

KIC 010120296

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})
010120296-02	OBS	No	304.562260	208.218429	983.7	2.995	19.9	7.0	1.01	5716	3.41	1.39
010120296-03	OBS	No	333.478170	188.606770	743.7	32.641	16.0	3.5	1.01	5716	2.77	1.23
010120296-04	OBS	No	277.558750	147.270358	1003.3	3.591	15.7	9.0	1.01	5716	3.19	1.57
010120296-06	OBS	No	201.159398	263.569559	639.6	3.000	14.1	-1.0	1.01	5716	2.55	2.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010120296-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010120296-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010120296-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010120296-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

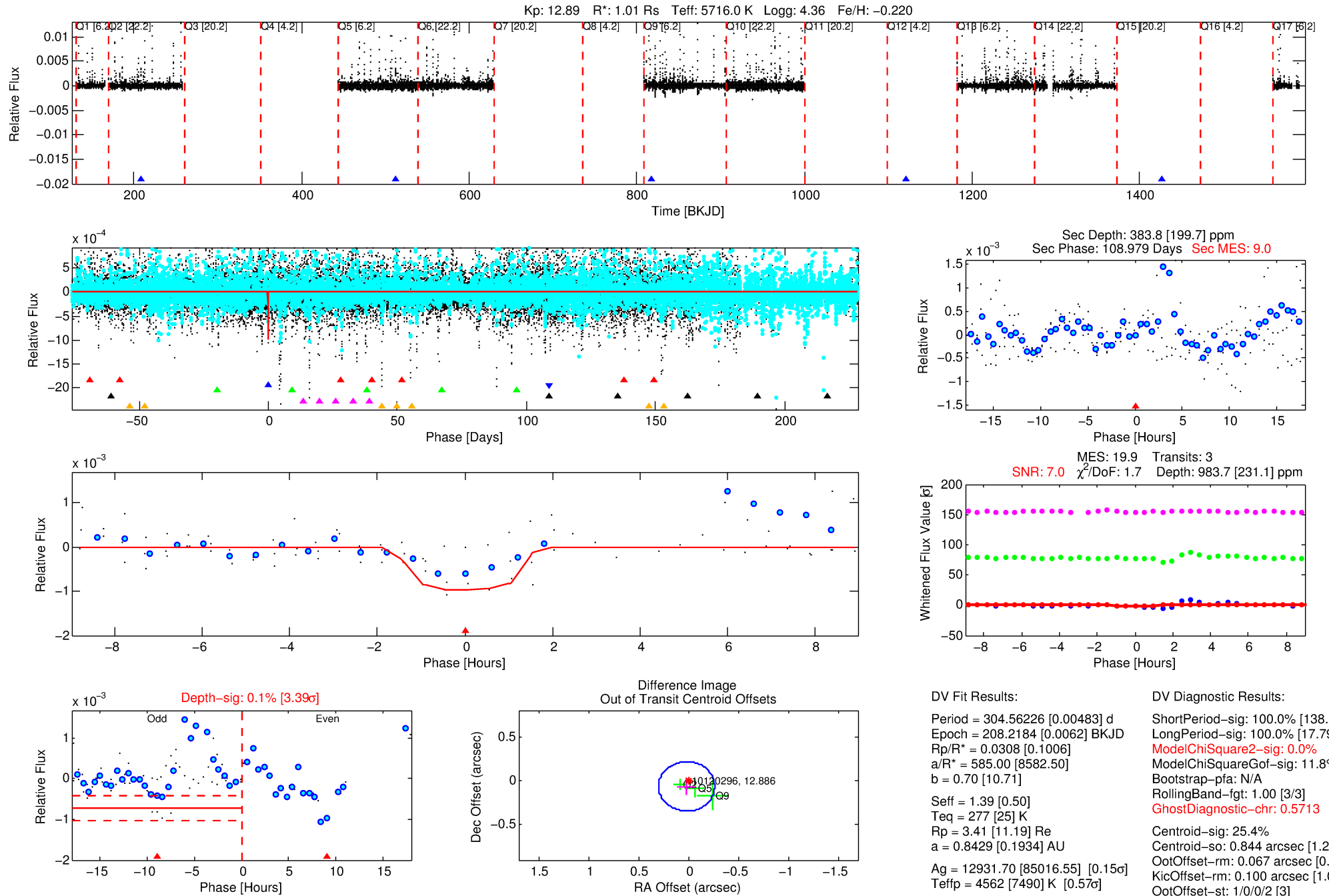
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010120296-02

No Significant Match Found

DV One-Page Summary

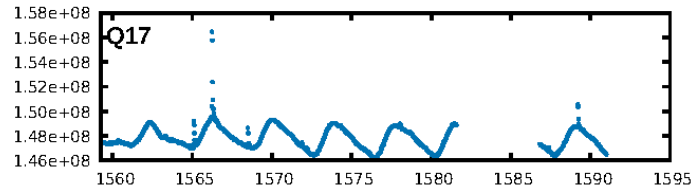
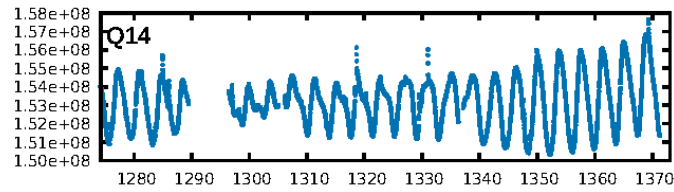
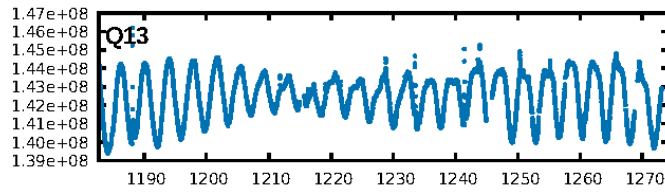
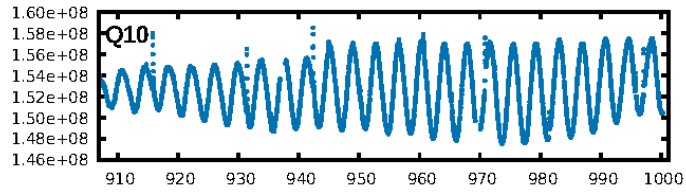
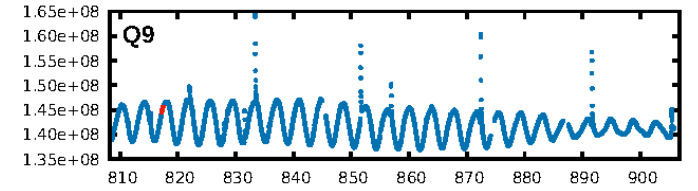
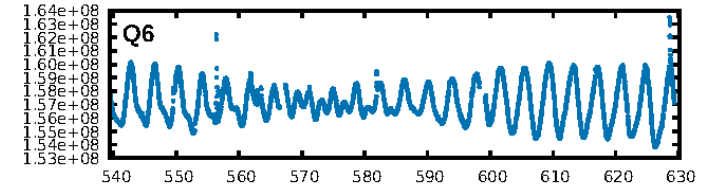
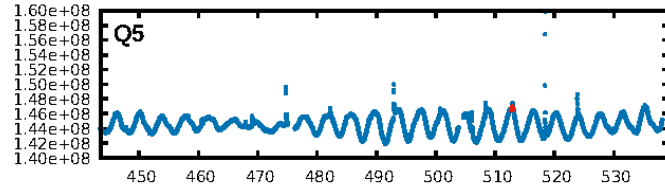
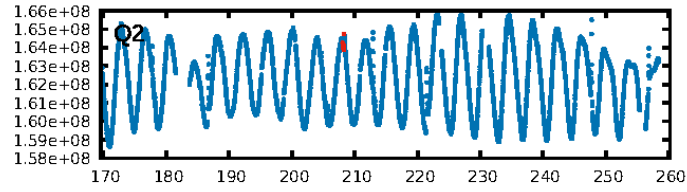
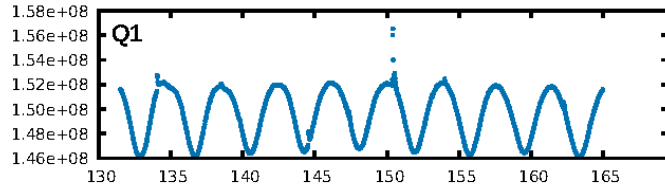
KIC: 10120296 Candidate: 2 of 6 Period: 304.562 d



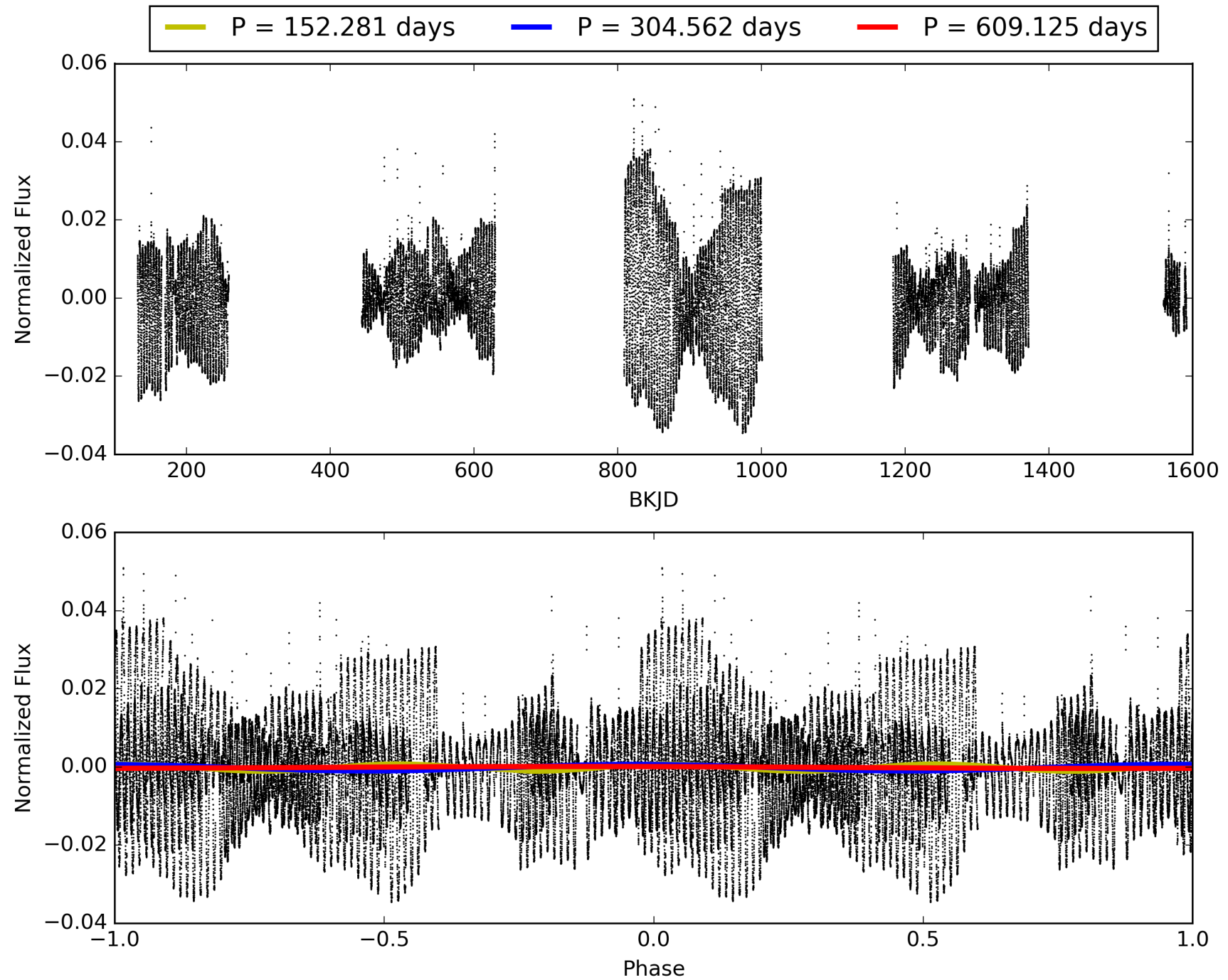
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010120296-02, PDC Light Curves

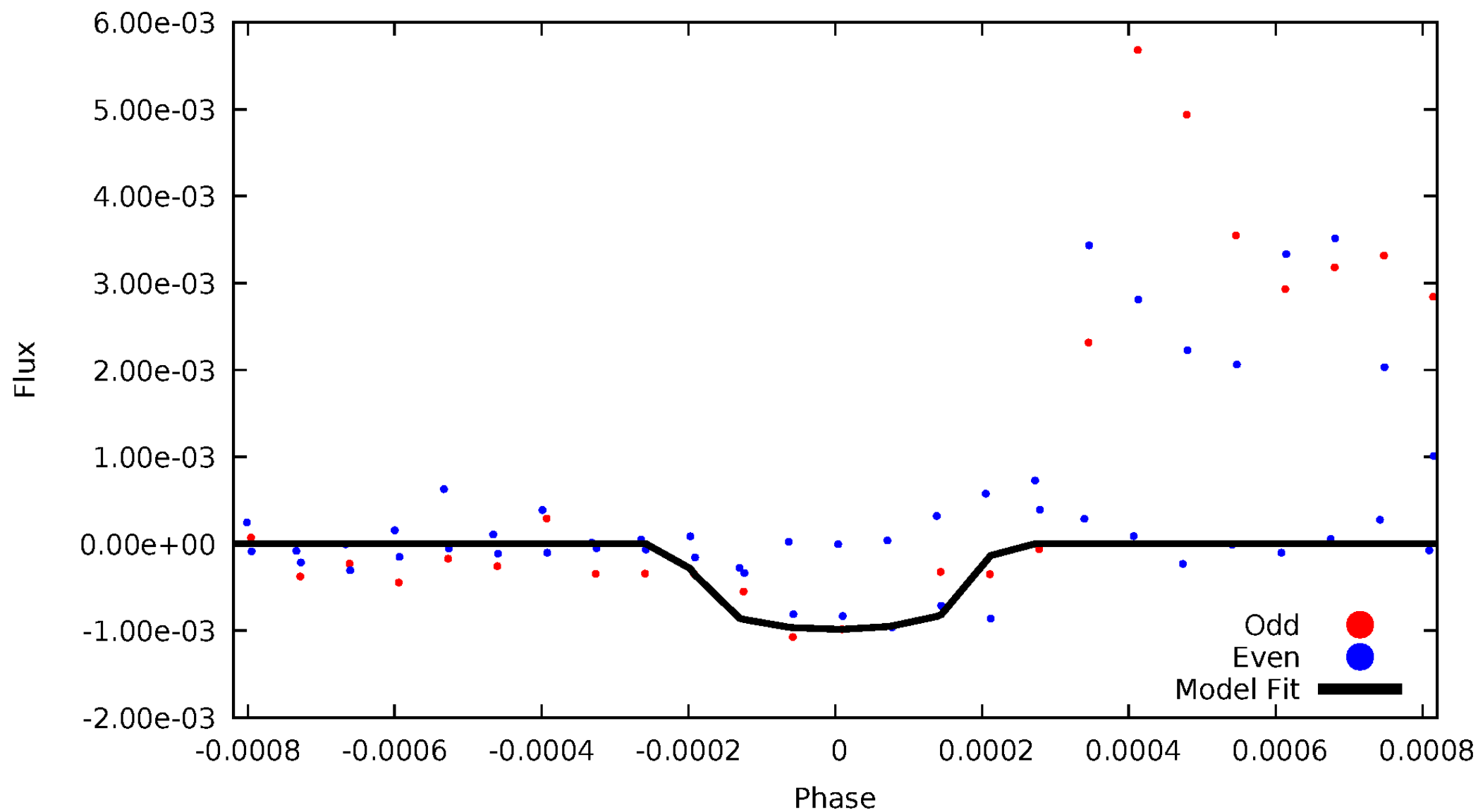


TCE 010120296-02



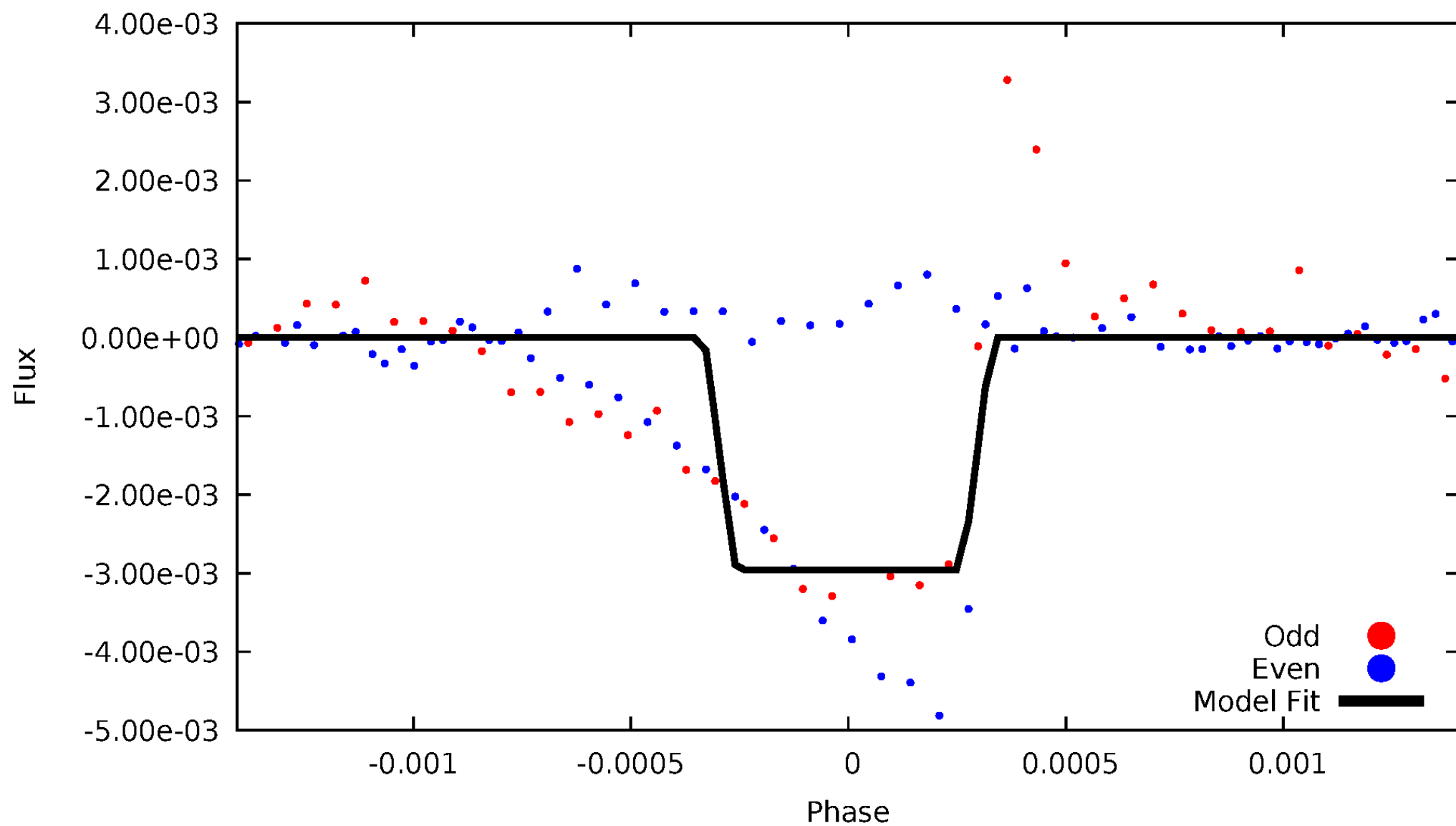
DV Odd/Even

TCE 010120296-02



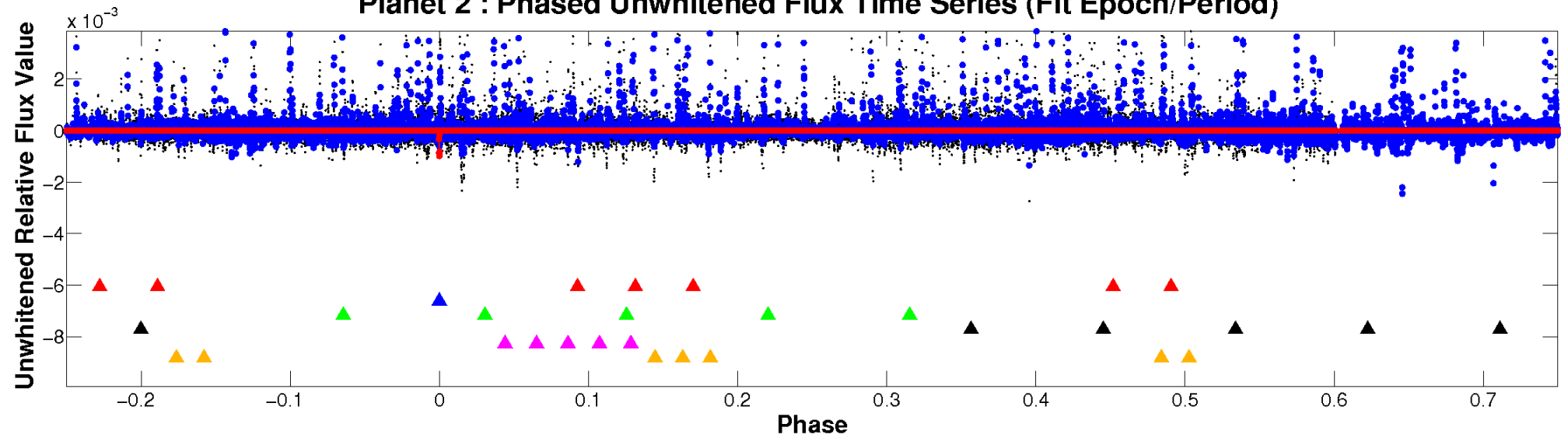
ALT Odd/Even

TCE 010120296-02

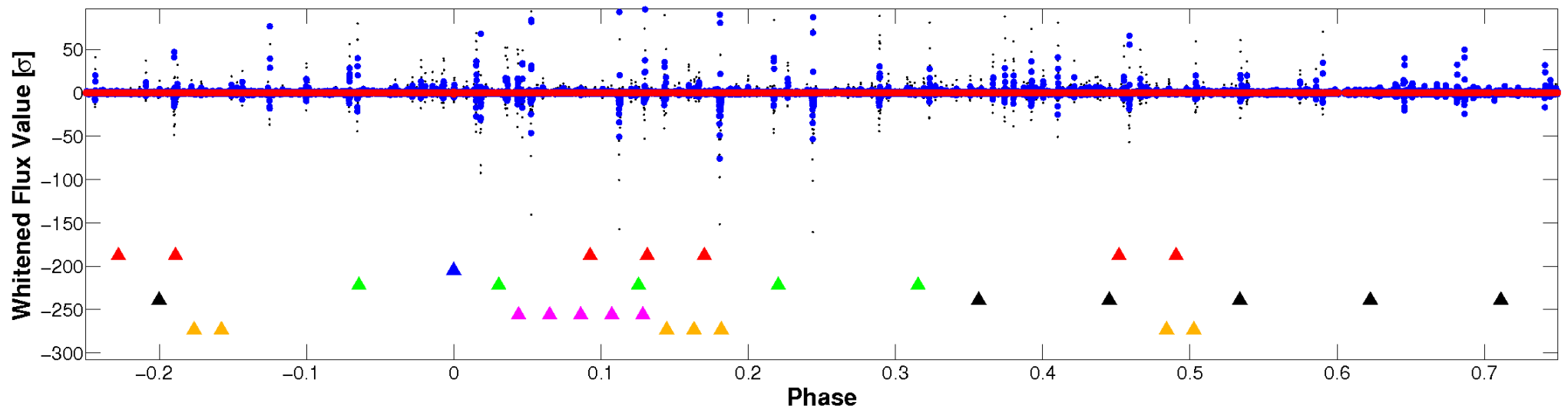


Non-Whitened Vs. Whitened Light Curve

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

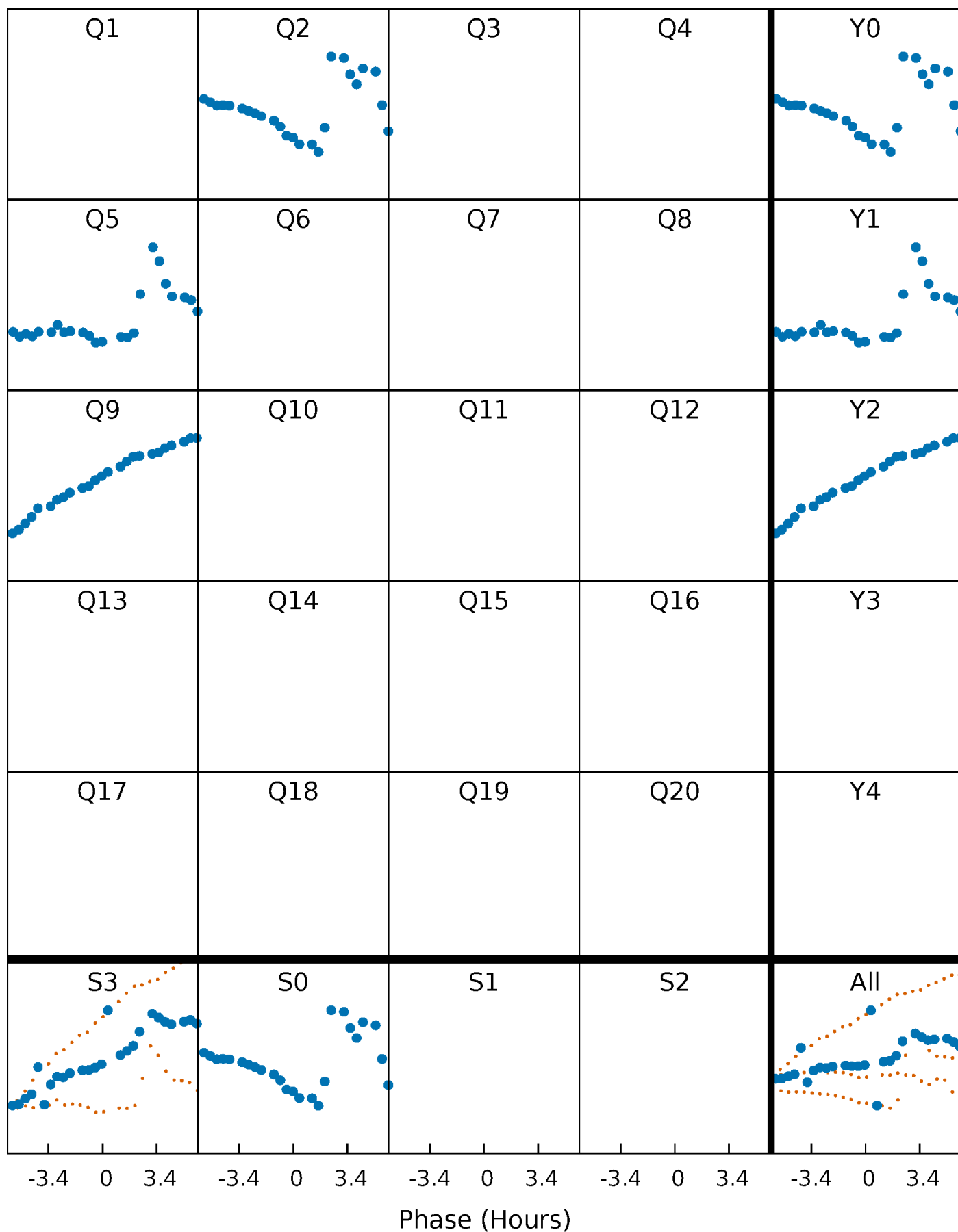


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 010120296-02 $P=304.562260$ Days $T_0=208.218429$ (BKJD)



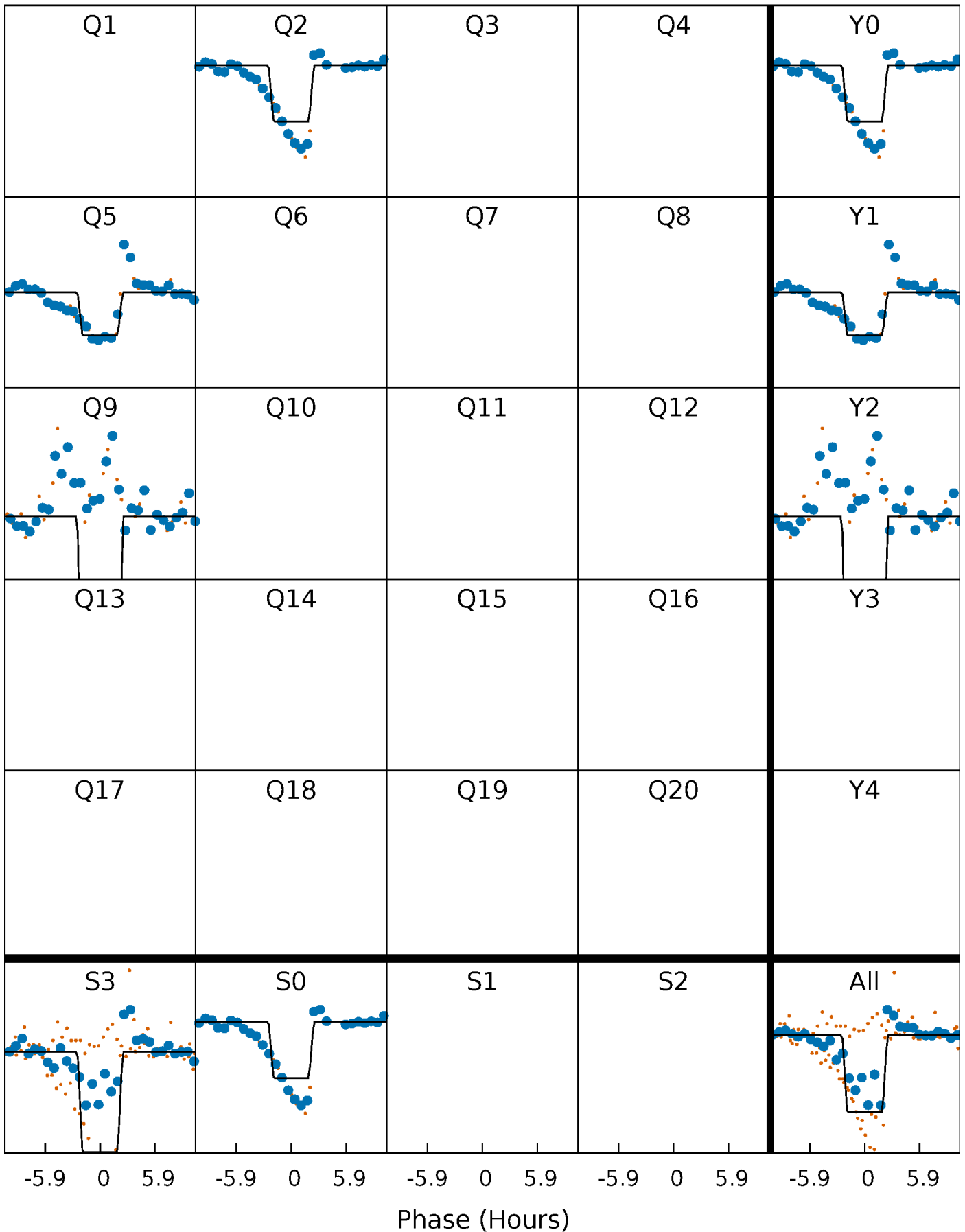
DV Quarter-Phased Transit Curves

TCE 010120296-02 $P=304.562260$ Days $T_0=208.218429$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

