

KIC 005477964

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})
005477964-01	OBS	No	1.882285	132.182969	72.5	1.413	10.0	4.1	1.07	6352	1.03	1744.83
005477964-02	OBS	No	1.882615	131.566093	136.8	1.054	9.9	6.5	1.07	6352	1.42	1744.42
005477964-03	OBS	No	3.765597	132.562555	80.8	12.120	8.8	8.0	1.07	6352	1.11	692.18

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005477964-01	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_KIC_POS
005477964-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
005477964-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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.

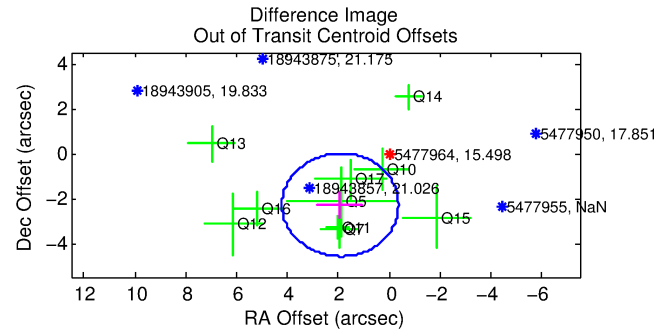
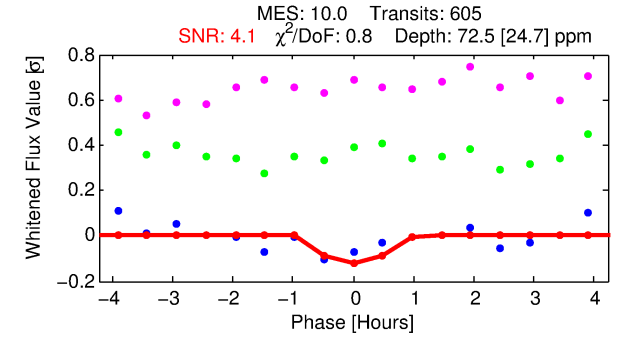
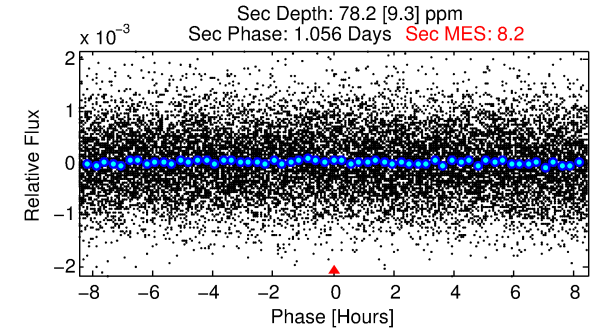
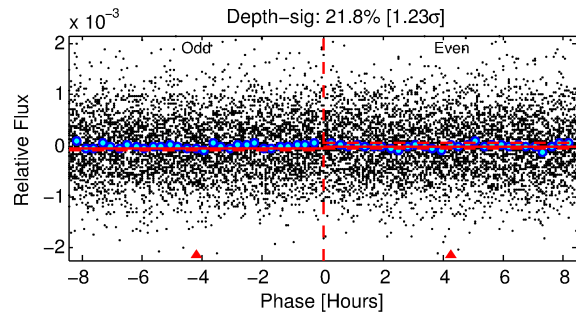
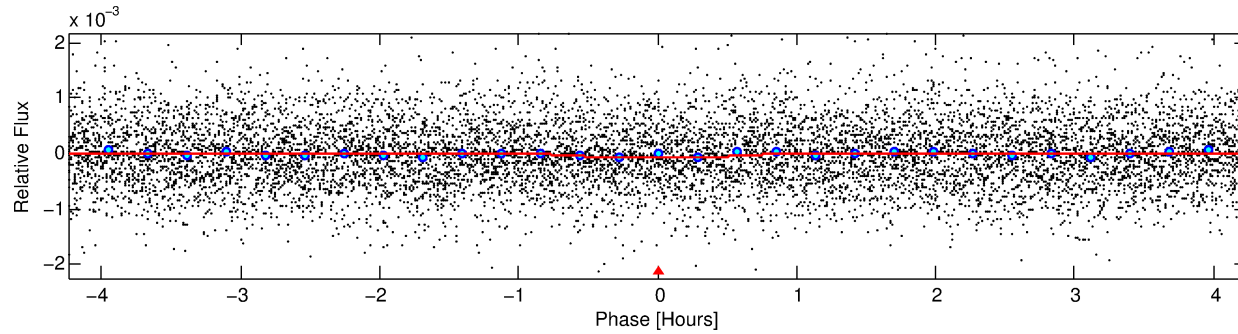
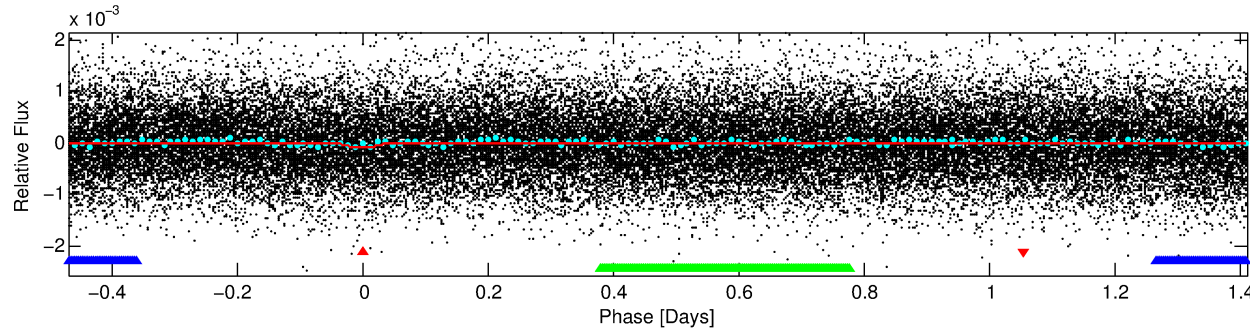
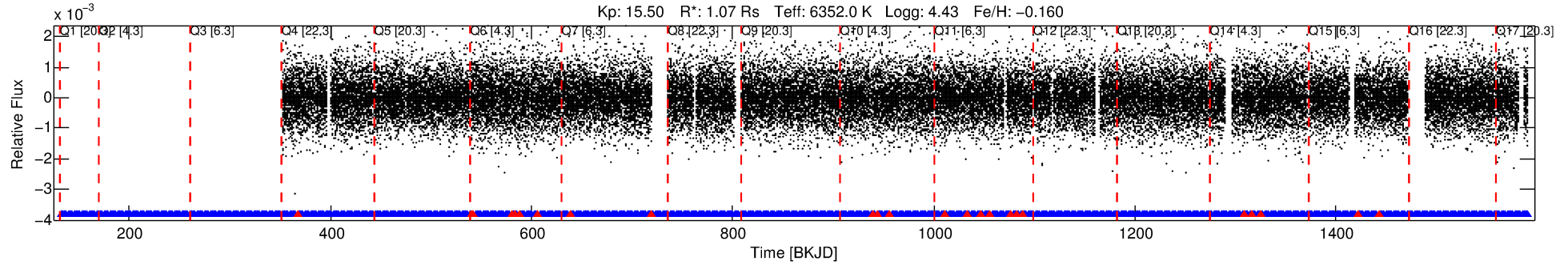
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005477964-01

No Significant Match Found

DV One-Page Summary

KIC: 5477964 Candidate: 1 of 3 Period: 1.882 d



DV Fit Results:

Period = 1.88228 [0.00003] d
Epoch = 132.1830 [0.0059] BKJD
Rp/R* = 0.0088 [0.0074]
a/R* = 5.73 [24.72]
b = 0.84 [1.56]
Seff = 1744.83 [684.13]
Teq = 1648 [162] K
Rp = 1.03 [0.92] Re
a = 0.0310 [0.0078] AU
Ag = 38.74 [66.44] [0.57 σ]
Teffp = 6357 [2675] K [1.76 σ]

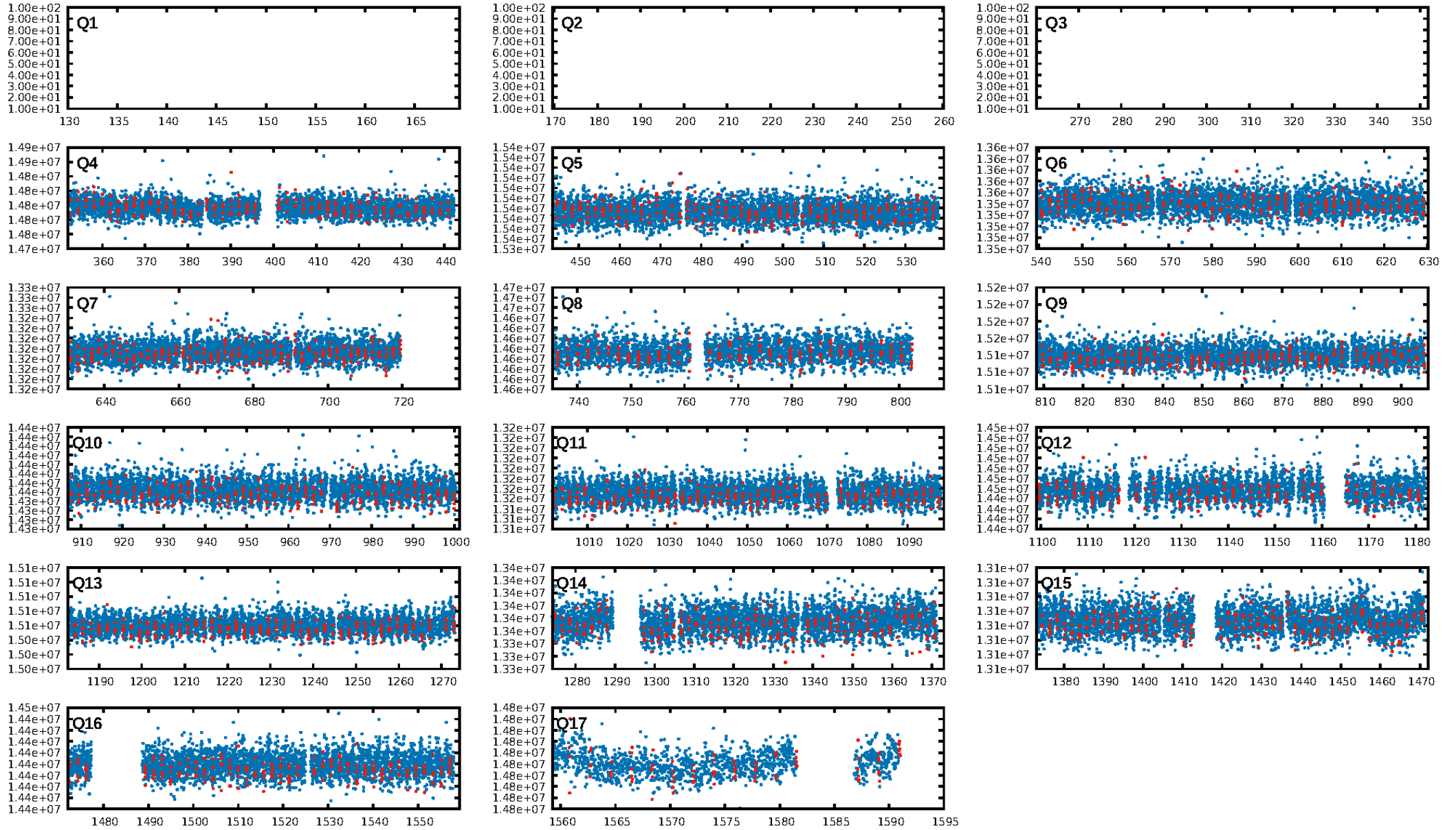
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.4% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.62e-22
RollingBand-fgt: 0.96 [566/590]
GhostDiagnostic-chr: -1.708
Centroid-sig: 58.7%
Centroid-so: 0.769 arcsec [0.25 σ]
OotOffset-rm: 2.991 arcsec [3.91 σ]
KicOffset-rm: 3.008 arcsec [3.83 σ]
OotOffset-st: 2/3/2/3 [10]
KicOffset-st: 2/3/2/3 [10]
DiffImageQuality-fgm: 0.00 [0/10]
DiffImageOverlap-fno: 1.00 [14/14]

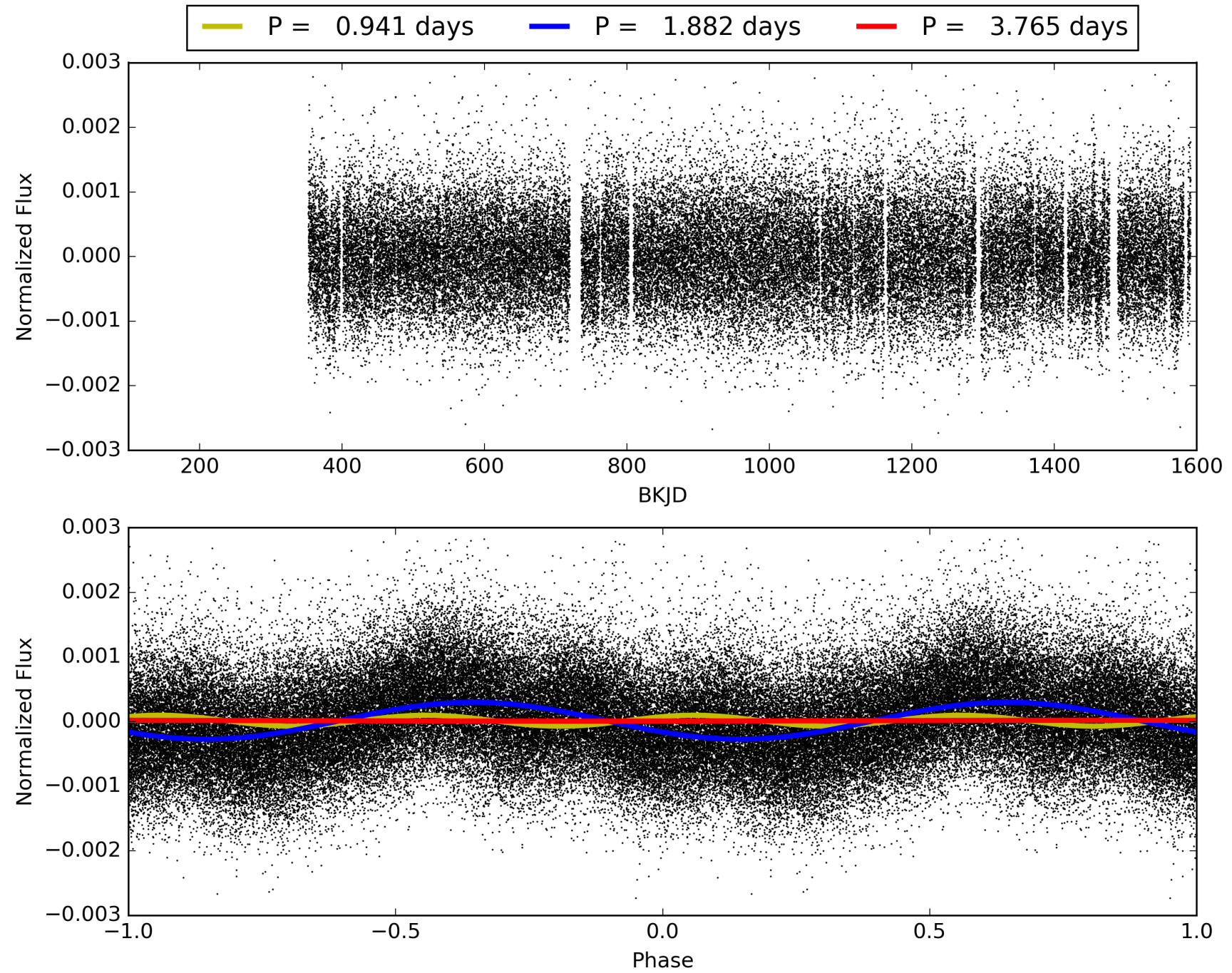
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:08:29 Z

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

TCE 005477964-01, PDC Light Curves

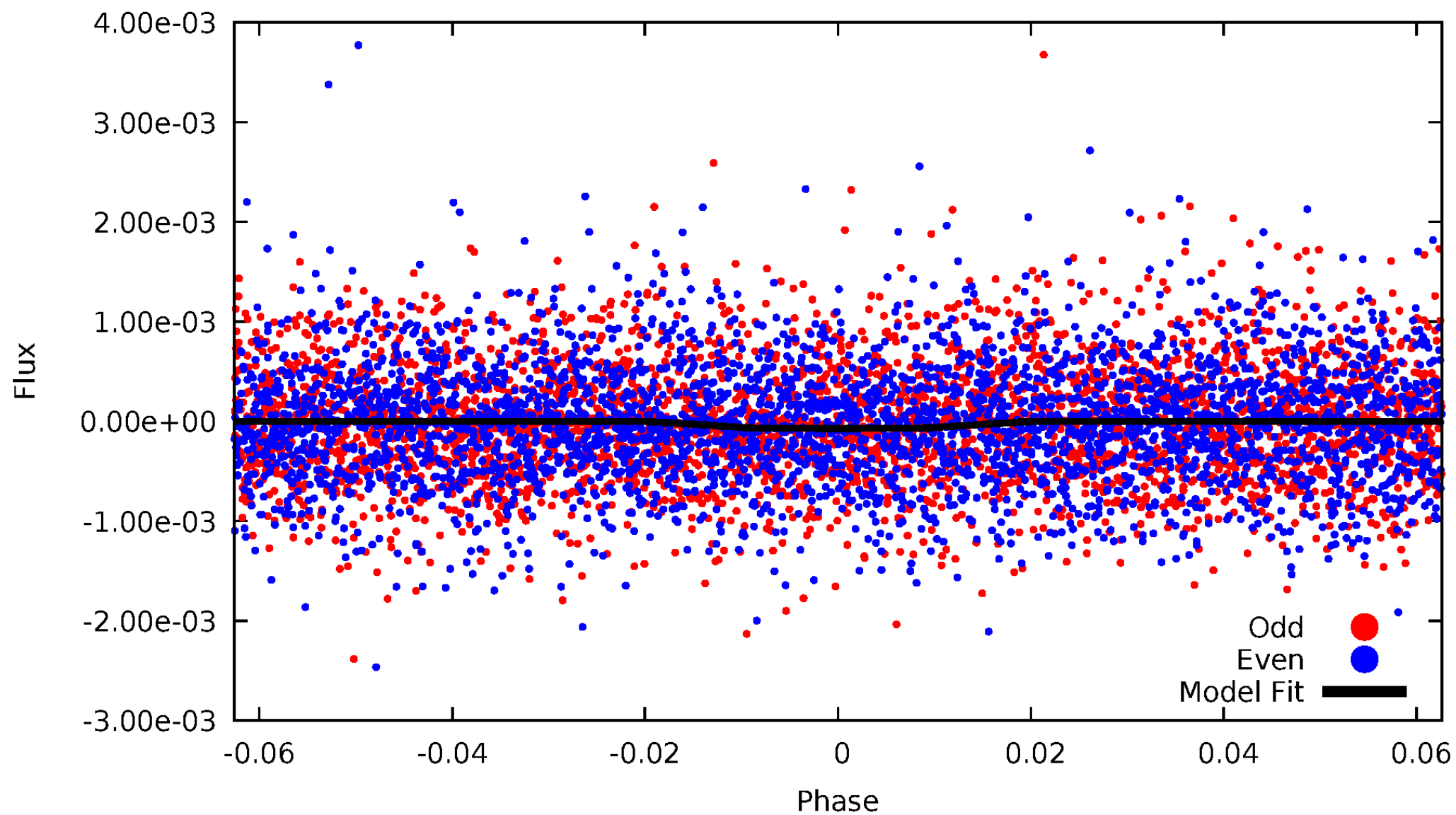


TCE 005477964-01



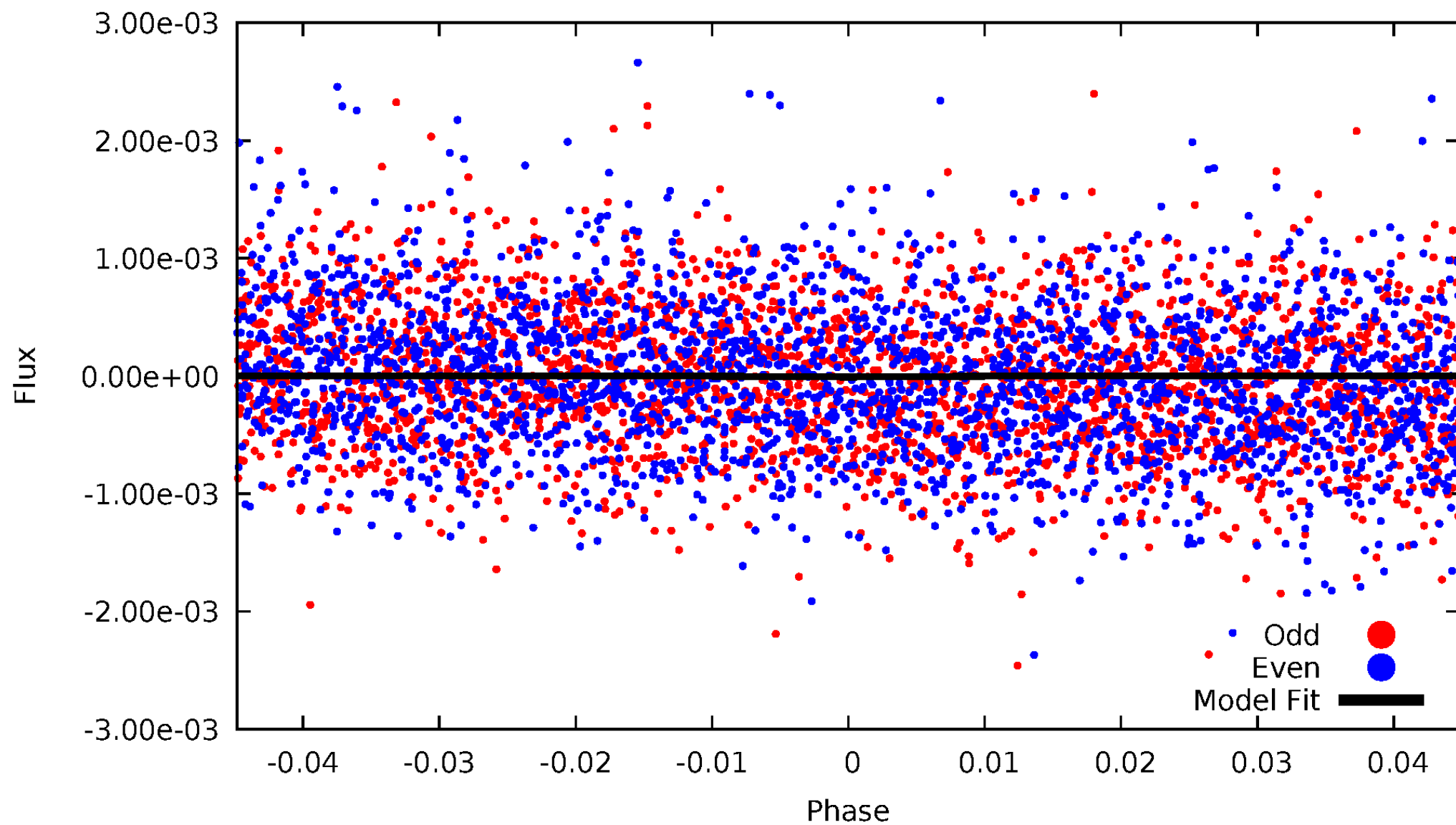
DV Odd/Even

TCE 005477964-01



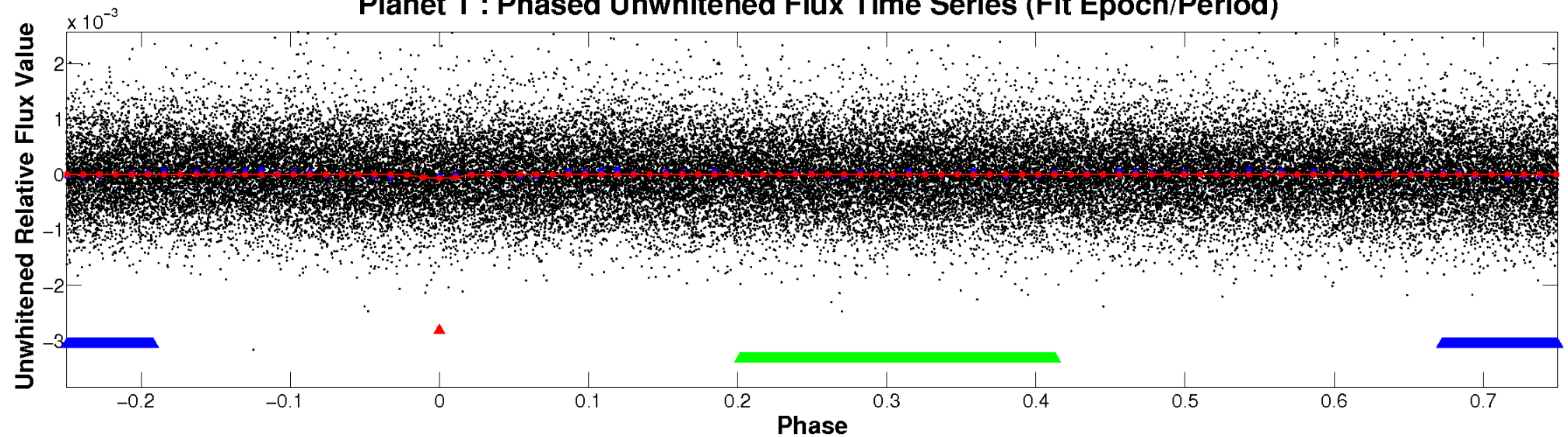
ALT Odd/Even

TCE 005477964-01

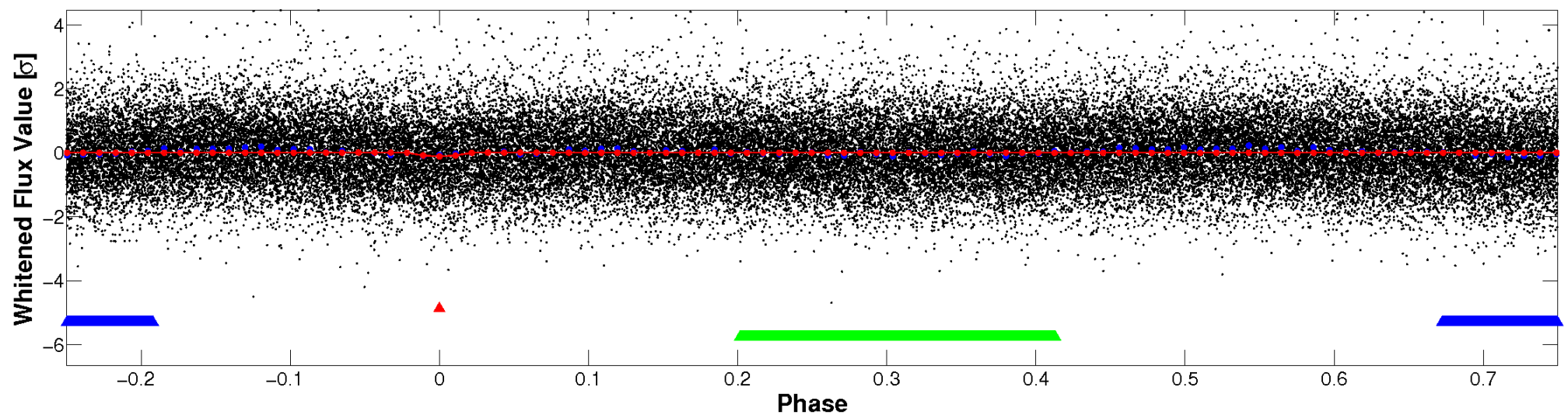


Non-Whitened Vs. Whitened Light Curve

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

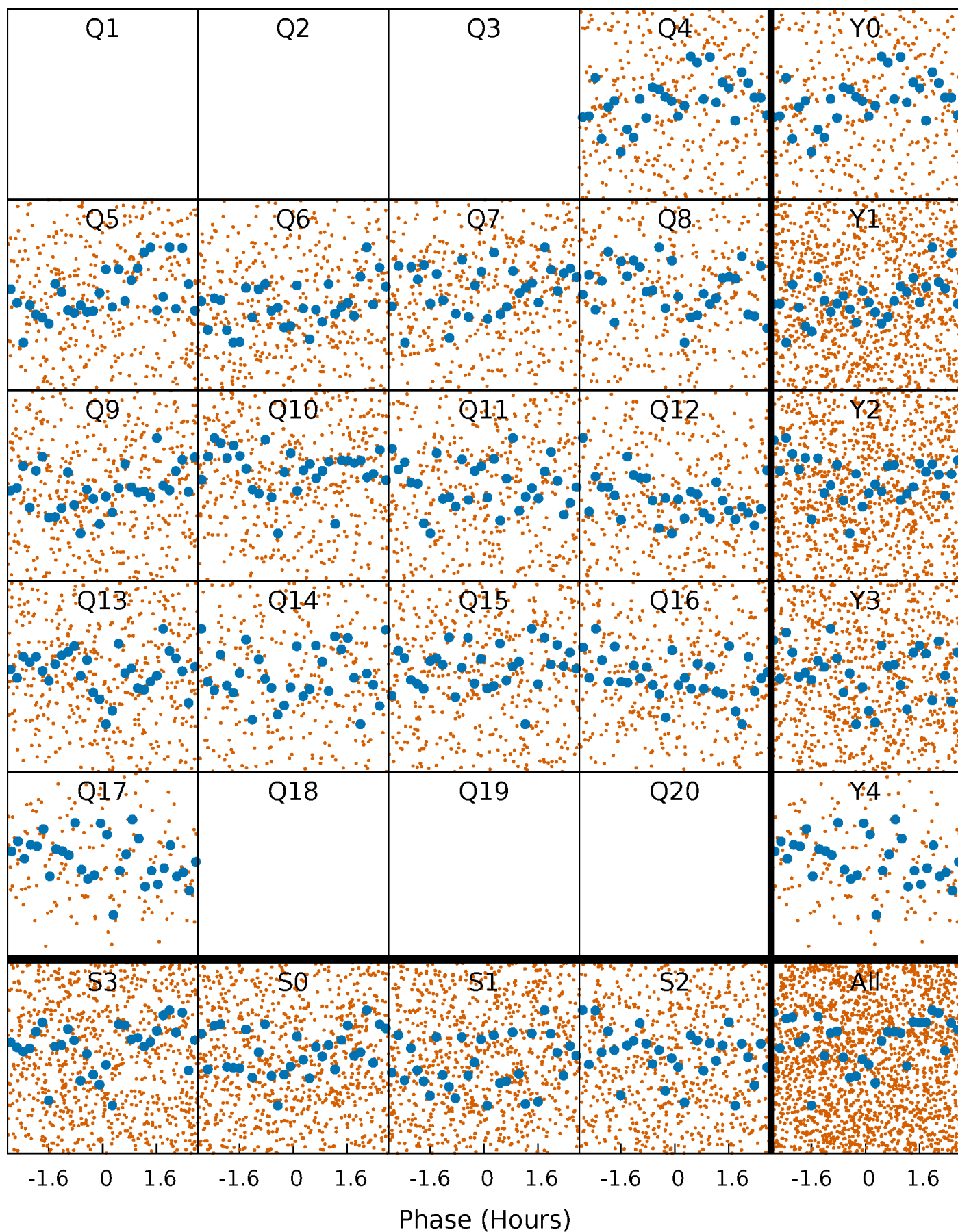


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



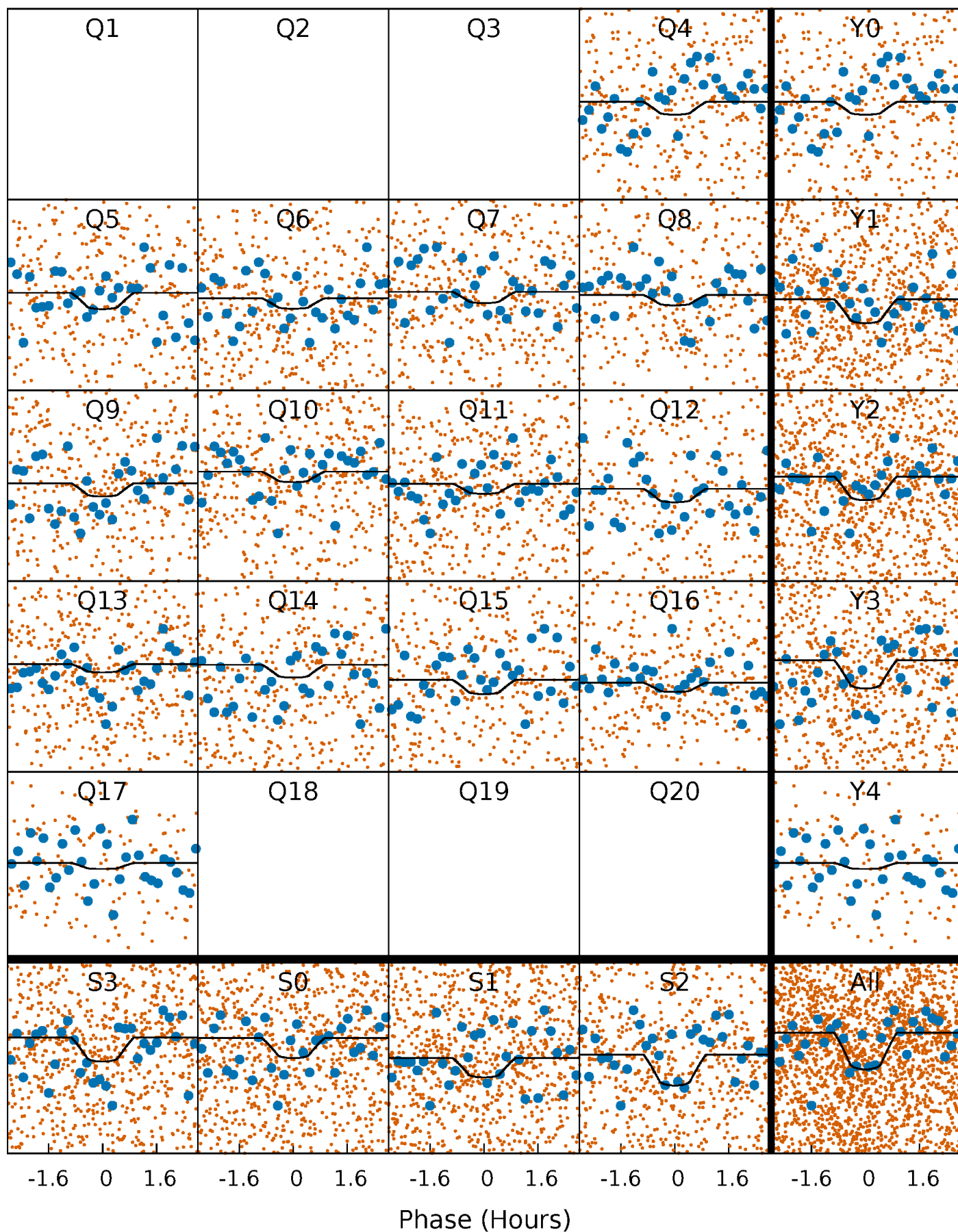
PDC Quarter-Phased Transit Curves

TCE 005477964-01 P= 1.882285 Days $T_0=132.182969$ (BKJD)



