

KIC 005428125

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})
005428125-01	OBS	No	404.050132	293.995976	171.3	1.758	13.9	4.0	2.16	6084	3.17	4.61
005428125-02	OBS	No	348.482193	435.266766	125.4	1.990	11.6	3.0	2.16	6084	2.65	5.62
005428125-03	OBS	No	195.740093	282.562538	313.8	2.273	13.0	7.3	2.16	6084	3.94	12.12

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005428125-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005428125-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
005428125-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

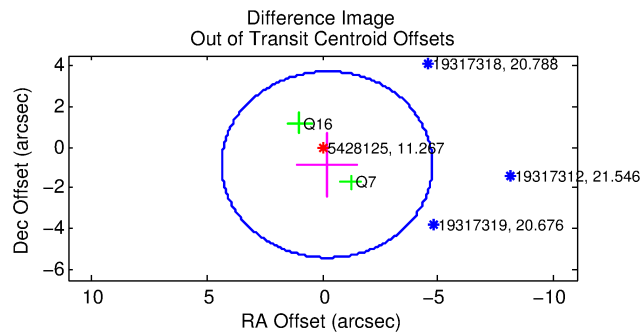
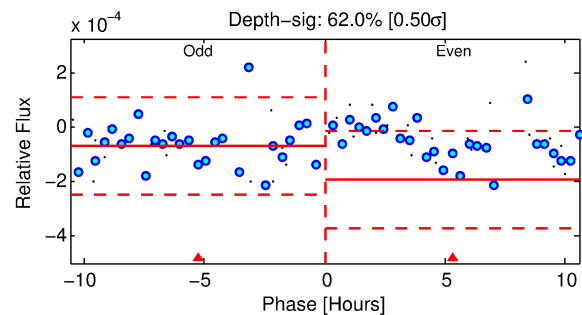
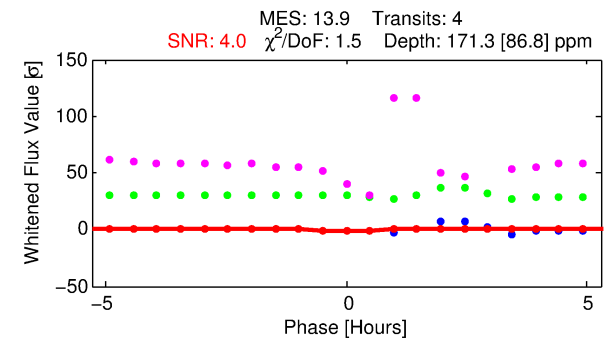
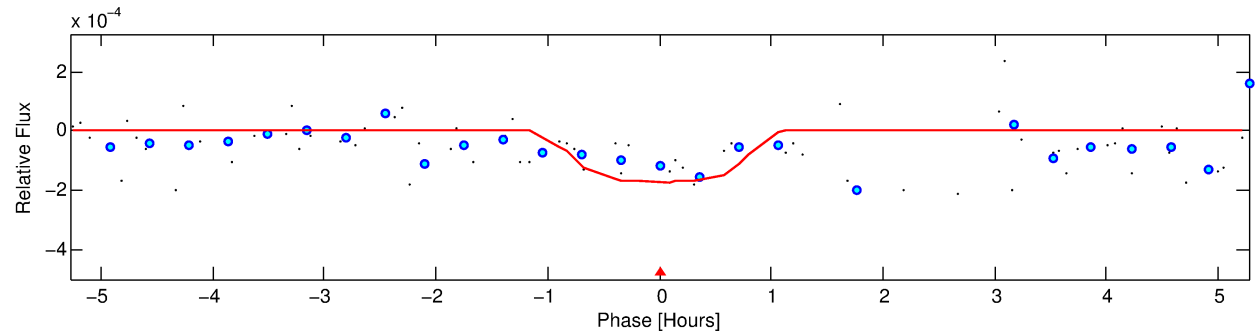
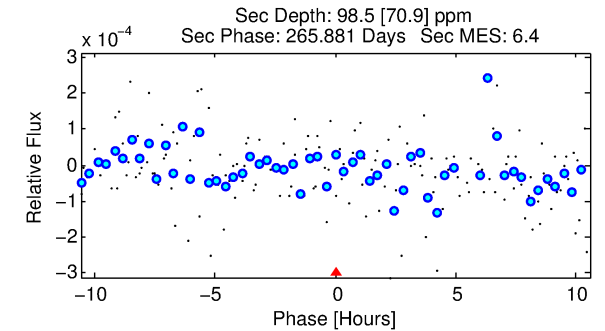
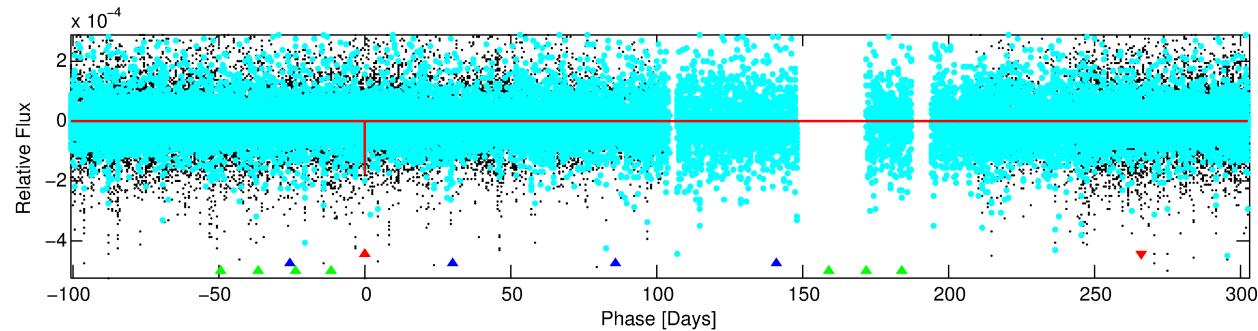
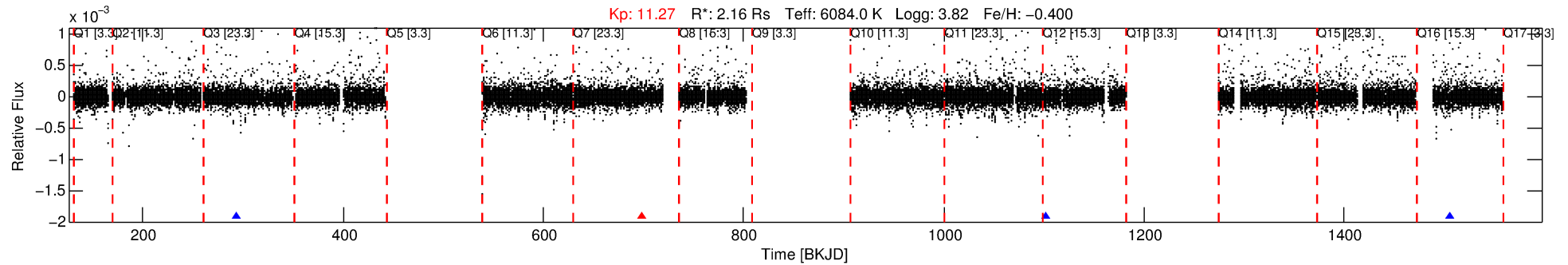
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005428125-01

No Significant Match Found

DV One-Page Summary

KIC: 5428125 Candidate: 1 of 3 Period: 404.050 d



DV Fit Results:

Period = 404.05013 [0.00753] d
Epoch = 293.9960 [0.0143] BKJD
Rp/R* = 0.0134 [0.0399]
a/R* = 1039.46 [16052.95]
b = 0.82 [6.14]
Seff = 4.61 [4.30]
Teq = 374 [87] K
Rp = 3.17 [9.56] Re
a = 1.1157 [0.6071] AU
Ag = 6704.68 [40599.34] [0.17σ]
Teffp = 5227 [7823] K [0.62σ]

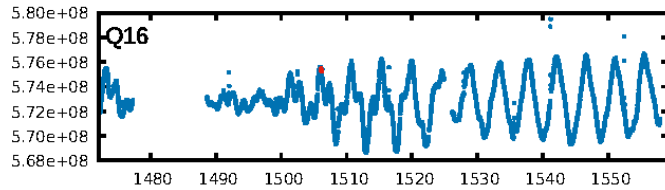
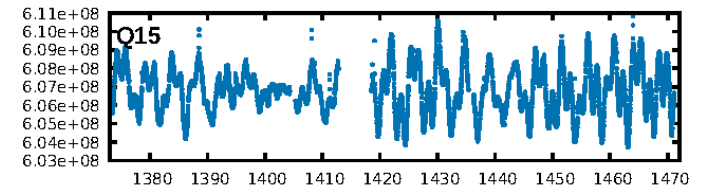
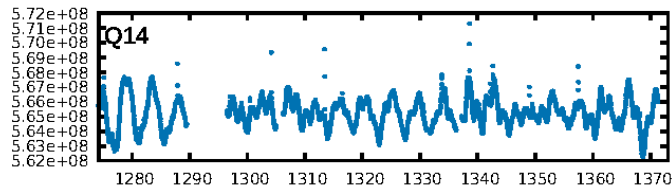
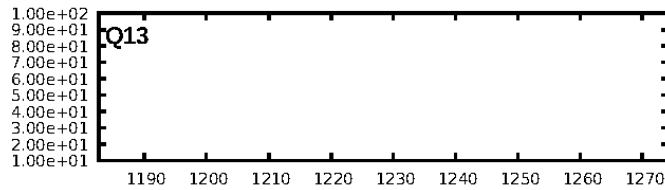
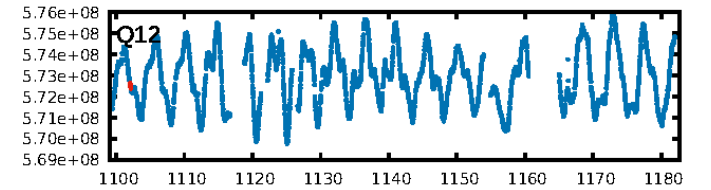
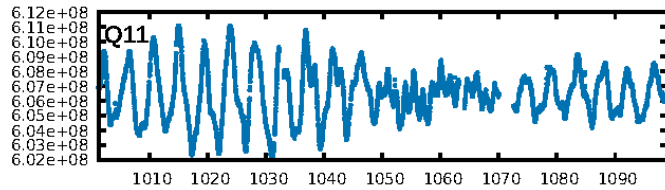
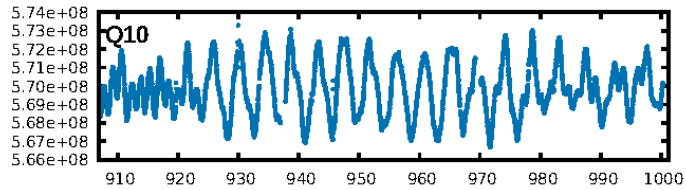
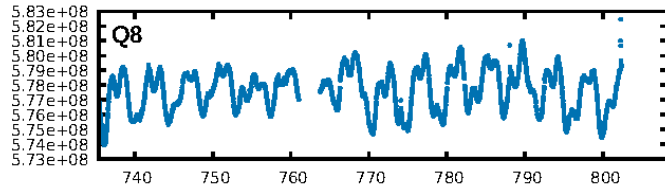
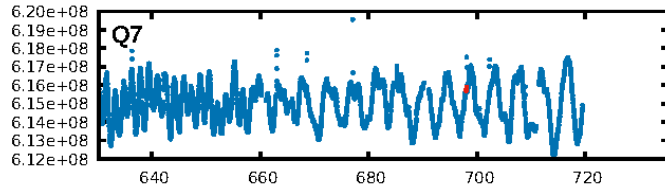
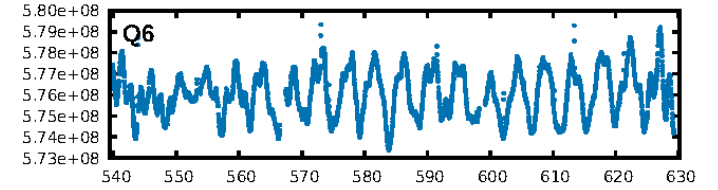
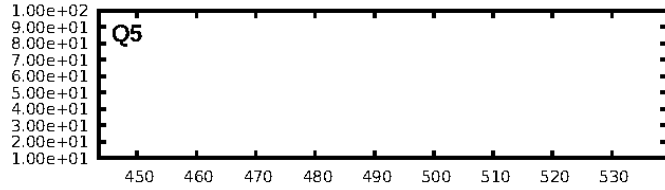
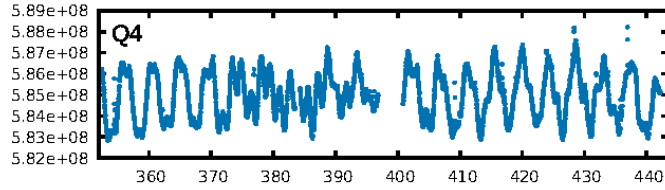
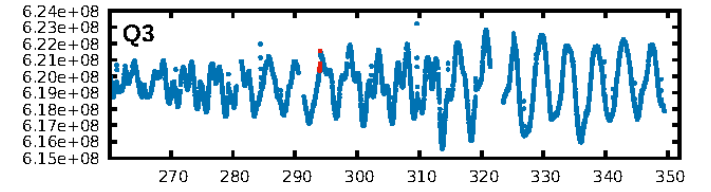
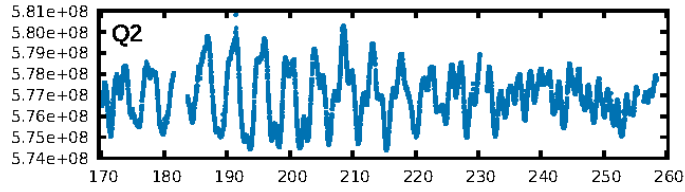
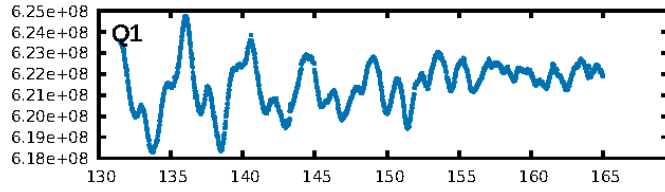
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [502.21σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.5%
ModelChiSquareGof-sig: 57.7%
Bootstrap-pfa: 3.25e-13
RollingBand-fgt: 0.75 [3/4]
GhostDiagnostic-chr: -2.285
Centroid-sig: 58.2%
Centroid-so: 0.868 arcsec [0.58σ]
OotOffset-rm: 0.872 arcsec [0.57σ]
KicOffset-rm: 0.790 arcsec [0.54σ]
OotOffset-st: 0/1/1/0 [2]
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DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [4/4]

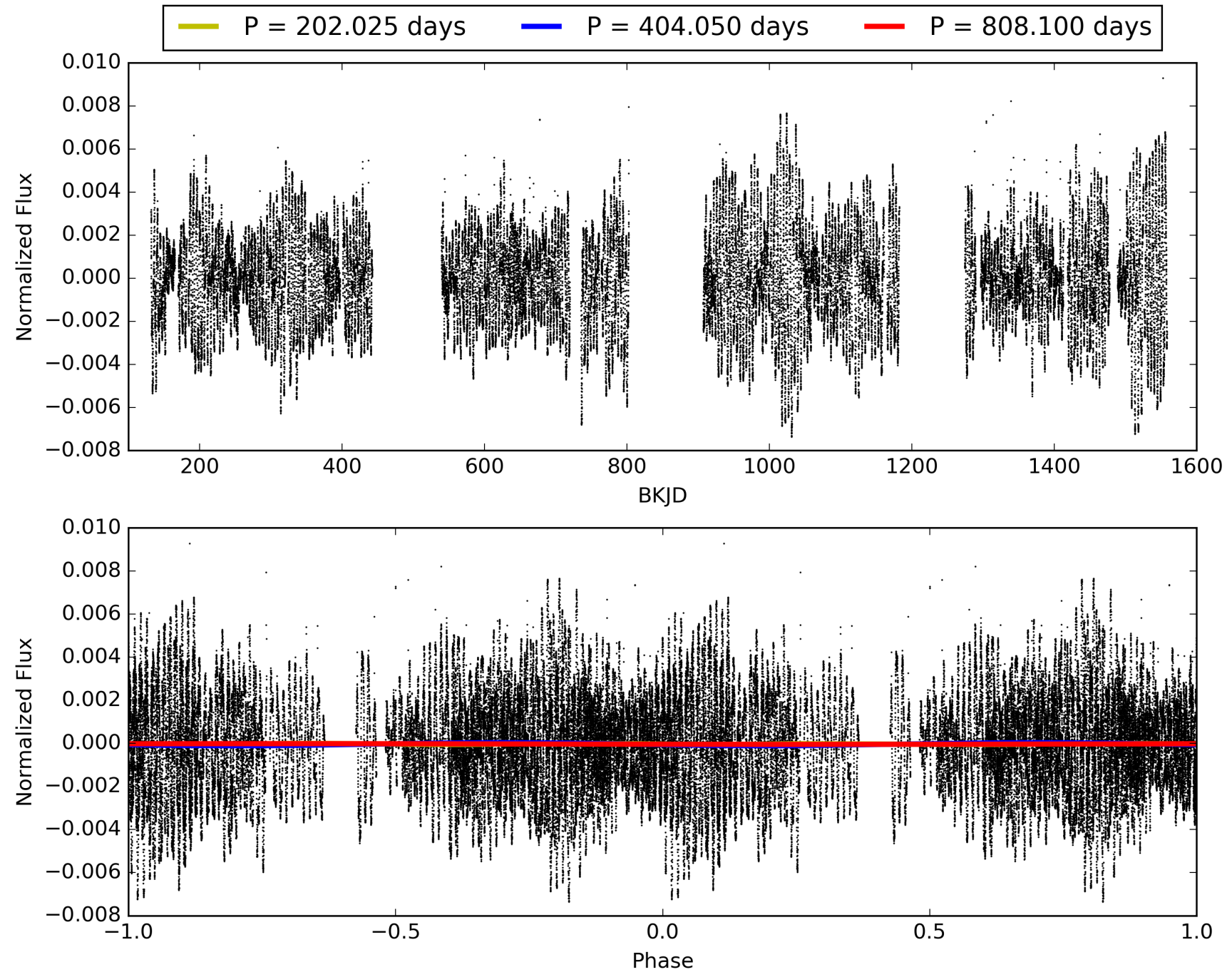
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005428125-01, PDC Light Curves

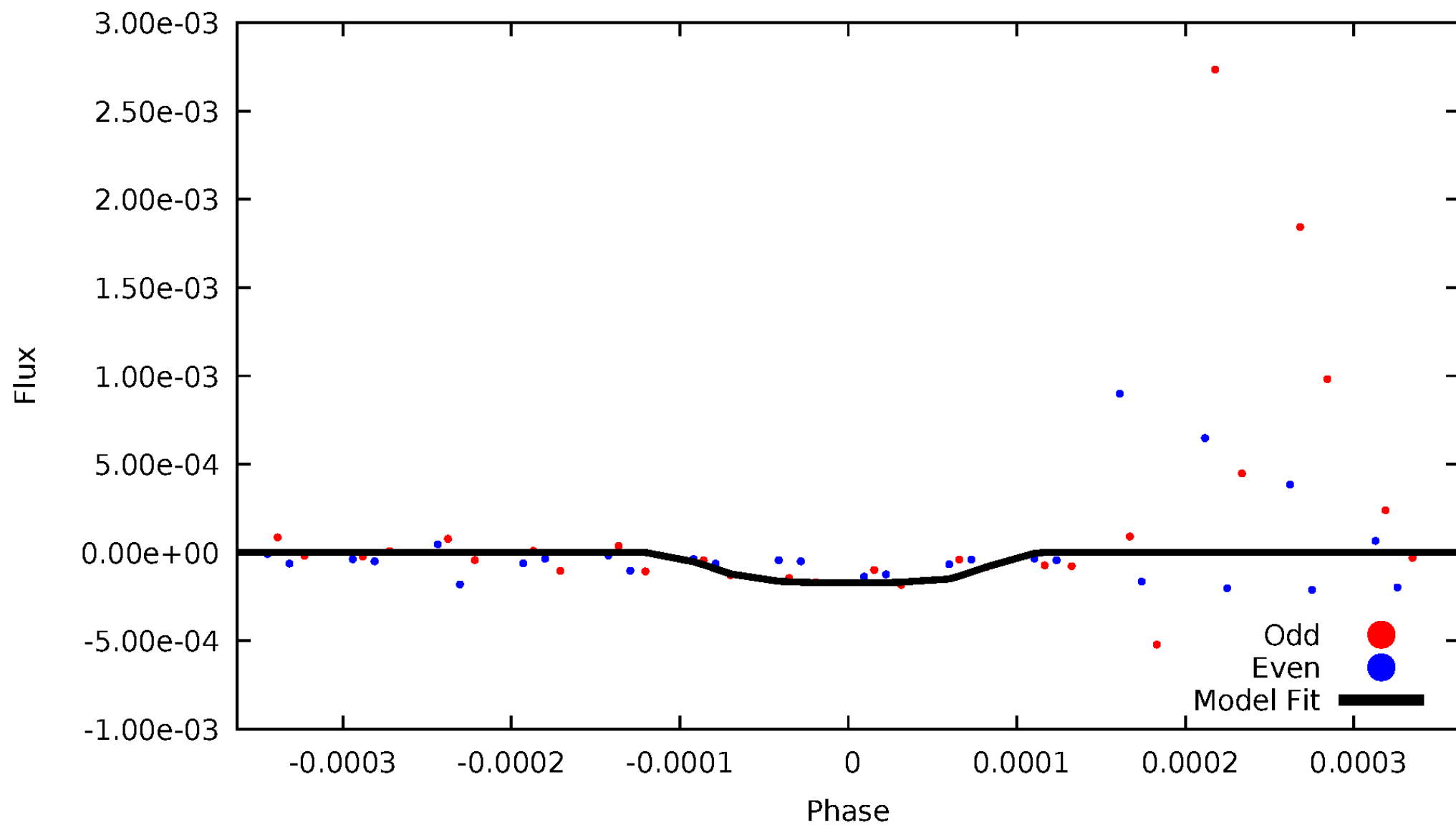


TCE 005428125-01



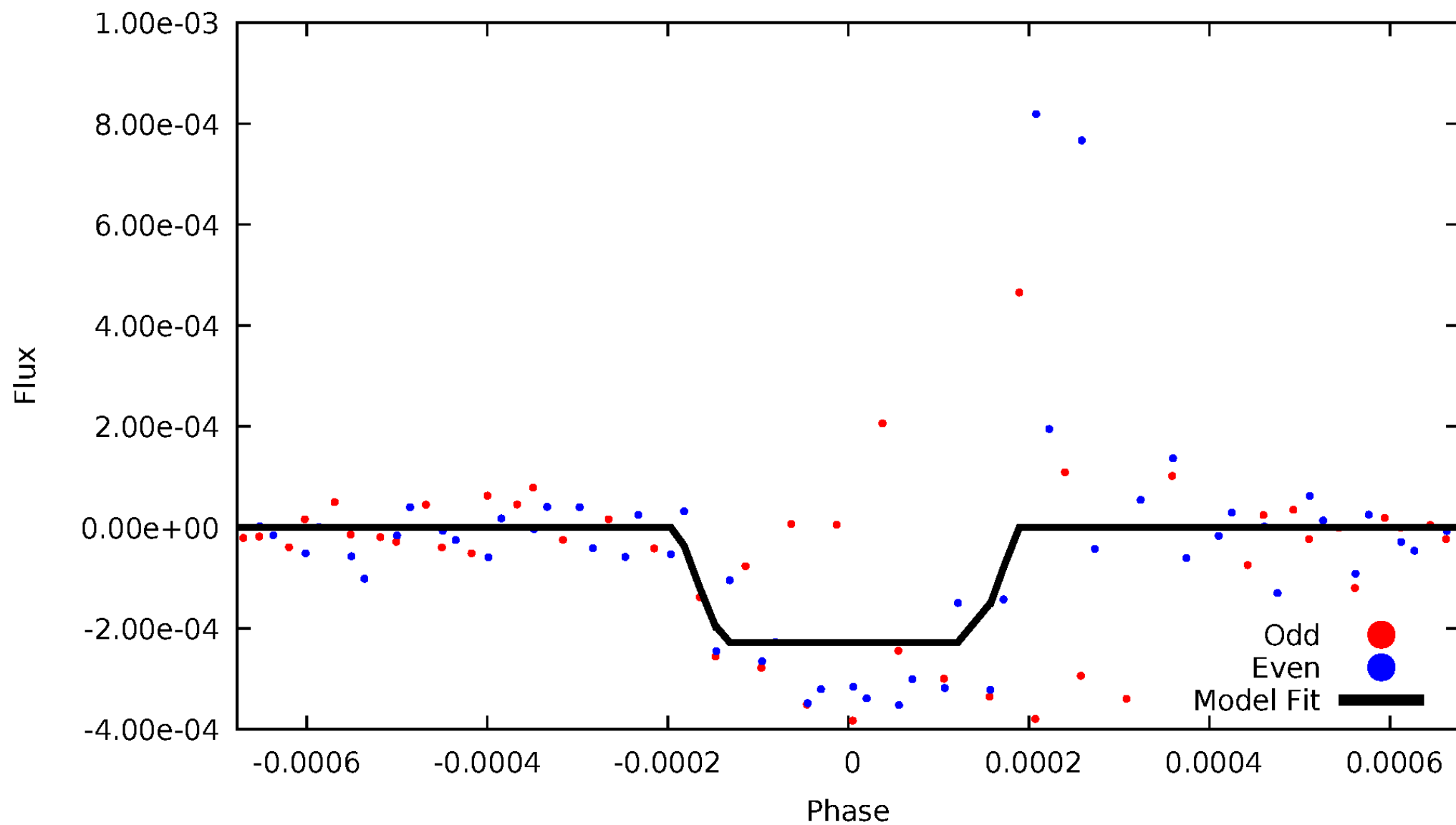
DV Odd/Even

TCE 005428125-01

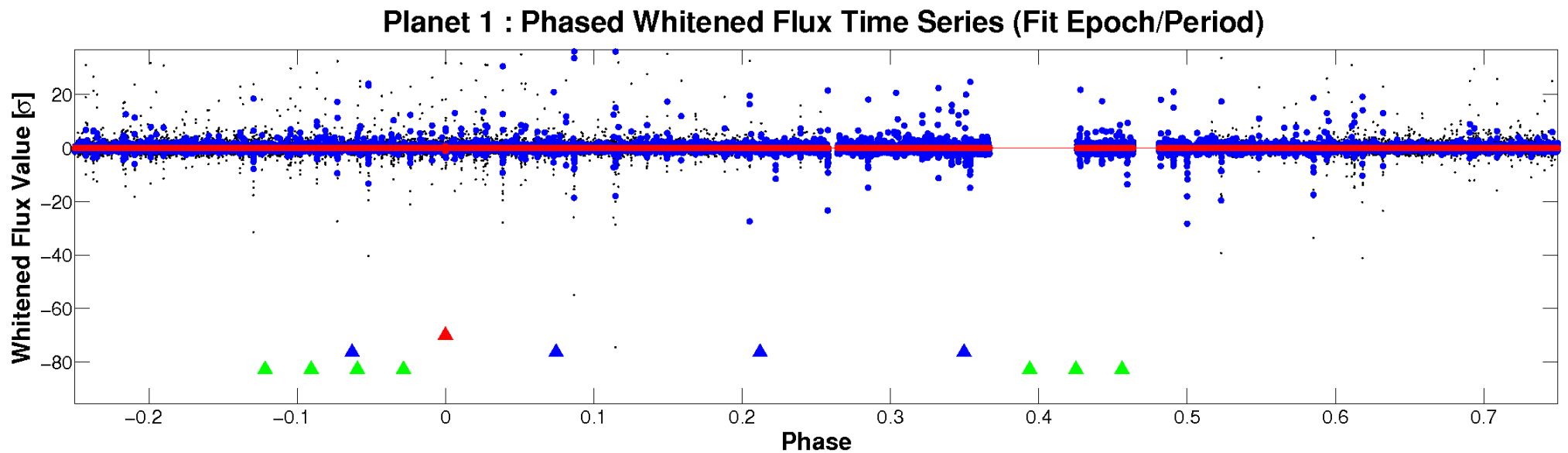
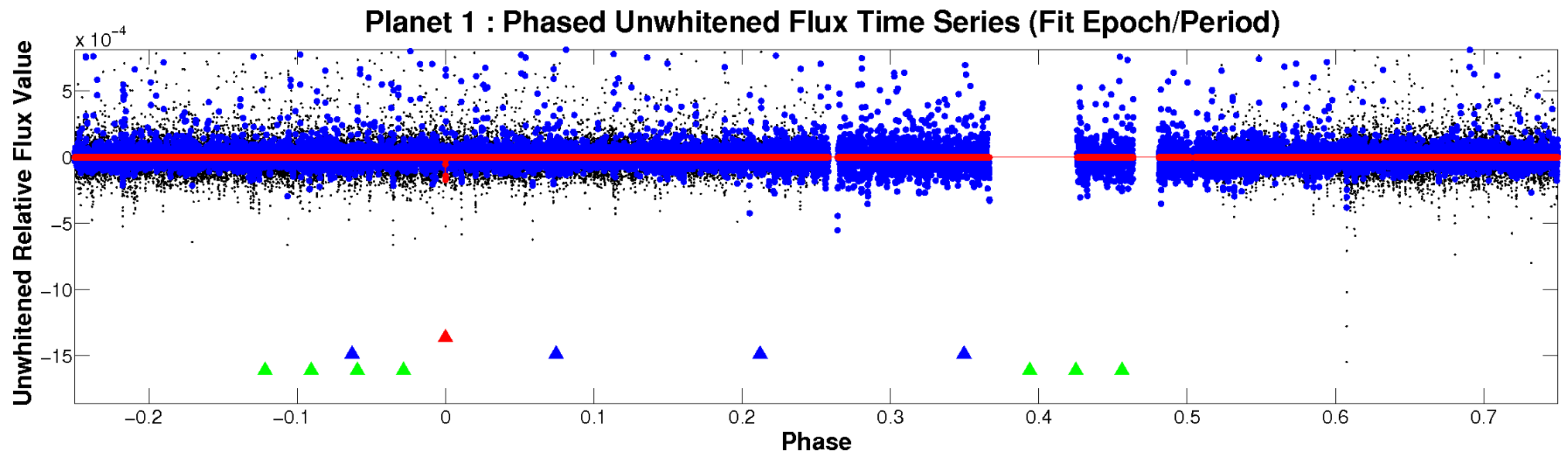