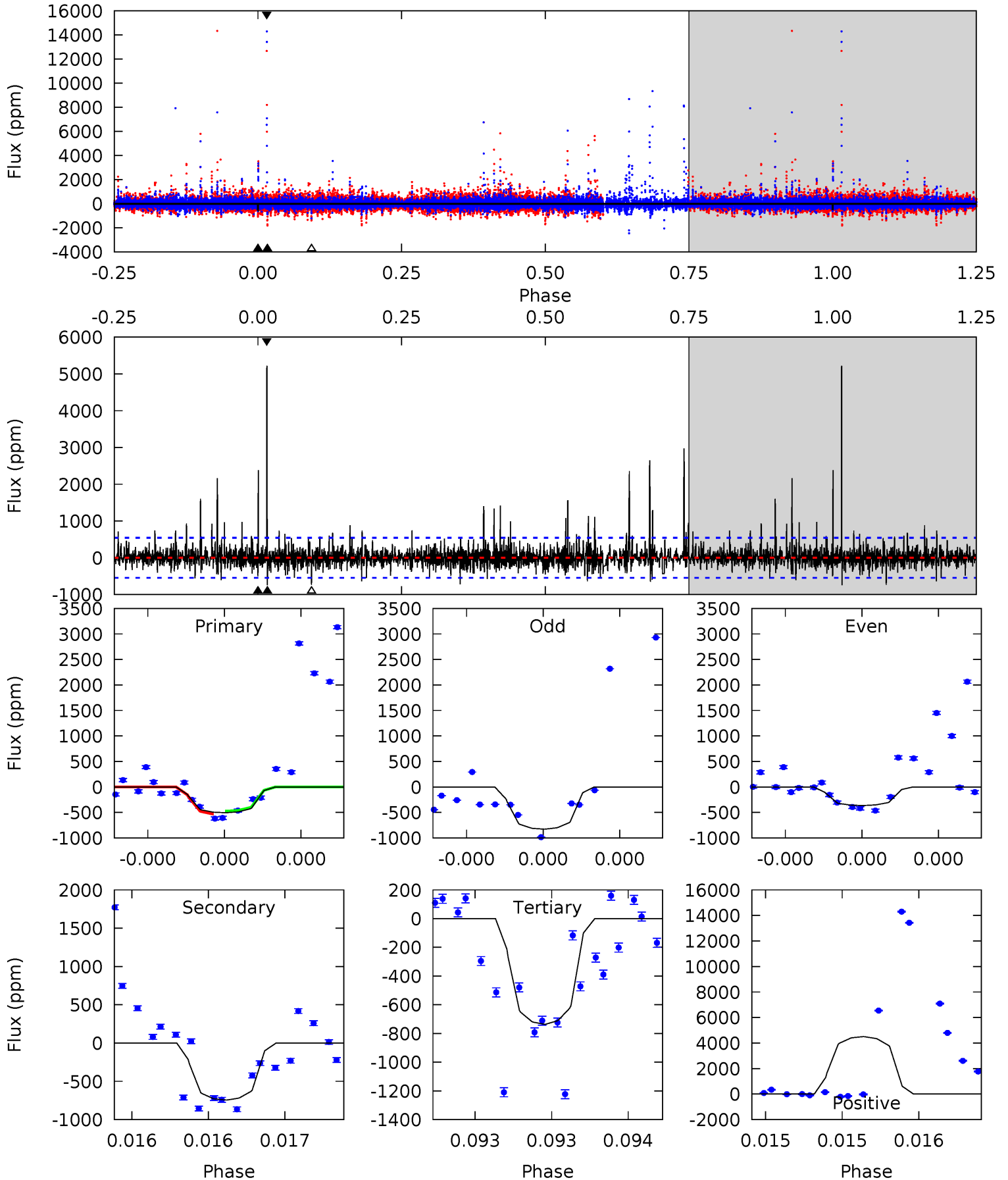
TCE 010120296-02 $P=304.575834$ Days $T_0=208.219065$ (BKJD)



DV Model-Shift Uniqueness Test

010120296-02, P = 304.562260 Days, E = 208.218429 Days

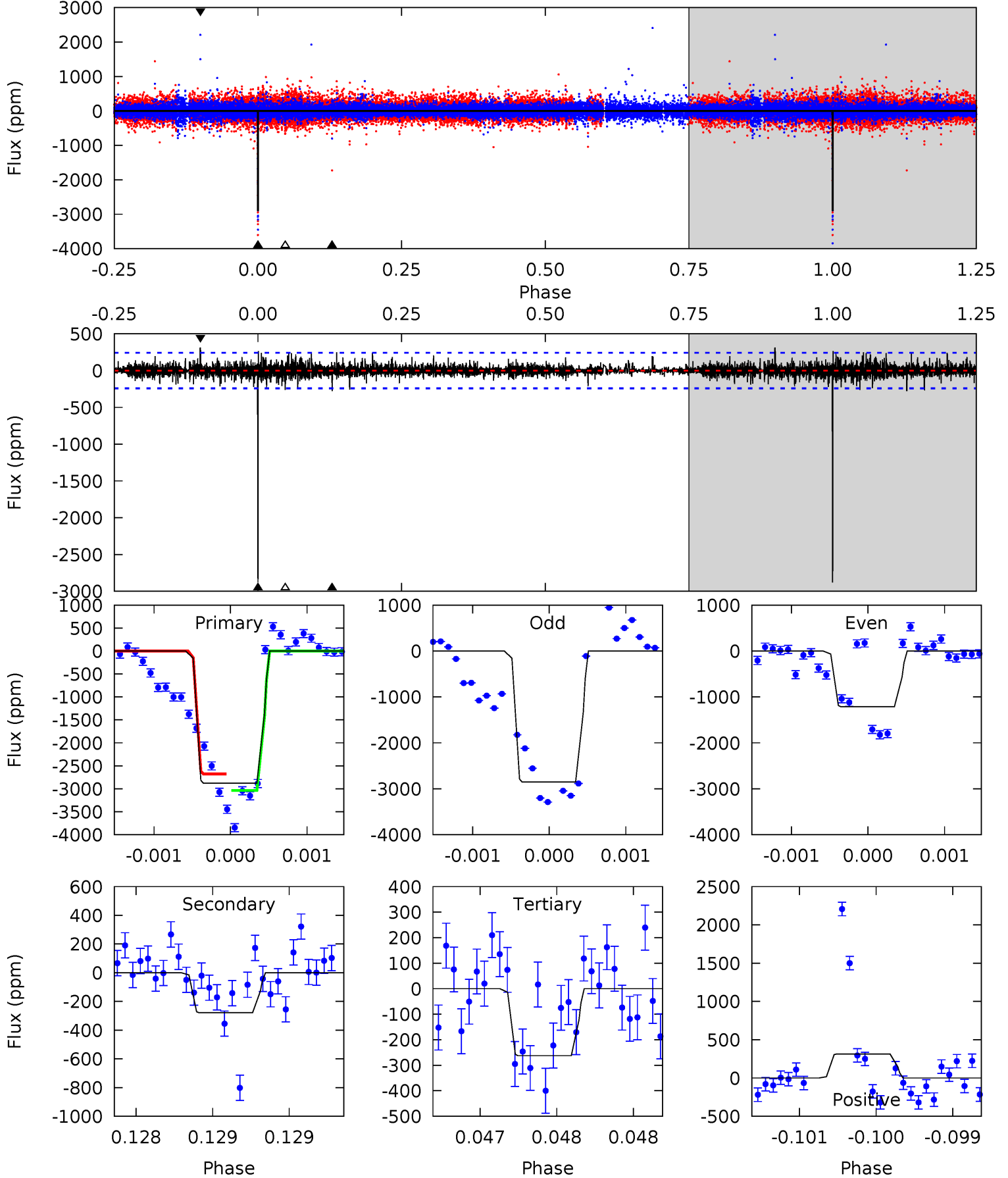
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.19	7.66	7.58	46.4	5.61	3.53	2.37	-2.39	-41.2	0.09	-38.7	0.61	0.66	0.88	0.28



Alt Model-Shift Uniqueness Test

010120296-02, P = 304.575834 Days, E = 208.219065 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
65.7	6.35	5.99	7.14	5.52	3.40	1.08	59.7	58.6	0.36	-0.79	18.0	0.72	0.10	0



Stellar Parameters For KIC 010120296

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5716^{+189}_{-189}	$4.360^{+0.180}_{-0.180}$	$-0.220^{+0.300}_{-0.300}$	$1.015^{+0.279}_{-0.186}$	$0.862^{+0.130}_{-0.070}$	$1.160^{+0.996}_{-0.566}$
	+3%/-3%	+4%/-4%	+136%/-136%	+27%/-18%	+15%/-8%	+86%/-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 010120296-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-744 ± 97	$9.07^{+8.78}_{-6.24}$	387^{+29}_{-26}	3729^{+2242}_{-711}	3698^{+33130}_{-2796}
Alt.	-278 ± 44	$9.92^{+8.56}_{-6.23}$	386^{+29}_{-26}	3103^{+1197}_{-509}	1119^{+7057}_{-812}

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 $A_{obs} \gg 1.0$

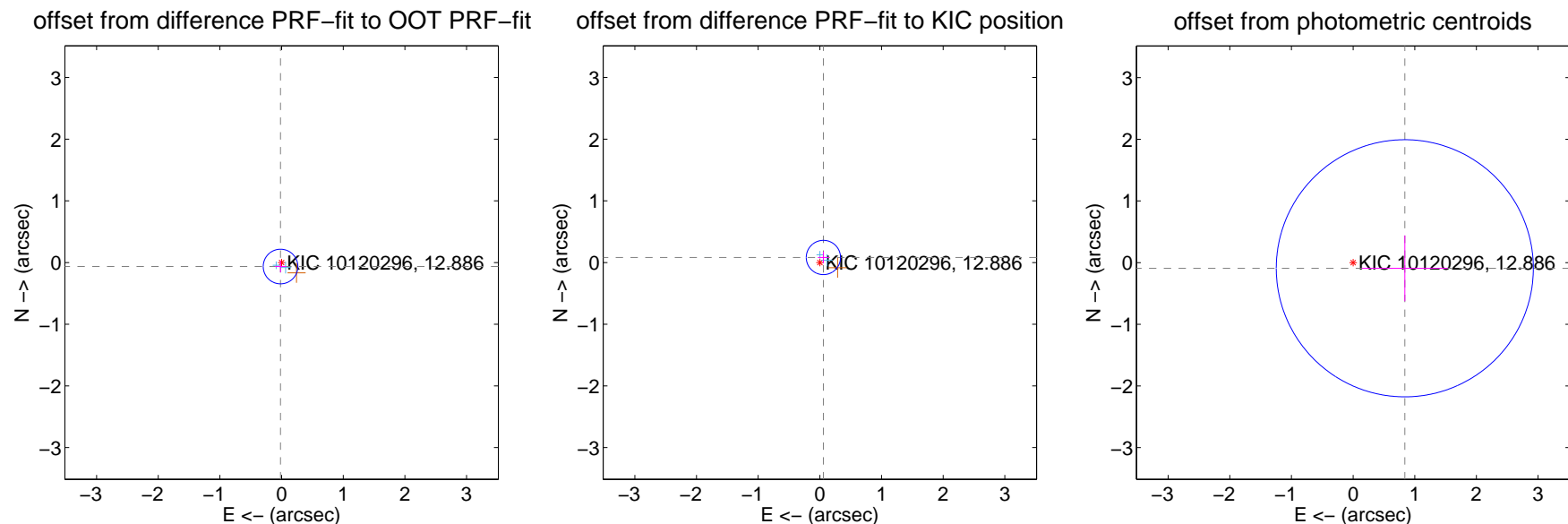
DV Centroid Data

Supplemental centroid analysis for 010120296-02. Kepler magnitude: 12.89. Transit SNR 6.98

There are 2 quarters with good PRF difference image offsets

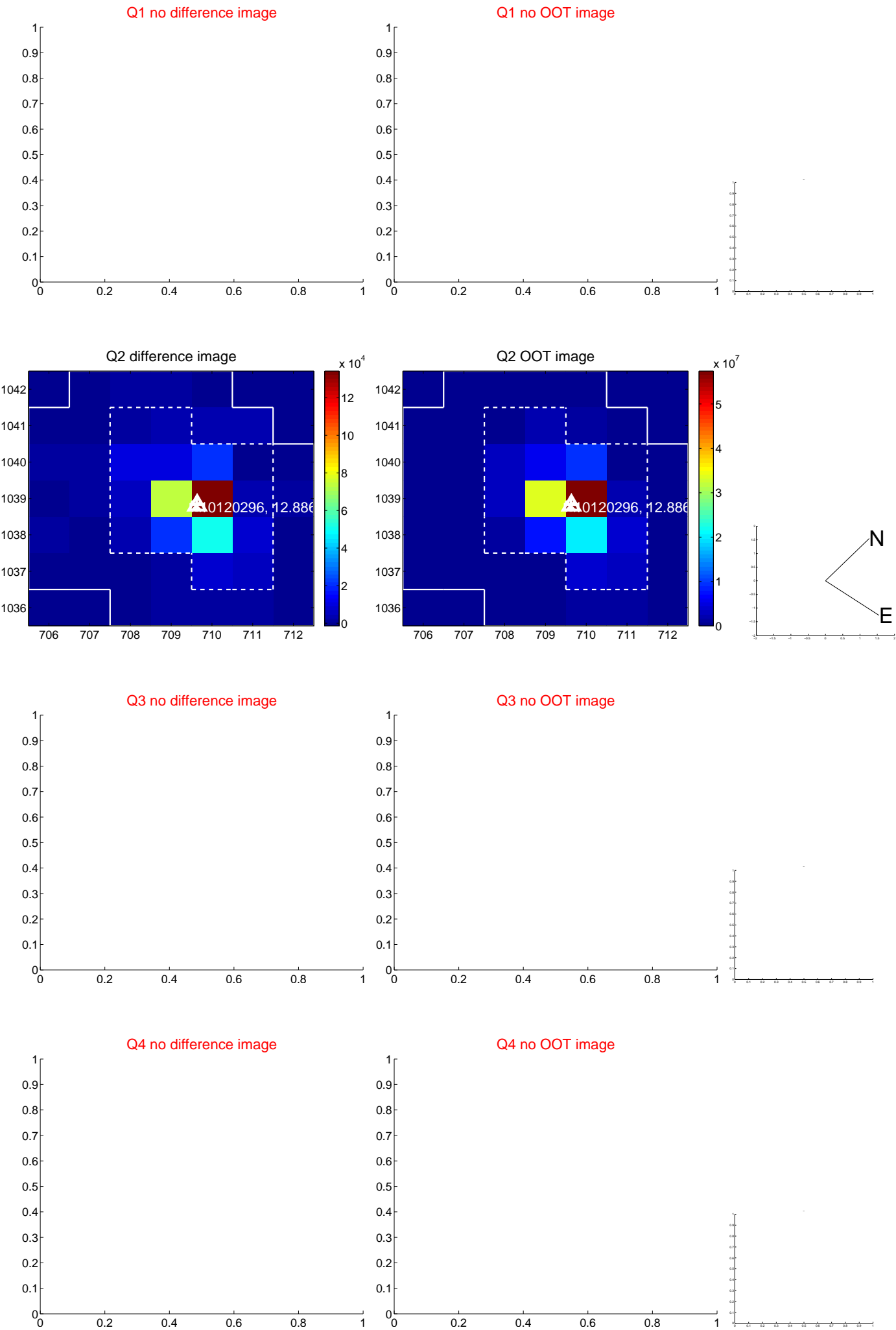
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.067 ± 0.094	0.71	0.017 ± 0.090	-0.065 ± 0.094
PRF-fit source offset from KIC position	0.100 ± 0.093	1.08	-0.058 ± 0.090	0.082 ± 0.094
photometric centroid source offset	0.84 ± 0.70	1.21	-0.84 ± 0.70	-0.09 ± 0.53

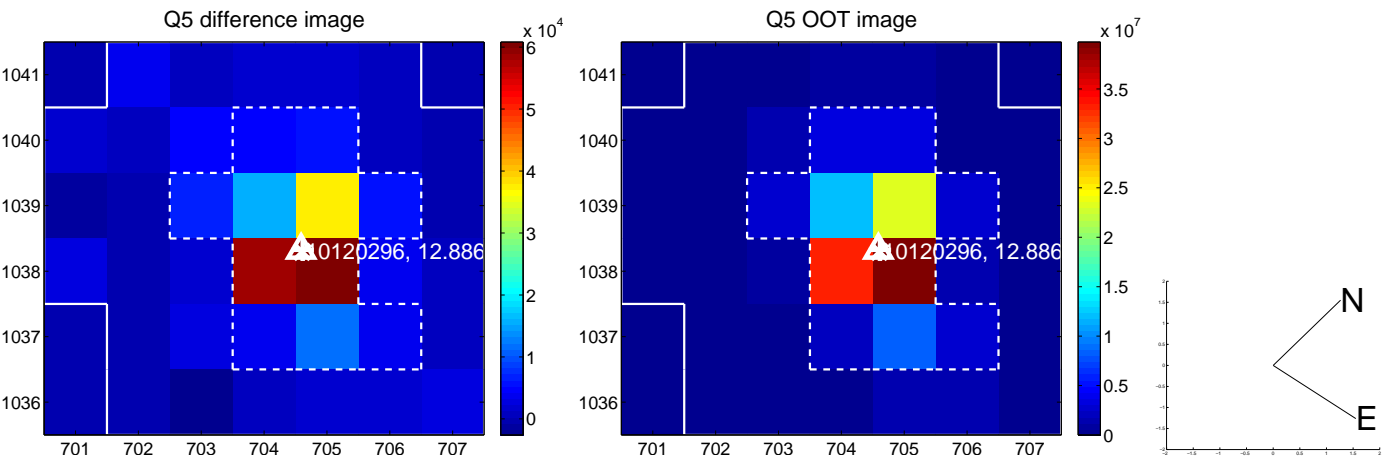


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

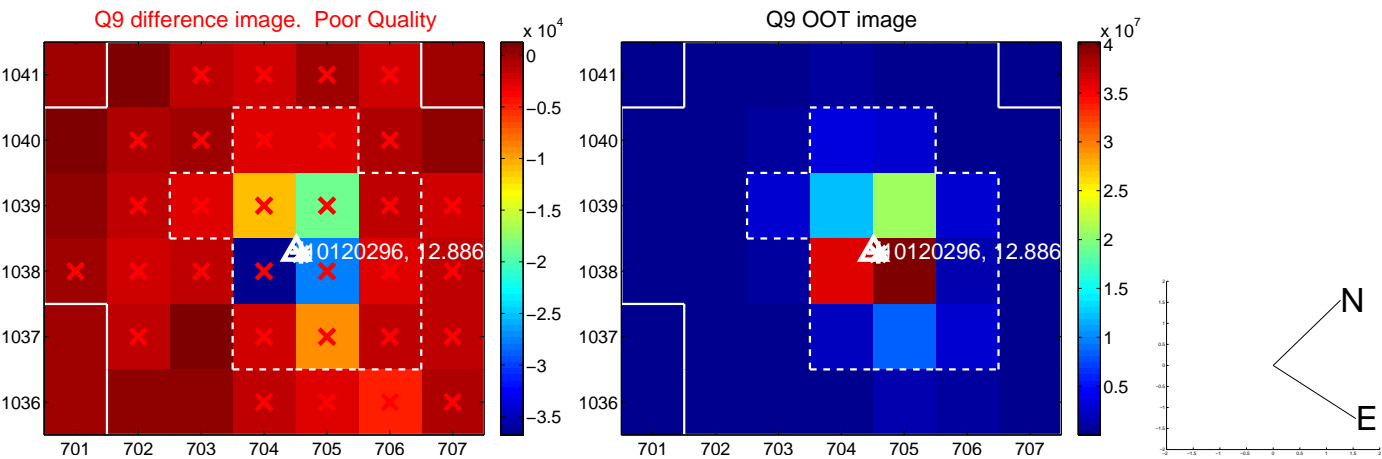
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



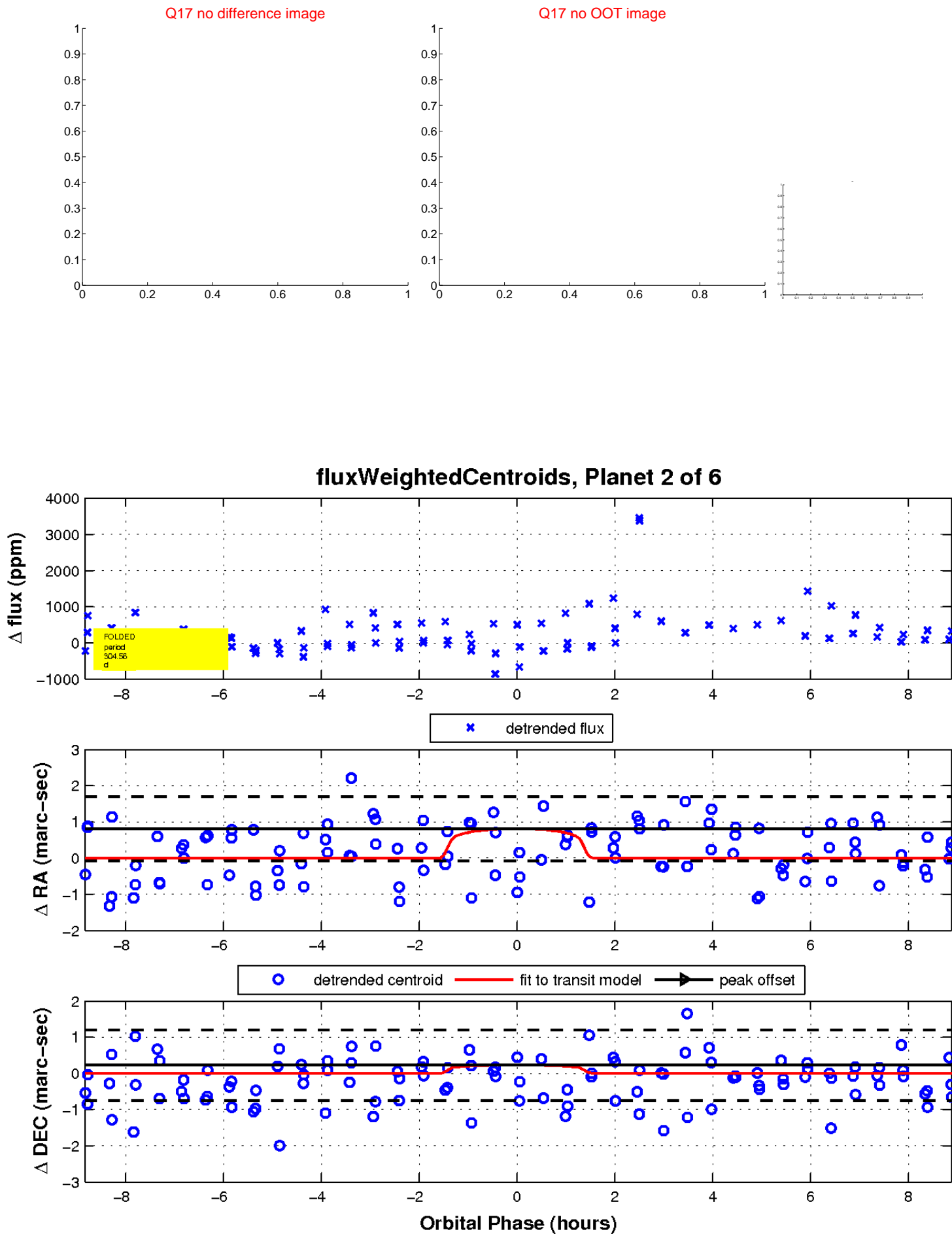
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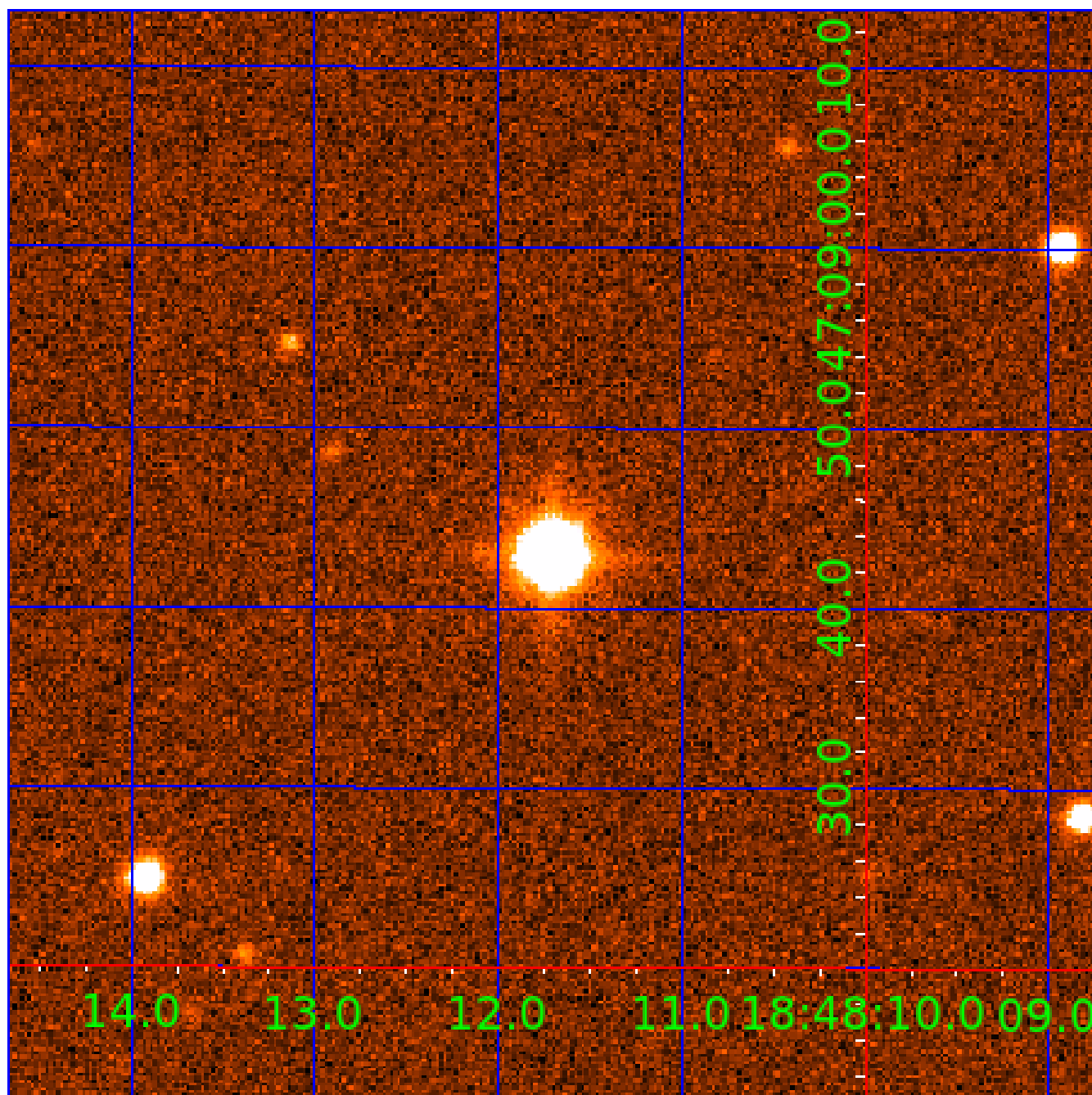


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010120296

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
010120296-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010120296-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010120296-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010120296-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

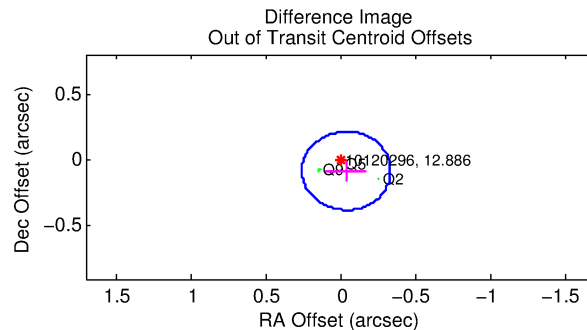
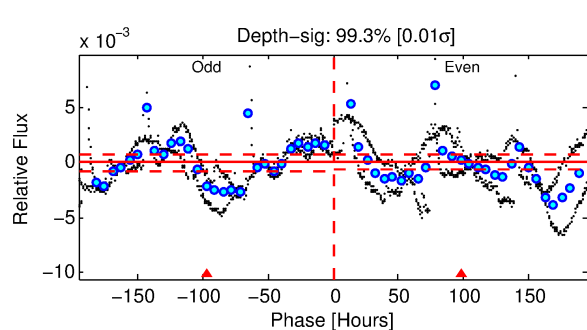
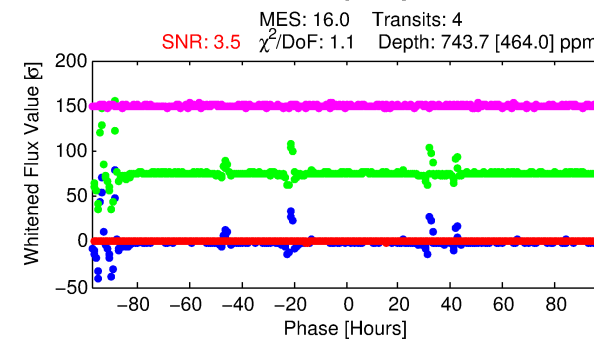
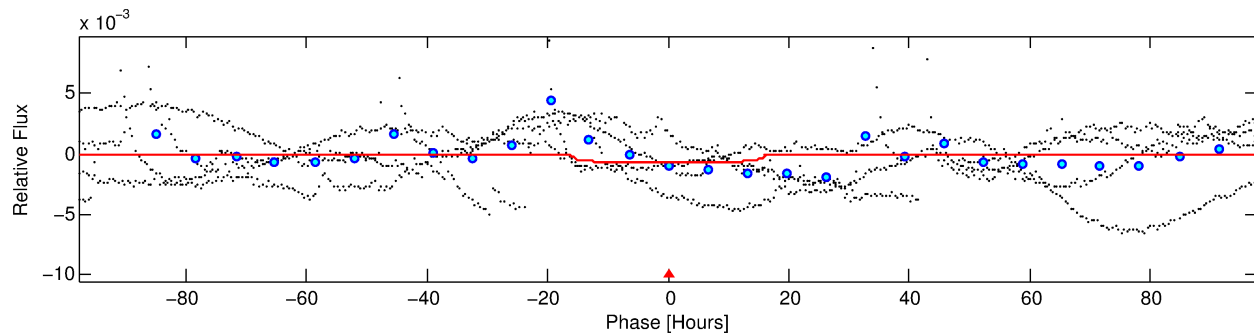
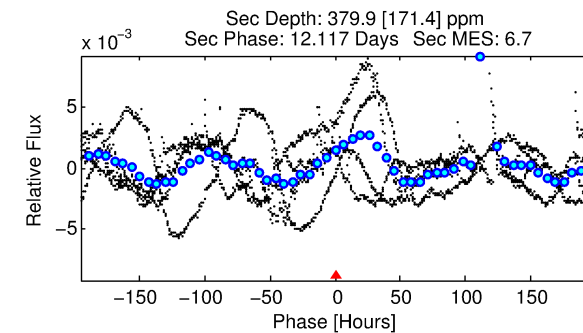
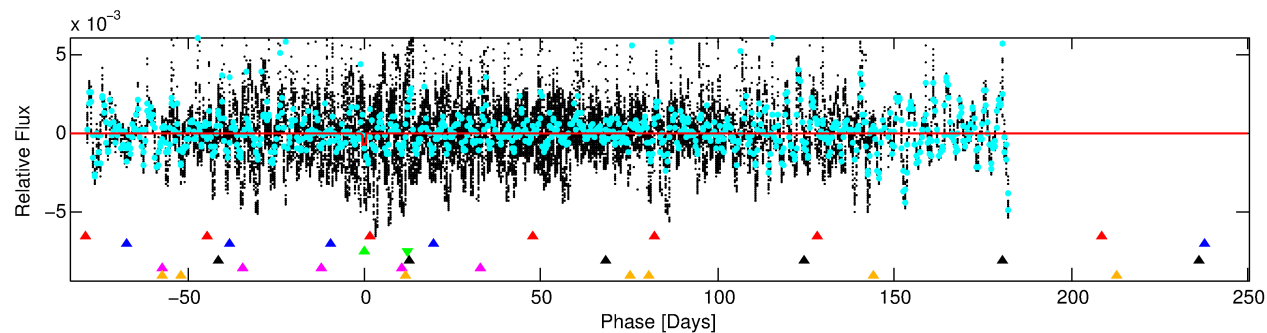
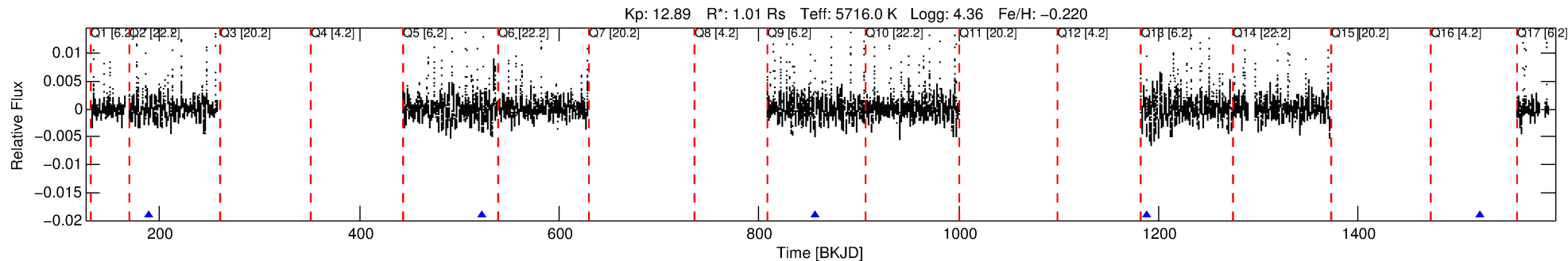
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010120296-03

