

Supplementary Table S1 – The fraction of noncoding DNA in completely-sequenced plastid genomes.

Taxon	Genome length (nt)	% Noncoding	Genbank accession number
PLASTID GENOMES			
<i>Acorus americanus</i>	153819	42	NC_010093
<i>Acorus calamus</i>	153821	42	NC_007407
<i>Adiantum capillus-veneris</i>	150568	39	NC_004766
<i>Aethionema cordifolium</i>	154168	41	NC_009265
<i>Aethionema grandiflorum</i>	154243	41	NC_009266
<i>Agrostis stolonifera</i>	136584	47	NC_008591
<i>Amborella trichopoda</i>	162686	44	NC_005086
<i>Aneura mirabilis</i>	108007	46	NC_010359
<i>Angiopteris evecta</i>	153901	46	NC_008829
<i>Anthoceros formosae</i>	161162	46	NC_004543
<i>Arabidopsis thaliana</i>	154478	41	NC_000932
<i>Arabis hirsuta</i>	153689	41	NC_009268
<i>Atropa belladonna</i>	156687	43	NC_004561
<i>Barbarea verna</i>	154532	41	NC_009269
<i>Bigeloviella natans</i>	69166	13	NC_008408
<i>Buxus microphylla</i>	159010	42	NC_009599
<i>Calycanthus floridus</i> var. <i>glaucus</i>	153337	41	NC_004993
<i>Capsella bursa-pastoris</i>	154490	41	NC_009270
<i>Carica papaya</i>	160100	43	NC_010323
<i>Ceratophyllum demersum</i>	156252	42	NC_009962
<i>Chaetosphaeridium globosum</i>	131183	31	NC_004115
<i>Chara vulgaris</i>	184933	51	NC_008097
<i>Chlamydomonas reinhardtii</i>	204159	56	FJ423446
<i>Chloranthus spicatus</i>	157772	41	NC_009598
<i>Chlorella vulgaris</i>	150613	36	NC_001865
<i>Chlorokybus atmophyticus</i>	152254	38	NC_008822
<i>Cicer arietinum</i>	125319	39	NC_011163
<i>Citrus sinensis</i>	160129	43	NC_008334
<i>Coffea arabica</i>	155189	41	NC_008535
<i>Crucihimalaya wallichii</i>	155199	41	NC_009271
<i>Cryptomeria japonica</i>	131810	39	NC_010548
<i>Cucumis sativus</i>	155293	42	NC_007144
<i>Cuscuta exaltata</i>	125373	45	NC_009963
<i>Cuscuta gronovii</i>	86744	29	NC_009765
<i>Cuscuta obtusiflora</i>	85286	29	NC_009949
<i>Cuscuta reflexa</i>	121521	44	NC_009766
<i>Cyanidioschyzon merolae</i> strain 10D	149887	5	NC_004799
<i>Cyanidium caldarium</i>	164921	11	NC_001840
<i>Cyanophora paradoxa</i>	135599	20	NC_001675
<i>Cycas taitungensis</i>	163403	37	NC_009618
<i>Daucus carota</i>	155911	43	NC_008325
<i>Dioscorea elephantipes</i>	152609	41	NC_009601
<i>Draba nemorosa</i>	153289	41	NC_009272

<i>Drimys granadensis</i>	160604	43	NC_008456
<i>Eimeria tenella</i> strain Penn State	34750	5	NC_004823
<i>Emiliana huxleyi</i>	105309	13	NC_007288
<i>Epifagus virginiana</i>	70028	41	NC_001568
<i>Eucalyptus globulus</i> subsp. <i>globulus</i>	160286	43	NC_008115
<i>Euglena gracilis</i>	143171	52	NC_001603
<i>Euglena longa</i>	73345	32	NC_002652
<i>Glycine max</i>	152218	41	NC_007942
<i>Gossypium barbadense</i>	160317	43	NC_008641
<i>Gossypium hirsutum</i>	160301	43	NC_007944
<i>Gracilaria tenuistipitata</i> var. <i>liui</i>	183883	16	NC_006137
<i>Guillardia theta</i>	121524	11	NC_000926
<i>Guizotia abyssinica</i>	151762	41	NC_010601
<i>Helianthus annuus</i>	151104	41	NC_007977
<i>Helicosporidium</i> sp. ex <i>Simulium jonesii</i>	37454	5	NC_008100
<i>Heterosigma akashiwo</i>	159370	23	NC_010772
<i>Hordeum vulgare</i> subsp. <i>vulgare</i>	136462	47	NC_008590
<i>Huperzia lucidula</i>	154373	45	NC_006861
<i>Illicium oligandrum</i>	148553	44	NC_009600
<i>Ipomoea purpurea</i>	162046	40	NC_009808
<i>Jasminum nudiflorum</i>	165121	43	NC_008407
<i>Lactuca sativa</i>	152765	45	NC_007578
<i>Lemna minor</i>	165955	42	NC_010109
<i>Lepidium virginicum</i>	154743	41	NC_009273
<i>Leptosira terrestris</i>	195081	53	NC_009681
<i>Liriodendron tulipifera</i>	159886	44	NC_008326
<i>Lobularia maritima</i>	152659	40	NC_009274
<i>Lolium perenne</i>	135282	46	NC_009950
<i>Lotus japonicus</i>	150519	45	NC_002694
<i>Manihot esculenta</i>	161453	50	NC_010433
<i>Marchantia polymorpha</i>	121024	31	NC_001319
<i>Medicago truncatula</i>	124033	42	NC_003119
<i>Mesostigma viride</i>	118360	26	NC_002186
<i>Morus indica</i>	158484	43	NC_008359
<i>Nandina domestica</i>	156599	42	NC_008336
<i>Nasturtium officinale</i>	155105	41	NC_009275
<i>Nephroselmis olivacea</i>	200799	32	NC_000927
<i>Nicotiana glauca</i>	155941	38	NC_007500
<i>Nicotiana glauca</i>	155943	38	NC_001879
<i>Nicotiana tomentosiformis</i>	155745	38	NC_007602
<i>Nuphar advena</i>	160866	44	NC_008788
<i>Nymphaea alba</i>	159930	43	NC_006050
<i>Odontella sinensis</i>	119704	16	NC_001713
<i>Oedogonium cardiacum</i>	196547	41	NC_011031
<i>Oenothera argillicola</i>	165055	44	NC_010358
<i>Oenothera biennis</i>	164807	44	NC_010361
<i>Oenothera elata</i>	165728	44	NC_002693
<i>Oenothera glazioviana</i>	165225	44	NC_010360
<i>Oenothera parviflora</i>	163365	44	NC_010362

