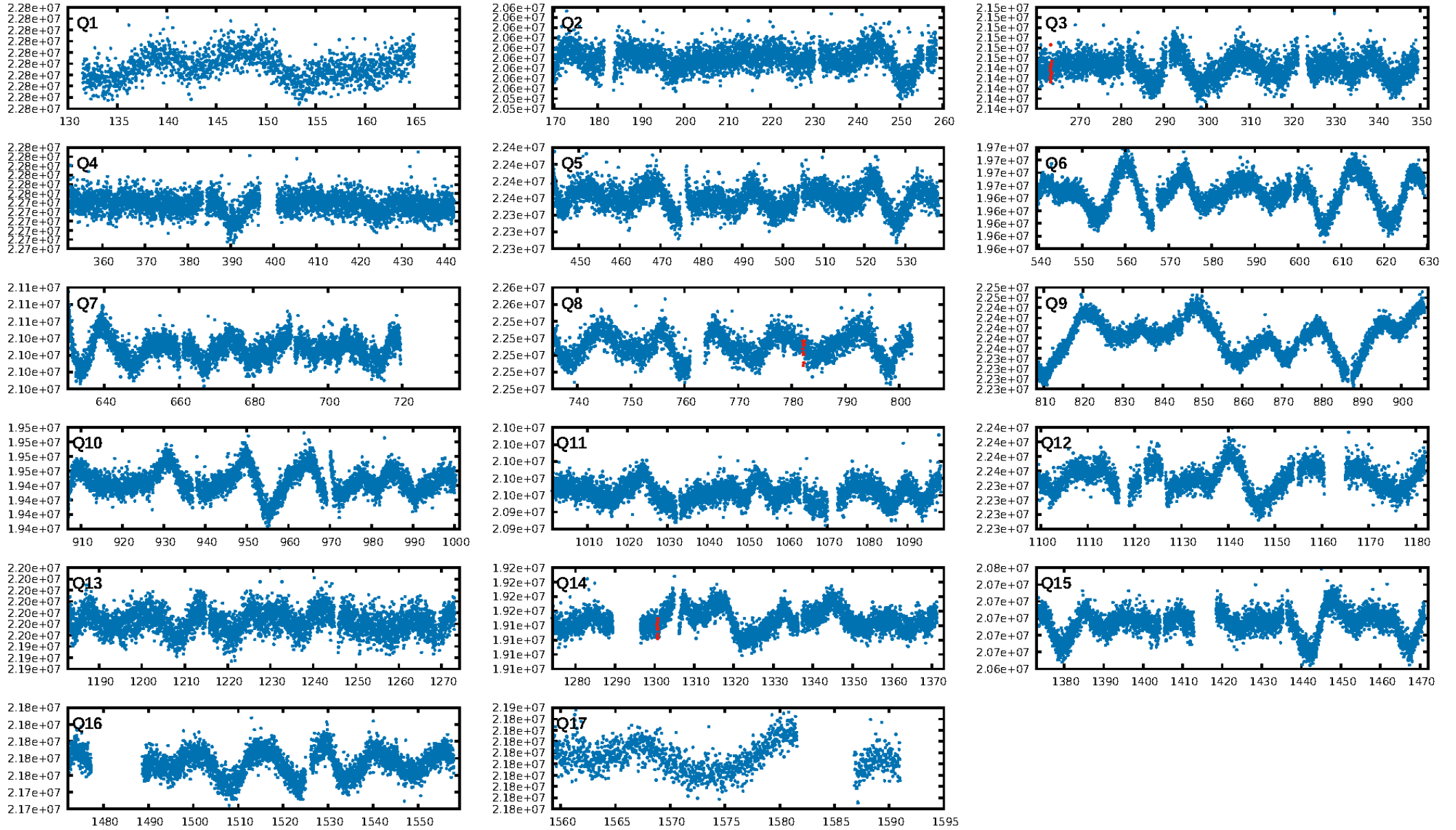
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [2338.70σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 44.8%
ModelChiSquareGof-sig: 46.4%
Bootstrap-pfa: 2.66e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -4.311
Centroid-sig: 9.4%
Centroid-so: 2.466 arcsec [1.64σ]
OotOffset-rm: 1.157 arcsec [0.30σ]
KicOffset-rm: 1.279 arcsec [0.30σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/3]

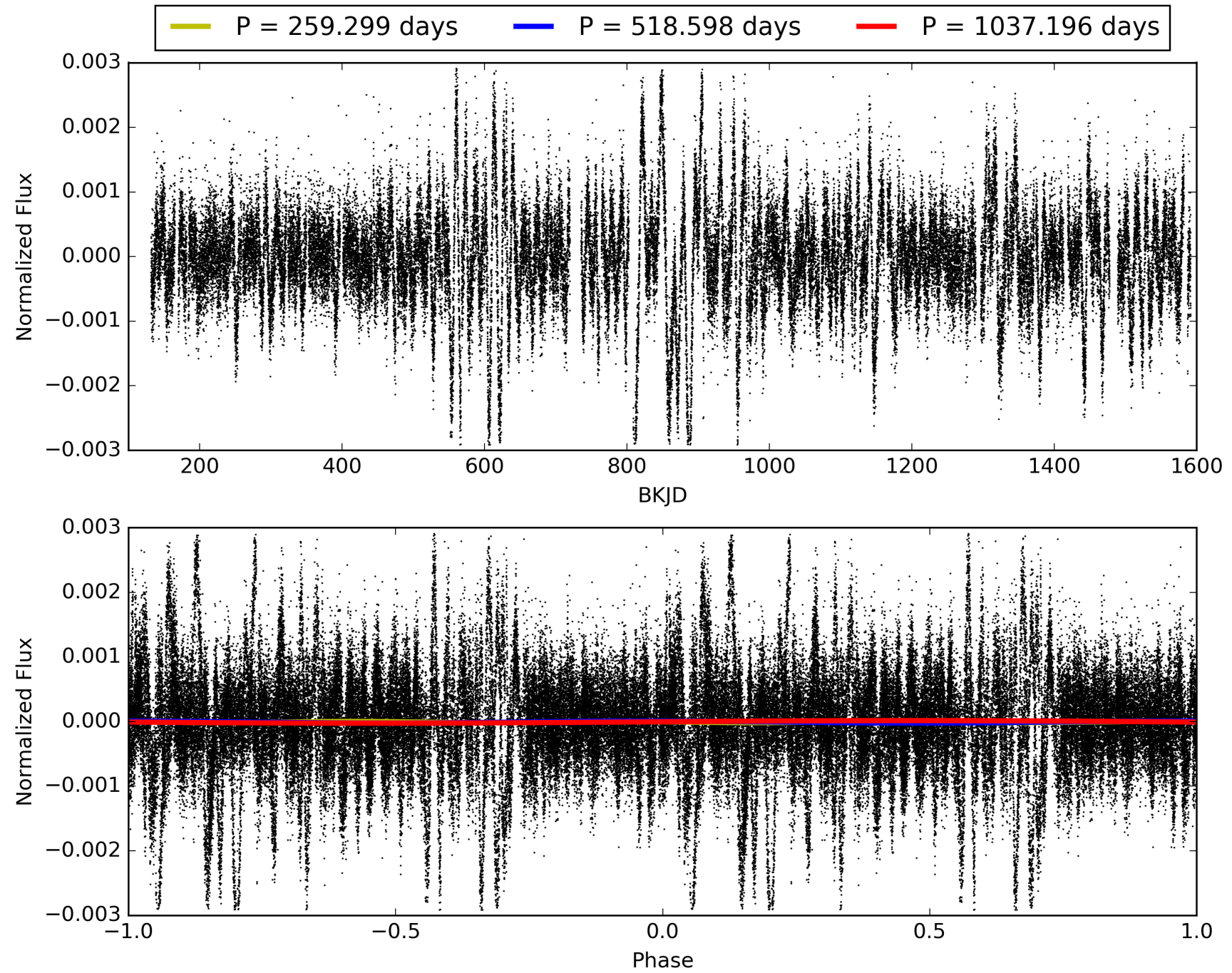
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 12:35:59 Z