ALT Odd/Even

TCE 005428125-01

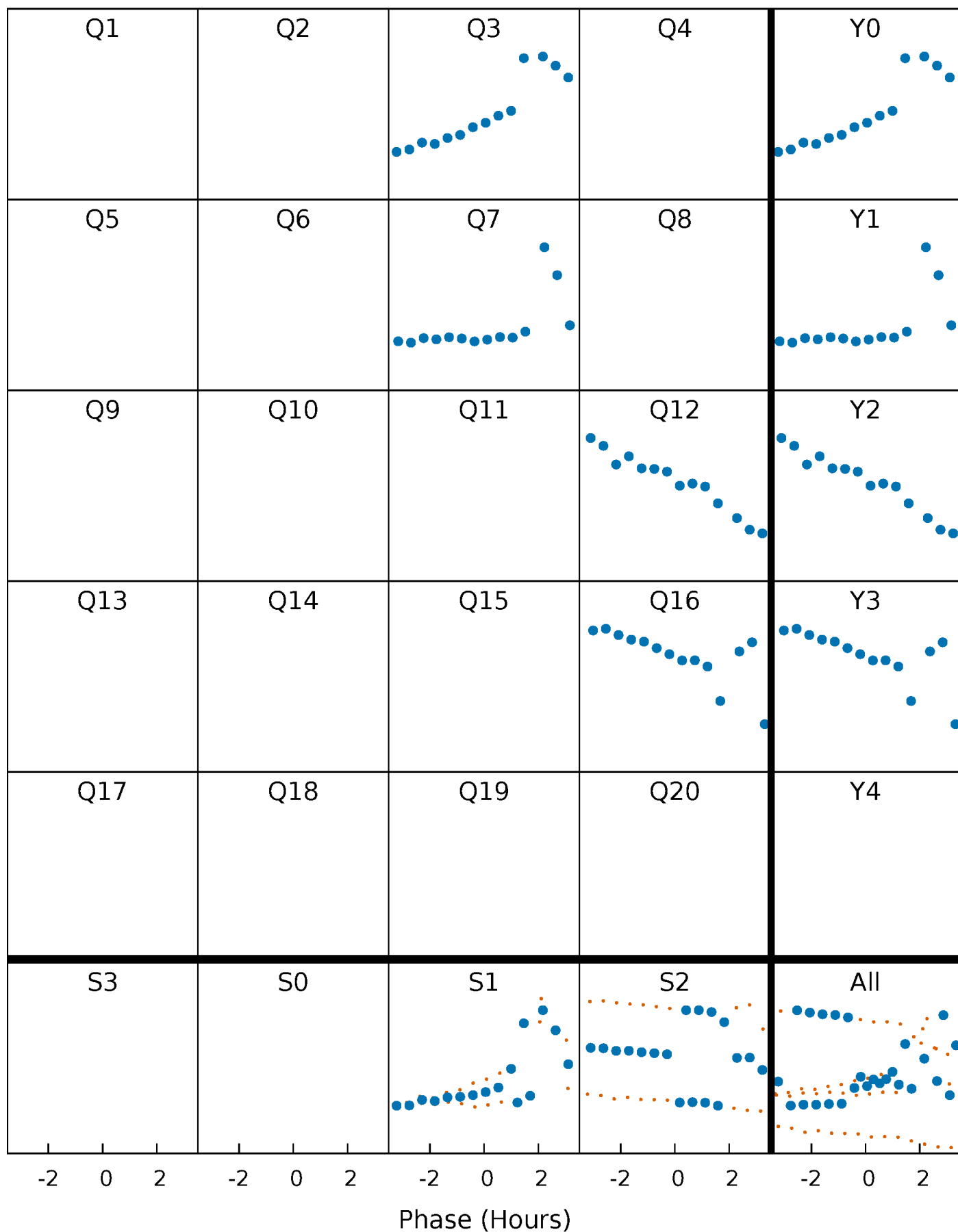


Non-Whitened Vs. Whitened Light Curve



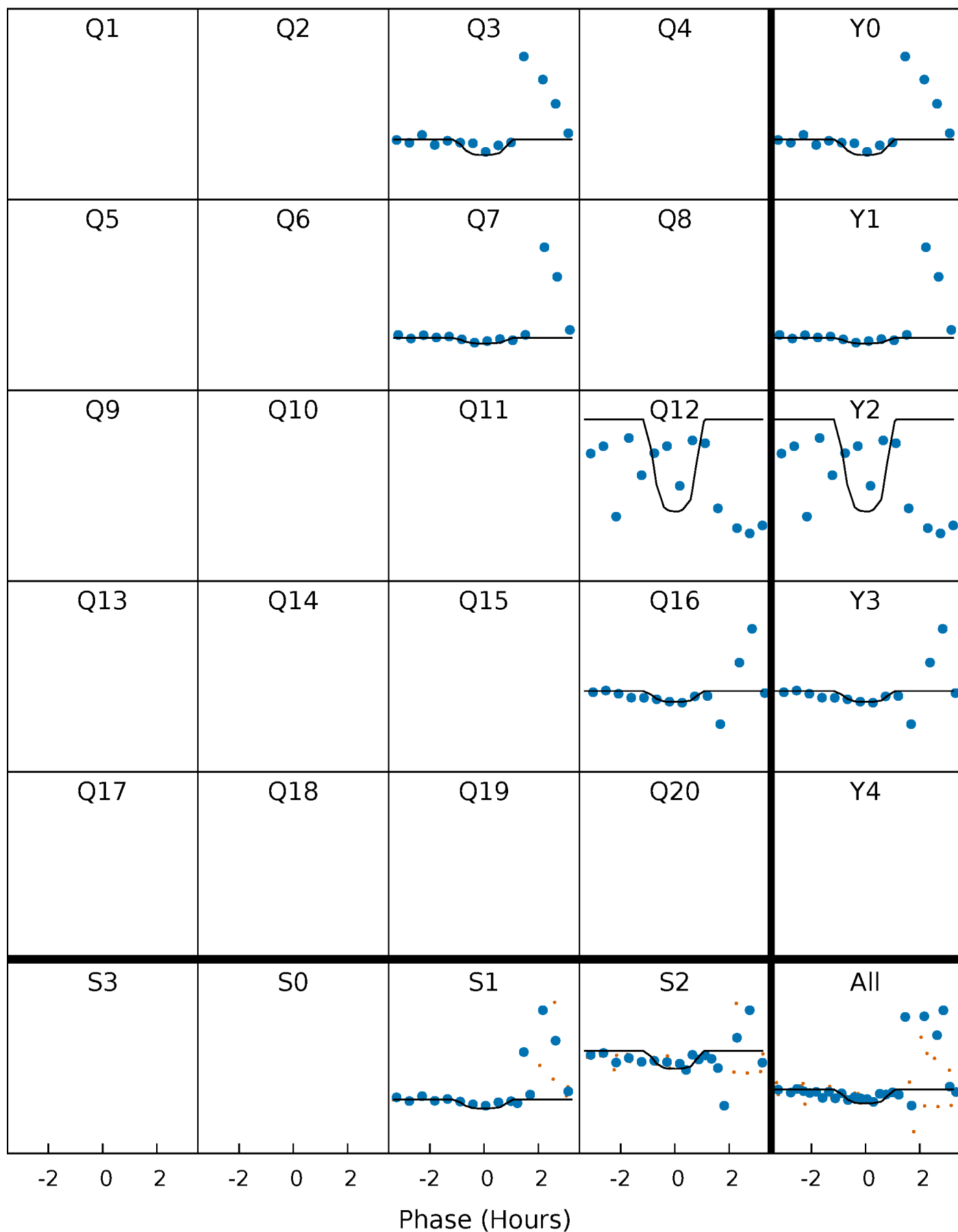
PDC Quarter-Phased Transit Curves

TCE 005428125-01 P=404.050132 Days $T_0=293.995976$ (BKJD)



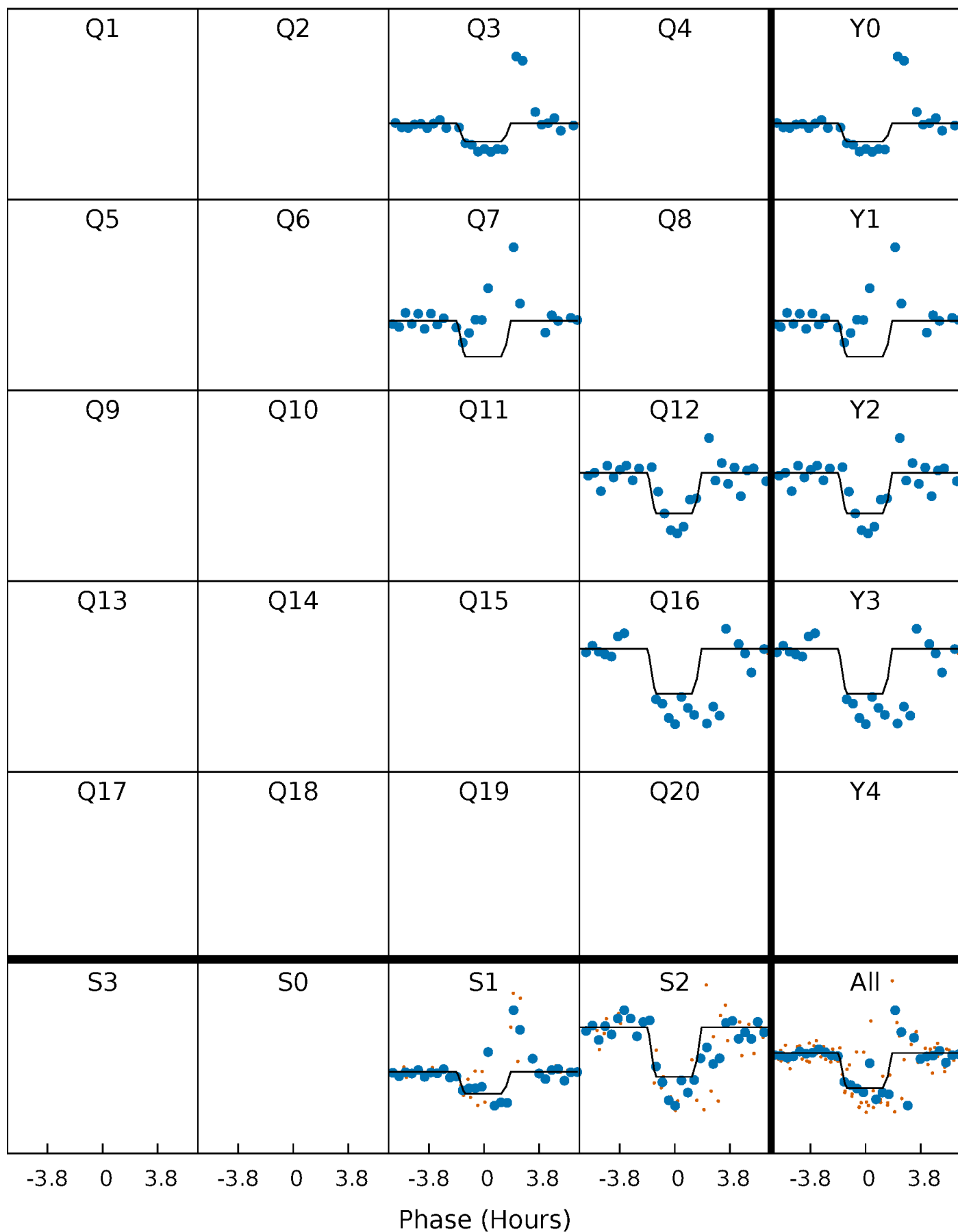
DV Quarter-Phased Transit Curves

TCE 005428125-01 P=404.050132 Days $T_0=293.995976$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

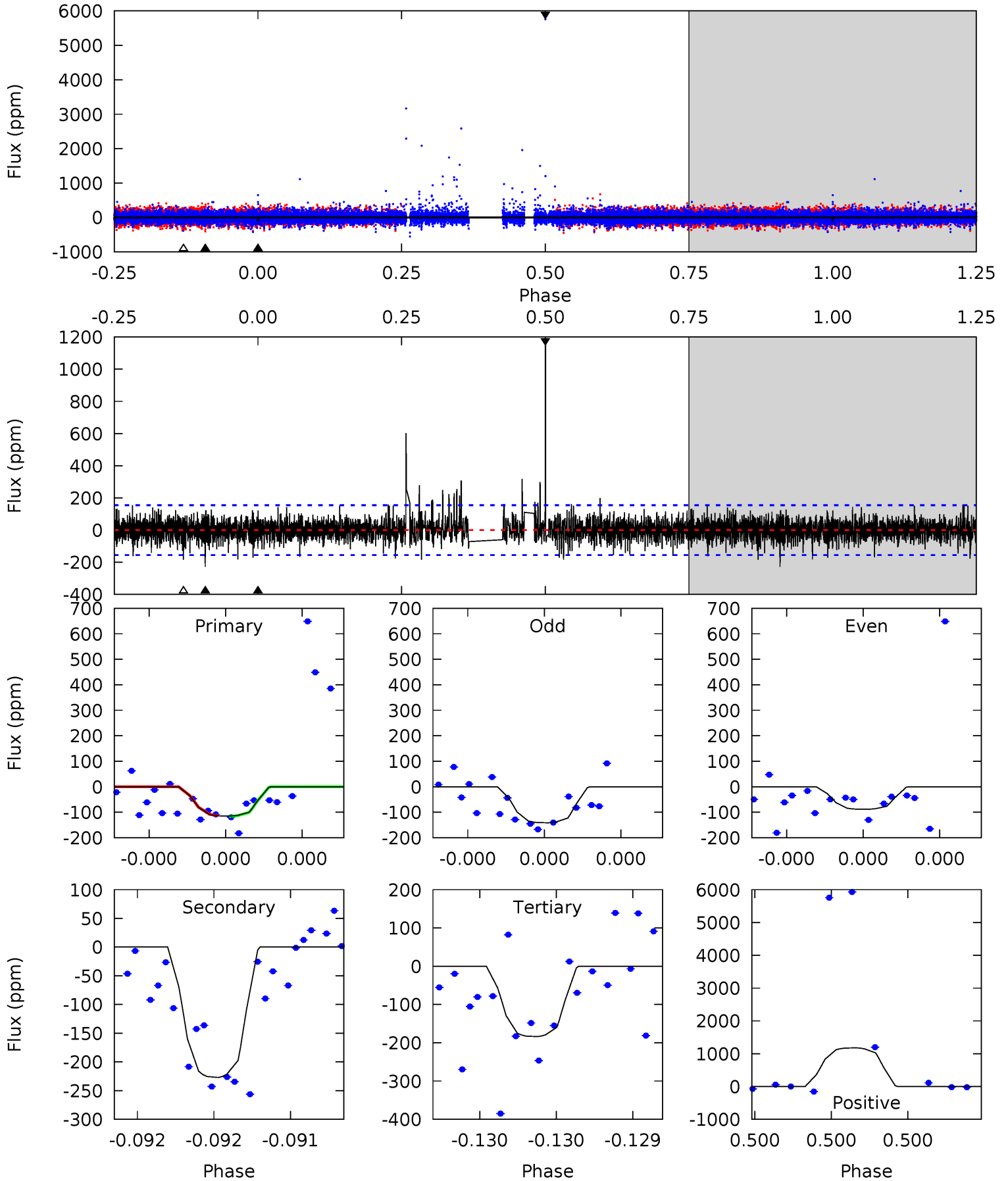
TCE 005428125-01 P=404.121327 Days $T_0=293.977018$ (BKJD)



DV Model-Shift Uniqueness Test

005428125-01, P = 404.050132 Days, E = 293.995976 Days

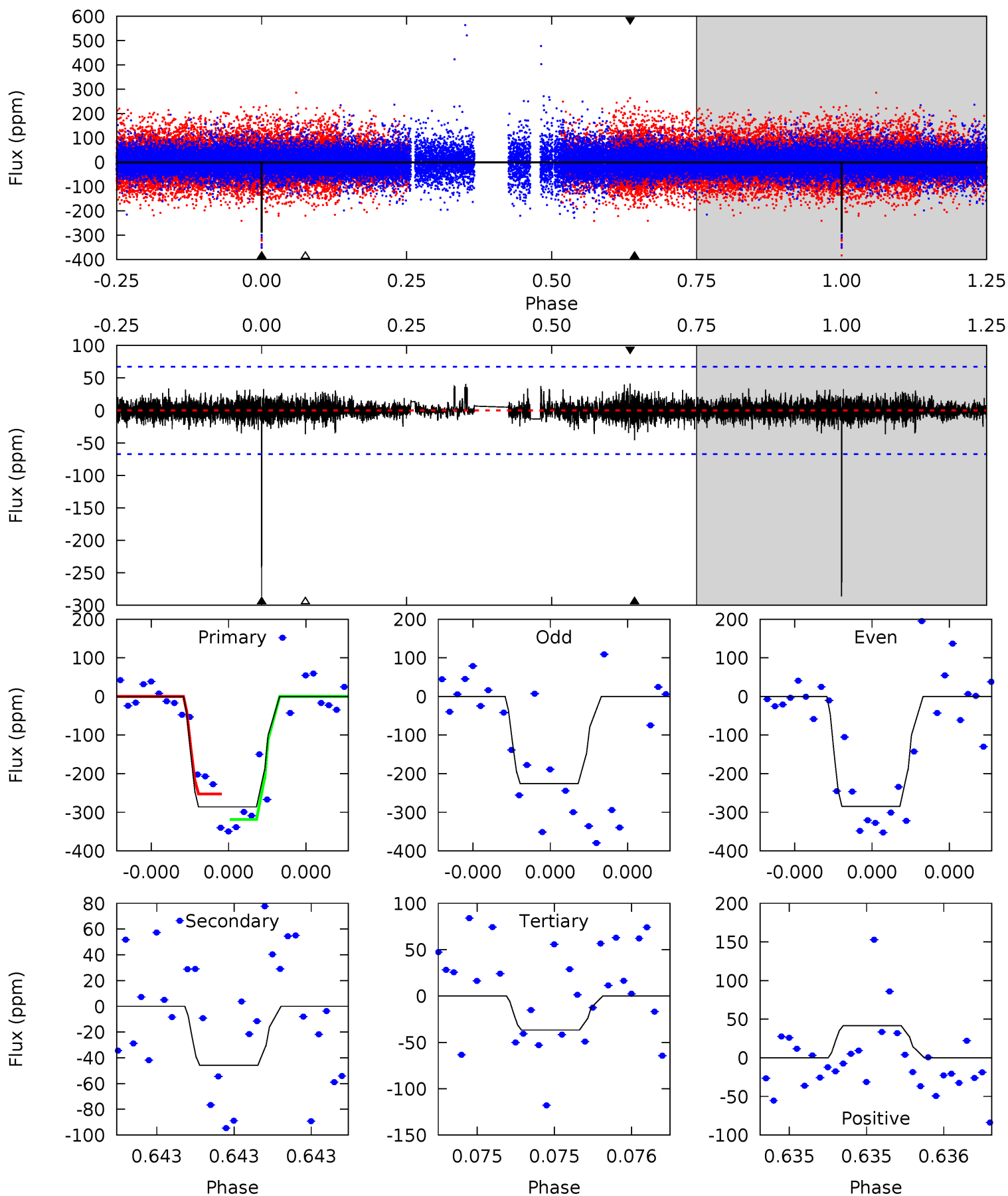
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.25	8.40	6.80	43.6	5.73	3.72	1.76	-2.55	-39.4	1.60	-35.2	0.74	1.18	0.84	0.06



Alt Model-Shift Uniqueness Test

005428125-01, P = 404.121327 Days, E = 293.977018 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.0	3.85	3.08	3.48	5.64	3.59	0.71	20.9	20.5	0.77	0.37	2.48	0.78	0.13	0



Stellar Parameters For KIC 005428125

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6084^{+211}_{-211}	$3.823^{+0.560}_{-0.140}$	$-0.400^{+0.300}_{-0.300}$	$2.162^{+0.499}_{-1.082}$	$1.134^{+0.175}_{-0.262}$	$0.158^{+1.107}_{-0.066}$
	+3%/-3%	+15%/-4%	+75%/-75%	+23%/-50%	+15%/-23%	+700%/-42%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 005428125-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-227 ± 27	$6.51^{+7.05}_{-4.70}$	508^{+45}_{-70}	4418^{+3766}_{-965}	3543^{+44418}_{-2711}
Alt.	-46 ± 12	$7.24^{+7.43}_{-5.07}$	507^{+48}_{-72}	3271^{+1736}_{-602}	589^{+5703}_{-456}

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 $A_{obs} \gg 1.0$

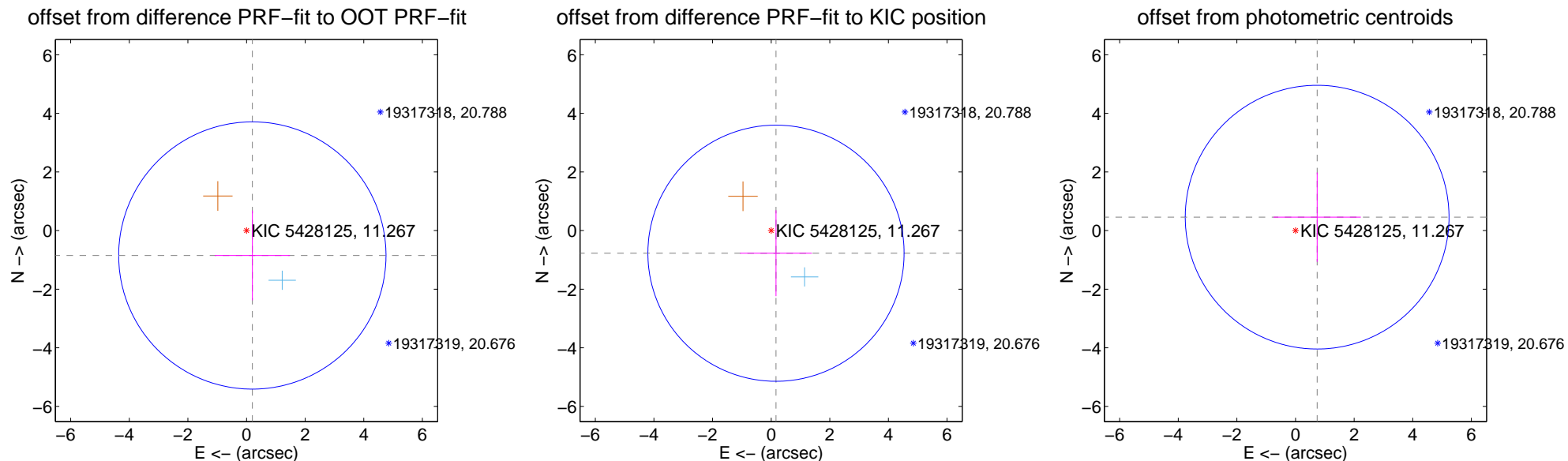
DV Centroid Data

Supplemental centroid analysis for 005428125-01. **Kepler magnitude: 11.27.** Transit SNR 4.00