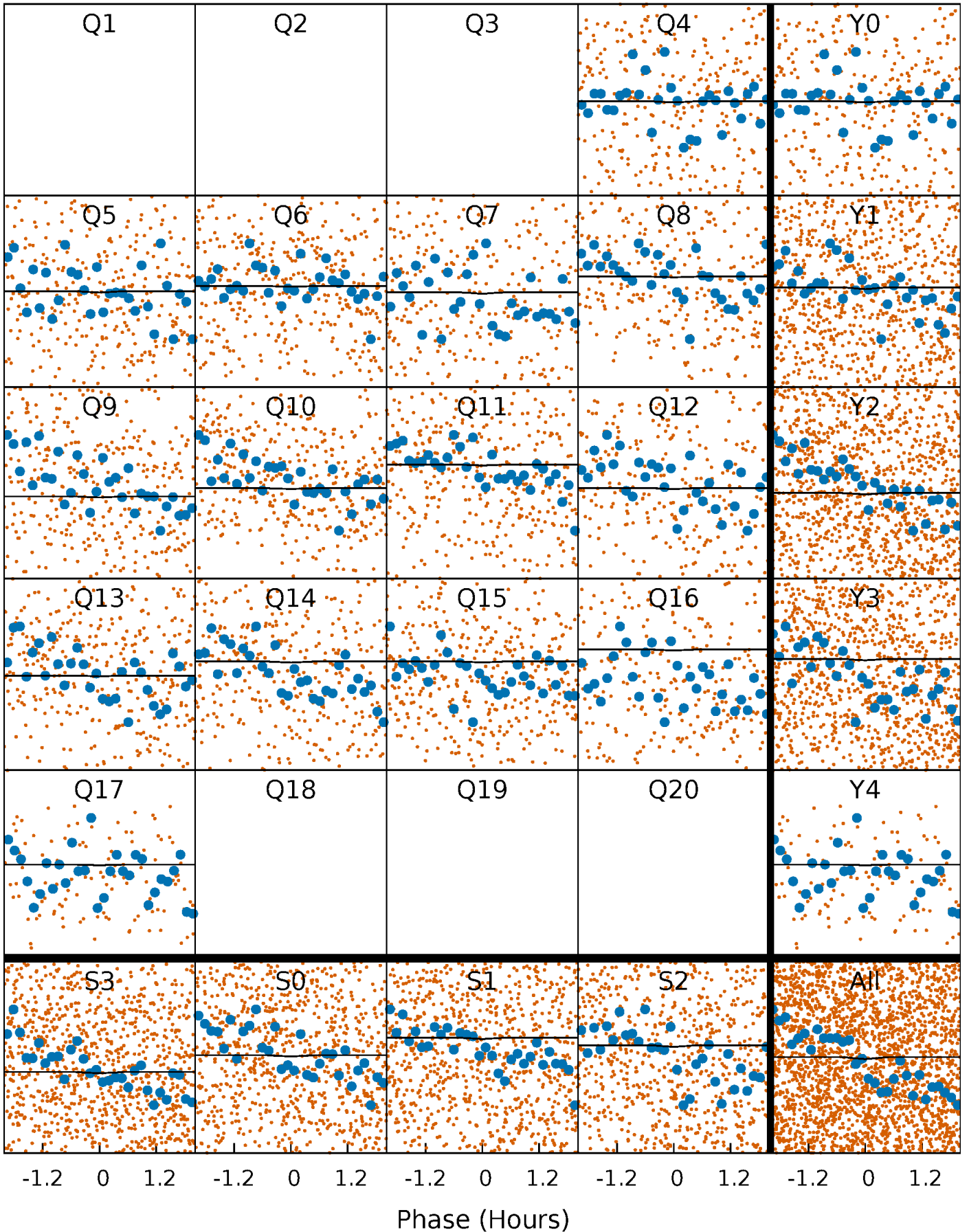
DV Quarter-Phased Transit Curves

TCE 005477964-01 P= 1.882285 Days $T_0=132.182969$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

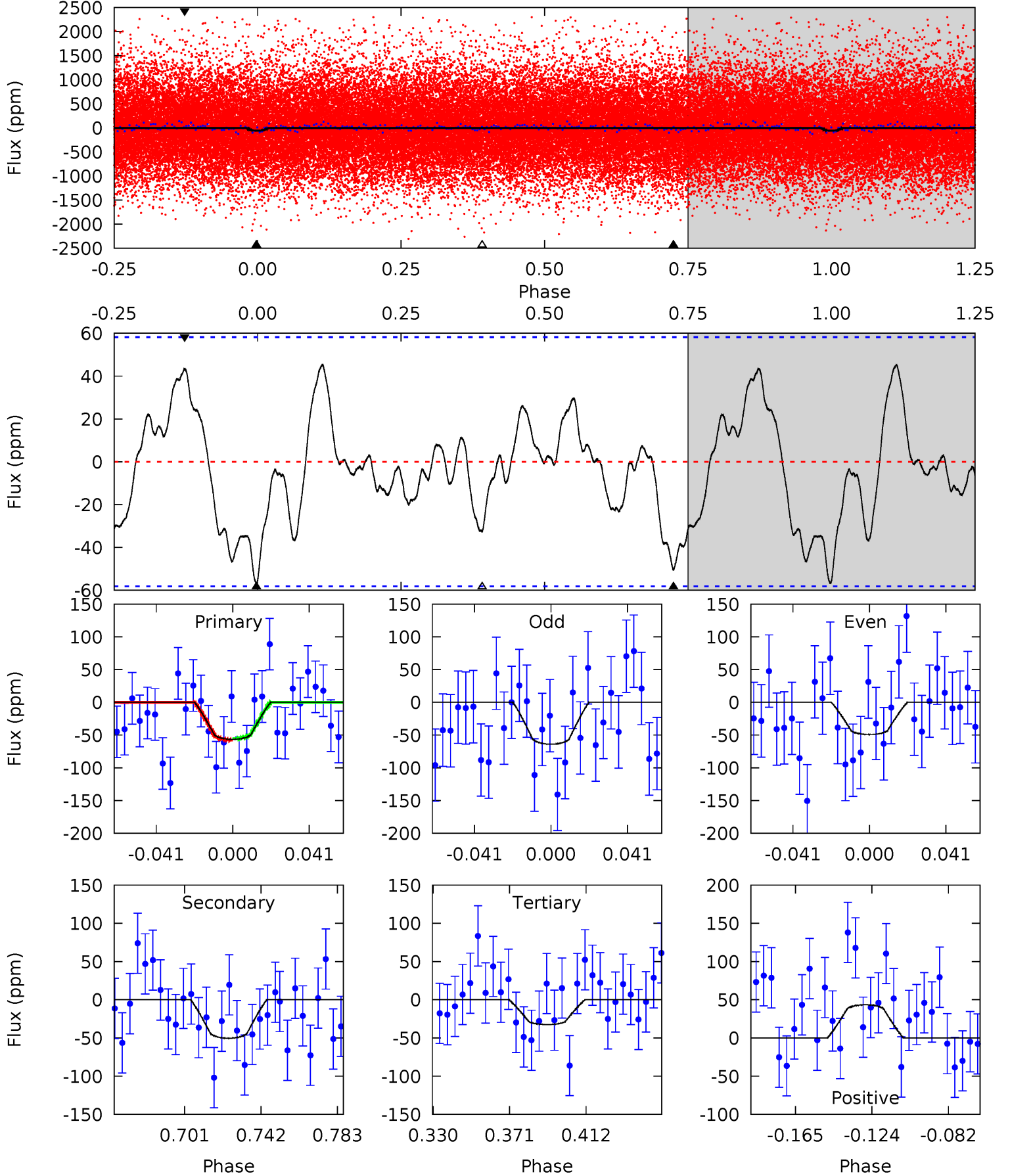
TCE 005477964-01 P= 1.882577 Days $T_0=131.893841$ (BKJD)



DV Model-Shift Uniqueness Test

005477964-01, P = 1.882285 Days, E = 132.182969 Days

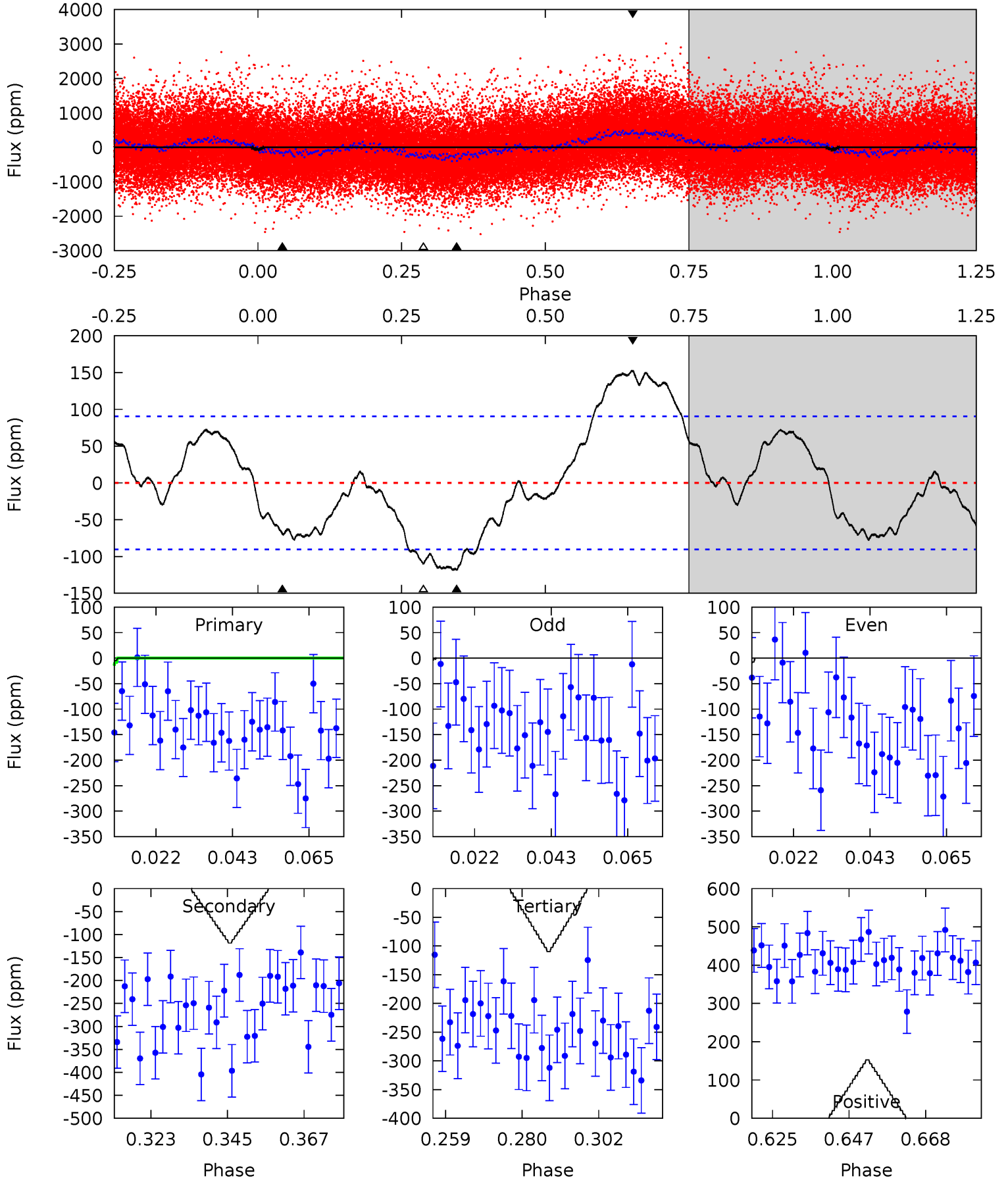
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.62	4.11	2.65	3.55	4.75	2.04	1.53	1.97	1.08	1.46	0.57	0.61	1.17	0.44	0.08



Alt Model-Shift Uniqueness Test

005477964-01, P = 1.882577 Days, E = 131.893841 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.73	6.40	5.92	8.23	4.88	2.30	3.85	-2.19	-4.50	0.49	-1.82	2.12	0.79	0.56	3.16



Stellar Parameters For KIC 005477964

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6352^{+175}_{-241}	$4.427^{+0.065}_{-0.195}$	$-0.160^{+0.250}_{-0.300}$	$1.072^{+0.326}_{-0.116}$	$1.118^{+0.148}_{-0.148}$	$1.278^{+0.433}_{-0.625}$
	+3%/-4%	+1%/-4%	+156%/-188%	+30%/-11%	+13%/-13%	+34%/-49%
Source	KIC0	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 005477964-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-50 ± 12	$1.18^{+0.91}_{-0.70}$	2337^{+167}_{-118}	5413^{+3368}_{-1179}	19^{+90}_{-13}
Alt.	-119 ± 19	$0.74^{+0.74}_{-0.52}$	2336^{+150}_{-115}	8868^{+19544}_{-2980}	110^{+1201}_{-83}

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

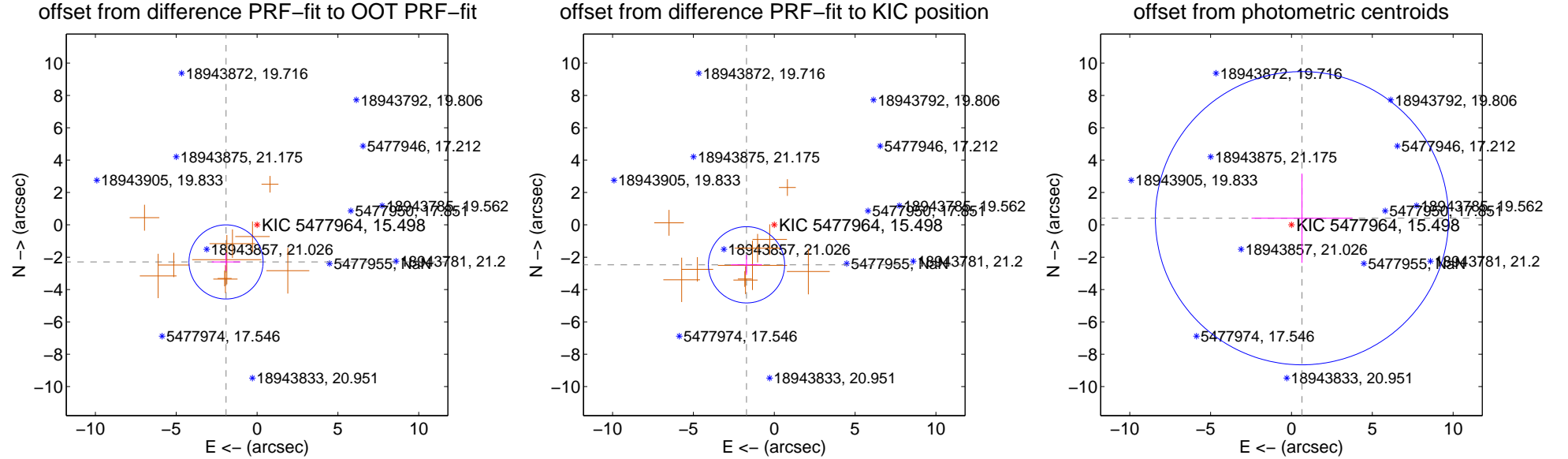
DV Centroid Data

Supplemental centroid analysis for 005477964-01. Kepler magnitude: 15.50. Transit SNR 4.06

There are 0 quarters with good PRF difference image offsets

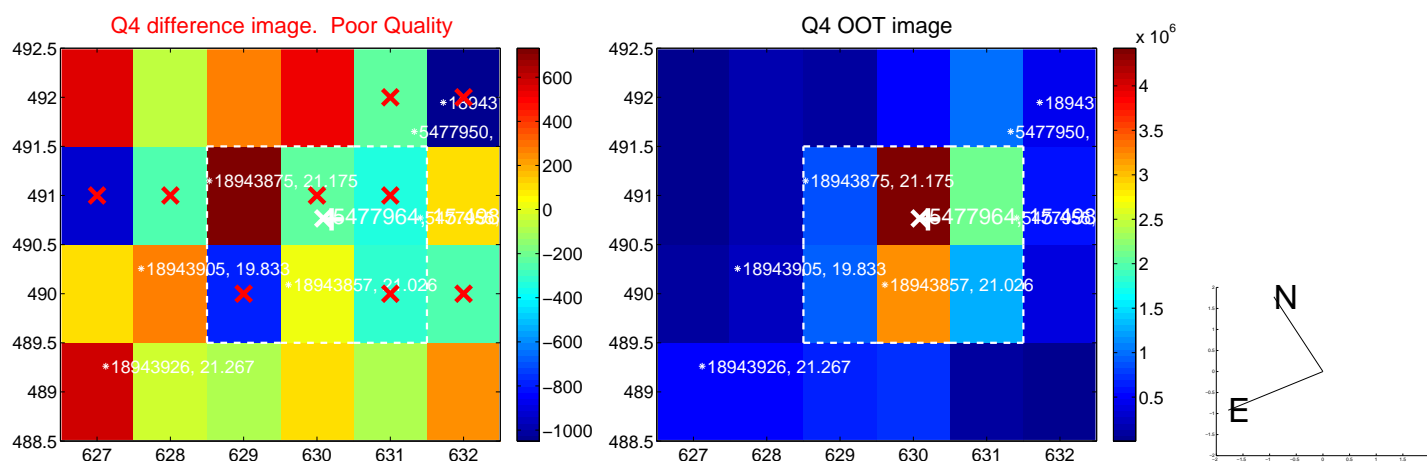
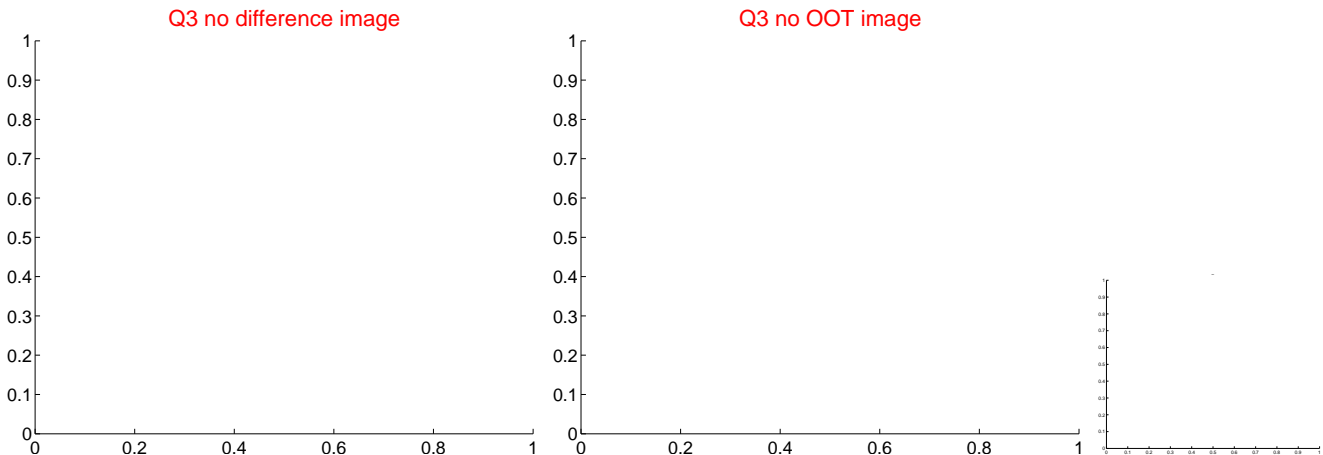
The direct PRF centroid is offset from the target star catalog position by about 0.56 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.991 \pm 0.764	3.91	1.920 \pm 0.883	-2.293 \pm 0.559
PRF-fit source offset from KIC position	3.008 \pm 0.786	3.83	1.716 \pm 0.956	-2.471 \pm 0.620
photometric centroid source offset	0.77 \pm 3.02	0.25	-0.65 \pm 3.12	0.41 \pm 2.76

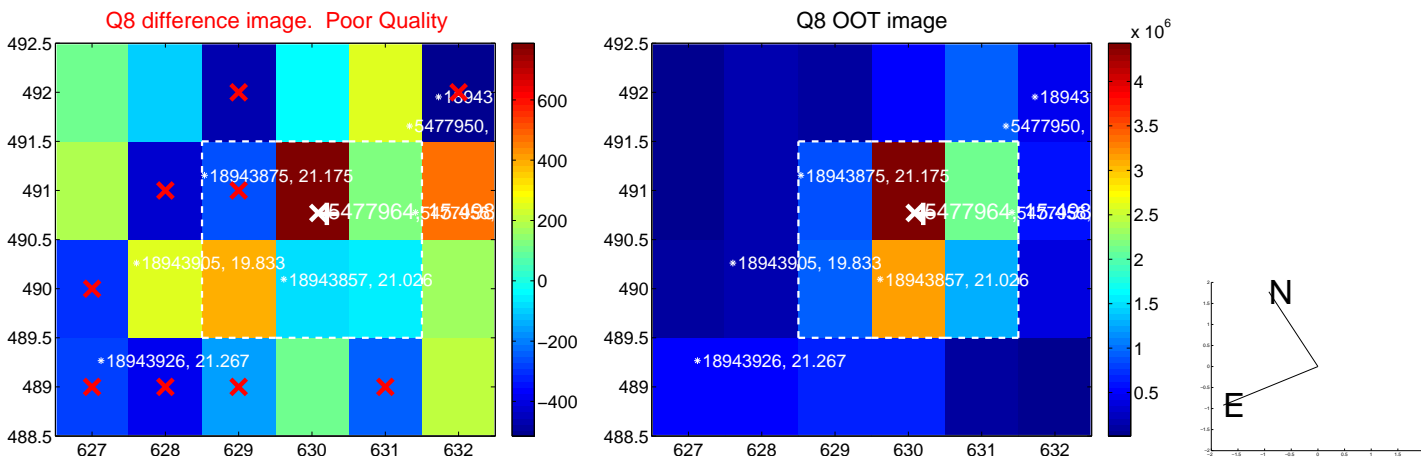
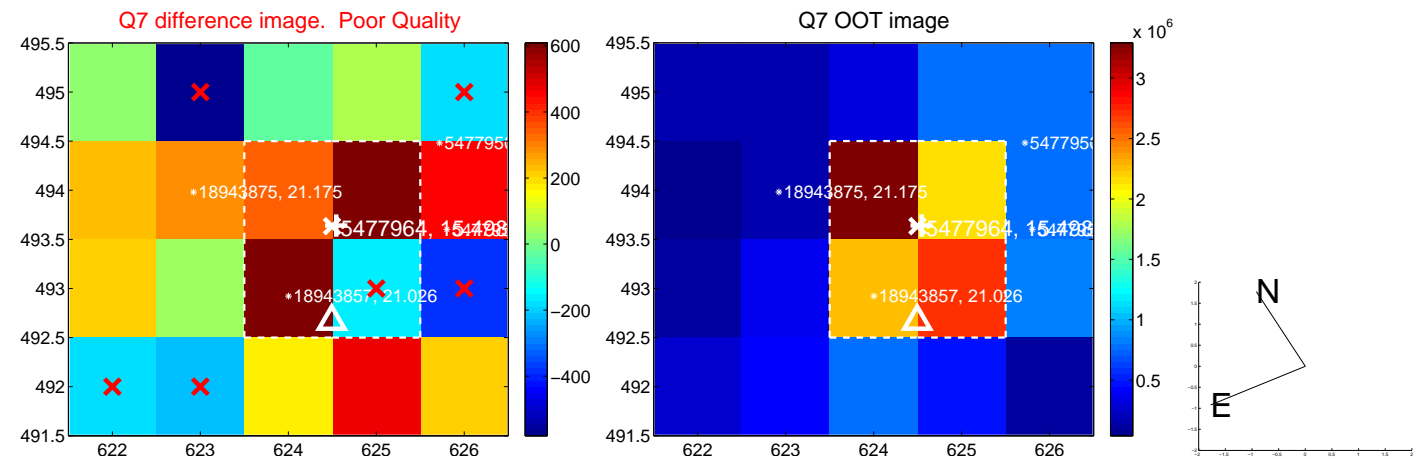
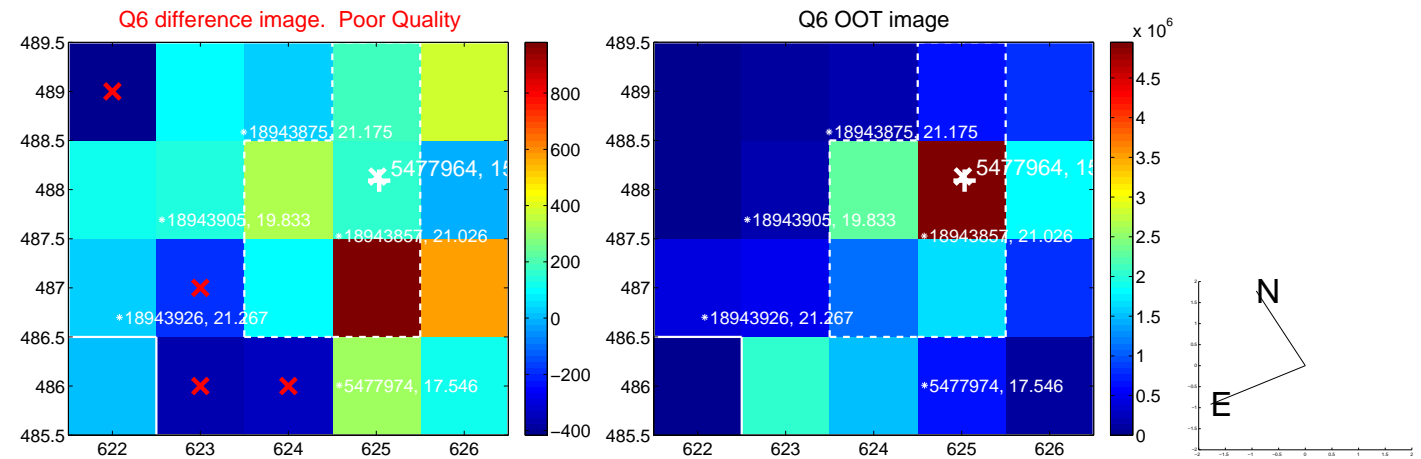
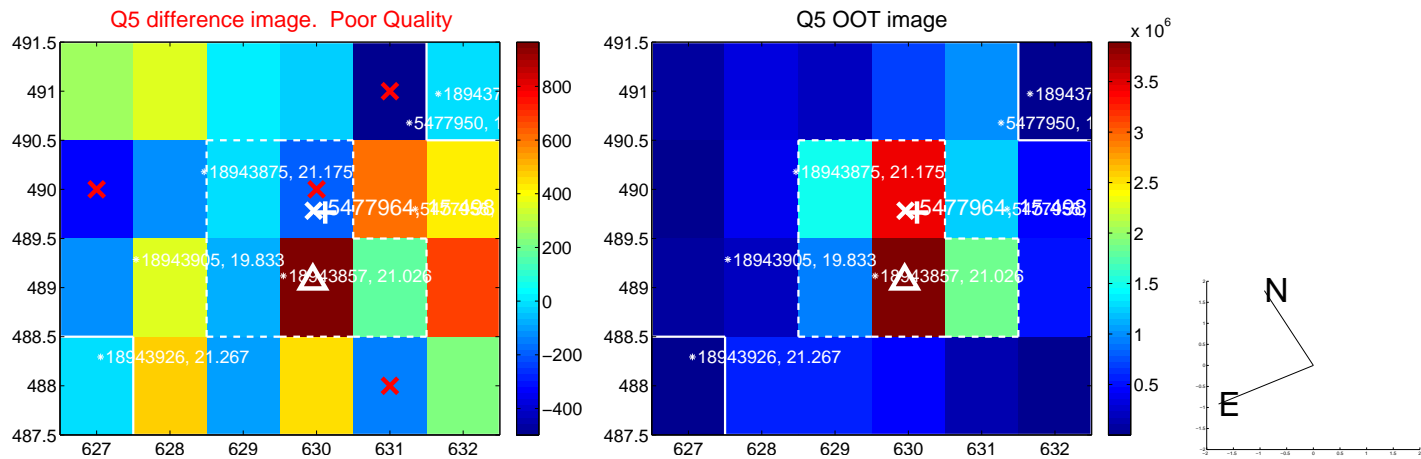