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

TCE 005206128-02, PDC Light Curves

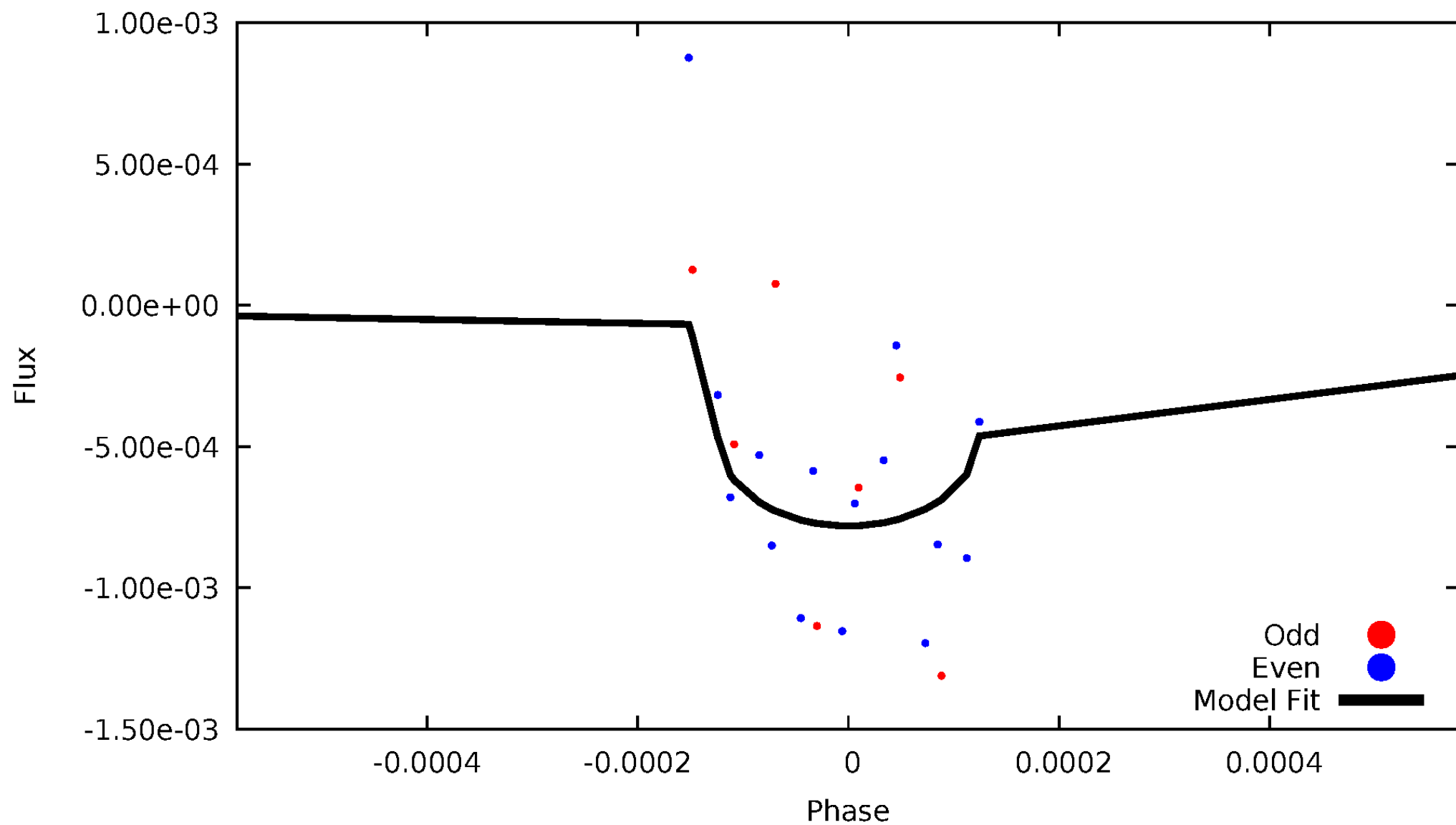


TCE 005206128-02



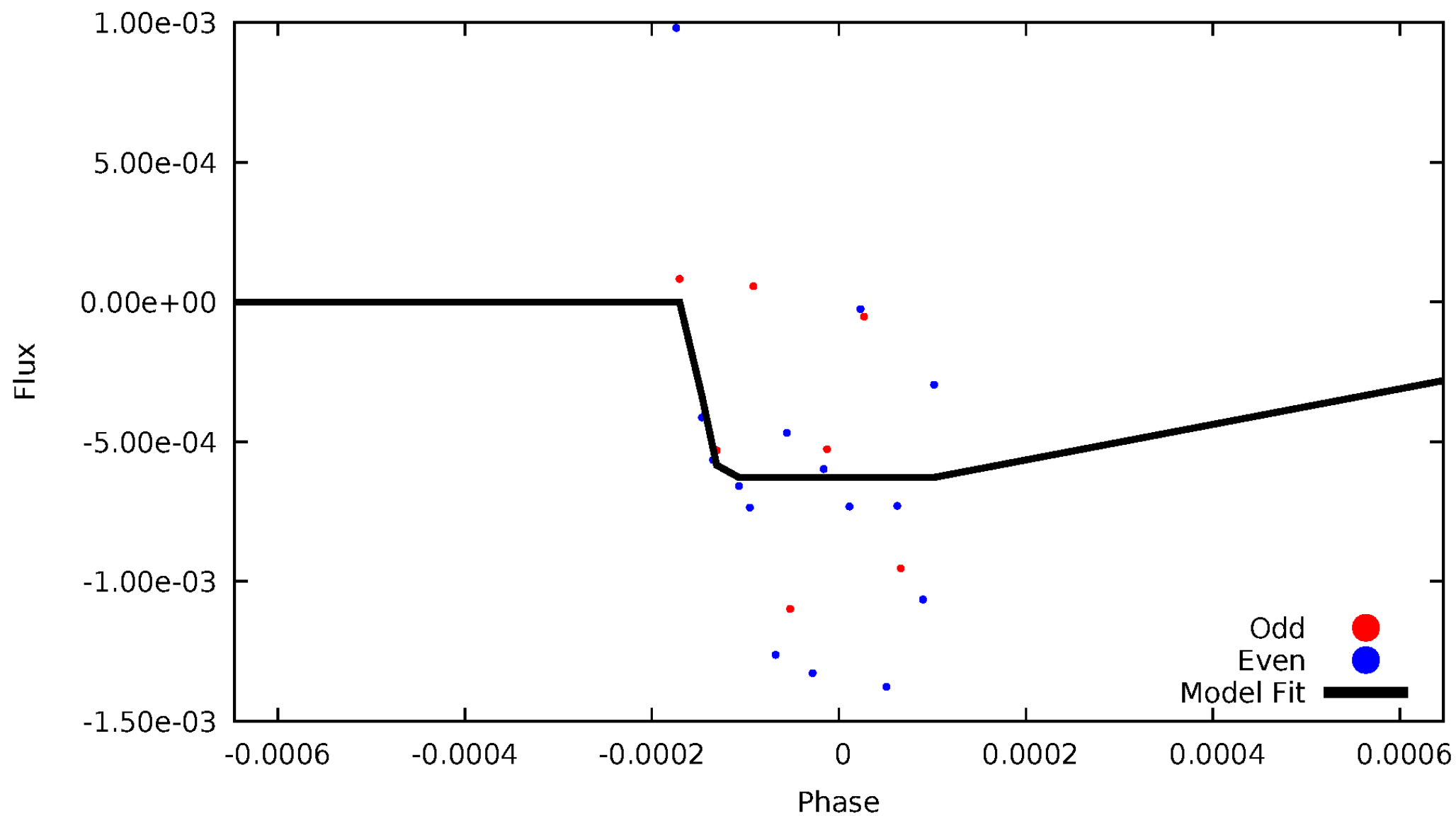
DV Odd/Even

TCE 005206128-02



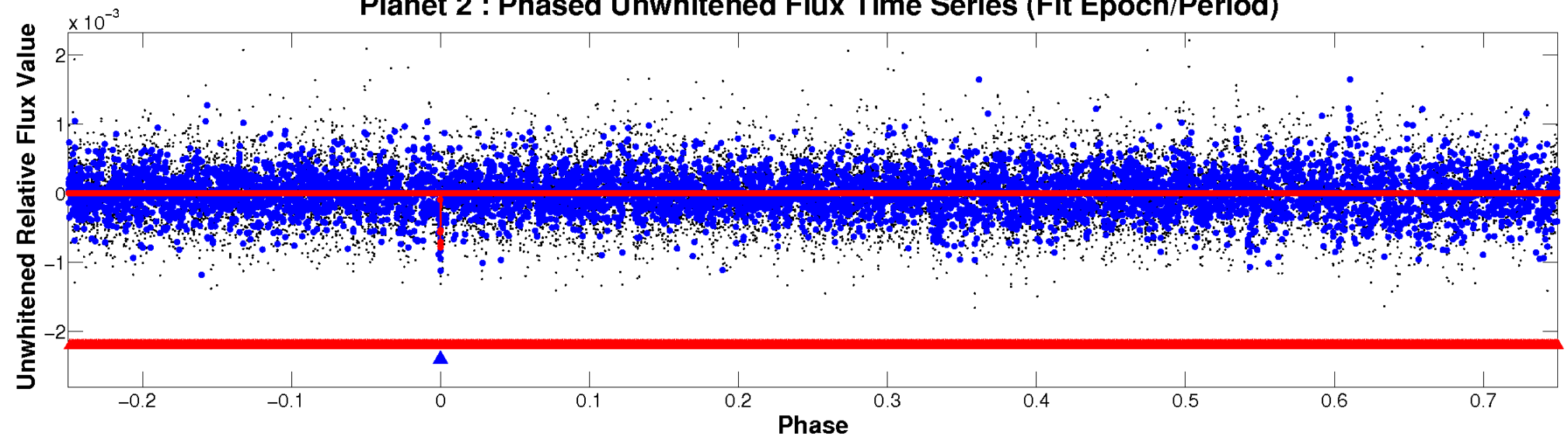
ALT Odd/Even

TCE 005206128-02

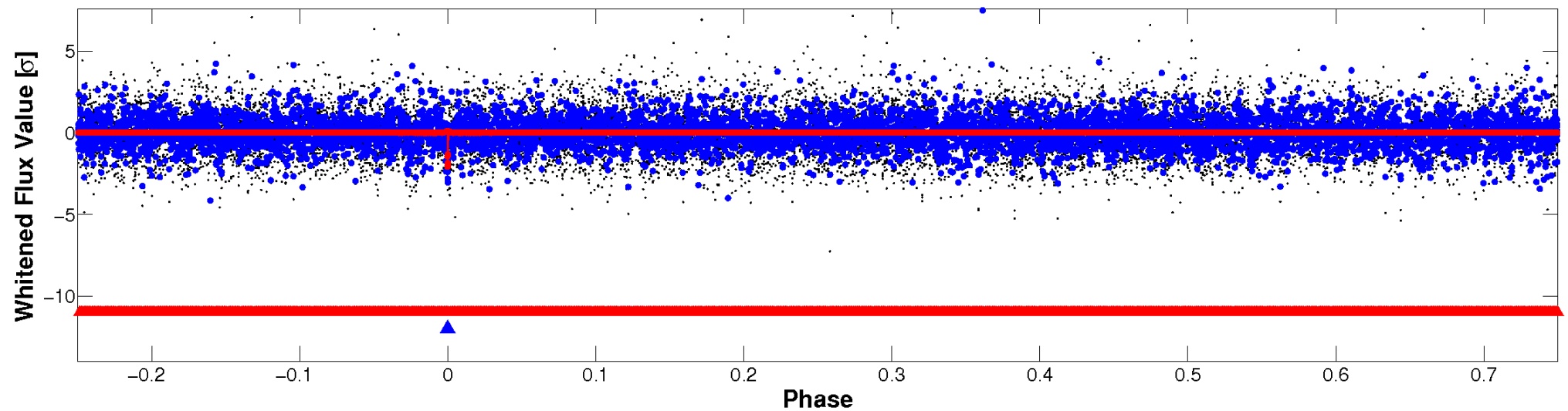


