Table S1.

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| Case Number | Case Study Name | Location | Source Reference(s) | Age  |
| 1 | Eriksfjord Formation | Greenland | Clemmensen, L.B., 1988, Aeolian morphology preserved by lava cover, the Precambrian Mussartut Member, Eriksfjord Formation, South Greenland, Bulletin of the Geological Society of Denmark, v. 37, p. 105-116; Tirsgaard, H. and Oxnevad, I.E.I., 1998, Preservation of pre-vegetational mixed fluvio-aeolian deposits in a humid climatic setting: an example from the Middle Proterozoic Eriksfjord Formation, Southwest Greenland. Sedimentary Geology, v. 120, p. 295-317. | Proterozoic |
| 2 | Hopeman Sandstone | Scotland, UK | Clemmensen, L.B., 1987, Complex star dunes and associated aeolian bedforms, Hopeman Sandstone (Permo-Triassic), Moray Firth Basin, Scotland, in Frostick, L.E. and Reid, I., Desert Sediments: Ancient and Modern, Geological Society of London Special Publictaion, 35, p. 213-231. | Paleozoic |
| 3 | Arran Red Beds | Isle of Arran, Scotland, UK | Clemmensen, L.B. and Abrahamsen, K., 1983, Aeolian stratification and facies association in desert sediments, Arran basin (Permian), Scotland, Sedimentology, v. 30, p. 311-339. | Paleozoic |
| 4 | Sherwood Sandstone | UK (Onshore and Offshore England) | Cowan, G., 1993, Identification and significance of aeolian deposits within the dominantly fluvial Sherwood Sandstone group of the East Irish Sea Basin UK, in North, C.P. and Prosser, D.J., eds., Characterization of fluvial and aeolian reservoirs, Geological Society of London Special Publication, v. 73, p. 231-245; Meadows, N.S. and Beach, A., 1993, Structural and climatic controls on facies distribution in a mixed fluvial and aeolian reservoir: the Triassic Sherwood Sandstone in the Irish Sea, in North, C.P. and Prosser, D.J., eds., Characterization of fluvial and aeolian reservoirs, Geological Society of London Special Publication, v. 73, p. 247-264. | Mesozoic |
| 5 | Rotliegendes Sandstone | Germany, Poland, Denmark, Baltic Sea, Netherlands | Ellis, D., 1993, The Rough Gas Field: distribution of Permian aeolian and non-aeolian reservoir facies and their impact on field development, Geological Society of London Special Publication 73, p. 265-277; Newell, A.J., 2001, Bounding surfaces in a mixed aeolian-fluvial system (Rotliegend, Wessex Basin, SW UK), Marine and Petroleum Geology, v. 18, p. 339-347. | Paleozoic |
| 6 | Boxtel Formation | Netherlands | Schokker, J. and Koster, E.A., 2004, Sedimentology and facies distribution of Pleistocene cold-climate aeolian and fluvial deposits in the Roer Valley graben (Southeastern Netherlands), Permafrost and Periglacial Processes, v. 15, p. 1-20 | Cenozoic |
| 7 | Sables de Fontainbleau Formation | France | Cojan, I. and Thiry, M., 1992, Seismically induced deformation structures in Oligocene shallow-marine and aeolian coastal sands (Paris Basin), Tectonophysics, v. 206, p. 78-89. | Cenozoic |
| 8 | Escorihuela Formation | NE Spain | Liesa, C.L., Rodríguez-López, J.P., Ezquerro, L., Alfaro, P., Rodriguez-Pascua, M.A., Lafuente, P., Arlegui, L. and Simon J.L., 2016, Facies control on seismites in an alluvial-aeolian system: The Pliocene dunefield of the Teruel half-graben basin (eastern Spain), Sedimentary Geology, v. 344, p. 237-252. | Cenozoic |
| 9 | Etjo Formation | Namibia | Mountney, N.P. and Howell, J., 2000, Aeolian architecture, bedform climbing and preservation space in the Cretaceous Etjo Formation, NW Nambia, Sedimentology, v. 47, p. 825-849. | Mesozoic |