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

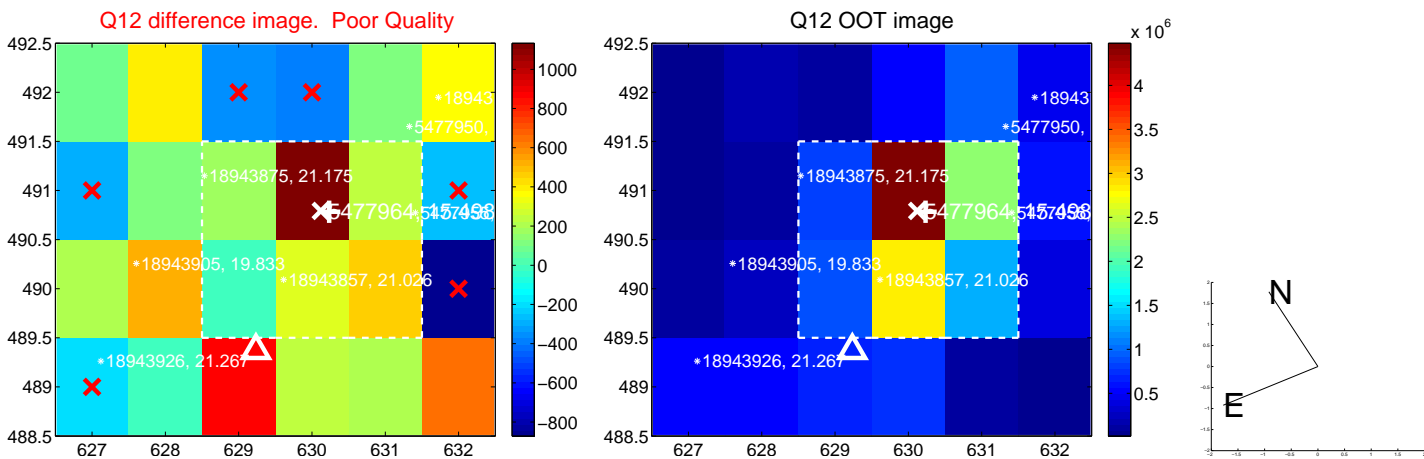
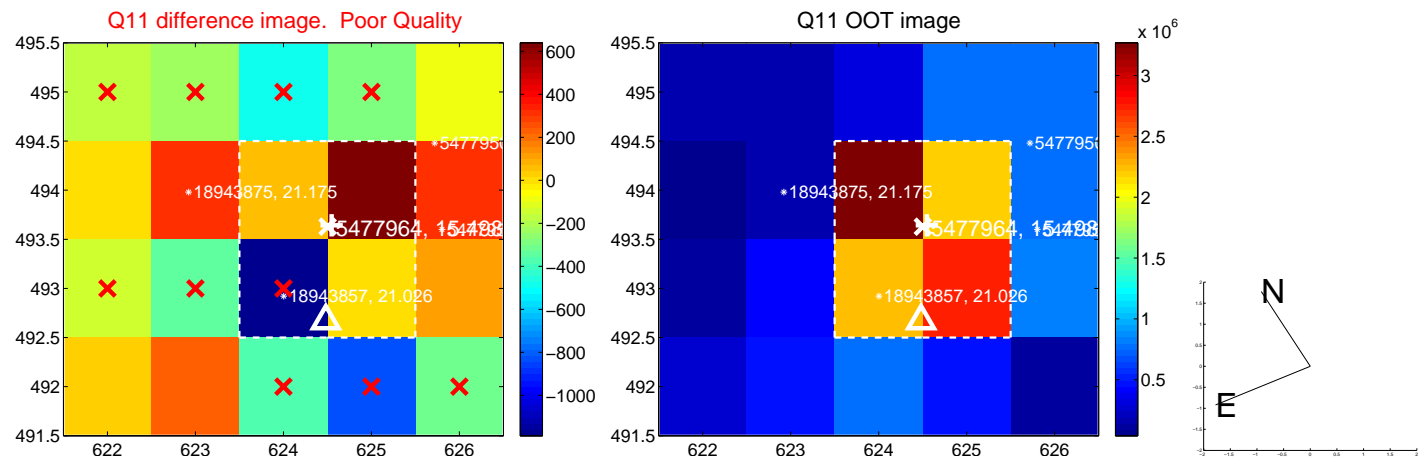
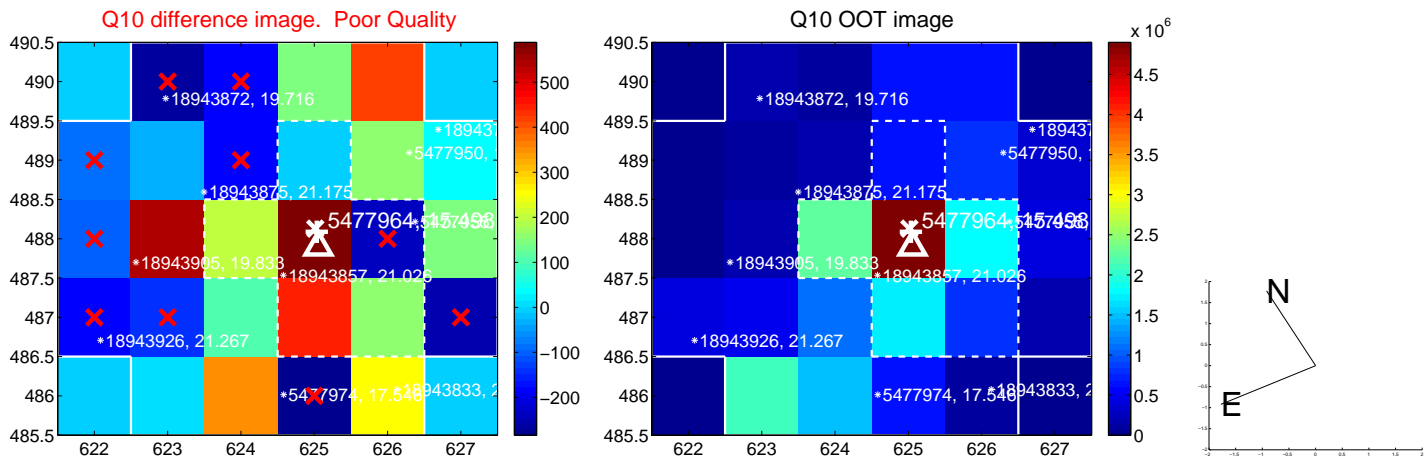
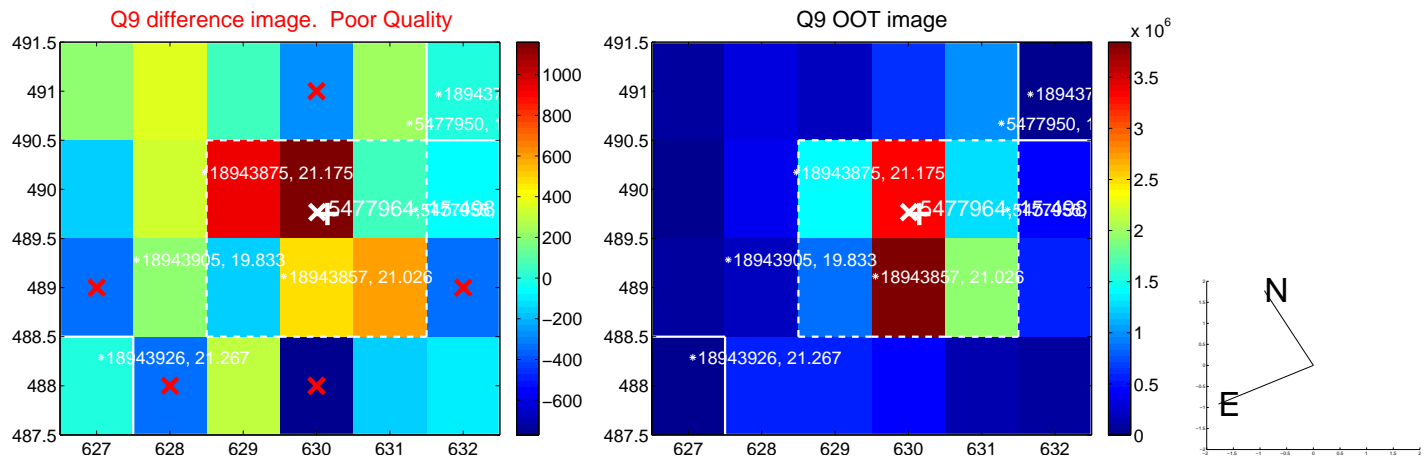
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



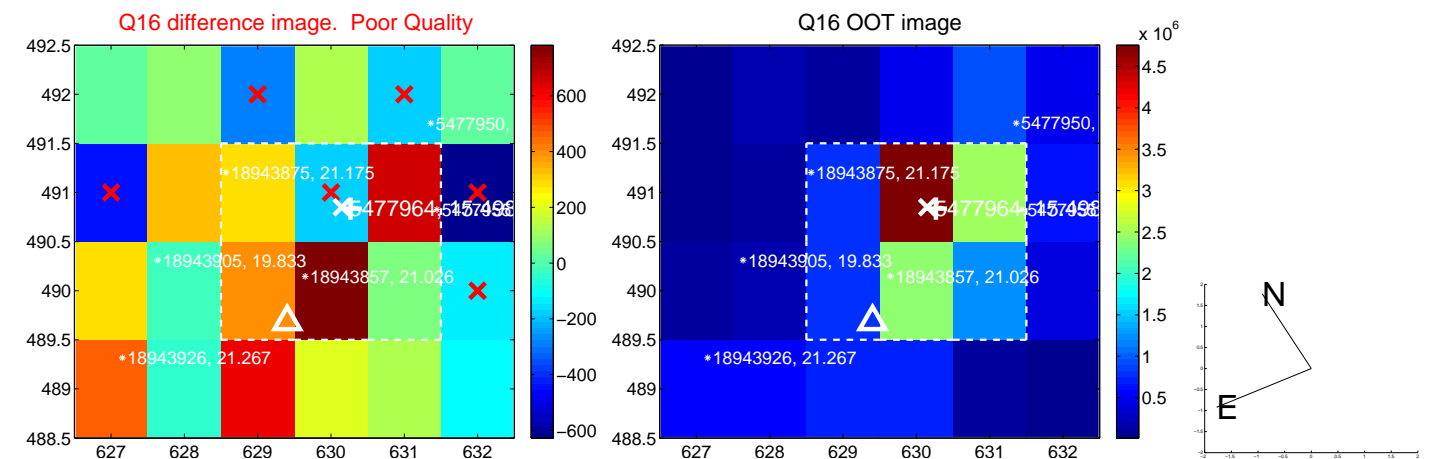
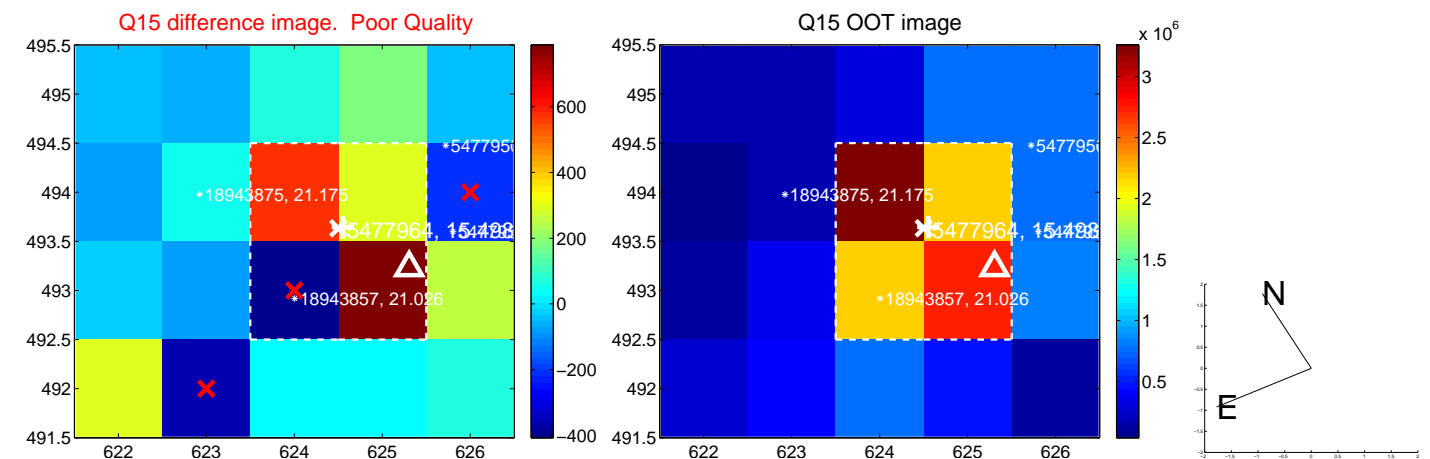
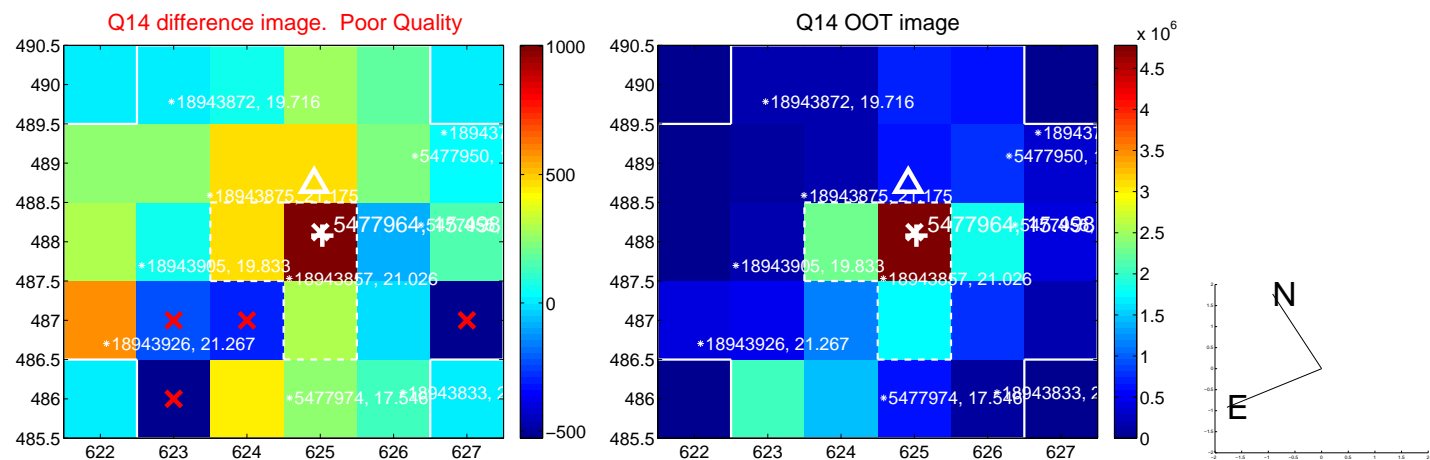
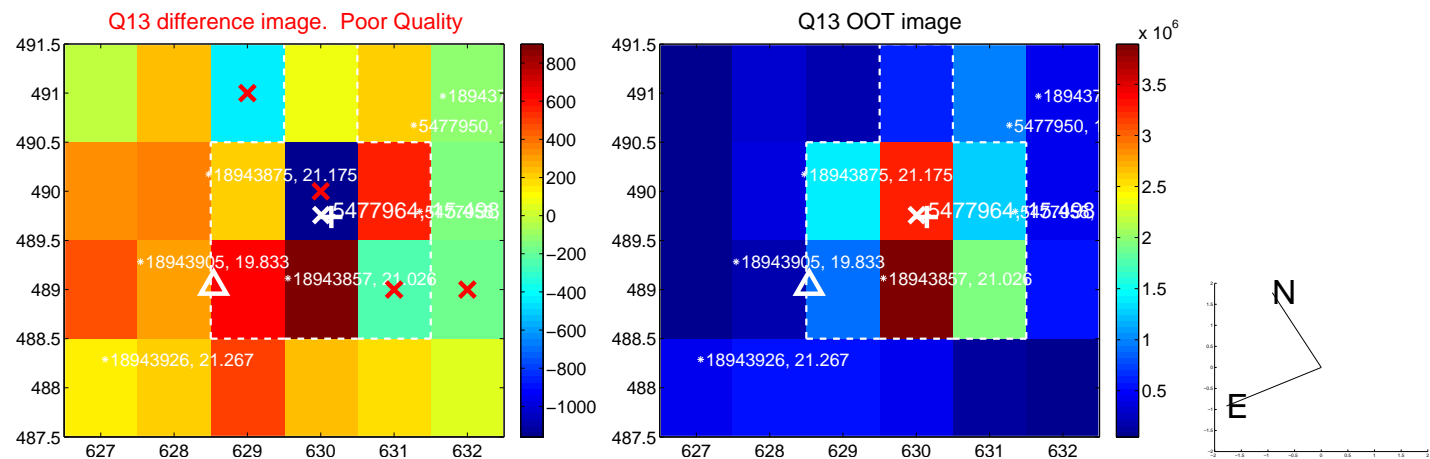
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



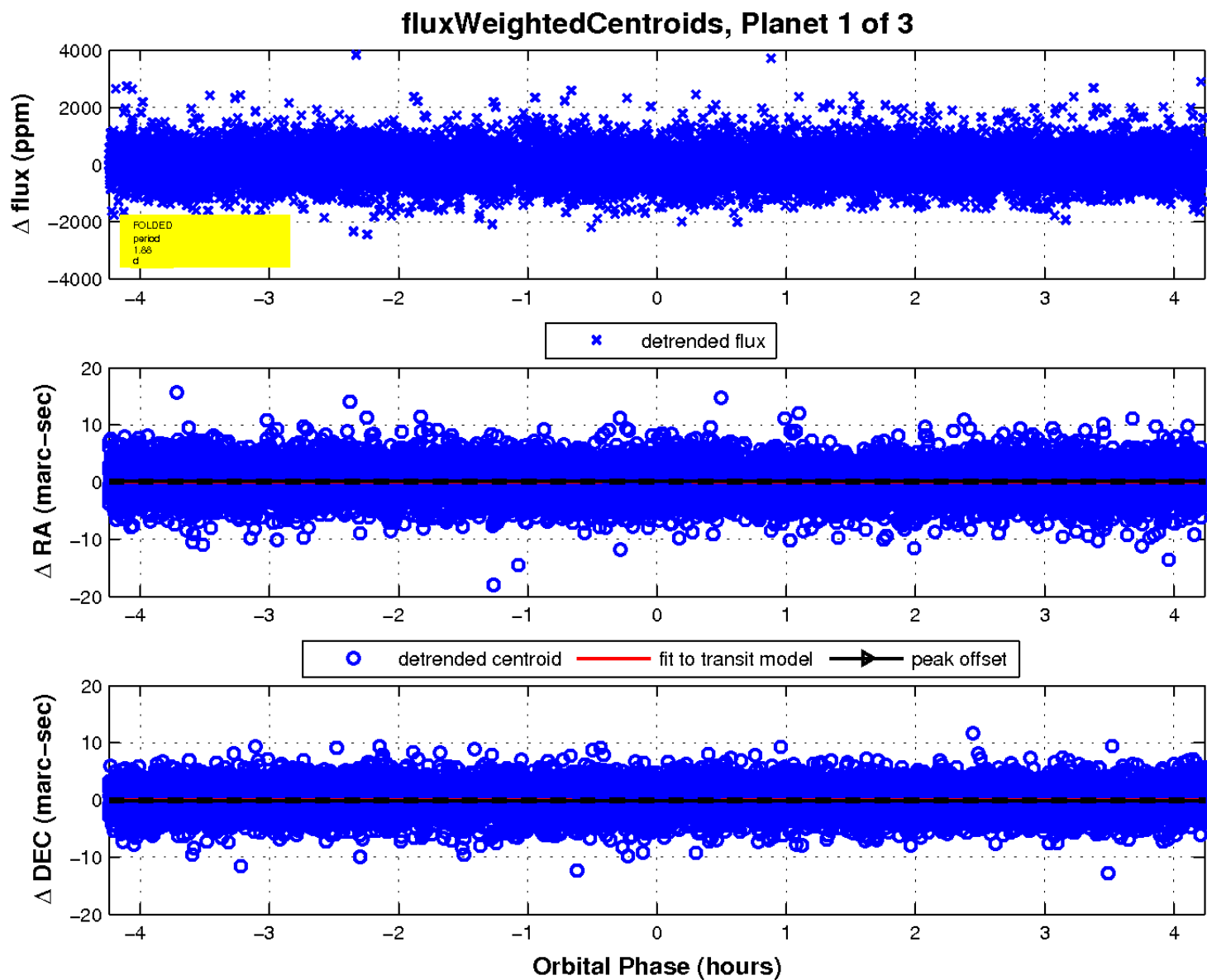
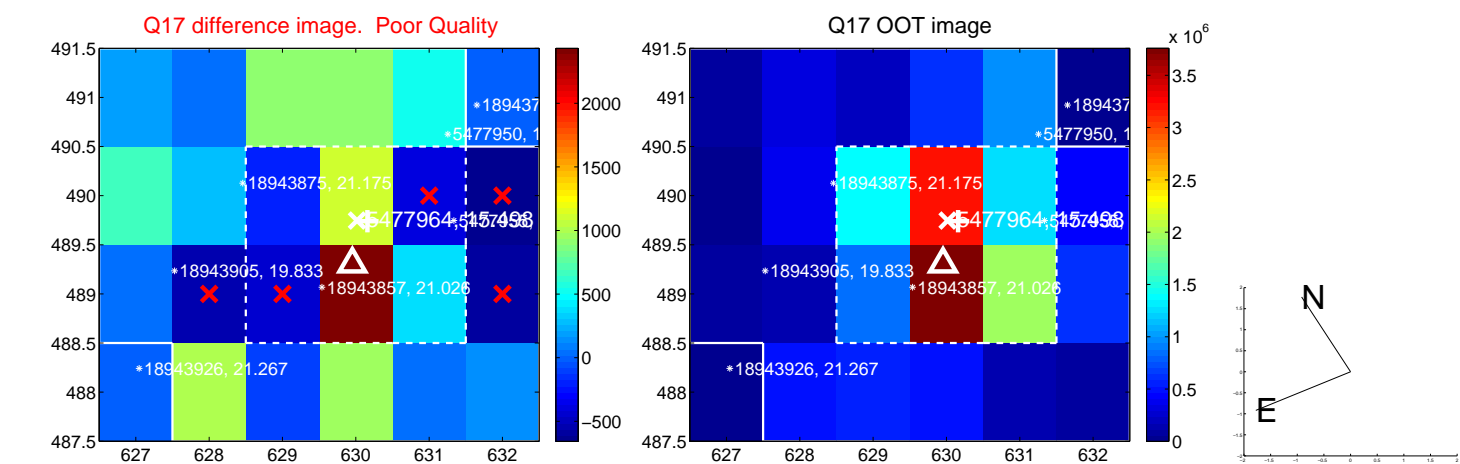
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

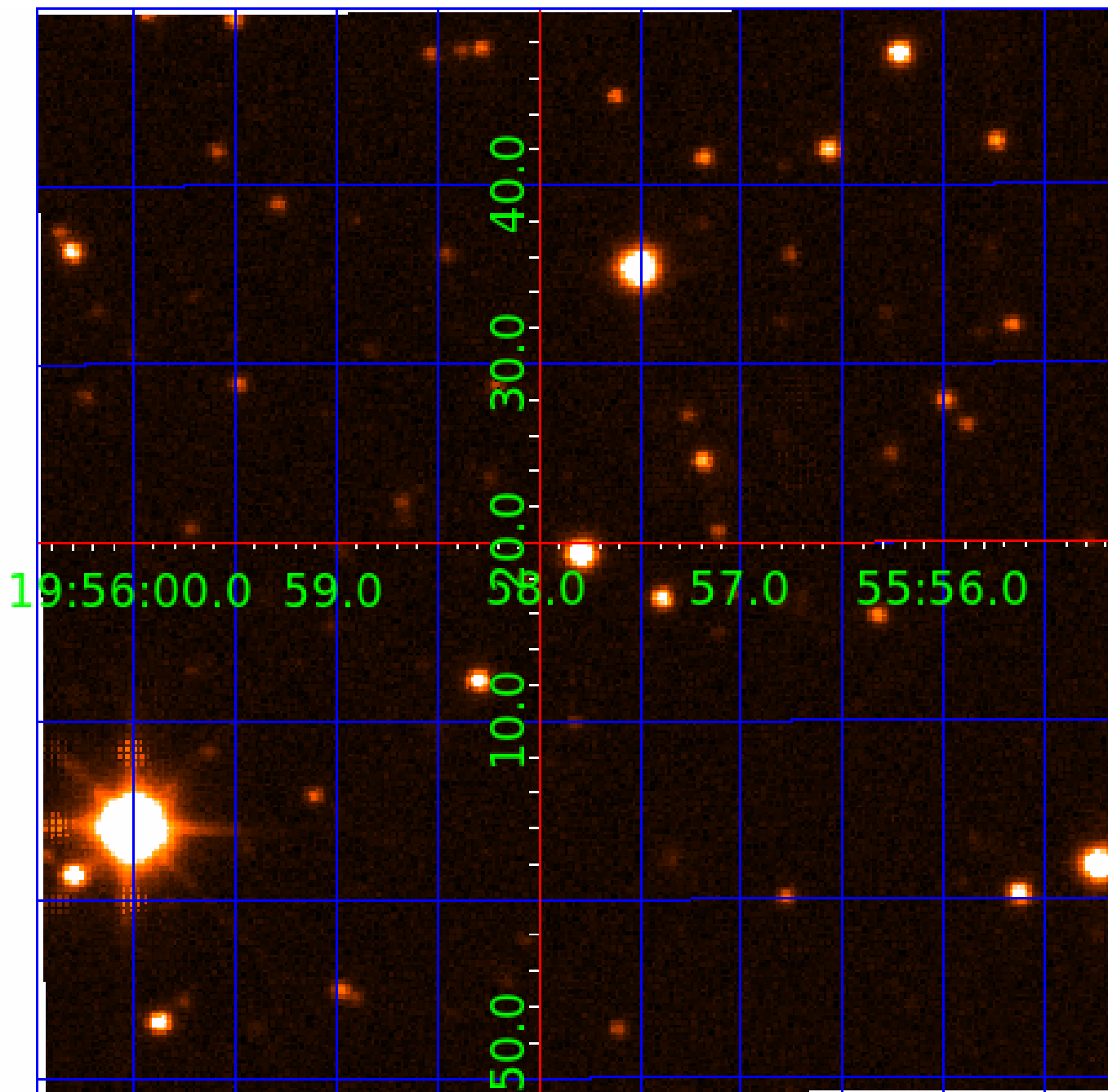


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005477964

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})
005477964-01	OBS	No	1.882285	132.182969	72.5	1.413	10.0	4.1	1.07	6352	1.03	1744.83
005477964-02	OBS	No	1.882615	131.566093	136.8	1.054	9.9	6.5	1.07	6352	1.42	1744.42
005477964-03	OBS	No	3.765597	132.562555	80.8	12.120	8.8	8.0	1.07	6352	1.11	692.18

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005477964-01	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_KIC_POS
005477964-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
005477964-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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.

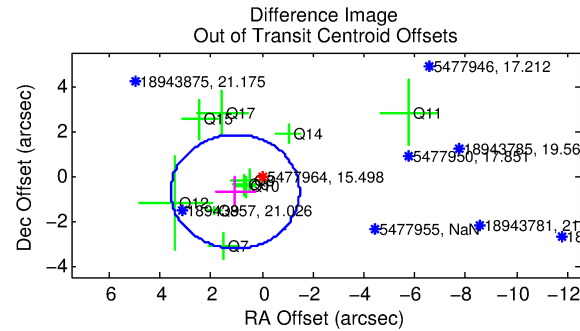
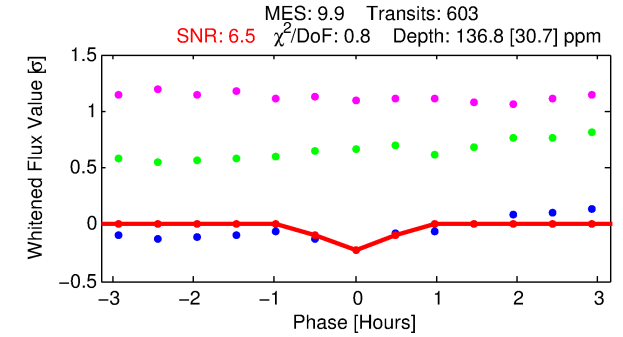
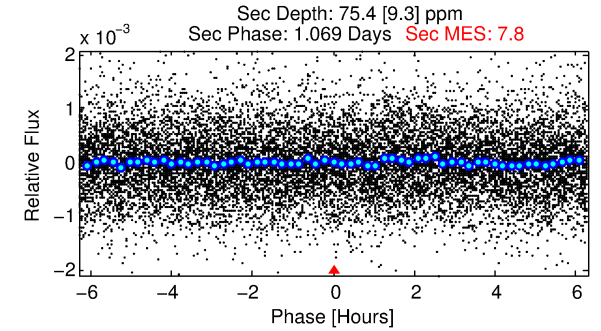
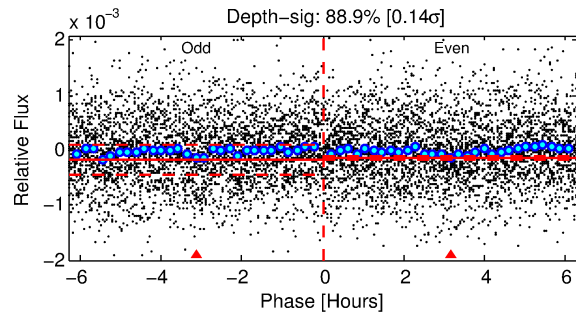
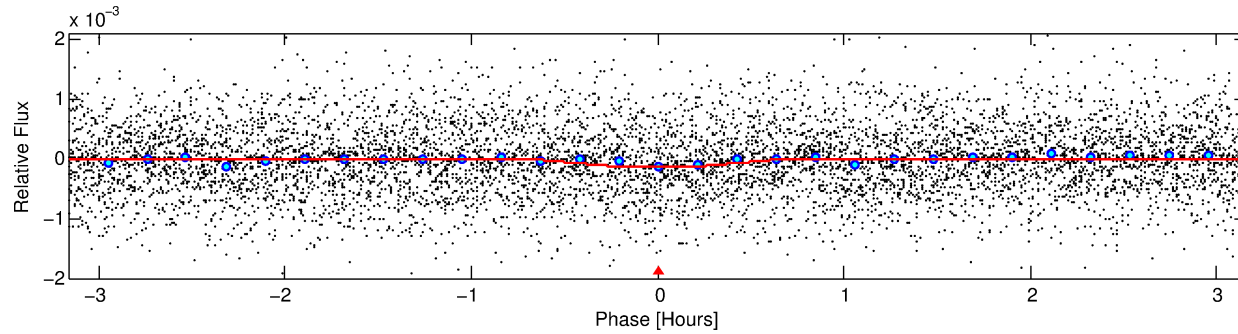
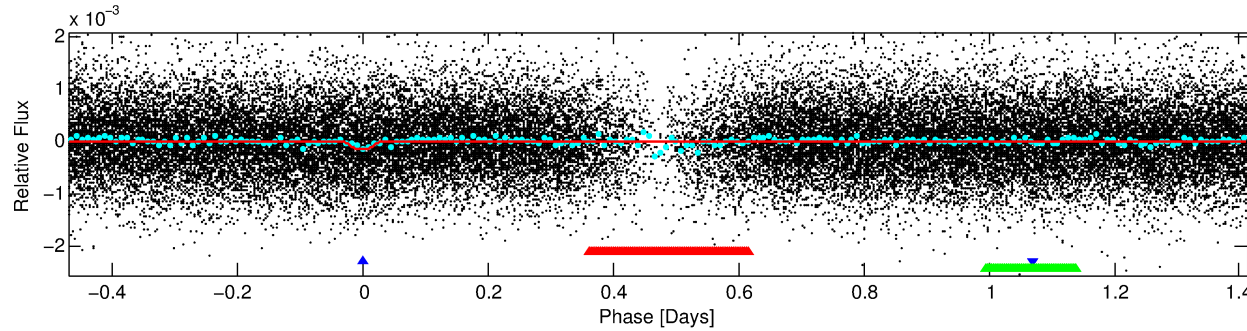
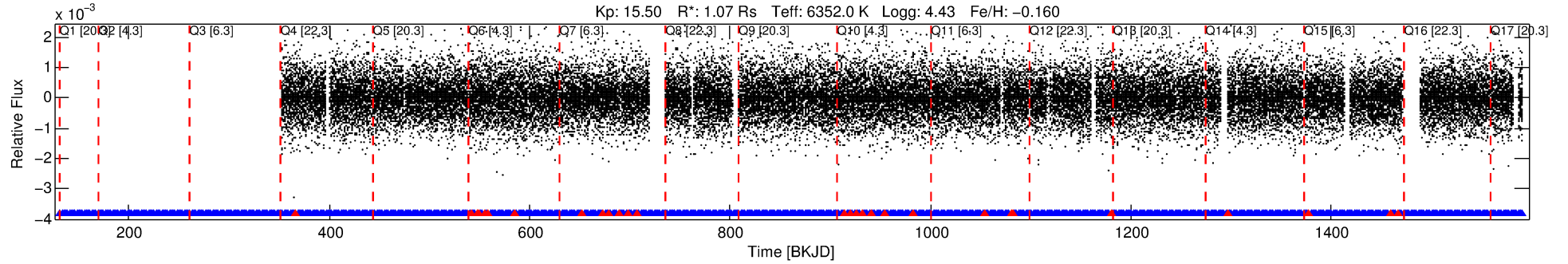
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005477964-02