Non-Whitened Vs. Whitened Light Curve

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

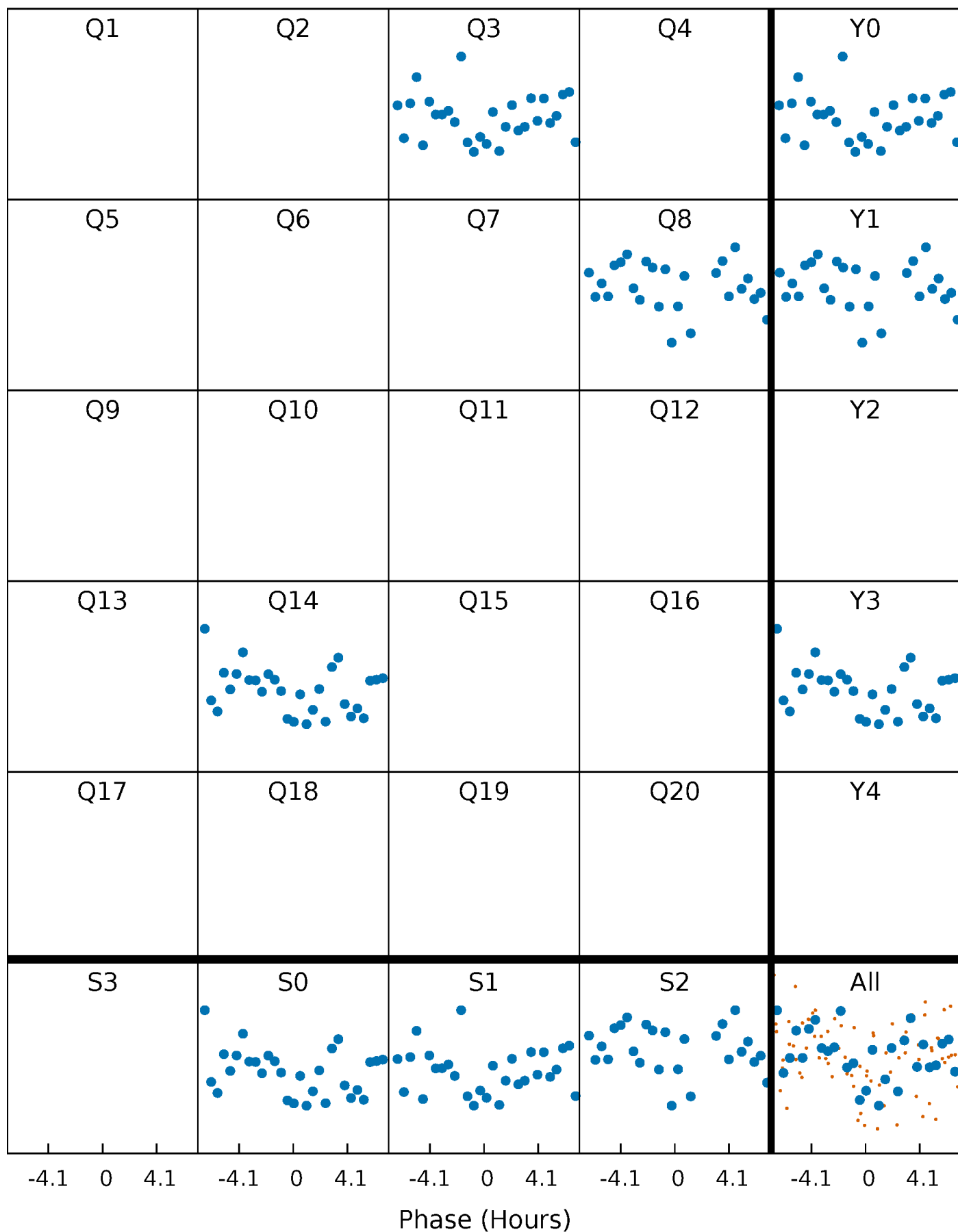


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



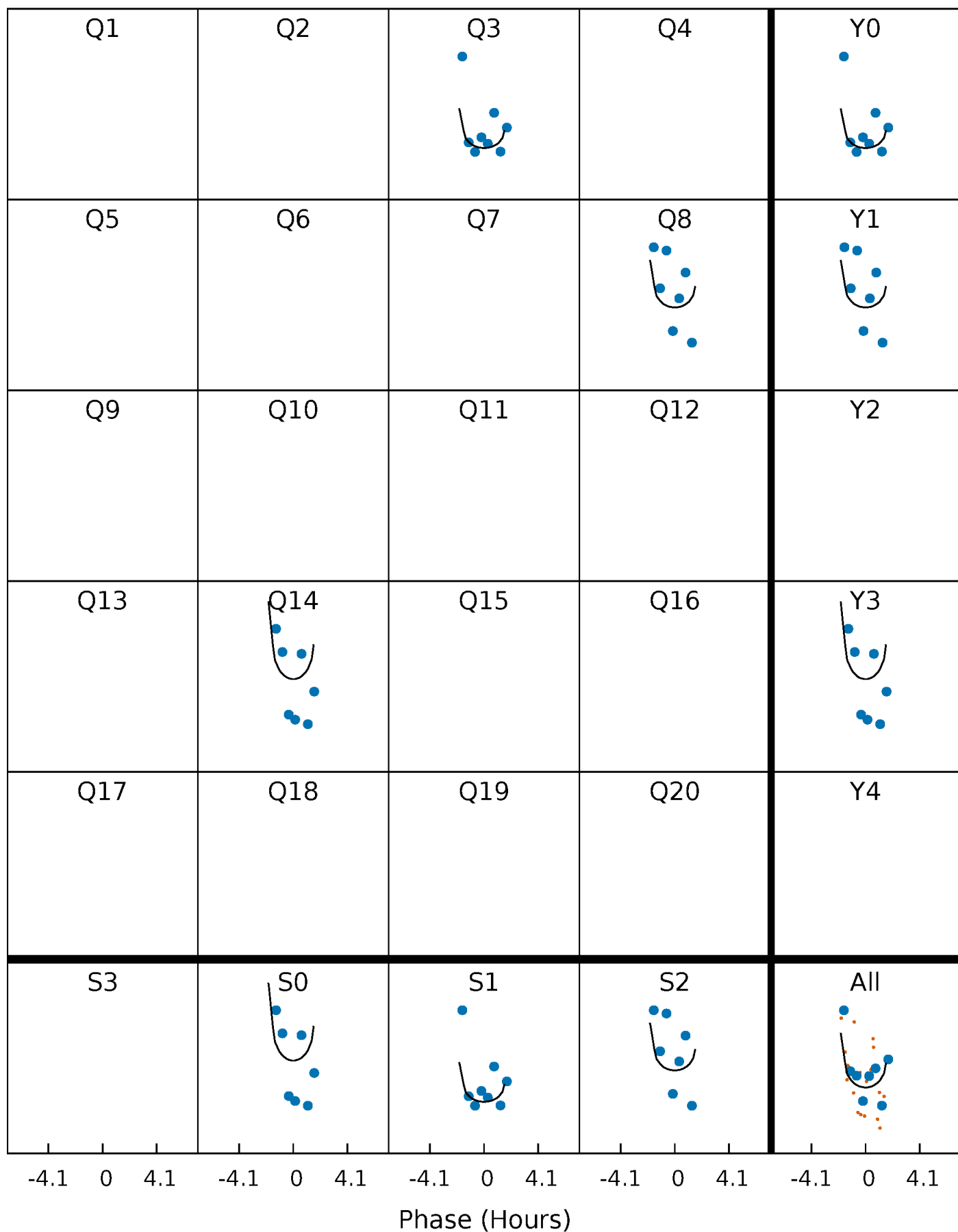
PDC Quarter-Phased Transit Curves

TCE 005206128-02 P=518.597771 Days $T_0=263.552706$ (BKJD)