| 10 | Tsondab Sandstone | Namibia | Kocurek, G., Lancaster, N., Carr, M. and Frank, A, 1999, Tertiary Tsondab Sandstone Formation: preliminary bedform reconstruction and comparison to modern Namib Sand Sea dunes, Journal of African Earth Sciences, v. 29, p. 629-642. | Cenozoic |
| 11 | Egalapenta Formation | India | Biswas, A., 2005, Coarse aeolianites: sand sheets and zibar-interzibar facies from the Mesoproterozoic Cuddapah Basin, India, Sedimentary Geology, v. 174, p. 149-160; Dasgupta, P.K., Biswas, A. and Mukherjee, R., 2005, Cyclicity in Palaeoproterozoic to Neoproterozoic Cuddapah Supergroup and its significance in basinal evolution, in Mabesoone, J.M. and Neumann, V.H., Cyclic Development of Sedimentary Basins, Developments in Sedimentology, v. 57, p. 313-354. | Proterozoic |
| 12 | Tumblagooda Formation | Australia | Trewin, N.H., 1993, Controls on fluvial deposition in mixed fluvial and aeolian facies within the Tumblagooda Sandstone (Late Silurian) of Western-Australia, Sedimentary Geology, v. 85, p. 387–400. | Paleozoic |
| 13 | Tamala Limestone | Australia | Semeniuk, V. and Glassford D.K., 1988, Significance of aeolian limestone lenses in quartz sand formations: an interdigitation of coastal and continental facies, Perth Basin, southwestern, Australia, Sedimentary Geology, v. 57, p. 199-209. | Cenozoic |
| 14 | São Sebastião Formation | Brazil | Formolo Ferronatto, J.P., dos Santos Scherer, C.M., de Souza, E.G, dos Reis, A.D. and de Mello, R.G., 2019, Genetic units and facies architecture of a Lower Cretaceous fluvial-aeolian succession, Sao Sebastiao Formation, Jatoba Basin, Brazil, Journal of South American Earth Sciences, v. 89, p. 158-172. | Mesozoic |
| 15 | Sergi Formation | Brazil | Scherer, M.S., Lavina, E.L.C., Dias Filho, D.C., Oliveira, F.M., Bongiolo, D.E. and Aguiar, E.S., 2007, Stratigraphy and facies architecture of the fluvial-aeolian-lacustrine Sergi Formation (Upper Jurassic), Reconcavo Basin, Brazil, Sedimentary Geology, v. 194, p. 169-193. | Mesozoic |
| 16 | Mangabeira Formation | Brazil | Bállico, M.B., Scherer, C.M.S., Mountney, N.P., Souza, E.G., Chemale, F., Pisarevsky, S.A. and Reis A.D., 2017, Wind-pattern circulation as a palaeogeographic indicator: Case study of the 1.5-1.6 Ga Mangabeira Formation, Sao Francisco Craton, Northeast Brazil, Precambrian Research, v. 298, p. 1-15. | Proterozoic |
| 17 | Caldeirao Formation | Brazil | Jones, F.H., dos Santos Scherer, C.M. and Kuchle, J., 2015, Facies architecture and stratigraphic evolution of aeolain dune and interdune deposits, Permian Caldeirao Member (Santa Brigida Formation), Brazil, Sedimentary Geology, v. 337, p. 133-150. | Paleozoic |
| 18 | Bandeirinha Formation | Brazil | Simplicio, F. and Basilici, G., 2015, Unusual thick eolian sand sheet sedimentary succession: Paleoproterozoic Bandeirinha Formation, Minas Gerais, Brazilian Journal of Geology, v. 45, p. 3-11. | Proterozoic |
| 19 | Guara Formation | Brazil | Scherer, C.M.A. and Lavina, L.C., 2005, Sedimentary cycles and facies architecture of aeolian–fluvial strata of the Upper Jurassic Guara Formation, southern Brazil, Sedimentology, v. 52, p. 1323-1341. | Mesozoic |
| 20 | Piramboia Formation | Brazil | Dias, K.D.N. and Scherer, C.M.S., 2008, Cross-bedding set thickness and stratigraphic architecture of aeolian systems: An example from the Upper Permian Piramboia Formation (Parana Basin), southern Brazil, Journal of South American Earth Sciences, v. 25, p. 405-415. | Paleozoic |