No Significant Match Found

DV One-Page Summary

KIC: 5477964 Candidate: 2 of 3 Period: 1.883 d



DV Fit Results:

Period = 1.88261 [0.00002] d
Epoch = 131.5661 [0.0029] BKJD
Rp/R* = 0.0121 [0.0072]
a/R* = 7.86 [24.54]
b = 0.83 [1.17]
Seff = 1744.42 [683.97]
Teq = 1648 [162] K
Rp = 1.42 [0.95] Re
a = 0.0310 [0.0078] AU
Ag = 19.82 [24.82] [0.76 σ]
Teffp = 5376 [1624] K [2.28 σ]

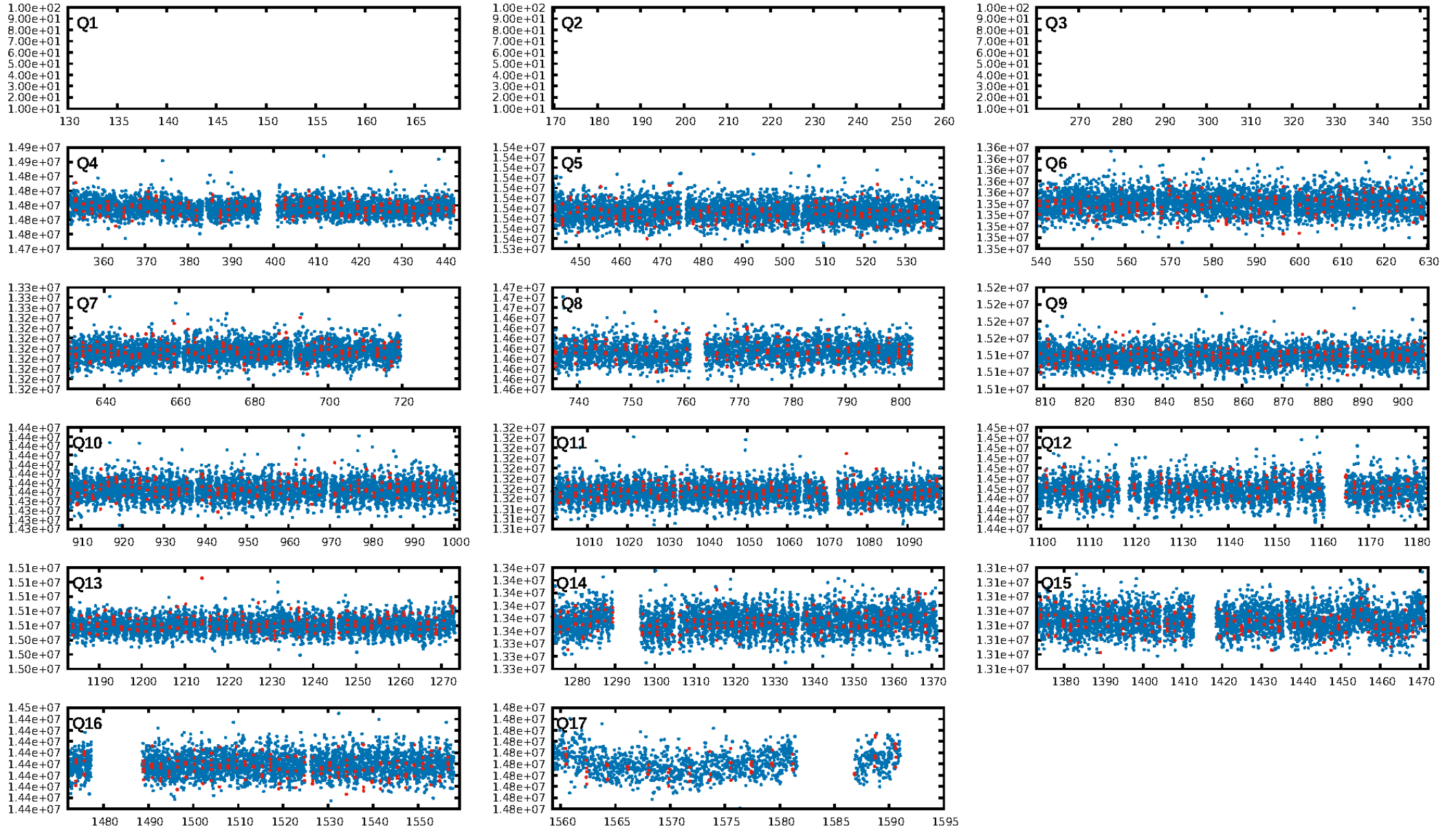
DV Diagnostic Results:

ShortPeriod-sig: 0.4% [0.00 σ]
LongPeriod-sig: 100.0% [3.71 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.38e-21
RollingBand-fgt: 0.95 [560/588]
GhostDiagnostic-chr: 4.257
Centroid-sig: 75.2%
Centroid-so: 1.638 arcsec [0.86 σ]
OotOffset-rm: 1.264 arcsec [1.50 σ]
KicOffset-rm: 1.279 arcsec [1.43 σ]
OotOffset-st: 3/3/2/2 [10]
KicOffset-st: 3/3/2/2 [10]
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DiffImageOverlap-fno: 1.00 [14/14]

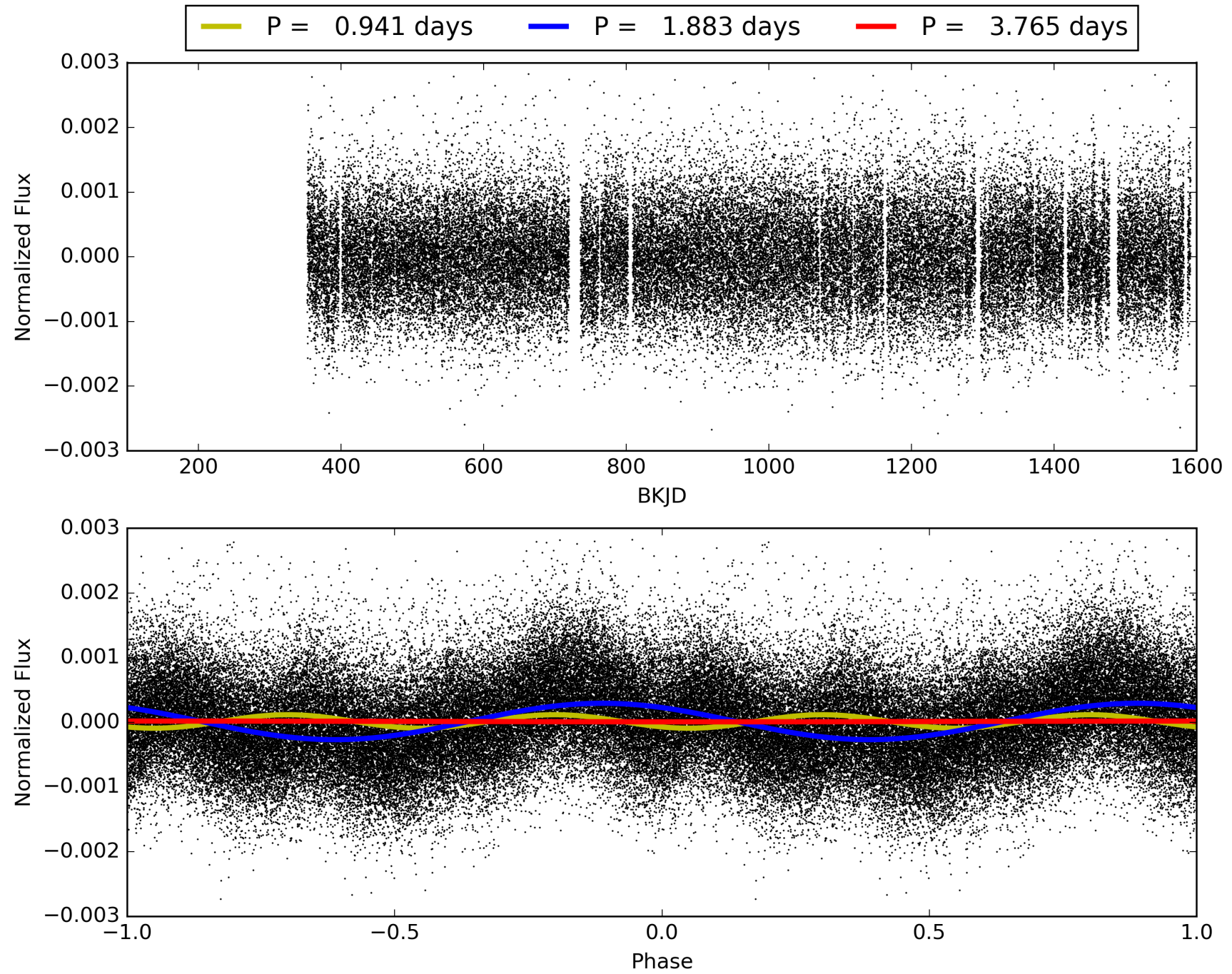
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:08:36 Z

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

TCE 005477964-02, PDC Light Curves

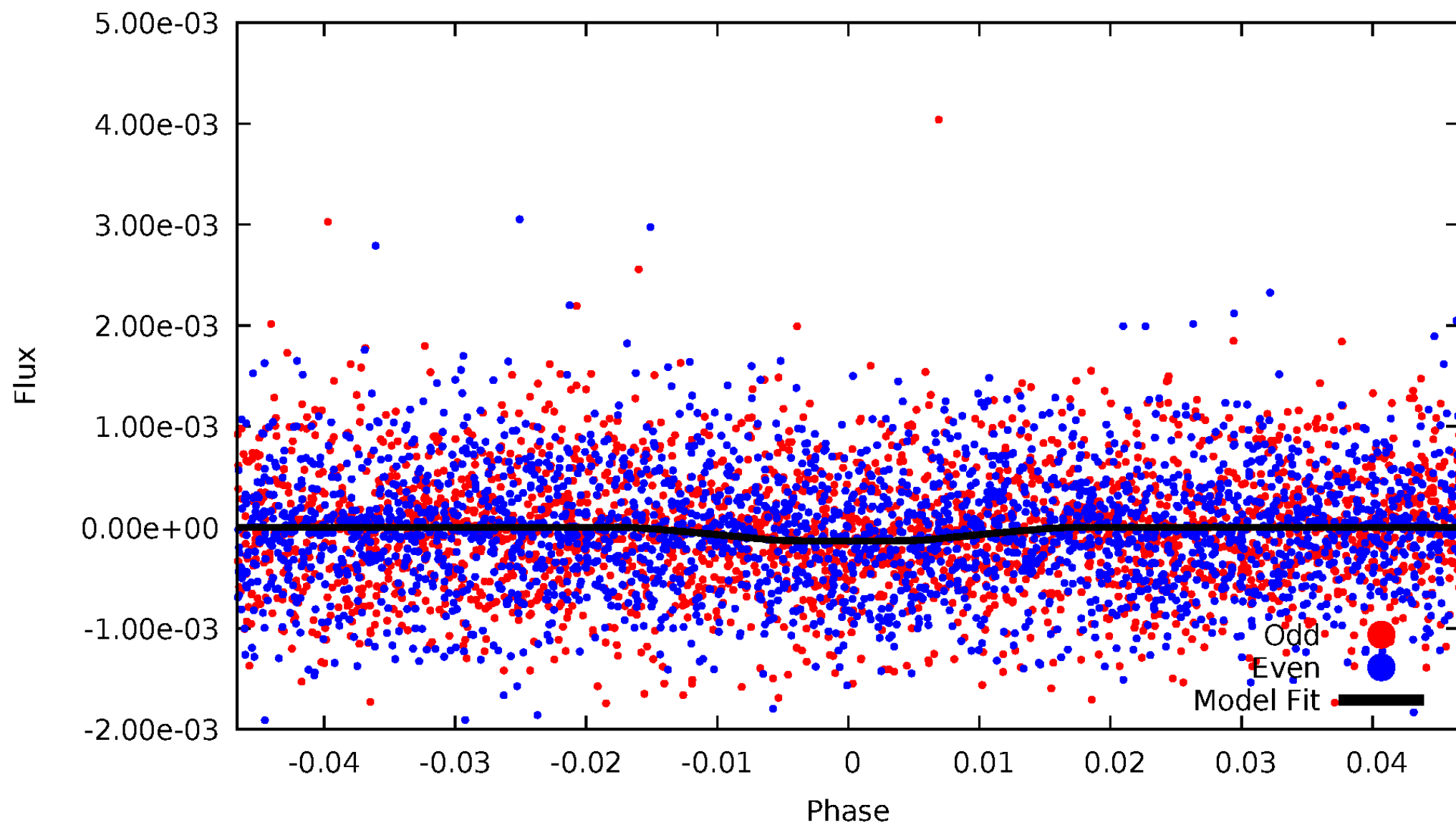


TCE 005477964-02



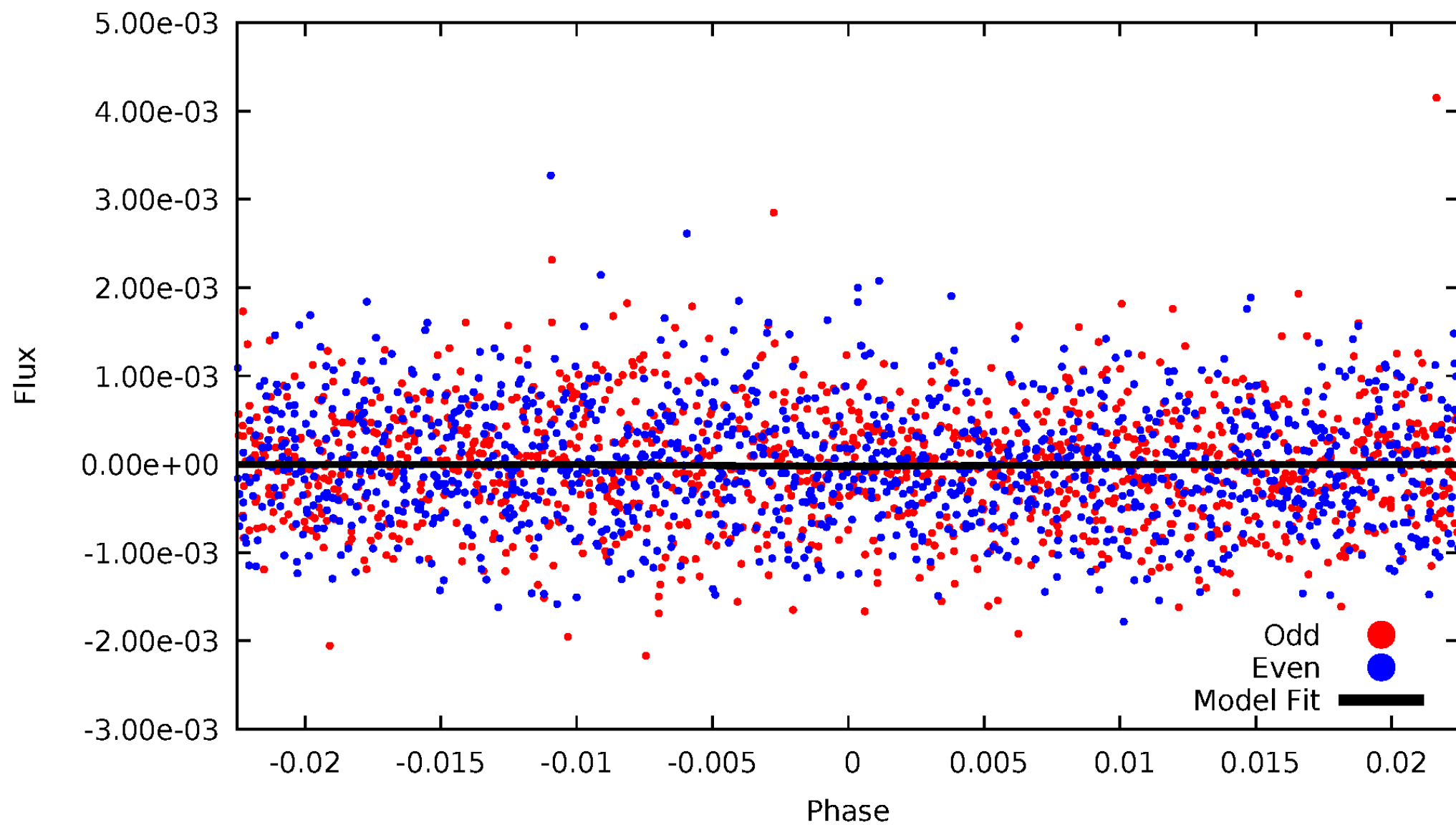
DV Odd/Even

TCE 005477964-02



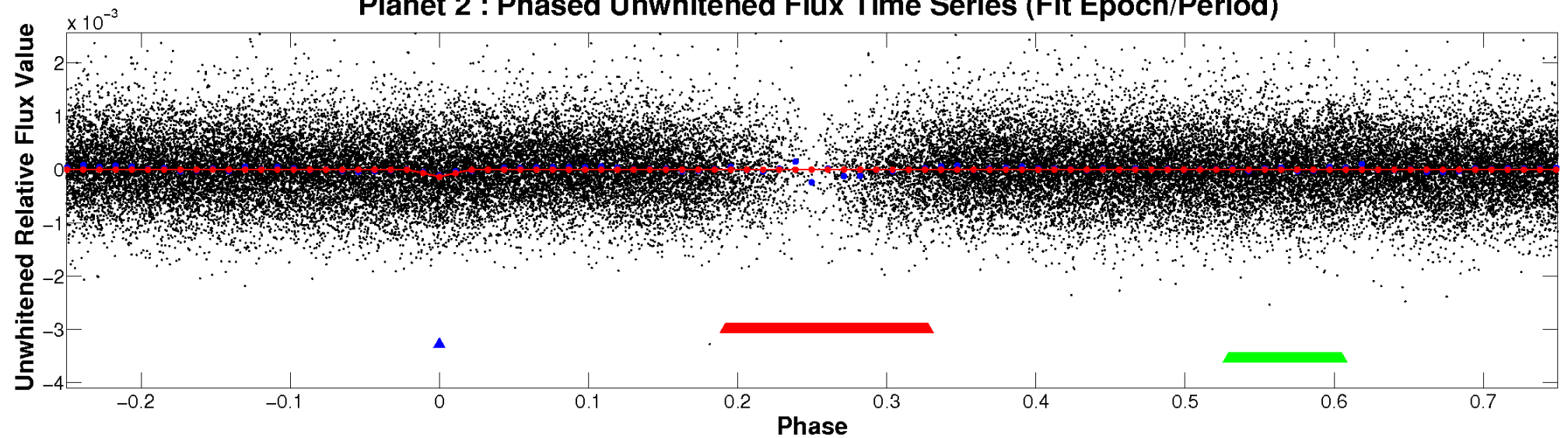
ALT Odd/Even

TCE 005477964-02

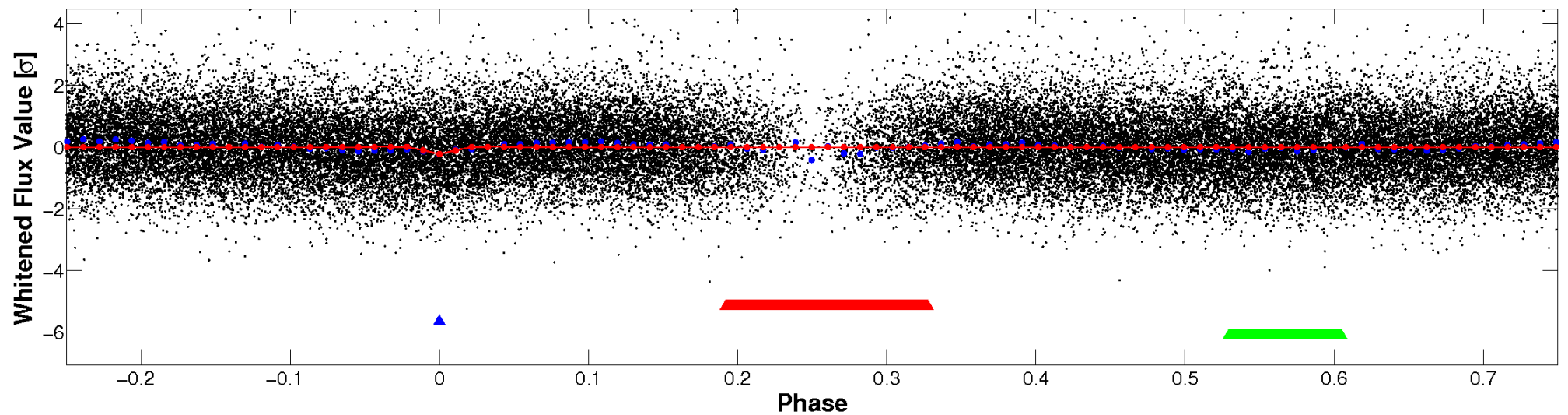


Non-Whitened Vs. Whitened Light Curve

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

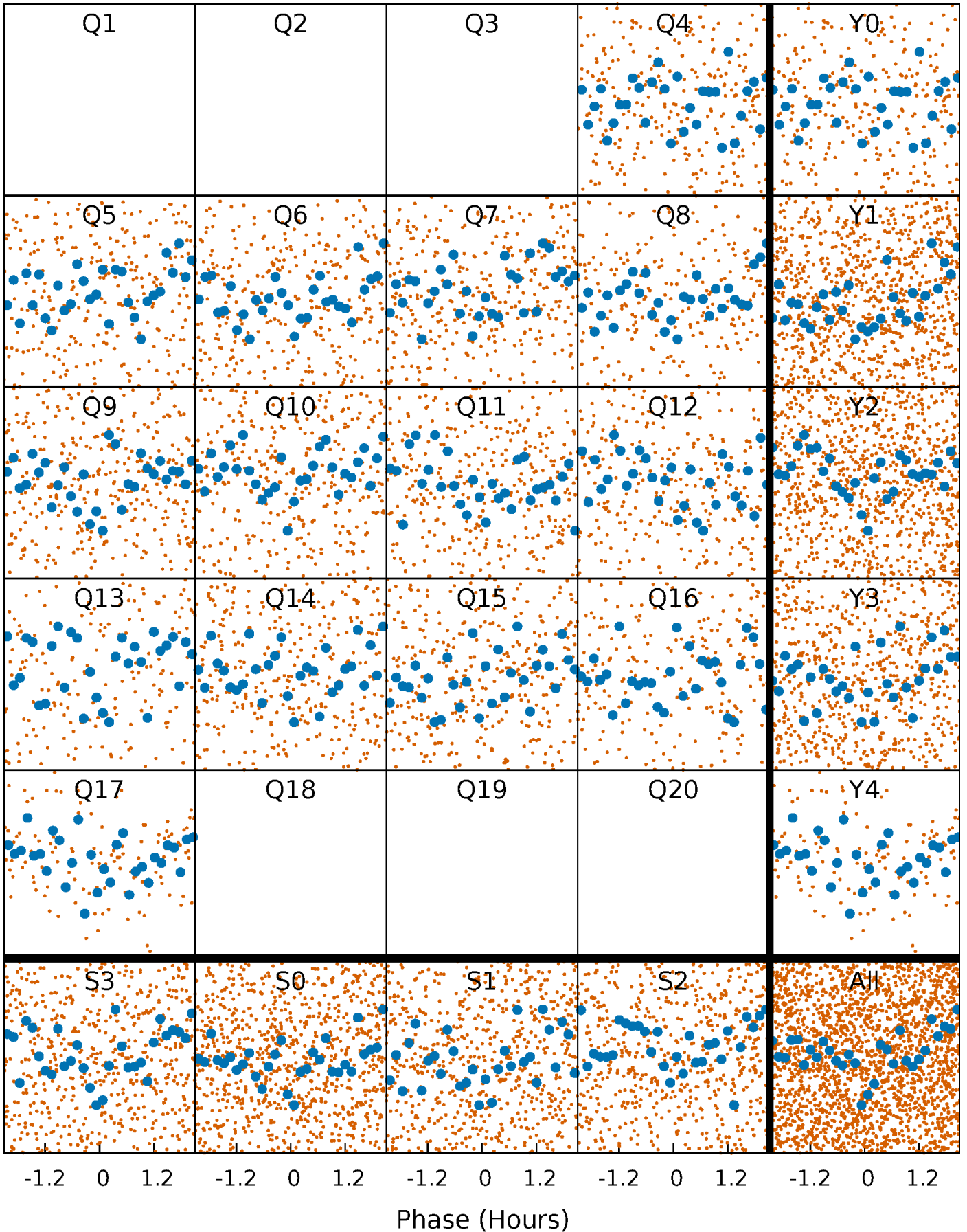


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



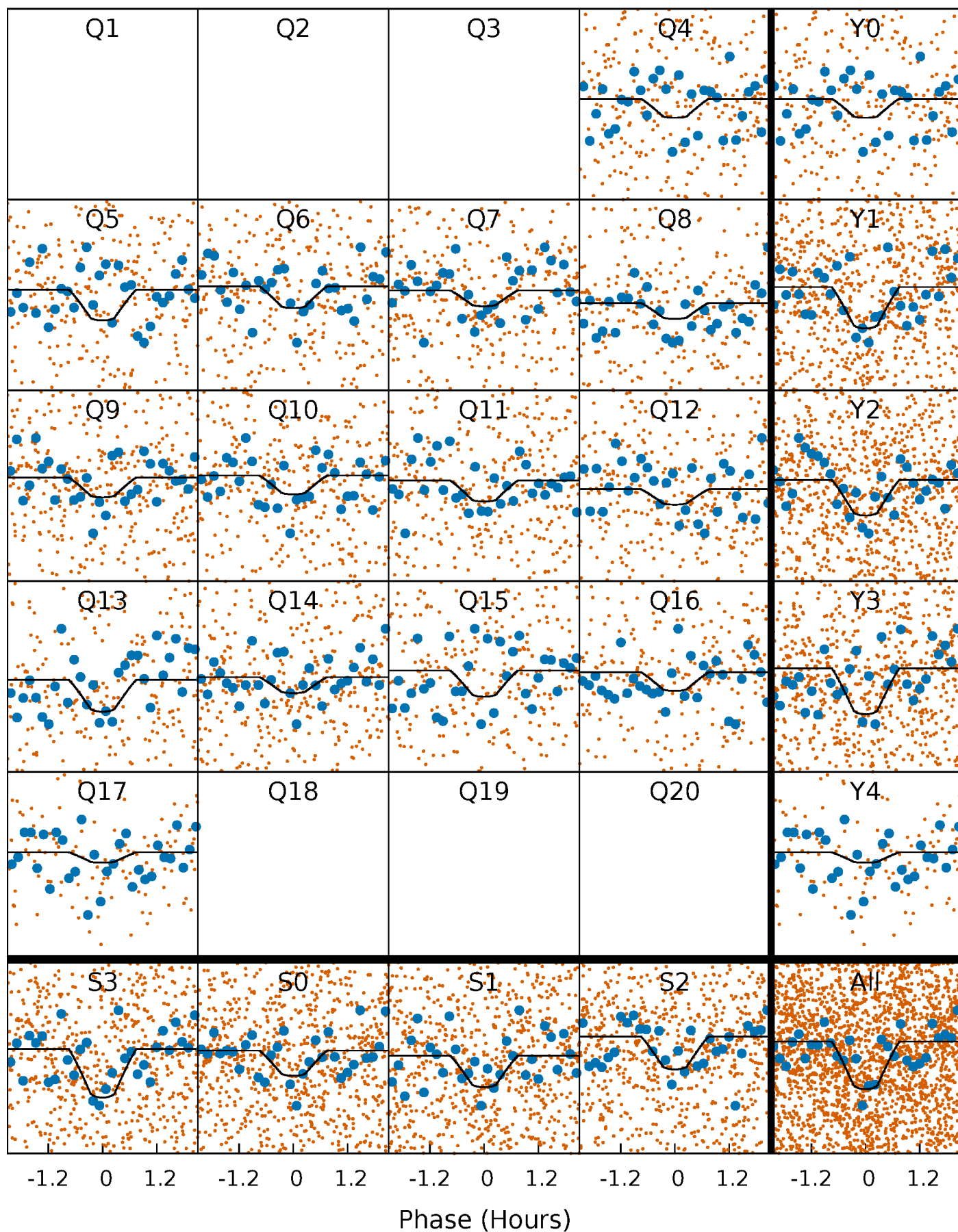
PDC Quarter-Phased Transit Curves

TCE 005477964-02 P= 1.882615 Days $T_0=131.566093$ (BKJD)



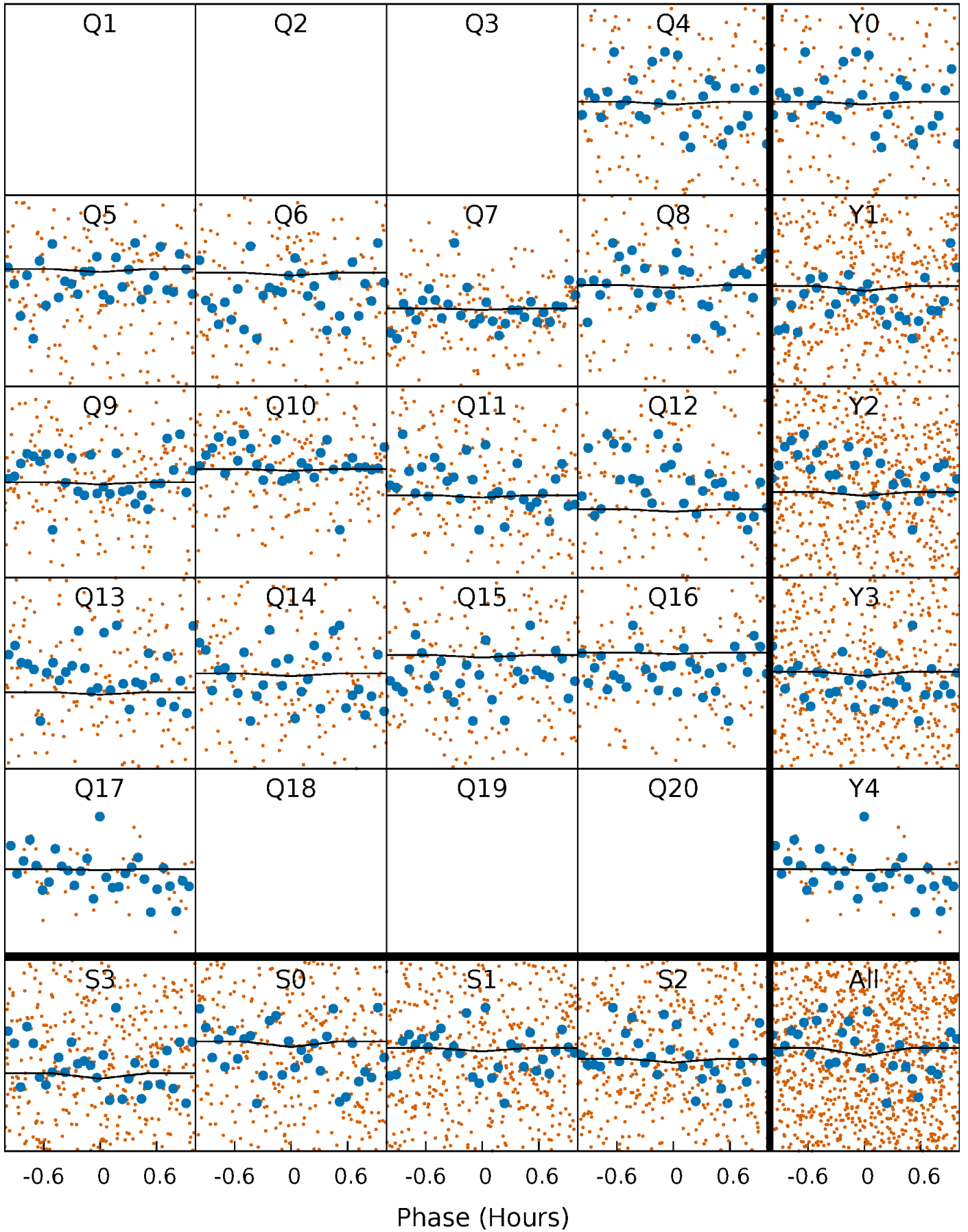
DV Quarter-Phased Transit Curves

TCE 005477964-02 P= 1.882615 Days $T_0=131.566093$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