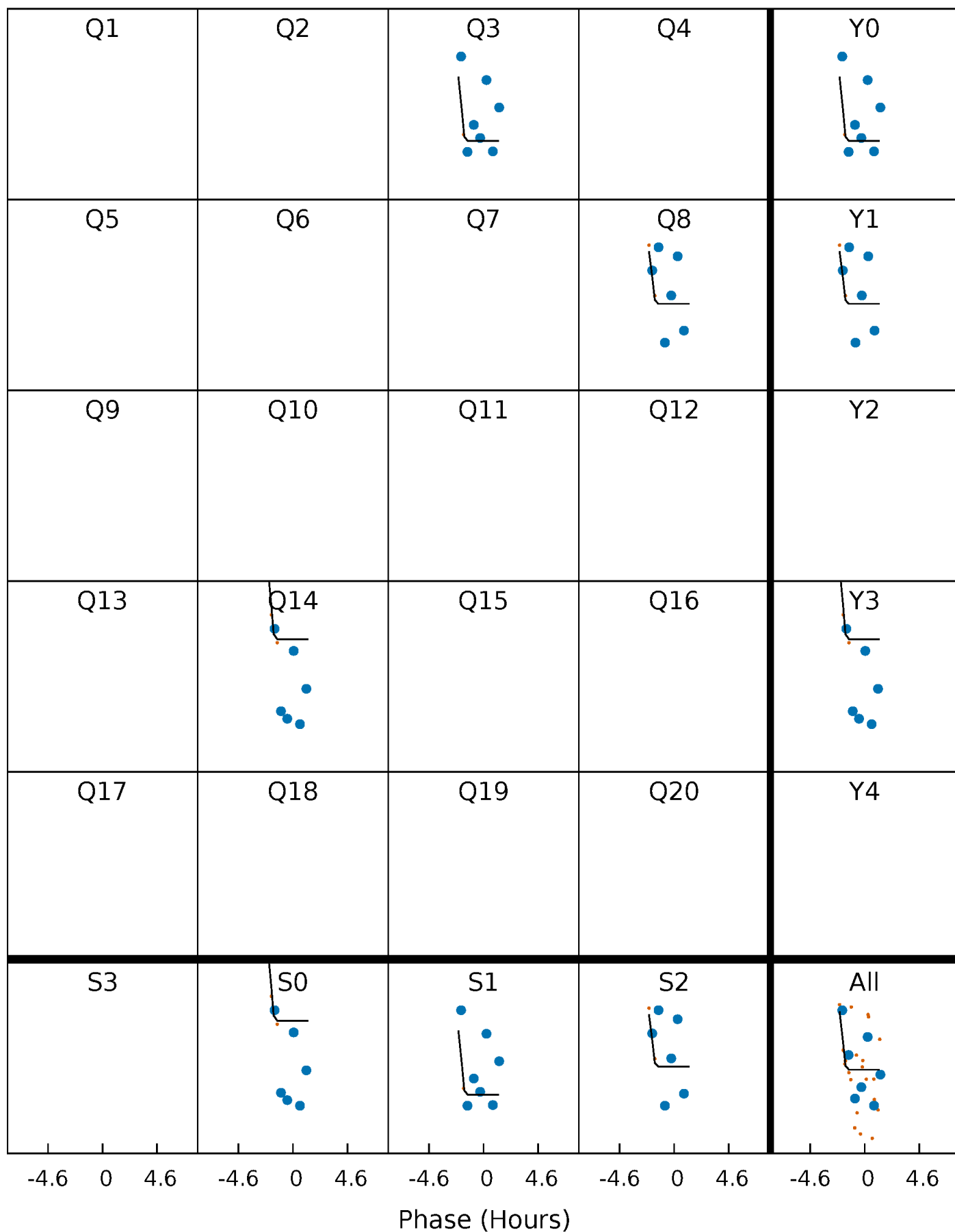
DV Quarter-Phased Transit Curves

TCE 005206128-02 P=518.597771 Days $T_0=263.552706$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

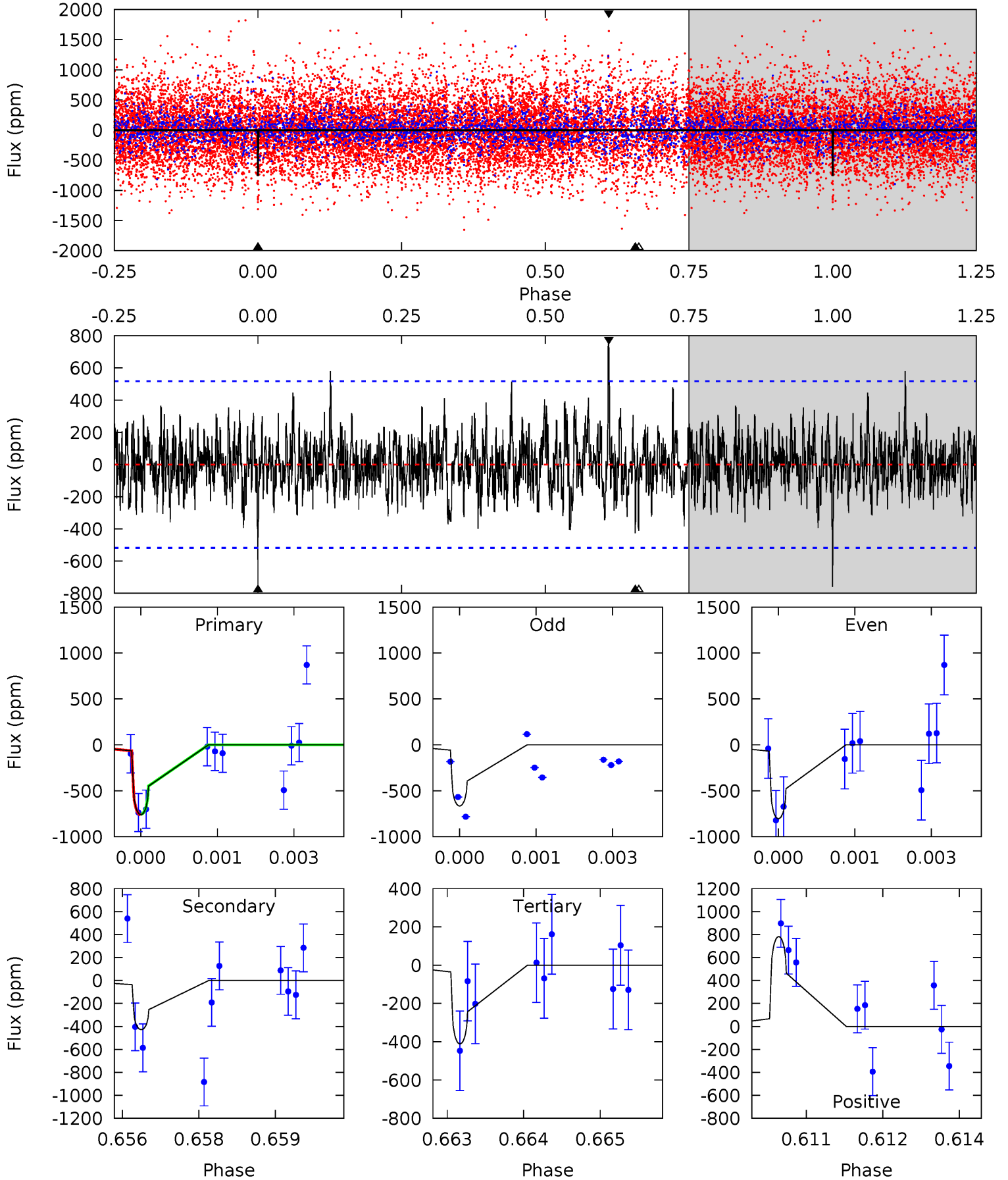
TCE 005206128-02 P=518.597730 Days $T_0=263.564334$ (BKJD)



DV Model-Shift Uniqueness Test

005206128-02, P = 518.597771 Days, E = 263.552706 Days

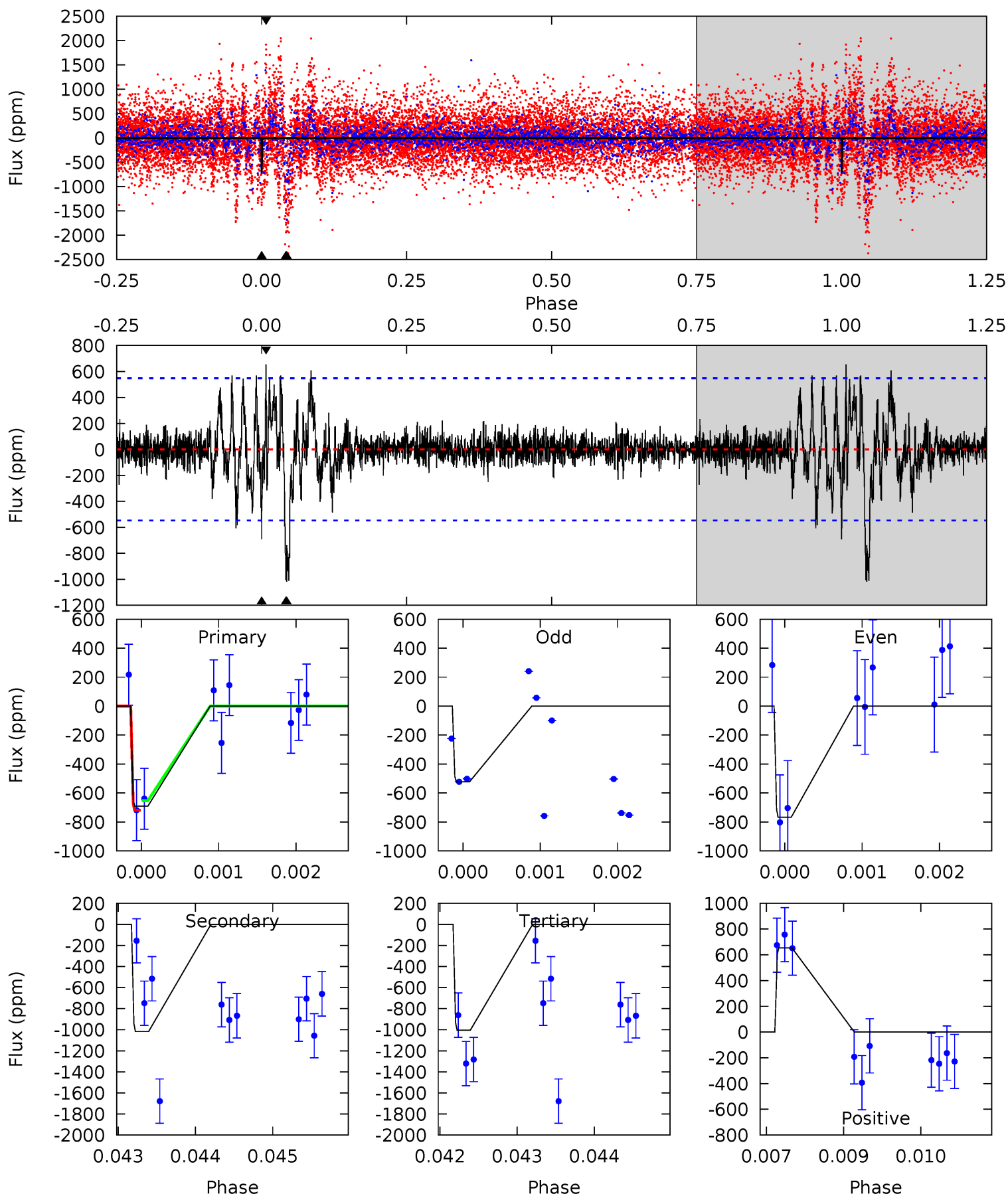
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.95	4.47	4.30	8.18	5.41	3.23	1.48	3.65	-0.23	0.17	-3.71	0.65	1.14	0.51	0.04



Alt Model-Shift Uniqueness Test

005206128-02, P = 518.597730 Days, E = 263.564334 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.84	10.1	9.95	6.46	5.42	3.23	1.38	-3.11	0.38	0.11	3.60	1.16	1.32	0.39	0.33