No Significant Match Found

DV One-Page Summary

KIC: 10120296 Candidate: 3 of 6 Period: 333.478 d



DV Fit Results:

Period = 333.47817 [0.01371] d
Epoch = 188.6068 [0.0229] BKJD
Rp/R* = 0.0250 [0.0106]
a/R* = 76.40 [74.25]
b = 0.30 [2.90]
Seff = 1.23 [0.44]
Teq = 268 [24] K
Rp = 2.77 [1.40] Re
a = 0.8955 [0.2055] AU
Ag = 21835.99 [22112.42] [0.99σ]
Teff = 5046 [1218] K [3.92σ]

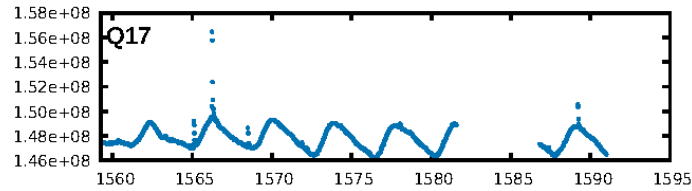
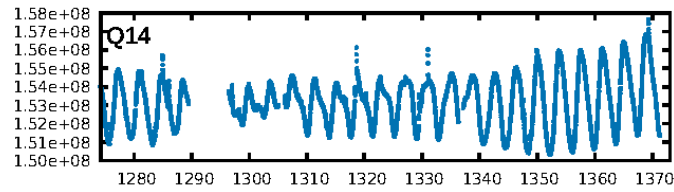
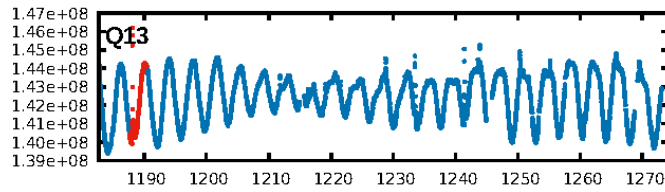
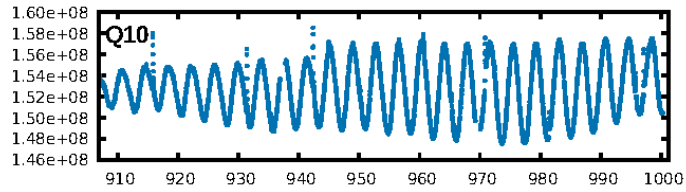
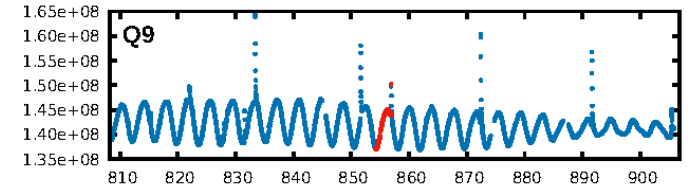
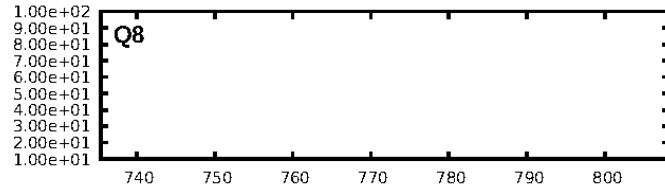
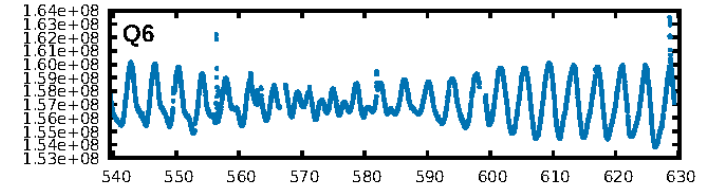
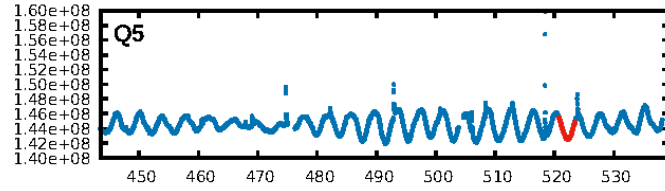
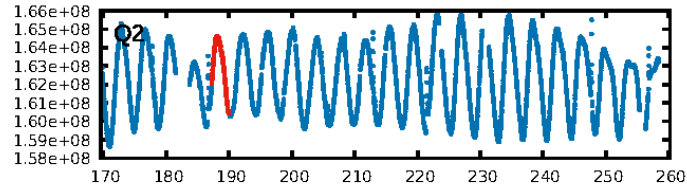
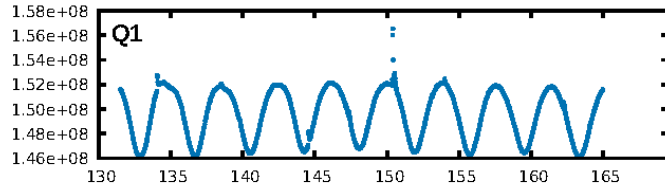
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [16.05σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.6083
Centroid-sig: 13.3%
Centroid-so: 0.425 arcsec [1.71σ]
OotOffset-rm: 0.091 arcsec [0.92σ]
KicOffset-st: 1/0/0/2 [3]
KicOffset-st: 1/0/0/2 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.67 [2/3]

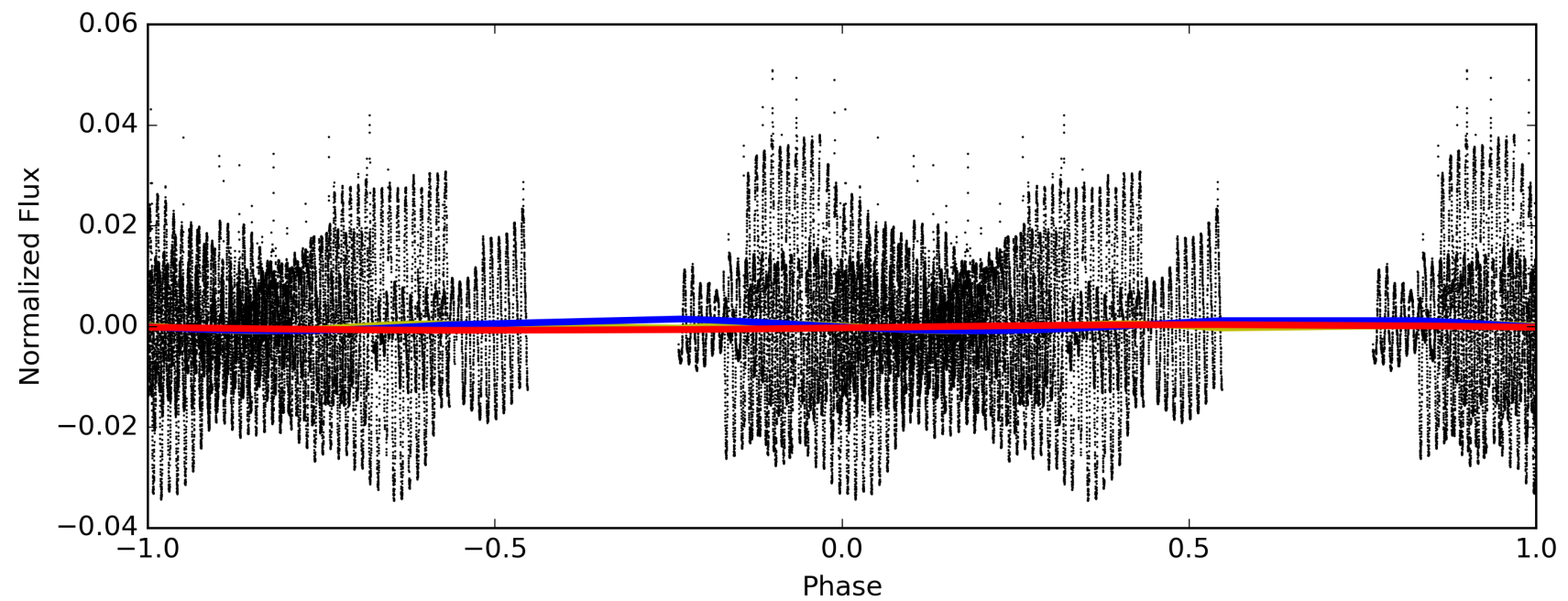
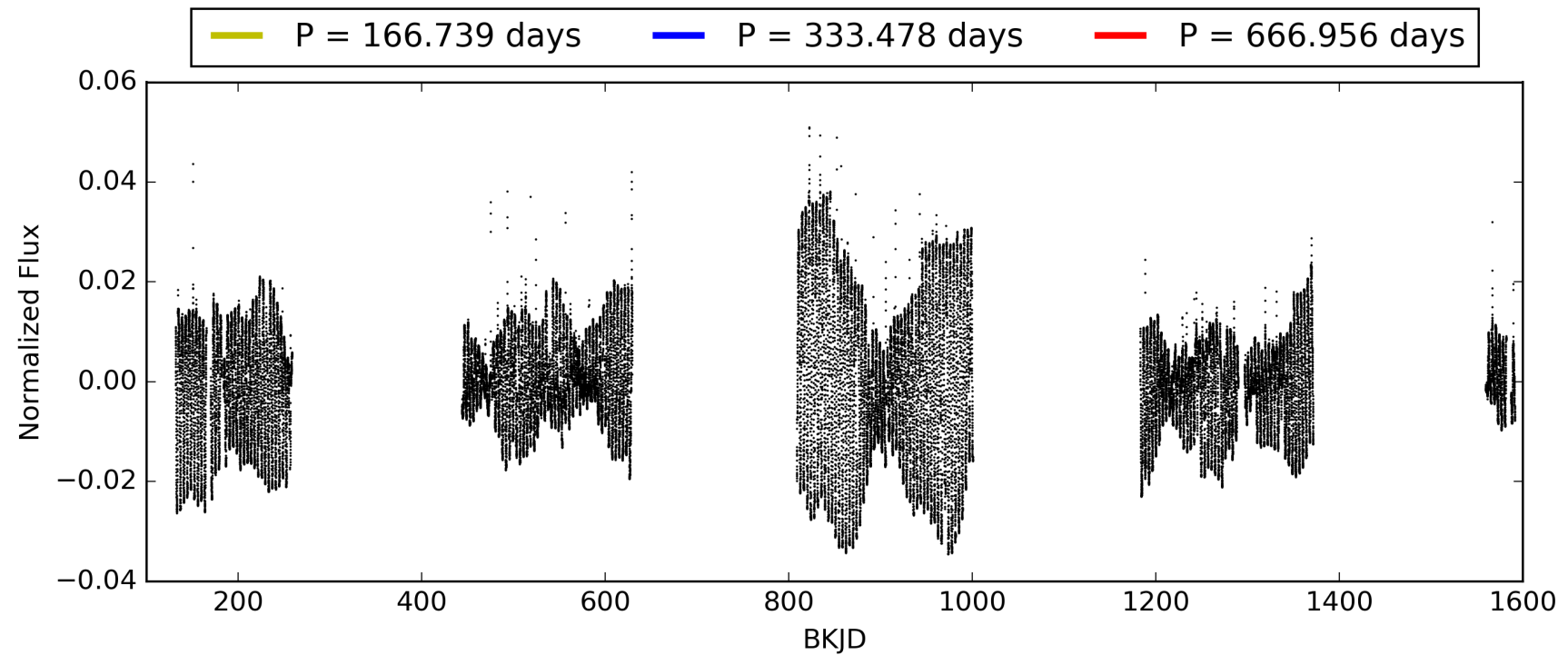
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010120296-03, PDC Light Curves

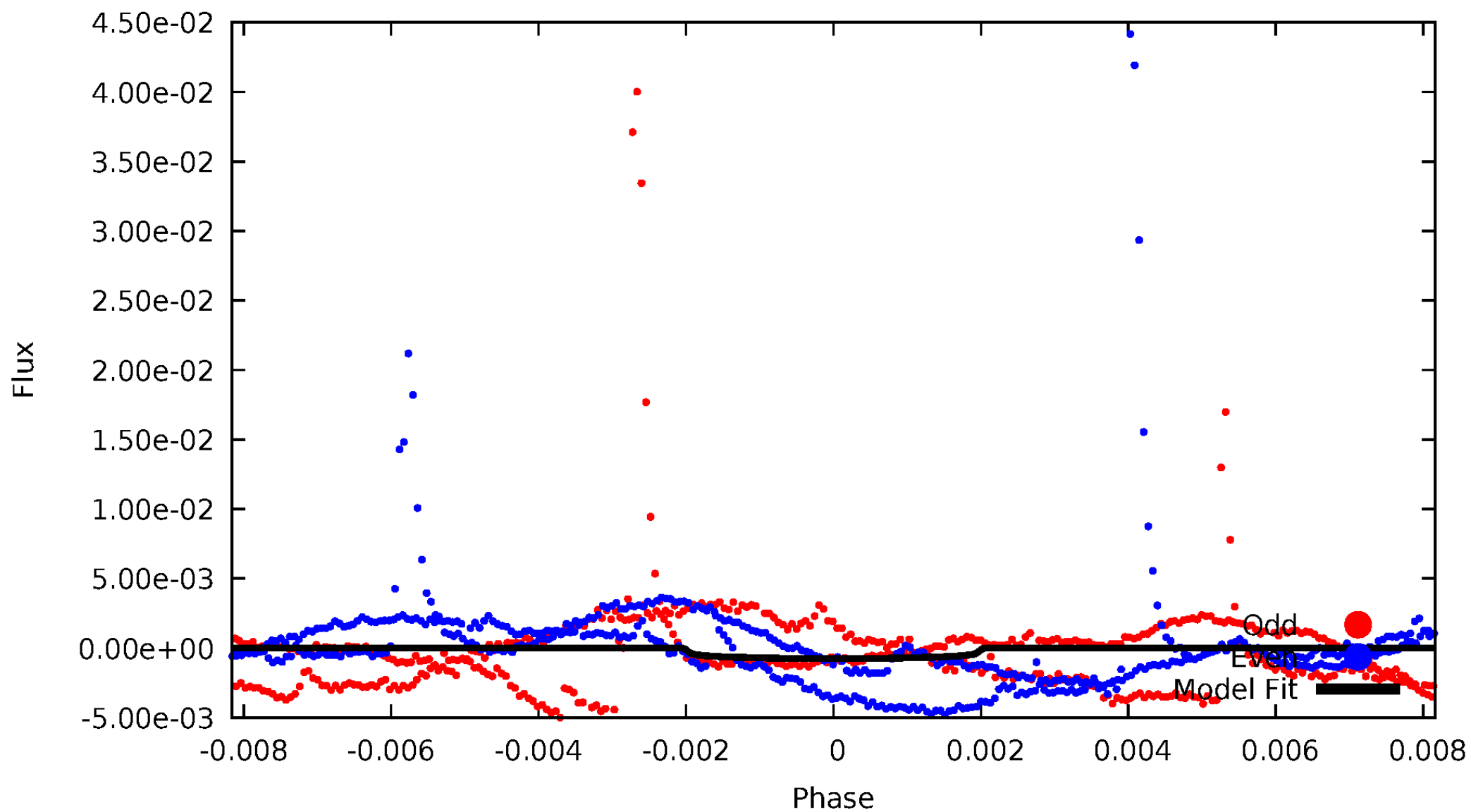


TCE 010120296-03



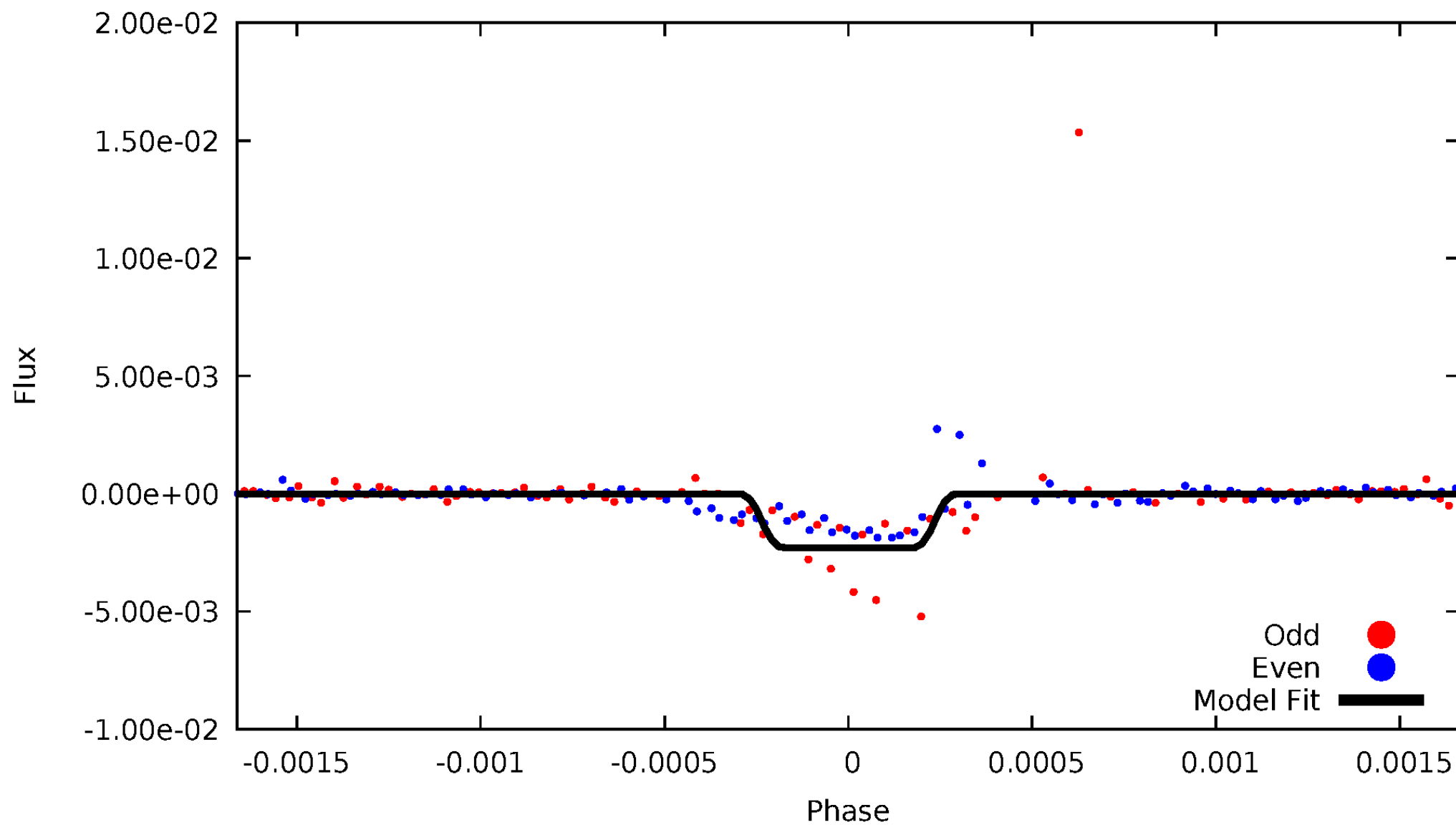
DV Odd/Even

TCE 010120296-03



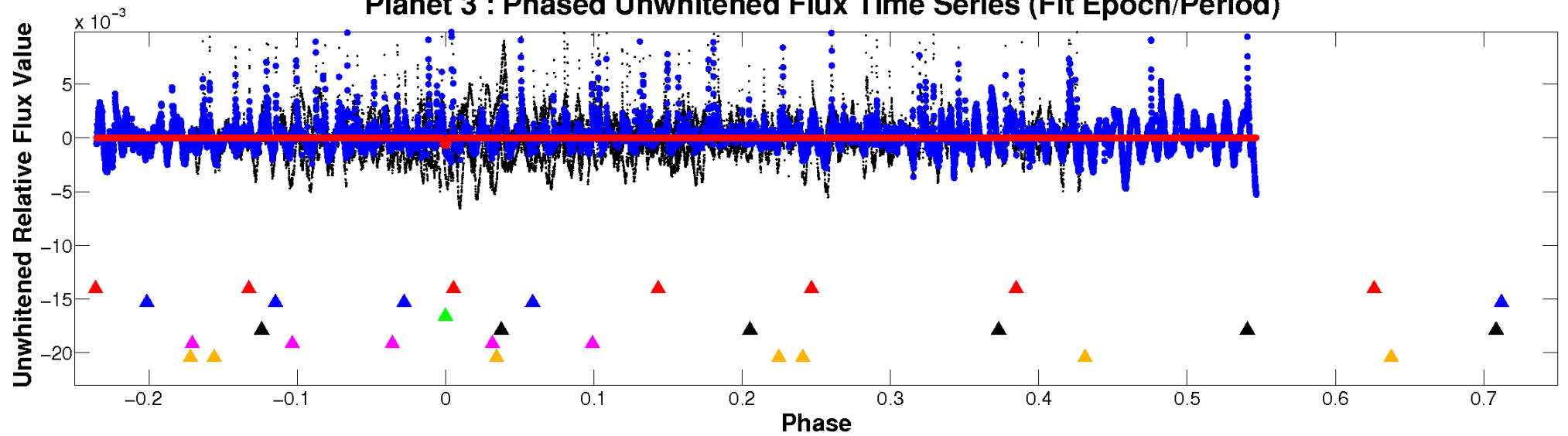
ALT Odd/Even

TCE 010120296-03

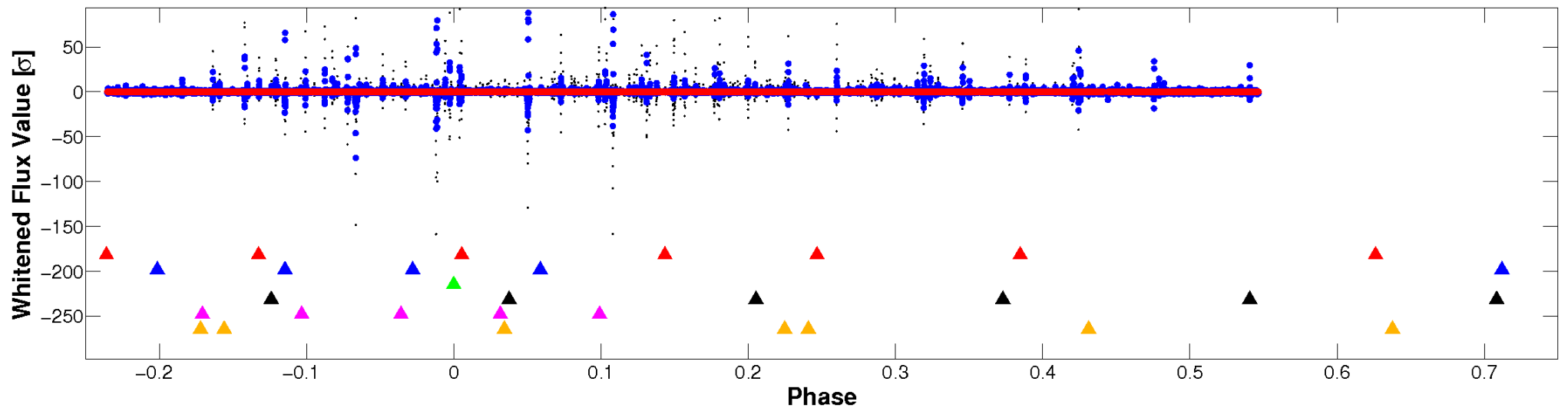


Non-Whitened Vs. Whitened Light Curve

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

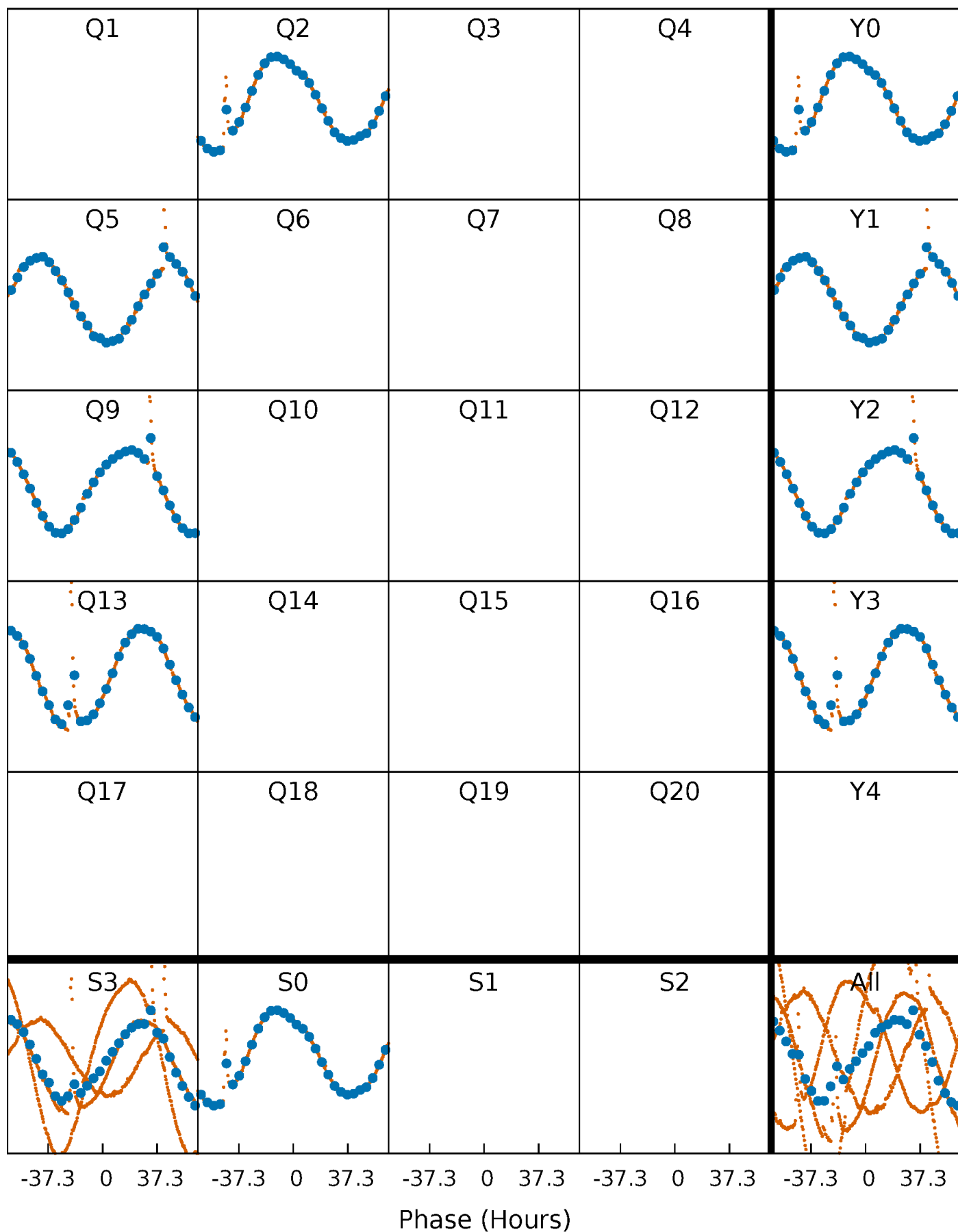


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



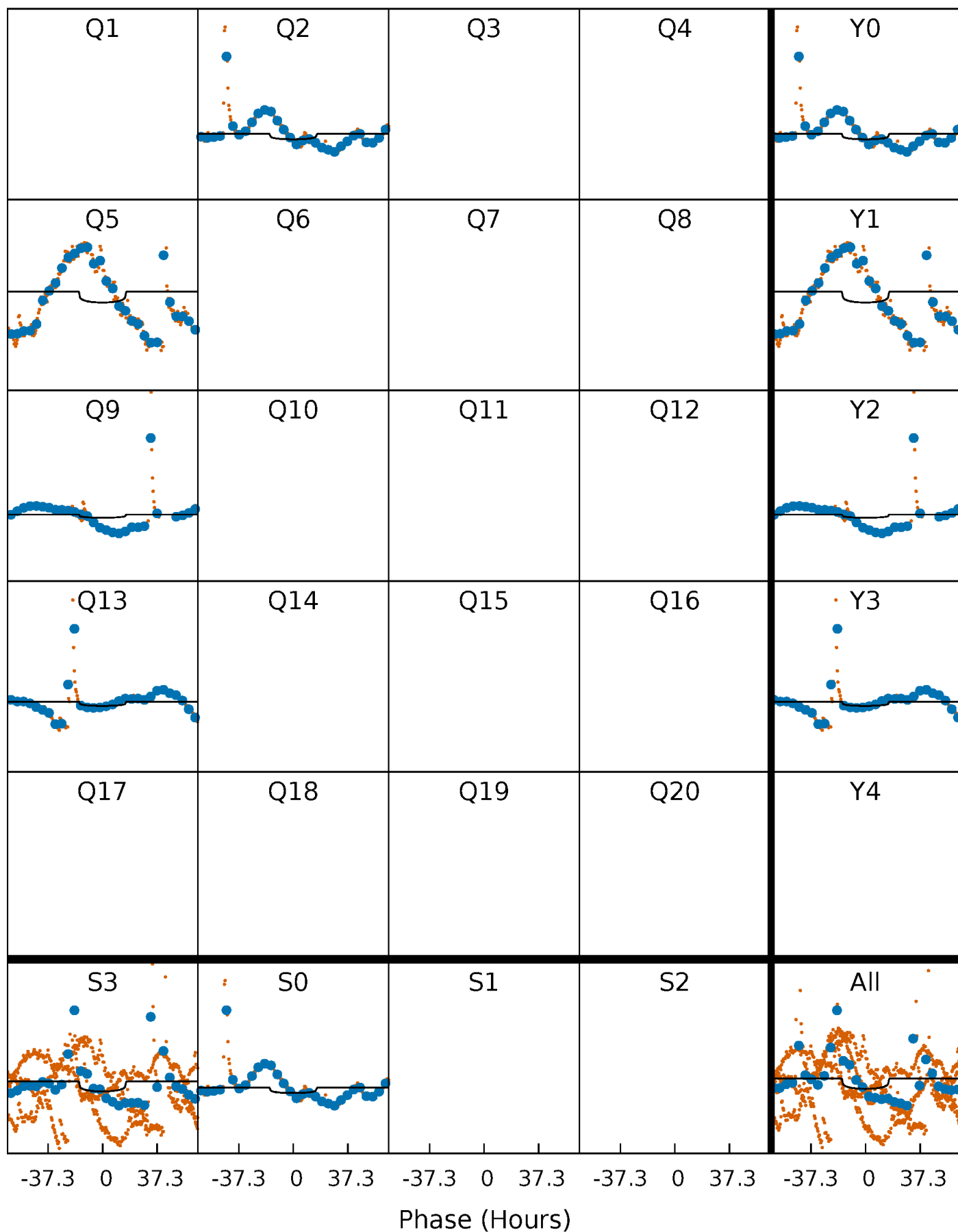
PDC Quarter-Phased Transit Curves

TCE 010120296-03 $P=333.478170$ Days $T_0=188.606770$ (BKJD)