| 21 | Huitrin Formation | Argentina | Strömbäck, A., Howell, J.A. and Veiga, G.D., 2005, The transgression of an erg- sedimentation and reworking/soft-sediment deformation of aeolian facies: the Cretaceous Troncoso Member, Neuquen Basin, Argentina. In G.D. Viega, G.D. Spaletti, J.A. Howell and E. Schwartz (Eds.) The Neuquen Basin, Argentina: A Case Study in Sequence Stratigraphy and Basin Dynamics. Geological Society of London Special Publications, v. 252, p. 163-183. | Mesozoic |
| 22 | Agrio Formation | Argentina | Veiga, G.D., Spalletti, L.A. and Flint, S.S., 2002, Aeolian/fluvial interactions and high-resolution sequence stratigraphy of a non-marine lowstand wedge: the Avile Member of the Agrio Formation (Lower Cretaceous), central Neuquen Basin, Argentina, Sedimentology, v. 49, p. 1001-1019 | Mesozoic |
| 23 | Rio Negro Formation | Argentina | Zavala, C. and Freije, R.H., 2001, On the understanding of aeolian sequence stratigraphy: An example from Miocene-Pliocene deposits in Patagonia, Argentina, Rivista Italiana di Paleontologia e Stratigrafia, v. 107, p. 251-264. | Cenozoic |
| 24 | Copper Habor Formation | Michigan, USA | Taylor, I.E. and Middleton, G.V., 1990, Aeolian sandstone in the Copper Harbor Formation, Late Proterozoic, Lake Superior basin, Canadian Journal of Earth Science, v. 27, p. 1339-1347. | Proterozoic |
| 25 | Chugwater Formation | Wyoming, USA | Irmen, A.P. and Vondra, C.F., 2000, Aeolian sediments in lower to middle (?) Triassic rocks of central Wyoming, Sedimentary Geology, v. 132, p. 69-88. | Mesozoic |
| 26 | Arikaree Formation | Wyoming, USA | Bart, H.A., 1977, Sedimentology of cross-stratified sandstones in Arikaree Group, Miocene, Southeastern Wyoming, Sedimentary Geology, v. 19, p. 165-184. | Cenozoic |
| 27 | Ingleside Formation | Colorado, Wyoming, USA | Pike, J.D. and Sweet, D.E., 2018, Environmental drivers of cyclicity recorded in lower Permian eolian strata, Manitou Springs, western United States, Palaeogeography, Palaeoclimatology, Palaeoecology, v. 499, p. 1-12. | Paleozoic |
| 28 | Lower Cutler Beds | Utah, USA  | Jordan, O.D. and Mountney, N.P., 2010, Styles of interaction between aeolian, fluvial and shallow marine environments in the Pennsylvanian to Permian lower Cutler beds, south-east Utah, USA, Sedimentology, v. 57, p. 1357-1385; Wakefield, O.J.W. and Mountney, N.P., 2013, Stratigraphic architecture of back-filled incised-valley systems: Pennsylvanian–Permian lower Cutler beds, Utah, USA, Sedimentary Geology, v. 298, p. 1-16. | Paleozoic |
| 29 | Cedar Mesa Sandstone | Utah, Colorado, USA  | Loope, D.B., 1985, Episodic deposition and preservation of eolian sands – a Late Paleozoic example from southeastern Utah, Geology, v. 13, p. 73– 76; Mountney, N.P. and Jagger, A., 2004, Stratigraphic evolution of an aeolian erg margin system: the Permian Cedar Mesa Sandstone, SE Utah, USA, Sedimentology, v. 51, p. 713-743.; Mountney, N.P., 2006, Periodic accumulation and destruction of aeolian erg sequences: The Cedar Mesa Sandstone, White Canyon, southern Utah, Sedimentology, v. 53, p. 789-823. | Paleozoic |
| 30 | Navajo Sandstone |  Utah-Arizona border, USA | Loope, D.B. and Rowe C.M., 2003, Long-lived pluvial episodes during deposition of the Navajo Sandstone, The Journal of Geology, v. 111, p. 223-232. | Mesozoic |
| 31 | Entrada Sandstone  | Utah, USA  | Loope, D.B. and Rowe C.M., 2003, Long-lived pluvial episodes during deposition of the Navajo Sandstone, The Journal of Geology, v. 111, p. 223-232; Benan, C.A.A. and Kocurek, G., 2000, Catastrophic flooding of an aeolian dune field: Jurassic Entrada and Todilto Formations, Ghost Ranch, New Mexico, USA, Sedimentology, v. 47, p. 1069-1080; Kocurek, G. and Day, M., 2018, What is preserved in the aeolian rock record? A Jurassic Entrada Sandstone case study at the Utah–Arizona border, Sedimentology, v. 65, p. 1301-1321. | Mesozoic |