Stellar Parameters For KIC 005206128

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5616^{+169}_{-169}	$4.471^{+0.075}_{-0.175}$	$0.020^{+0.250}_{-0.300}$	$0.929^{+0.242}_{-0.104}$	$0.932^{+0.104}_{-0.094}$	$1.636^{+0.524}_{-0.774}$
	+3%/-3%	+2%/-4%	+1250%/-1500%	+26%/-11%	+11%/-10%	+32%/-47%
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 005206128-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-428 ± 96	$12.23^{+12.37}_{-8.14}$	304^{+20}_{-15}	2992^{+1253}_{-489}	2256^{+17727}_{-1681}
Alt.	-1017 ± 101	$12.46^{+12.54}_{-8.81}$	304^{+21}_{-14}	3398^{+2088}_{-594}	5317^{+55733}_{-3954}

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

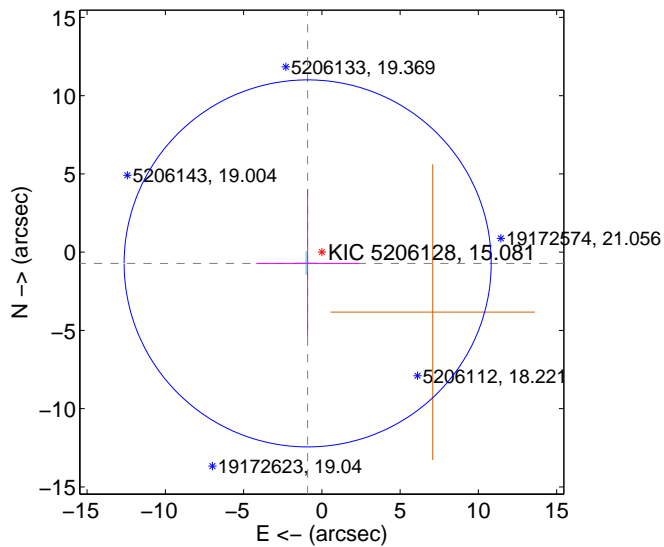
Supplemental centroid analysis for 005206128-02. Kepler magnitude: 15.08. Transit SNR 8.31

There are 1 quarters with good PRF difference image offsets

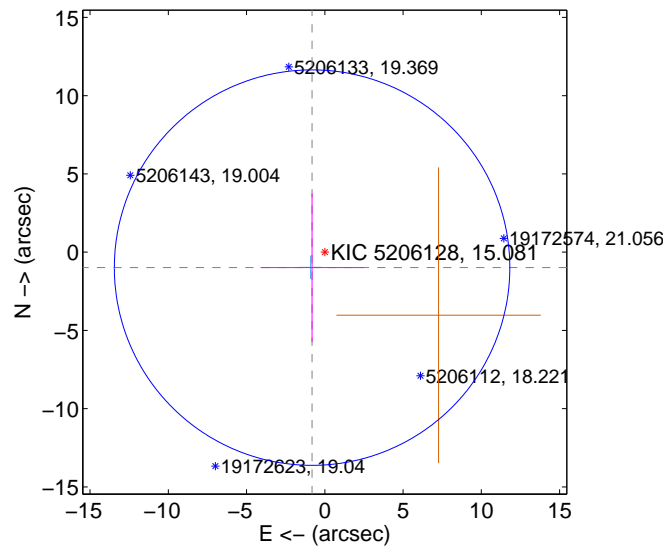
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.157 ± 3.908	0.30	0.907 ± 3.284	-0.717 ± 4.739
PRF-fit source offset from KIC position	1.279 ± 4.211	0.30	0.814 ± 3.284	-0.986 ± 4.739
photometric centroid source offset	2.47 ± 1.50	1.64	-1.30 ± 1.60	-2.09 ± 1.46

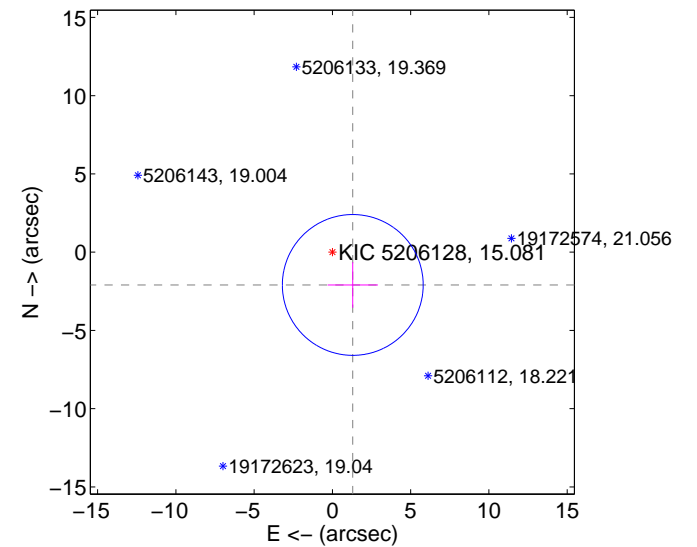
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



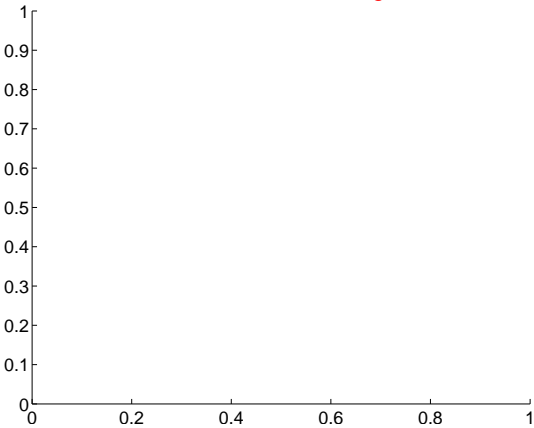
offset from photometric centroids



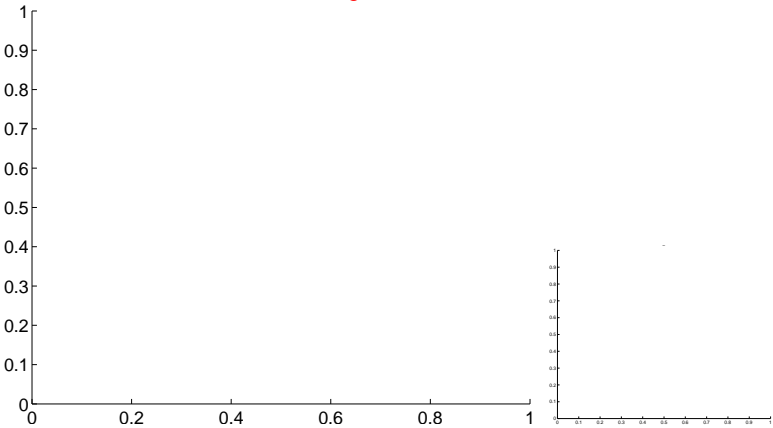
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

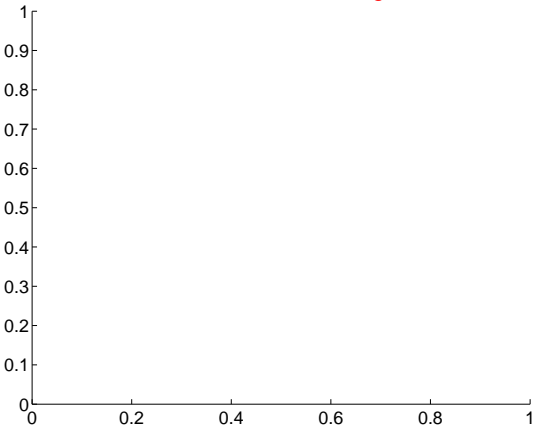
Q1 no difference image



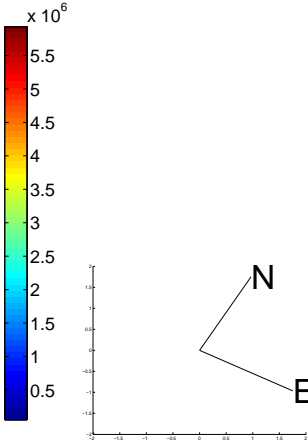
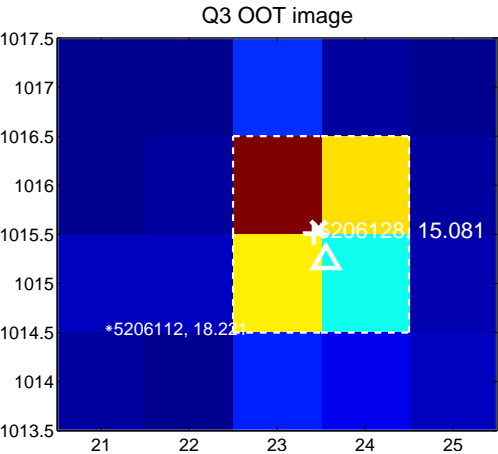
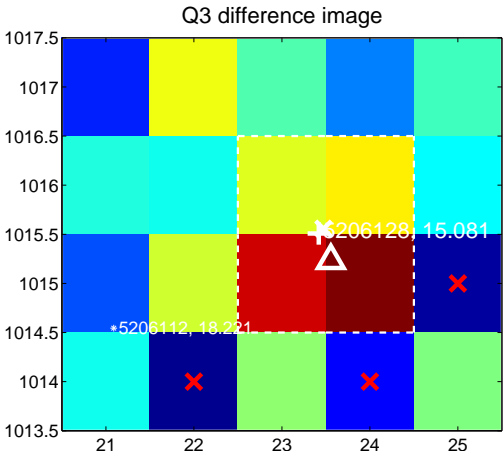
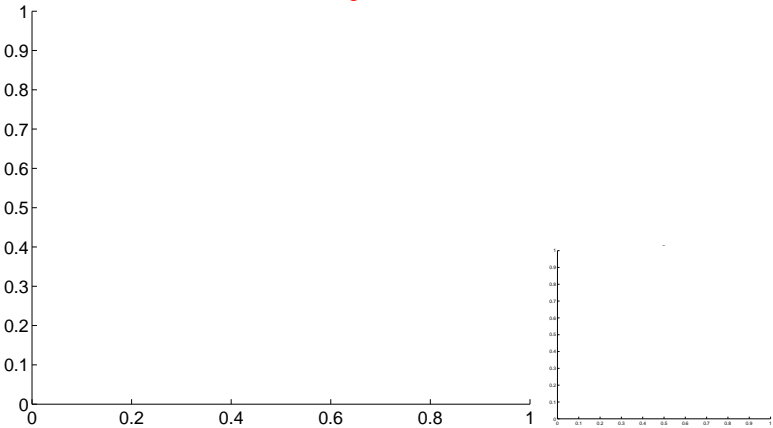
Q1 no OOT image