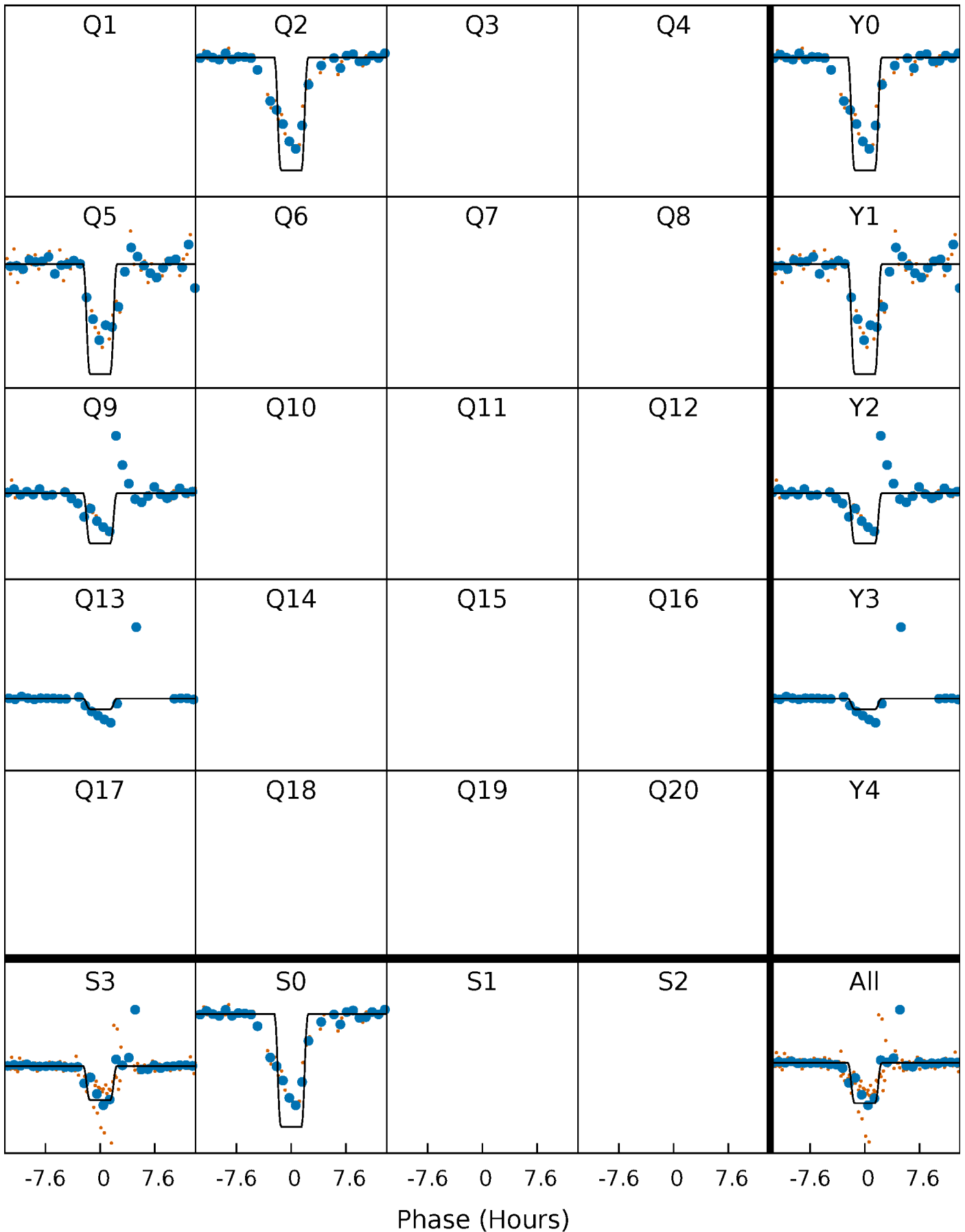
DV Quarter-Phased Transit Curves

TCE 010120296-03 $P=333.478170$ Days $T_0=188.606770$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

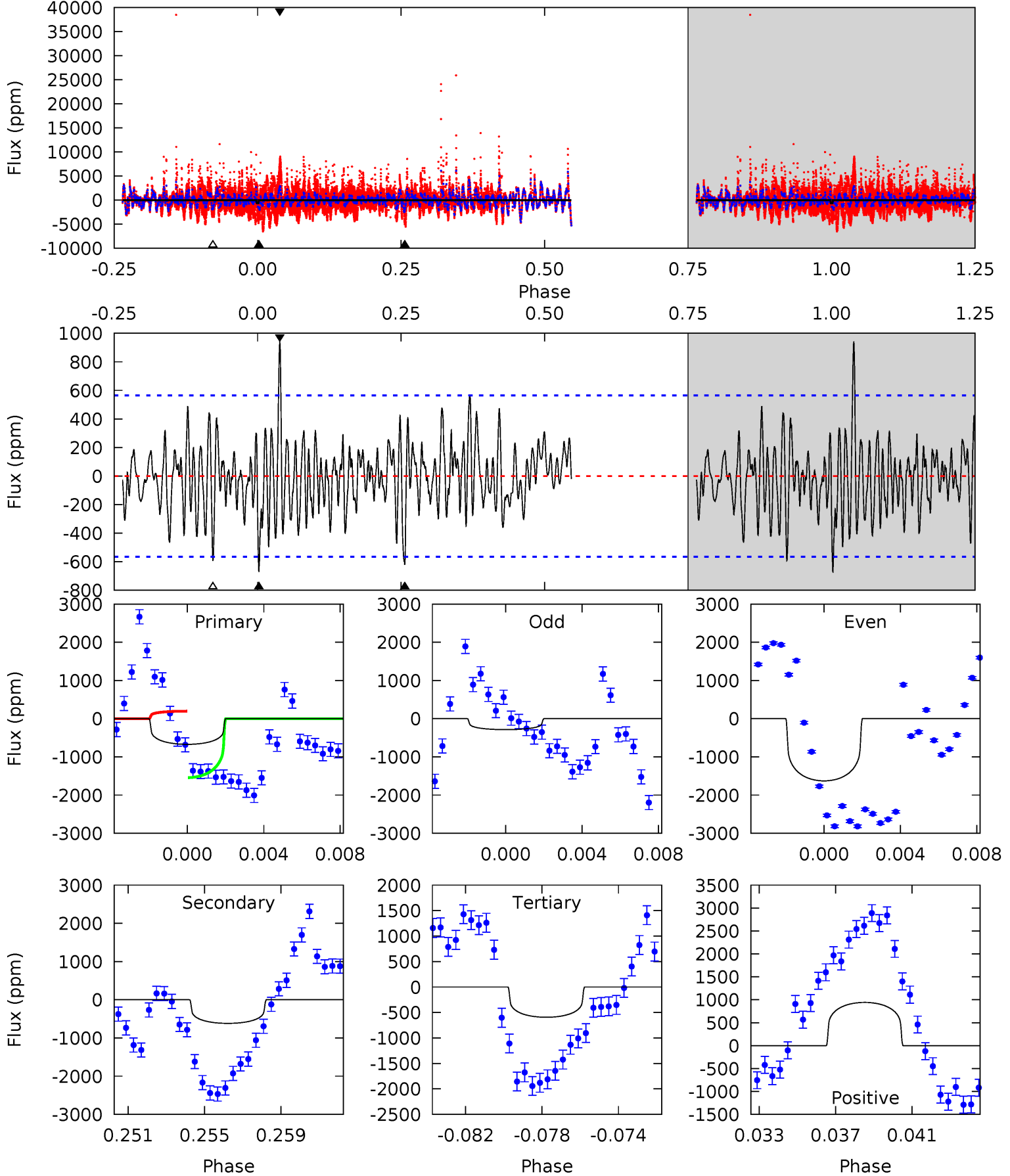
TCE 010120296-03 P=333.060217 Days $T_0=188.803794$ (BKJD)



DV Model-Shift Uniqueness Test

010120296-03, P = 333.478170 Days, E = 188.606770 Days

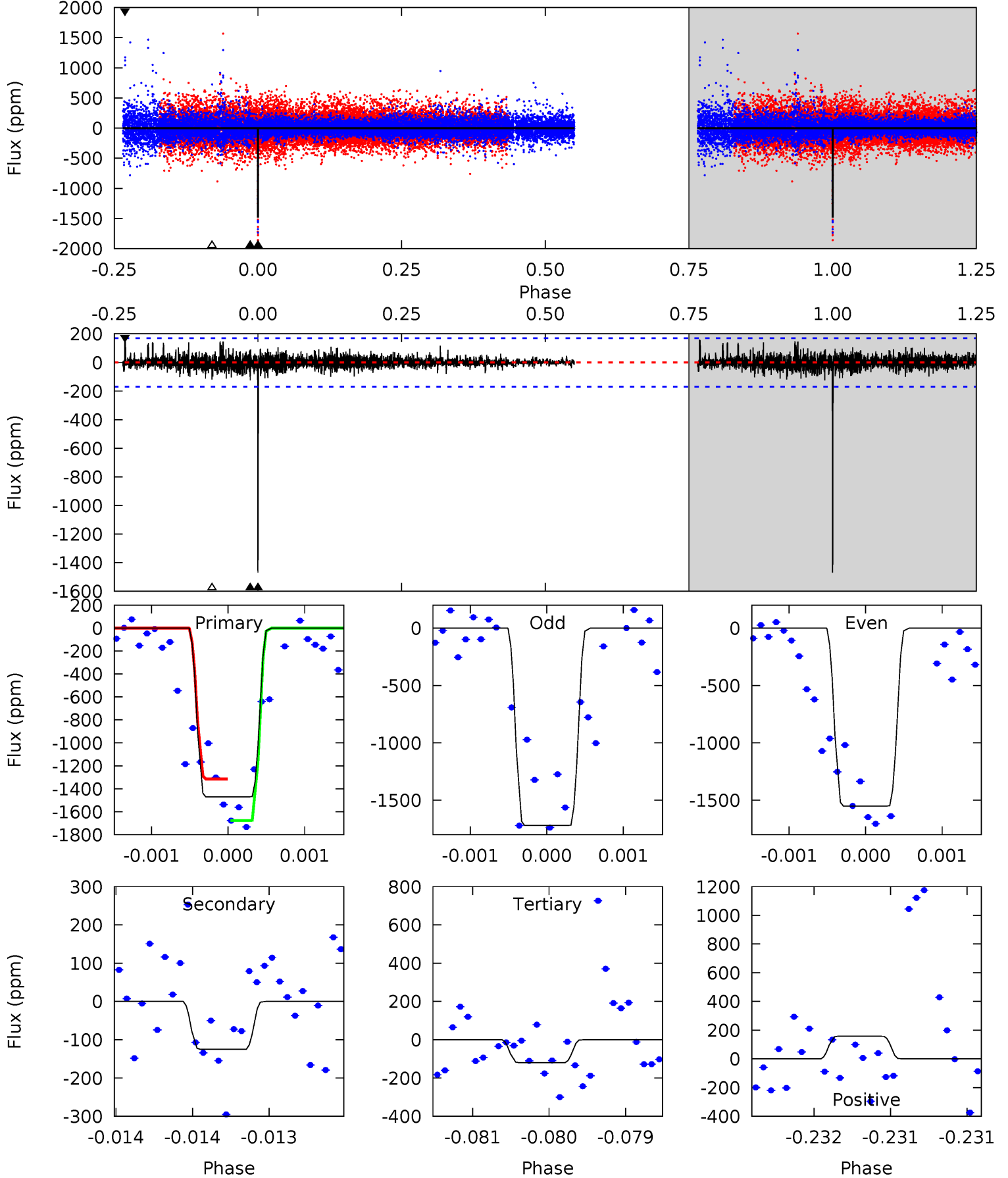
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.17	5.68	5.45	8.65	5.19	2.87	1.93	0.72	-2.48	0.23	-2.97	4.65	1.55	0.58	6.26



Alt Model-Shift Uniqueness Test

010120296-03, P = 333.060217 Days, E = 188.803794 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
48.1	4.08	3.91	5.14	5.55	3.45	0.94	44.2	42.9	0.17	-1.06	2.01	1.37	0.10	5.43



Stellar Parameters For KIC 010120296

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5716^{+189}_{-189}	$4.360^{+0.180}_{-0.180}$	$-0.220^{+0.300}_{-0.300}$	$1.015^{+0.279}_{-0.186}$	$0.862^{+0.130}_{-0.070}$	$1.160^{+0.996}_{-0.566}$
	+3%/-3%	+4%/-4%	+136%/-136%	+27%/-18%	+15%/-8%	+86%/-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 010120296-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-618 ± 109	$2.82^{+1.26}_{-1.18}$	373^{+29}_{-25}	5614^{+1730}_{-817}	34509^{+59629}_{-17855}
Alt.	-125 ± 31	$5.33^{+1.41}_{-1.25}$	375^{+29}_{-24}	3307^{+287}_{-222}	1944^{+1539}_{-820}

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 $A_{obs} \gg 1.0$

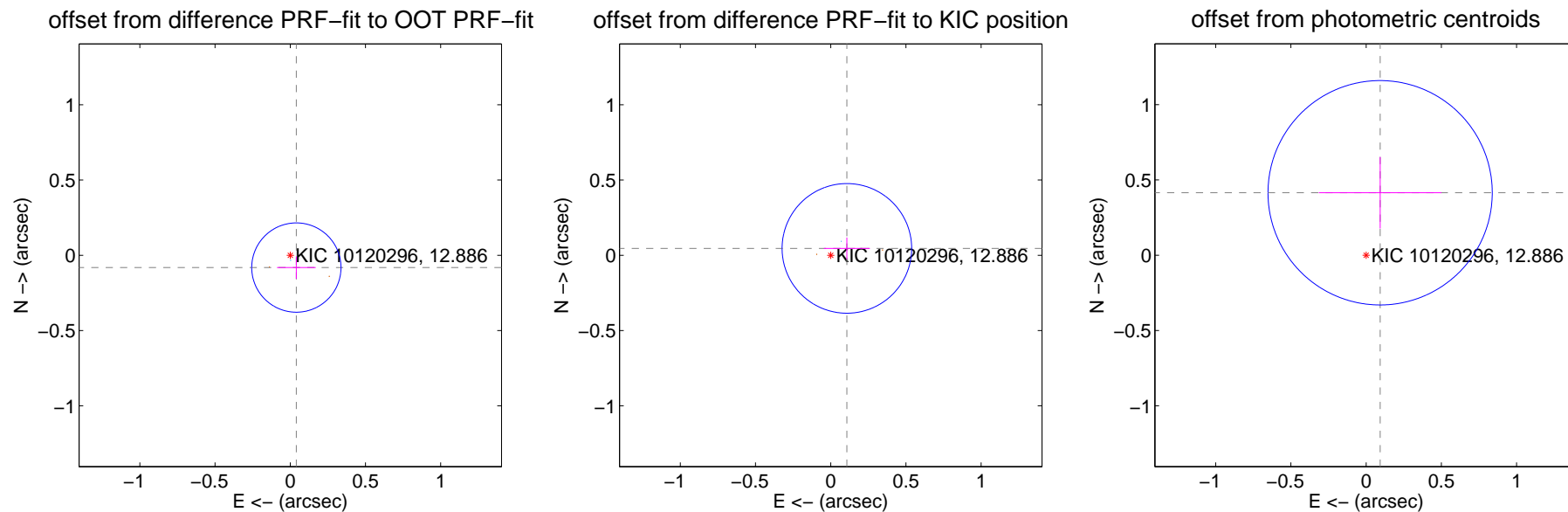
DV Centroid Data

Supplemental centroid analysis for 010120296-03. Kepler magnitude: 12.89. Transit SNR 3.50

There are 1 quarters with good PRF difference image offsets

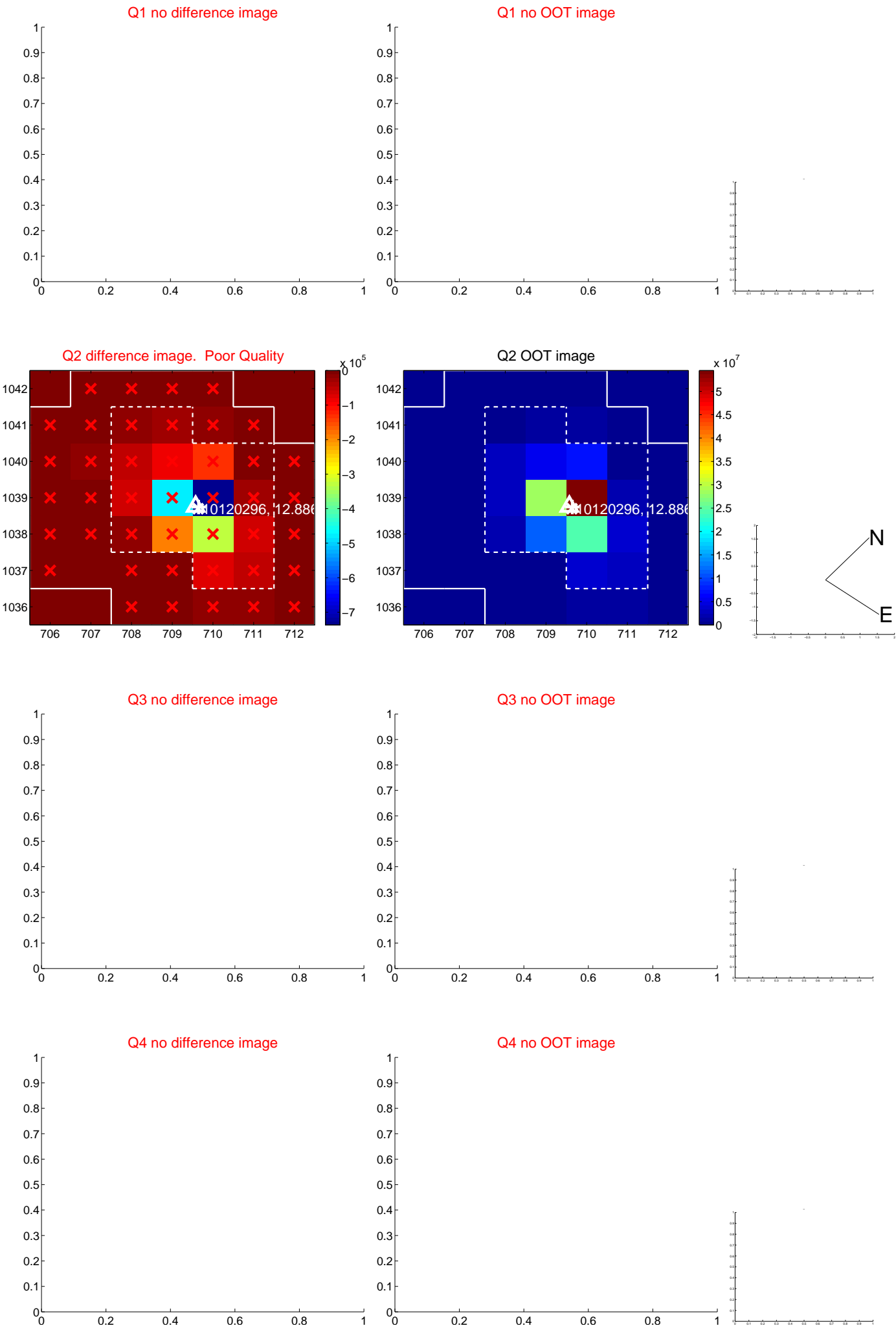
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.091 ± 0.099	0.92	-0.041 ± 0.128	-0.082 ± 0.074
PRF-fit source offset from KIC position	0.117 ± 0.144	0.81	-0.107 ± 0.153	0.046 ± 0.073
photometric centroid source offset	0.43 ± 0.25	1.71	-0.09 ± 0.41	0.41 ± 0.24

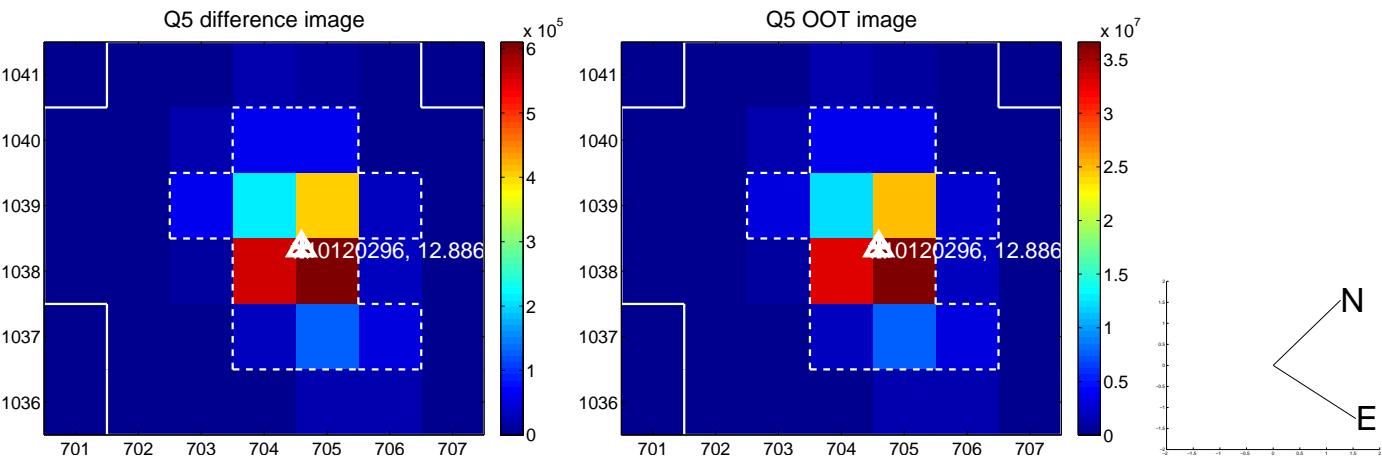


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

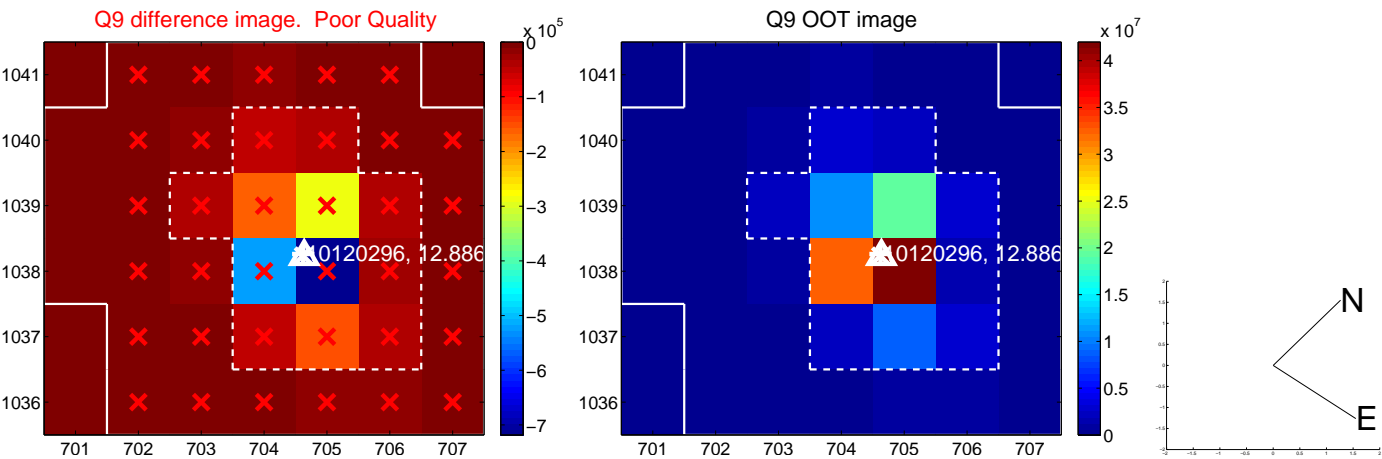
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



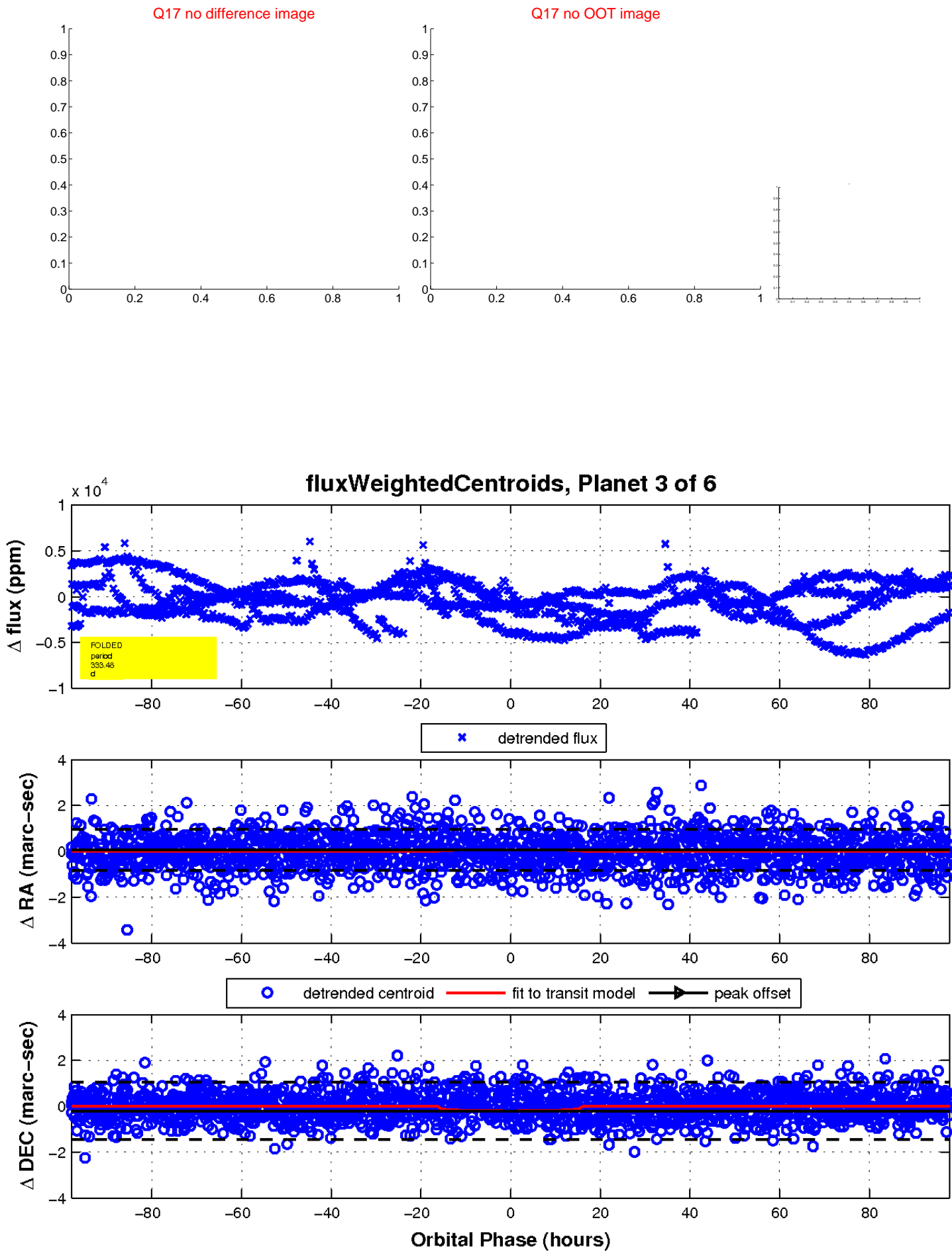
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

