

”Hundreds of new satellites of figure-eight orbit computed with high precision”

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Table of the 82 linearly stable solutions (76 new ones)
 stability angles ν_j , where $\lambda_j = \exp(\pm 2\pi i \nu_j)$, $j=1,2$
 _o - old solutions - Moore’s figure-8 and previously found in [1-4]

N	ν_1	ν_2
1_o	0.298092529004750122423759217553	0.00842272470813137798255957006197
28_o	0.272160427320195450097223156158	0.158543465092658278982659775476
29_o	0.272160427320195450097223156158	0.158543465092658278982659775476
37	0.182985059420457599172733966666	0.0289570662863985368222910722744
38	0.182985059420457599172733966666	0.0289570662863985368222910722744
168	0.40784890349106384337866469433	0.0019935128774804191847075312742
170	0.0515839150544179521320026754435	0.0187371379740303412461182767182
171	0.0515839150544179521320026754435	0.0187371379740303412461182767182
180	0.0568465521990455362284172866691	0.0175473839805566128425075649137
181	0.0568465521990455362284172866691	0.0175473839805566128425075649137
183	0.113906946482767933622664910797	0.000204847809204453673846810059986
184_o	0.321766297952400861501345817752	2.73443408190332171158835273135e-06
188_o	0.04354103745993106547756679072	0.0026268544414190697078965258573
189_o	0.04354103745993106547756679072	0.0026268544414190697078965258573
329	0.0367738675117840187256591991586	0.016707509614292298568484234969
330	0.0367738675117840187256591991586	0.016707509614292298568484234969
333	0.0405876398706952021962905564324	2.25050172957579554809144841323e-09
334	0.0405876398706952021962905564324	2.25050172957579554809144841323e-09
337	0.116325810410596690810438480577	0.0478373595504863815041806247878
338	0.116325810410596690810438480577	0.0478373595504863815041806247878
341	0.212732374795901797393457838099	0.00220273541251748499942773212832
342	0.212732374795901797393457838099	0.00220273541251748499942773212832
413	0.275011350174751332178664212923	0.00341516982815402730209182950586
416	0.458981175657251083162092697487	0.328869711757248395519117609865
422	0.003397998578560026589576620031	4.82388747012967024553752728676e-05
423	0.003397998578560026589576620031	4.82388747012967024553752728676e-05
502	0.387576363752675059793659742175	0.264838331971960161190185087597
516	0.419985465991861588825969387458	2.53711693697649396156909239048e-05
520	0.361376380897484249572752140665	0.0231339618346582777747666816
528	0.0529059748753600640057884995236	8.40394892854548346207390271051e-06
529	0.0529059748753600640057884995236	8.40394892854548346207390271051e-06
566	0.0510448387685393038619167549197	0.000470536861501385808885643455201

N	V_1	V_2
567	0.0510448387685393038619167549197	0.00047053686150138580888564345201
572	0.39757254002479180571383131892	9.17836344897321522144939653048e-11
573	0.39757254002479180571383131892	9.17836344897321522144939653048e-11
602	0.486970420626426013258486704454	1.57783479465699085471836250548e-10
605	0.0327953388952792073716032366859	3.22317484874566580526492303709e-06
606	0.0327953388952792073716032366859	3.22317484874566580526492303709e-06
609	0.267131864119191530384832354753	0.127489871368591999957771257333
610	0.267131864119191530384832354753	0.127489871368591999957771257333
624	0.240287772211474372544199872797	0.000182682893319628471822739187105
625	0.240287772211474372544199872797	0.000182682893319628471822739187105
639	0.162697715289864173824953372472	0.0687218343498230121448208143422
644	0.157729507606524510022167564065	0.0283430135966549812824177661055
649	0.0206041446539215527974859347742	0.0125013470371071536980603991751
652	0.344921003825902434563879905703	8.59217233840852954369381751128e-07
666	0.187691189591235263346007262414	2.61504980535709161857184424983e-12
670	0.0937385311958221201020392196211	0.000838678707197693244105921997421
672	0.0308263343073840951900566009404	2.02431626792443480568451317487e-05
680	0.169527730848064177498518581569	0.128509259793241440080805877689
685	0.222501649413779517139178456756	0.0036792591620697872803154606036
686	0.222501649413779517139178456756	0.0036792591620697872803154606036
691	0.487960908078045080311608298601	0.0116439901612481596604627072404
700	0.373561790221294643304600159167	6.86210348434063414148280640244e-05
701	0.373561790221294643304600159167	6.86210348434063414148280640244e-05
710	0.362106684842480412831481000468	5.4254102403482686231779425702e-05
720	0.36245672210892843931231323728	0.000209721386305604385887872300354
728	0.0724152274487795242990216498858	0.000266532022732685850069577528535
729	0.0682739230834686948136175919013	0.000131672244976664846836338681333
731	0.0971120528140926919241196318085	0.000808663437803720927597748129776
736	0.307202789172282109457047915848	0.268026909621859987811093665146
740	0.42002141220873997072025435874	8.7447538657739351008869861027e-11
746	0.37755146267942189954594406623	0.124442755725419282105781151949
755	0.00946377154778741165366811754396	4.71783677598593864678638586614e-09
756	0.00946377154778741165366811754396	4.71783677598593864678638586614e-09
758	0.221889372805163326730390165938	0.00215412951288912920666429060941
761	0.366333991557669070406797640641	0.165776123889668663701800011736
762	0.0900273630782851490211315766446	0.04246020975963862775871702475
765	0.242225070908416293123405168819	0.0778932862754010698043312443809
768	0.464427858979106140311612046341	0.00108425811097059254043825612564
770	0.311666755066247796432864937298	0.00964850850389394889830296692674
771	0.26317445831440086242485711321	0.000221728707509136714730352331599
772	0.26317445831440086242485711321	0.000221728707509136714730352331599
783	0.427373702369188544983378448257	0.00236826906538802133452909107108
787	0.264423542467638368267640155079	0.0486266416729203817006786636297
791	0.0611217415632411880935540592997	0.0306732686882578452507746079522
792	0.106326211448045072568679622685	0.0546421530183393050835017766911
797	0.34507695388600852860657508389	0.00135066090679101736234636324895
799	0.376315052261497474047661511684	4.95737788455128082115378851449e-10
805	0.0235160103220771879779324951436	3.99634712469523463334786809674e-06
812	0.000271405431881764307622275642029	2.62714627575304455374171942221e-05
816	0.0569778172452586429455727714835	1.84519912717157249707071014081e-11

The old solutions (previously found solutions) are from [1-3] (taken from tables in [1] and [2] and the table for sequence V (figure-eight) at [4]).

[1] Shuvakov, Milovan. "Numerical search for periodic solutions in the vicinity of the figure-eight orbit: slaloming around singularities on the shape sphere." *Celestial Mechanics and Dynamical Astronomy* 119.3 (2014): 369-377.

[2] Shuvakov, Milovan, and Mitsuru Shibayama. "Three topologically nontrivial choreographic motions of three bodies." *Celestial Mechanics and Dynamical Astronomy* 124.2 (2016): 155-162.

[3] Dmitrashinovich, V., Hudomal, A., Shibayama, M., Sugita, A. (2018). "Linear stability of periodic three-body orbits with zero angular momentum and topological dependence of Keplers third law: a numerical test." *Journal of Physics A: Mathematical and Theoretical*, 51(31), 315101.

[4] <http://three-body.ipb.ac.rs/sequences.php>