There are 1 quarters with good PRF difference image offsets

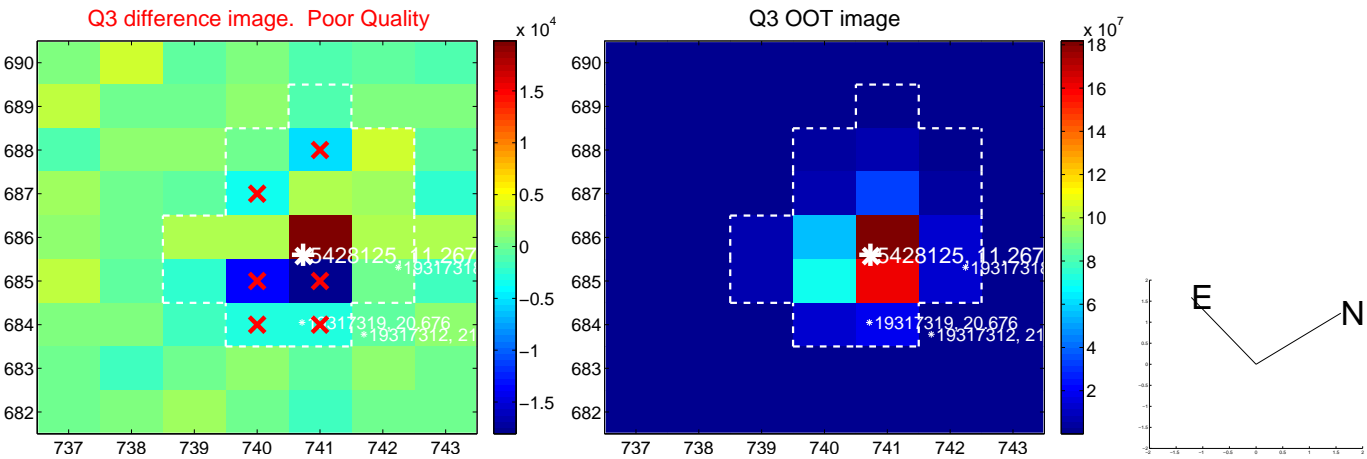
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.872 ± 1.520	0.57	-0.198 ± 1.281	-0.850 ± 1.532
PRF-fit source offset from KIC position	0.790 ± 1.457	0.54	-0.165 ± 1.226	-0.772 ± 1.466
photometric centroid source offset	0.87 ± 1.50	0.58	-0.74 ± 1.49	0.46 ± 1.52

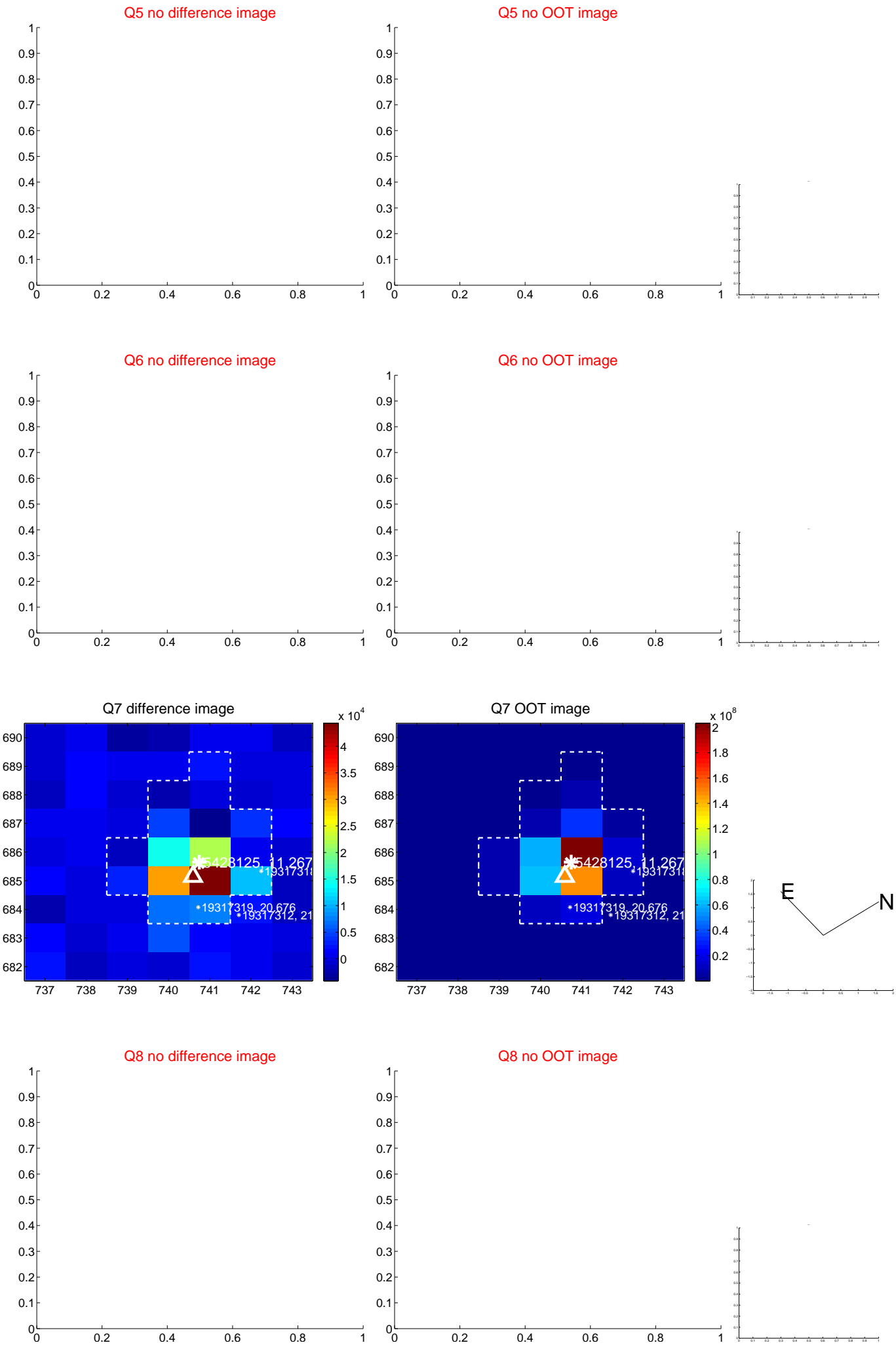


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

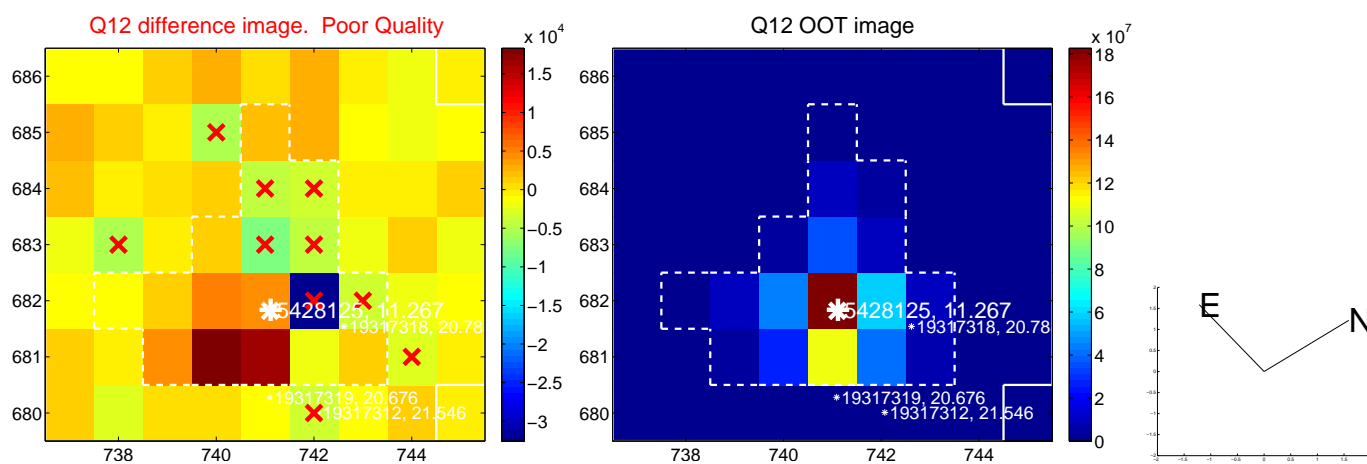
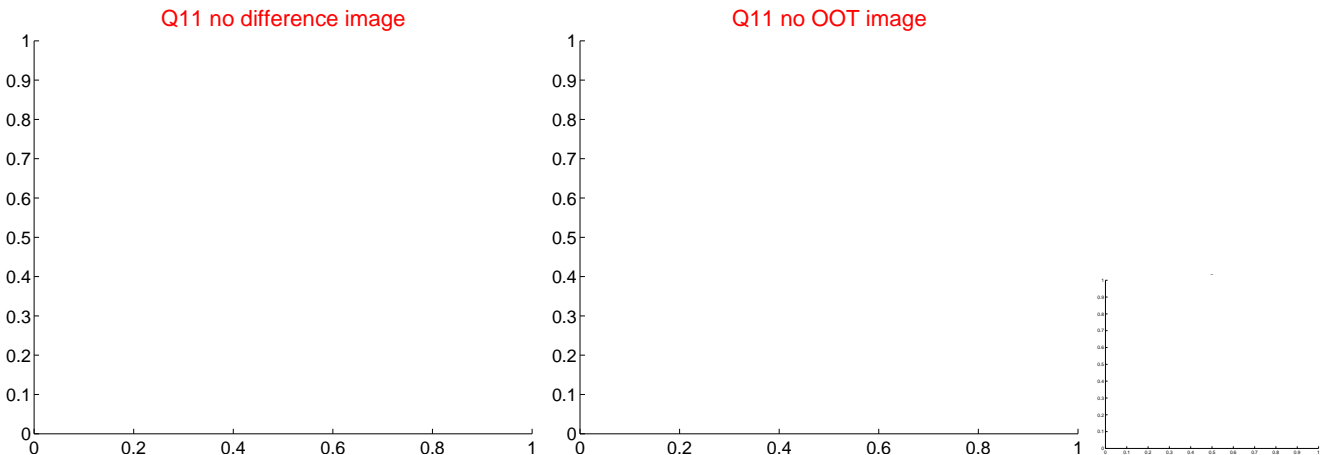
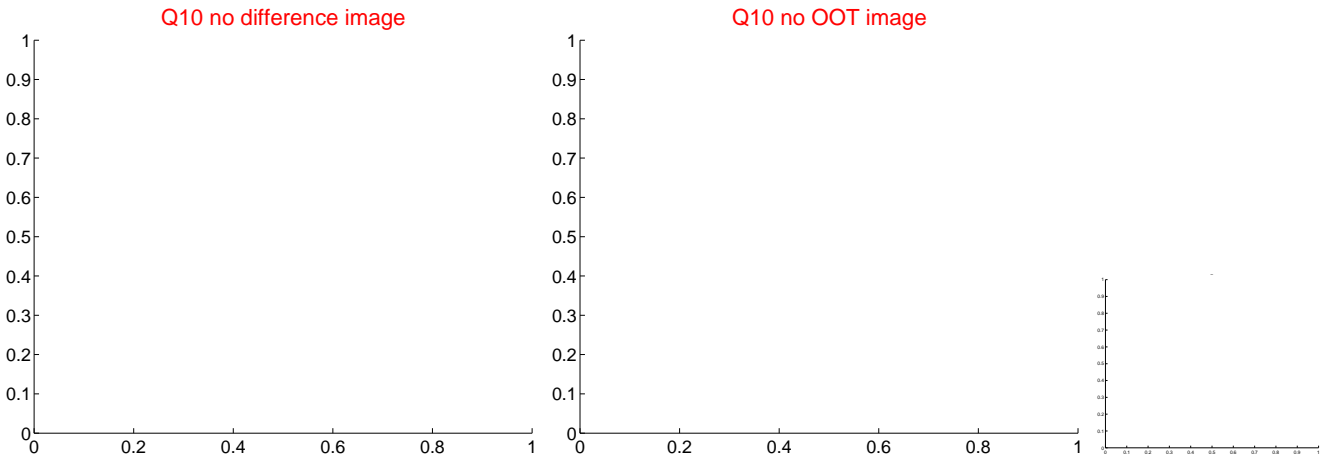
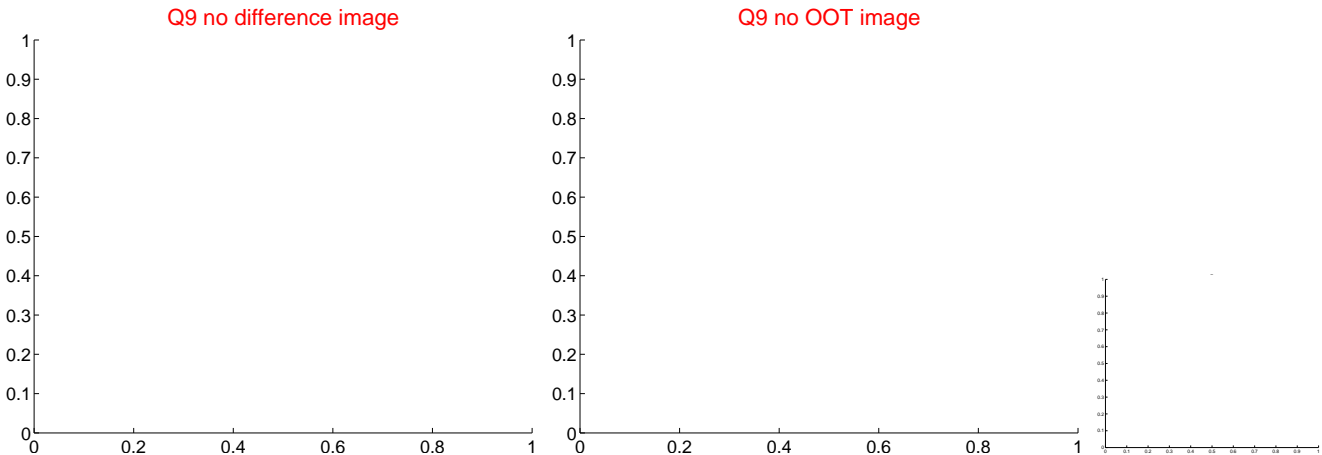
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



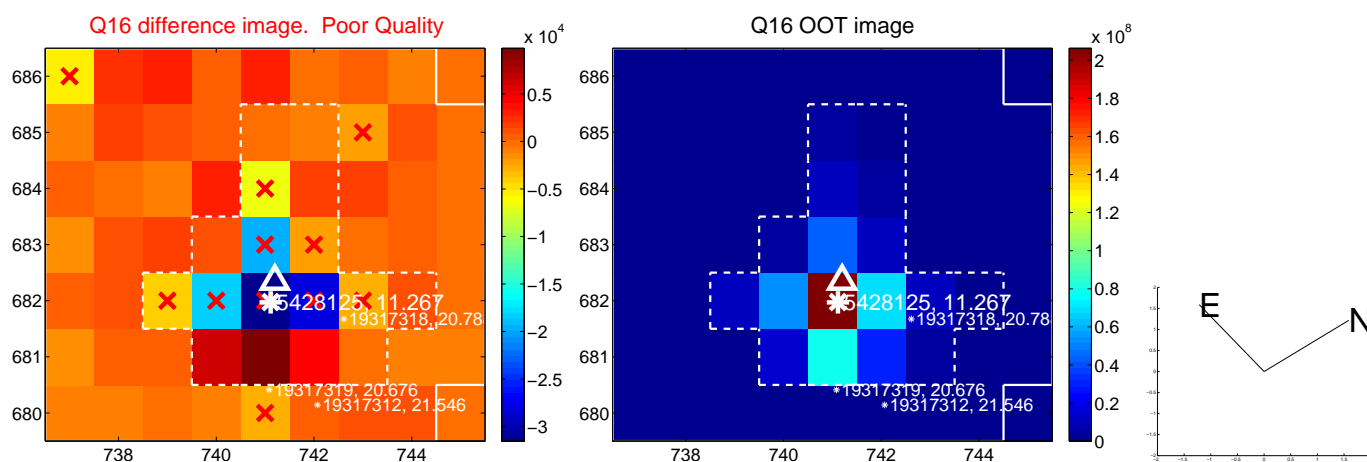
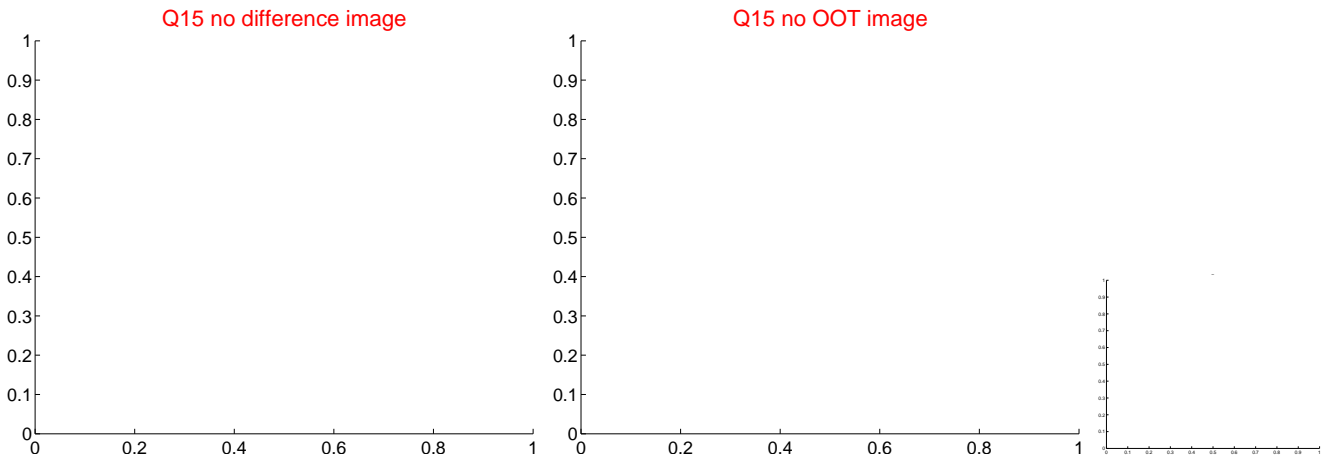
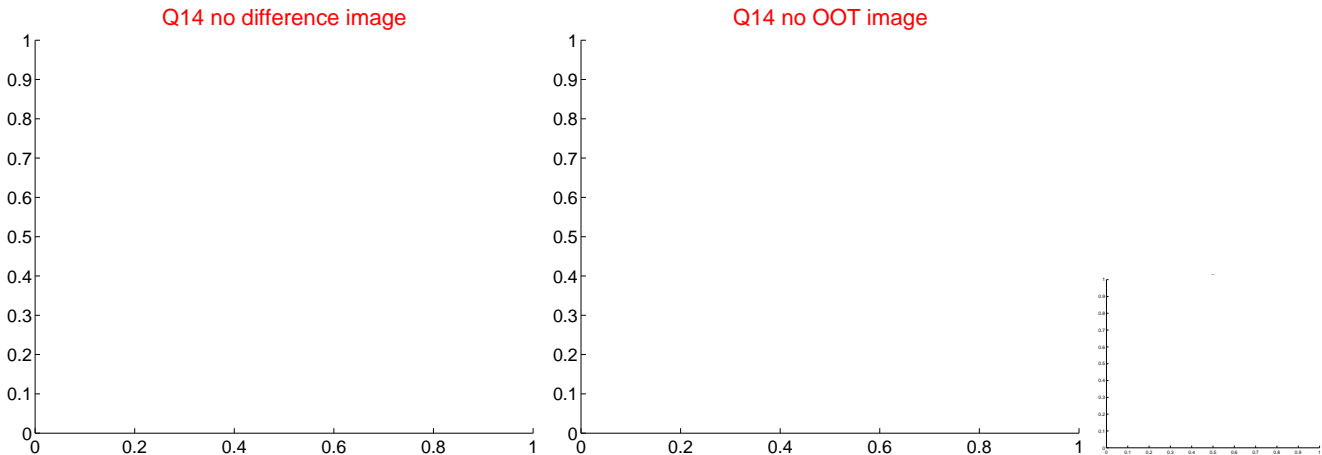
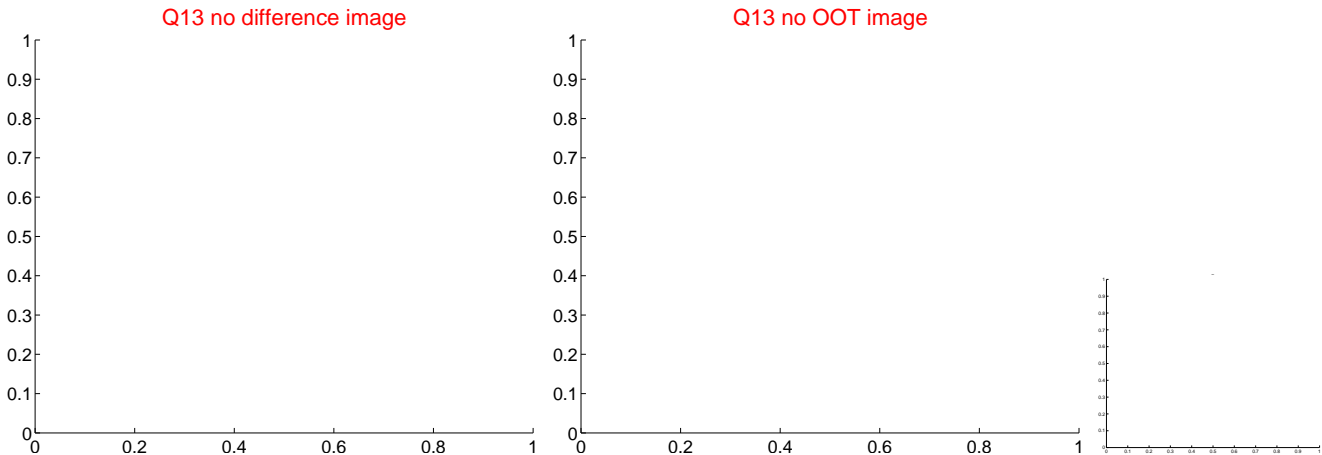
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



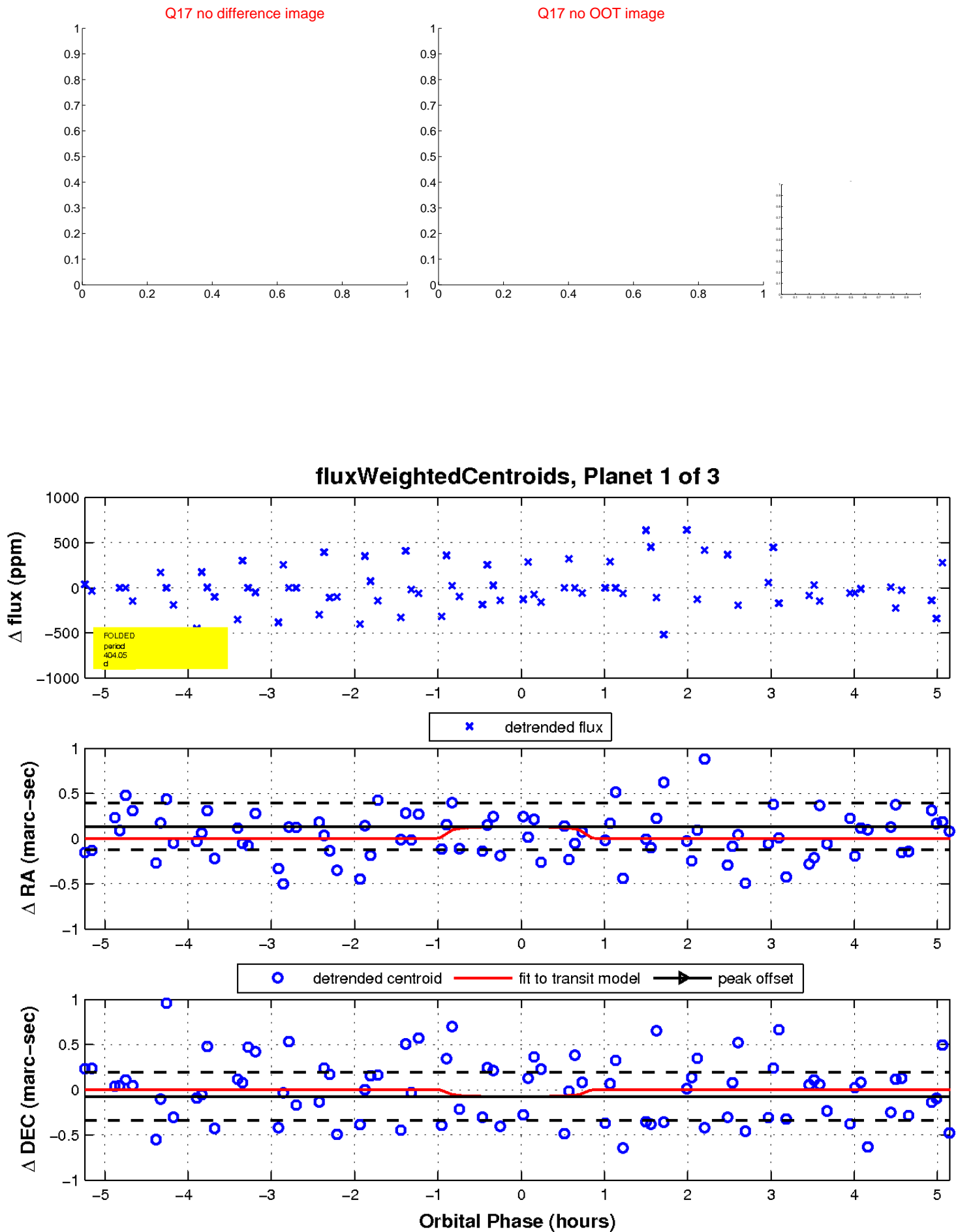
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

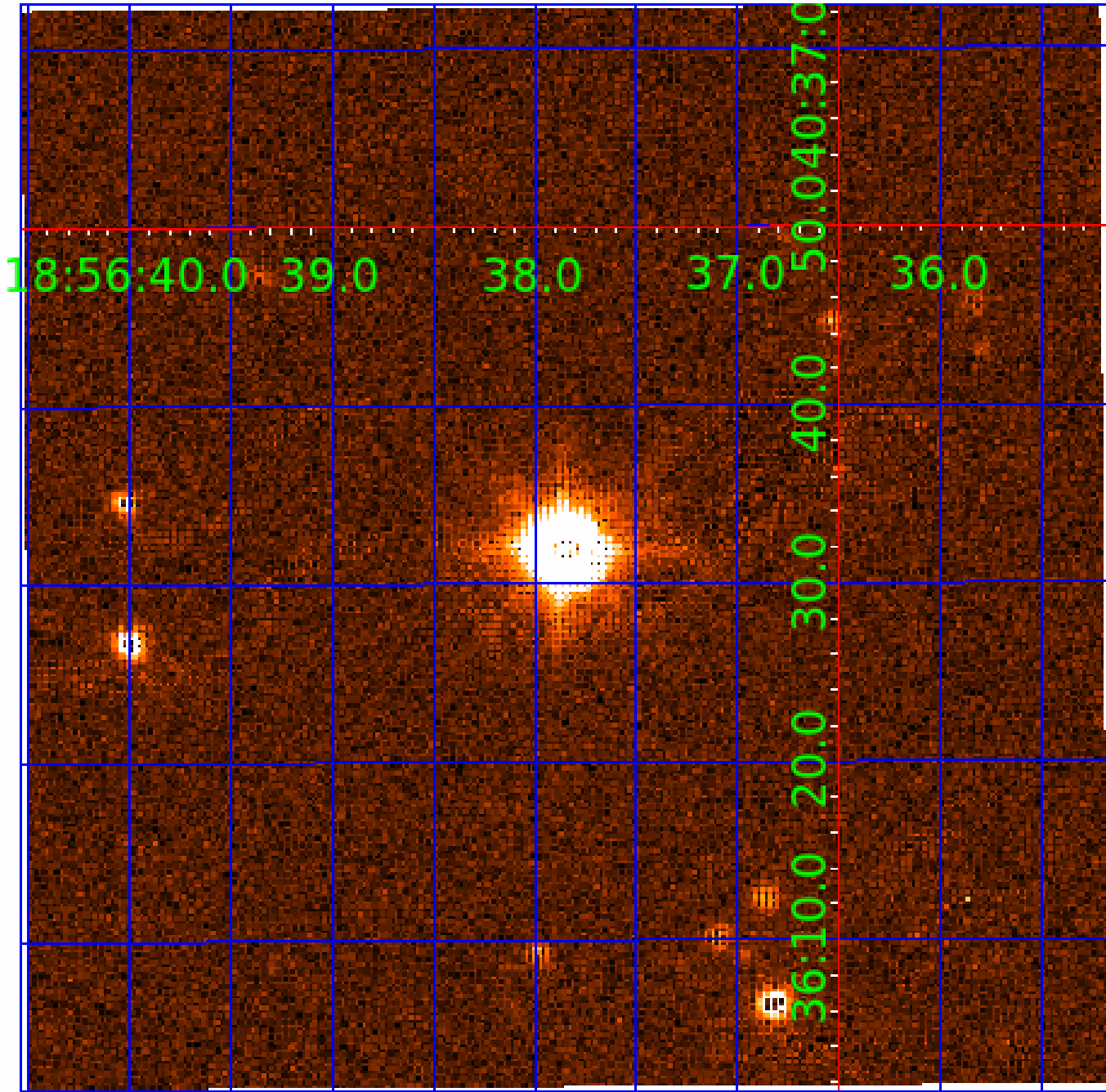


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005428125

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})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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005428125-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
005428125-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