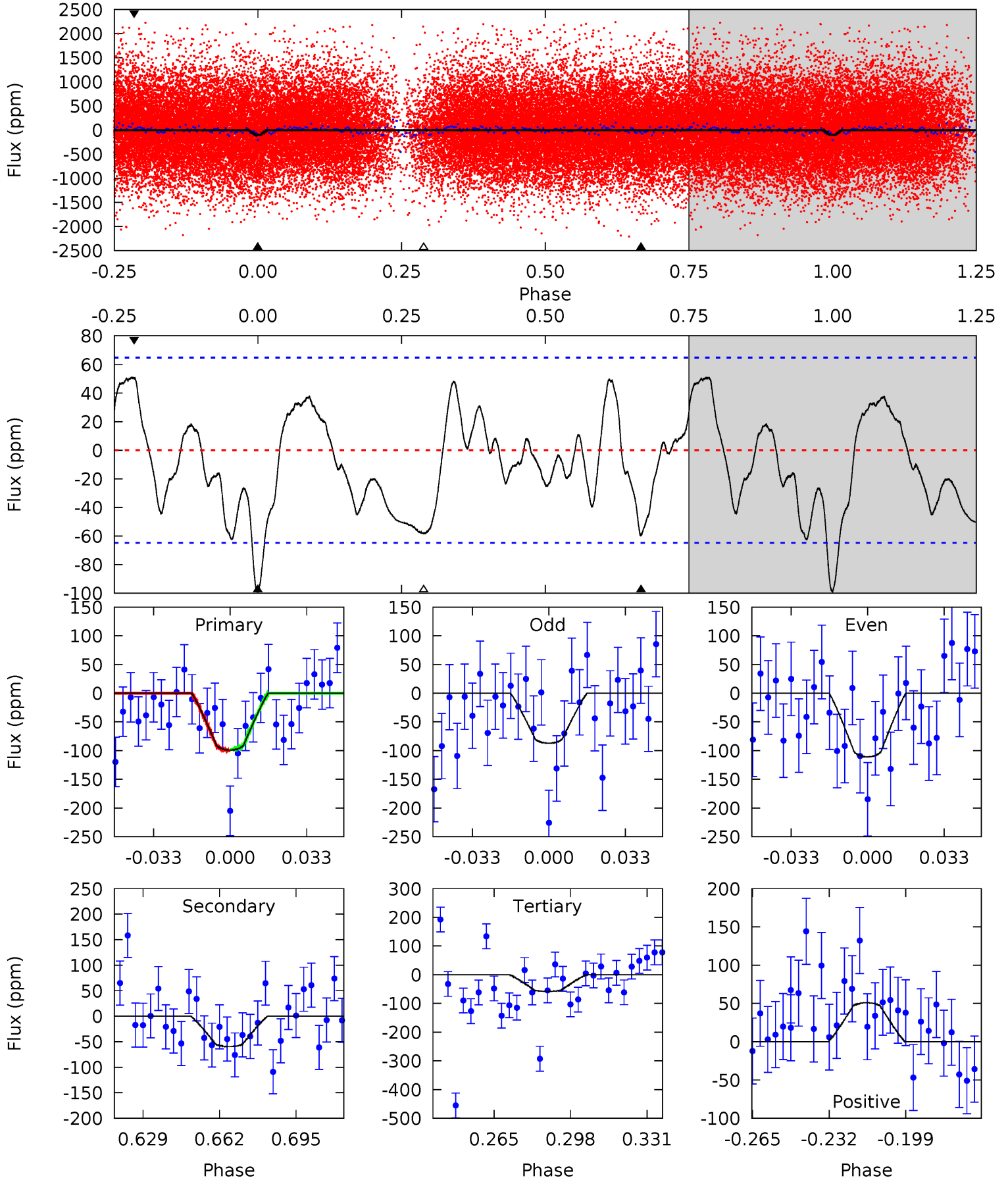
TCE 005477964-02 P= 1.882577 Days $T_0=131.560202$ (BKJD)



DV Model-Shift Uniqueness Test

005477964-02, P = 1.882615 Days, E = 131.566093 Days

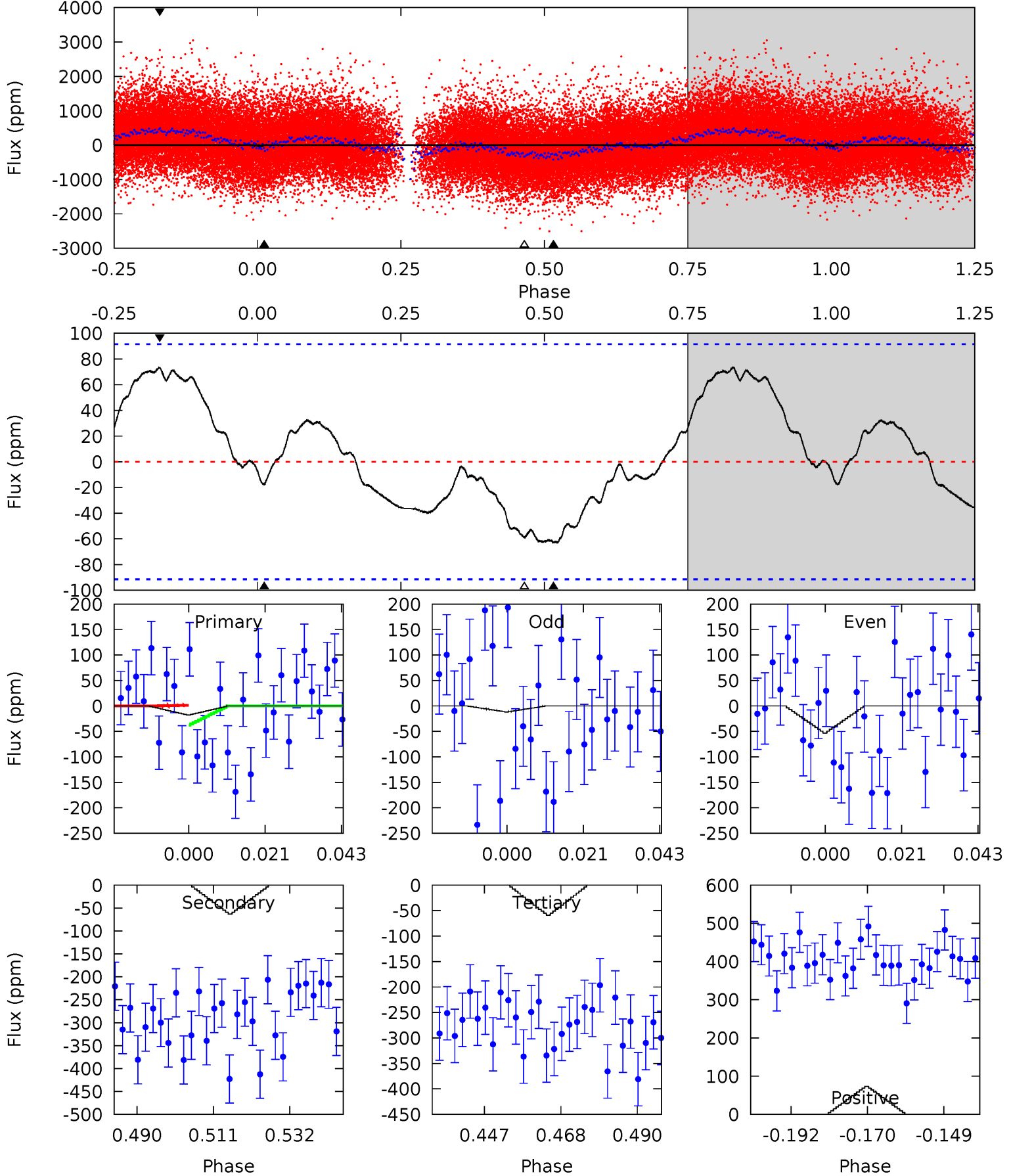
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.33	4.41	4.30	3.76	4.79	2.13	1.98	3.02	3.56	0.11	0.64	0.88	0.96	0.34	0.08



Alt Model-Shift Uniqueness Test

005477964-02, P = 1.882577 Days, E = 131.560202 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.95	3.37	3.15	3.92	4.88	2.30	1.96	-2.20	-2.97	0.22	-0.55	1.10	0.50	0.54	0.98



Stellar Parameters For KIC 005477964

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6352^{+175}_{-241}	$4.427^{+0.065}_{-0.195}$	$-0.160^{+0.250}_{-0.300}$	$1.072^{+0.326}_{-0.116}$	$1.118^{+0.148}_{-0.148}$	$1.278^{+0.433}_{-0.625}$
	+3%/-4%	+1%/-4%	+156%/-188%	+30%/-11%	+13%/-13%	+34%/-49%
Source	KIC0	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 005477964-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-60 ± 14	$1.54^{+0.85}_{-0.78}$	2331^{+162}_{-114}	4951^{+2114}_{-811}	13^{+42}_{-8}
Alt.	-63 ± 19	$0.86^{+0.76}_{-0.58}$	2342^{+130}_{-123}	6633^{+8238}_{-1790}	43^{+349}_{-32}

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

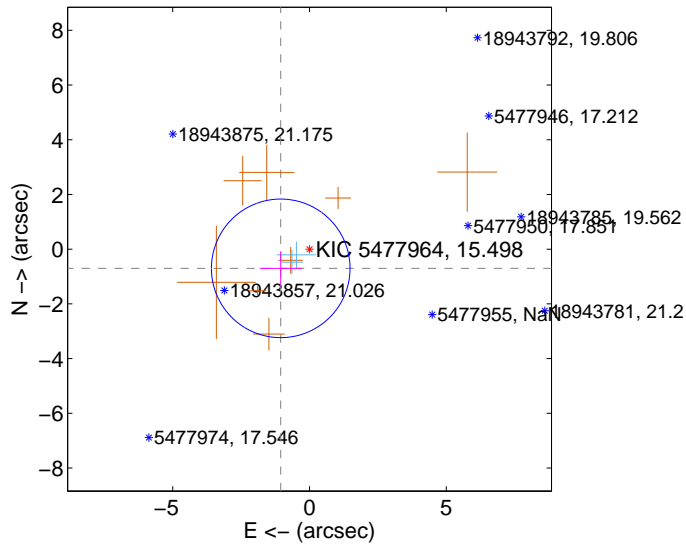
Supplemental centroid analysis for 005477964-02. Kepler magnitude: 15.50. Transit SNR 6.53

There are 2 quarters with good PRF difference image offsets

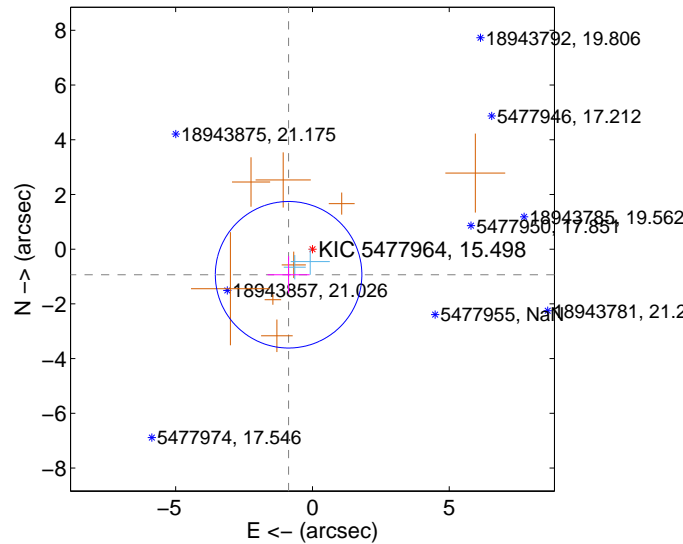
The direct PRF centroid is offset from the target star catalog position by about 0.56 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.264 ± 0.844	1.50	1.052 ± 0.766	-0.701 ± 0.622
PRF-fit source offset from KIC position	1.279 ± 0.893	1.43	0.872 ± 0.770	-0.936 ± 0.679
photometric centroid source offset	1.64 ± 1.91	0.86	1.48 ± 1.95	-0.71 ± 1.73

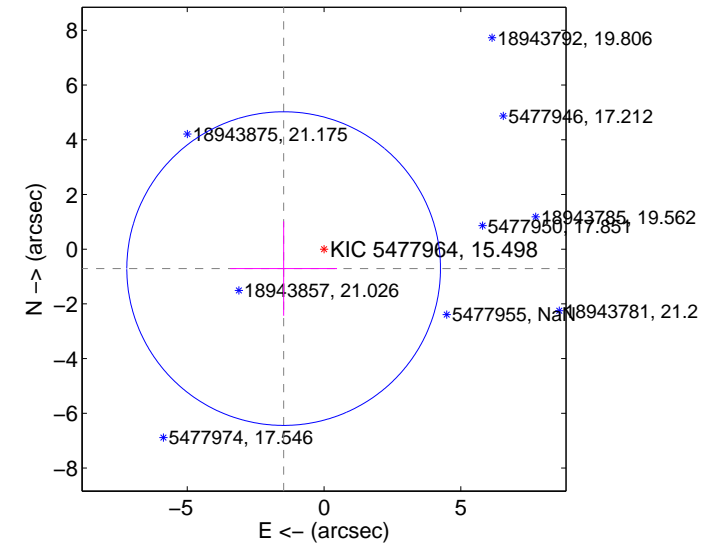
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

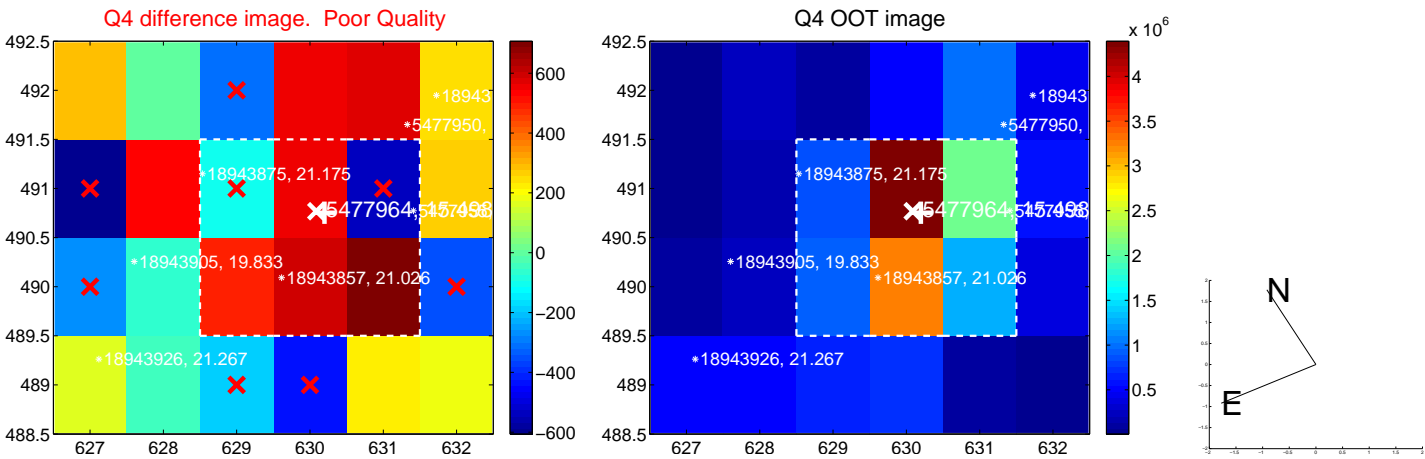
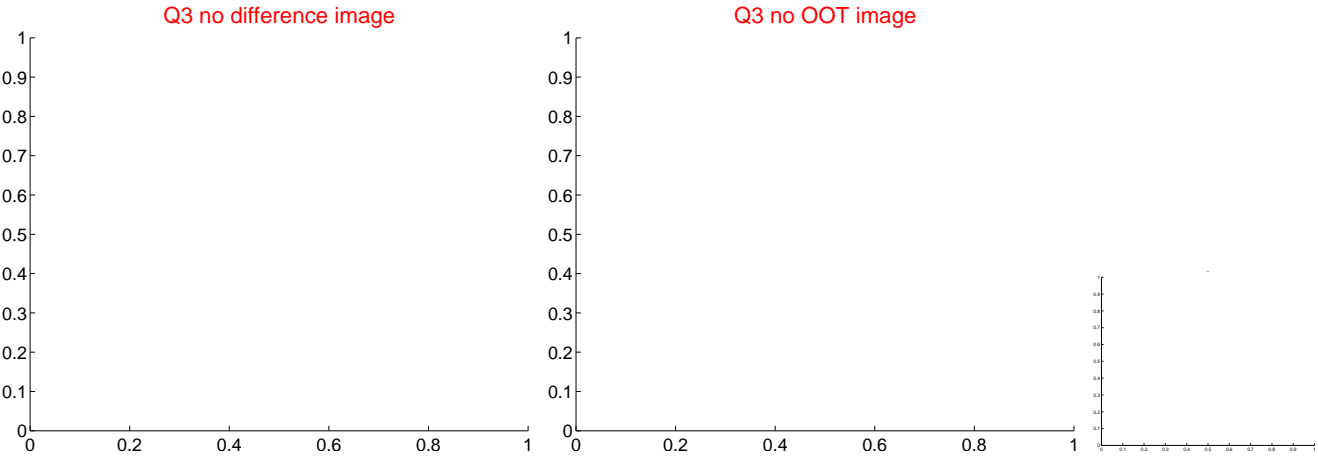
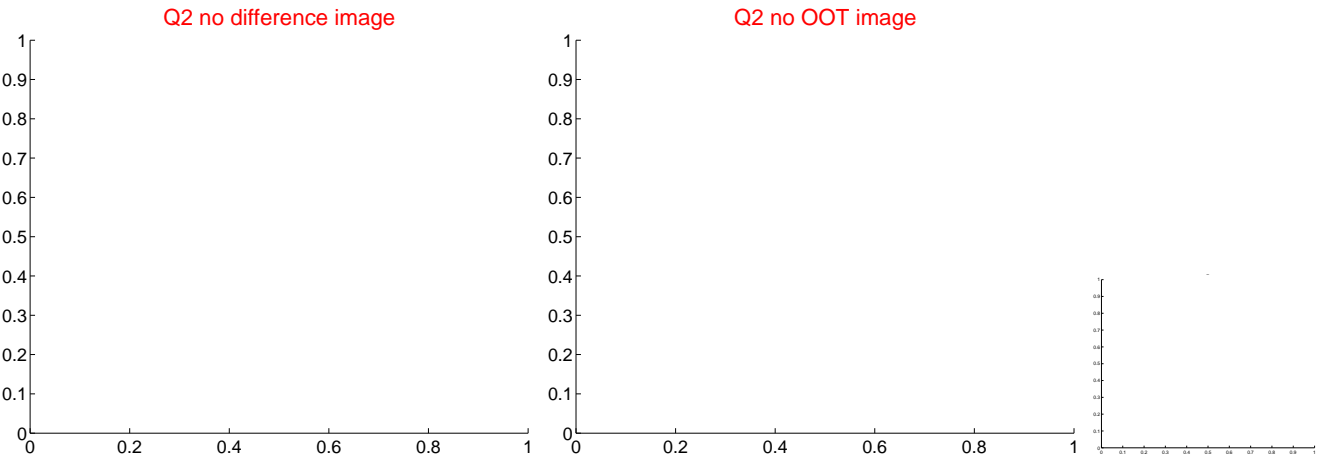
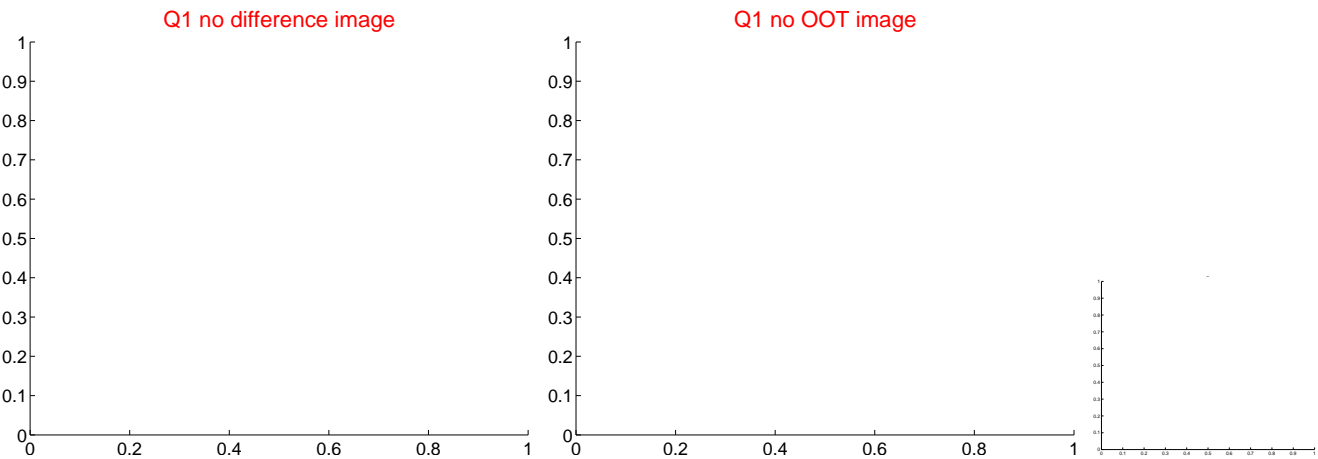


offset from photometric centroids

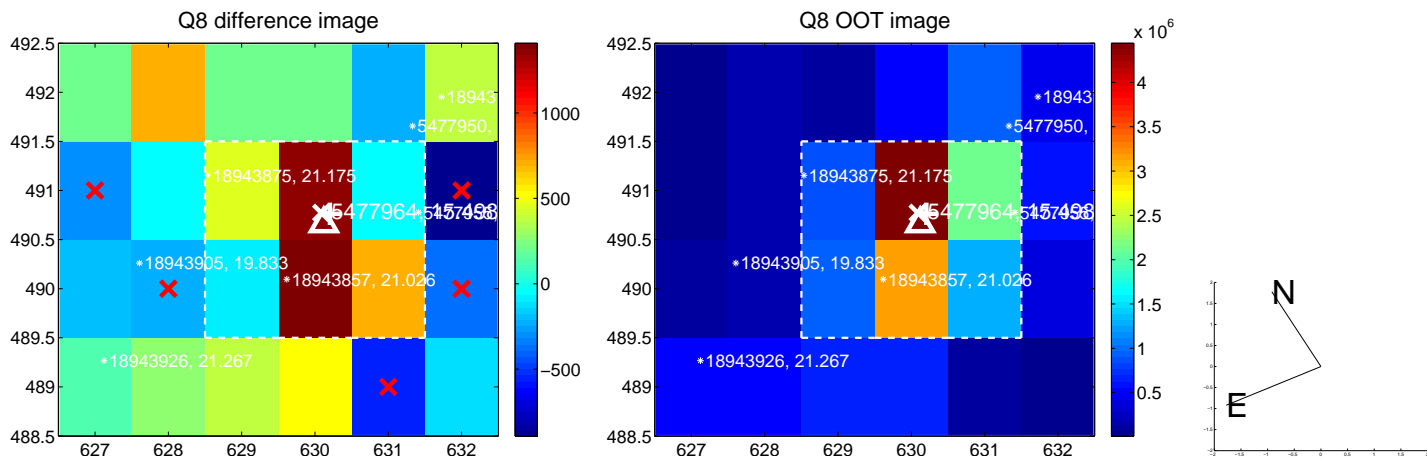
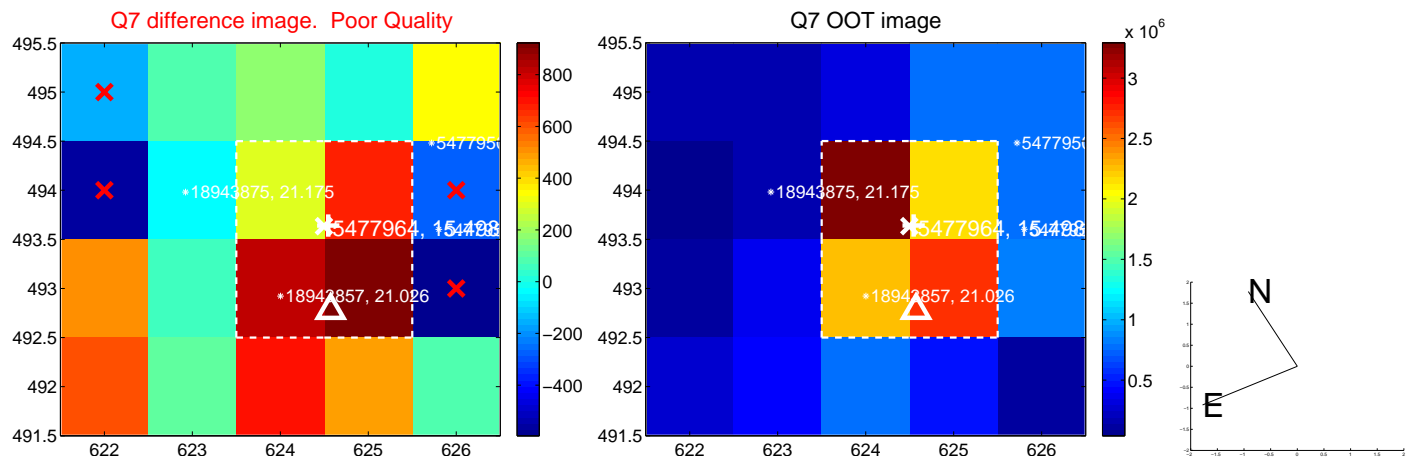
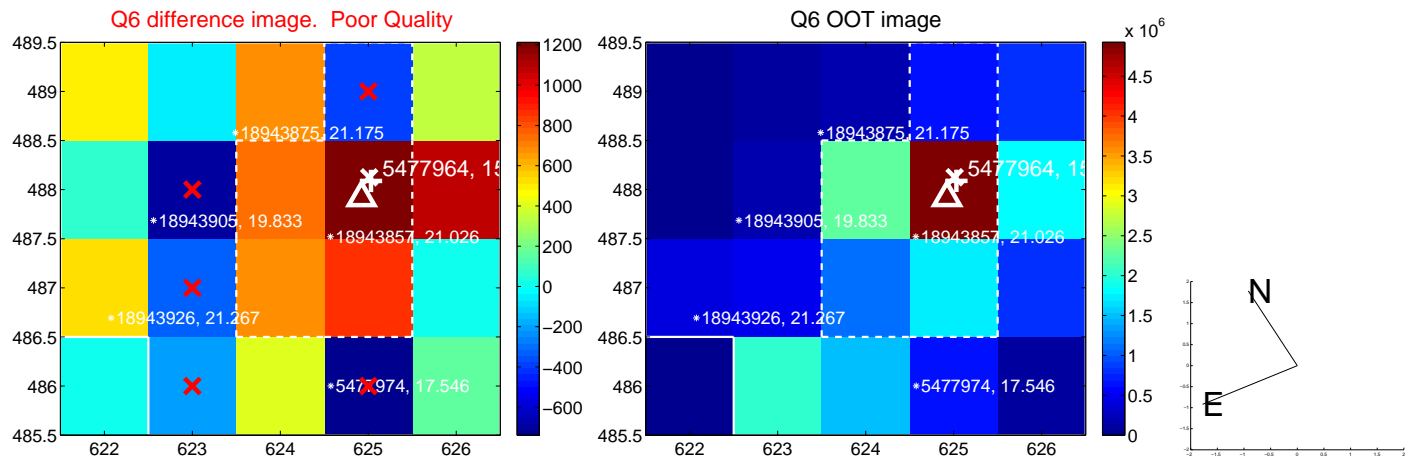
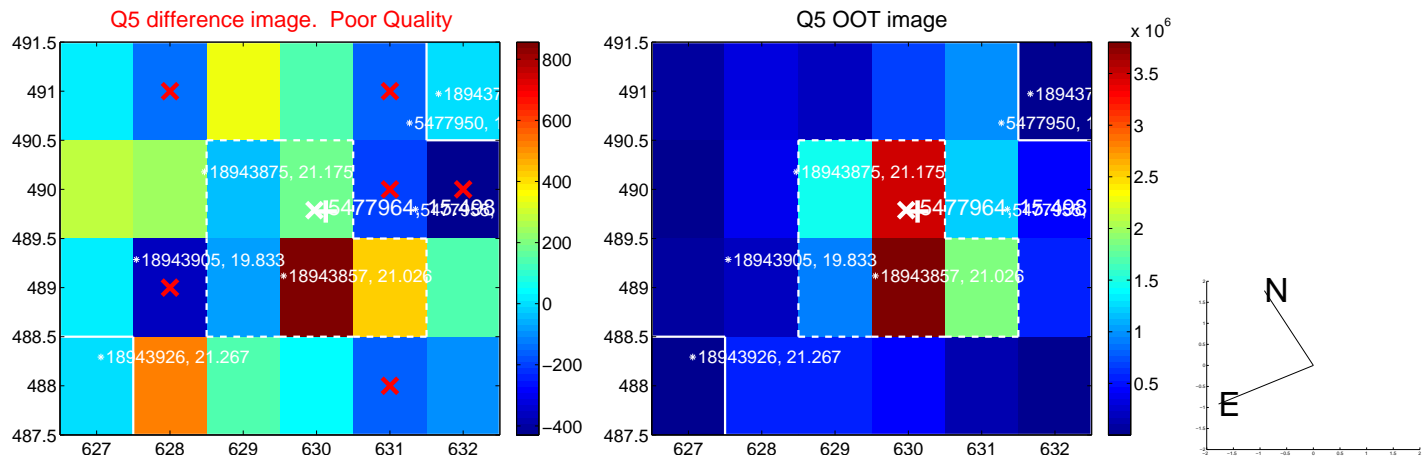