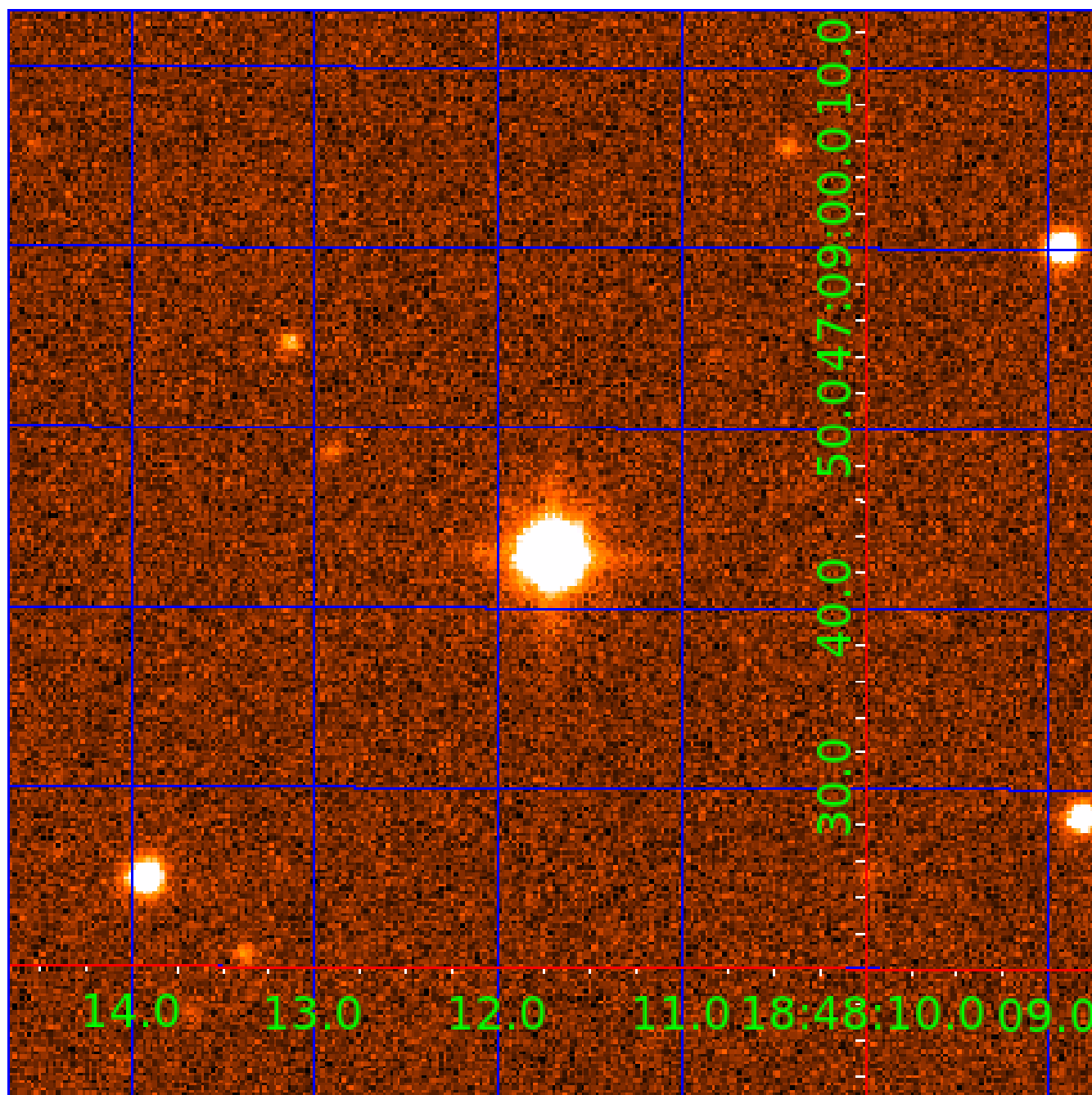


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010120296

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})
010120296-02	OBS	No	304.562260	208.218429	983.7	2.995	19.9	7.0	1.01	5716	3.41	1.39
010120296-03	OBS	No	333.478170	188.606770	743.7	32.641	16.0	3.5	1.01	5716	2.77	1.23
010120296-04	OBS	No	277.558750	147.270358	1003.3	3.591	15.7	9.0	1.01	5716	3.19	1.57
010120296-06	OBS	No	201.159398	263.569559	639.6	3.000	14.1	-1.0	1.01	5716	2.55	2.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010120296-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010120296-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010120296-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010120296-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

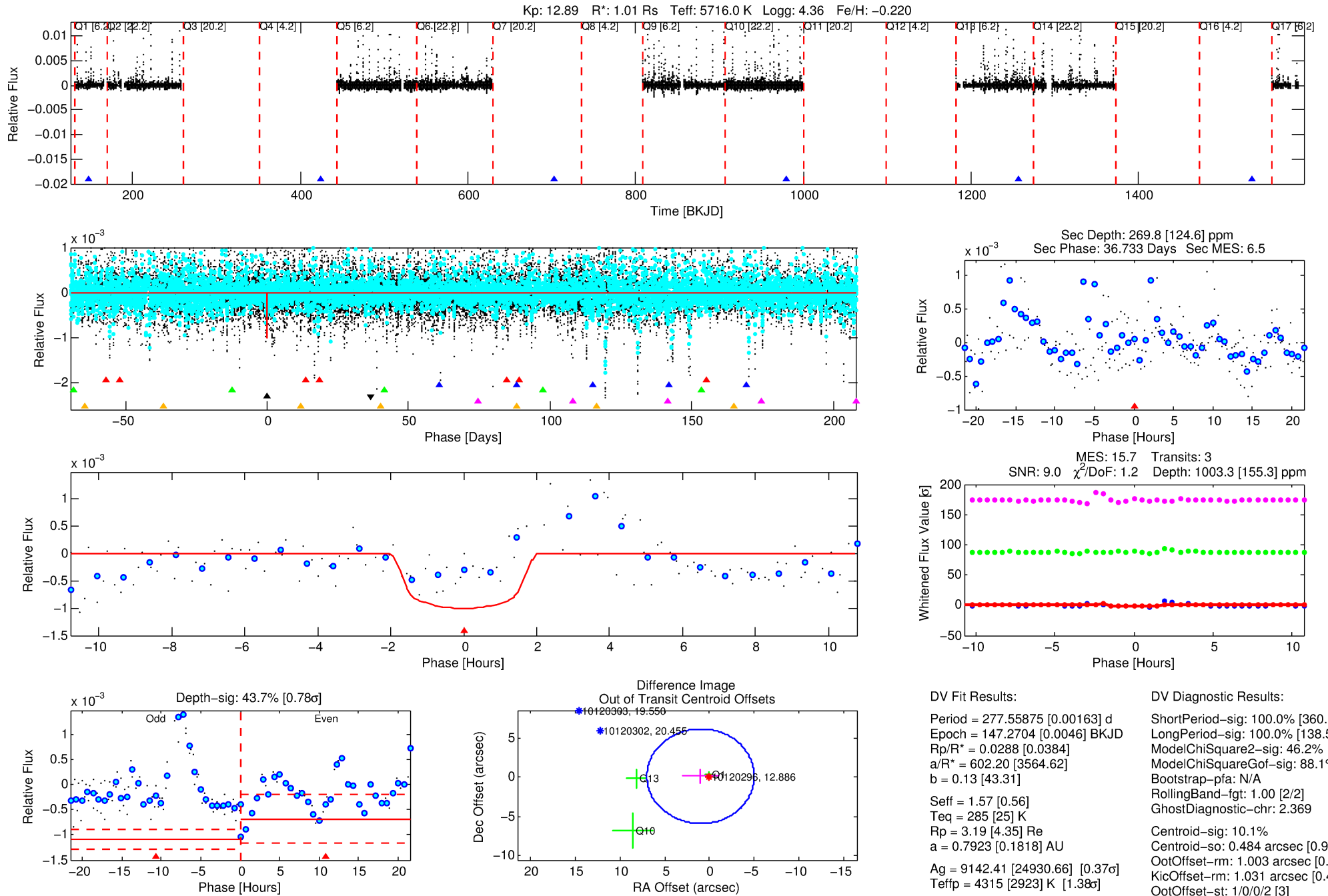
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010120296-04

No Significant Match Found

DV One-Page Summary

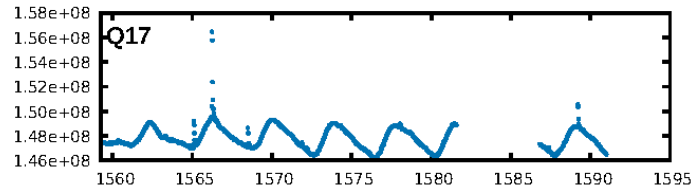
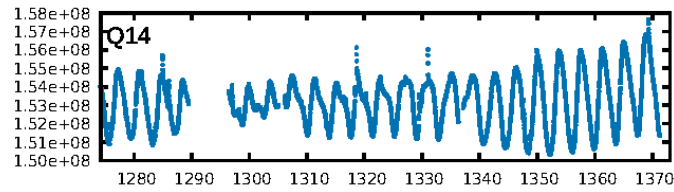
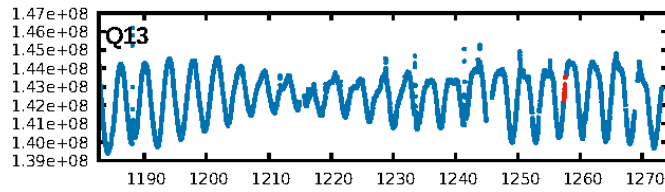
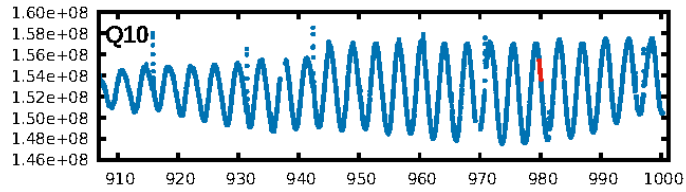
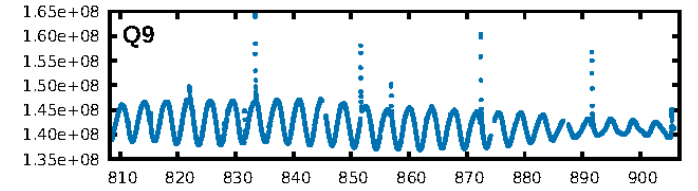
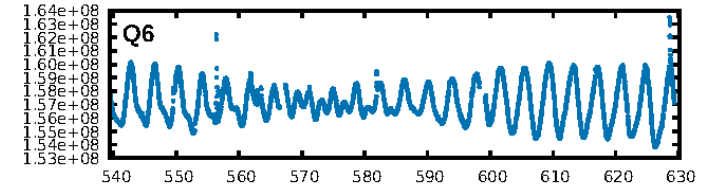
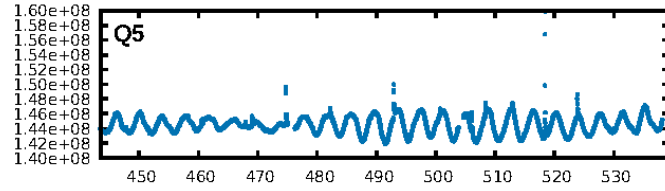
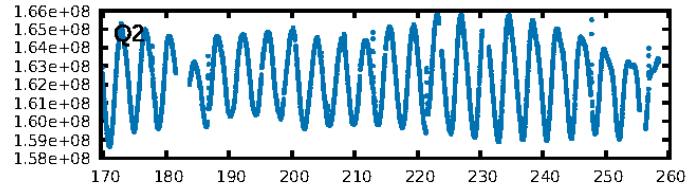
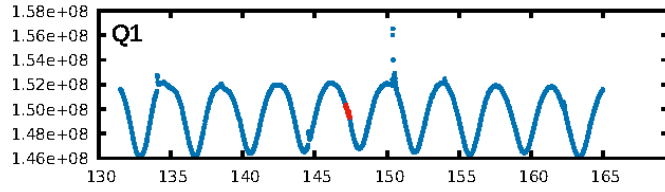
KIC: 10120296 Candidate: 4 of 6 Period: 277.559 d



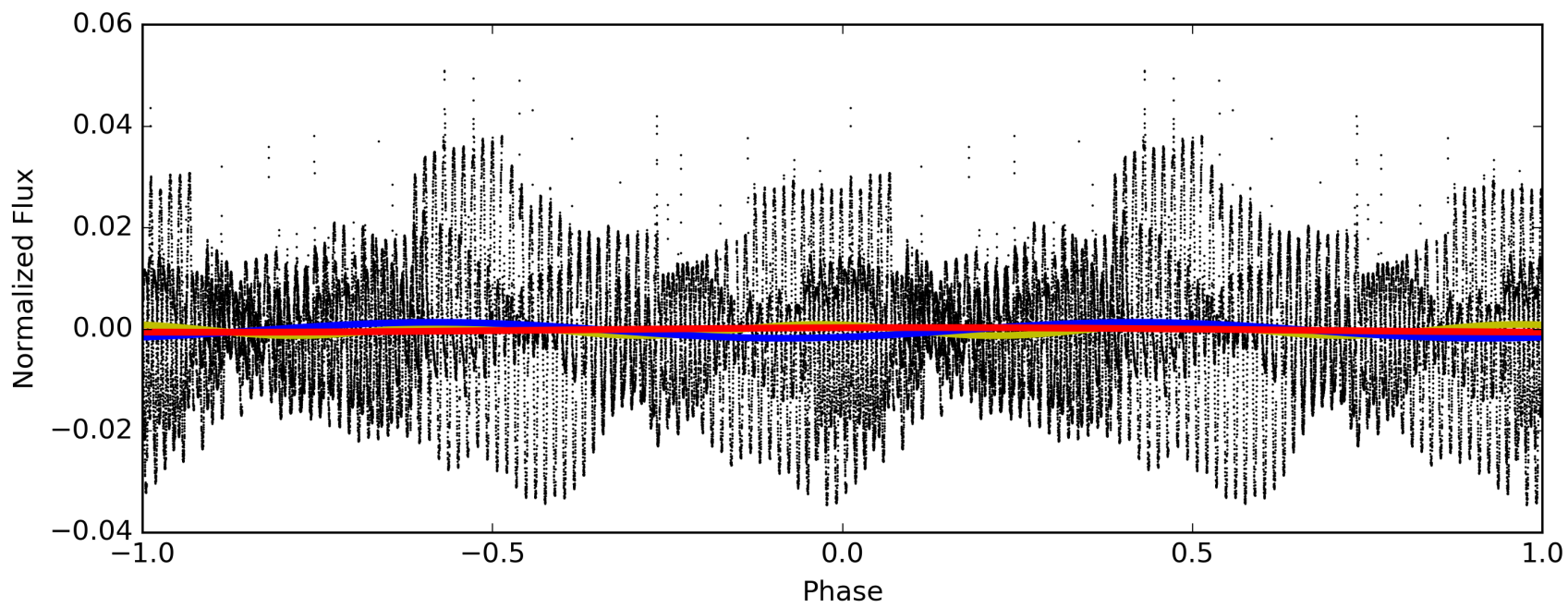
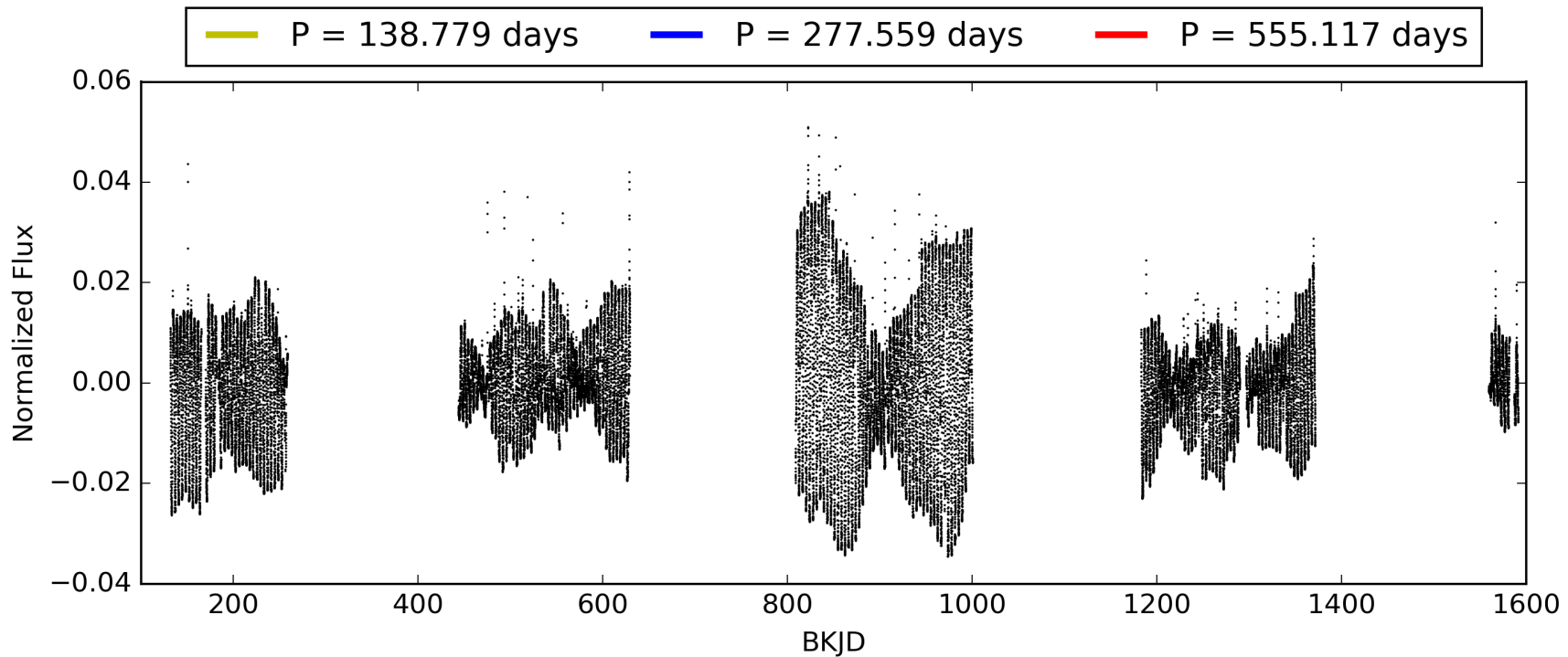
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:30:57 Z

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

TCE 010120296-04, PDC Light Curves

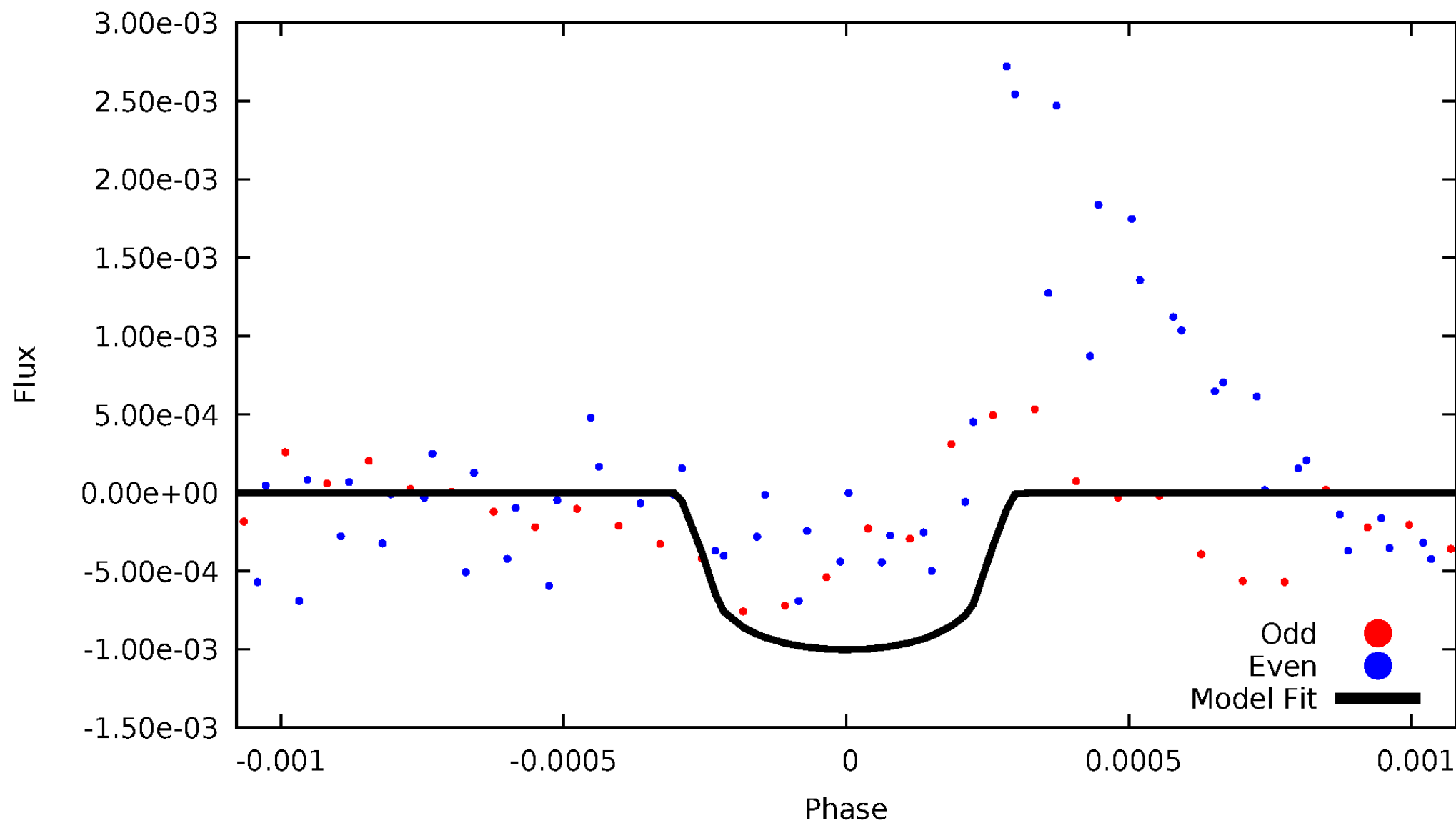


TCE 010120296-04



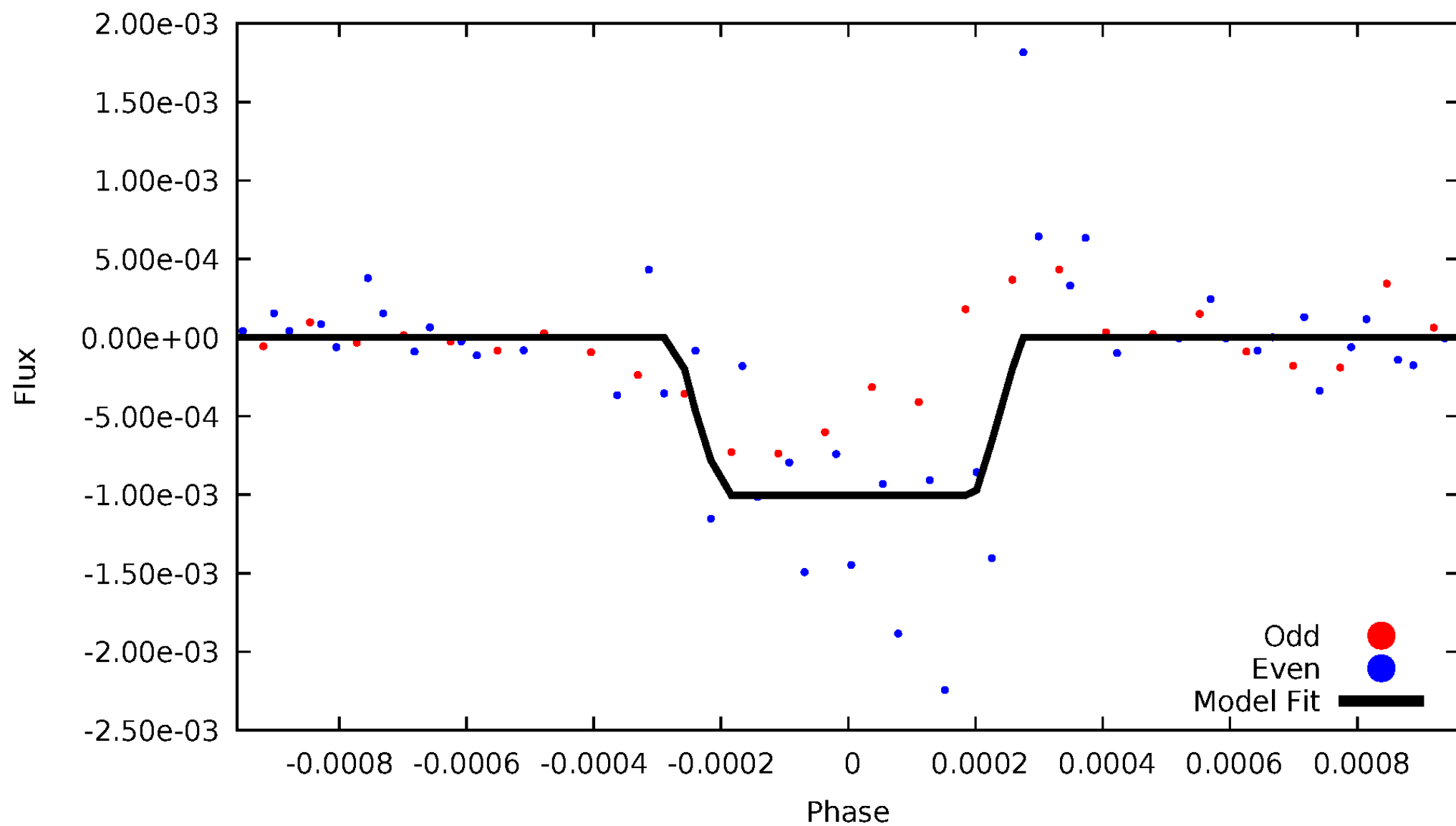
DV Odd/Even

TCE 010120296-04



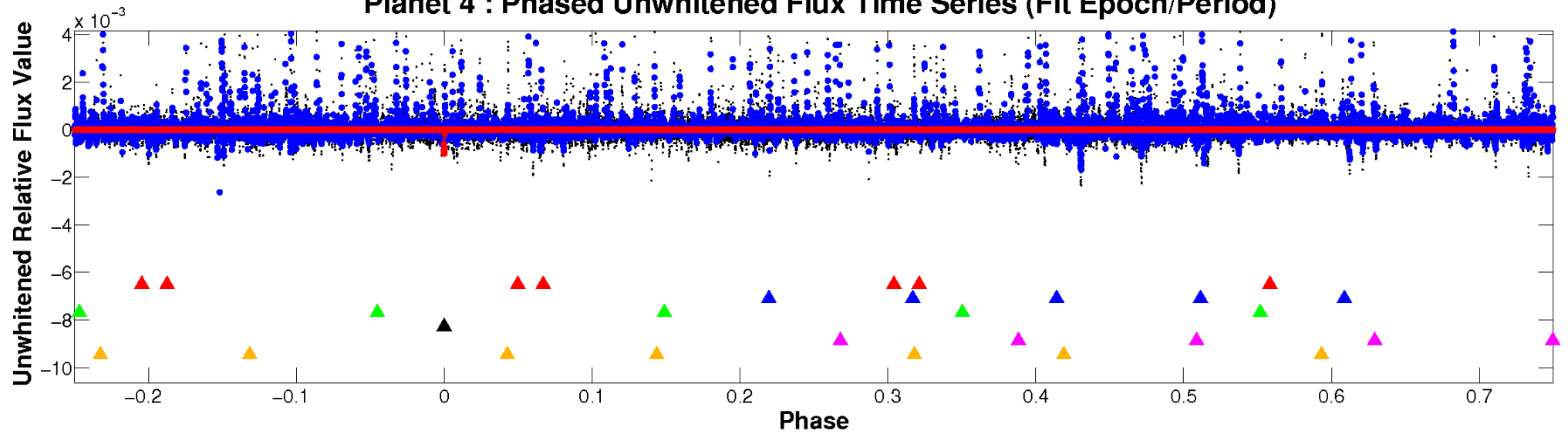
ALT Odd/Even

TCE 010120296-04

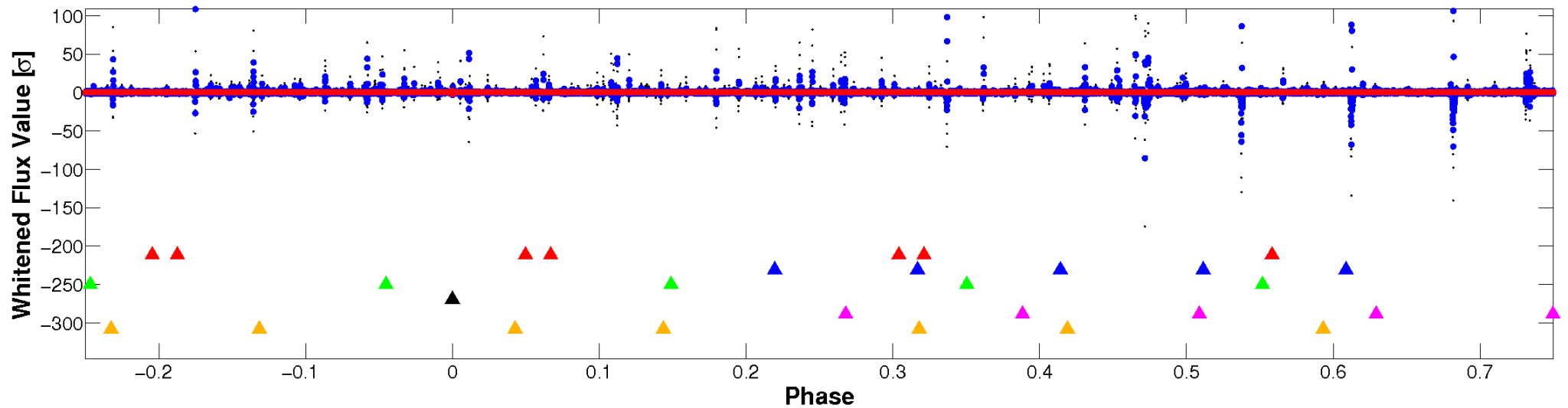


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)



Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



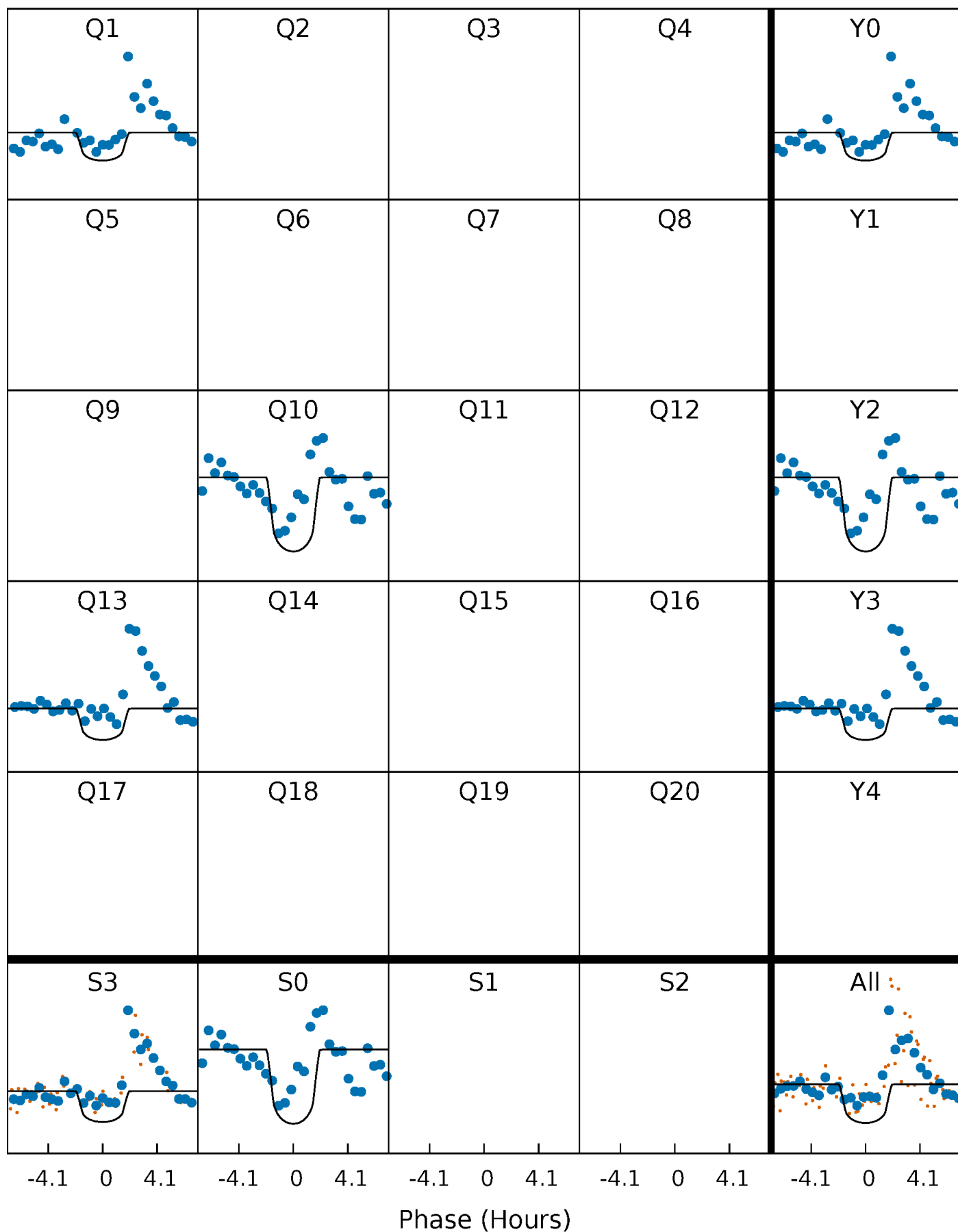
PDC Quarter-Phased Transit Curves

TCE 010120296-04 P=277.558750 Days $T_0=147.270358$ (BKJD)