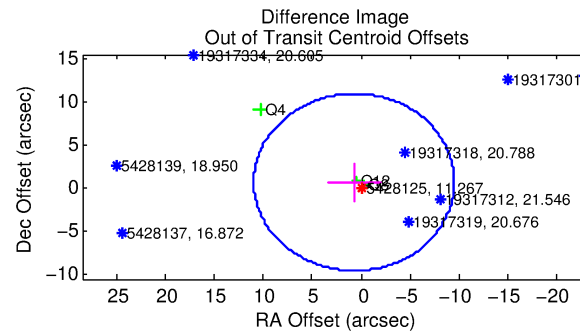
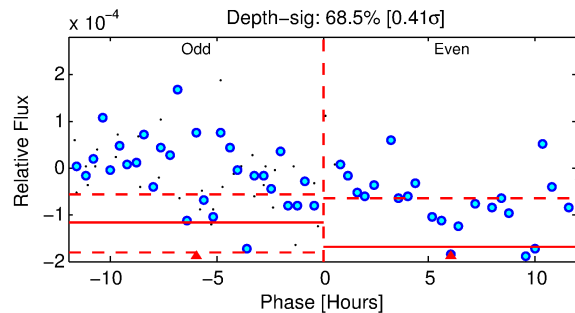
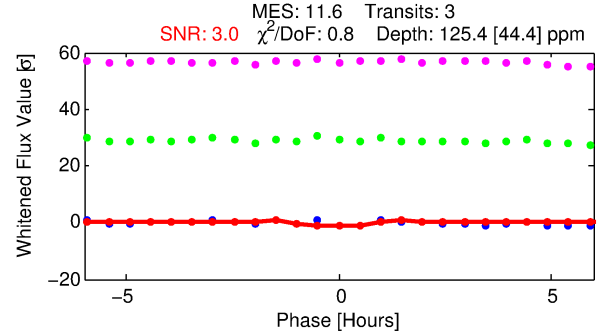
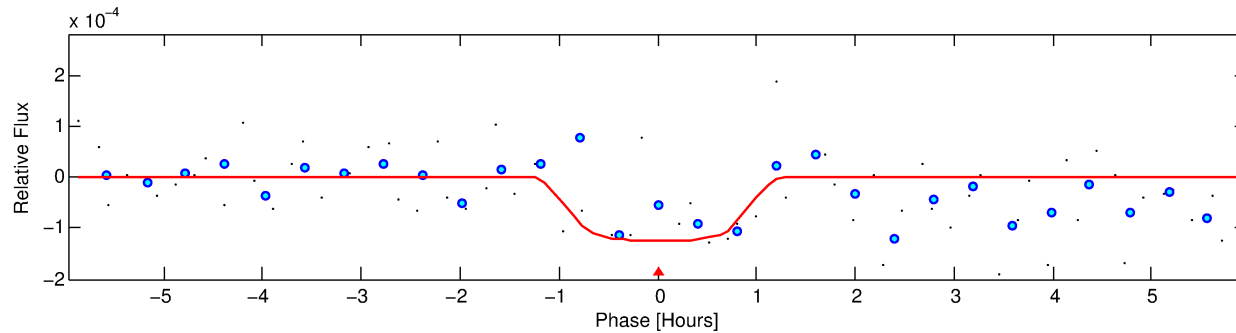
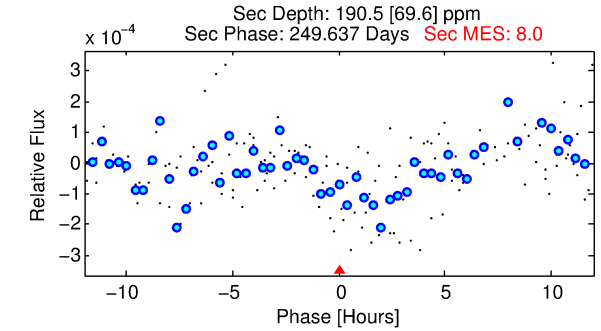
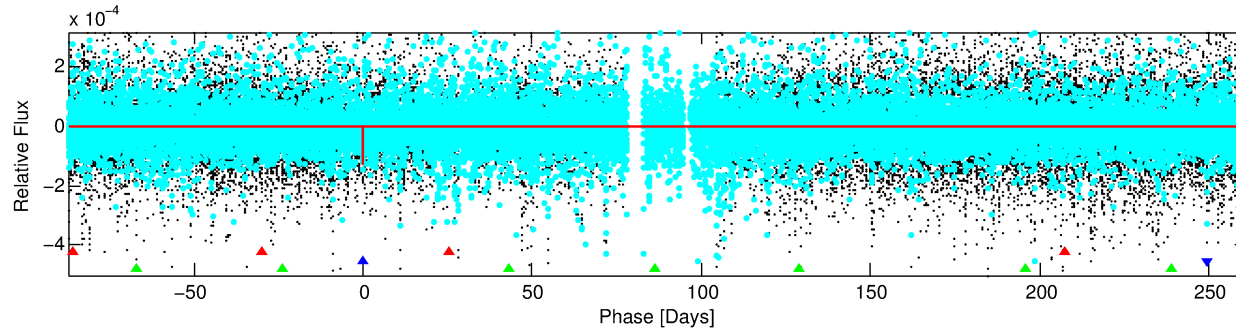
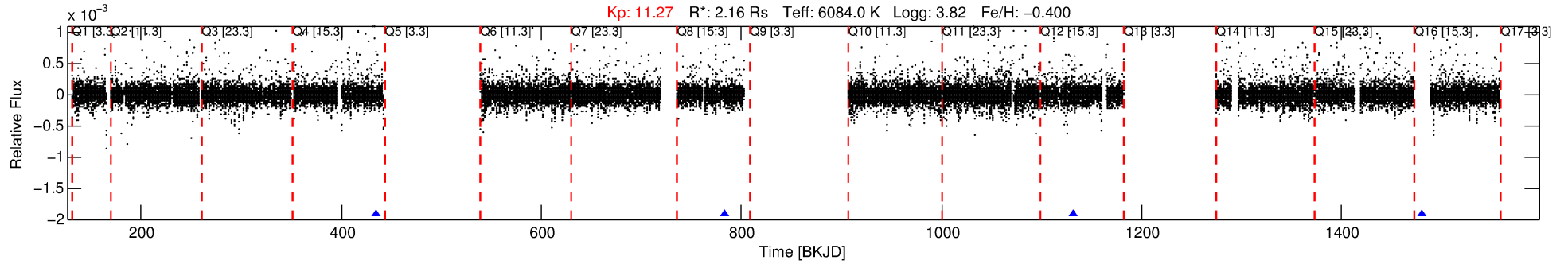
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005428125-02

No Significant Match Found

DV One-Page Summary

KIC: 5428125 Candidate: 2 of 3 Period: 348.482 d



DV Fit Results:

Period = 348.48219 [0.00939] d
Epoch = 435.2668 [0.0100] BKJD
Rp/R* = 0.0112 [0.0199]
a/R* = 881.78 [8012.64]
b = 0.77 [4.96]
Seff = 5.61 [5.24]
Teq = 393 [92] K
Rp = 2.65 [4.87] Re
a = 1.0109 [0.5501] AU
Ag = 15270.35 [56137.43] [0.27σ]
Teffp = 6746 [6006] K [1.06σ]

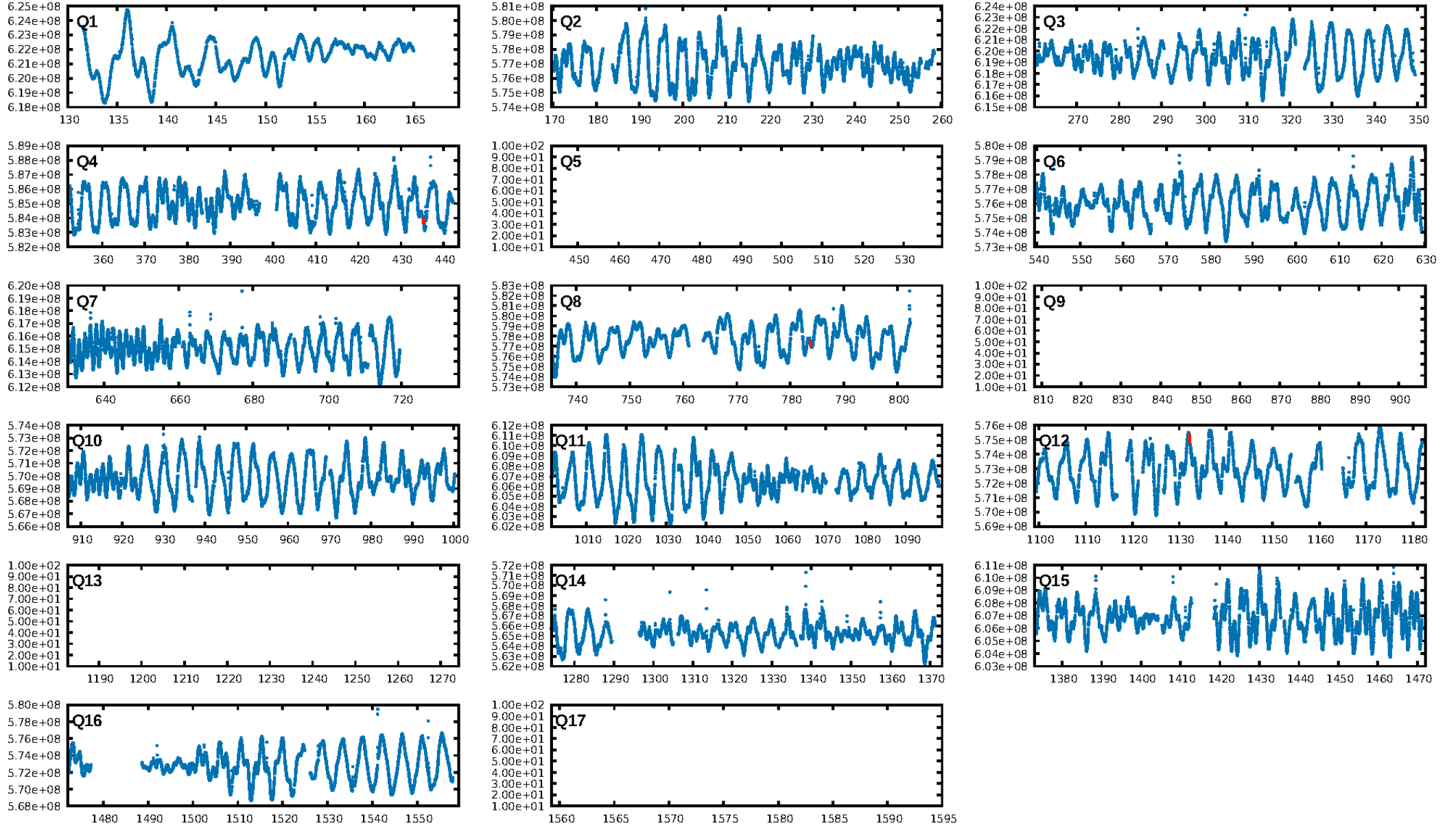
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1213.29σ]
LongPeriod-sig: 100.0% [502.21σ]
ModelChiSquare2-sig: 85.6%
ModelChiSquareGof-sig: 99.2%
Bootstrap-pfa: 2.21e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.2807
Centroid-sig: 12.3%
Centroid-so: 3.306 arcsec [1.63σ]
OotOffset-rm: 1.008 arcsec [0.30σ]
KicOffset-rm: 1.045 arcsec [0.26σ]
OotOffset-st: 0/0/3/0 [3]
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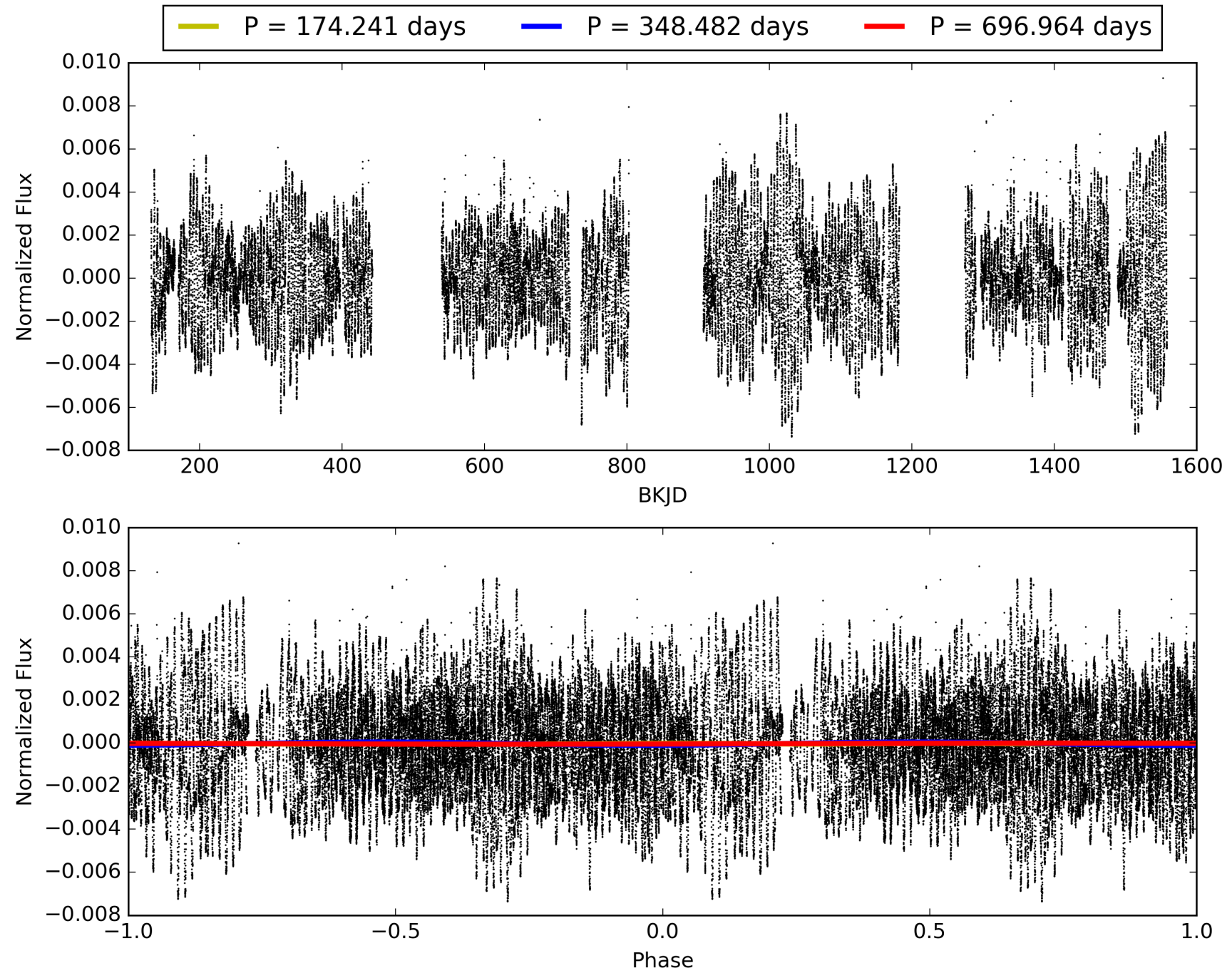
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 15:49:18 Z