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

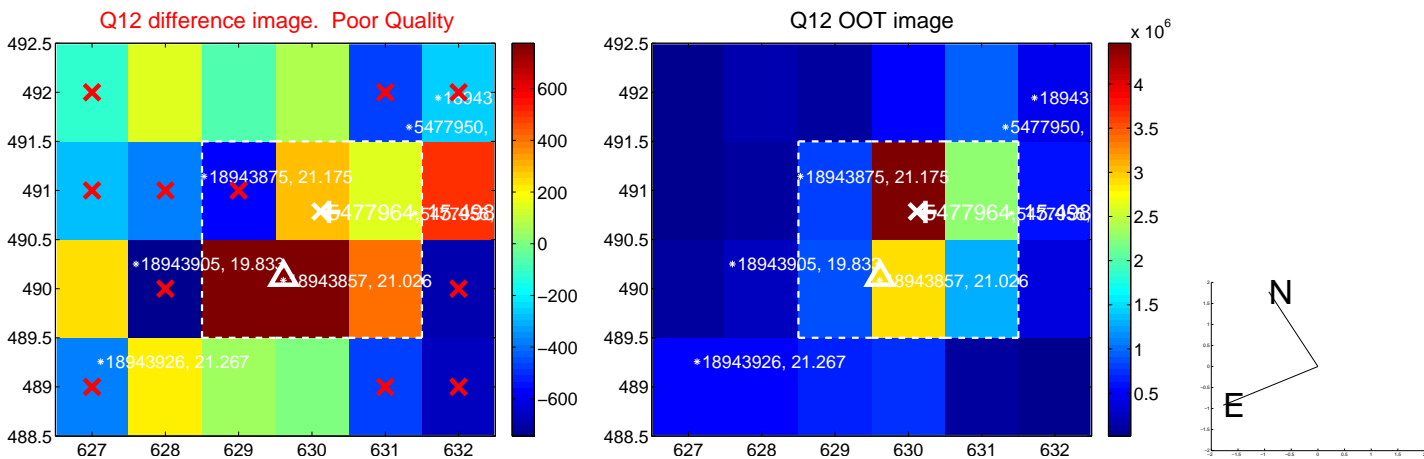
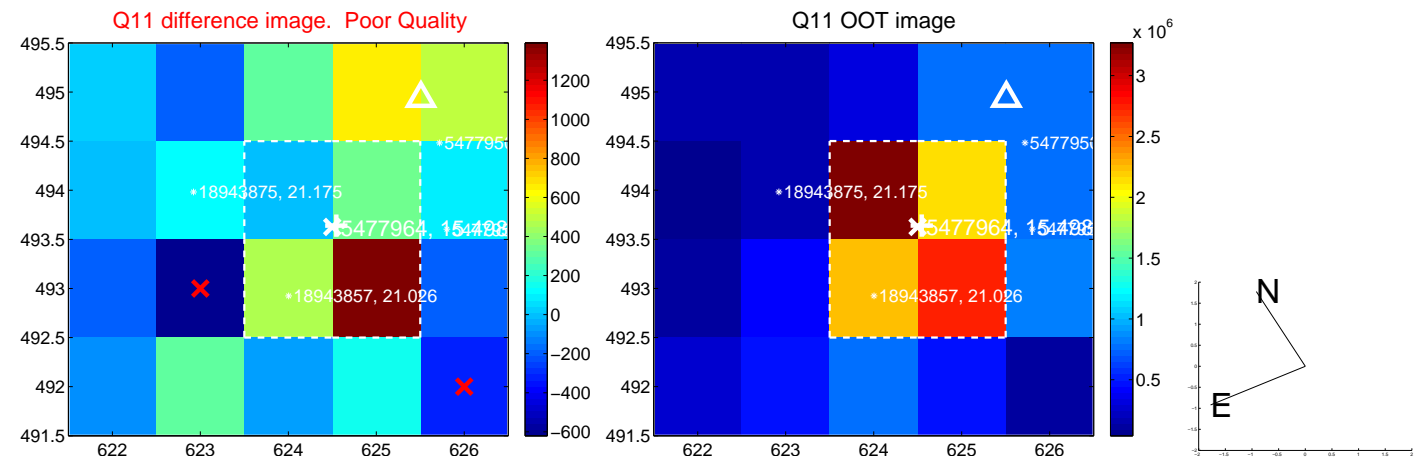
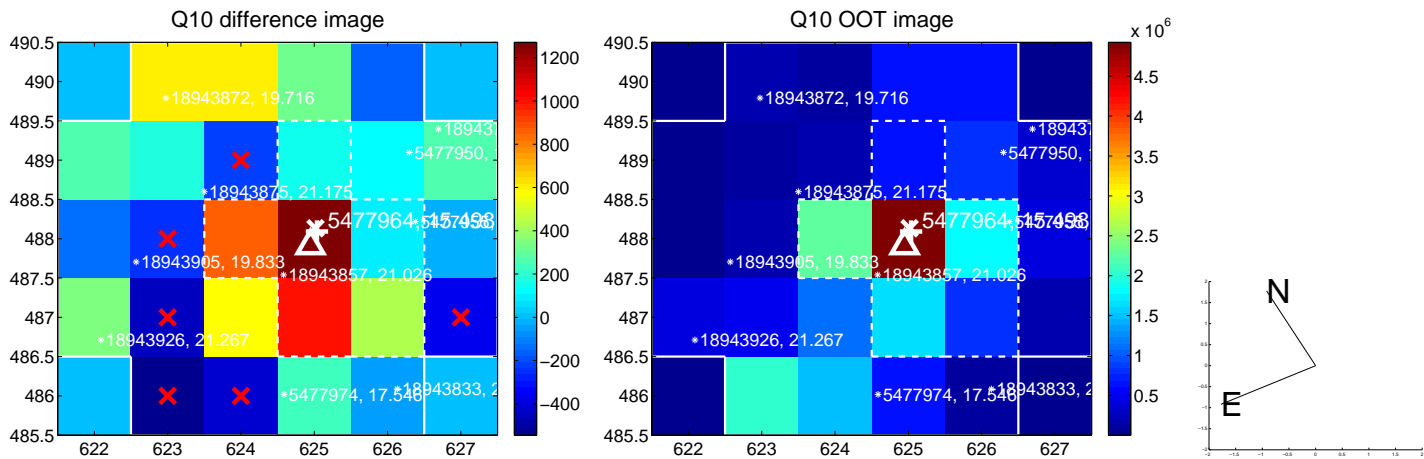
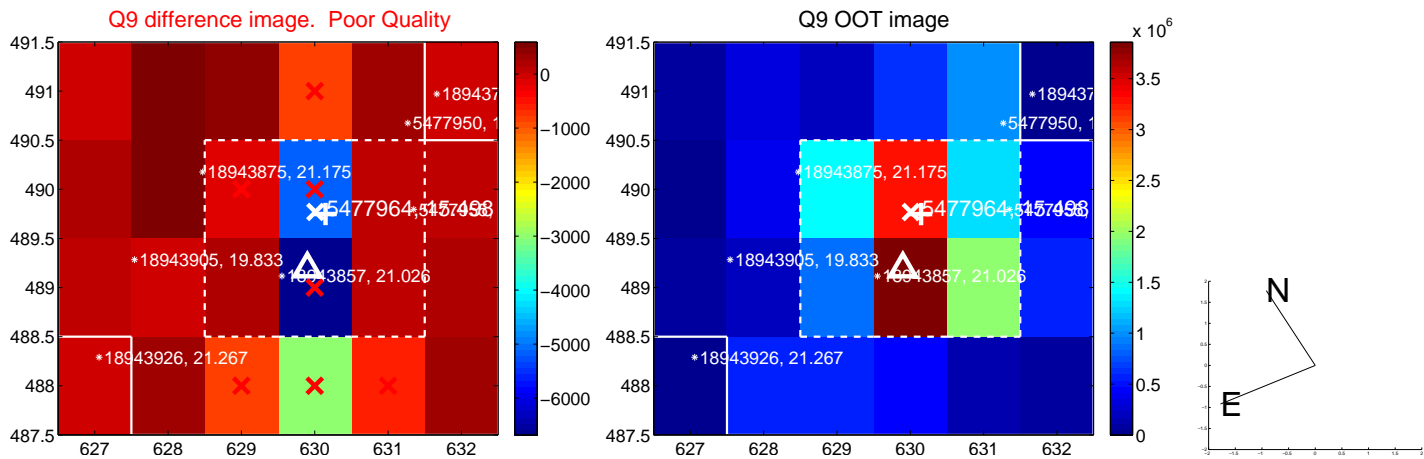
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



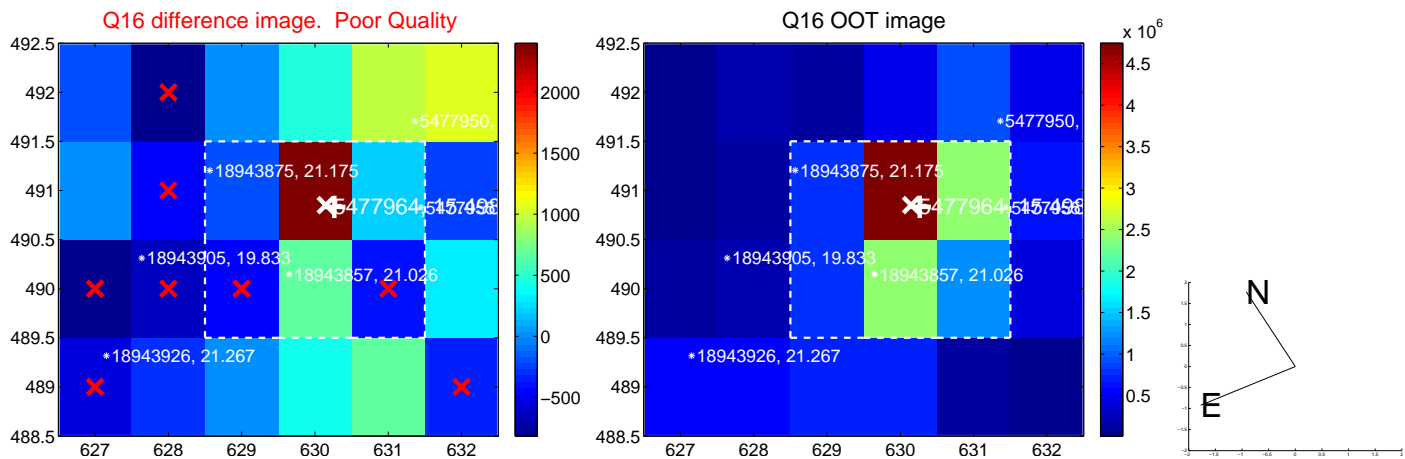
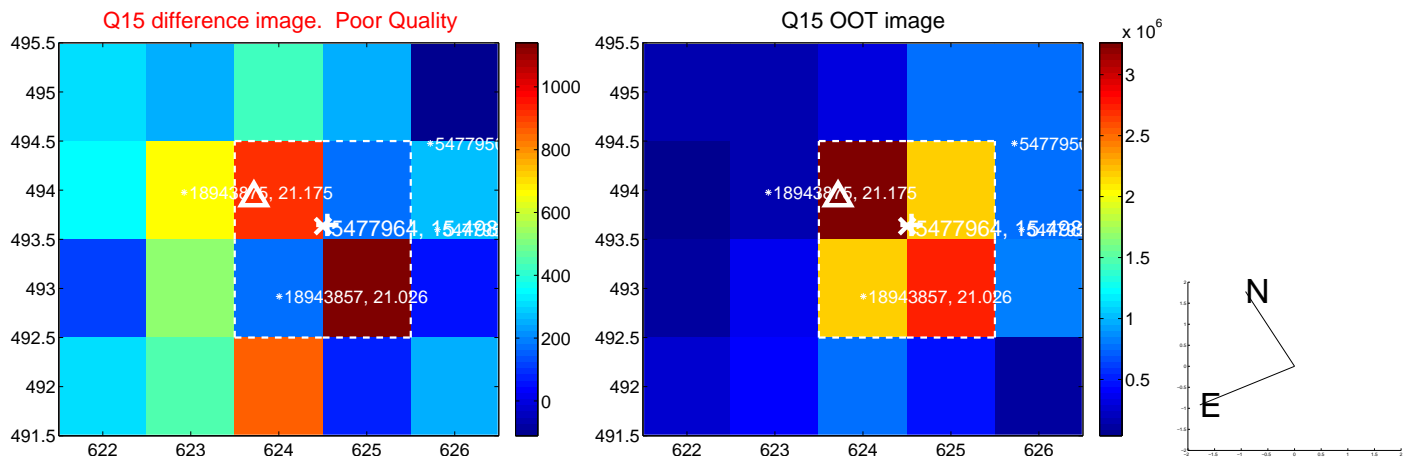
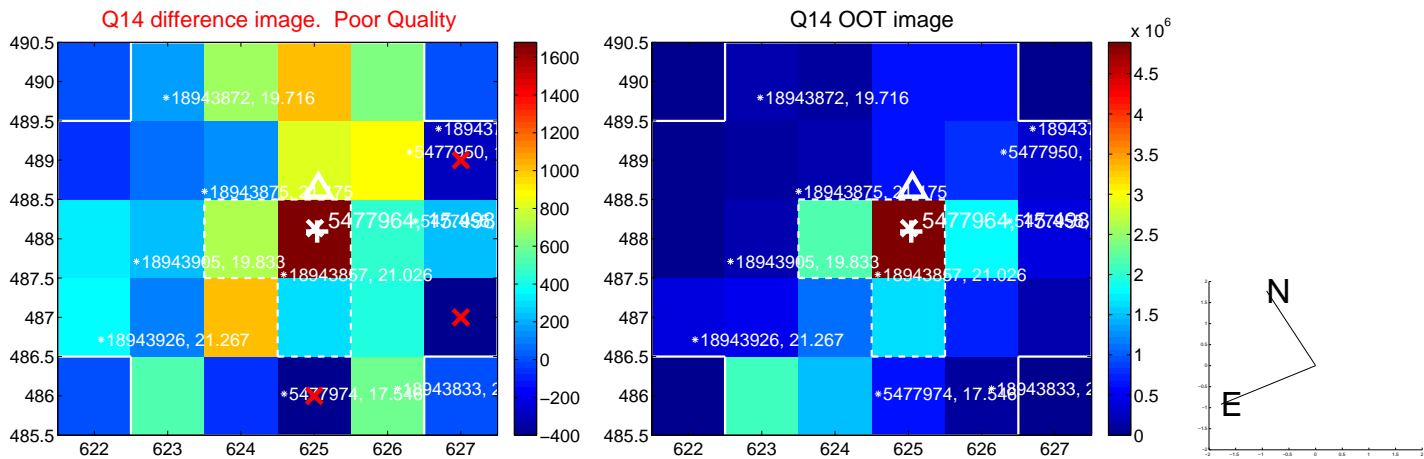
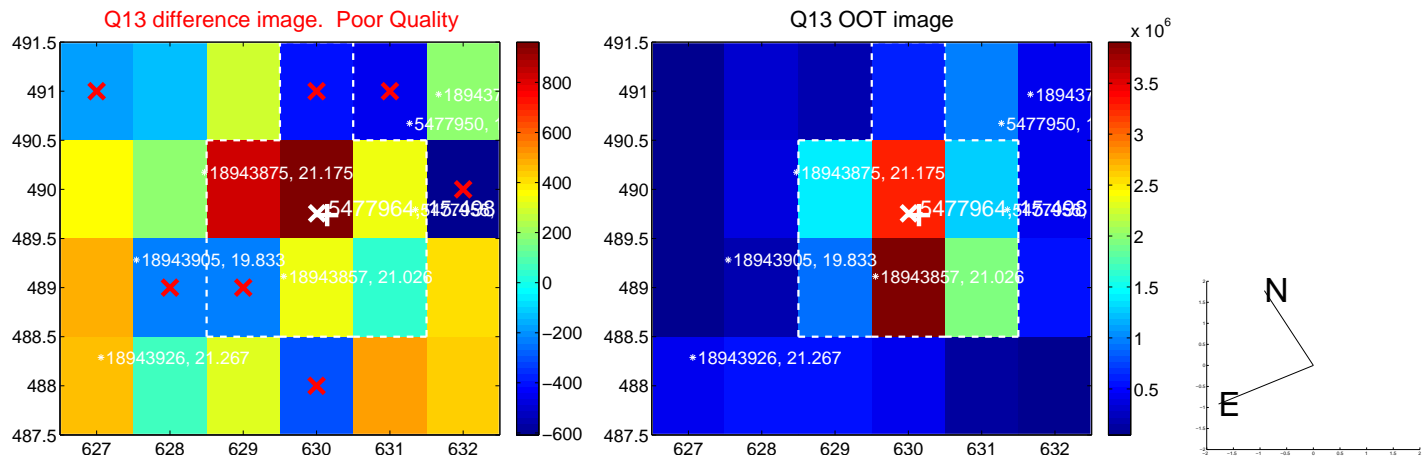
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



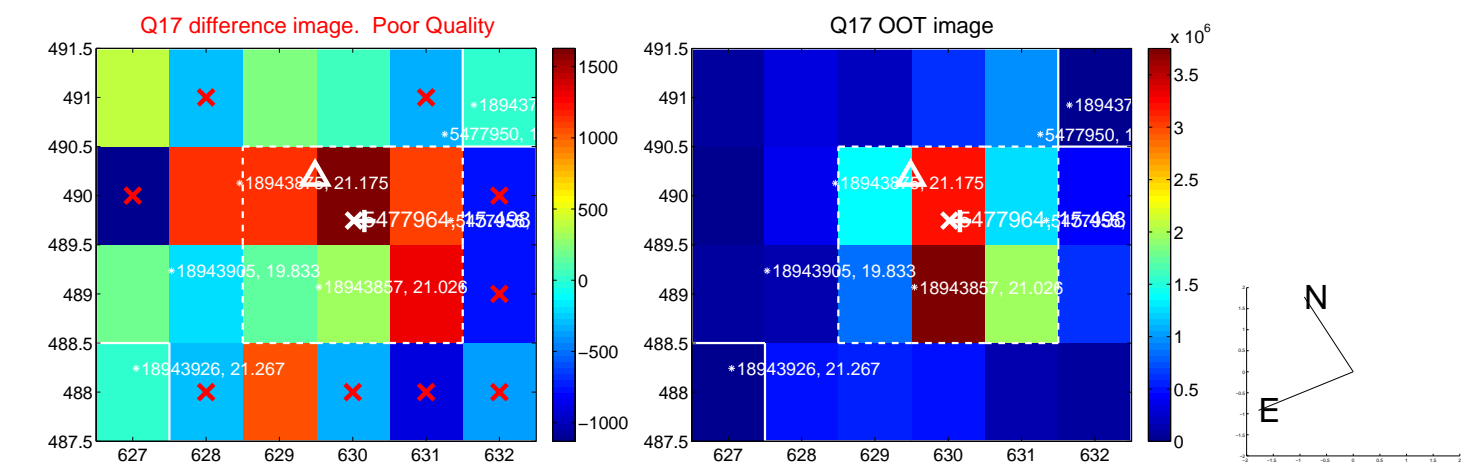
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



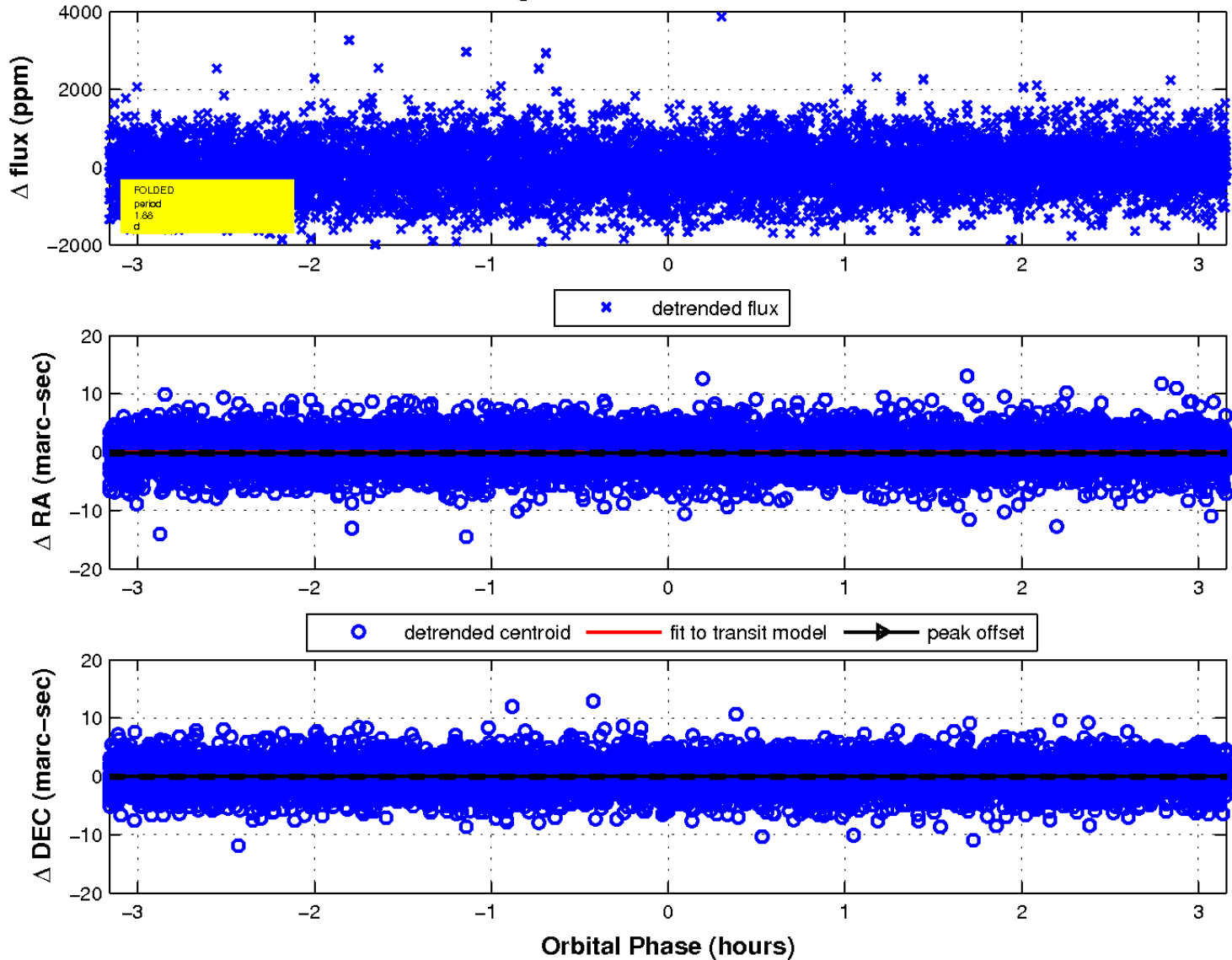
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

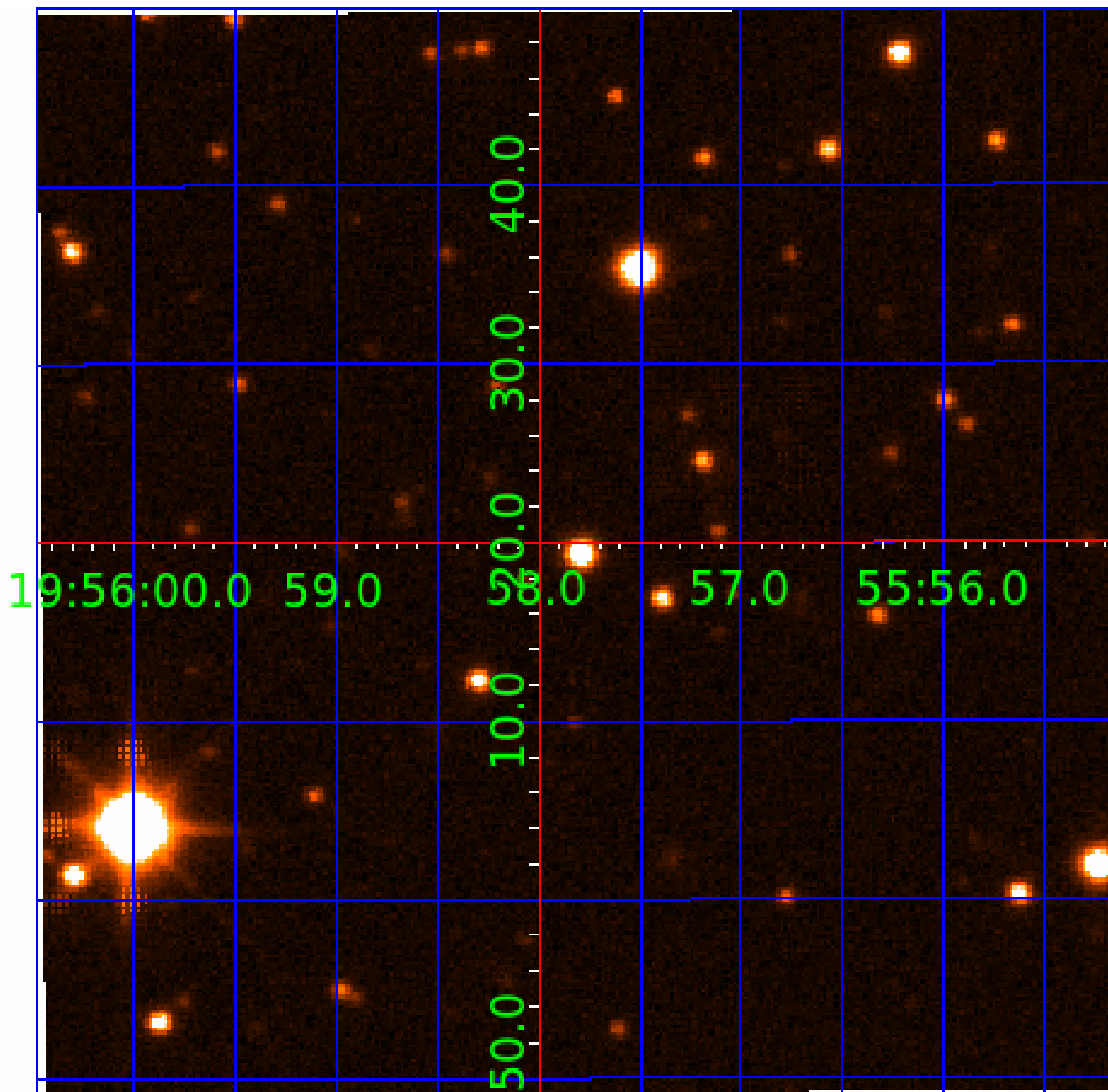


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 005477964

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})
005477964-01	OBS	No	1.882285	132.182969	72.5	1.413	10.0	4.1	1.07	6352	1.03	1744.83
005477964-02	OBS	No	1.882615	131.566093	136.8	1.054	9.9	6.5	1.07	6352	1.42	1744.42
005477964-03	OBS	No	3.765597	132.562555	80.8	12.120	8.8	8.0	1.07	6352	1.11	692.18

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005477964-01	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_KIC_POS
005477964-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
005477964-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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.

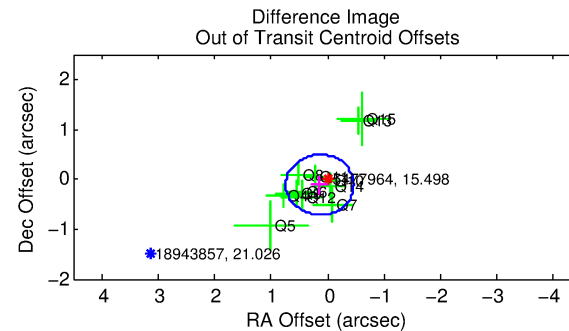
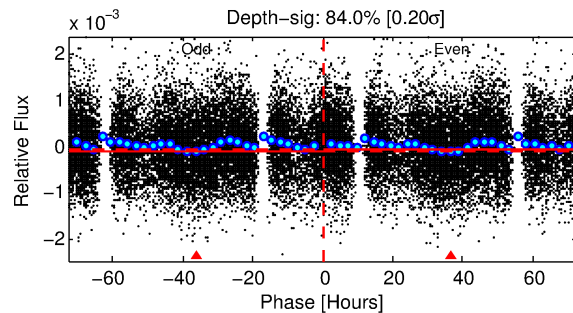
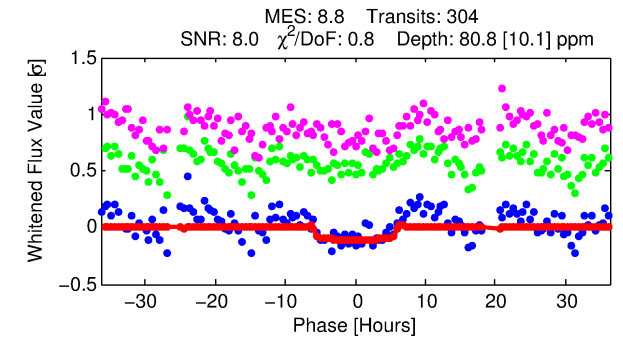
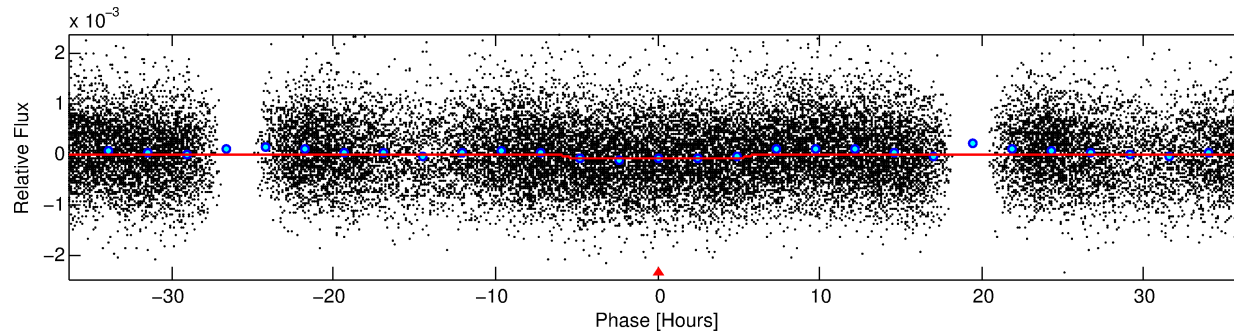
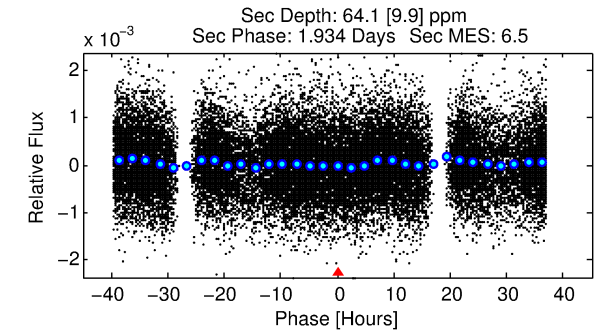
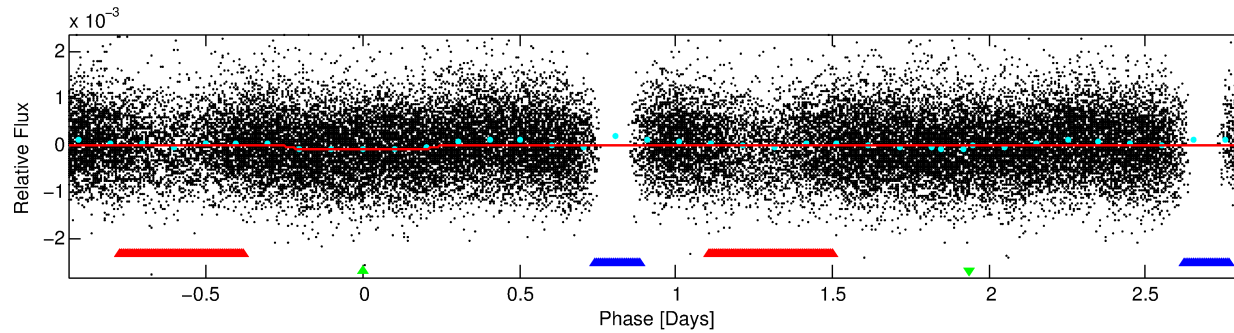
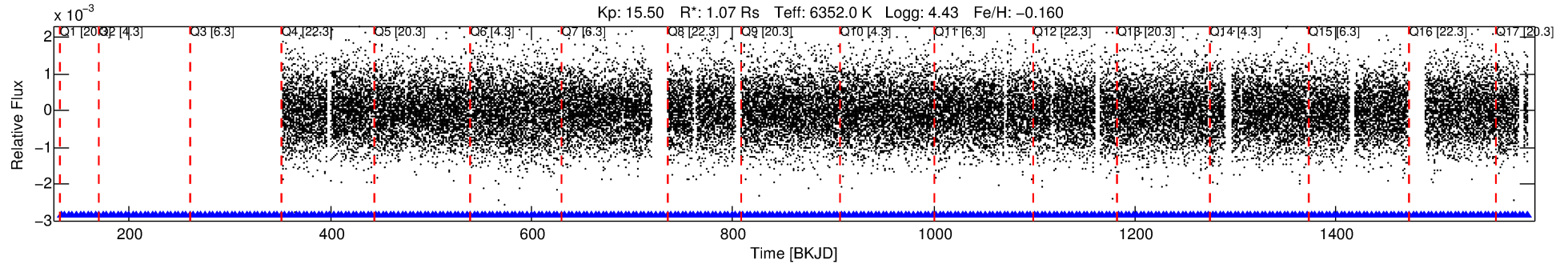
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005477964-03

No Significant Match Found

DV One-Page Summary

KIC: 5477964 Candidate: 3 of 3 Period: 3.766 d



DV Fit Results:

Period = 3.76560 [0.00008] d
Epoch = 132.5626 [0.0164] BKJD
Rp/R* = 0.0095 [0.0025]
a/R* = 1.49 [1.19]
b = 0.88 [0.37]
Seff = 692.18 [271.40]
Teq = 1308 [128] K
Rp = 1.11 [0.45] Re
a = 0.0492 [0.0124] AU
Ag = 68.94 [45.58] [1.49σ]
Teffp = 5827 [836] K [5.34σ]