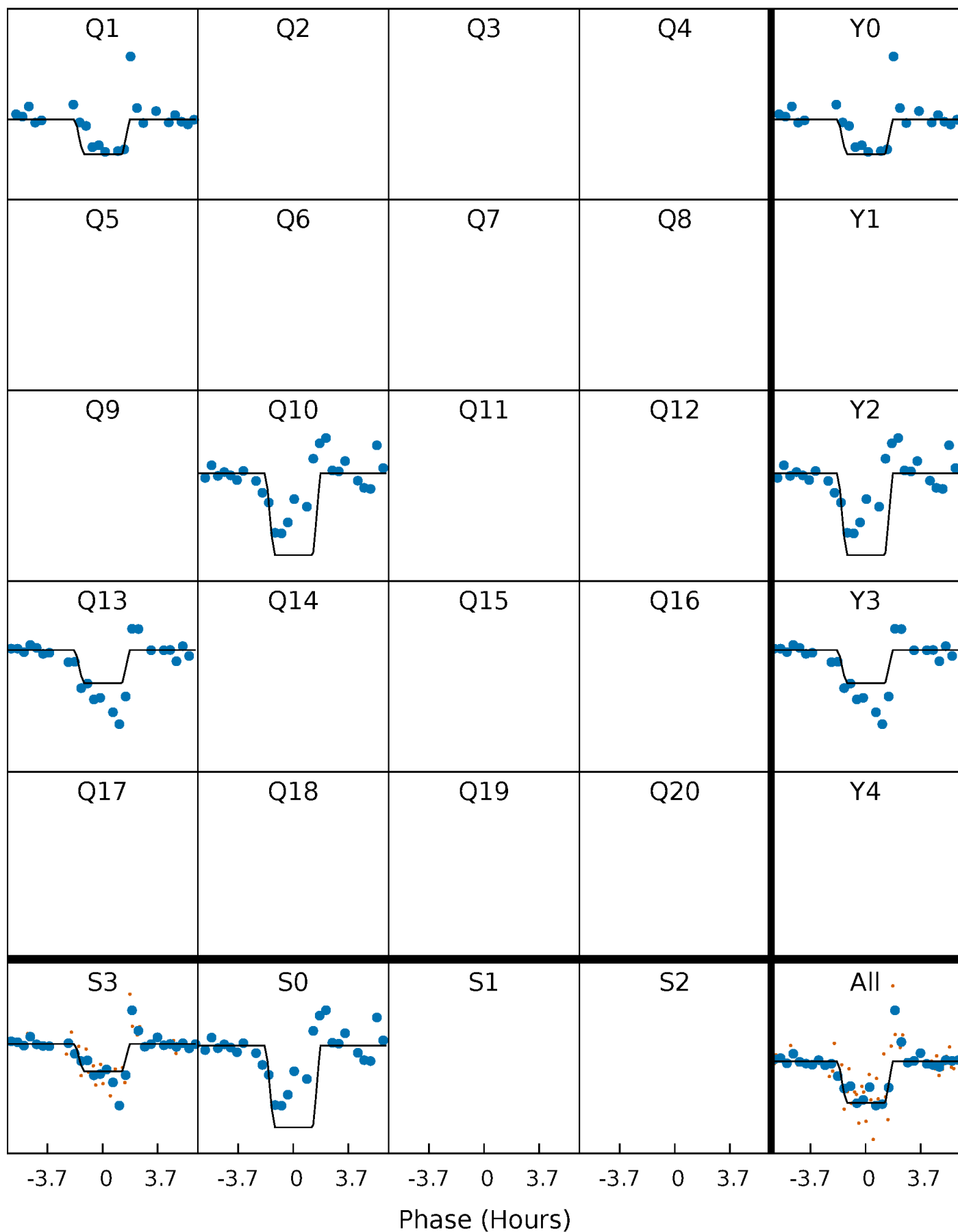
DV Quarter-Phased Transit Curves

TCE 010120296-04 $P=277.558750$ Days $T_0=147.270358$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

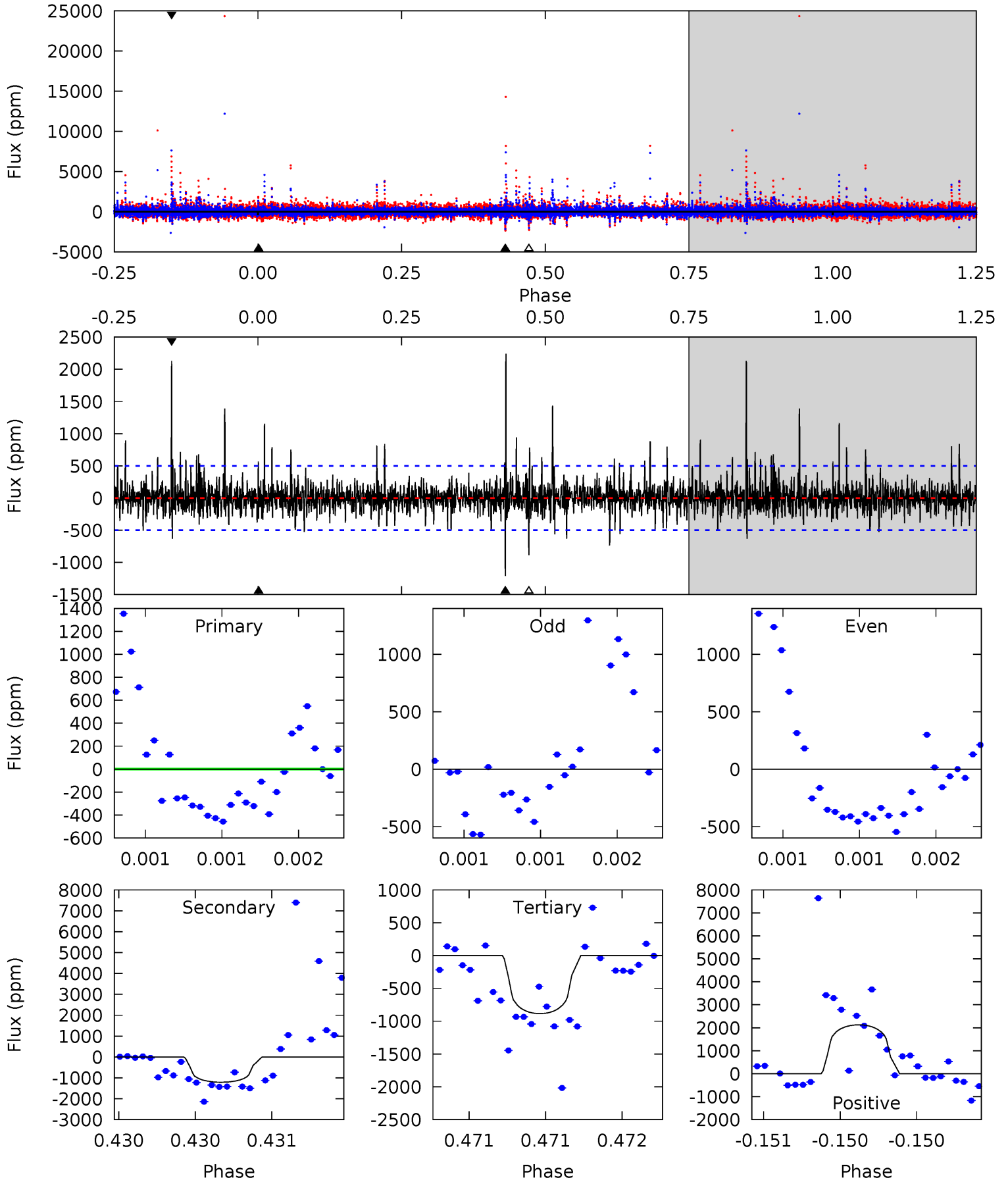
TCE 010120296-04 $P=277.558087$ Days $T_0=147.272814$ (BKJD)



DV Model-Shift Uniqueness Test

010120296-04, P = 277.558750 Days, E = 147.270358 Days

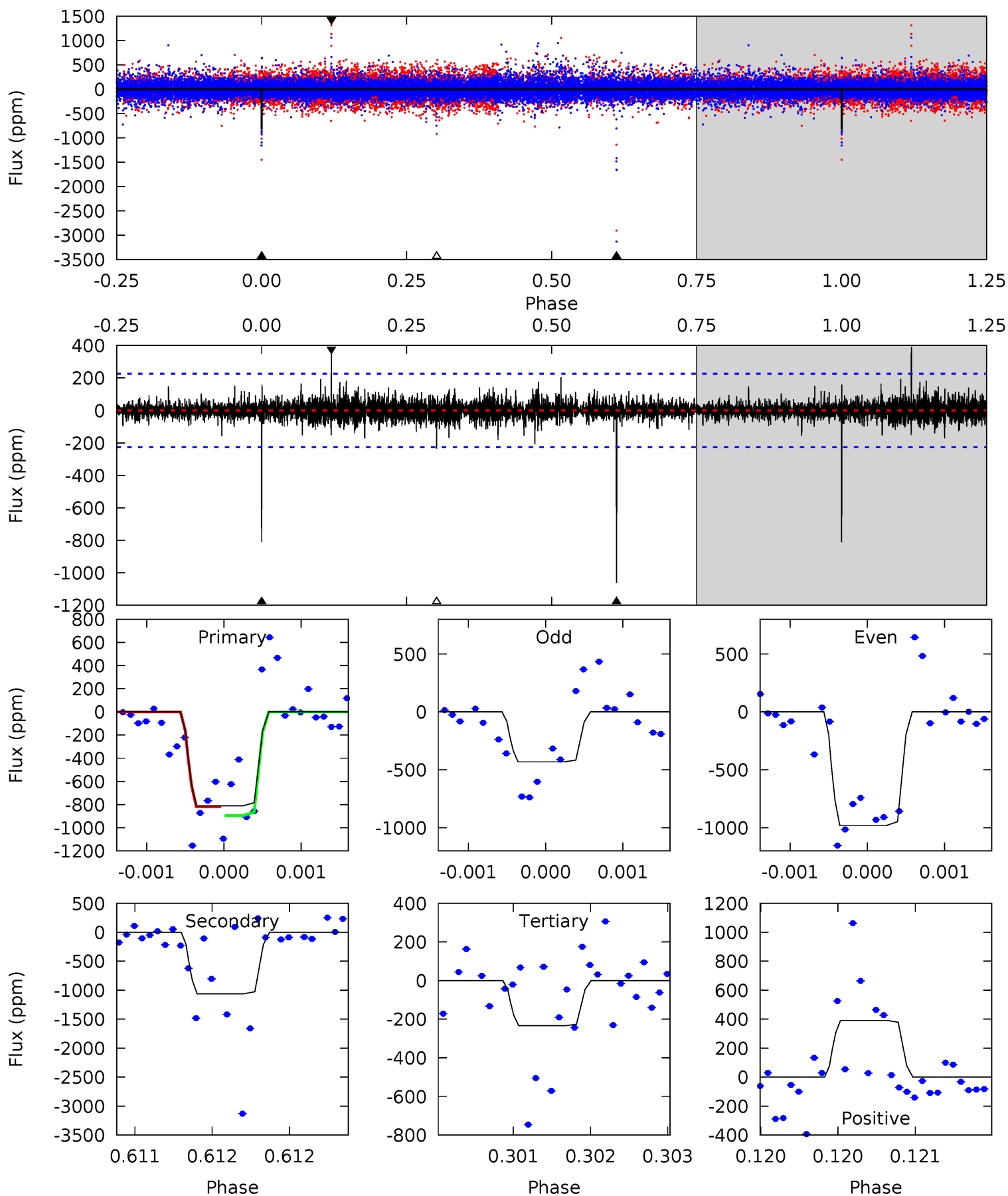
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.57	13.4	9.83	23.6	5.53	3.42	1.96	-6.26	-20.0	3.59	-10.2	0.10	0.84	0.65	1.96



Alt Model-Shift Uniqueness Test

010120296-04, P = 277.558087 Days, E = 147.272814 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.9	26.1	5.75	9.63	5.57	3.47	0.93	14.2	10.3	20.3	16.5	4.91	1.29	0.27	0.89



Stellar Parameters For KIC 010120296

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5716^{+189}_{-189}	$4.360^{+0.180}_{-0.180}$	$-0.220^{+0.300}_{-0.300}$	$1.015^{+0.279}_{-0.186}$	$0.862^{+0.130}_{-0.070}$	$1.160^{+0.996}_{-0.566}$
	+3%/-3%	+4%/-4%	+136%/-136%	+27%/-18%	+15%/-8%	+86%/-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 010120296-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1209 ± 90	$4.48^{+3.89}_{-3.02}$	398^{+32}_{-25}	5343^{+4820}_{-1184}	$20765^{+178075}_{-14611}$
Alt.	-1061 ± 41	$4.80^{+3.73}_{-3.21}$	399^{+28}_{-29}	5044^{+3874}_{-1023}	$16146^{+131803}_{-11021}$

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

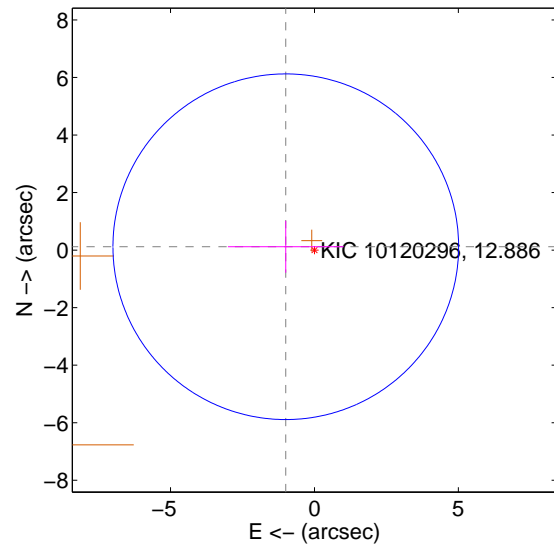
Supplemental centroid analysis for 010120296-04. Kepler magnitude: 12.89. Transit SNR 9.03

There are 0 quarters with good PRF difference image offsets

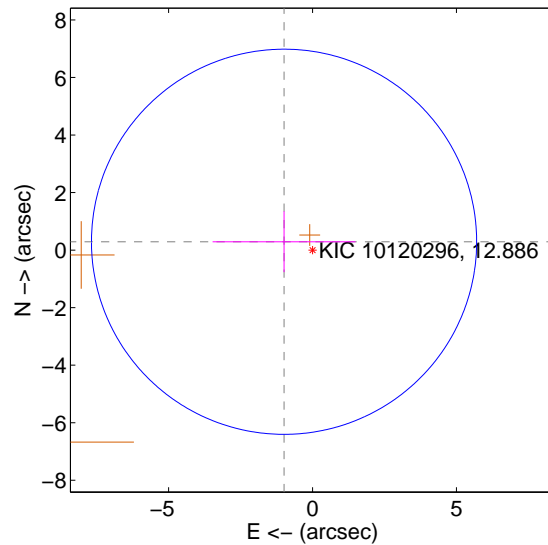
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.003 ± 2.002	0.50	0.996 ± 2.013	0.117 ± 0.902
PRF-fit source offset from KIC position	1.031 ± 2.231	0.46	0.989 ± 2.484	0.289 ± 1.057
photometric centroid source offset	0.48 ± 0.52	0.93	0.39 ± 0.56	-0.28 ± 0.42

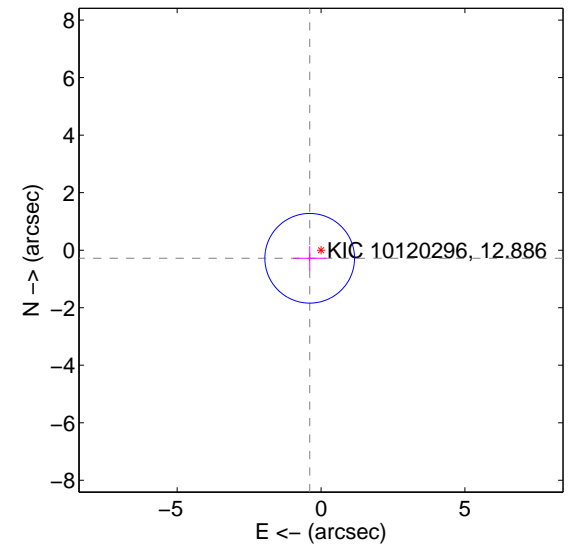
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

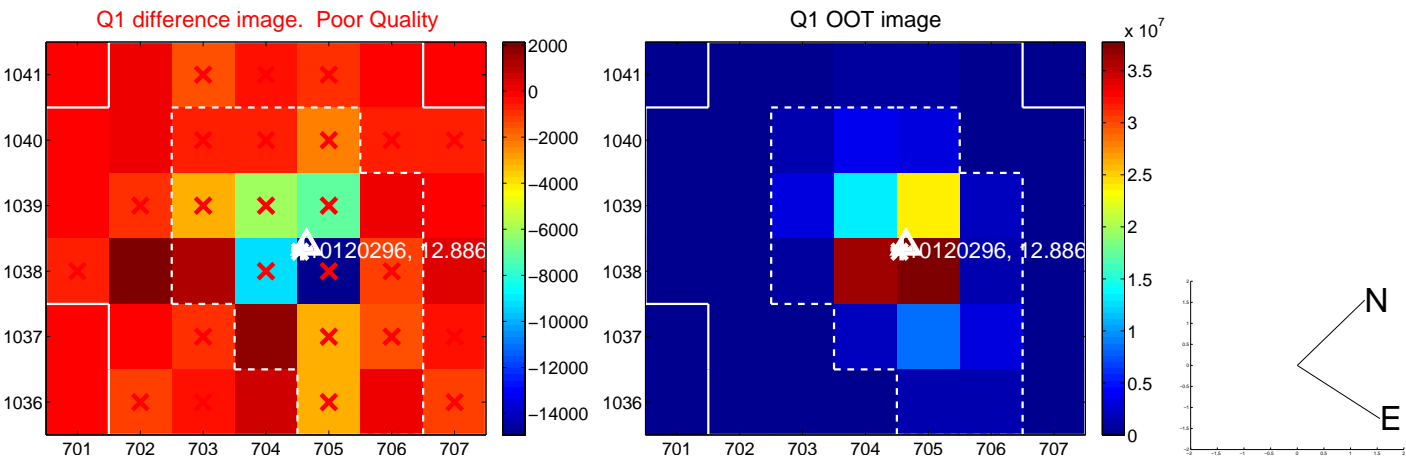


offset from photometric centroids



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.

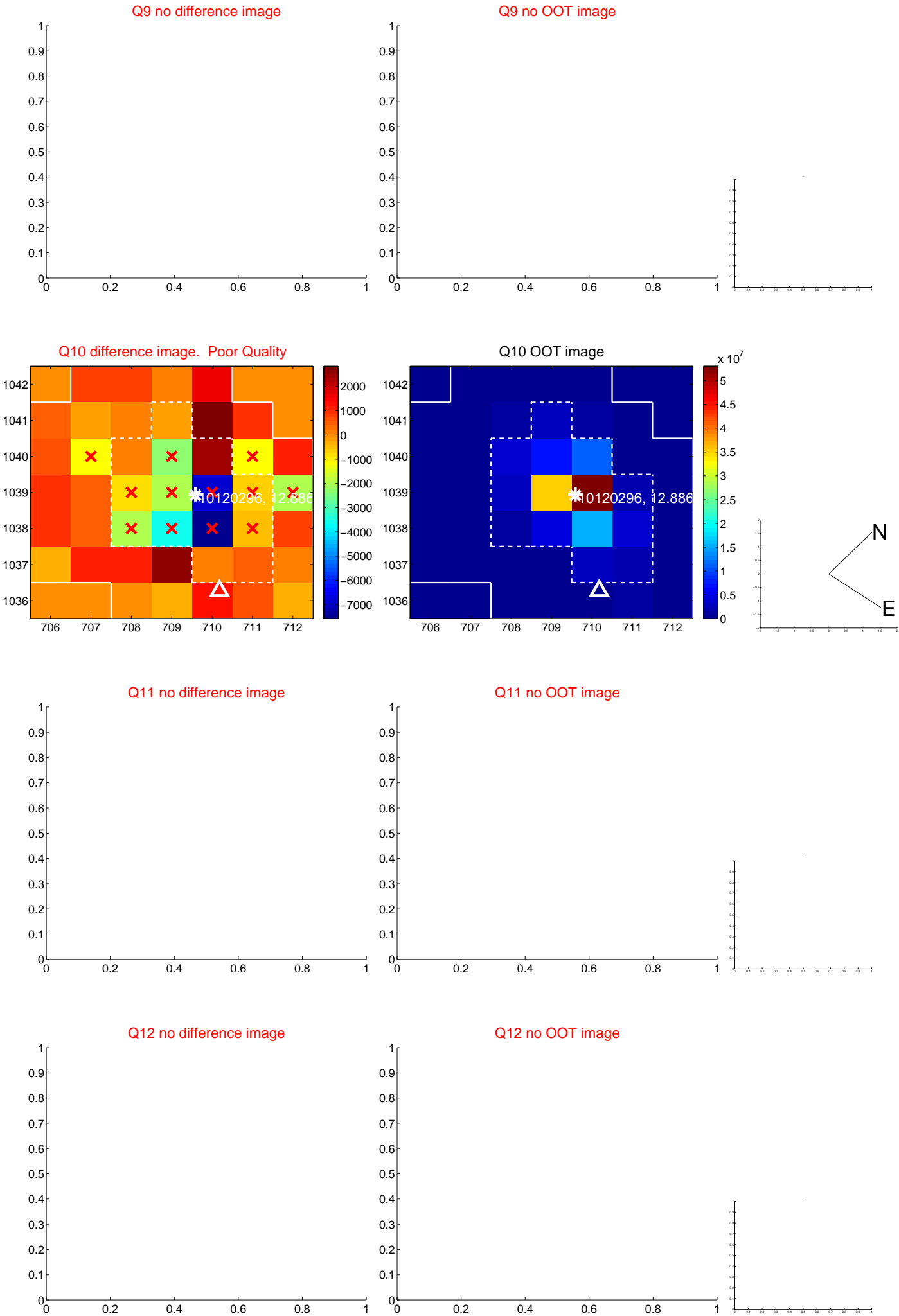
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



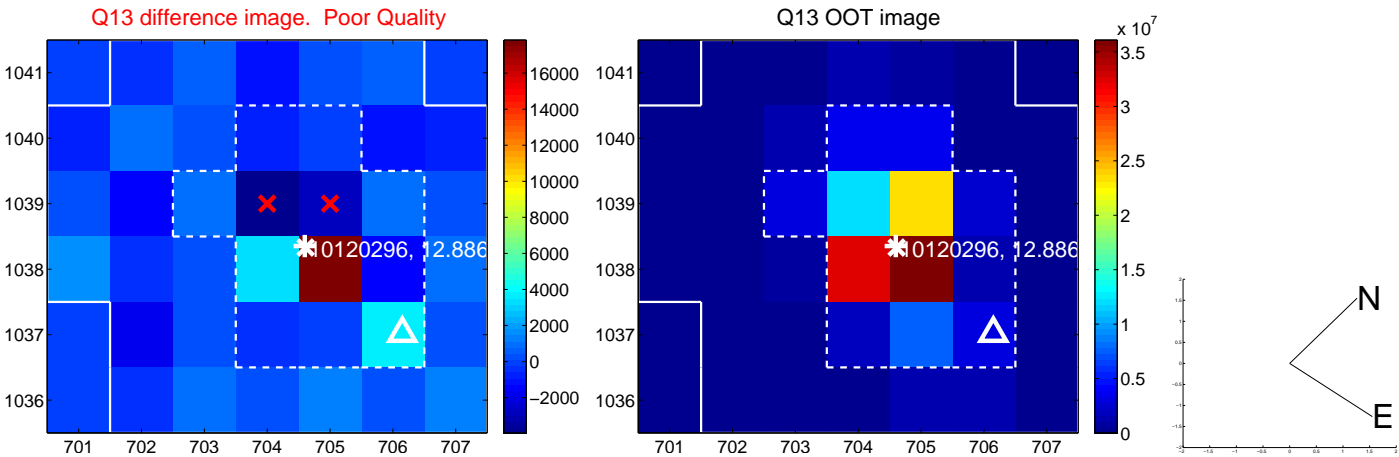
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



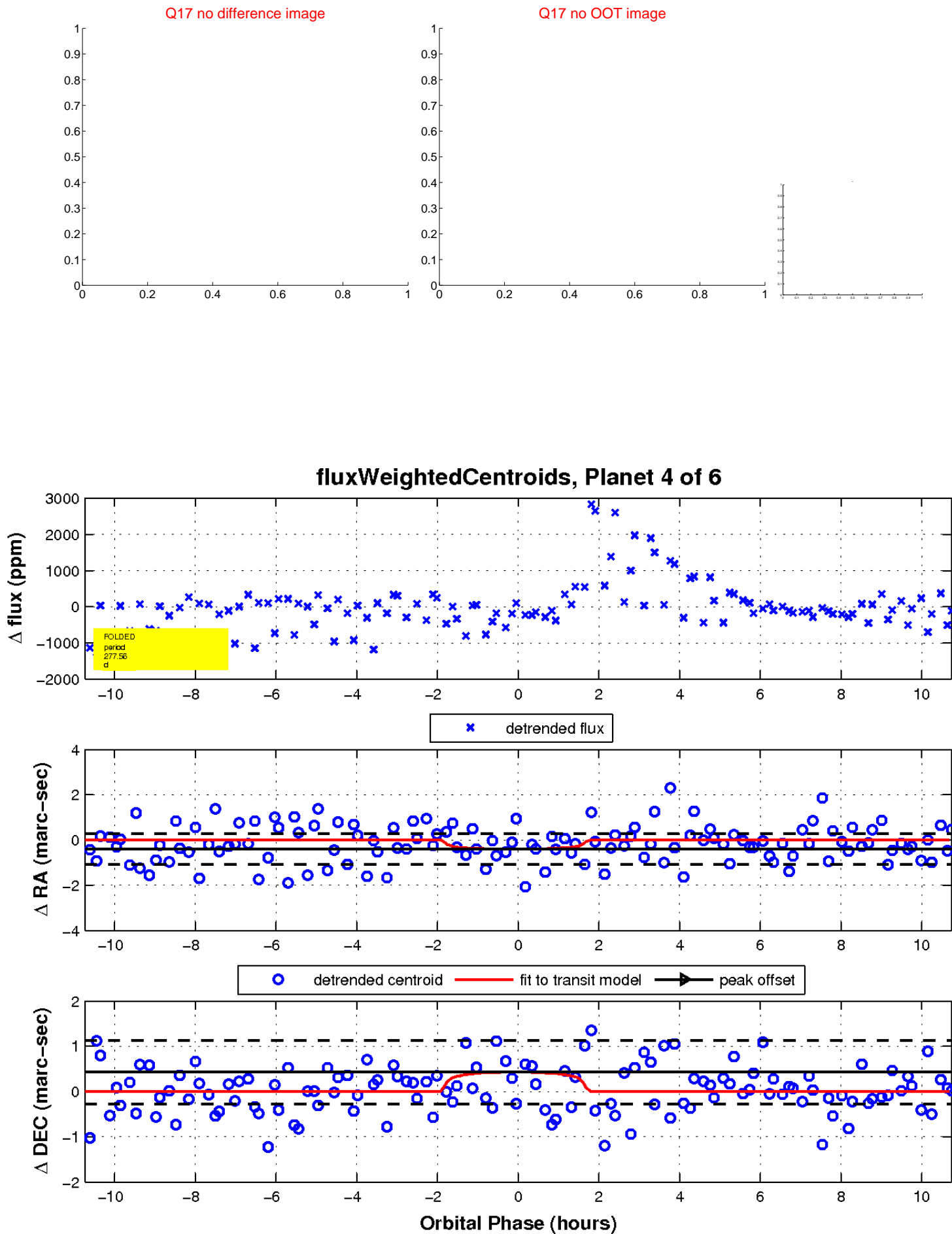
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

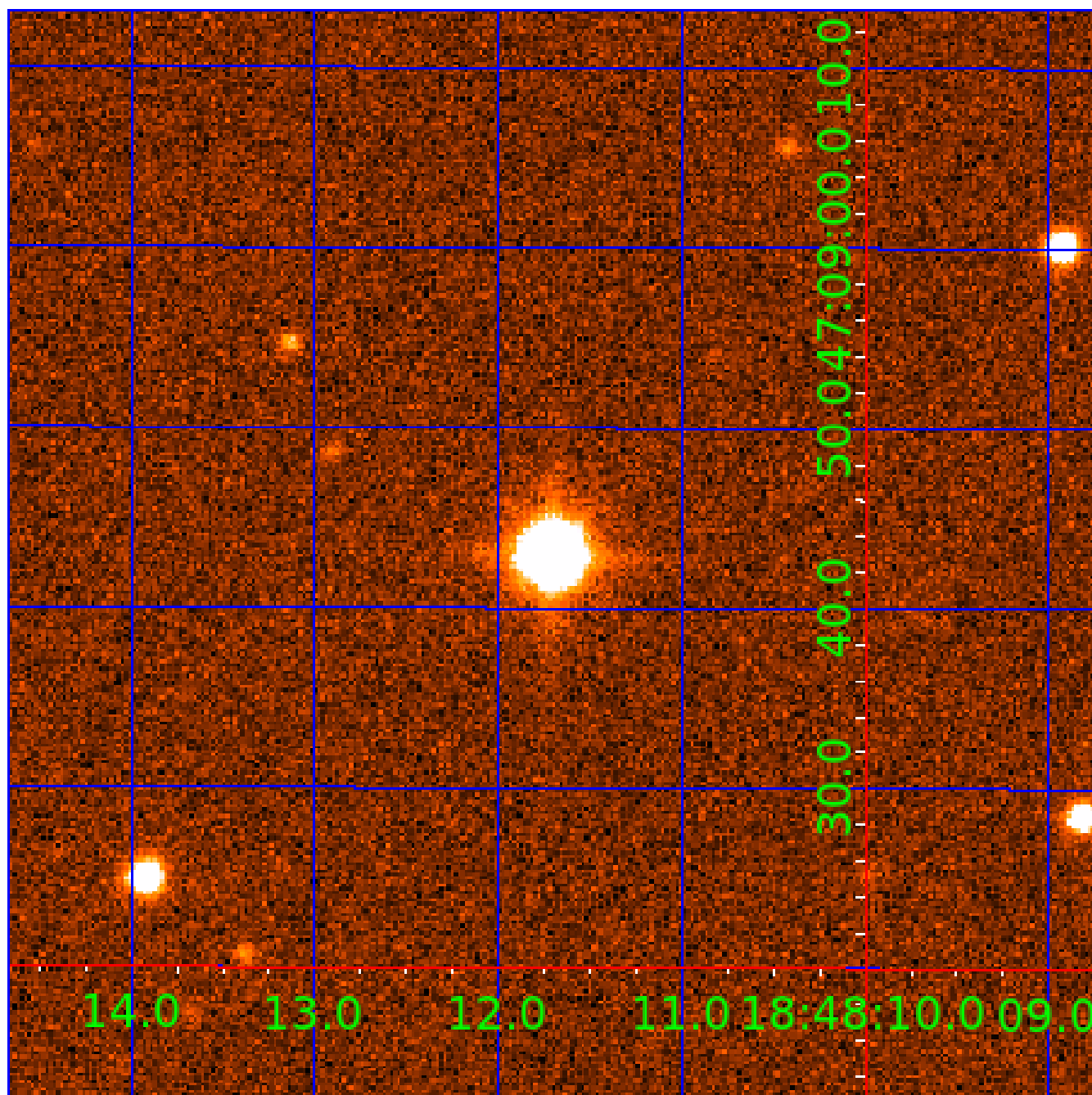


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010120296

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})
010120296-02	OBS	No	304.562260	208.218429	983.7	2.995	19.9	7.0	1.01	5716	3.41	1.39
010120296-03	OBS	No	333.478170	188.606770	743.7	32.641	16.0	3.5	1.01	5716	2.77	1.23
010120296-04	OBS	No	277.558750	147.270358	1003.3	3.591	15.7	9.0	1.01	5716	3.19	1.57
010120296-06	OBS	No	201.159398	263.569559	639.6	3.000	14.1	-1.0	1.01	5716	2.55	2.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010120296-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010120296-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010120296-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010120296-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