| 32 | Big Bear Formation | California, USA | Stewart, J.H., 2005, Eolian deposits in the Neoproterozoic Big Bear Group, San Bernardino Mountains, California, USA, Earth Science Reviews, v. 72, p. 47-62. | Proterozoic |
| 33 | Wolfville Formation | Nova Scotia, Canada | Leleu, S. and Hartley, A.J., 2018, Constraints on synrift intrabasinal horst development from alluvial fan and aeolian deposits (Triassic, Fundy Basin, Nova Scotia), in Ventra, D. and Clarke, L.E., Geology and Geomorphology of Alluvial and Fluvial Fans: Terrestrial and Planetary Perspectives, Geological Society of London Special Publication, v. 440, p. 79-101. | Mesozoic |
| 34 | Page Sandstone  | Utah, USA  | Jones, L.S. and Blakey, R.C., 1997, Eolian-fluvial interaction in the Page Sandstone (Middle Jurassic) in south-central Utah, USA: A case study of erg-margin processes, Sedimentary Geology, v. 109, p. 181-198; Kocurek, G., Knight, J. and Havholm, K., 1991, Outcrop and semi-regional three-dimensional architecture and reconstruction of a portion of the eolian Page Sandstone (Jurassic). In A. Miall and N. Tyler (Eds.) Three-dimensional facies architecture, SEPM, pp. 25-43, Tulsa, OK. | Mesozoic |
| 35 | Mancheral Quartzite | India | Chakraborty, T. and Chaudhuri, A.K., 1993, Fluvial-aeolian interactions in a Proterozoic alluvial plain: example from the Mancheral Quartzite, Sullavai Group, Pranhita-Godavari Valley, India. In K. Pye (Ed.) The Dynamics and Environmental Context of Aeolian Sedimentary Systems, Geological Society Special Publications, v. 72, p. 127-141. | Proterozoic |
| 36 | Venkatpur Sandstone | India | Chakraborty, T., 1991, Sedimentology of a Proterozoic erg: the Venkatpur Sandstone, Pranhita-Godavari Valley, South-India. Sedimentology, v. 38, p. 301-322. | Proterozoic |
| 37 | Unayzah A | Saudi Arabia | Melvin, J., Sprague, R.A., and Heine, C.J., 2010, From bergs to ergs: The late Paleozoic Gondwanan glaciation and its aftermath in Saudi Arabia. In O.R. LópezGamundí and L.A. Buatois (Eds.), Late Paleozoic Glacial Events and Postglacial Transgressions in Gondwana. Geological Society of America Special Paper, v. 468, p. 37–80 | Paleozoic |
| 38 | Unayzah (middle member)  | Saudi Arabia | Melvin, J., Sprague, R.A., and Heine, C.J., 2010, From bergs to ergs: The late Paleozoic Gondwanan glaciation and its aftermath in Saudi Arabia. In O.R. LópezGamundí and L.A. Buatois (Eds.), Late Paleozoic Glacial Events and Postglacial Transgressions in Gondwana. Geological Society of America Special Paper, v. 468, p. 37–80 | Paleozoic |
| 39 | Karutola Formation | India | Chakraborty, T. and Sensarma, St., 2008, Shallow marine and coastal eolian quartz arenites in the Neoarchean-Palaeoproterozoic Karutola Formation, Dongargarh volcano-sedimentary succession, central India. Precambrian Research, v. 162, p. 284-301 | Proterozoic |
| 40 | Nepean Formation | Canada | MacNaughton, R.B., Cole, J.M., Dalrymple, R.W., Braddy, S.J., Briggs, D.E.G. and Lukie, T.D., 2002, First steps on land: Arthropod trackways in Cambrian-Ordovician eolian sandstone, southeastern Ontario, Canada. Geology, v. 30, p. 391-394. | Paleozoic |
| 41 | Pedra Pintada Formation | Brazil | Paim, P.S.G. and Scherer, C.M.S., 2007, High-resolution stratigraphy and depositional model of wind- and water-laid deposits in the Ordovician Guaritas Rift (southernmost Brazil). Sedimentary Geology, v. 202, p. 776-795 | Paleozoic |