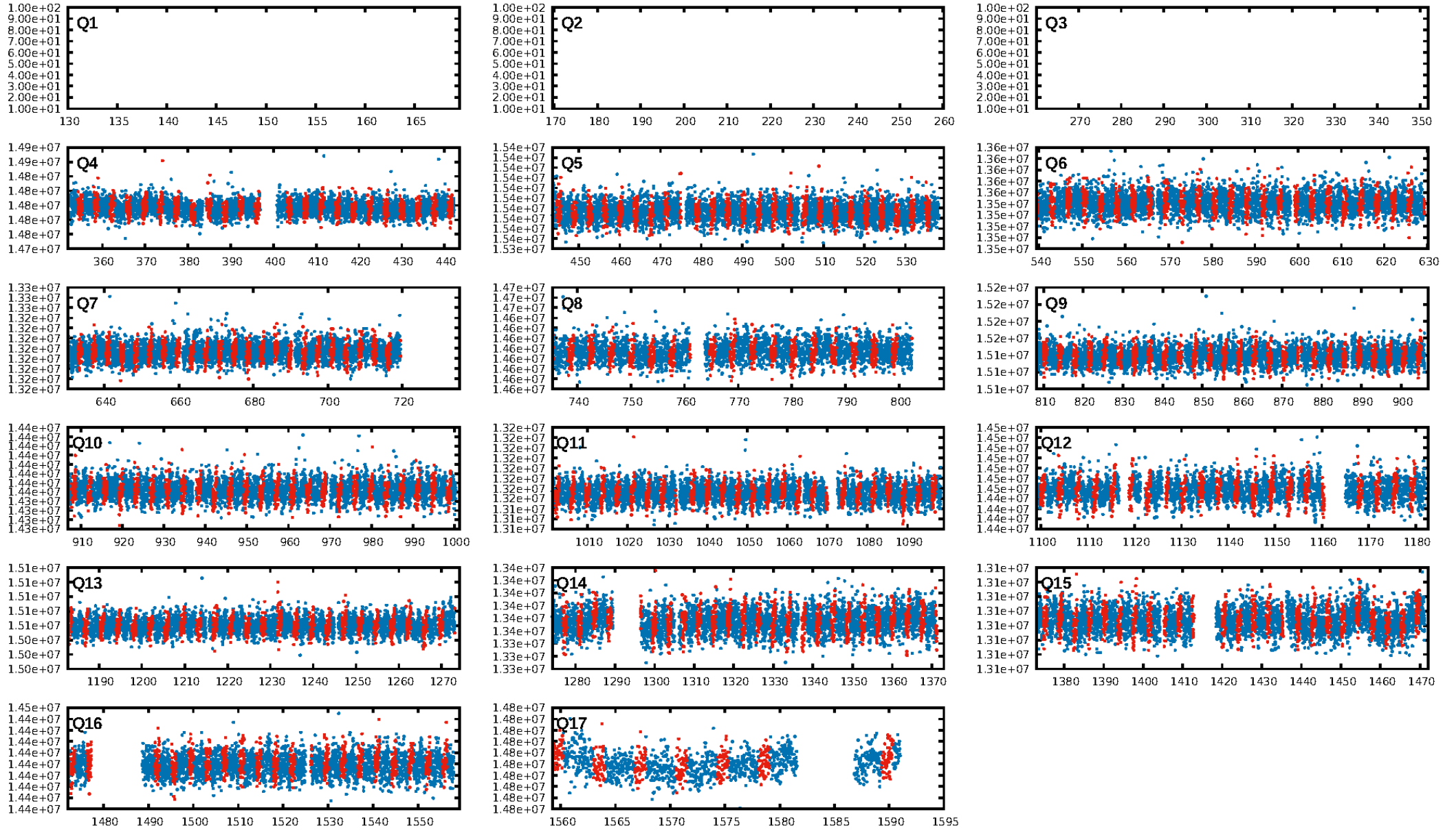
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [3.71σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.68e-14
RollingBand-fgt: 1.00 [297/297]
GhostDiagnostic-chr: 1.283
Centroid-sig: 0.6%
Centroid-so: 2.689 arcsec [1.86σ]
OotOffset-rm: 0.178 arcsec [0.89σ]
KicOffset-rm: 0.280 arcsec [1.37σ]
OotOffset-st: 3/3/3/3 [12]
KicOffset-st: 3/3/3/3 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 0.00 [0/14]

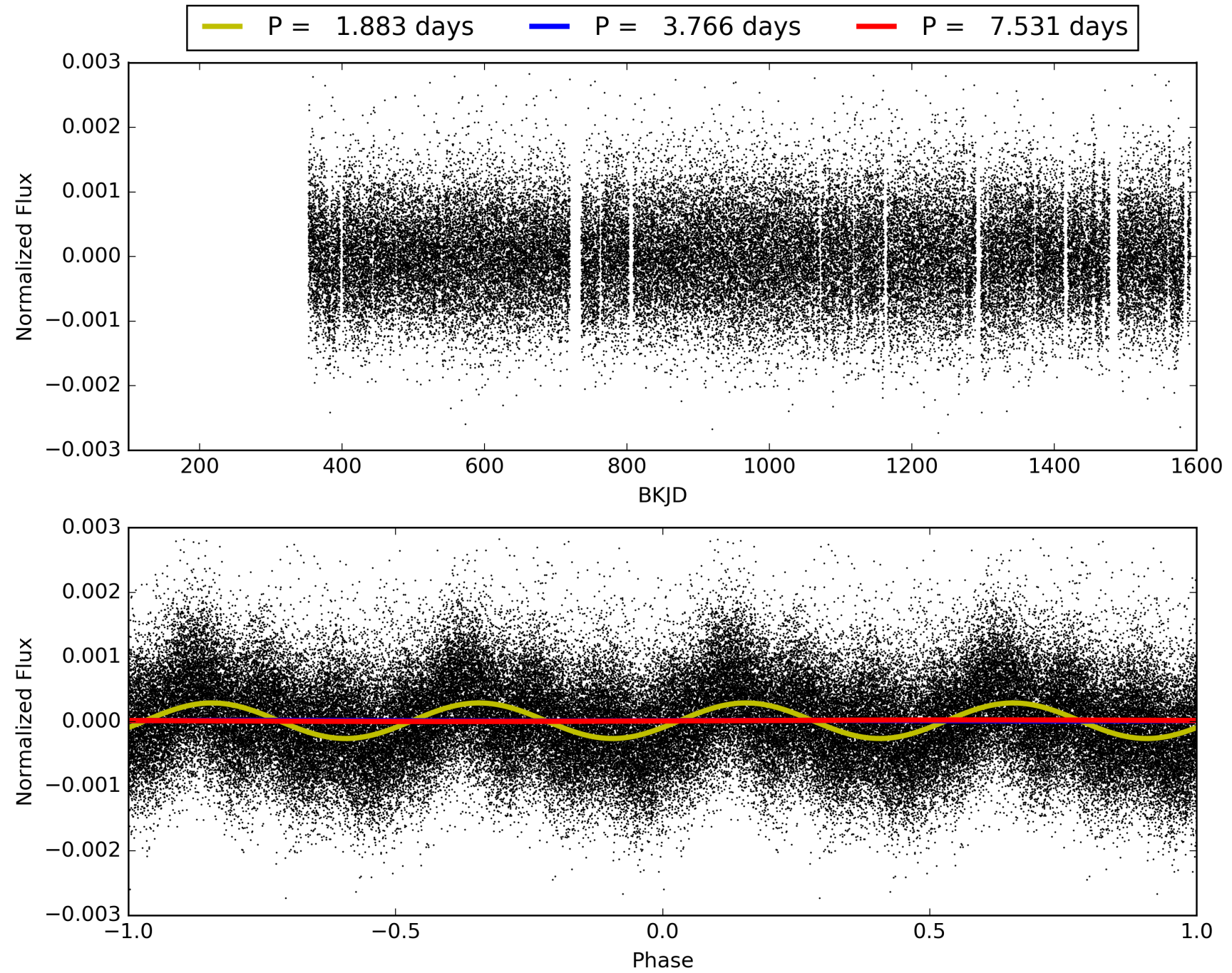
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:08:45 Z

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

TCE 005477964-03, PDC Light Curves

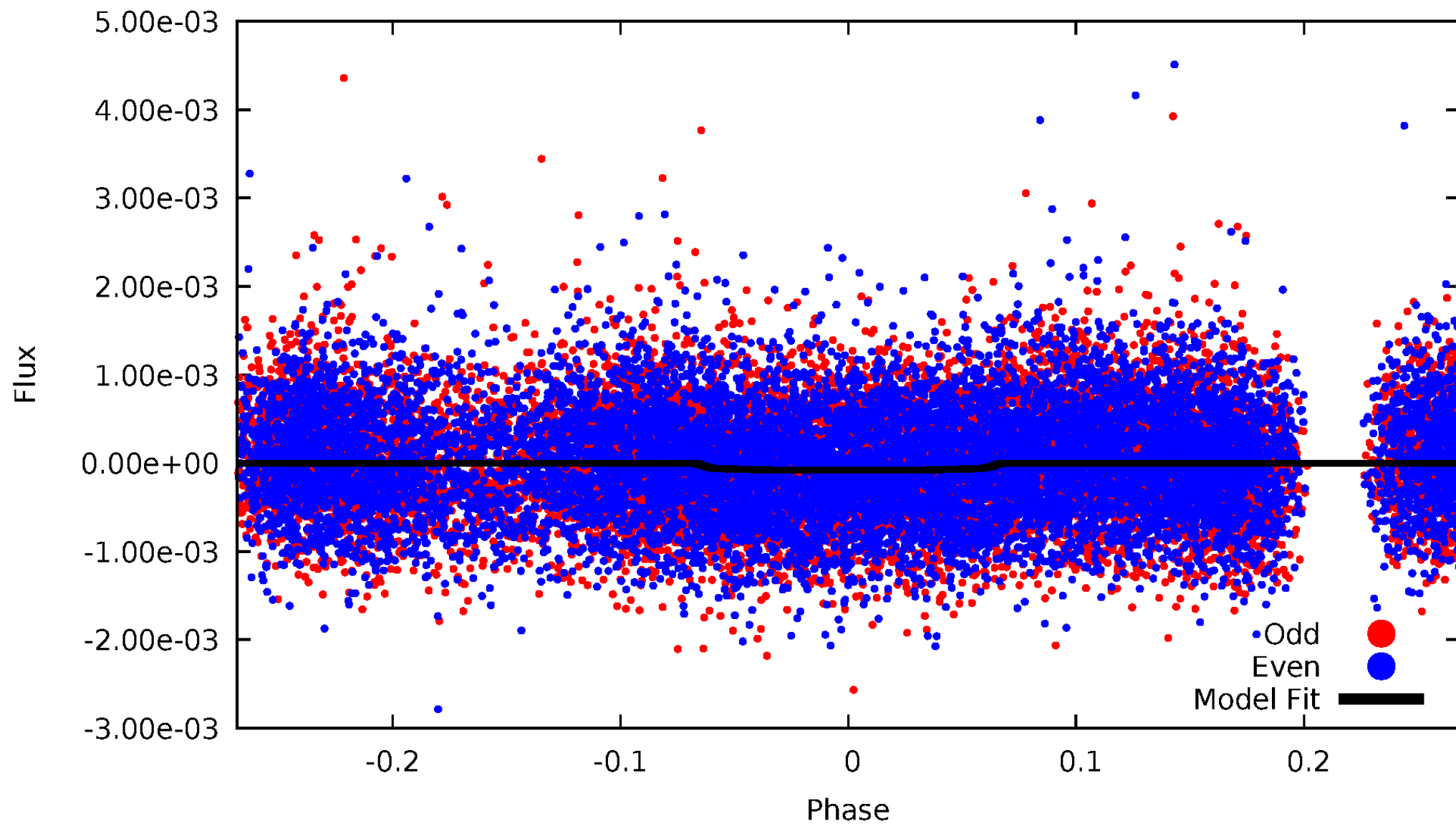


TCE 005477964-03



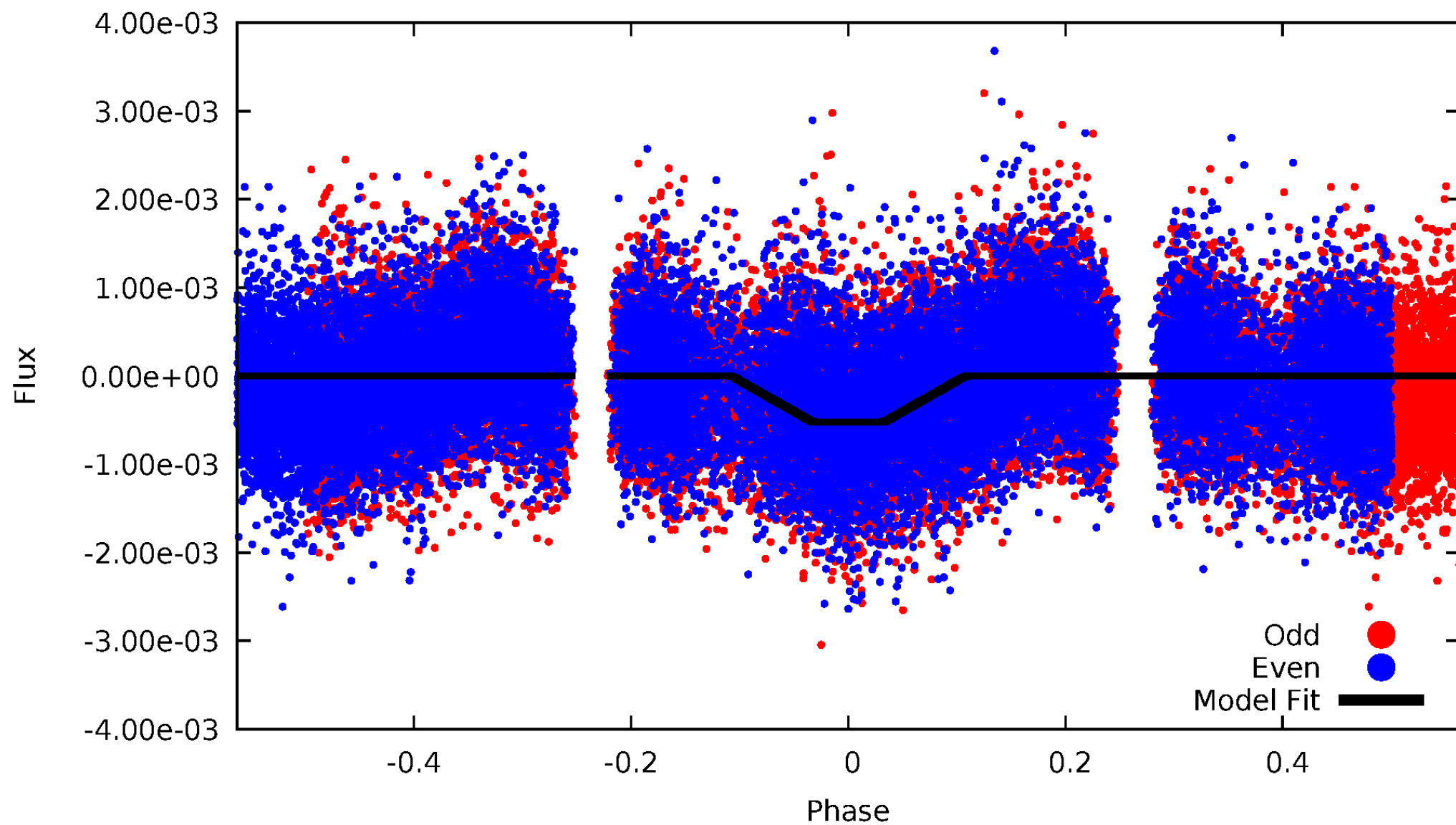
DV Odd/Even

TCE 005477964-03



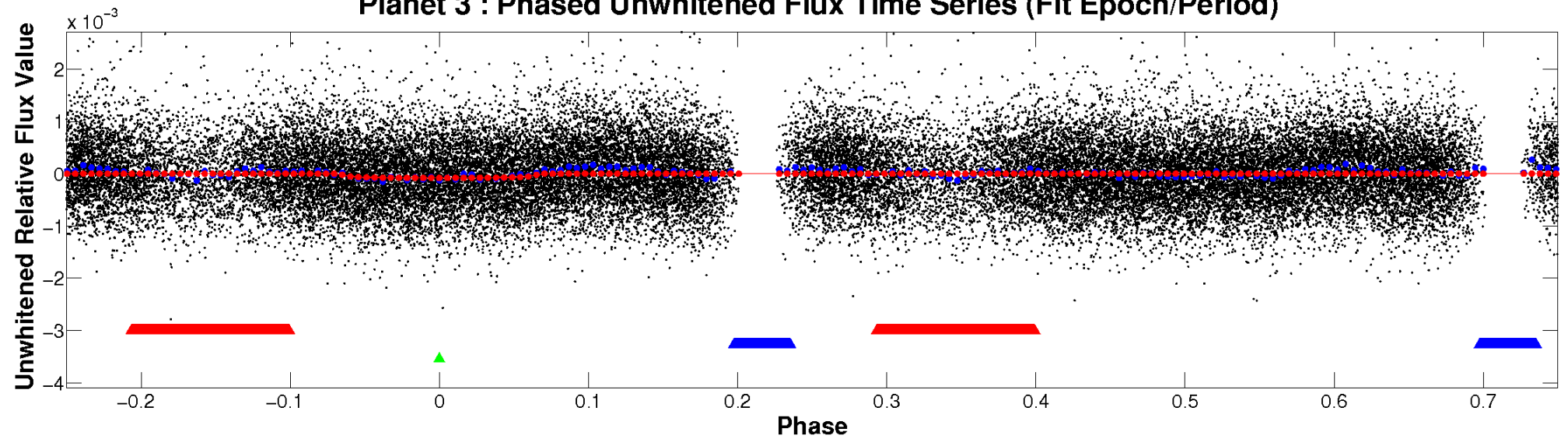
ALT Odd/Even

TCE 005477964-03

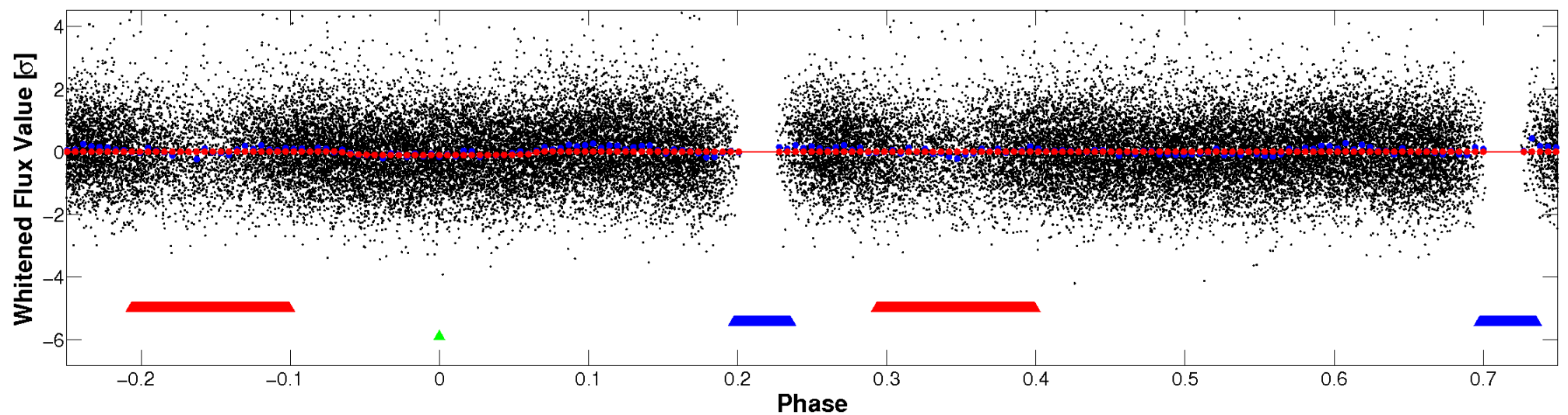


Non-Whitened Vs. Whitened Light Curve

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

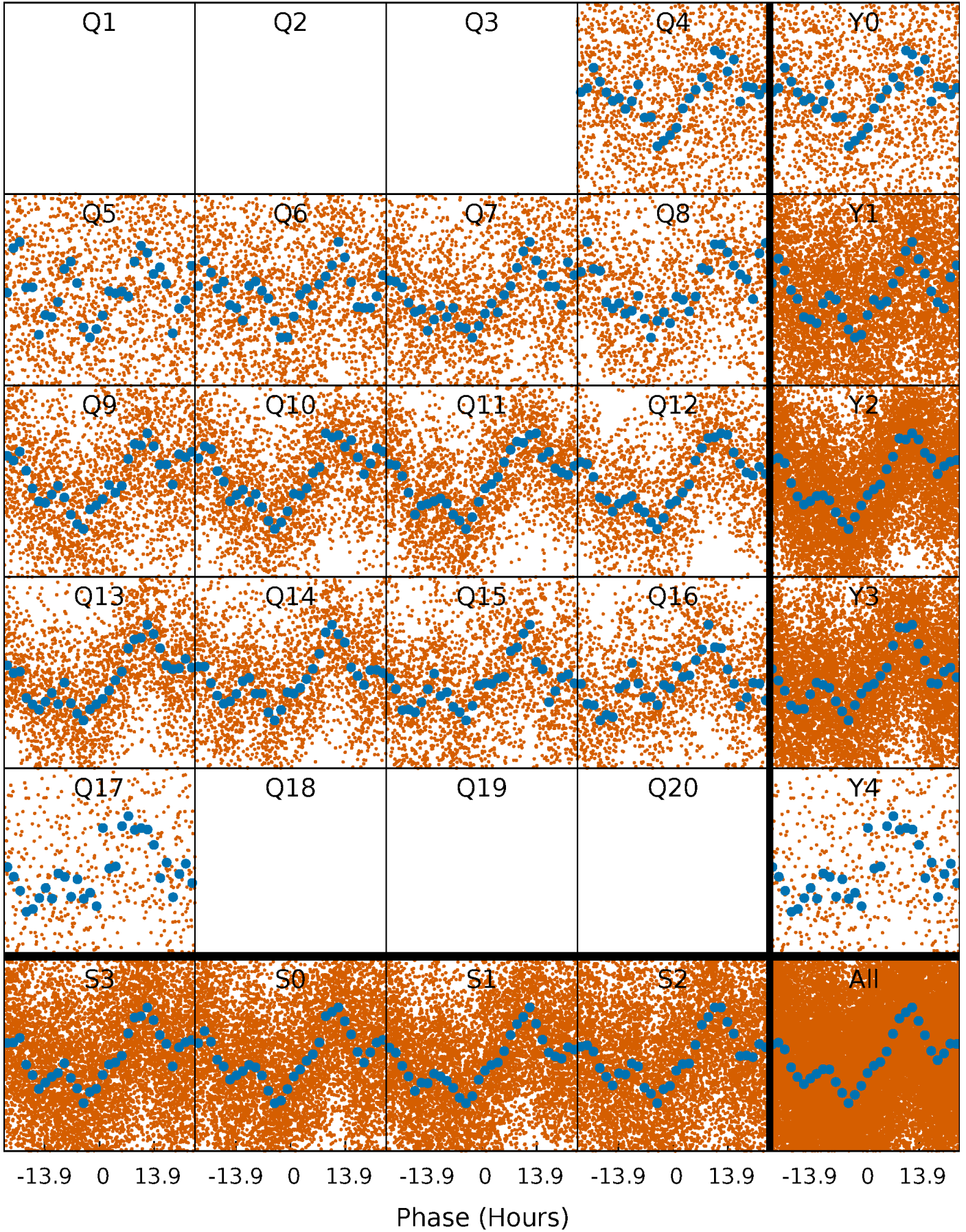


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



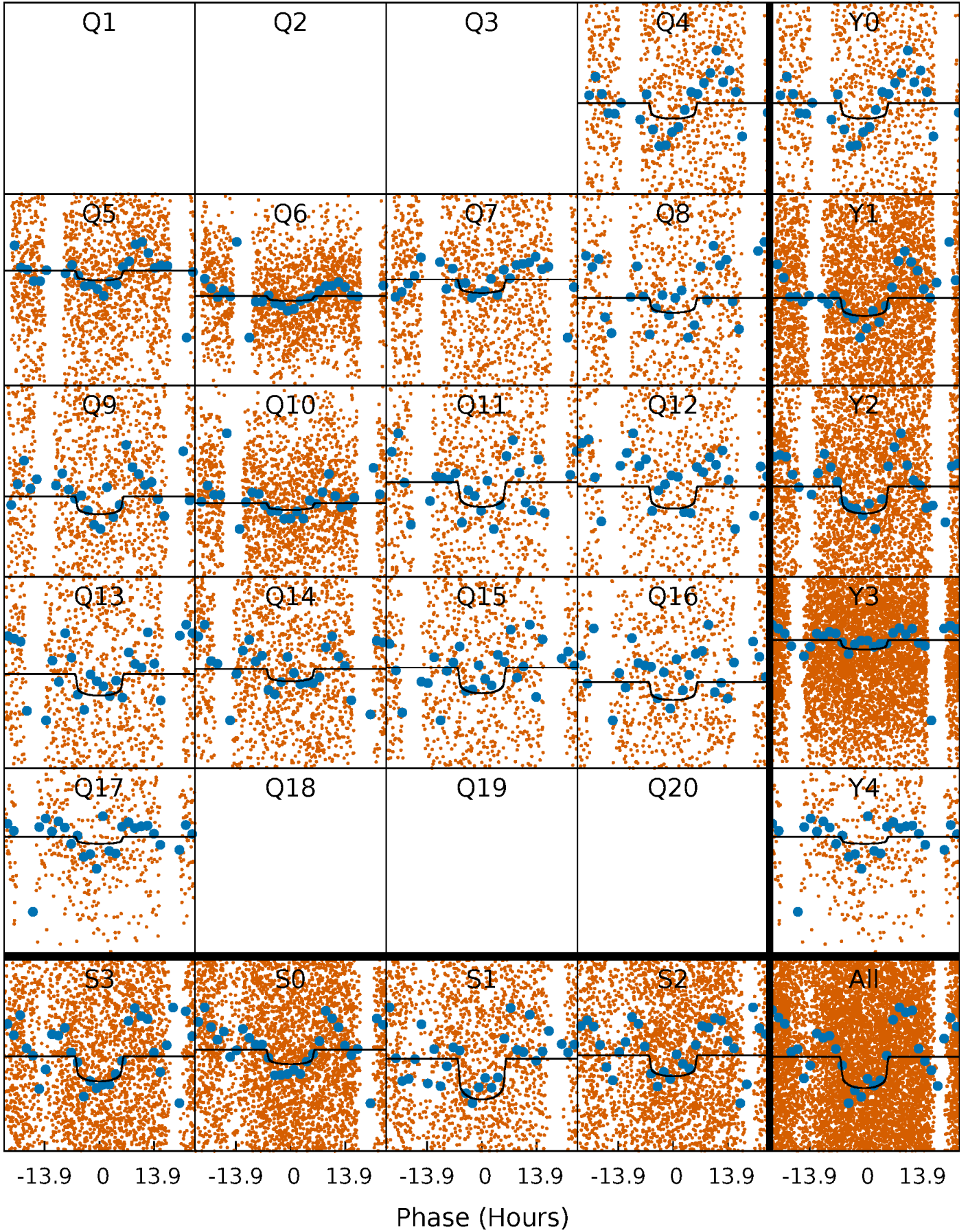
PDC Quarter-Phased Transit Curves

TCE 005477964-03 P= 3.765597 Days $T_0=132.562555$ (BKJD)



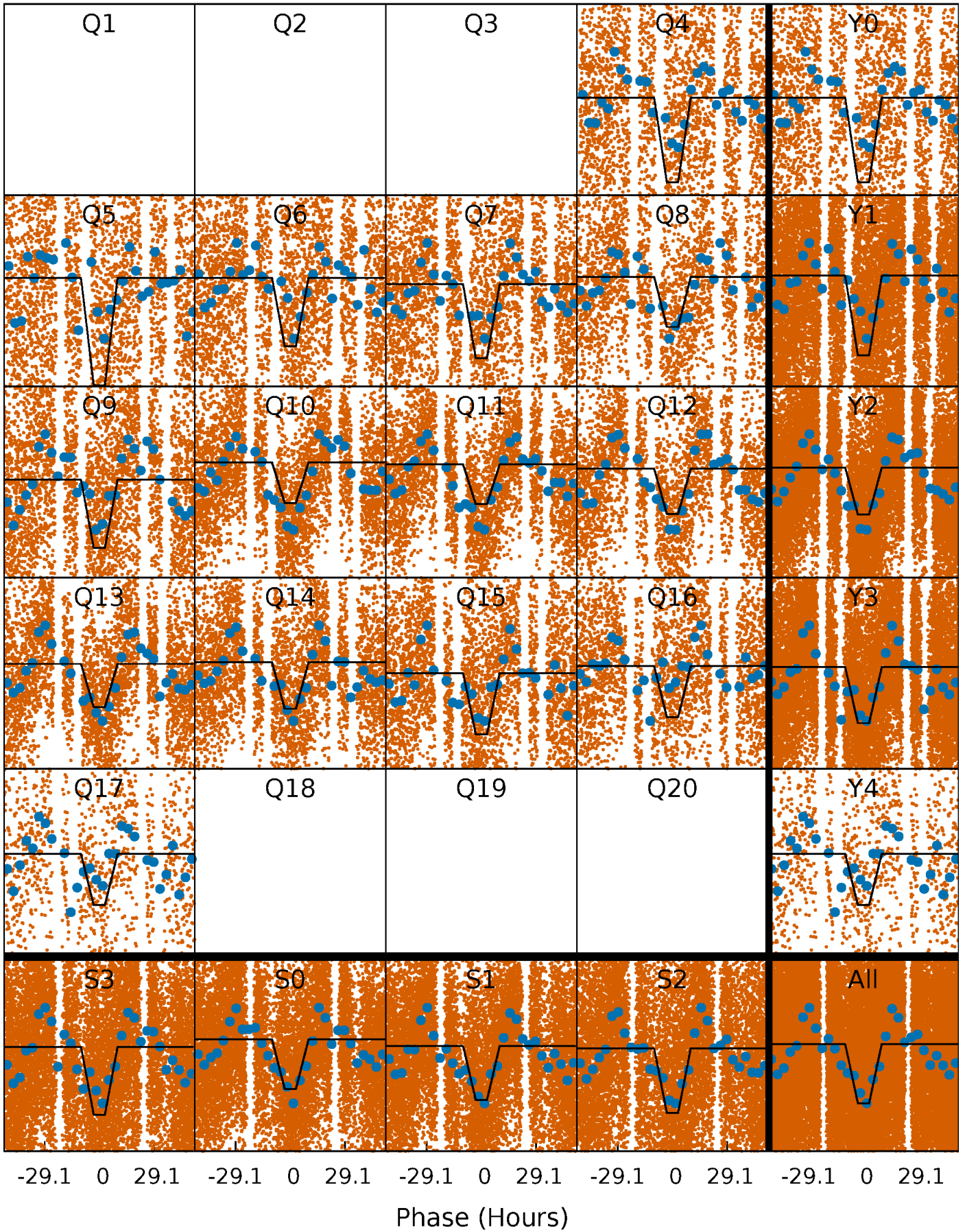
DV Quarter-Phased Transit Curves

TCE 005477964-03 P= 3.765597 Days $T_0=132.562555$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

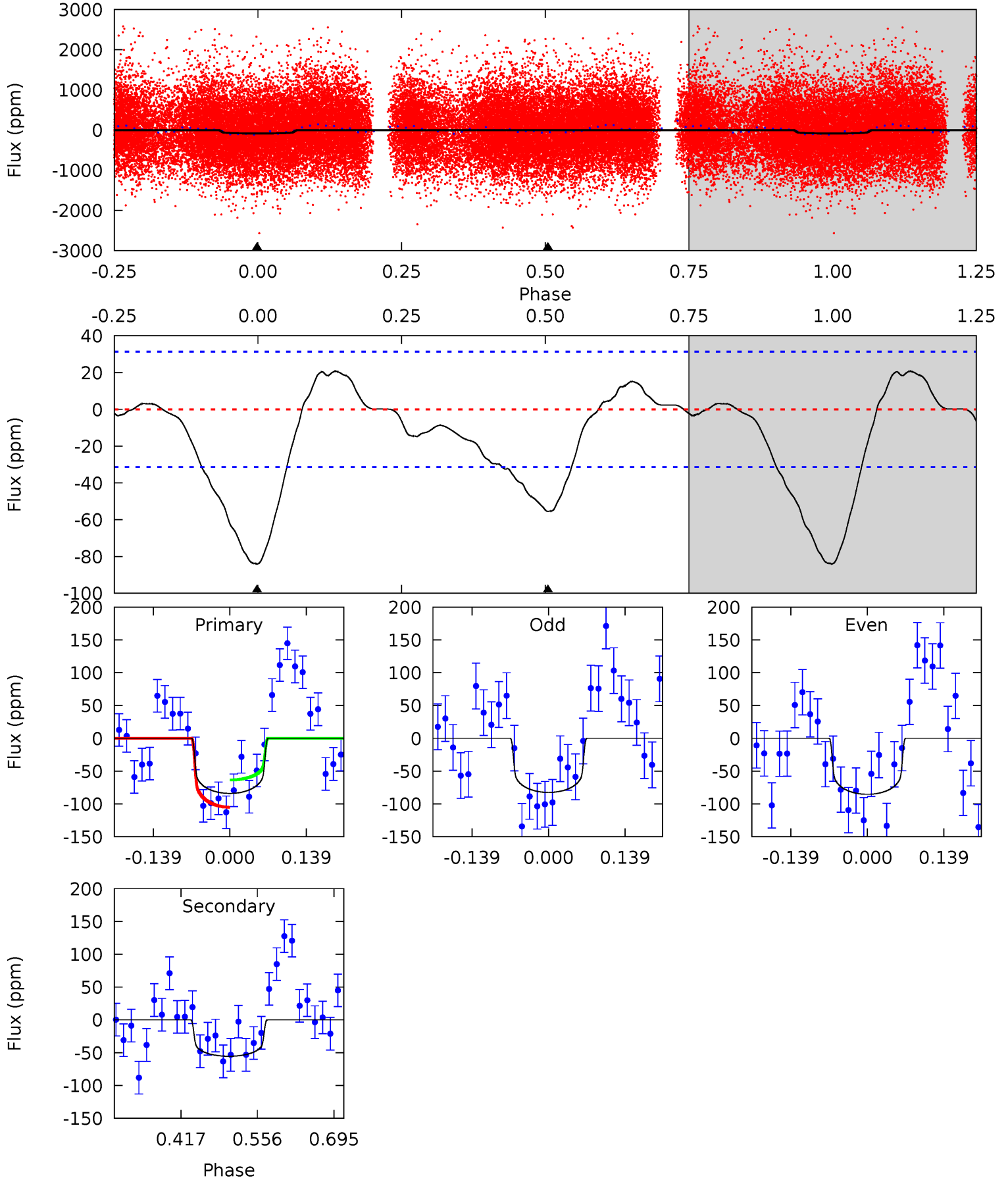
TCE 005477964-03 P= 3.765525 Days $T_0=132.390022$ (BKJD)