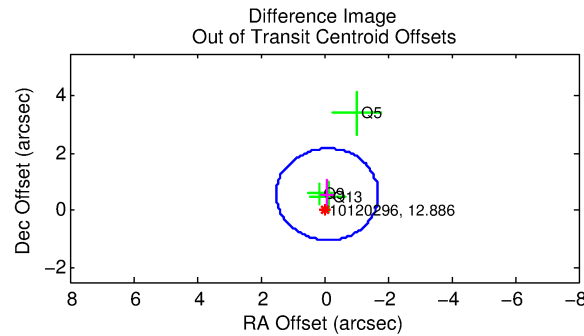
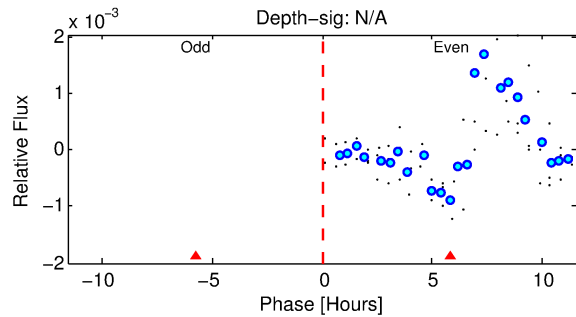
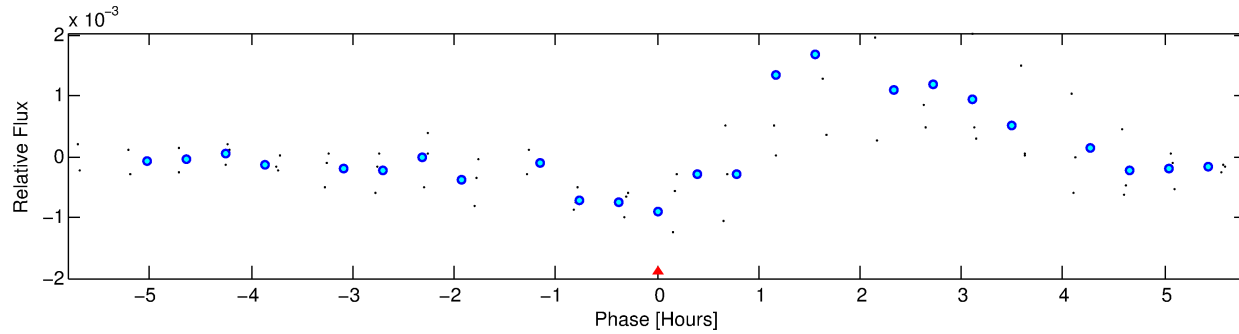
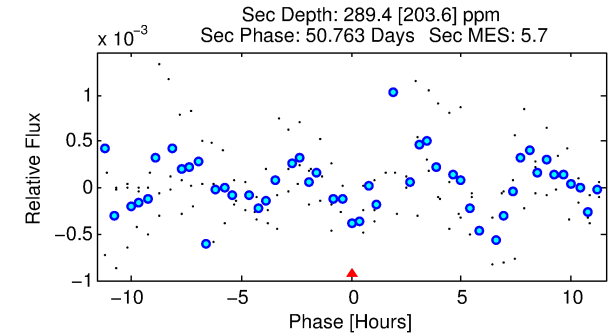
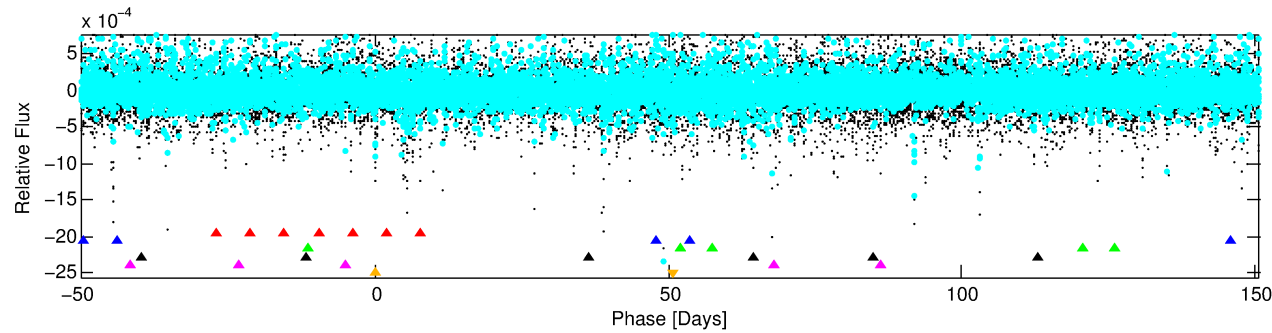
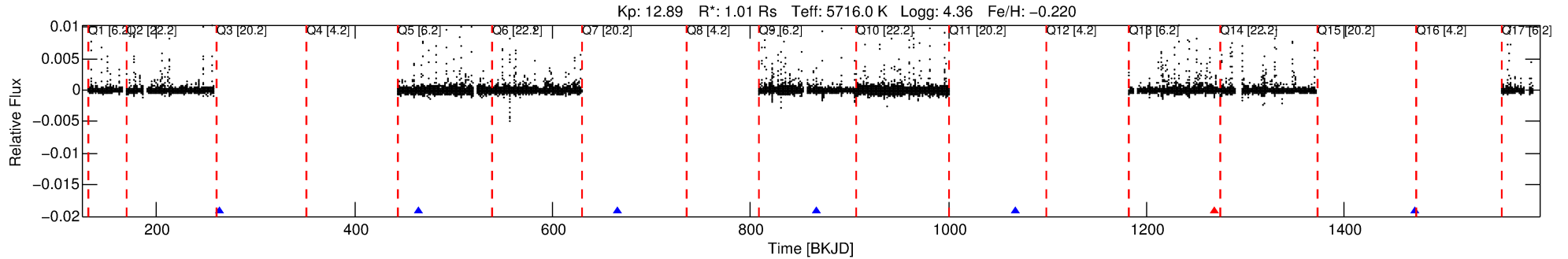
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010120296-06

No Significant Match Found

DV One-Page Summary

KIC: 10120296 Candidate: 6 of 6 Period: 201.159 d



TPS TCE Results:

Period = 201.15940 d
Epoch = 263.5696 BKJD

DV fit results are unavailable

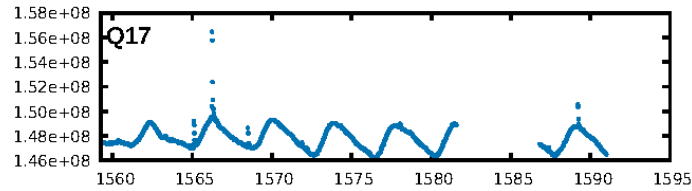
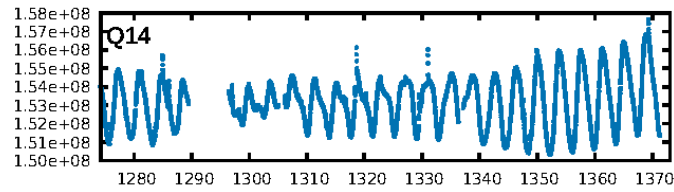
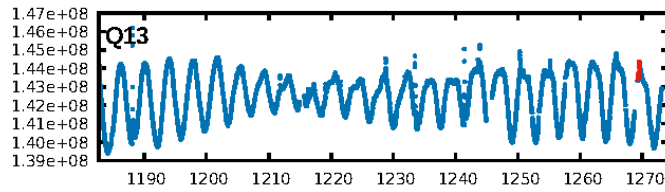
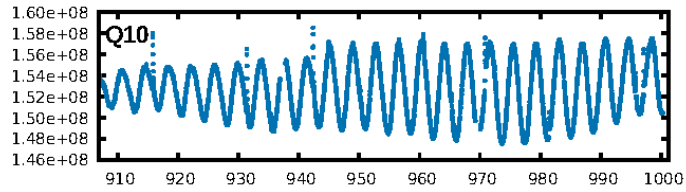
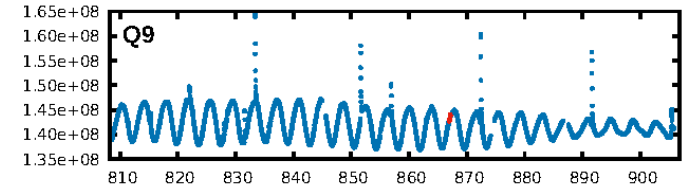
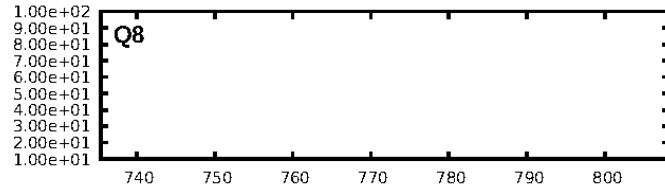
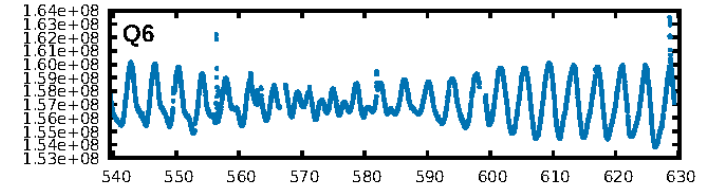
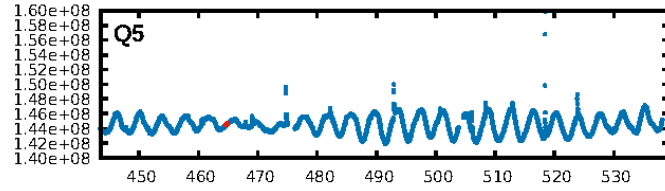
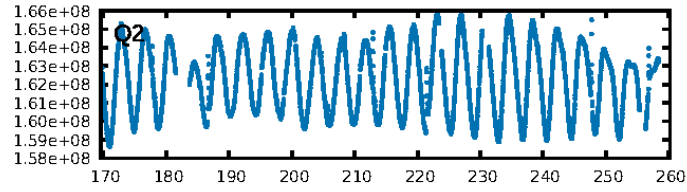
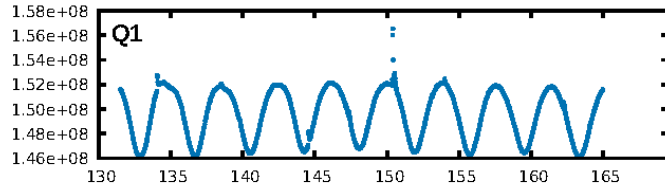
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [32.74σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.67 [2/3]
GhostDiagnostic-chr: -1.588
Centroid-sig: 36.8%
Centroid-so: 0.521 arcsec [1.04σ]
OotOffset-rm: 0.577 arcsec [1.08σ]
KicOffset-rm: 0.663 arcsec [0.73σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

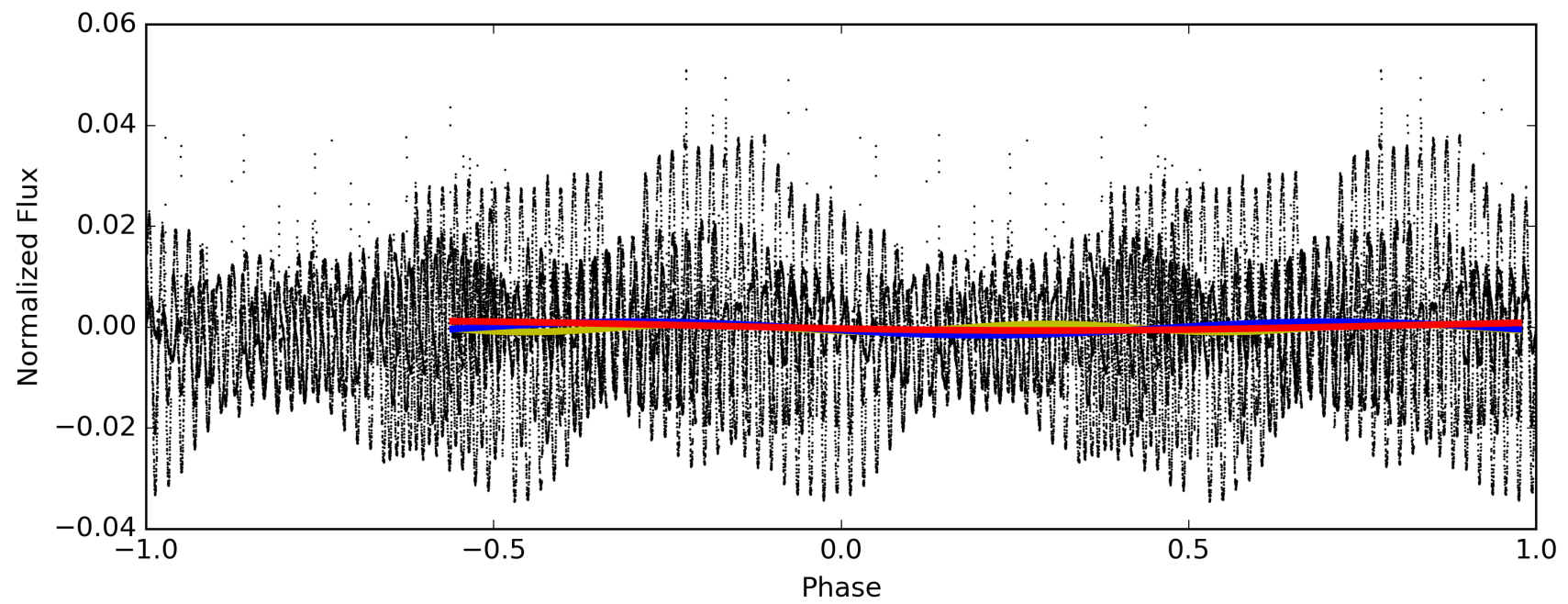
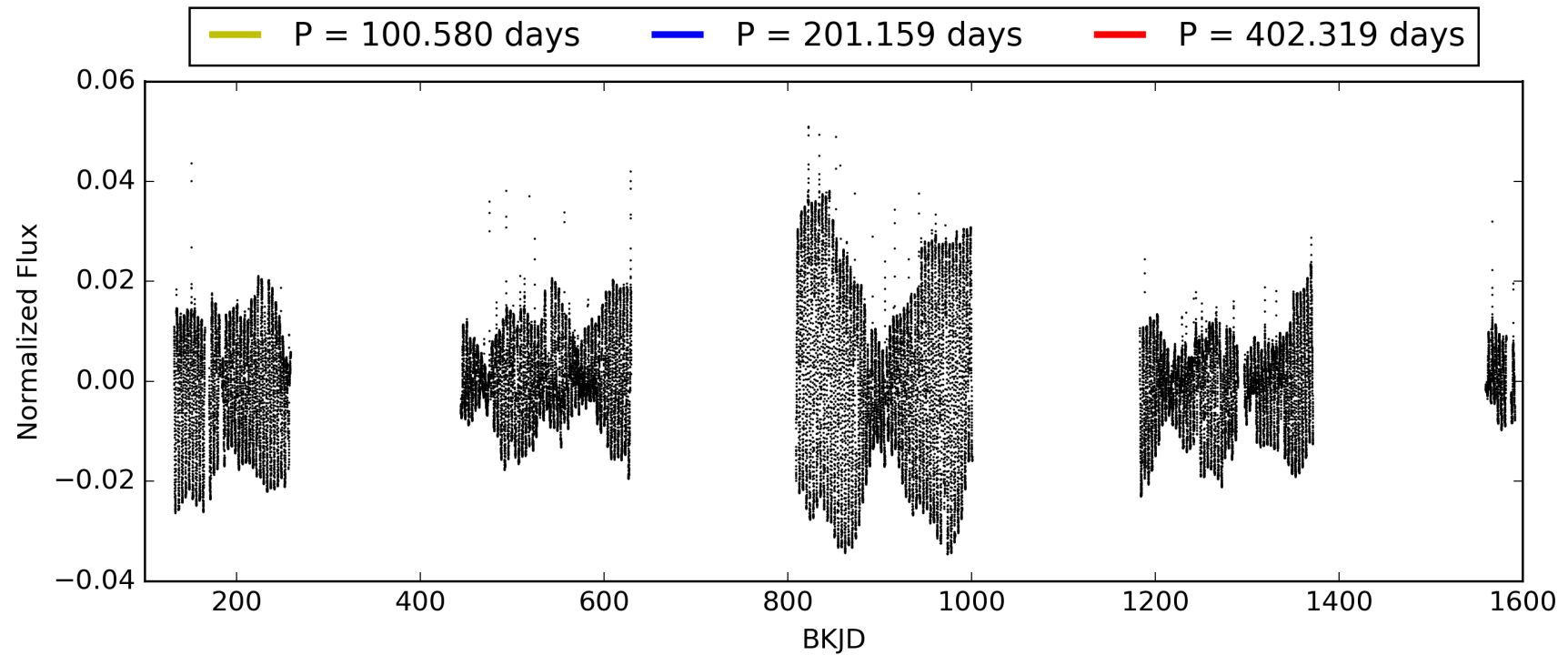
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:31:13 Z

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

TCE 010120296-06, PDC Light Curves

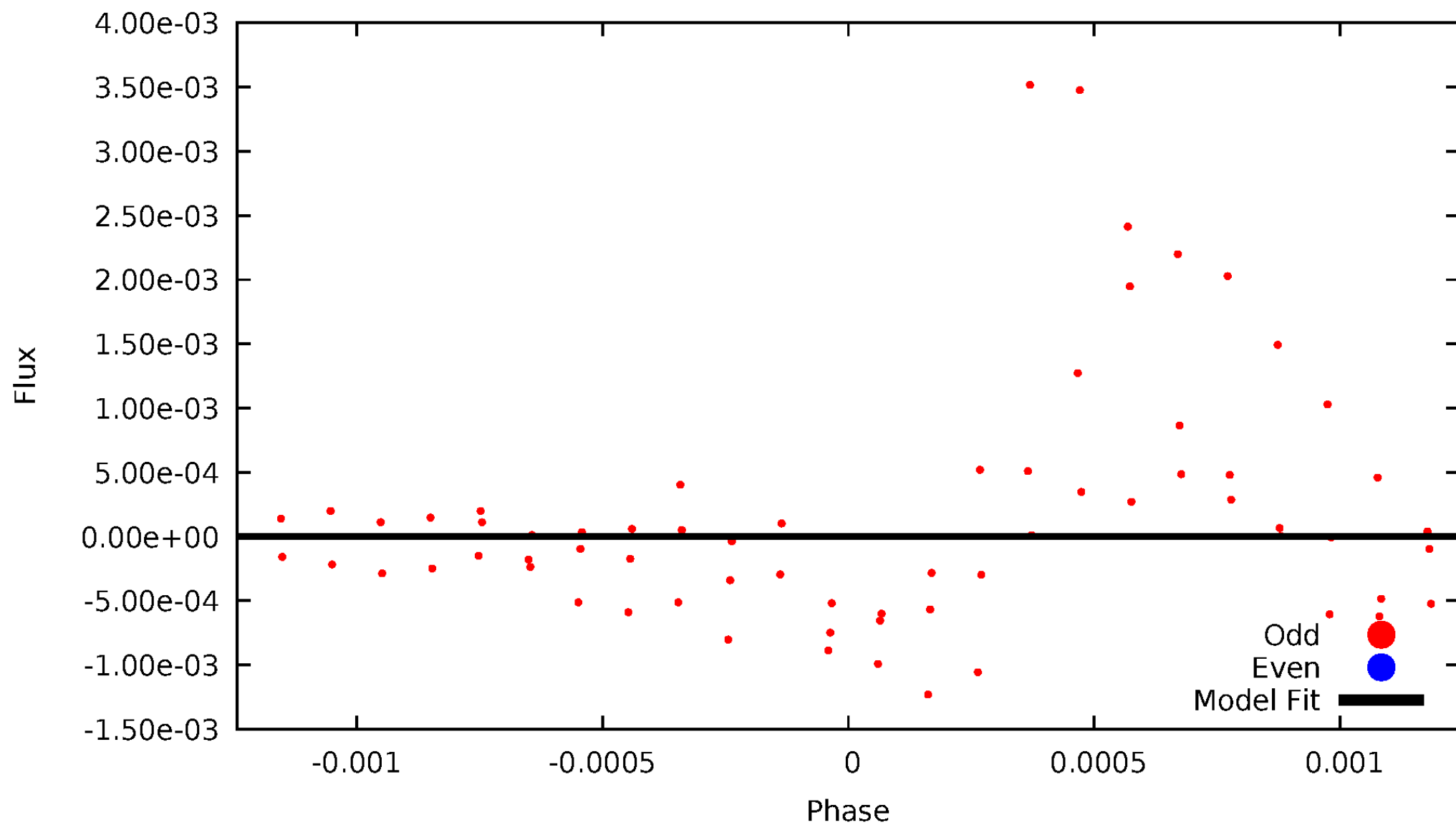


TCE 010120296-06



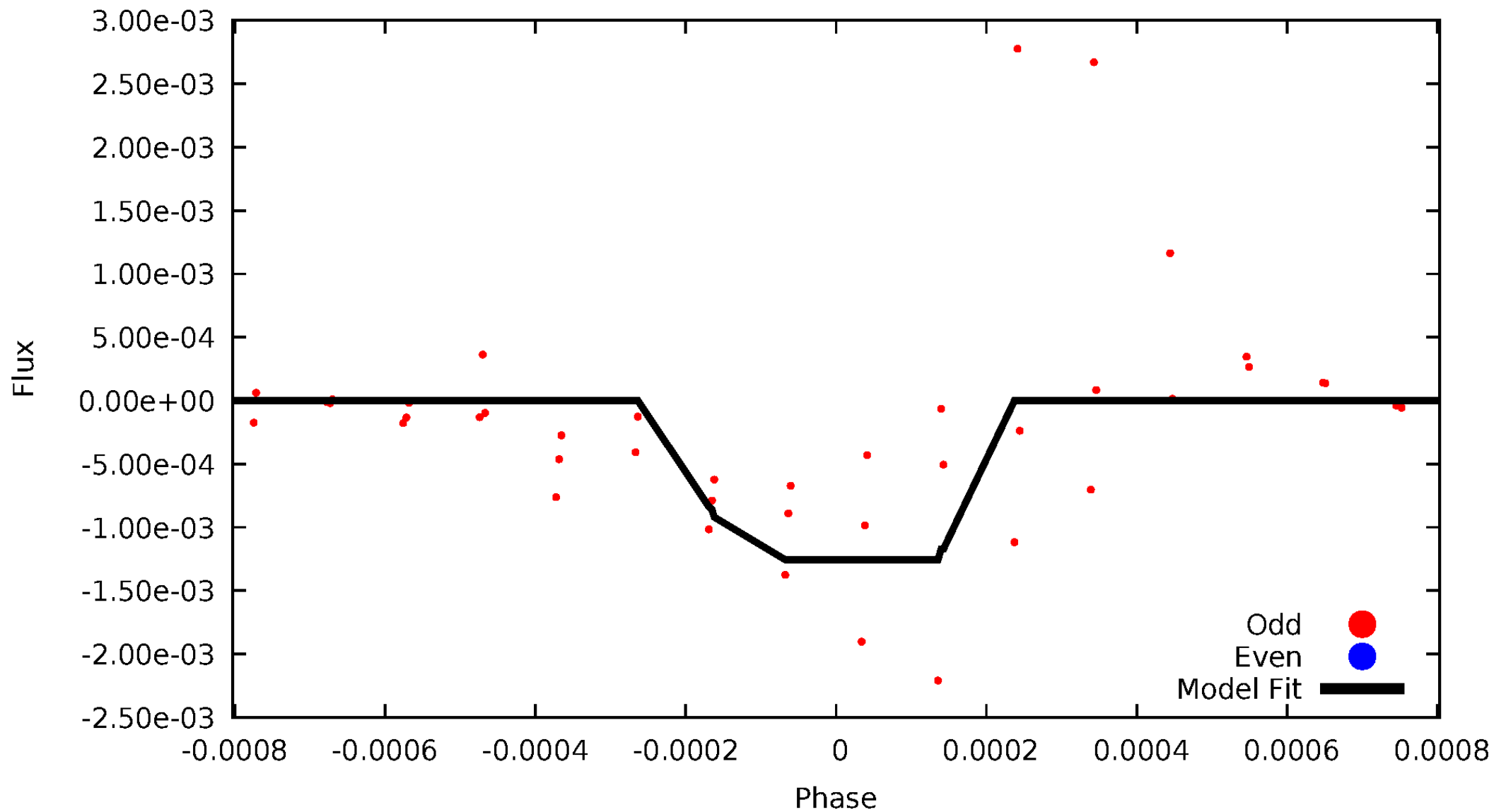
DV Odd/Even

TCE 010120296-06



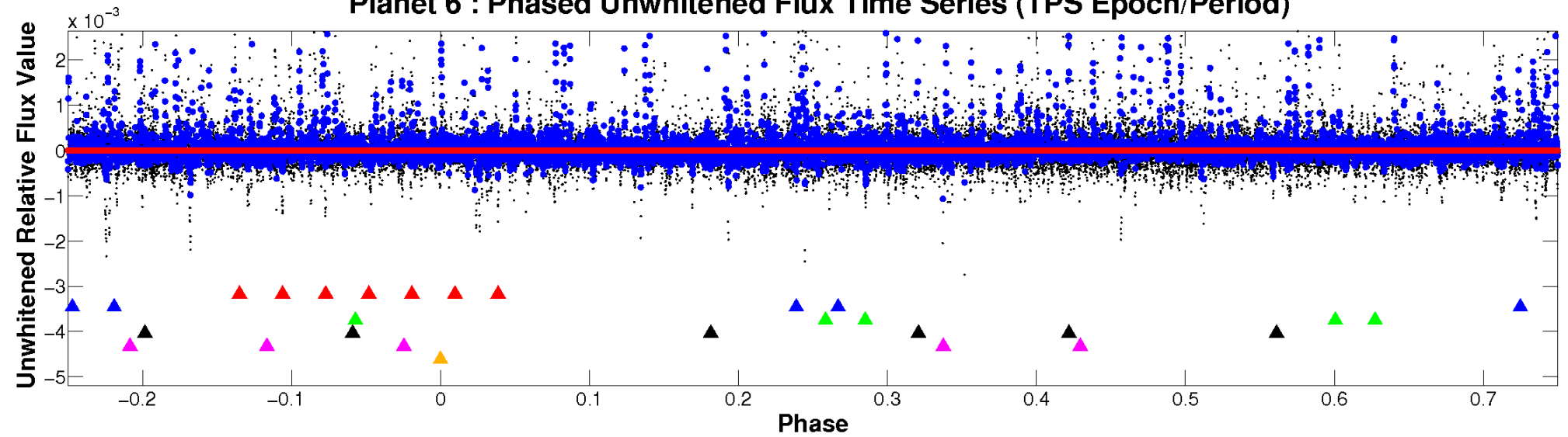
ALT Odd/Even

TCE 010120296-06



Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

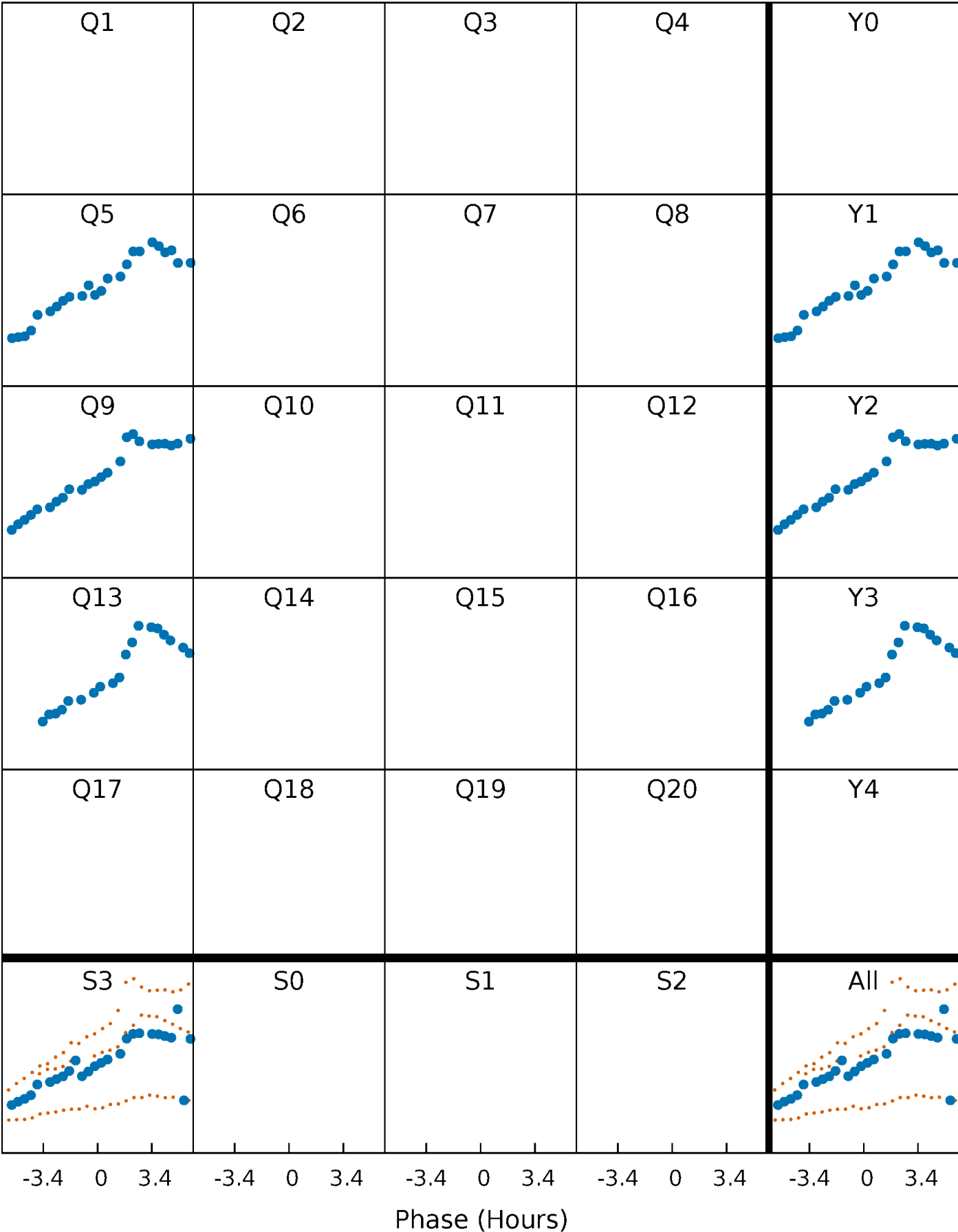


Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)