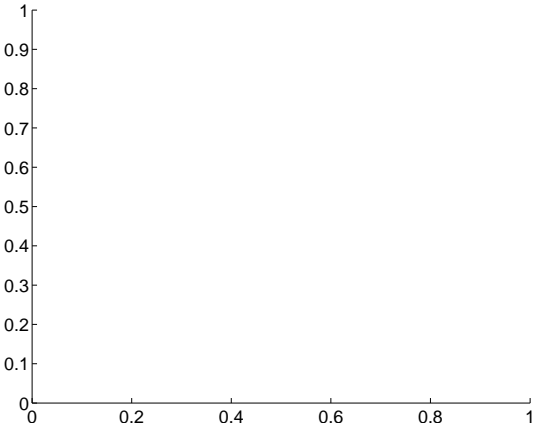
Q2 no difference image



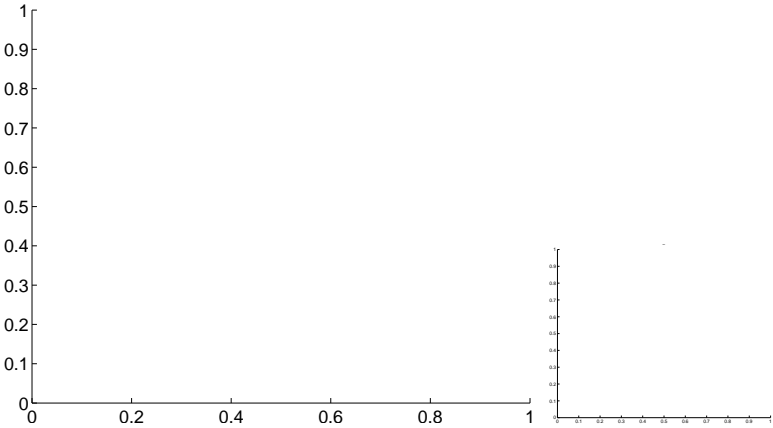
Q2 no OOT image



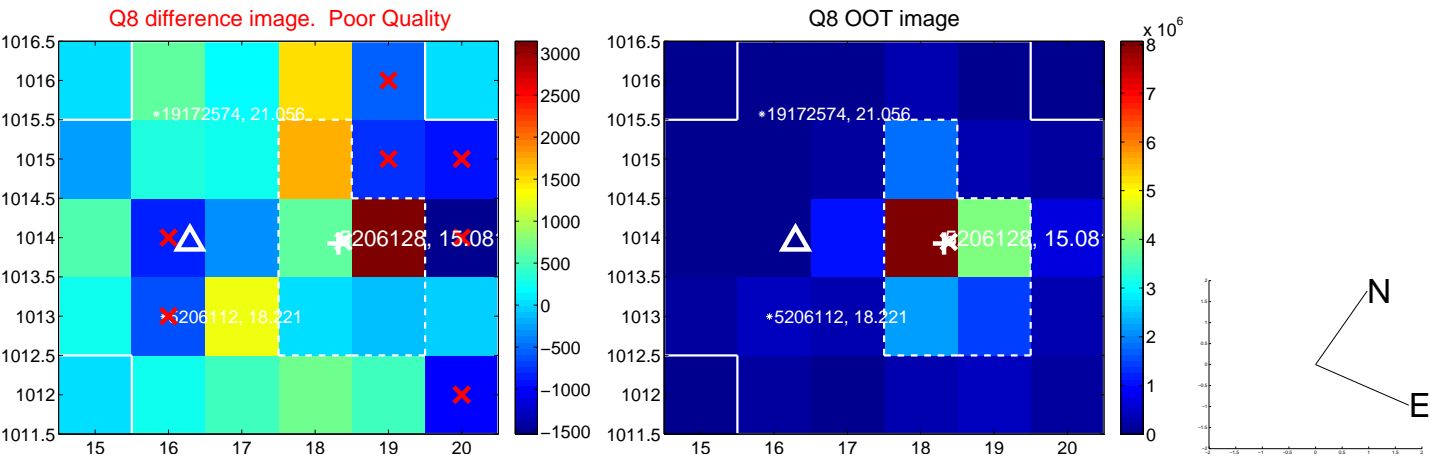
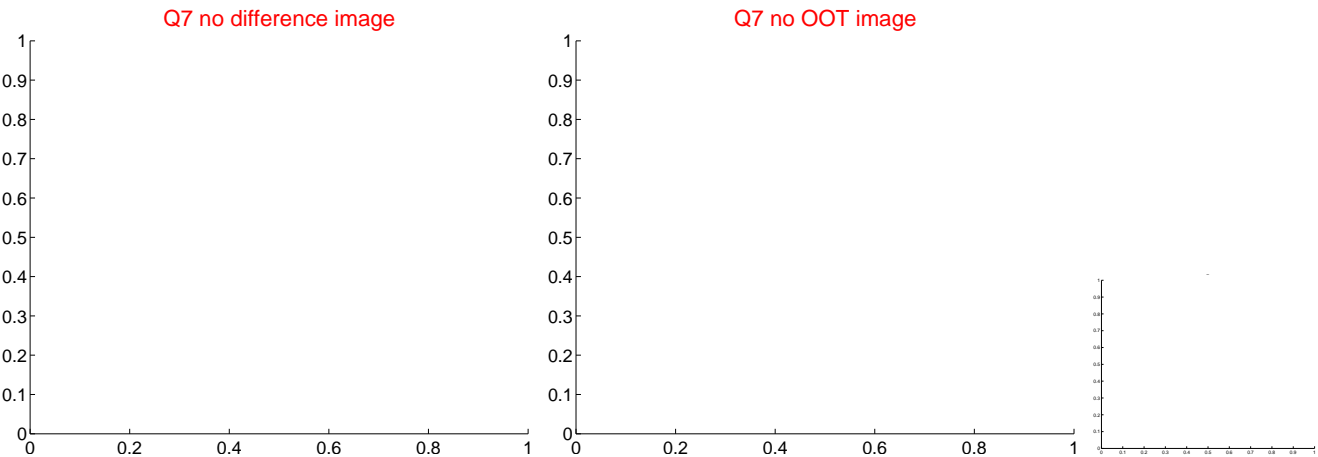
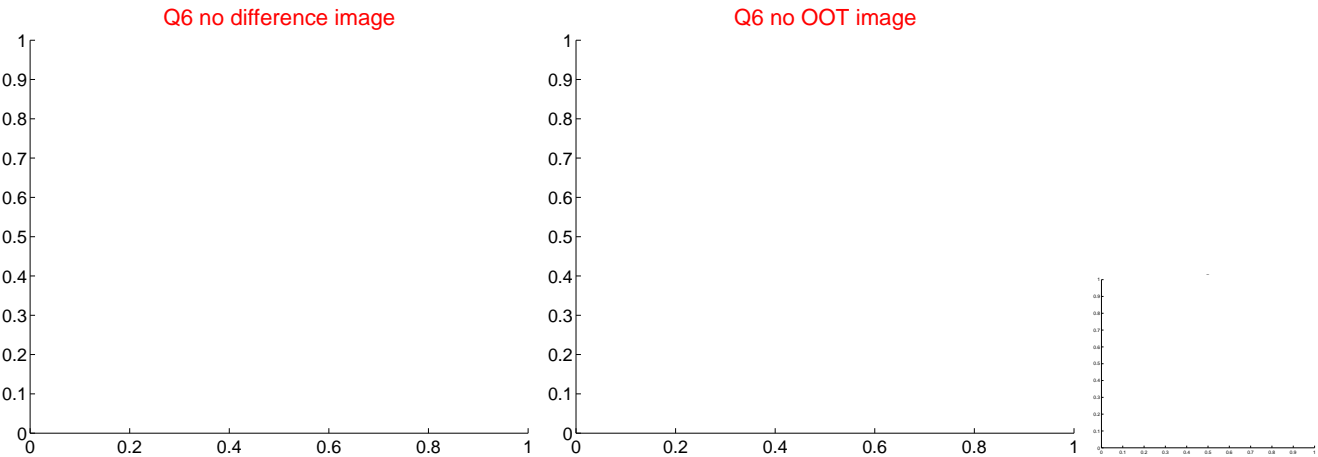
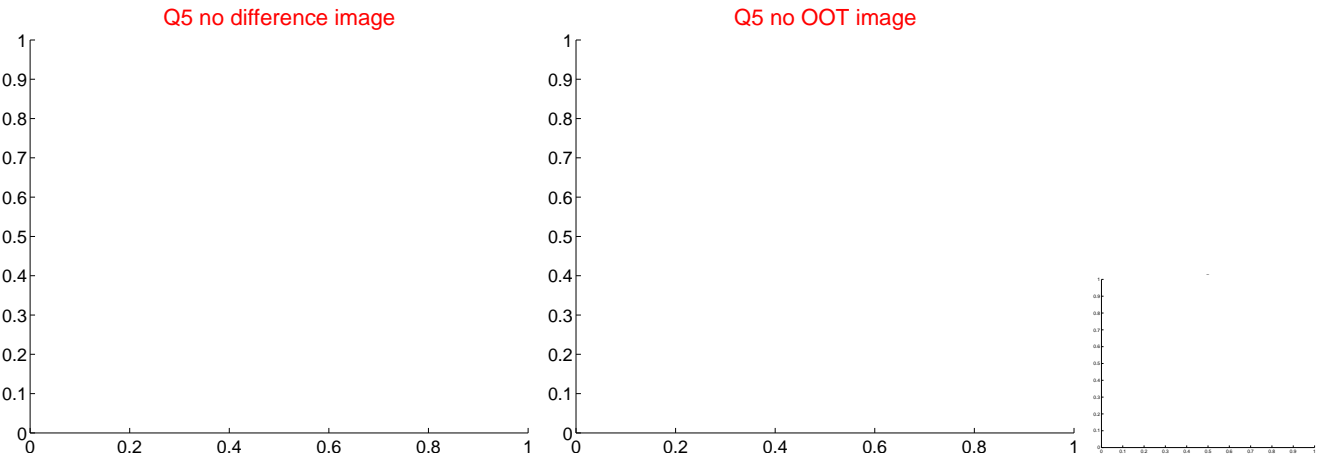
Q4 no difference image