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

TCE 005428125-02, PDC Light Curves

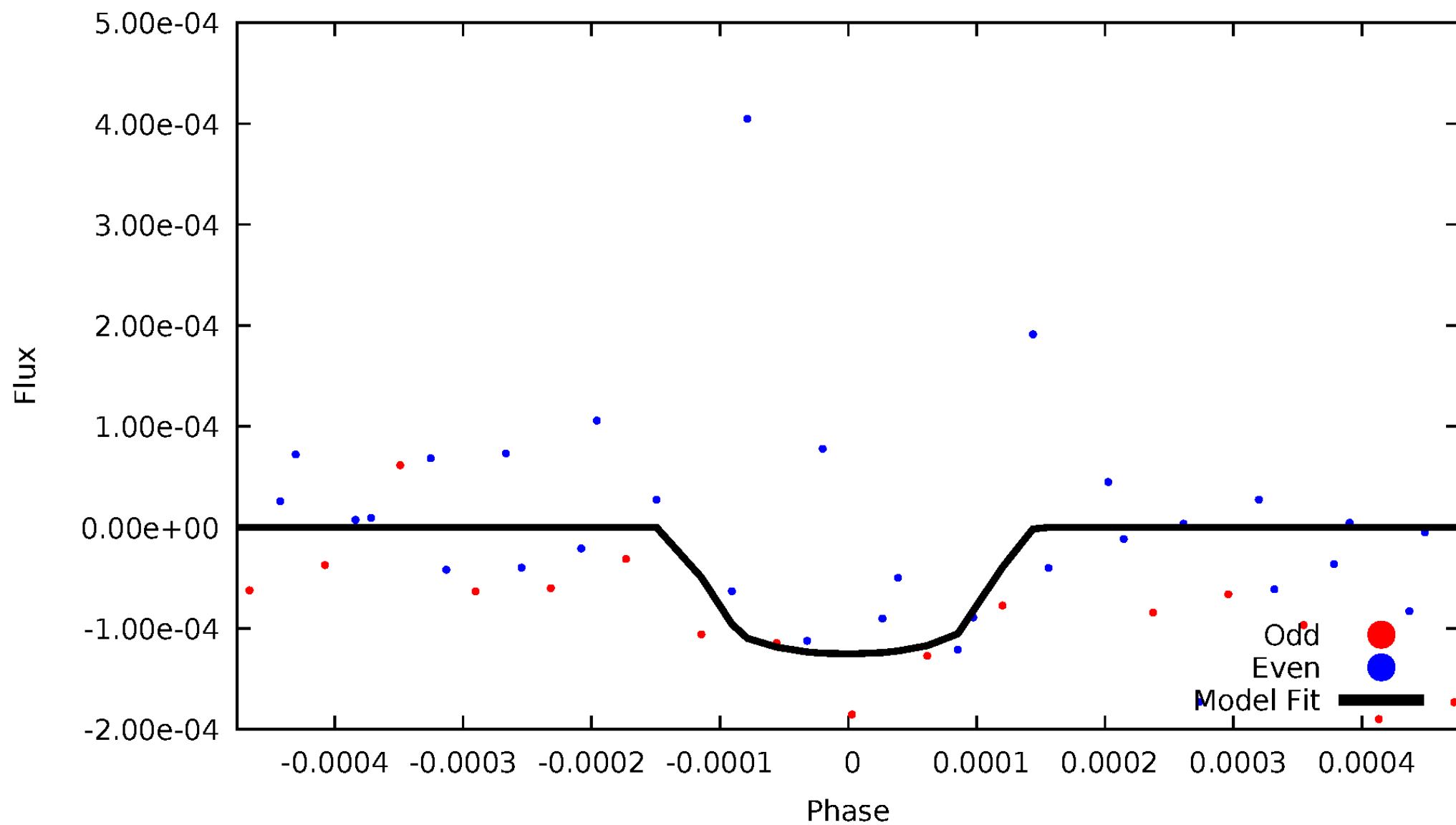


TCE 005428125-02



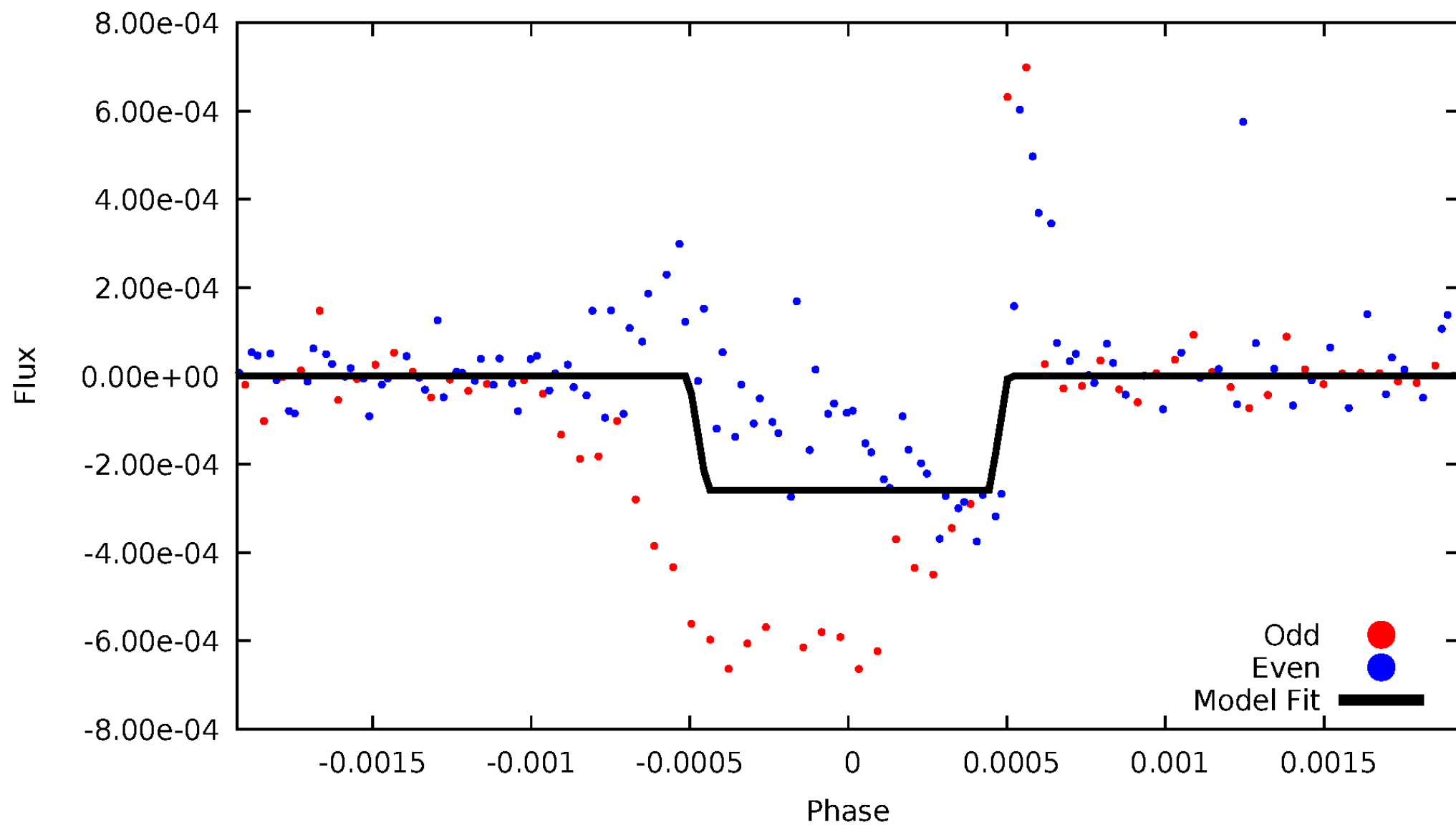
DV Odd/Even

TCE 005428125-02



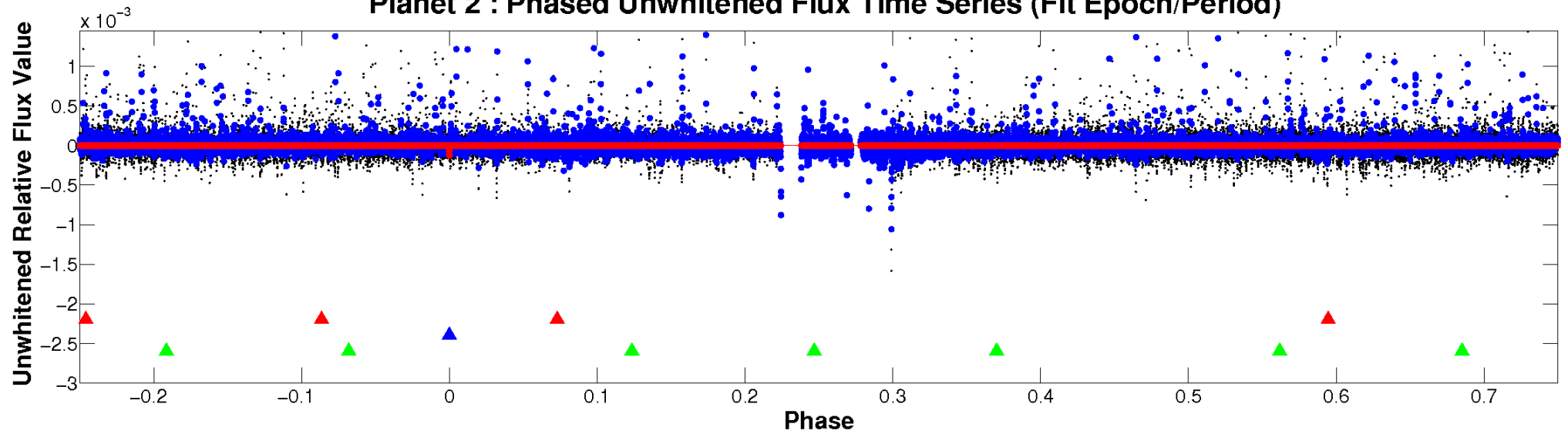
ALT Odd/Even

TCE 005428125-02

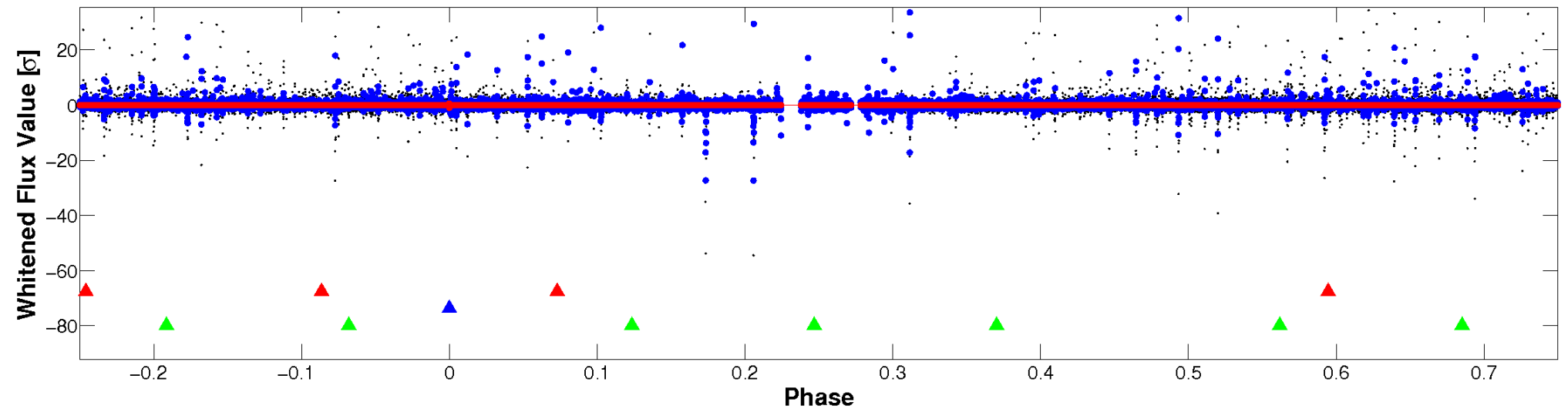


Non-Whitened Vs. Whitened Light Curve

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

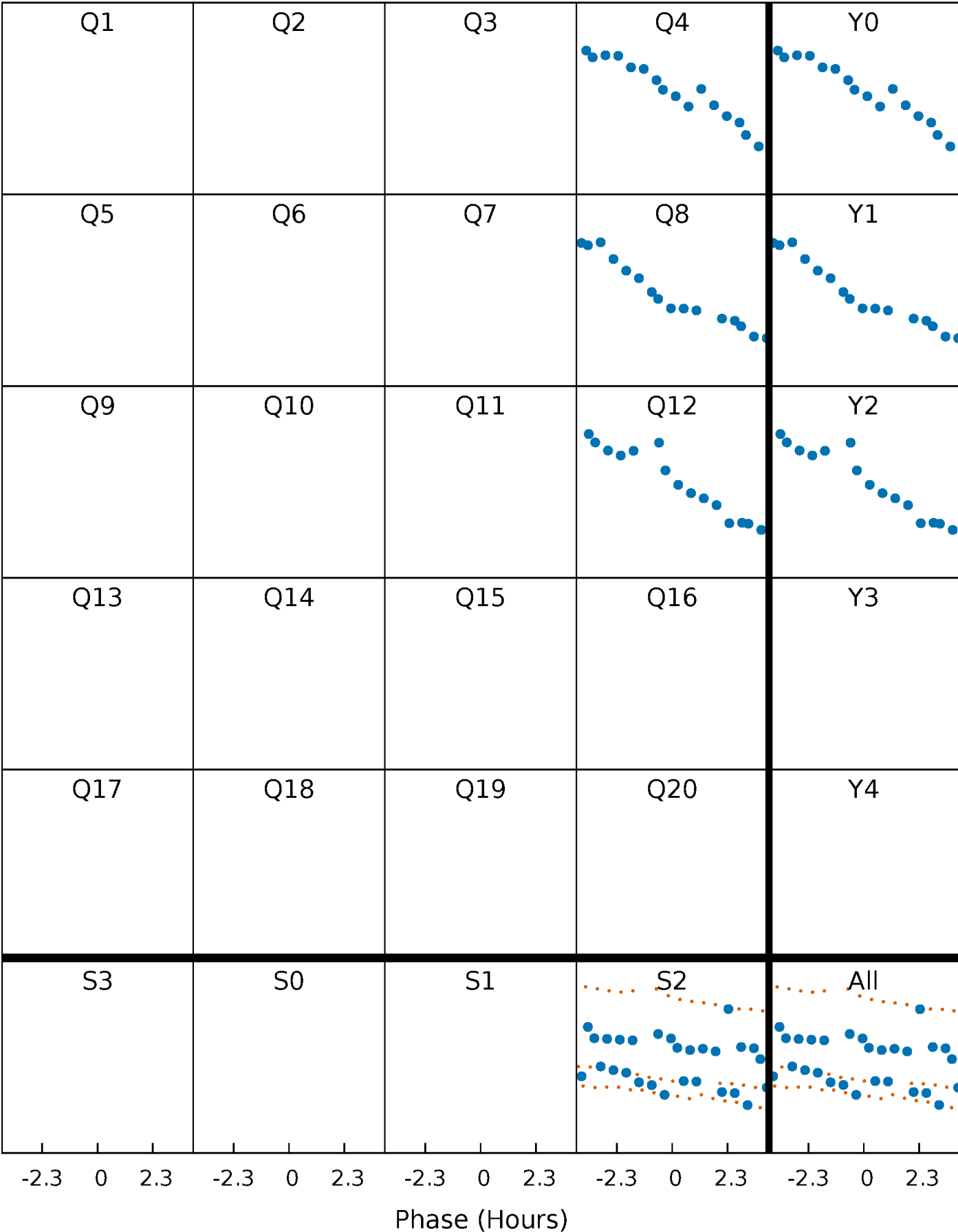


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



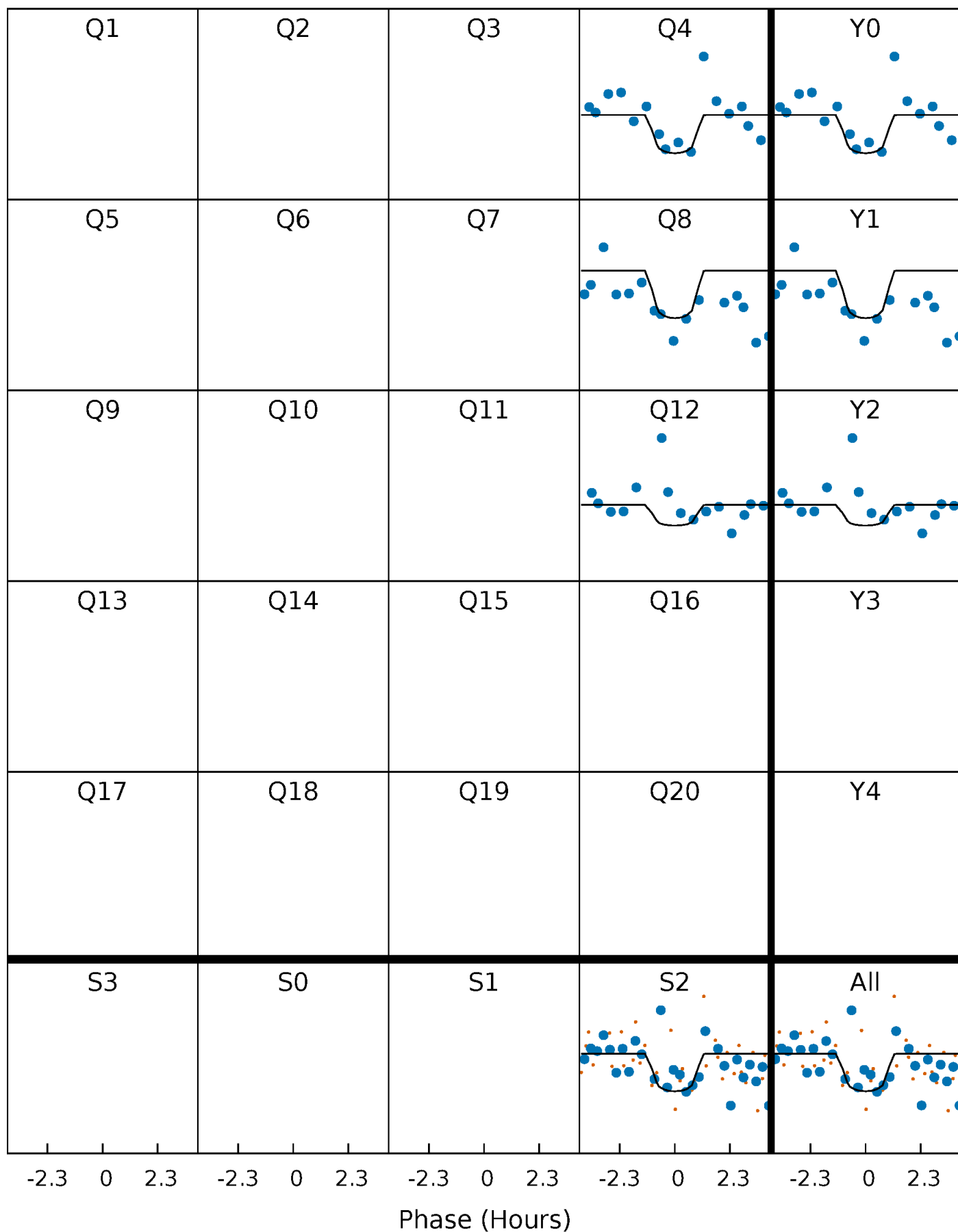
PDC Quarter-Phased Transit Curves

TCE 005428125-02 P=348.482193 Days T₀=435.266766 (BKJD)



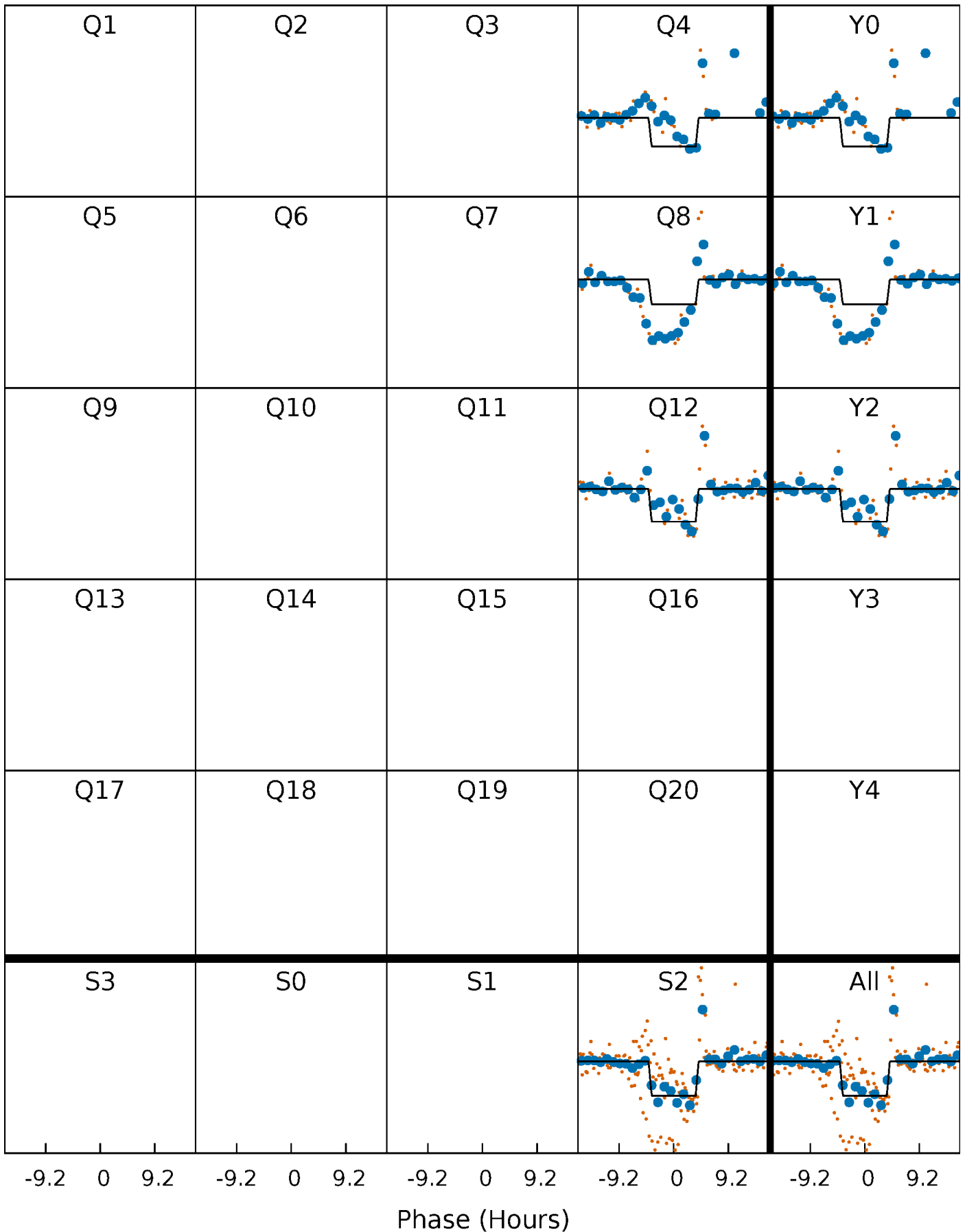
DV Quarter-Phased Transit Curves

TCE 005428125-02 P=348.482193 Days $T_0=435.266766$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

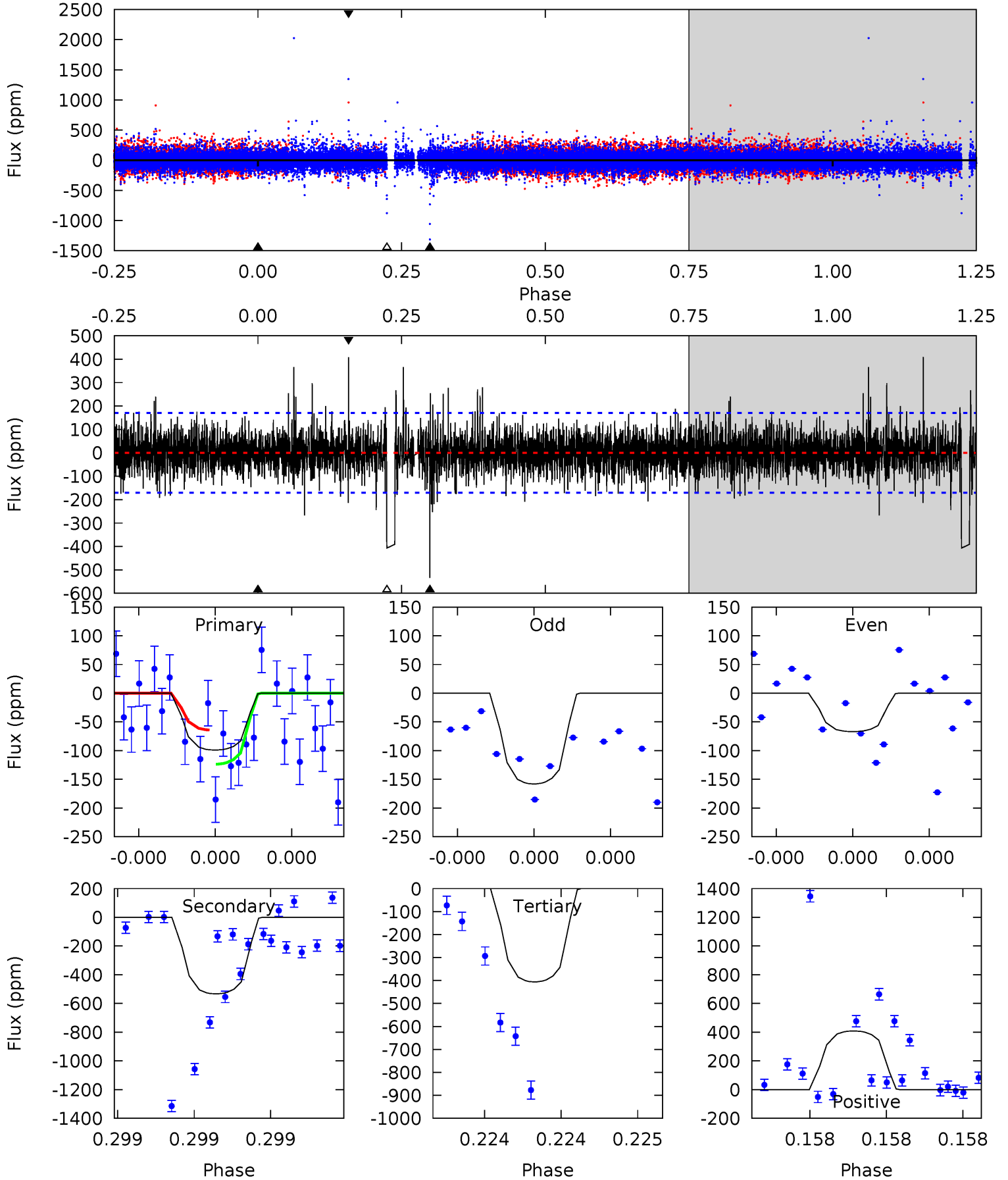
TCE 005428125-02 $P=348.507988$ Days $T_0=435.373405$ (BKJD)



DV Model-Shift Uniqueness Test

005428125-02, P = 348.482193 Days, E = 86.784573 Days

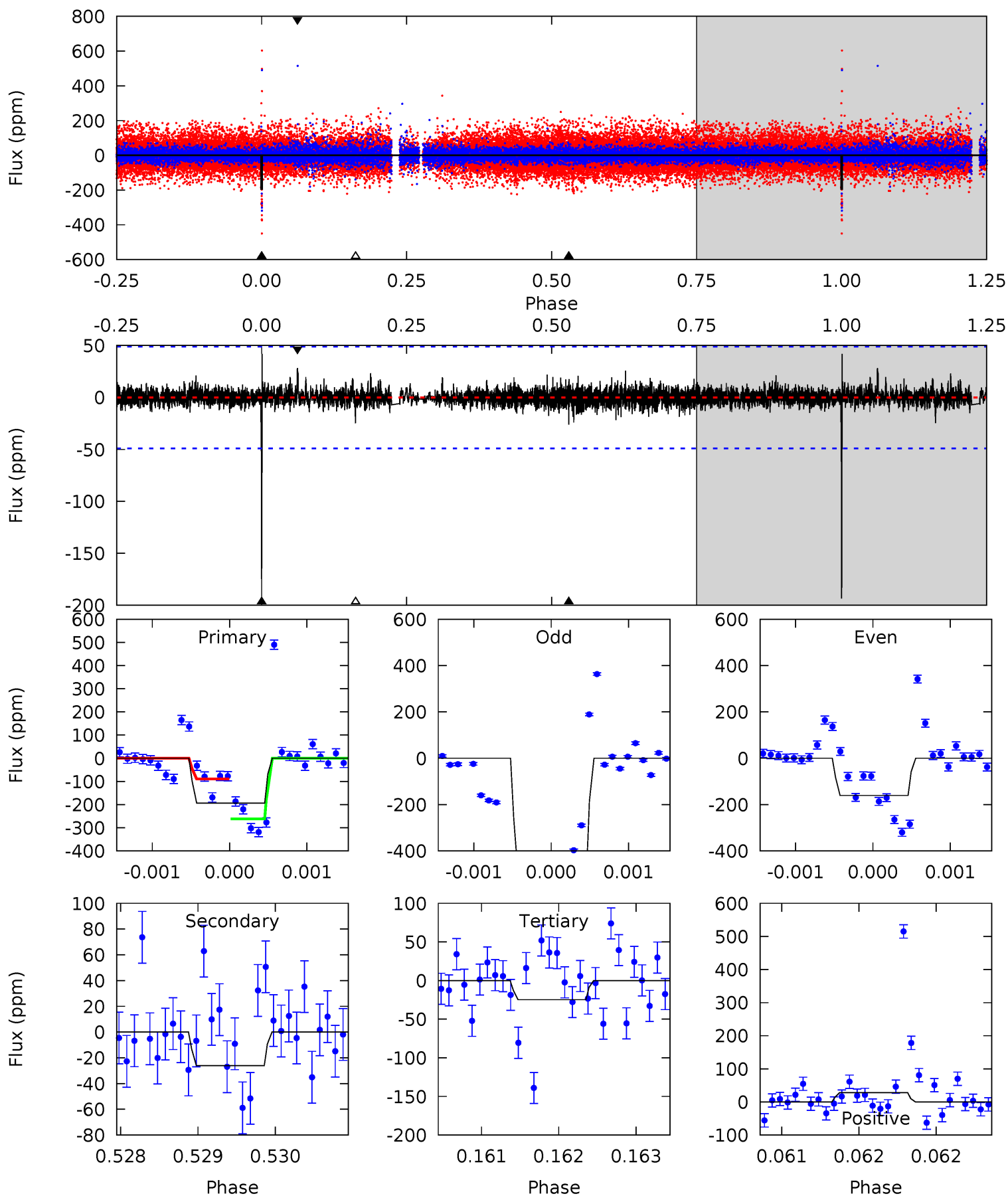
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.32	17.9	13.6	13.7	5.69	3.65	1.80	-10.3	-10.4	4.25	4.19	1.35	0.50	0.43	0.97



Alt Model-Shift Uniqueness Test

005428125-02, P = 348.507988 Days, E = 86.865417 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.5	2.90	2.76	3.15	5.46	3.30	0.57	18.8	18.4	0.14	-0.25	20.5	1.41	0.18	9.30



Stellar Parameters For KIC 005428125

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6084^{+211}_{-211}	$3.823^{+0.560}_{-0.140}$	$-0.400^{+0.300}_{-0.300}$	$2.162^{+0.499}_{-1.082}$	$1.134^{+0.175}_{-0.262}$	$0.158^{+1.107}_{-0.066}$
	+3%/-3%	+15%/-4%	+75%/-75%	+23%/-50%	+15%/-23%	+700%/-42%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 005428125-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-534 ± 30	$3.71^{+3.94}_{-2.54}$	534^{+49}_{-75}	6905^{+9727}_{-1879}	$20949^{+194329}_{-15716}$
Alt.	-26 ± 9	$4.22^{+4.25}_{-2.60}$	533^{+46}_{-74}	3445^{+1395}_{-556}	749^{+4082}_{-563}

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 $A_{obs} \gg 1.0$

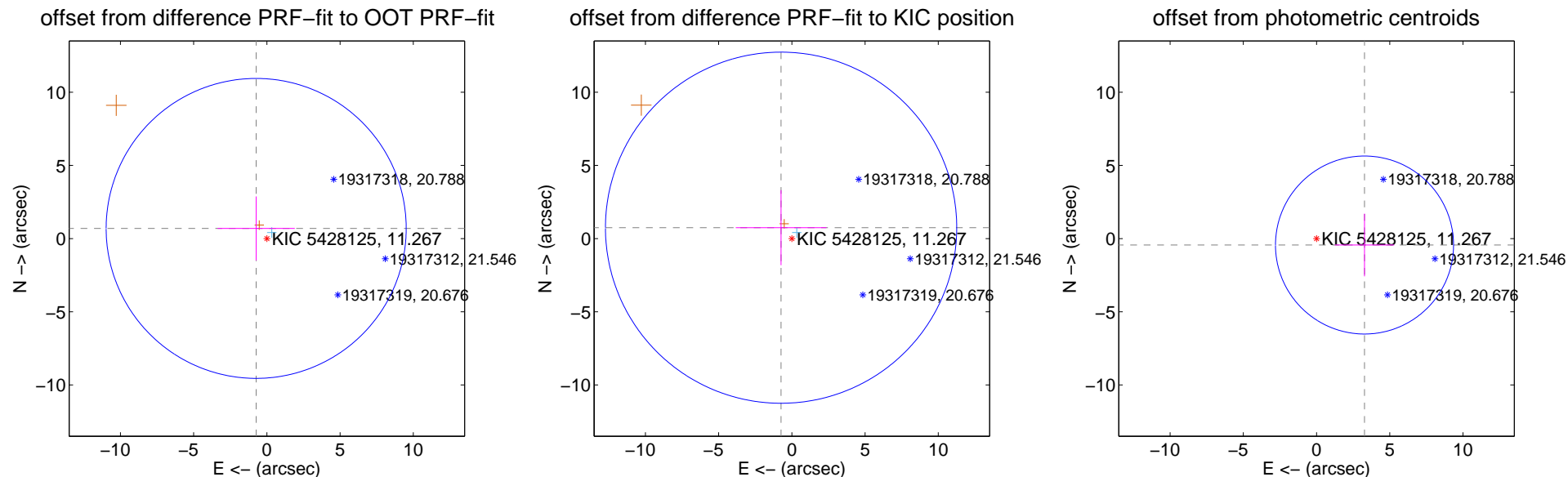
DV Centroid Data

Supplemental centroid analysis for 005428125-02. **Kepler magnitude: 11.27.** Transit SNR 3.04

There are 1 quarters with good PRF difference image offsets

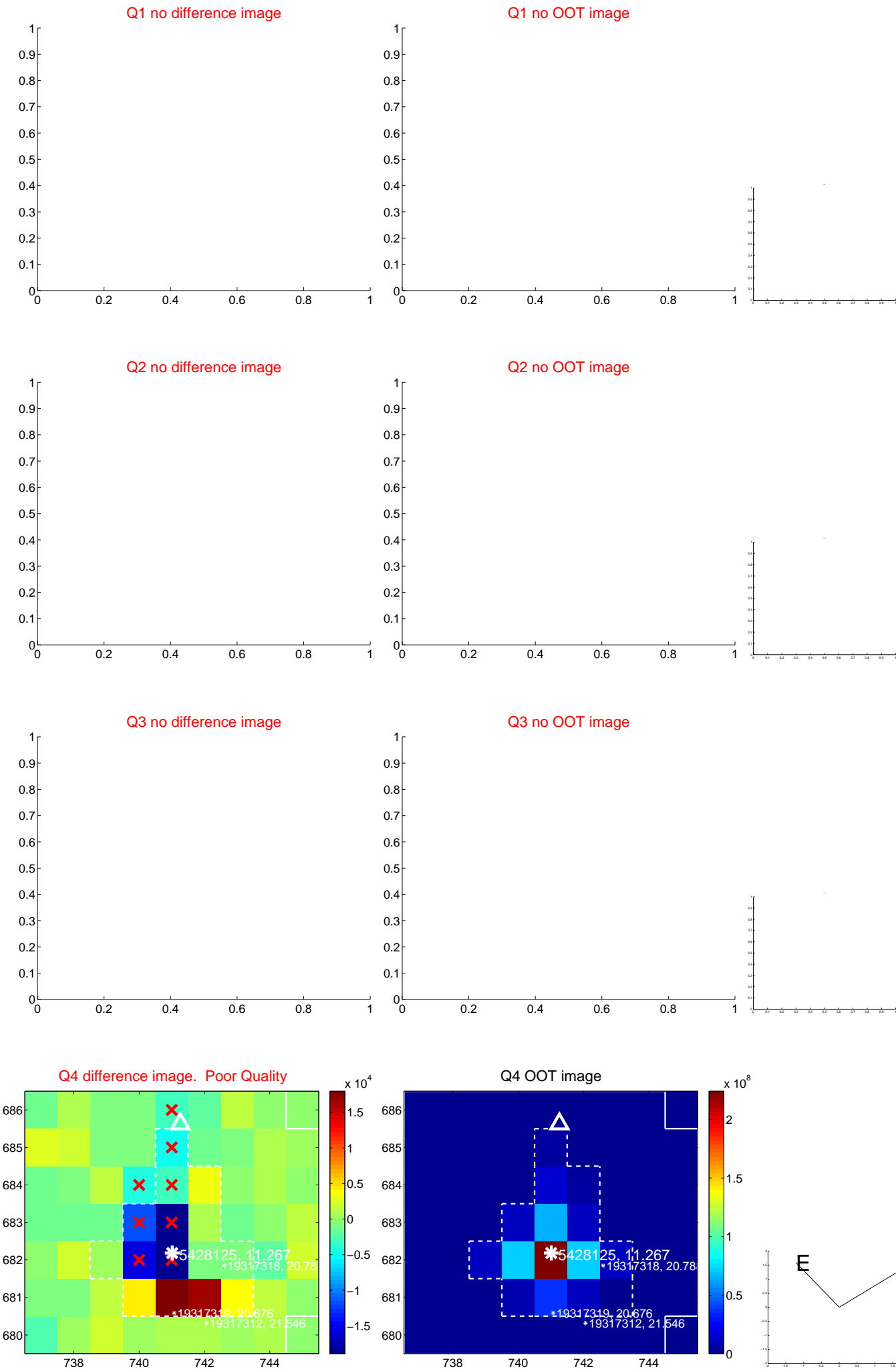
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.008 ± 3.414	0.30	0.730 ± 2.635	0.695 ± 2.185
PRF-fit source offset from KIC position	1.045 ± 3.997	0.26	0.735 ± 3.096	0.743 ± 2.562
photometric centroid source offset	3.31 ± 2.03	1.63	-3.28 ± 2.02	-0.44 ± 2.14