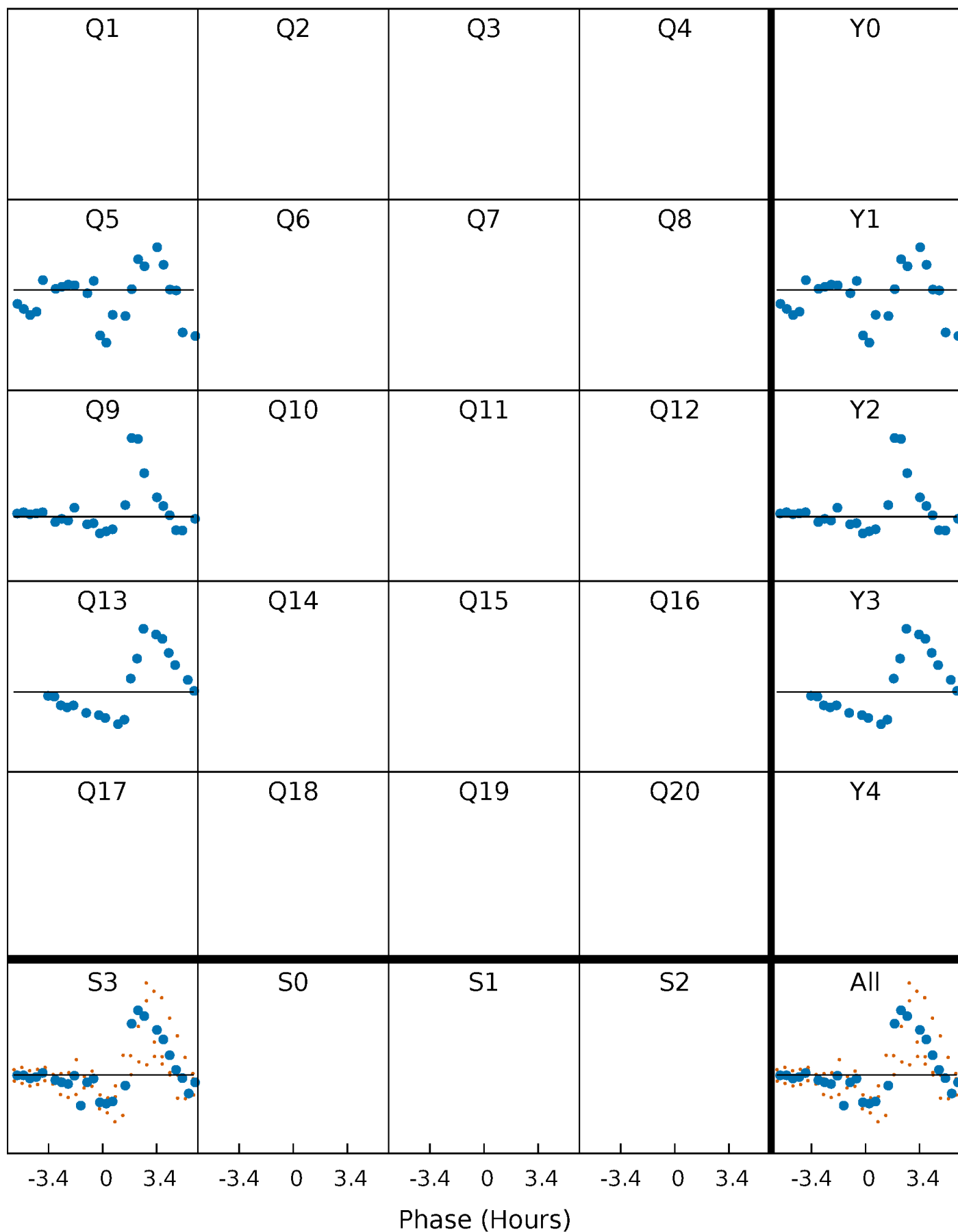
PDC Quarter-Phased Transit Curves

TCE 010120296-06 P=201.159398 Days $T_0=263.569559$ (BKJD)



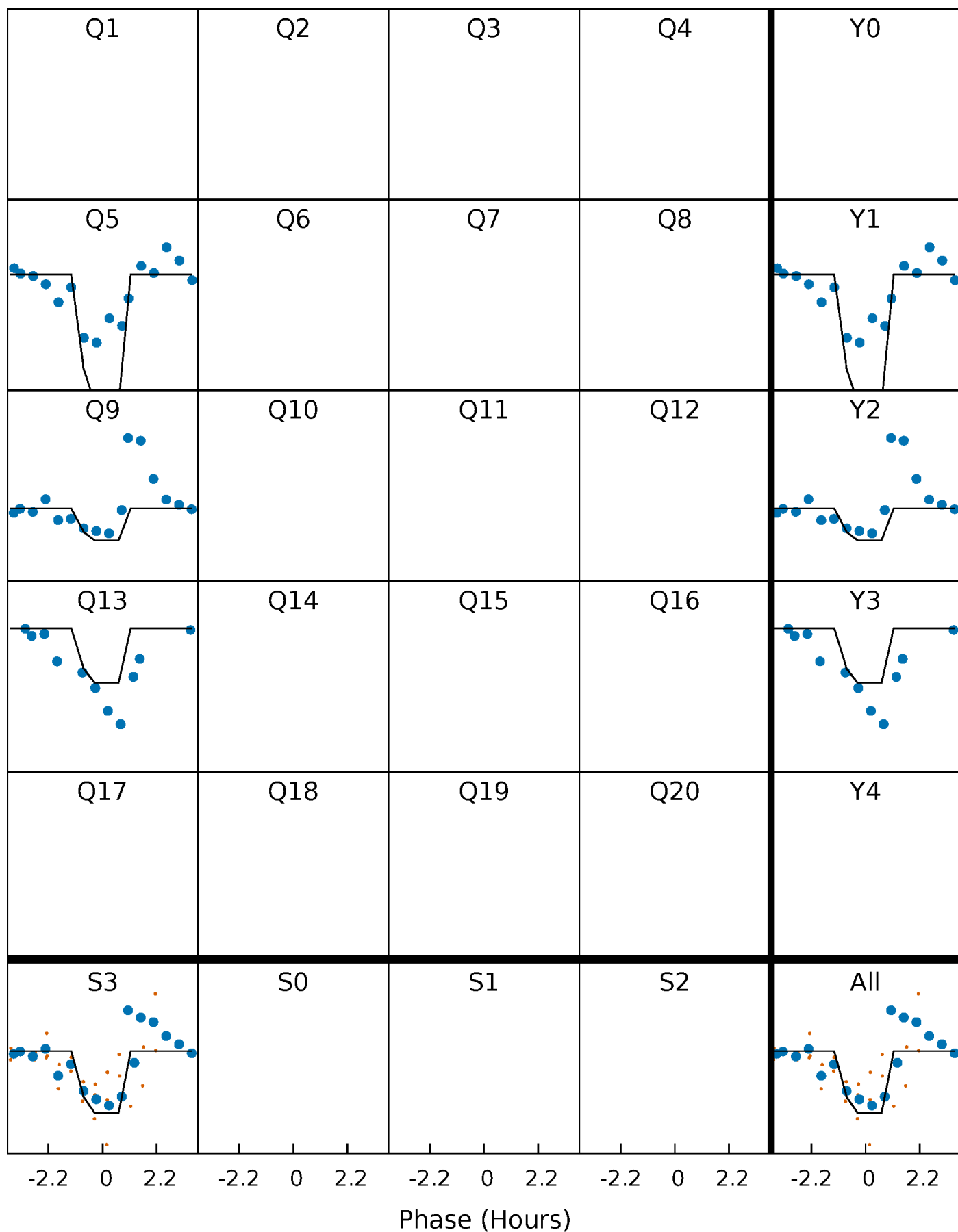
DV Quarter-Phased Transit Curves

TCE 010120296-06 P=201.159398 Days $T_0=263.569559$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

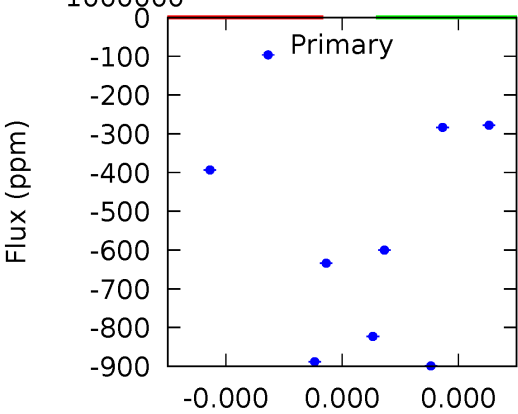
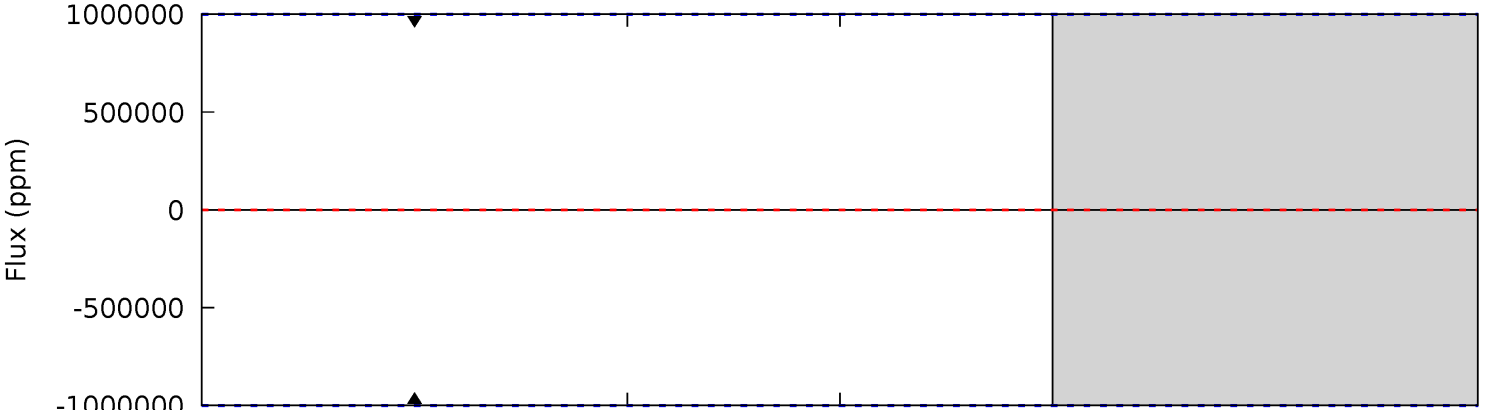
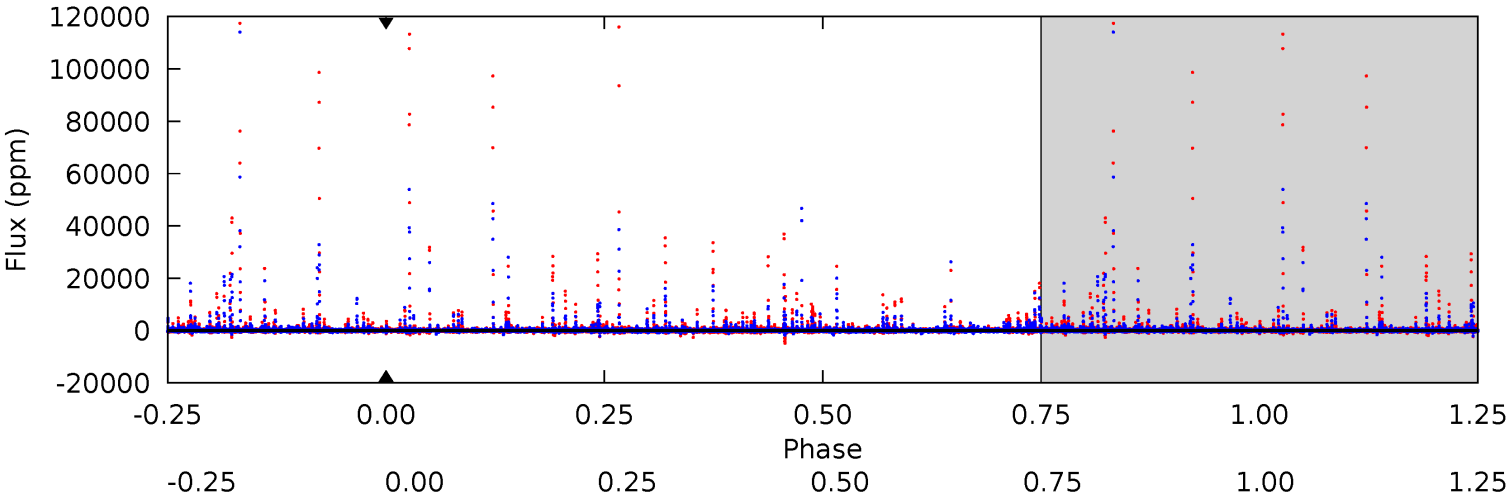
TCE 010120296-06 P=201.159398 Days $T_0=263.595333$ (BKJD)



DV Model-Shift Uniqueness Test

010120296-06, P = 201.159398 Days, E = 62.410161 Days

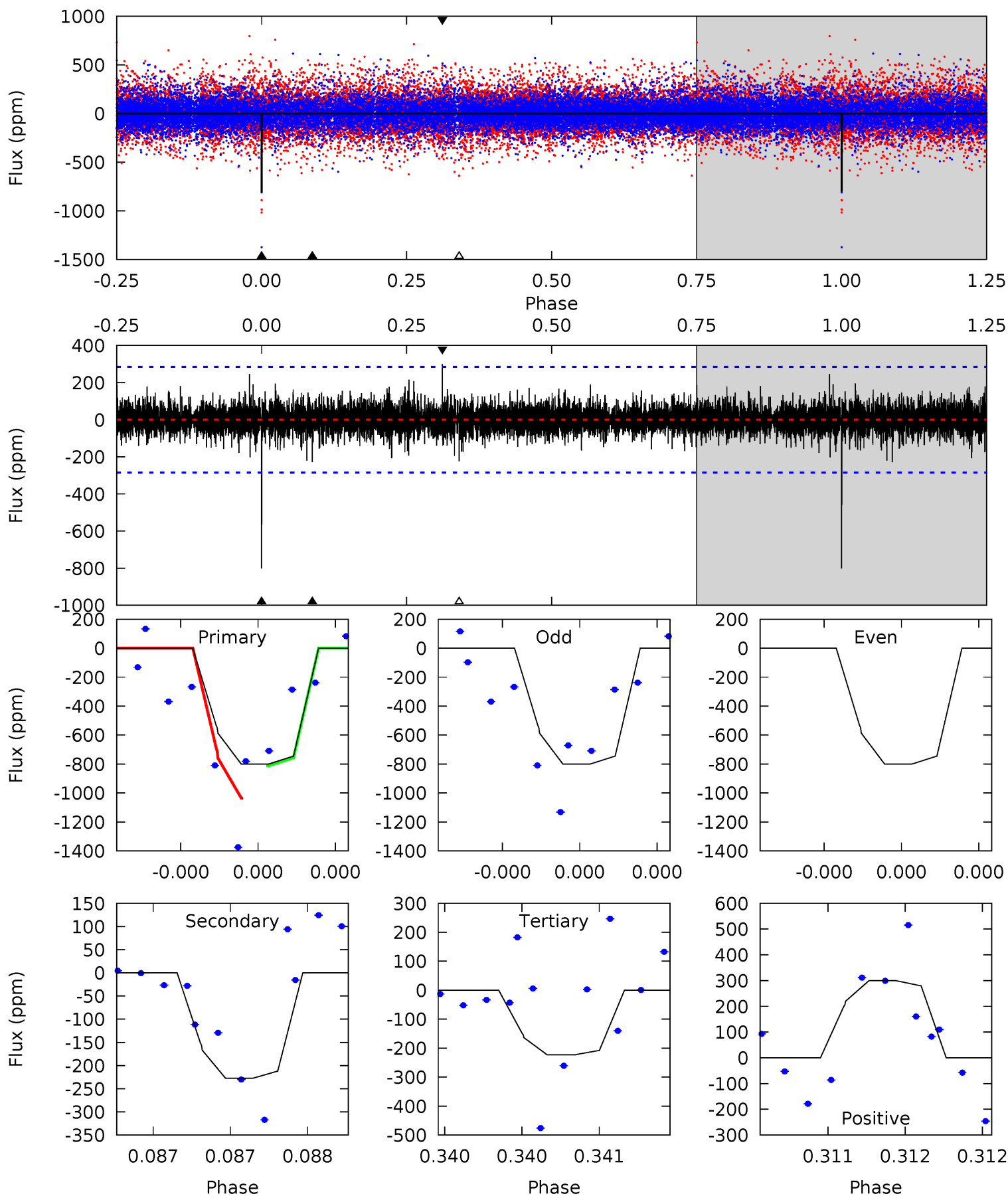
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010120296-06, P = 201.159398 Days, E = 62.435935 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	4.52	4.43	5.95	5.65	3.61	0.94	11.5	9.94	0.09	-1.43	0	1.41	0.27	2.33



Stellar Parameters For KIC 010120296

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5716^{+189}_{-189}	$4.360^{+0.180}_{-0.180}$	$-0.220^{+0.300}_{-0.300}$	$1.015^{+0.279}_{-0.186}$	$0.862^{+0.130}_{-0.070}$	$1.160^{+0.996}_{-0.566}$
	+3%/-3%	+4%/-4%	+136%/-136%	+27%/-18%	+15%/-8%	+86%/-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 010120296-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$7.77^{+9.97}_{-5.72}$	444^{+32}_{-28}	3388^{+19080}_{-24664}	$1350^{+700925}_{-641876}$
Alt.	-228 ± 50	$9.02^{+9.30}_{-6.02}$	443^{+35}_{-29}	3089^{+1339}_{-525}	652^{+5218}_{-503}

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 $A_{obs} \gg 1.0$

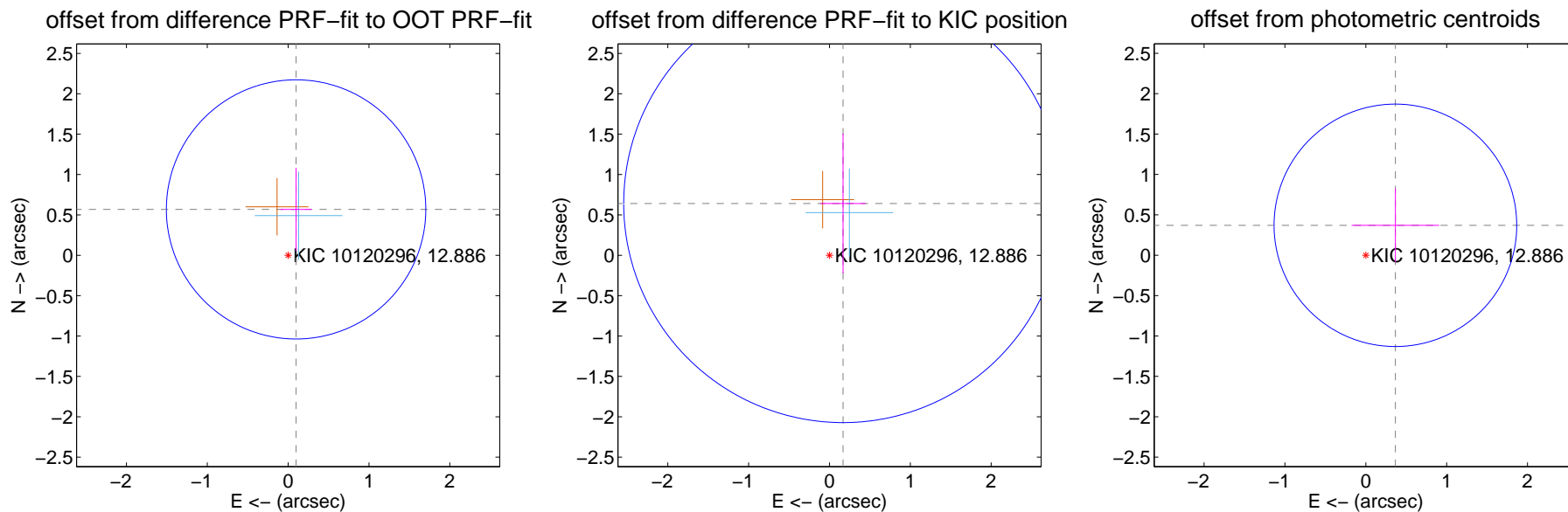
DV Centroid Data

Supplemental centroid analysis for 010120296-06. Kepler magnitude: 12.89. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.577 ± 0.535	1.08	-0.098 ± 0.194	0.568 ± 0.514
PRF-fit source offset from KIC position	0.663 ± 0.905	0.73	-0.168 ± 0.278	0.642 ± 0.866
photometric centroid source offset	0.52 ± 0.50	1.04	-0.37 ± 0.54	0.37 ± 0.46

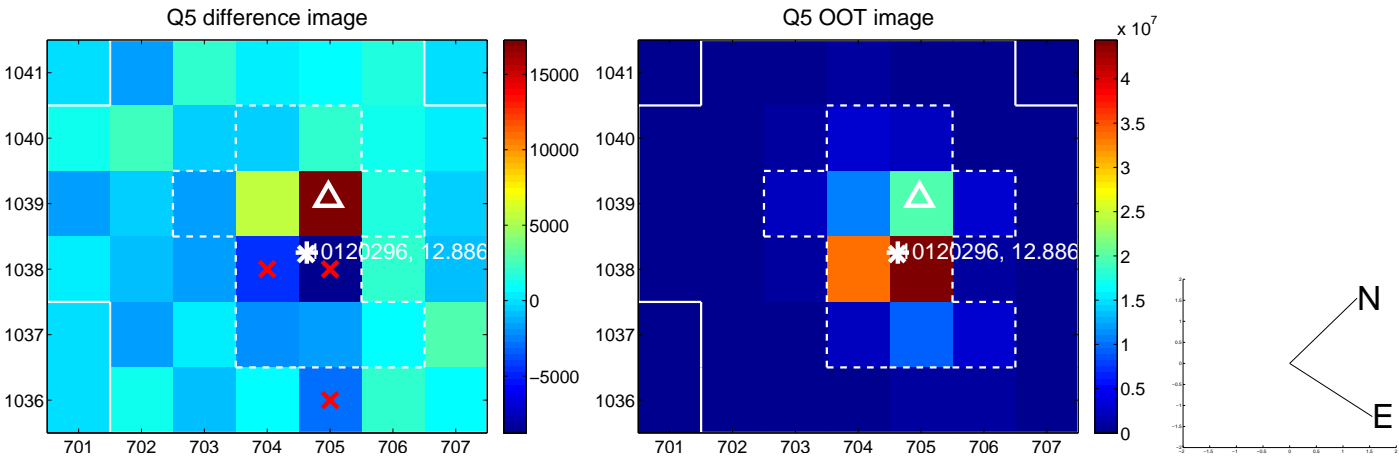


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

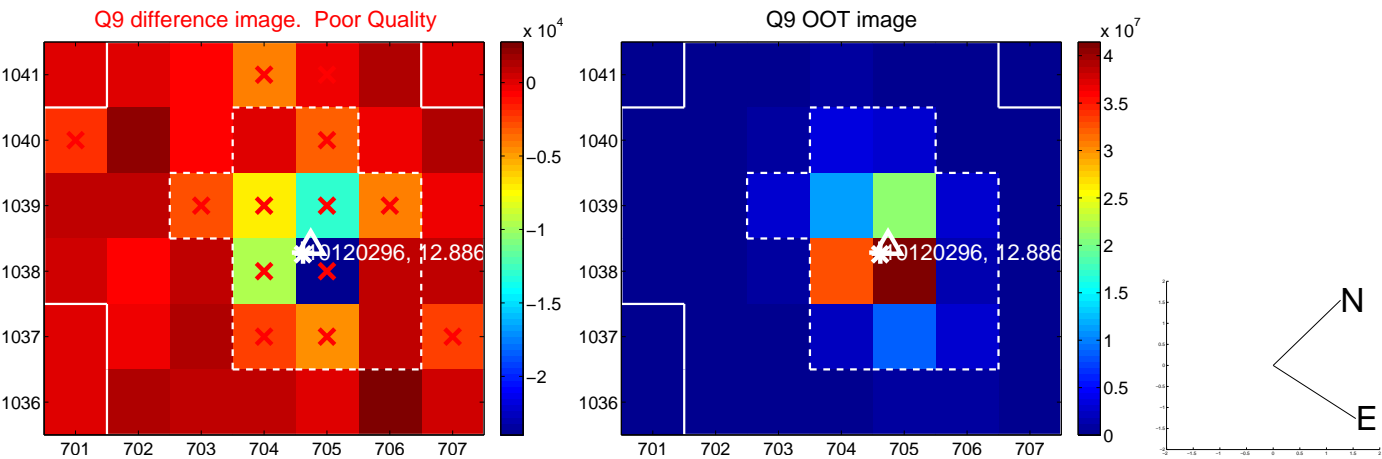
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



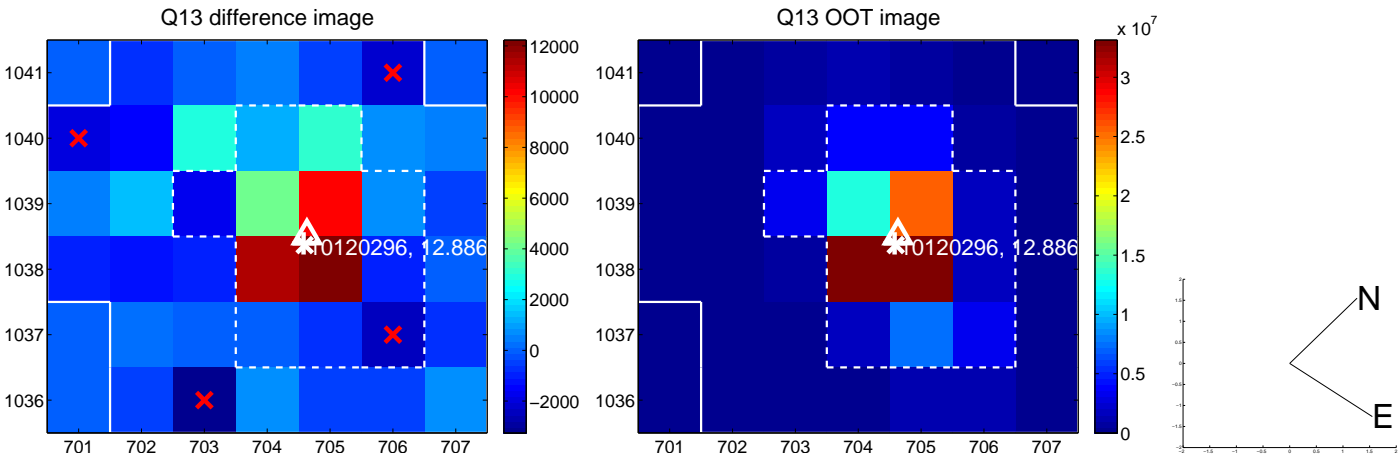
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



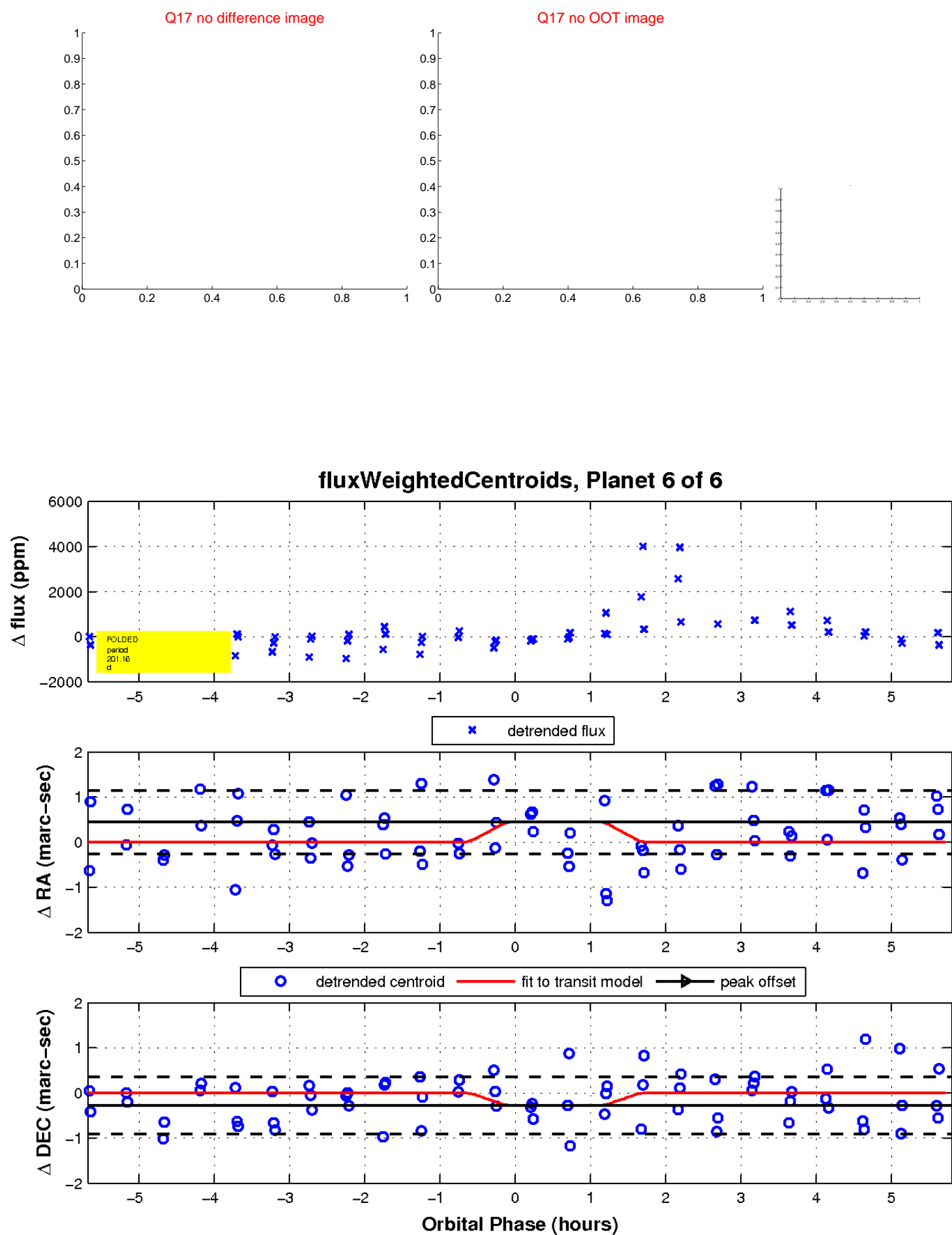
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