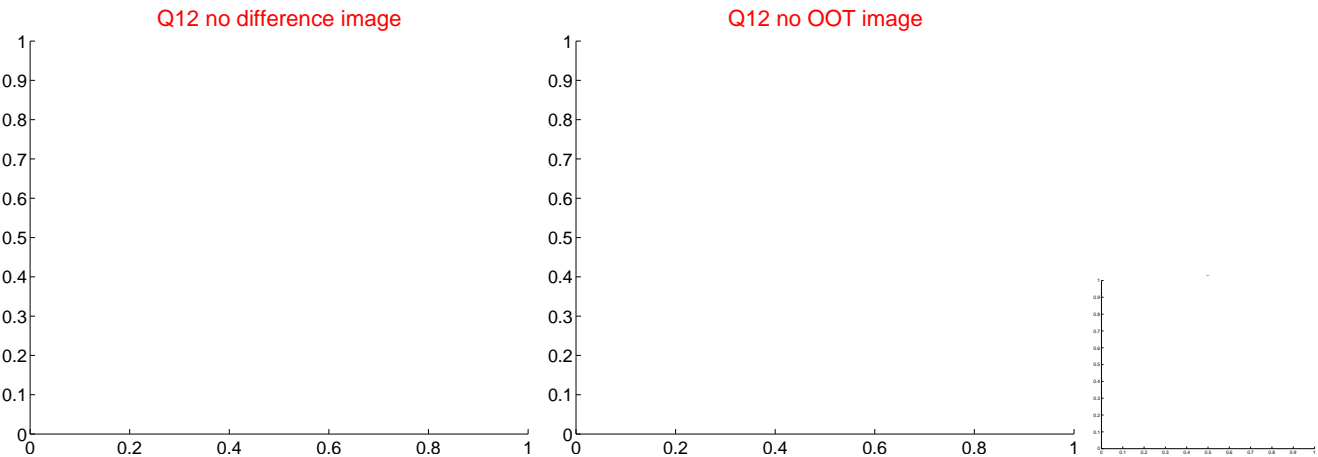
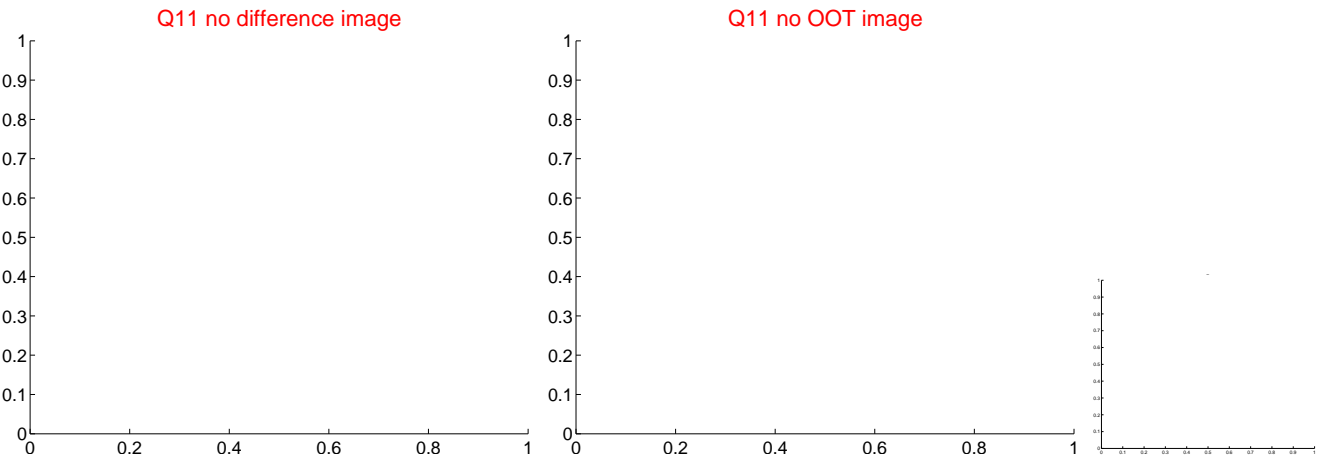
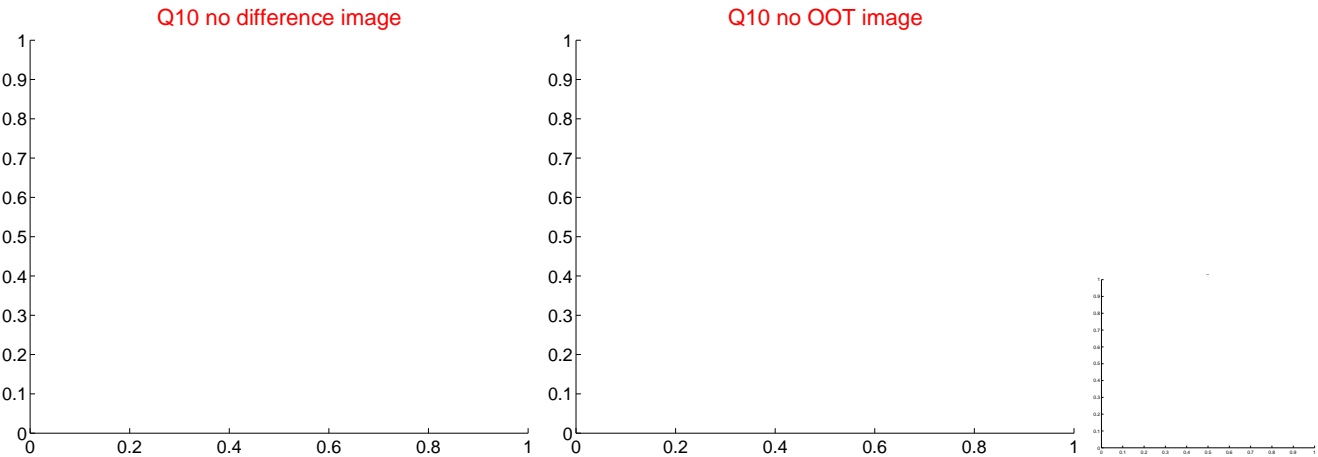
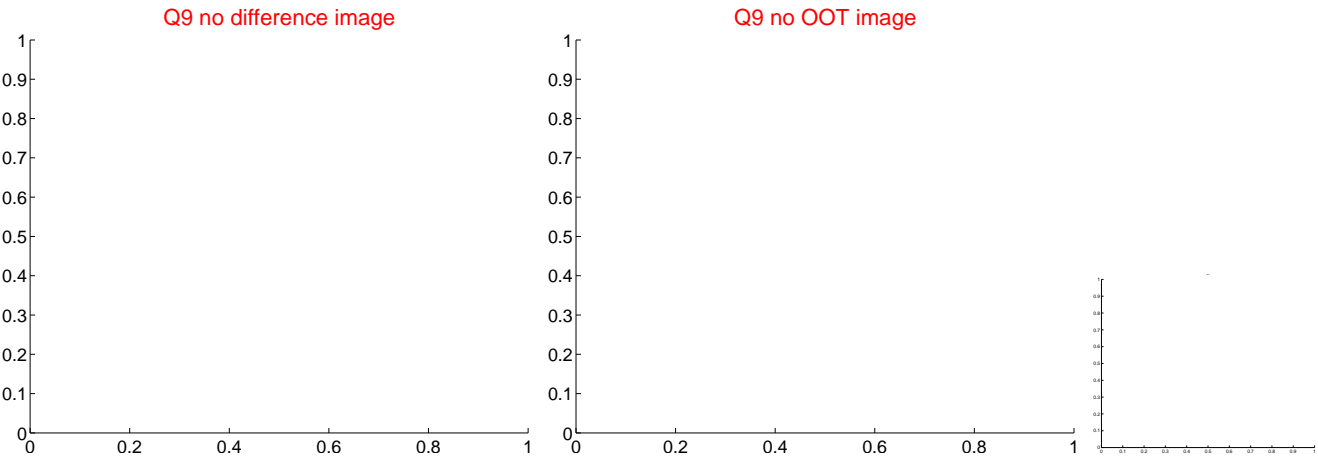
Q4 no OOT image