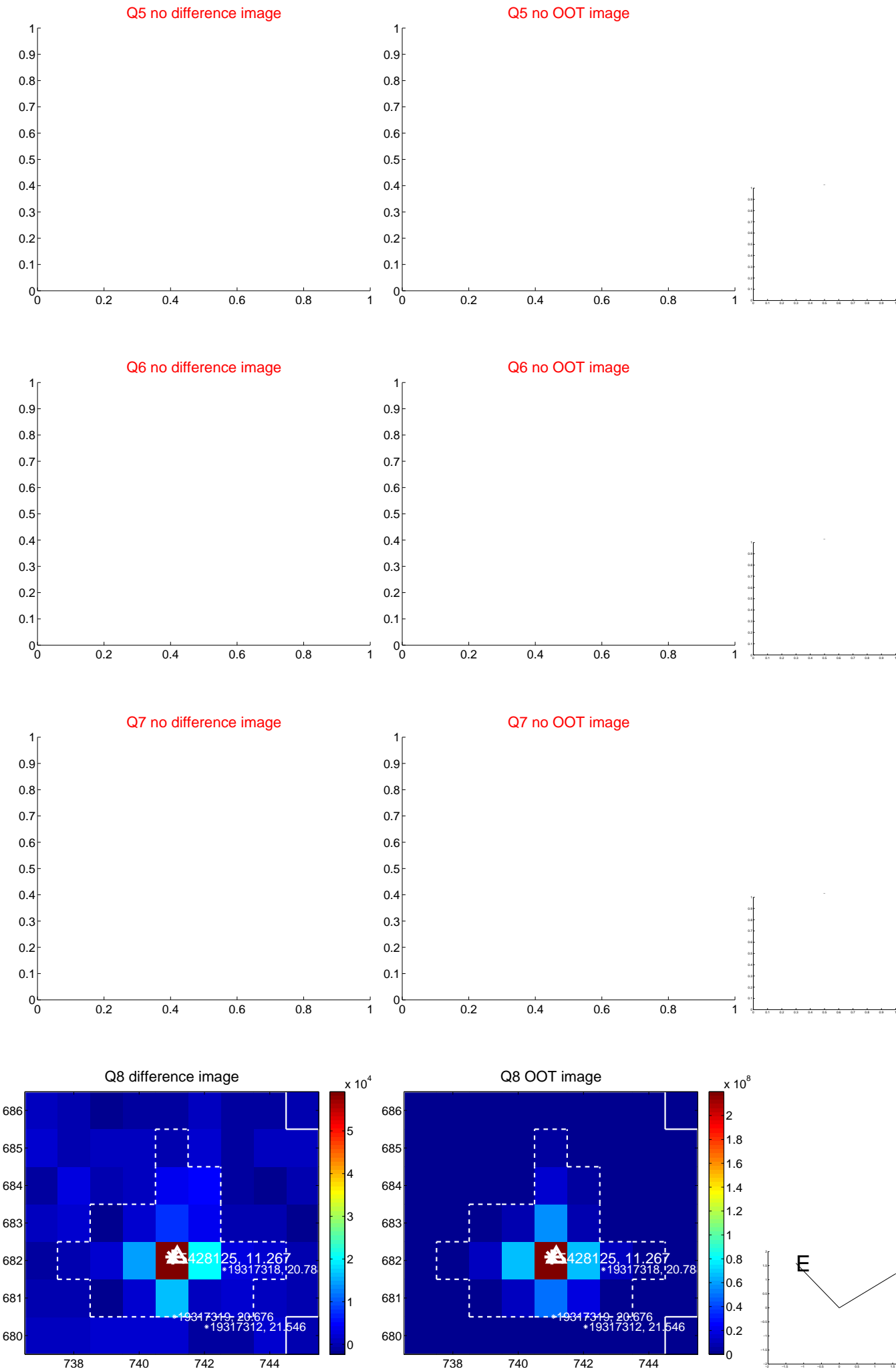


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

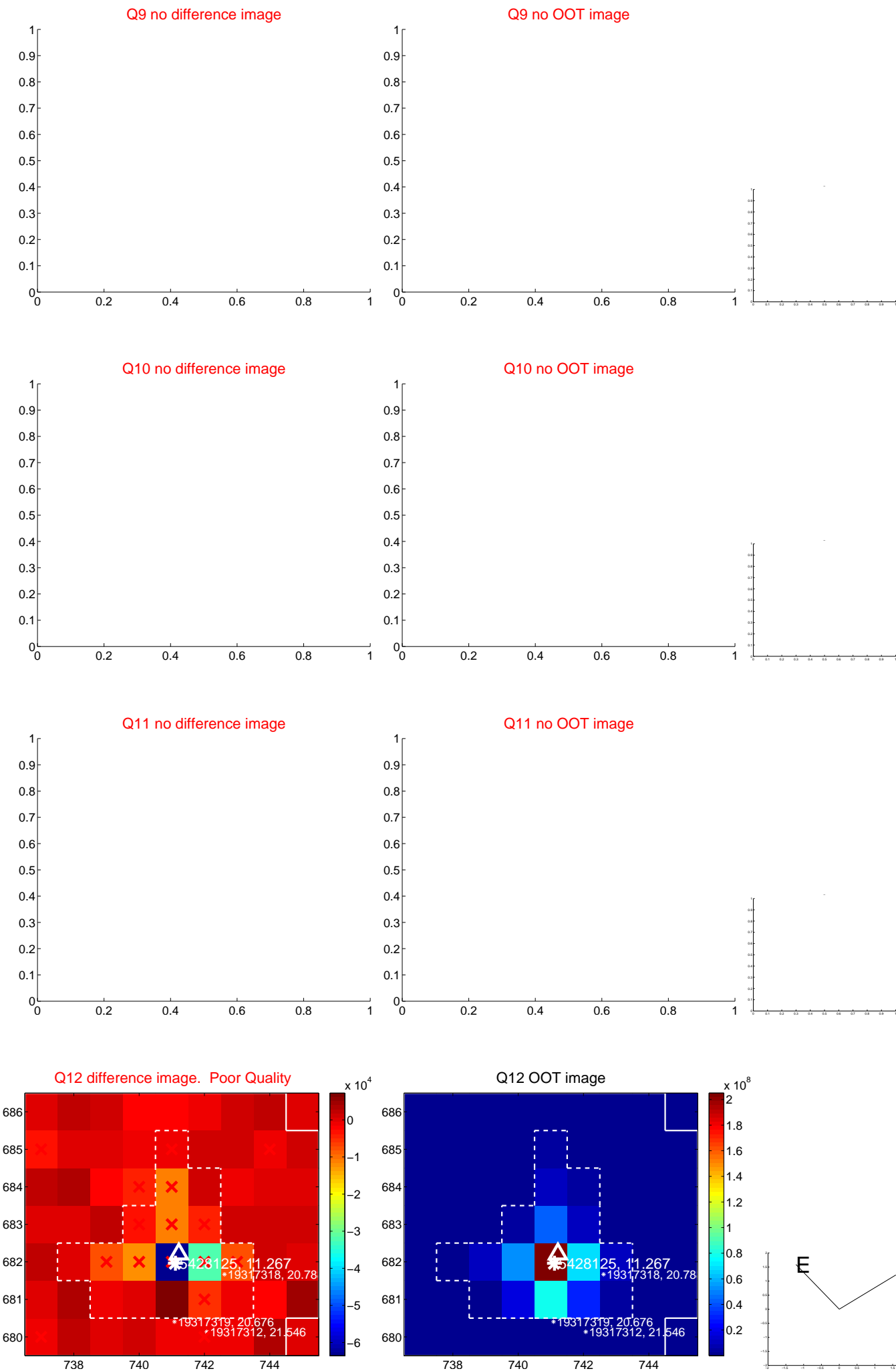
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



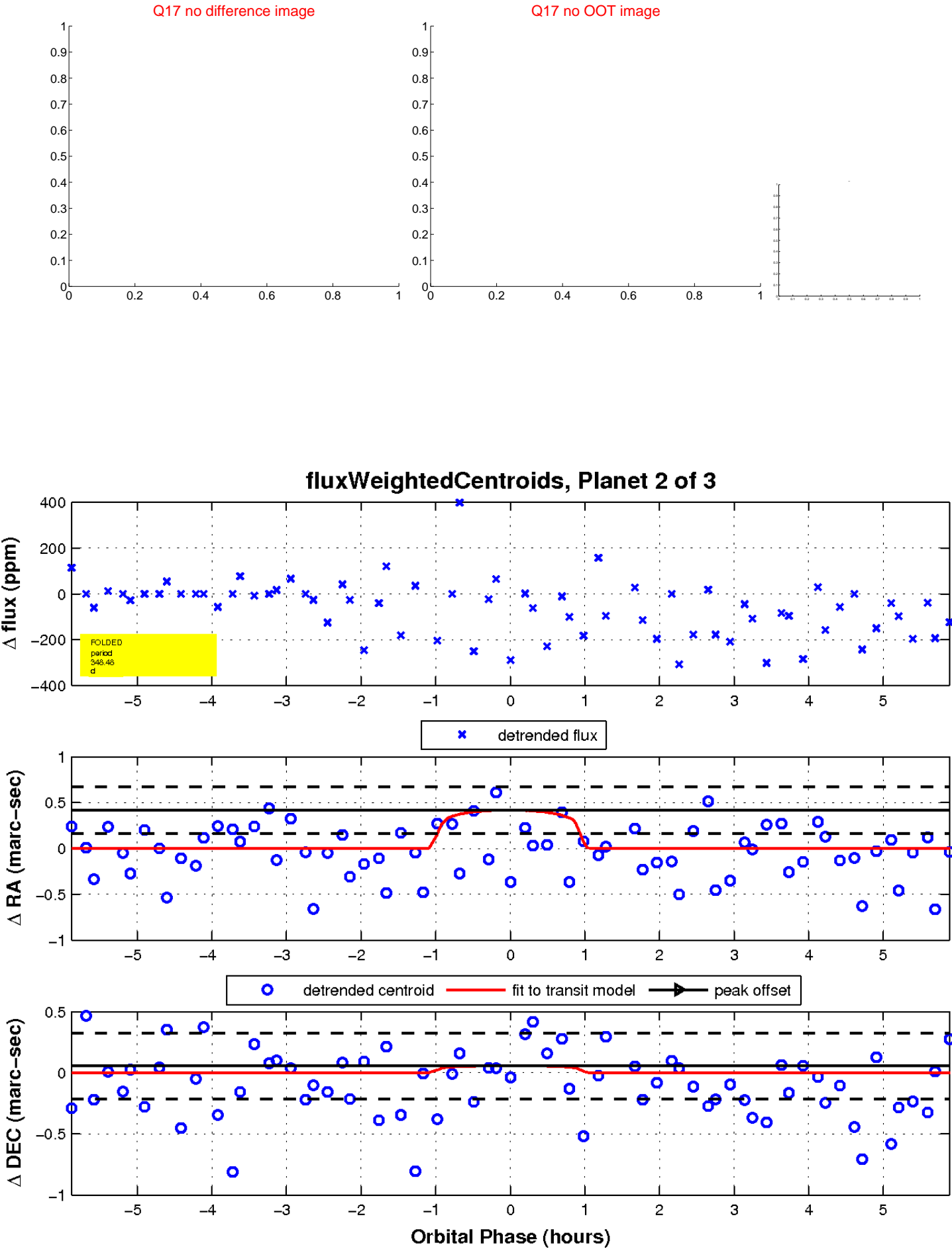
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

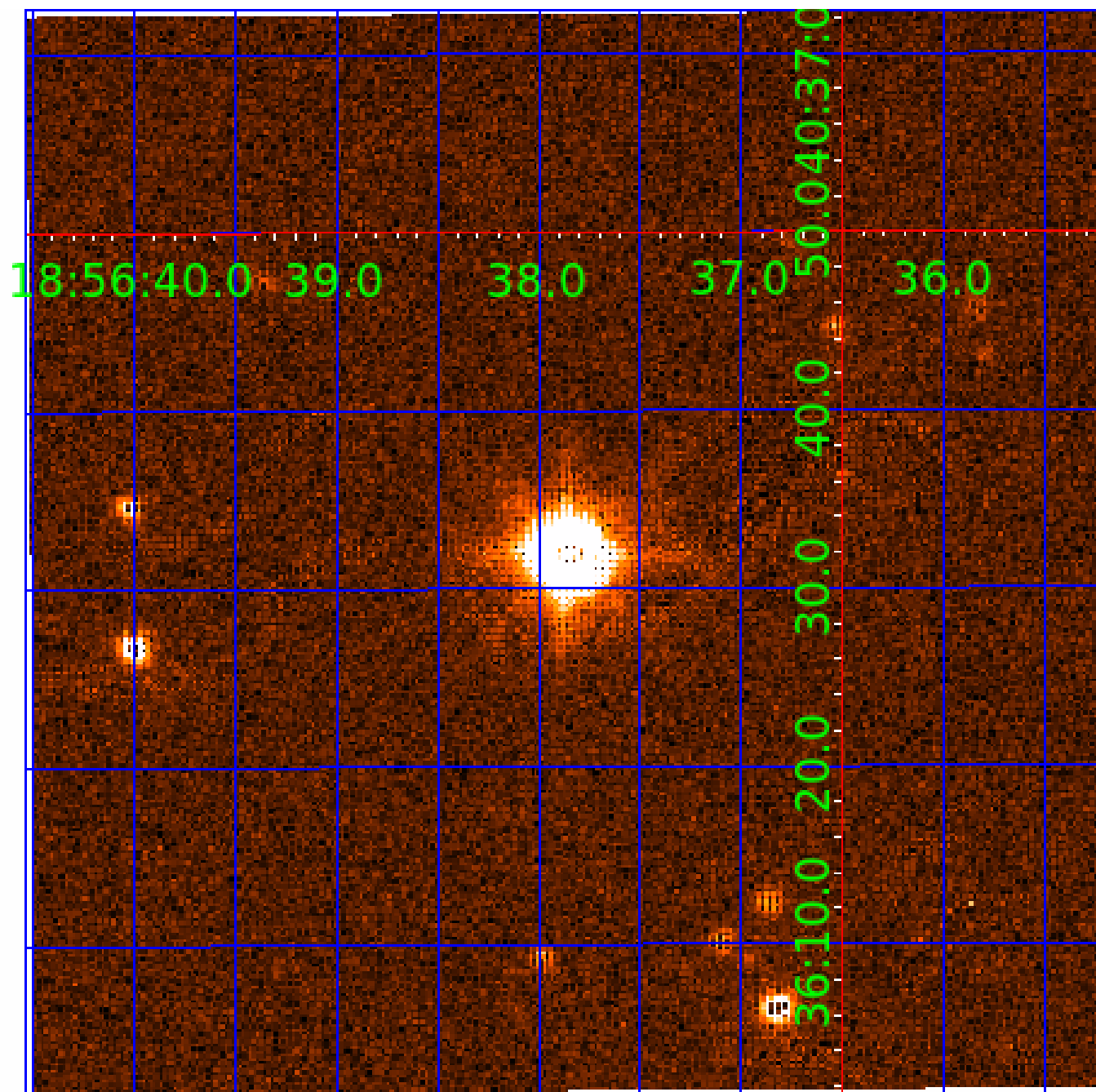


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005428125

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})
005428125-01	OBS	No	404.050132	293.995976	171.3	1.758	13.9	4.0	2.16	6084	3.17	4.61
005428125-02	OBS	No	348.482193	435.266766	125.4	1.990	11.6	3.0	2.16	6084	2.65	5.62
005428125-03	OBS	No	195.740093	282.562538	313.8	2.273	13.0	7.3	2.16	6084	3.94	12.12

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005428125-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
005428125-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
005428125-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

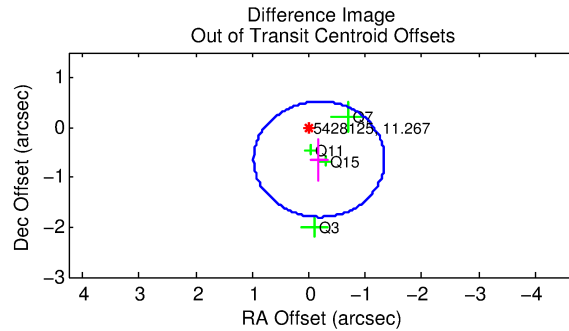
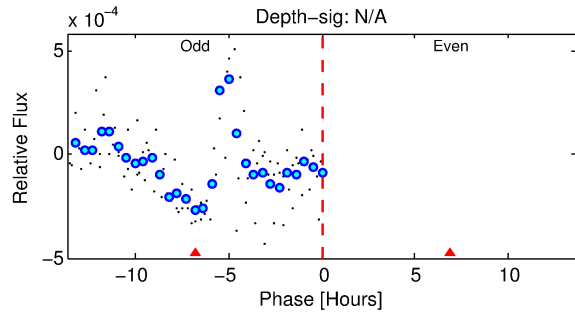
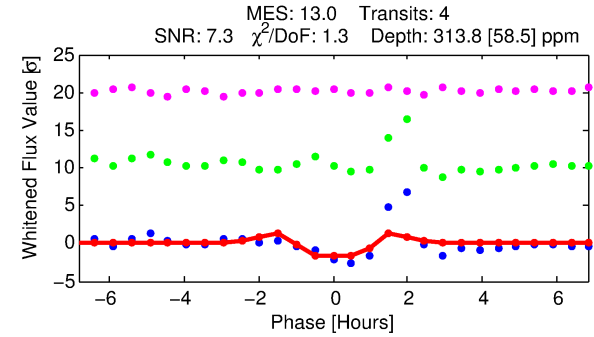
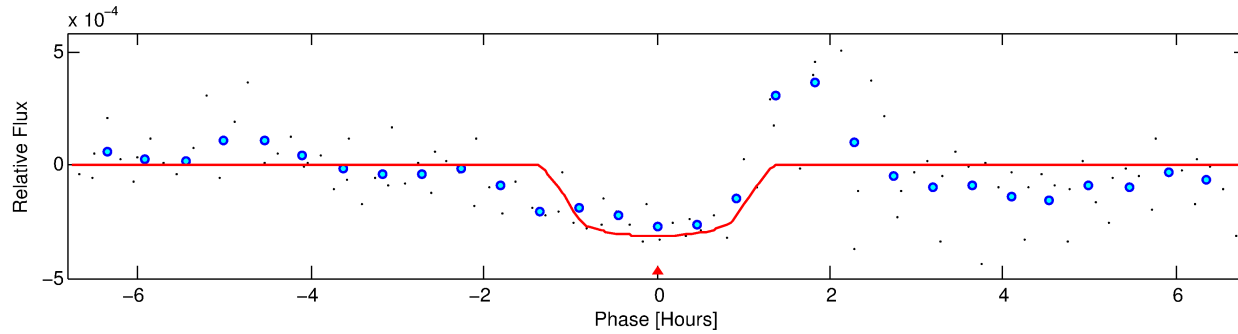
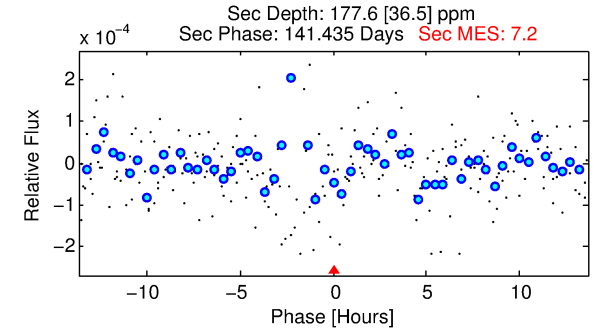
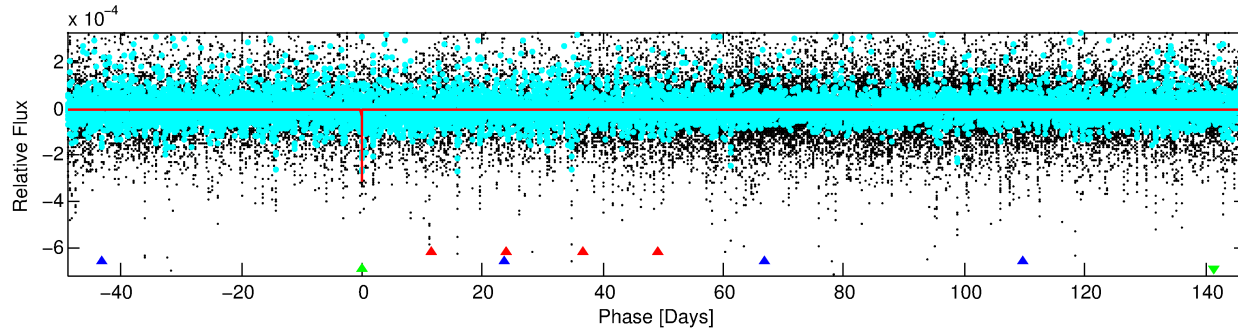
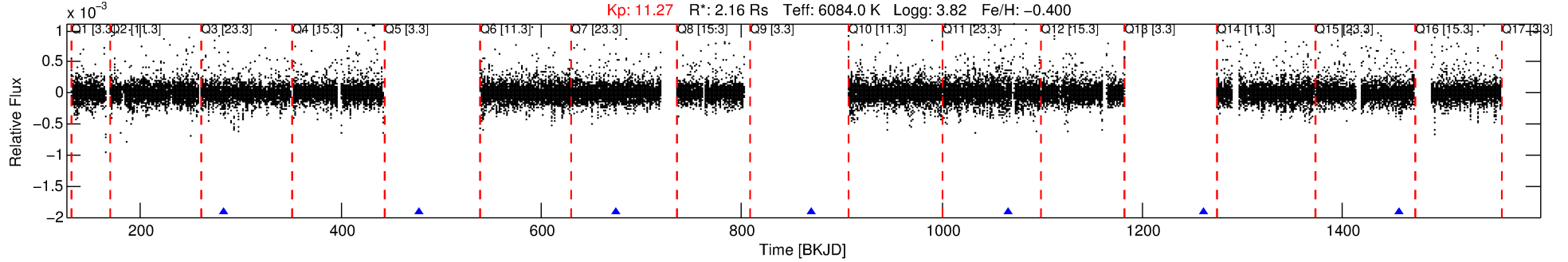
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005428125-03

No Significant Match Found

DV One-Page Summary

KIC: 5428125 Candidate: 3 of 3 Period: 195.740 d



DV Fit Results:

Period = 195.74009 [0.00142] d
Epoch = 282.5625 [0.0052] BKJD
Rp/R* = 0.0167 [0.0157]
a/R* = 589.26 [2772.26]
b = 0.48 [7.55]
Seff = 12.11 [11.30]
Teq = 476 [111] K
Rp = 3.94 [4.20] Re
a = 0.6882 [0.3745] AU
Ag = 2982.46 [6278.21] [0.47σ]
Teffp = 5435 [2578] K [1.92σ]

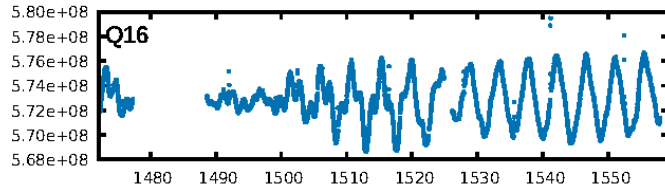
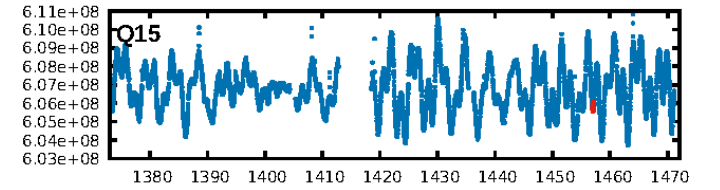
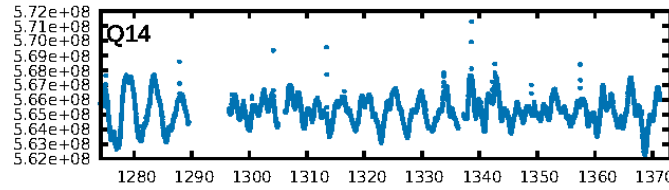
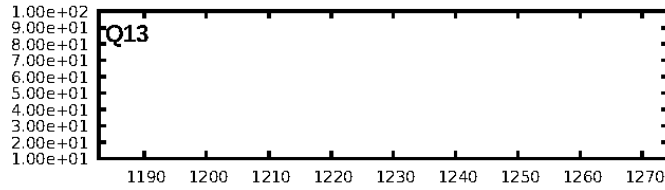
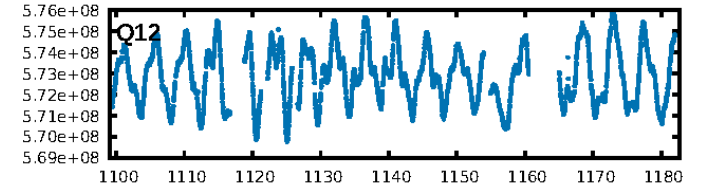
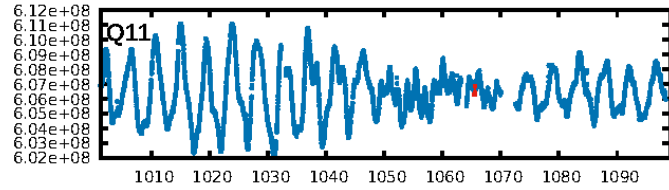
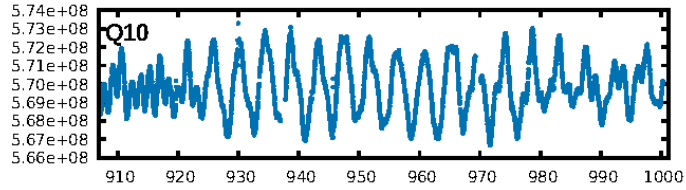
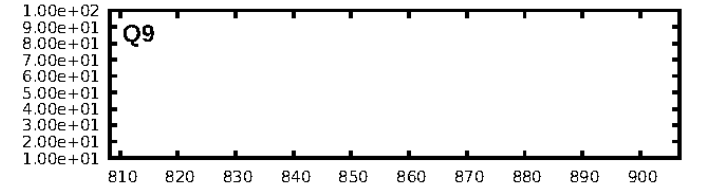
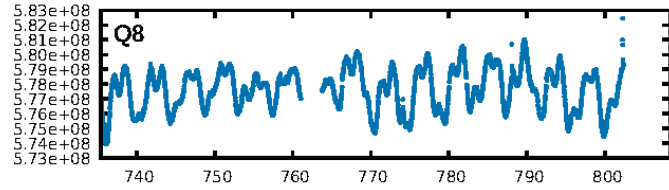
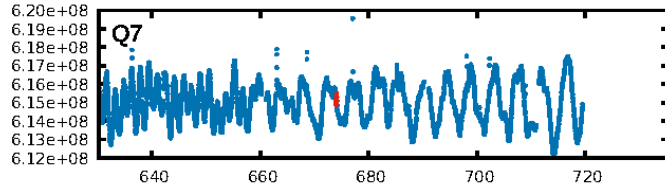
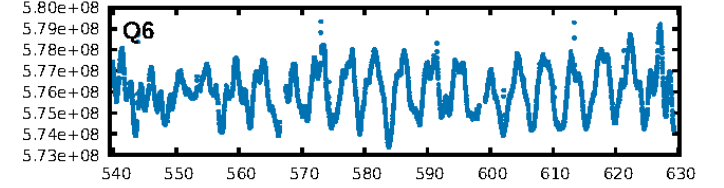
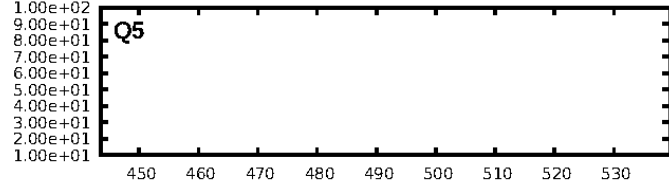
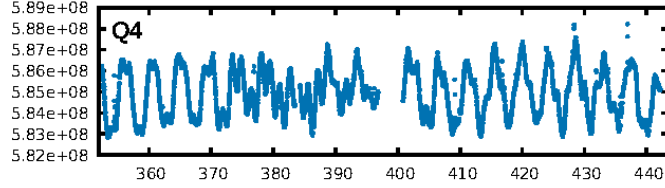
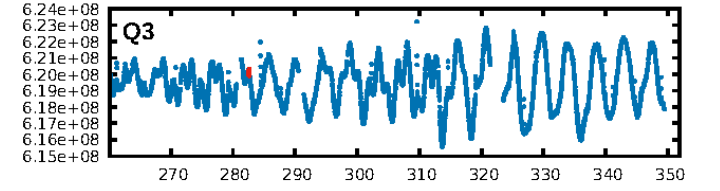
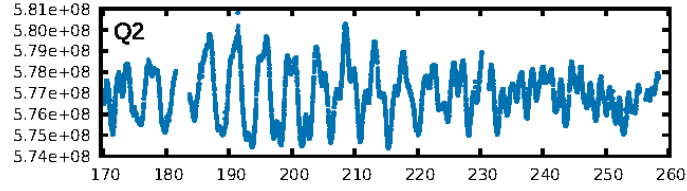
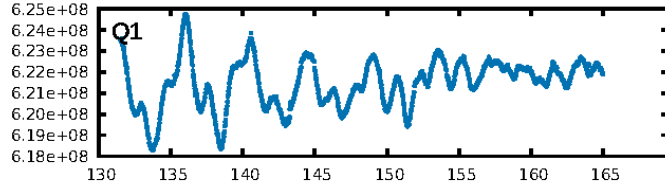
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1213.29σ]
ModelChiSquare2-sig: 38.5%
ModelChiSquareGof-sig: 81.8%
Bootstrap-pfa: 1.61e-12
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.502
Centroid-sig: 51.9%
Centroid-so: 0.534 arcsec [0.75σ]
OotOffset-rm: 0.670 arcsec [1.74σ]
KicOffset-rm: 0.551 arcsec [1.28σ]
OotOffset-st: 0/4/0/0 [4]
KicOffset-st: 0/4/0/0 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [4/4]