| 42 | Whitworth Formation | Australia | Simpson, E.L. and Eriksson, K.A., 1993, Thin eolianites interbedded within a fluvial and marine succession: Early Proterozoic Whitworth Formation, Mount Isa Inlier, Australia. Sedimentary Geology, v. 87, p. 39–62 | Proterozoic |
| 43 | Rodjeberg Formation | Greenland | Olsen, H. and Larsen, P.-H., 1993, Lithostratigraphy of the continental Devonian sediments in North-East Greenland. Geological Survey of Denmark and Greenland, v. 165, p.1-108. | Paleozoic |
| 44 | Snehvide Formation | Greenland | Olsen, H. and Larsen, P.-H., 1993, Lithostratigraphy of the continental Devonian sediments in North-East Greenland. Geological Survey of Denmark and Greenland, v. 165, p.1-108. | Paleozoic |
| 45 | Sofia Sund Formation | Greenland | Olsen, H. and Larsen, P.-H., 1993, Lithostratigraphy of the continental Devonian sediments in North-East Greenland. Geological Survey of Denmark and Greenland, v. 165, p.1-108. | Paleozoic |
| 46 | Alinya Formation | Australia | Zang, W.L., 1995, Early Neoproterozoic sequence stratigraphy and acritarch biostratigraphy, eastern Officer Basin, South Australia. Precambrian Research, v. 74, p. 119-175. | Proterozoic |
| 47 | Bakoye Formation | Africa | Deynoux, M., Kocurek, G. and Proust, J.N., 1989, Late Proterozoic periglacial aeolian deposits on the West African Platform, Taoudeni Basin, western Mali, Sedimentology, v. 36, p. 531-550. | Proterozoic |
| 48 | Galesville Member | Wisconsin, USA | Dott, R.H., Byers, C.W., Fielder, G.W., Stenzel, S.R. and Winfree, K.E., 1986, Aeolian to marine transition in Cambro-Ordovician cratonic sheet sandstones of the northern Mississippi valley, U.S.A, Sedimentology, v. 33, p. 345-367. | Paleozoic |
| 49 | Kilmurry Formation | Ireland | Morrisey, L.B., Braddy, S., Dodd, Ch., Higgs, K.T. and Williams B.P.J., 2012, Trace fossils and palaeoenvironments of the Middle Devonian Caherbla Group, Dingle Peninsula, southwest Ireland, Geological Journal, v. 47, p. 1–29. | Paleozoic |
| 50 | Lower Dala Sandstone | Sweden | Pulvertaft, T.C.R., 1985, Eolian dune and wet interdune sedimentation in the Middle Proterozoic Dala Sandstone, Sweden, Sedimentary Geology, v. 44, p. 93-111. | Proterozoic |
| 51 | Pewamo Formation | Michigan, USA | Benison, K.C., Knapp, J.P. and Dannenhoffer, J.M., 2011, The Pennsylvanian Pewamo Formation and associated Haybridge strata; toward the resolution of the Jurassic Ionia red bed problem in the Michigan Basin, U.S.A, Journal of Sedimentary Research, v. 81, p. 459-478. | Paleozoic |
| 52 | Shikaoda Formation | India | Chakraborty, T. and Chakraborty, C., 2001, Eolian-aqueous interactions in the development of a Proterozoic sand sheet: Shikaoda Formation, Hosangabad, India, Journal of Sedimentary Research, v. 71, p. 107-117. | Proterozoic |
| 53 | St. Peter Sandstone | Wisconsin, USA | Dott, R.H., Byers, C.W., Fielder, G.W., Stenzel, S.R. and Winfree, K.E., 1986, Aeolian to marine transition in Cambro-Ordovician cratonic sheet sandstones of the northern Mississippi valley, U.S.A, Sedimentology, v. 33, p. 345-367. | Paleozoic |
| 54 | Wonewoc Formation | Wisconsin, USA | Dott, R.H., Byers, C.W., Fielder, G.W., Stenzel, S.R. and Winfree, K.E., 1986, Aeolian to marine transition in Cambro-Ordovician cratonic sheet sandstones of the northern Mississippi valley, U.S.A, Sedimentology, v. 33, p. 345-367. | Paleozoic |
| 55 | Varzinyha | Brazil | Paim, P.S.G. and Scherer, C.M.S., 2007, High-resolution stratigraphy and depositional model of wind- and water-laid deposits in the Ordovician Guaritas Rift (southernmost Brazil). Sedimentary Geology, v. 202, p. 776-795 | Paleozoic |