DV Model-Shift Uniqueness Test

005477964-03, P = 3.765597 Days, E = 132.562555 Days

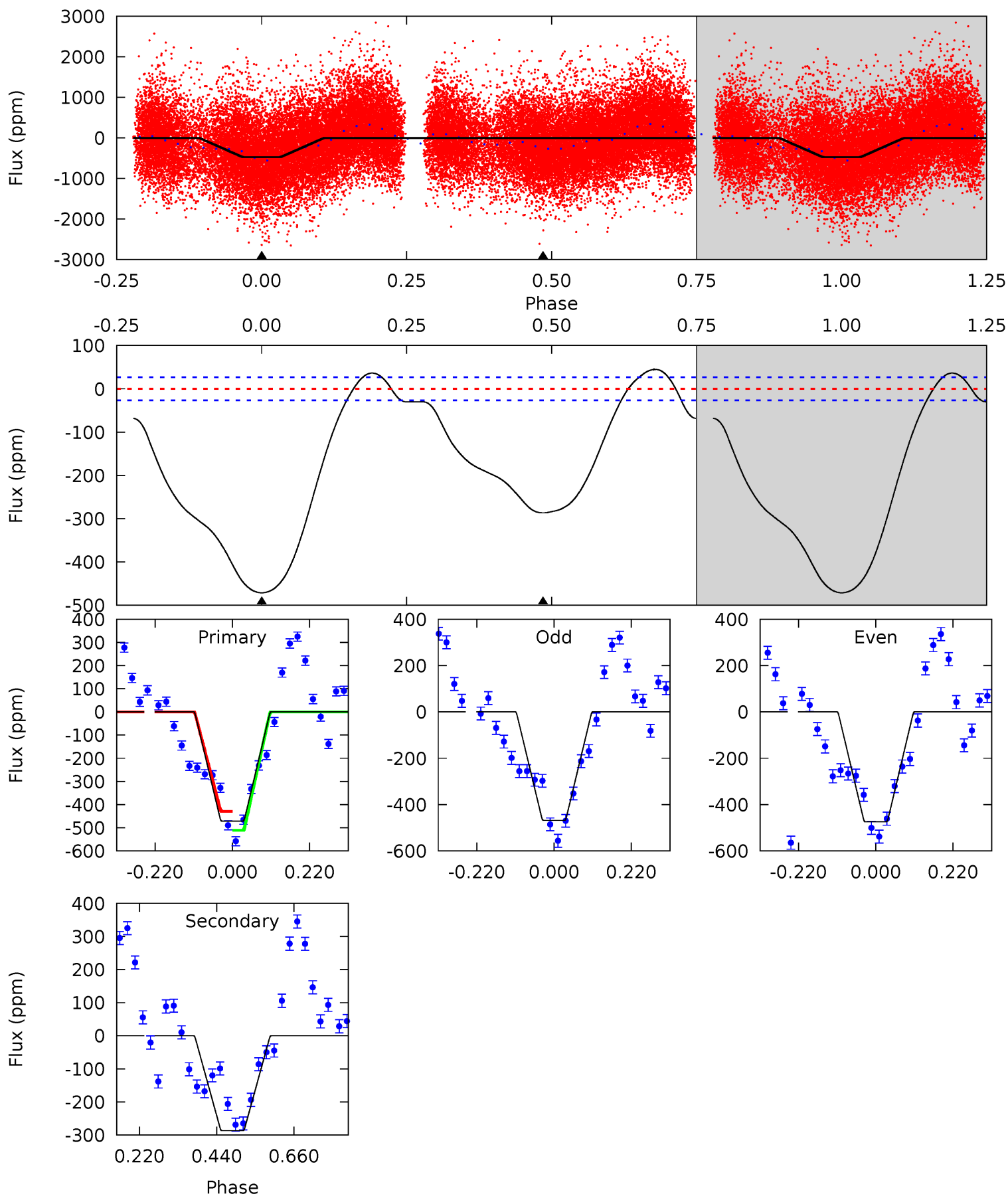
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	7.95	0	0	4.50	1.48	1.53	12.0	12.0	7.95	7.95	0.21	0.91	0.20	3.00



Alt Model-Shift Uniqueness Test

005477964-03, P = 3.765525 Days, E = 132.390022 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
78.0	47.5	0	0	4.40	1.23	5.29	78.0	78.0	47.5	47.5	0.47	1.13	0.09	7.00



Stellar Parameters For KIC 005477964

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6352^{+175}_{-241}	$4.427^{+0.065}_{-0.195}$	$-0.160^{+0.250}_{-0.300}$	$1.072^{+0.326}_{-0.116}$	$1.118^{+0.148}_{-0.148}$	$1.278^{+0.433}_{-0.625}$
	+3%/-4%	+1%/-4%	+156%/-188%	+30%/-11%	+13%/-13%	+34%/-49%
Source	KIC0	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 005477964-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-55 ± 7	$1.17^{+0.33}_{-0.32}$	1850^{+122}_{-93}	5558^{+972}_{-597}	52^{+49}_{-21}
Alt.	-287 ± 6	$2.76^{+0.46}_{-0.39}$	1856^{+133}_{-96}	5489^{+325}_{-304}	49^{+17}_{-12}

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 $A_{obs} \gg 1.0$

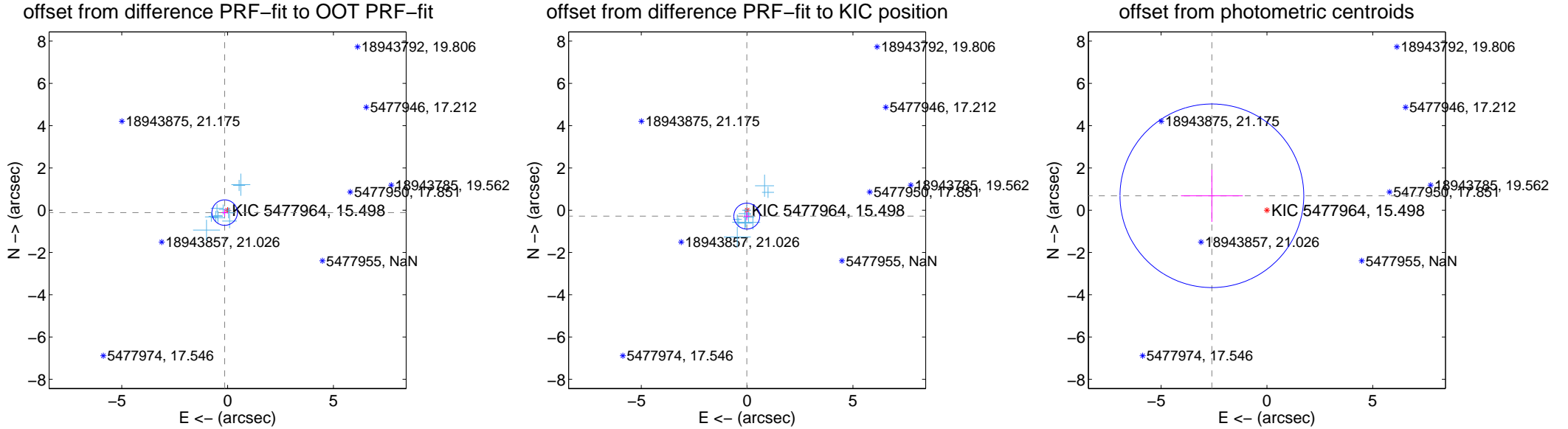
DV Centroid Data

Supplemental centroid analysis for 005477964-03. Kepler magnitude: 15.50. Transit SNR 8.03

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	0.178 ± 0.201	0.89	0.138 ± 0.145	-0.113 ± 0.172
PRF-fit source offset from KIC position	0.280 ± 0.204	1.37	0.015 ± 0.148	-0.280 ± 0.198
photometric centroid source offset	2.69 ± 1.45	1.86	2.60 ± 1.46	0.68 ± 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.

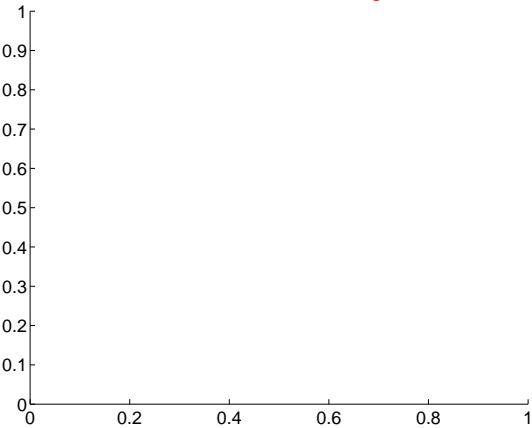
Q1 no difference image



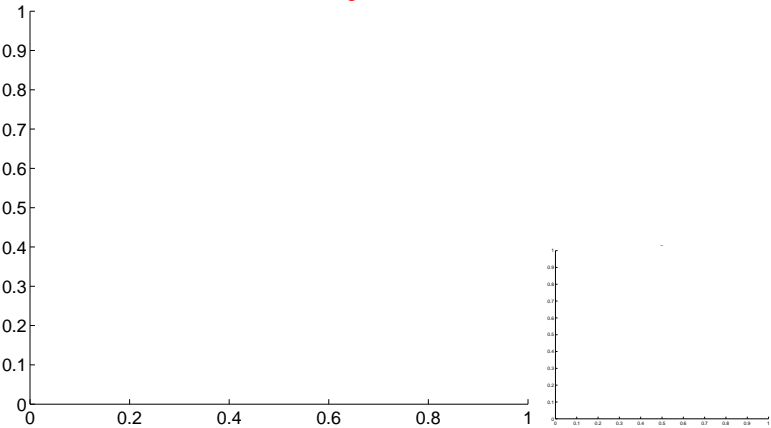
Q1 no OOT image



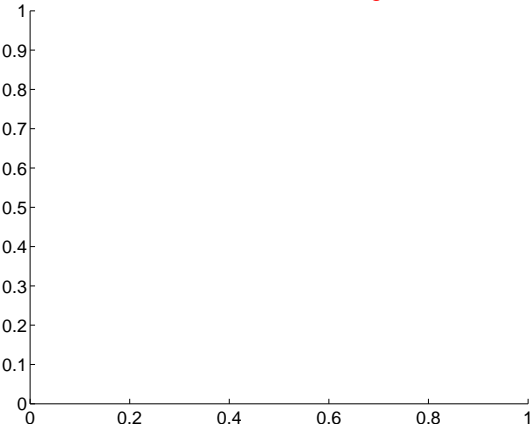
Q2 no difference image



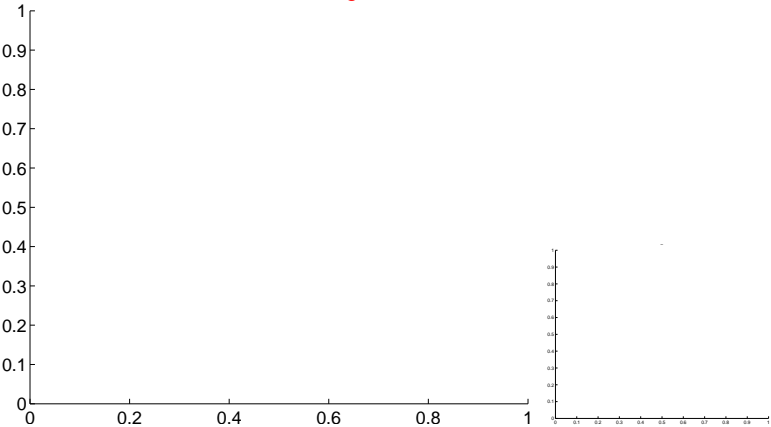
Q2 no OOT image



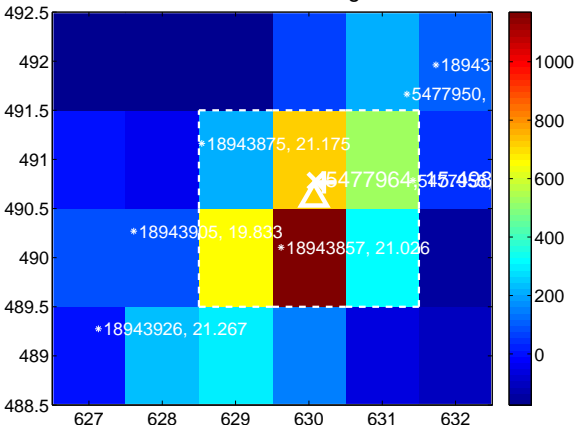
Q3 no difference image



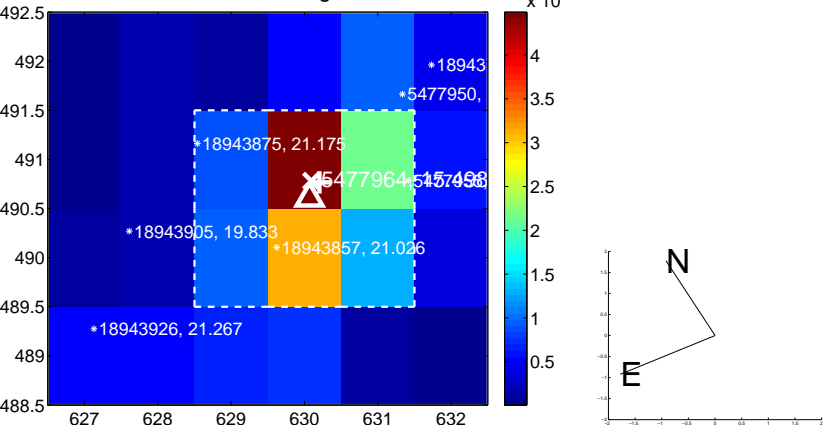
Q3 no OOT image



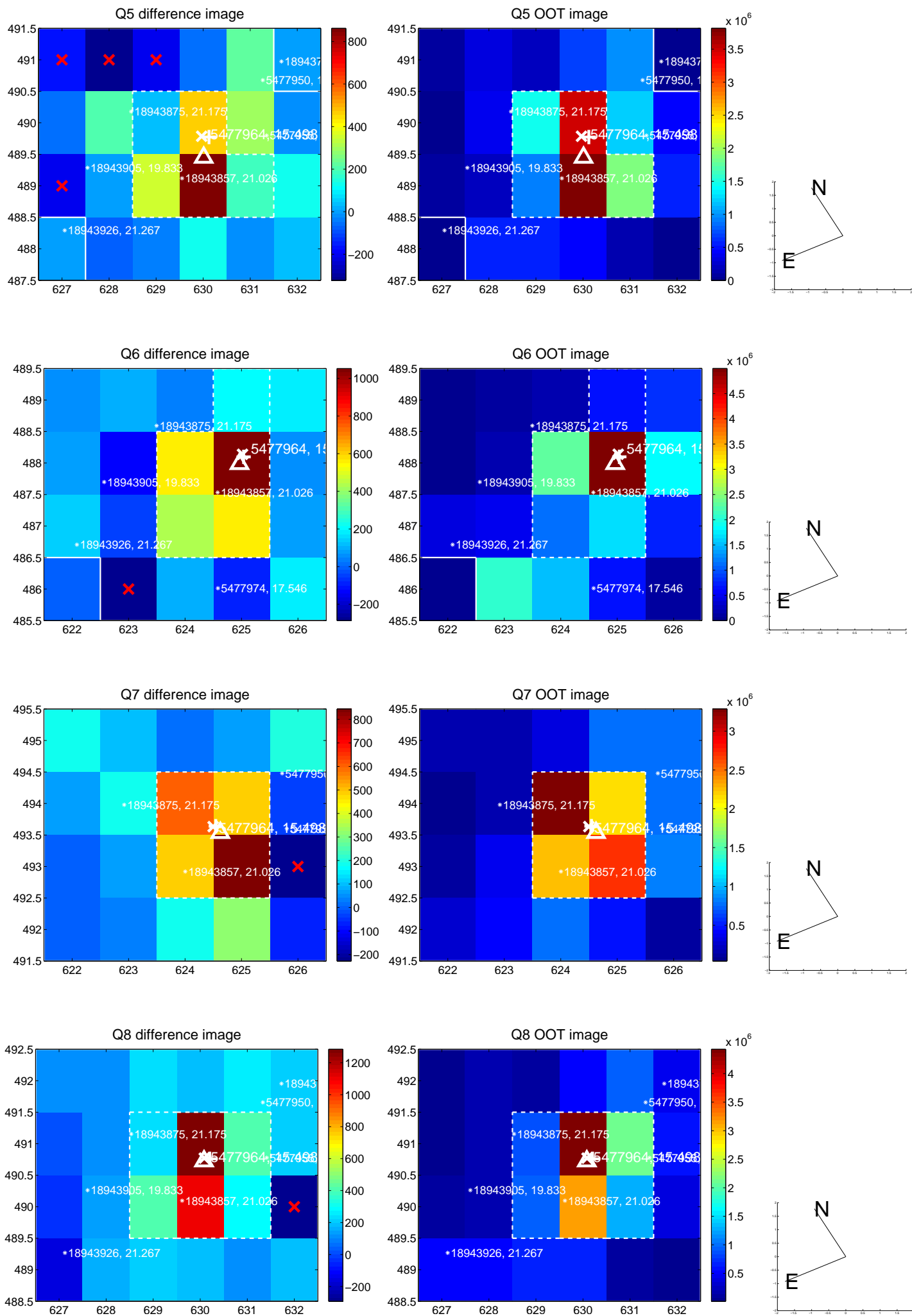
Q4 difference image



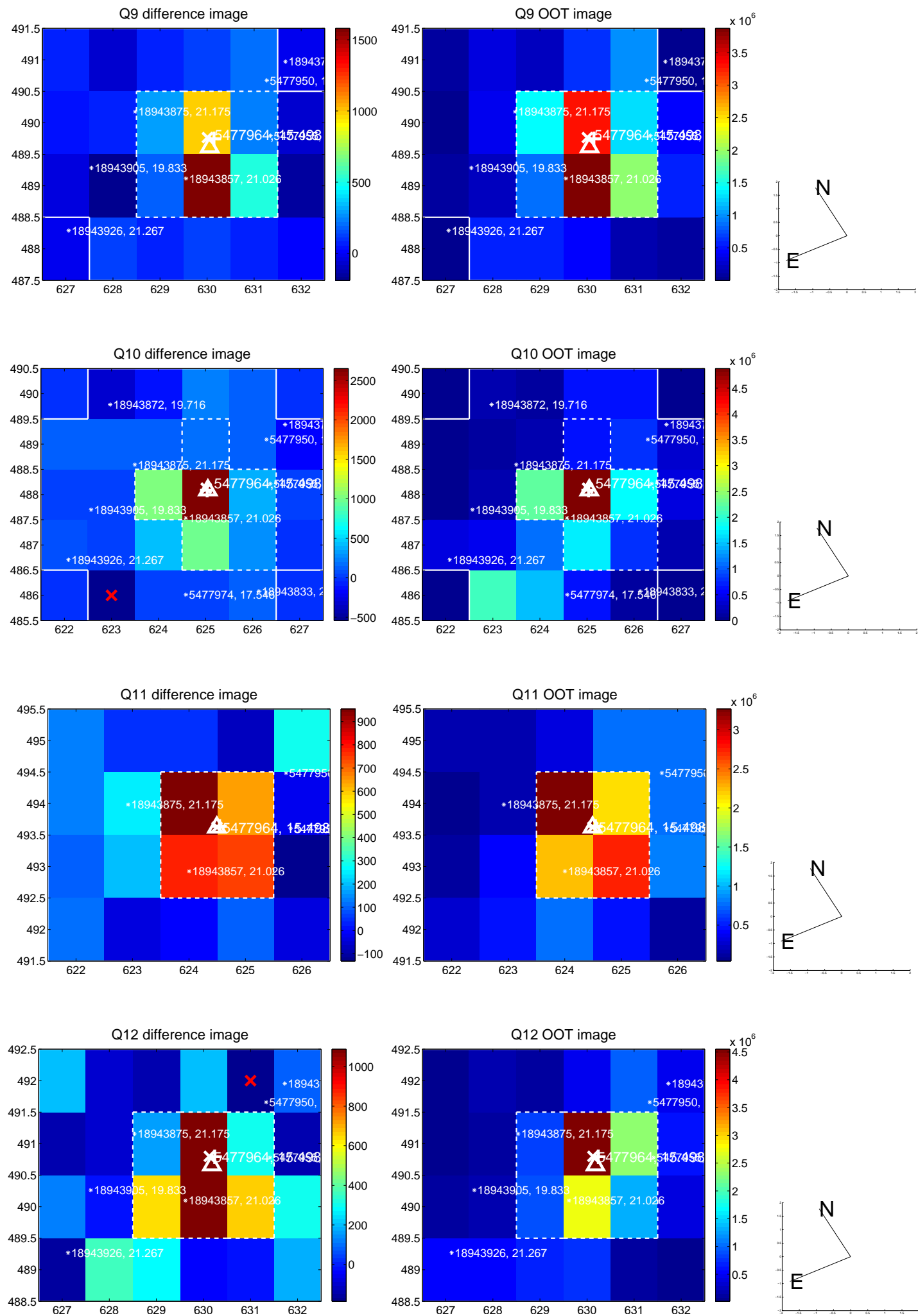
Q4 OOT image



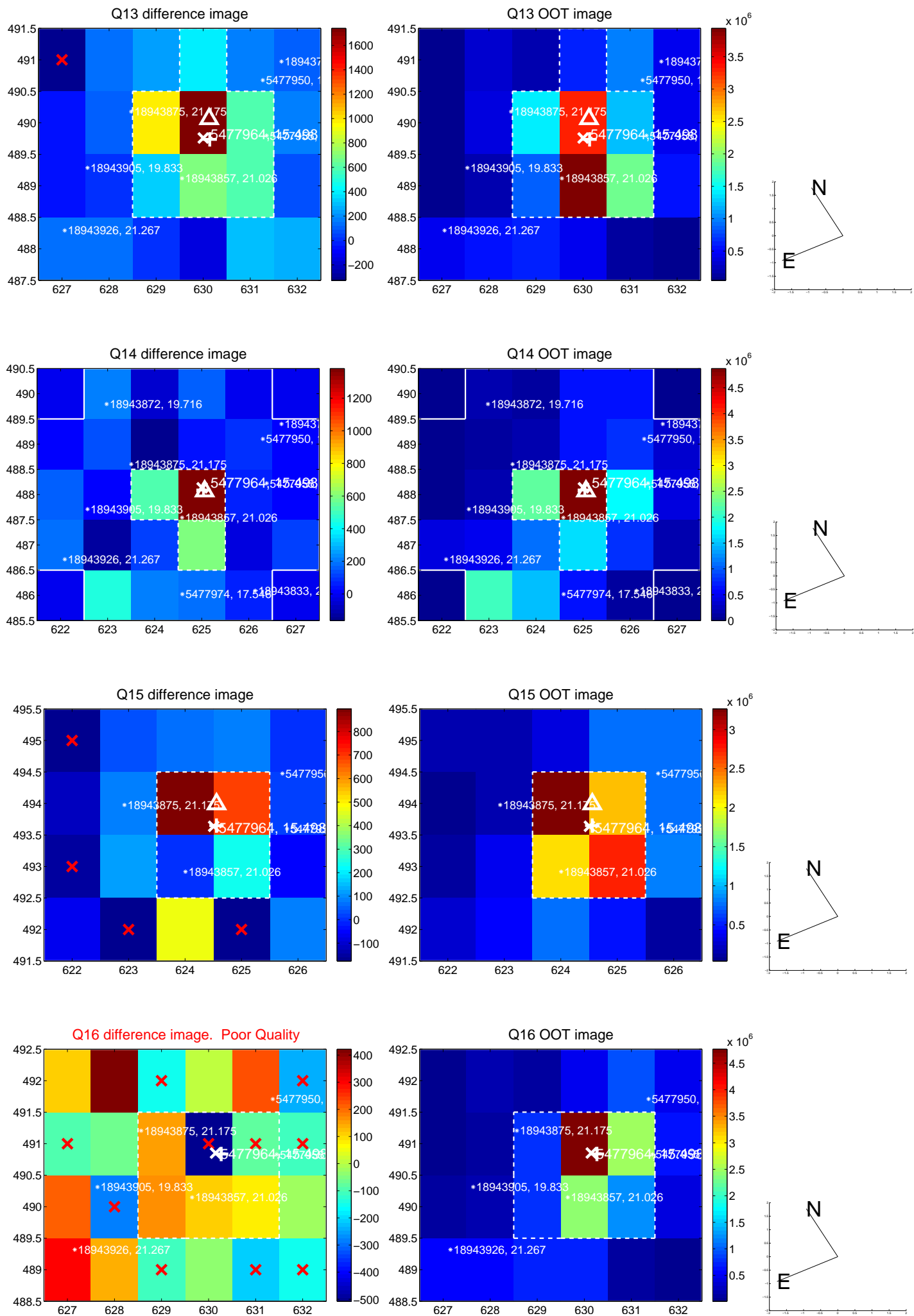
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



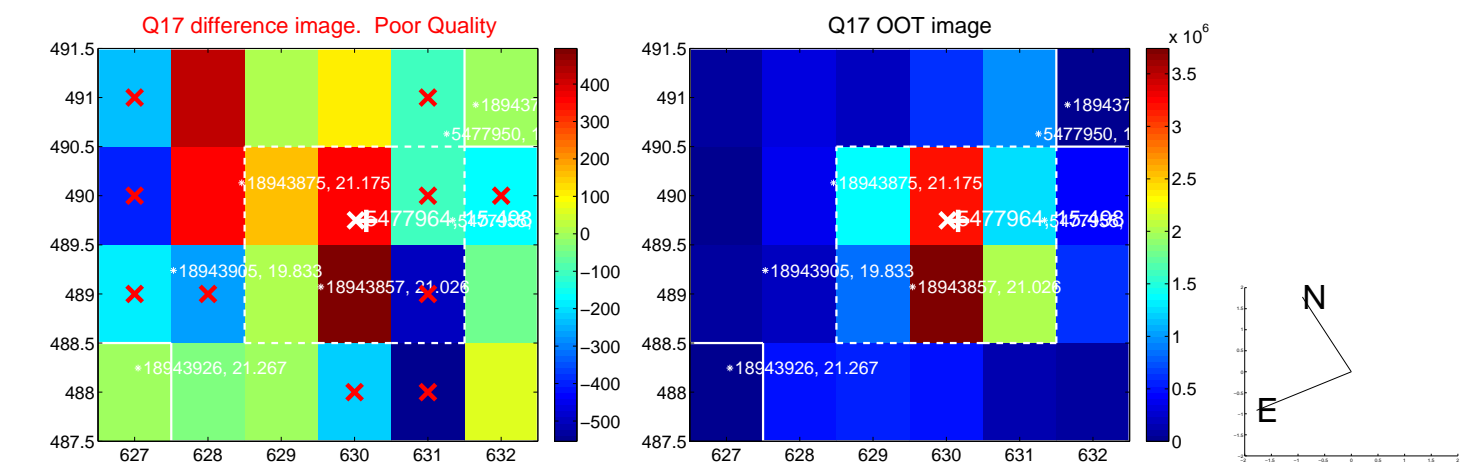
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



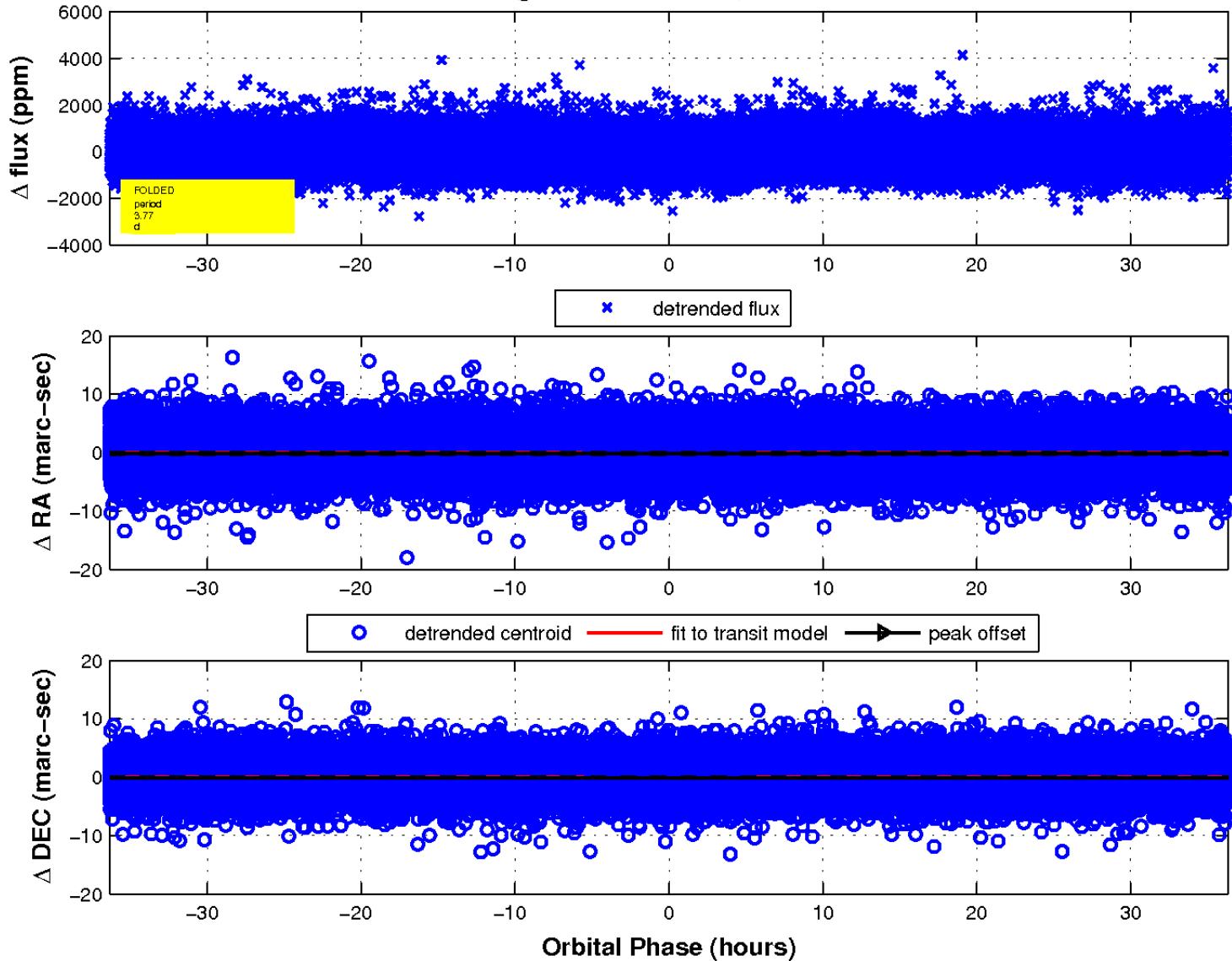
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