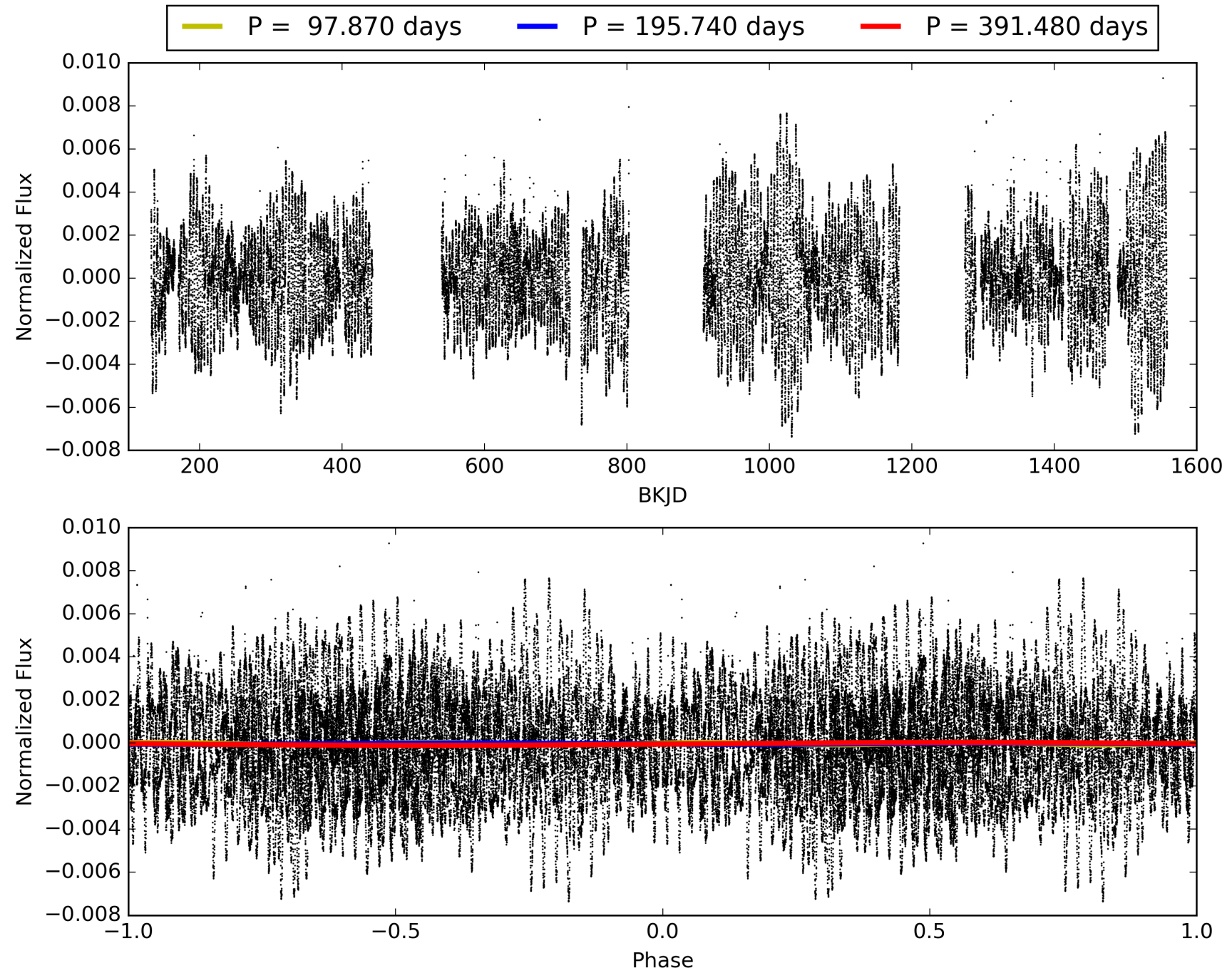
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 15:49:31 Z

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

TCE 005428125-03, PDC Light Curves

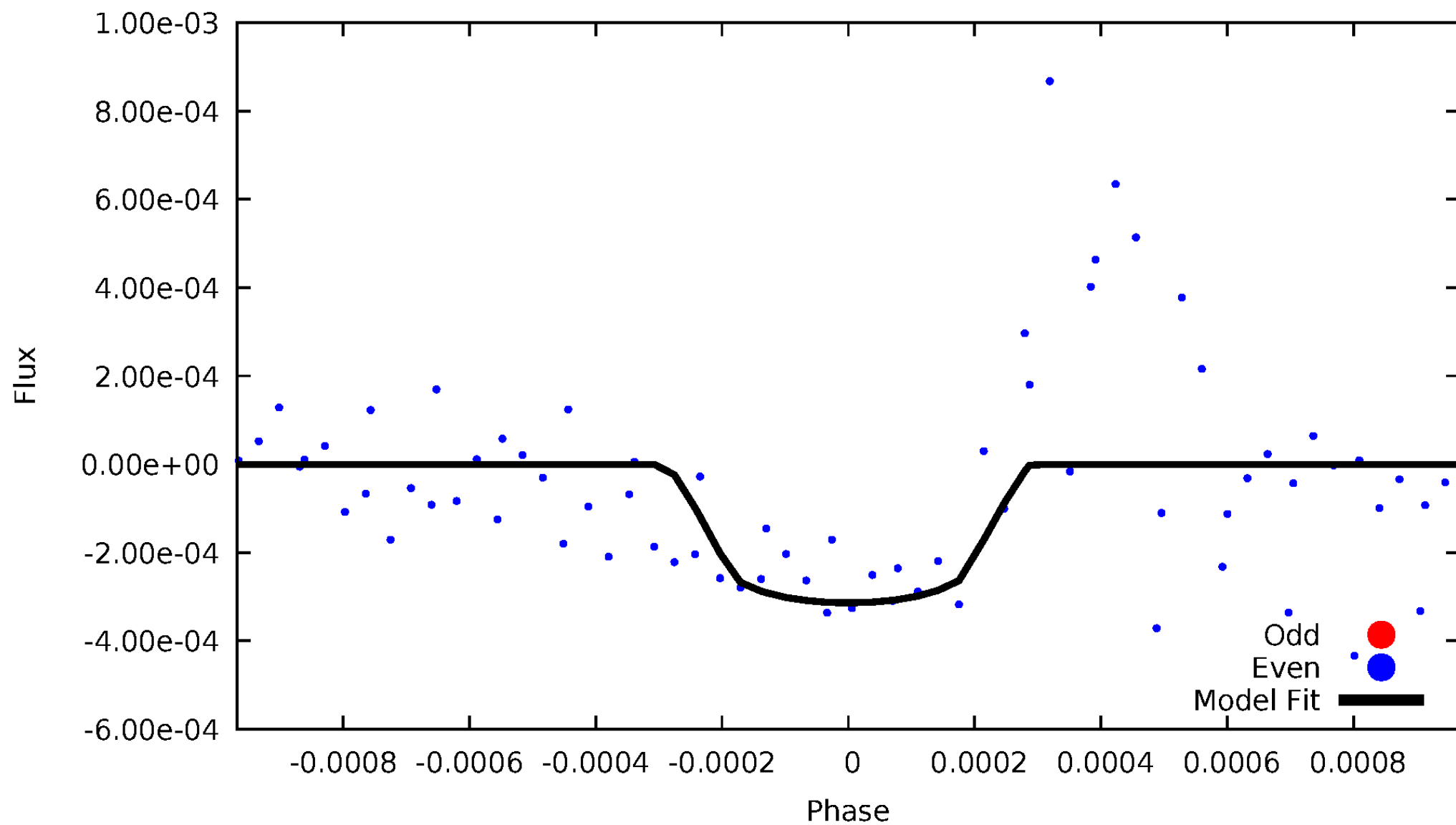


TCE 005428125-03



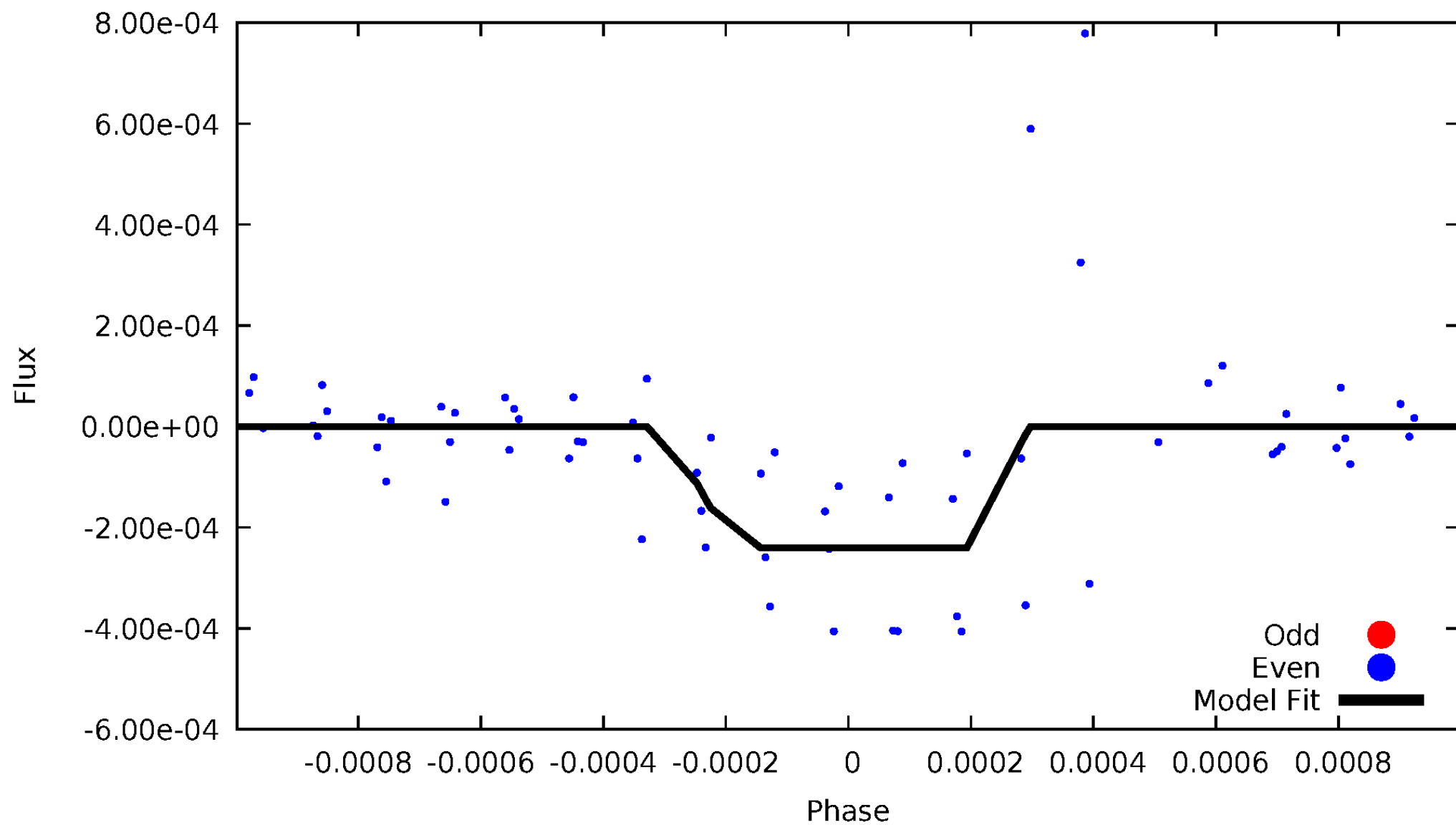
DV Odd/Even

TCE 005428125-03



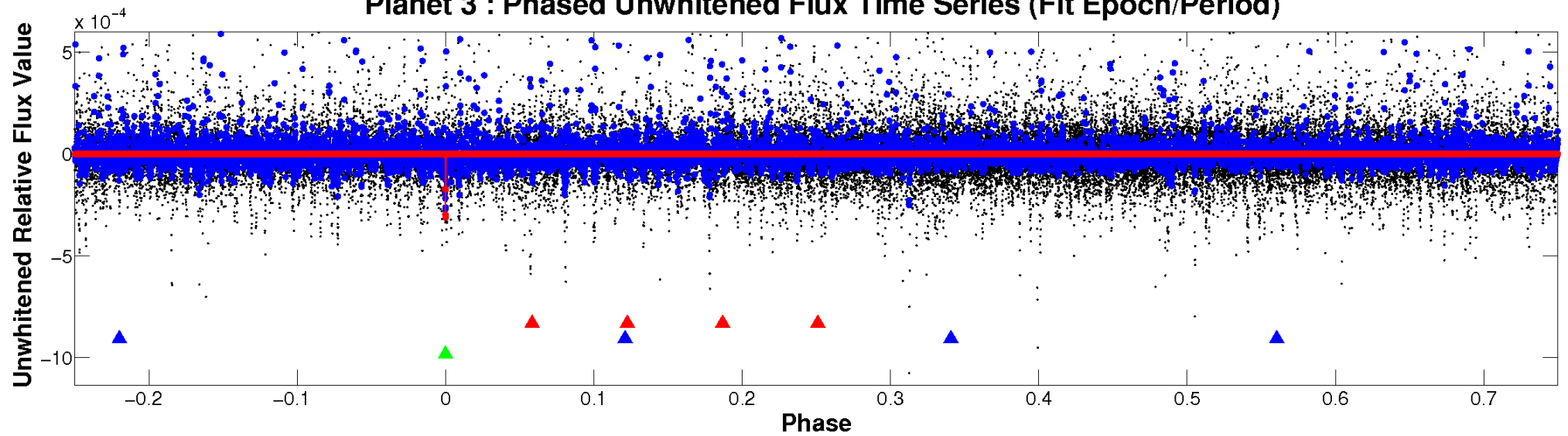
ALT Odd/Even

TCE 005428125-03

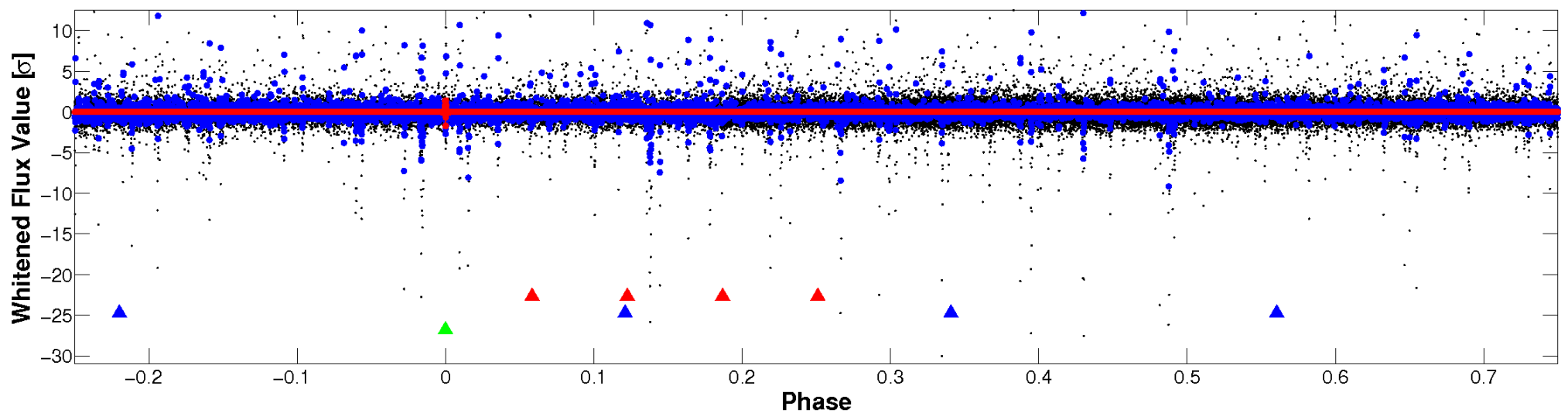


Non-Whitened Vs. Whitened Light Curve

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

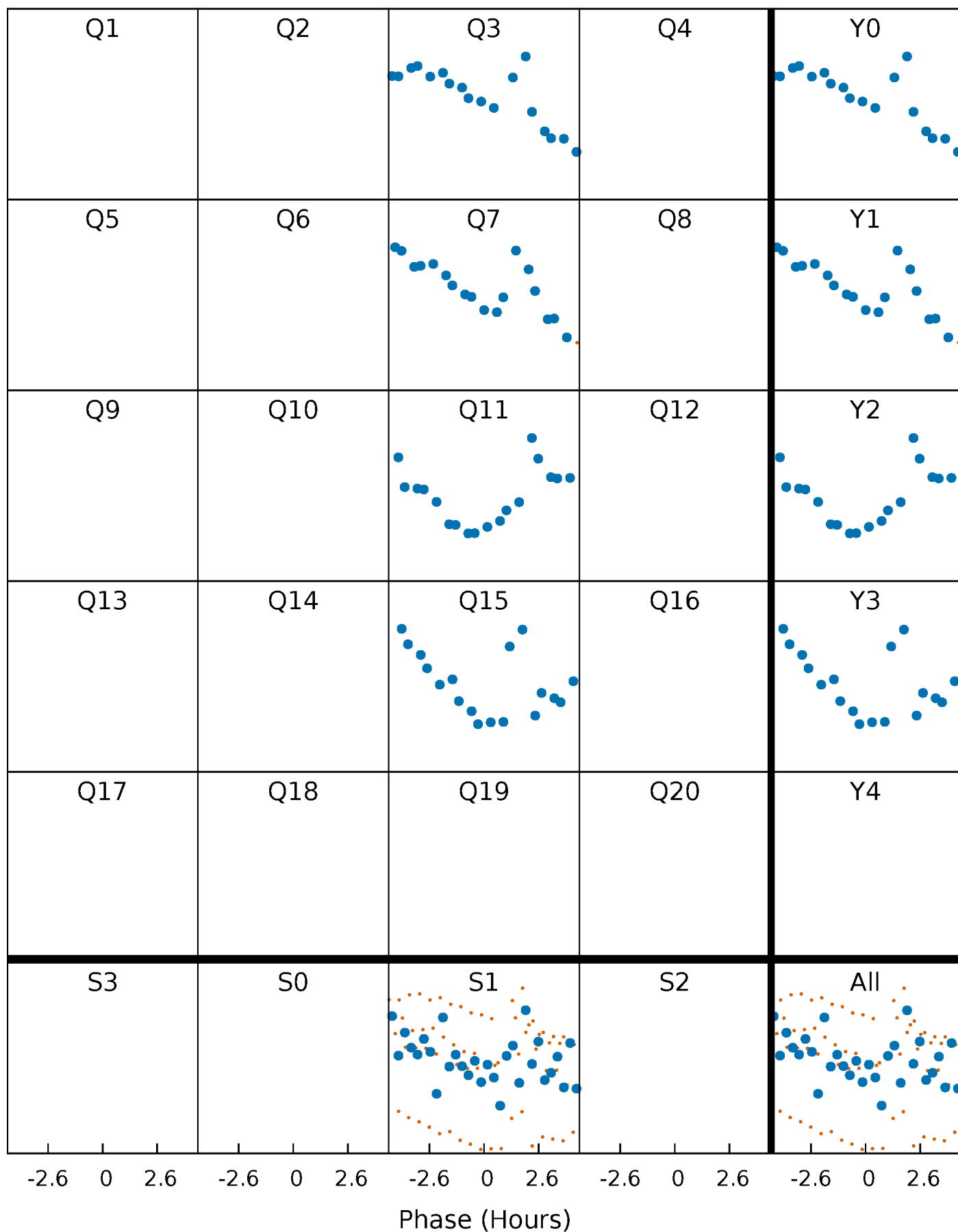


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



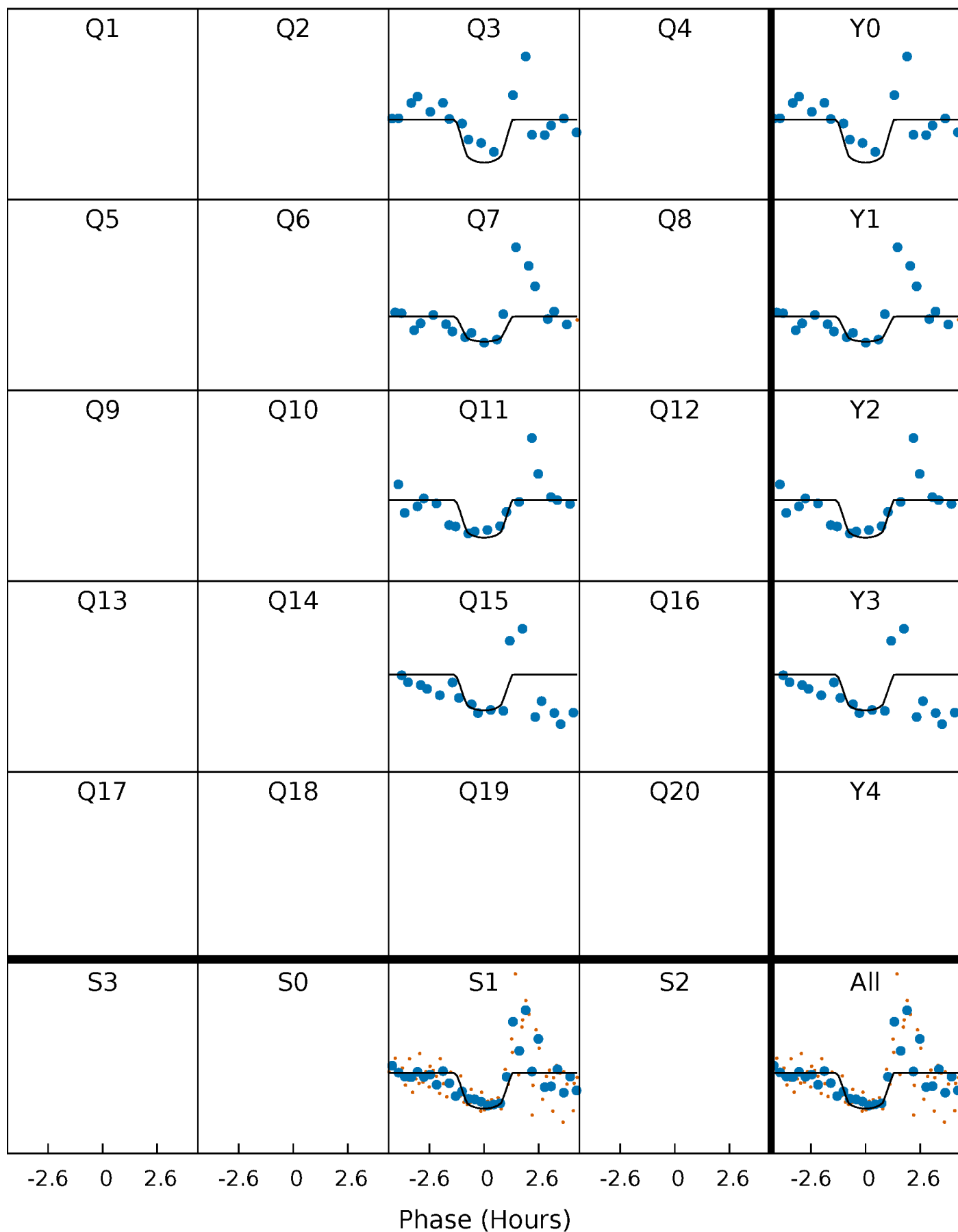
PDC Quarter-Phased Transit Curves

TCE 005428125-03 P=195.740093 Days $T_0=282.562538$ (BKJD)