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

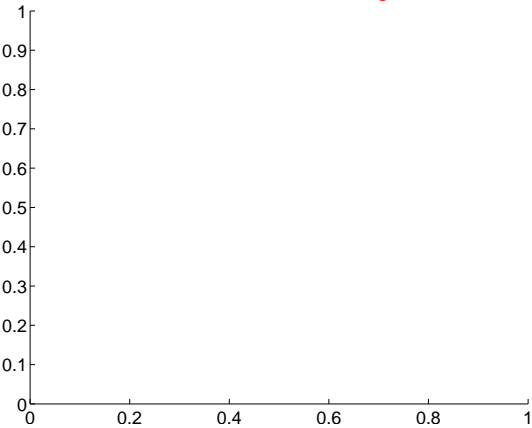


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

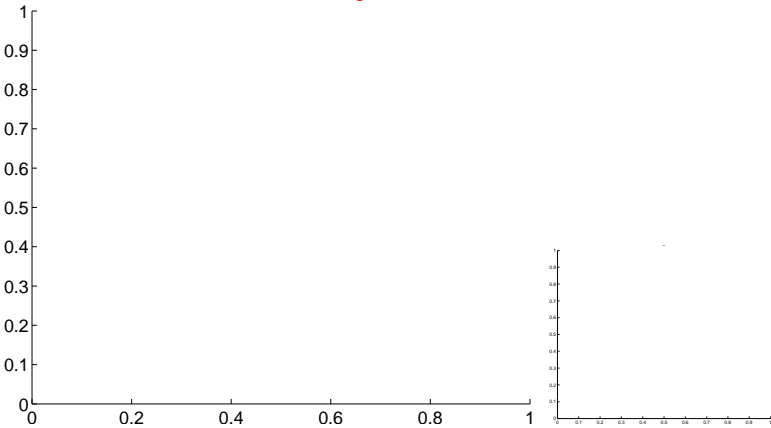


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

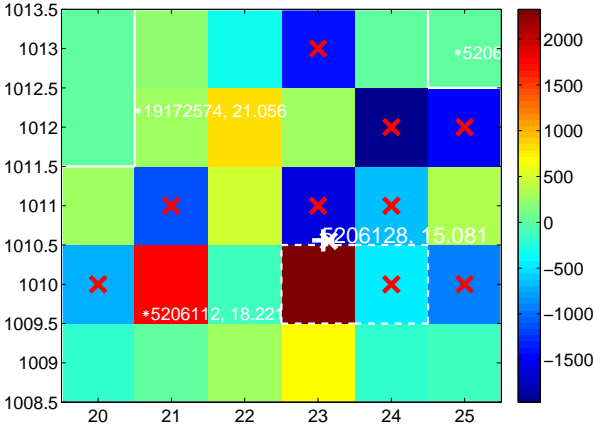
Q13 no difference image



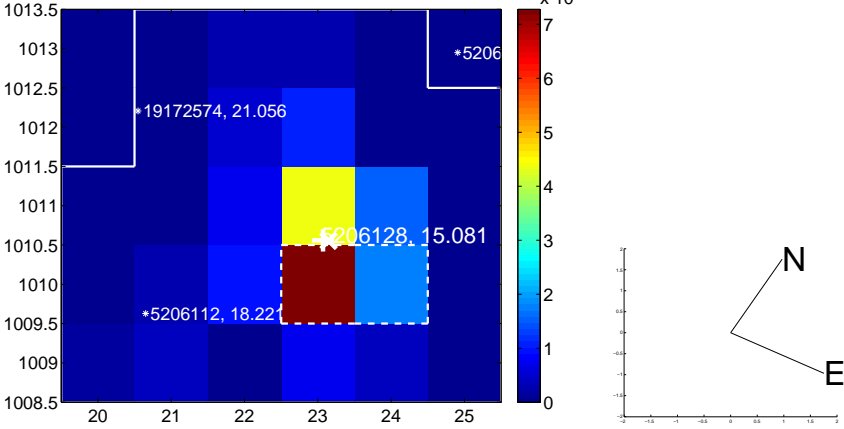
Q13 no OOT image



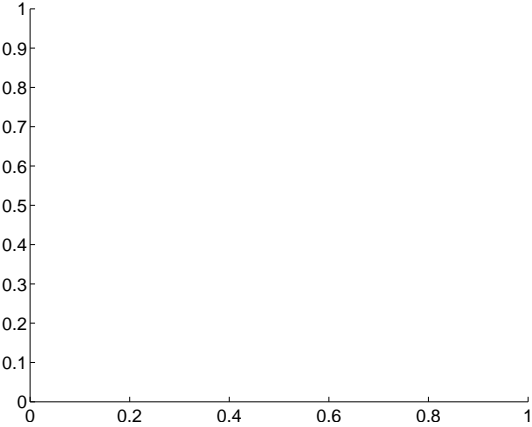
Q14 difference image. Poor Quality



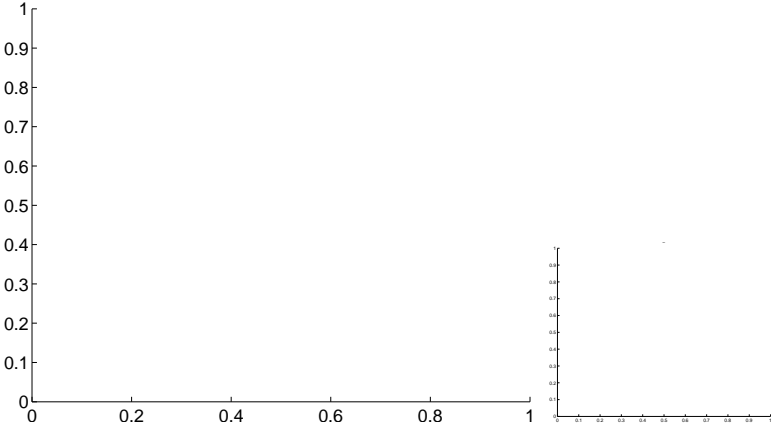
Q14 OOT image



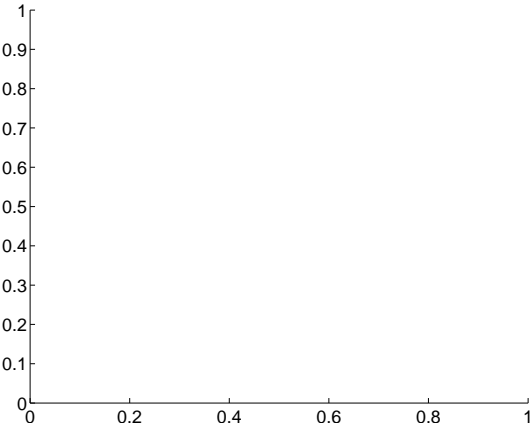
Q15 no difference image



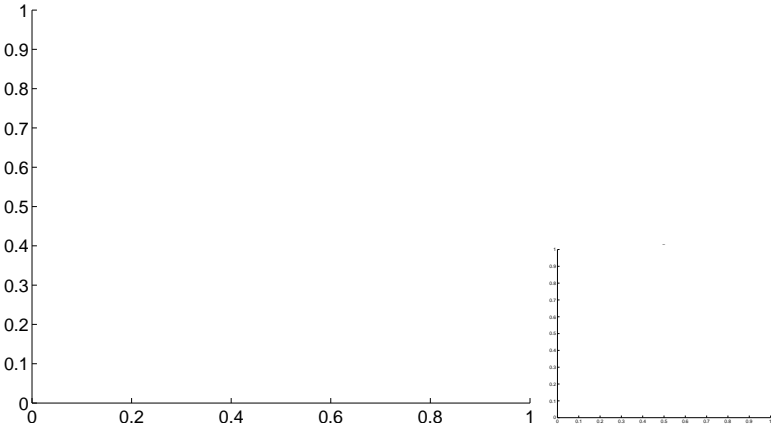
Q15 no OOT image



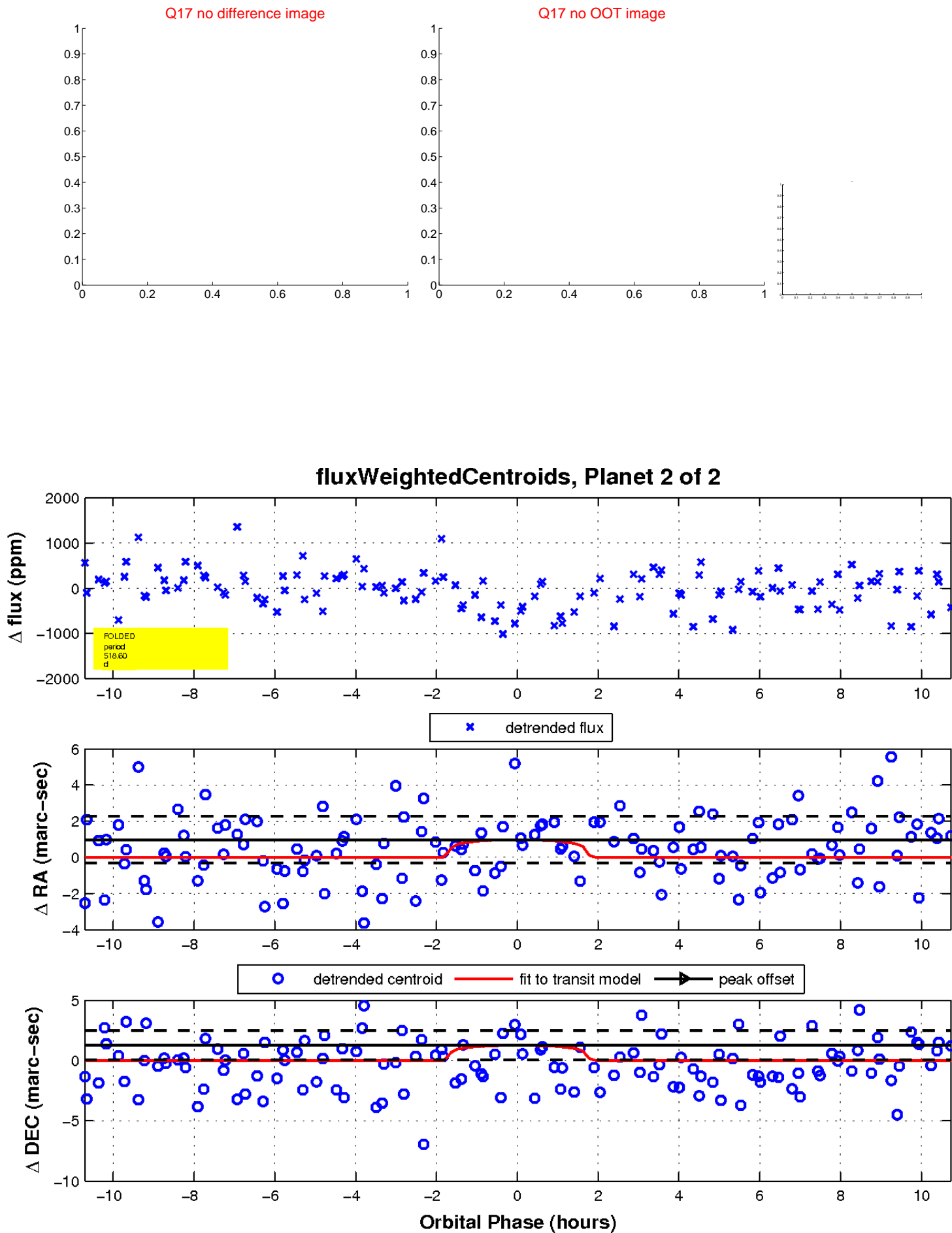
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