<i>Olimarabidopsis pumila</i>	154737	41	NC_009267
<i>Oltmannsiellopsis viridis</i>	151933	42	NC_008099
<i>Oryza nivara</i>	134494	47	NC_005973
<i>Oryza sativa Japonica Group</i>	134525	42	NC_001320
<i>Ostreococcus tauri</i>	71666	20	NC_008289
<i>Panax ginseng</i>	156318	42	NC_006290
<i>Pelargonium x hortorum</i>	217942	43	NC_008454
<i>Phaeodactylum tricornutum</i>	117369	12	NC_008588
<i>Phalaenopsis aphrodite</i>	148964	46	NC_007499
<i>Phaseolus vulgaris</i>	150285	40	NC_009259
<i>Physcomitrella patens subsp. patens</i>	122890	33	NC_005087
<i>Pinus thunbergii</i>	119707	31	NC_001631
<i>Piper cenocladum</i>	160624	46	NC_008457
<i>Platanus occidentalis</i>	161791	44	NC_008335
<i>Populus alba</i>	156505	42	NC_008235
<i>Populus trichocarpa</i>	157033	39	NC_009143
<i>Porphyra purpurea</i>	191028	15	NC_000925
<i>Porphyra yezoensis</i>	191952	16	NC_007932
<i>Pseudendoclonium akinetum</i>	195867	46	NC_008114
<i>Psilotum nudum</i>	138829	35	NC_003386
<i>Ranunculus macranthus</i>	155129	42	NC_008796
<i>Rhodomonas salina</i>	135854	19	NC_009573
<i>Saccharum officinarum</i>	141182	43	NC_006084
<i>Saccharum</i> hybrid cultivar SP-80-3280	141182	43	NC_005878
<i>Scenedesmus obliquus</i>	161452	39	NC_008101
<i>Solanum bulbocastanum</i>	155371	41	NC_007943
<i>Solanum lycopersicum</i>	155461	41	NC_007898
<i>Solanum tuberosum</i>	155298	42	NC_008096
<i>Sorghum bicolor</i>	140754	49	NC_008602
<i>Spinacia oleracea</i>	150725	39	NC_002202
<i>Stauroastrum punctulatum</i>	157089	43	NC_008116
<i>Stigeoclonium helveticum</i>	223902	51	NC_008372
<i>Thalassiosira pseudonana</i>	128814	15	NC_008589
<i>Theileria parva</i> strain Muguga	39579	17	NC_007758
<i>Toxoplasma gondii</i> strain RH	34996	16	NC_001799
<i>Trachelium caeruleum</i>	162321	48	NC_010442
<i>Triticum aestivum</i>	134545	46	NC_002762
<i>Vitis vinifera</i>	160928	44	NC_007957
<i>Welwitschia mirabilis</i>	119726	34	NC_010654
<i>Zea mays</i>	140384	43	NC_001666
<i>Zygnema circumcarinatum</i>	165372	45	NC_008117

Note: Complete plastid sequences were downloaded from the NCBI Reference Sequence (RefSeq) Collection on November 10, 2008; entries with incomplete Genbank annotations are not included in this table. The fraction of noncoding DNA in each genome was calculated by adding the lengths of the protein-, rRNA-, and tRNA-coding regions, subtracting this number from the total genome size, and then dividing the product of this by the full length of the genome. In all instances, intronic ORFs were considered to be noncoding DNA. Unclassified ORFs were categorized as noncoding DNA unless homologs existed in the organelle genomes of at least two other taxa.