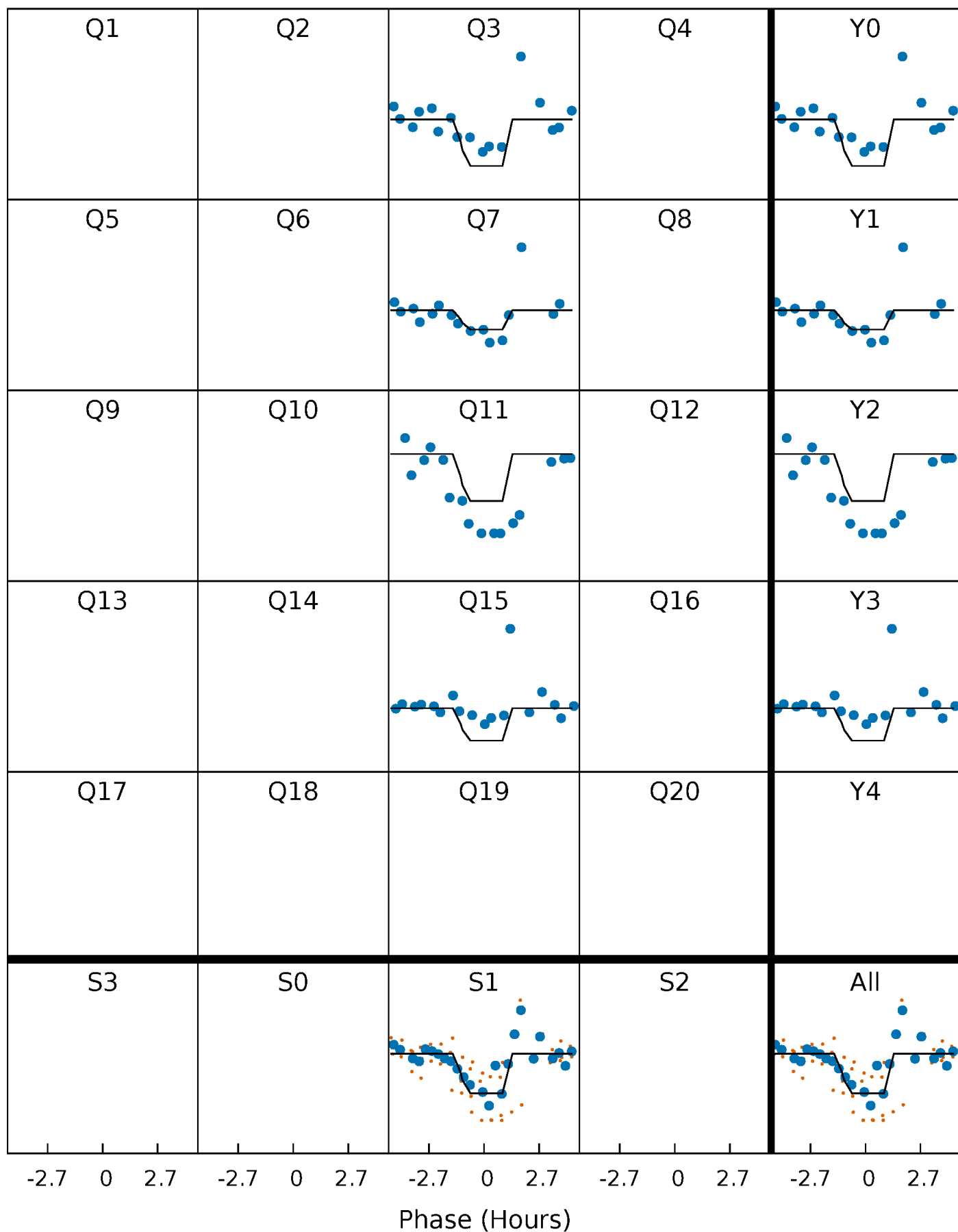
DV Quarter-Phased Transit Curves

TCE 005428125-03 $P=195.740093$ Days $T_0=282.562538$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

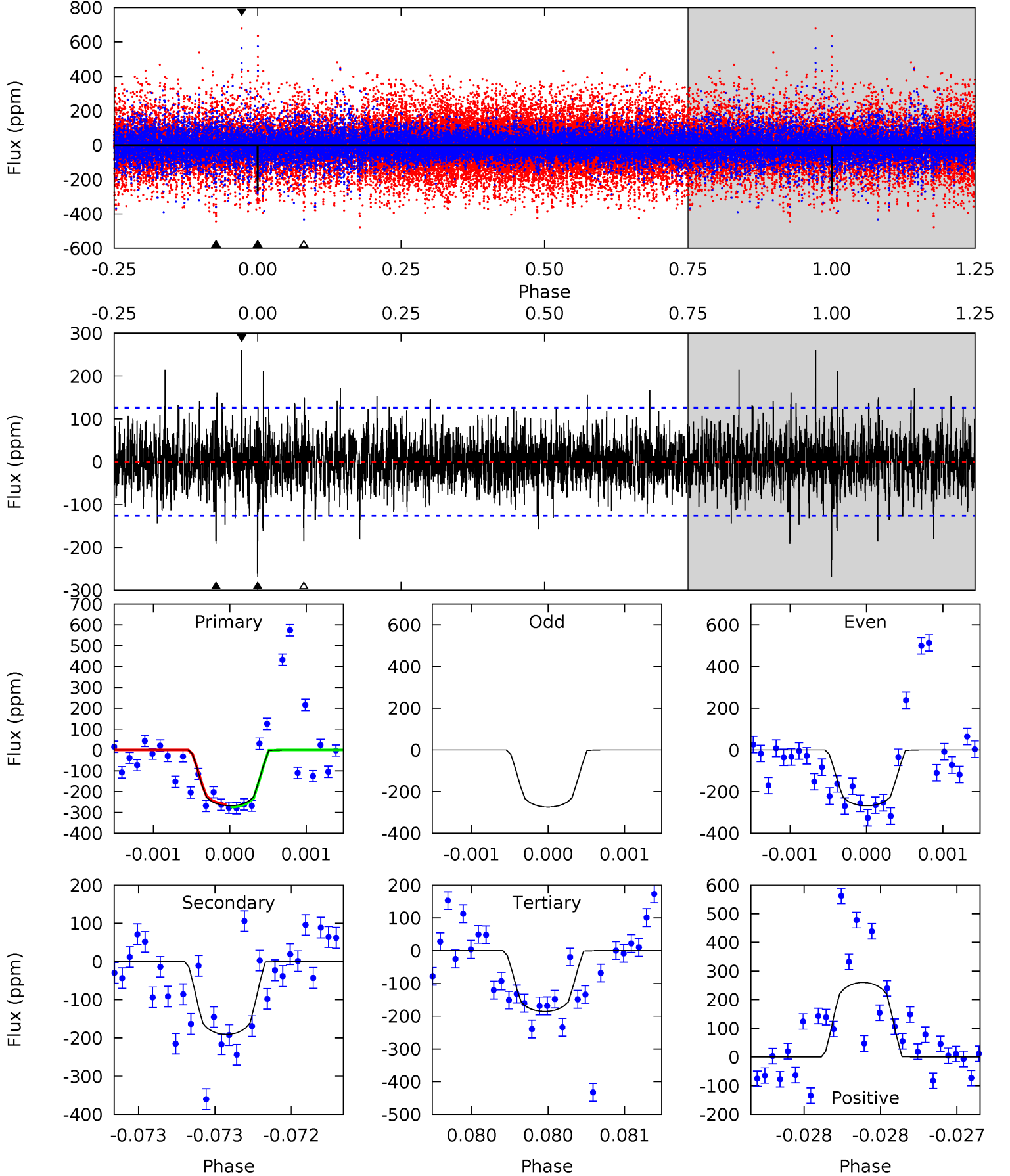
TCE 005428125-03 P=195.742511 Days $T_0=282.544505$ (BKJD)



DV Model-Shift Uniqueness Test

005428125-03, P = 195.740093 Days, E = 86.822445 Days

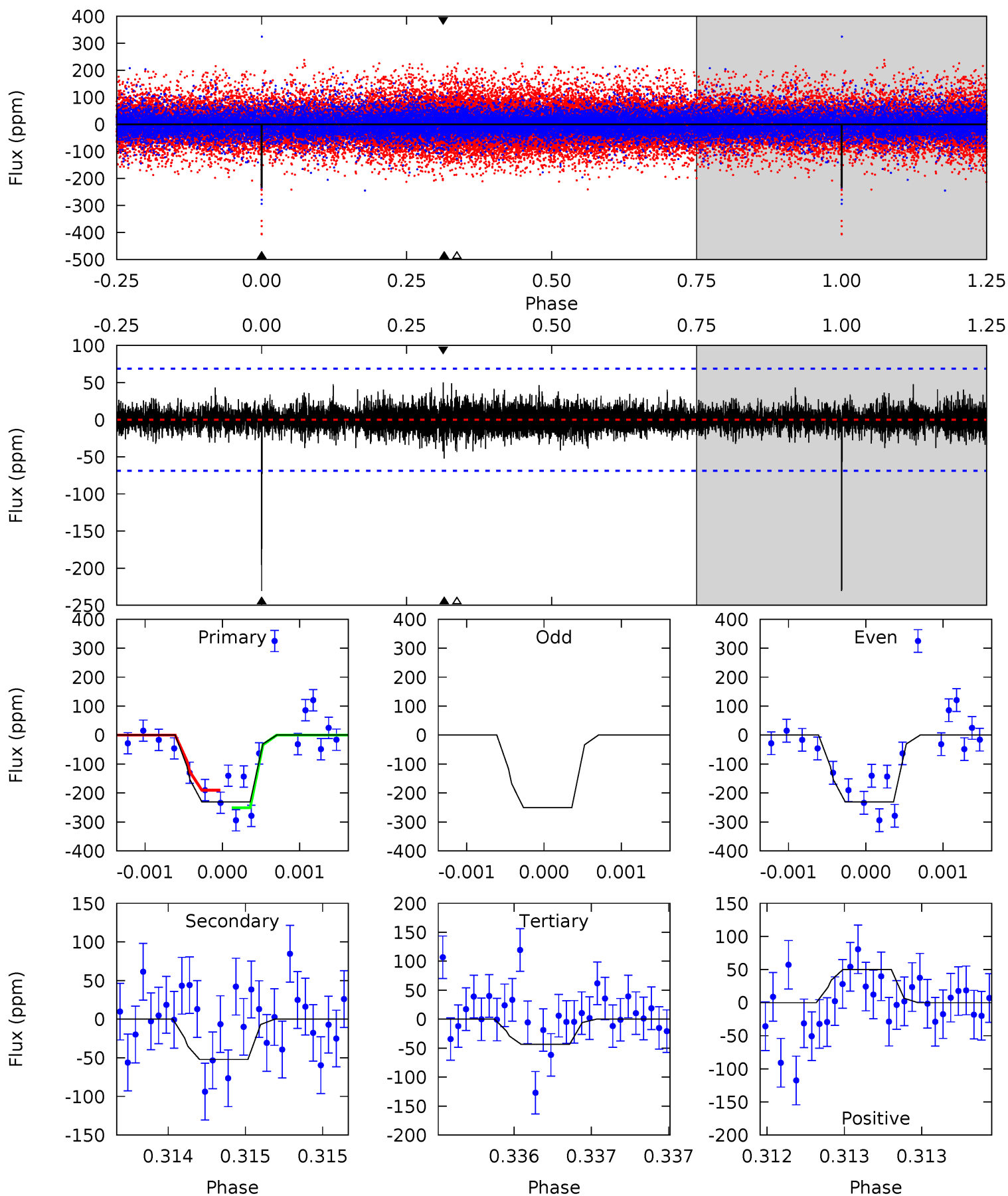
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	8.38	8.16	11.4	5.55	3.45	1.80	3.62	0.34	0.22	-3.06	0.16	0.98	0.49	0.28



Alt Model-Shift Uniqueness Test

005428125-03, P = 195.742511 Days, E = 86.801994 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.7	4.22	3.51	4.05	5.56	3.46	0.89	15.1	14.6	0.71	0.17	0.91	1.01	0.18	2.41



Stellar Parameters For KIC 005428125

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6084^{+211}_{-211}	$3.823^{+0.560}_{-0.140}$	$-0.400^{+0.300}_{-0.300}$	$2.162^{+0.499}_{-1.082}$	$1.134^{+0.175}_{-0.262}$	$0.158^{+1.107}_{-0.066}$
	+3%/-3%	+15%/-4%	+75%/-75%	+23%/-50%	+15%/-23%	+700%/-42%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 005428125-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-191 ± 23	$4.14^{+3.54}_{-2.48}$	645^{+54}_{-78}	5127^{+3283}_{-984}	2879^{+14466}_{-1984}
Alt.	-52 ± 12	$4.00^{+3.52}_{-2.68}$	646^{+56}_{-85}	4042^{+2006}_{-695}	869^{+6502}_{-635}

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 $A_{obs} \gg 1.0$

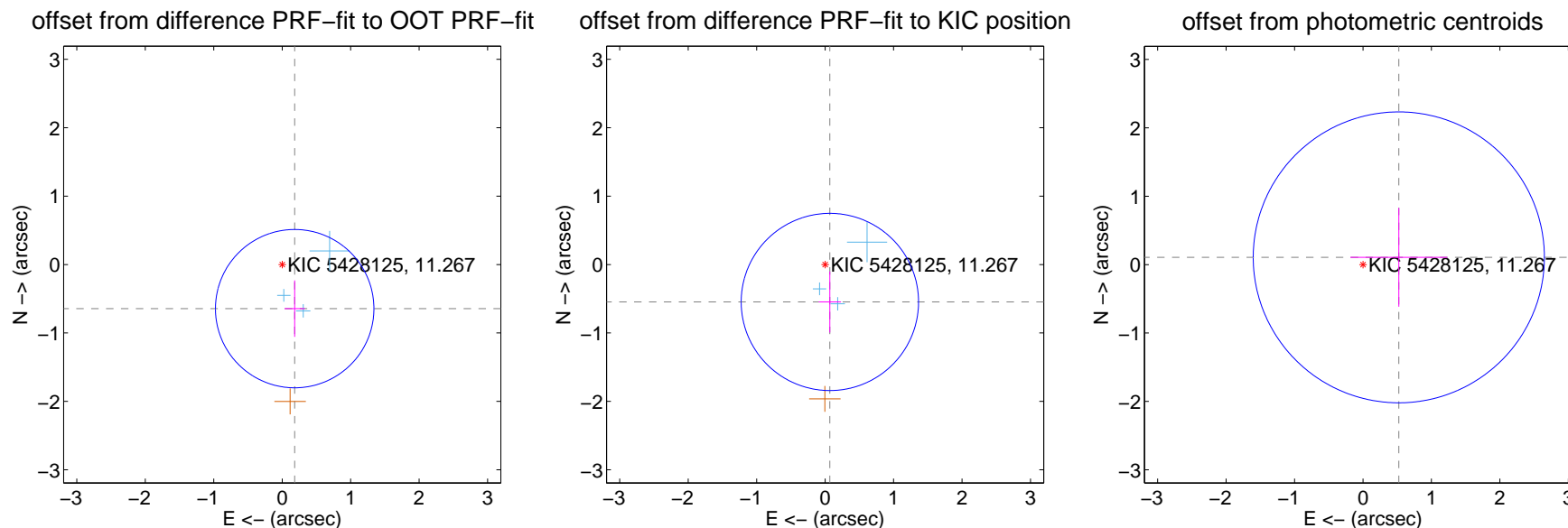
DV Centroid Data

Supplemental centroid analysis for 005428125-03. **Kepler magnitude: 11.27.** Transit SNR 7.28

There are 3 quarters with good PRF difference image offsets

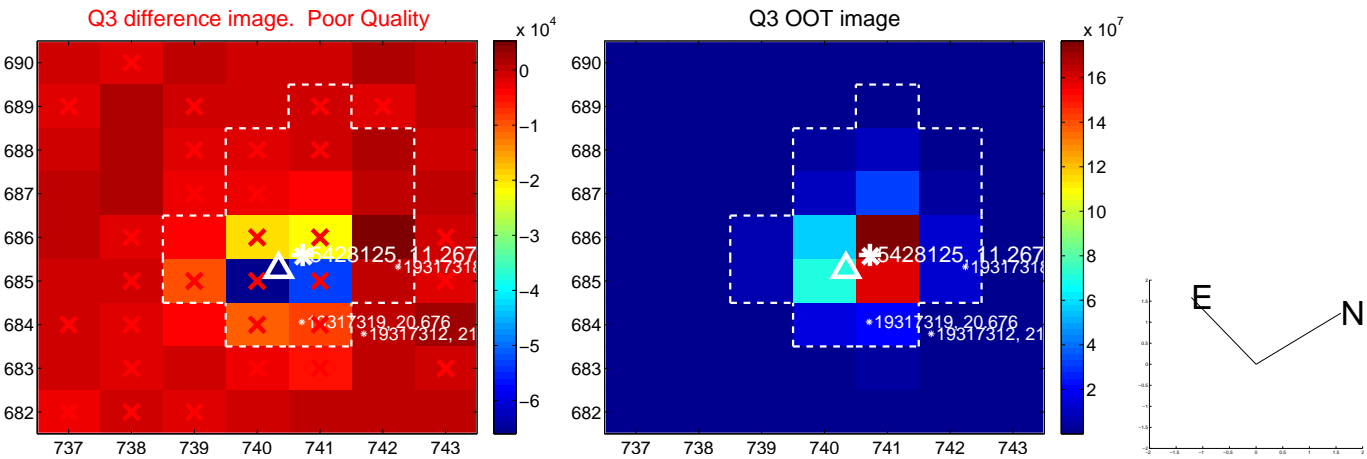
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.670 ± 0.386	1.74	-0.182 ± 0.148	-0.645 ± 0.413
PRF-fit source offset from KIC position	0.551 ± 0.432	1.28	-0.069 ± 0.162	-0.547 ± 0.447
photometric centroid source offset	0.53 ± 0.71	0.75	-0.52 ± 0.71	0.11 ± 0.72

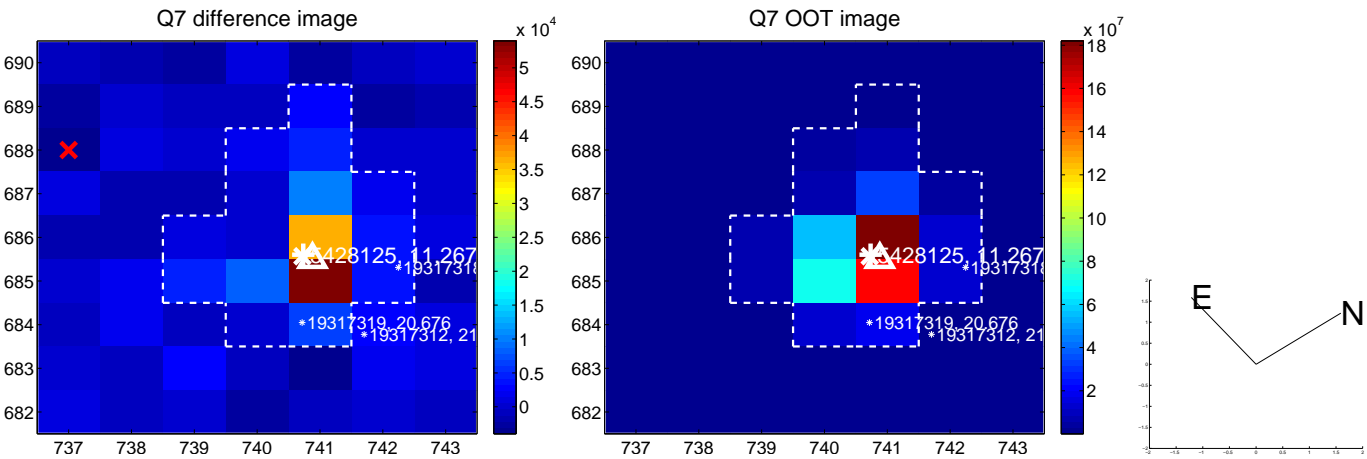


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

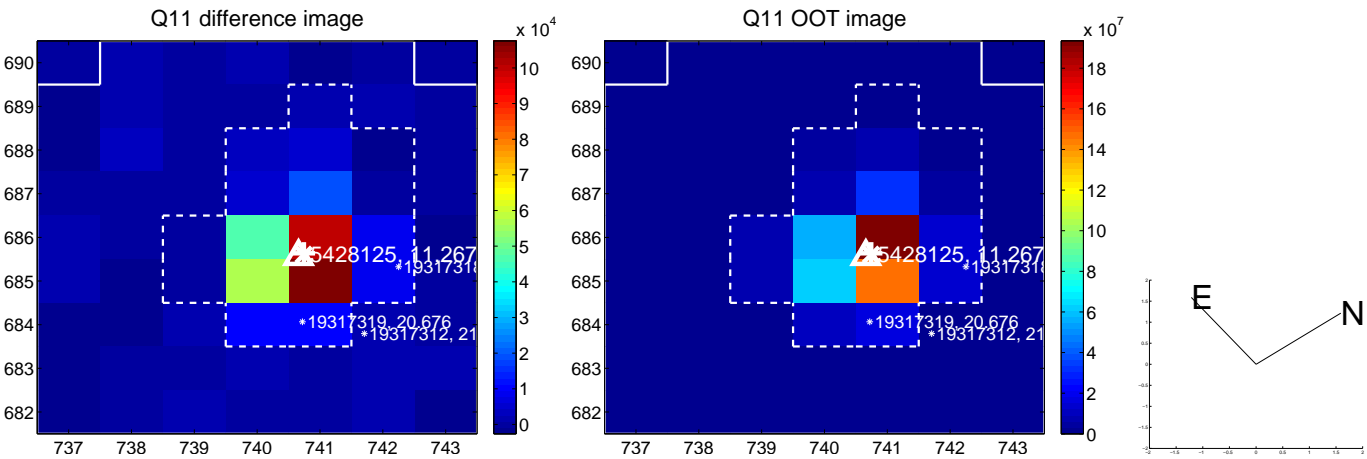
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



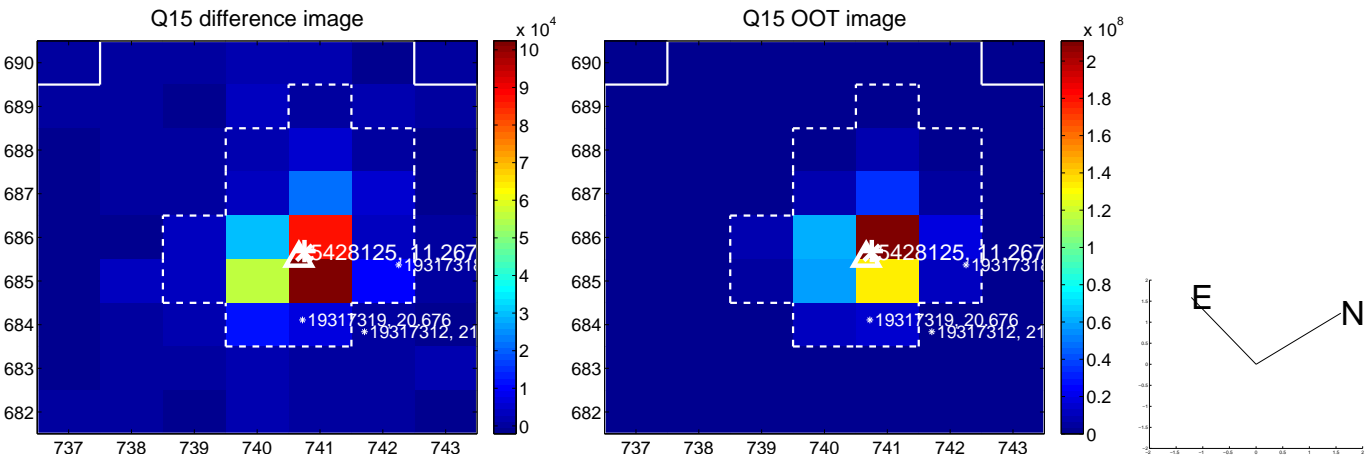
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



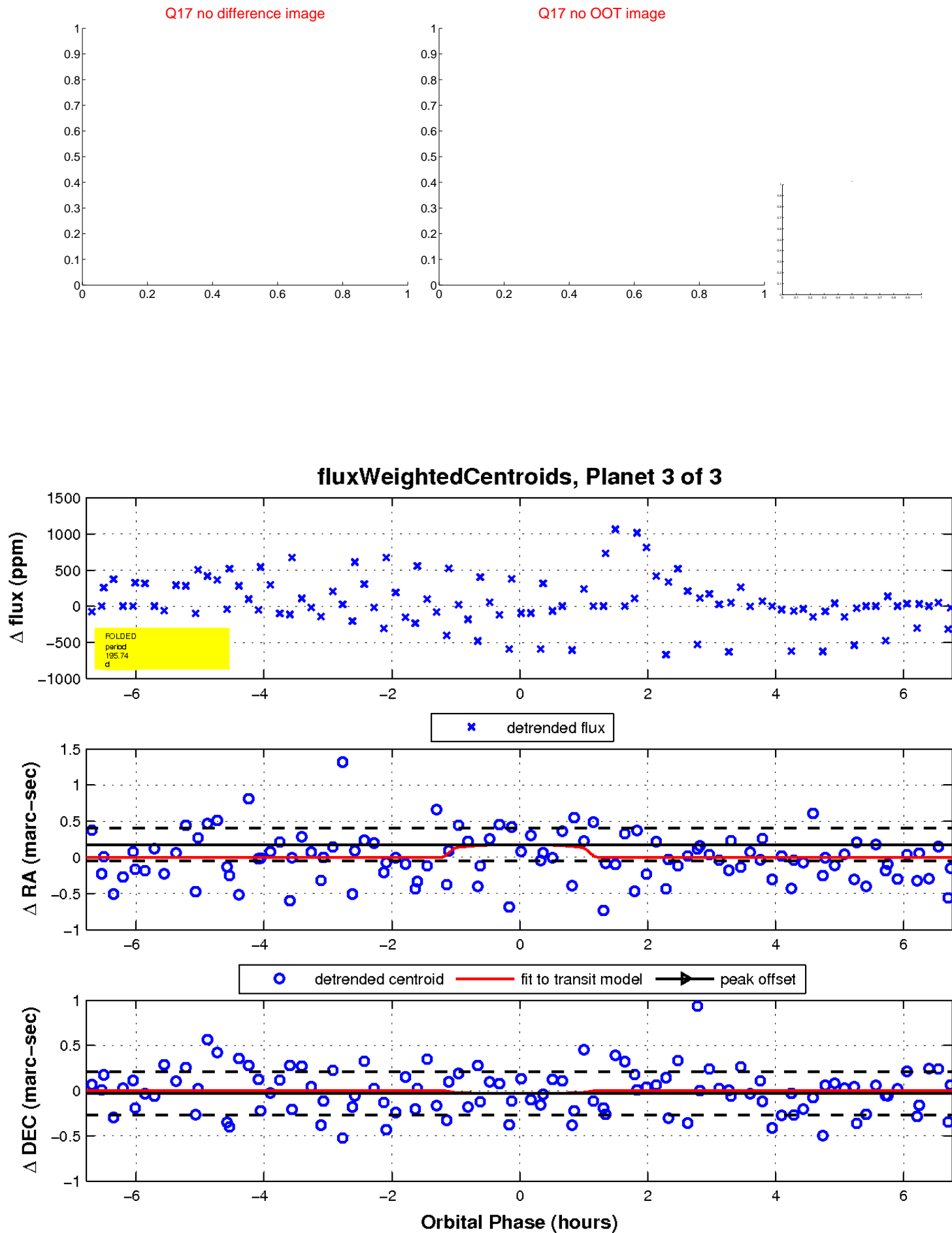
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

