


NATIONAL RESEARCH COUNCIL OF ITALY
INSTITUTE OF APPLIED GEOLOGY
REPUBLIC OF ITALY
(CNR-IRPI)




MONGOLIAN ACADEMY OF SCIENCES
INSTITUTE OF ARCHAEOLOGY
REPUBLIC OF MONGOLIA
(MAS-IA)



**GENERAL REPORT OF THE FIELDWORK CONDUCTED IN 2005
BY THE JOINT ITALIAN- MONGOLIAN CNR-MAS EXPEDITION
“GOBI ALTAYN GEO-ARCHAEOLOGY”**

edited by
BRUNO MARCOLONGO

Padova –Ulaanbaatar
2005



La Garangola - Padova

Cover photos:

- *left: joint CNR-MAS geo-archaeological expedition's team at 2005 excavation camp*
- *right: joint CNR-MAS team with Authorities and guest at Bogd "Italy-Mongolia Center", restored with the financial aid of the Regional Council of Veneto Region/ Department of International Relations.*

ISBN – 10: 88-95172-01-9

ISBN – 13: 978-88-95172-01-9

Published with the financial contribution of CNR-IRPI, Padova


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Padova –Ulaanbaatar
2005

EUT
Edizioni Università di Trieste

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Foreword

*The present general report on the field activity done during the summer 2005 intends to diffuse, in concomitance with the celebrations of the 800 Anniversary of the Foundation of the **Yeke Mongol Ulus** (Great Mongol State) the results reached so far by the CNR-MAS Joint Geo-archaeological Expedition in the Valley of Lakes, Gobi-Altayn region (Bayankhongor-Övörkhangay aimags)*

Here a geo-archaeological project officially started in the year 2000 after the signature of a memorandum of understanding between the National Research Council of Italy (CNR) and the Mongolian Academy of Sciences (MAS), sustained at the beginning by the Italian Ministry of Foreign Affairs and then strengthened and increased by the co-financing of the Regional Council of Veneto Region/ Department of International Relations.

The principal aim consists in recovering and emphasizing the anthropic and natural resources of the Valley of Lakes (Bogd soumon) in southern Gobi area, where many evidences witness durable and significant contacts through centuries of Mongolia with Central Asia and Caspian/Mediterranean basin.

This cultural initiative matches not only the scientific interests of various scholars but also contributes to the valorization of the cultural heritage of Mongolia in the perspective of a growth of the international co-operation between friend peoples and complementary cultures and economies.

The print of the work, written in Mongol language and translated also in English for a wider scientific Community, has been possible thank to the sensibility and support of University of Trieste and Association Italia-Mongolia, presided by Prof. Aldo Colleoni, Honorary Consul of Mongolia in Trieste, who is editor of a new series of contributions on Mongol culture, art and history.

Prof. Bruno Marcolongo
Director, joint CNR-MAS geo-archaeological project in Mongolia

The outcomes of the research conducted in the framework of the co-operation project between the Italian Research Council (CNR) and the Mongolian Academy of Sciences (MAS) directed by Prof. Bruno Marcolongo are innovative, original and significant.

They also favour among the Western scholars a wider knowledge of the Mongol culture and history, thus creating the bases for further developments in scientific co-operation and exchange.

The present publication closely follows two recent editorial works printed by EUT (Edizioni Università di Trieste), both of them dealing with outstanding aspects of the Mongol society and tradition and strictly connected with the joint research performed by CNR and MAS.

In particular the first one offers a collection of 323 inedited petroglyphs of Javkhlant Khairkhan mountains, located some 17 km to the northwest of Oyu Tolgoi (the "Turquoise Hill") in Umnogobi aimag. "Rock art" artefacts are one of the most peculiar and well spread witnesses of the prehistoric and protohistoric (mainly Bronze and Iron Age) cultures of Mongolia and they have been object of discovery and systematic study mainly in the second half of the last century. The second one deals with "shamanism" in Mongolia which is, since protohistoric times and through Hunnu period to the time of the Great Mongol Empire, one of its genuine cradles in which it has deeply struck root till rising to a true religion followed by the most of the people.

Now, it is my great satisfaction and pleasure to see the vitality of this joint scientific activity and to contribute to its diffusion, thus creating an ideal bridge between the friend People of Mongolia and Italy.

Prof. Aldo Colleoni
Honorary Consul of Mongolia and President of Italia-Mongolia Association

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INTRODUCTION

In the framework of the CNR-MAS joint geo-archaeological project in the Valley of Lakes in Mongolia (Gobi-Altayn region, Bayankhongor-Övörkhongay *aimags*, the joint Italian-Mongolian expedition succeeded to conduct a proper fieldwork from 29th July to 28th August 2005.

A group of about 300 structures (*kurgan* and) dating back to different periods, situated on the south-western bank of Orog Nuur in the area of Bogd Sum (Bayankhongor *aimag*), has been recognized and precisely located. All the archaeological evidences have been documented and some of the most outstanding tombs have been excavated.

The official team of the joint CNR-MAS 2005 geoarchaeological expedition was formed as follows:

- from **Italian side:**

Prof. Bruno Marcolongo (Italian-side Director of the Joint Italian-Mongol Geoarchaeological Project, CNR-IRPI, Padova, Italy)

Prof. Gabriele Rossi-Osmida (Archaeologist, Director of the “Ligabue Study and Research Center”, Venice, Italy)

Dr. Giovanna Fuggetta (Ethnographer, Researcher, CNR-IRPI, Padova, Italy)

Prof. Alessandro Grossato (Historian, University of Padova, Italy)

- from **Mongolian side:**

Dr. Günchinsüren Byambaa (Mongolian-side Director of the fieldwork, Head of the Department of Prehistory Studies, the Institute of Archaeology, Mongolian Academy of Sciences, Ulaanbaatar)

Bolorbat Tsendendorj (Researcher of the Department of Prehistory Studies, the Institute of Archaeology, Mongolian Academy of Sciences, Ulaanbaatar)

Bazargür Dashzeveg (Researcher of the Department of Prehistory Studies, the Institute of Archaeology, Mongolian Academy of Sciences, Ulaanbaatar)

Chinzorig Batnasan (Researcher of the Department of Prehistory Studies, the Institute of Archaeology, Mongolian Academy of Sciences, Ulaanbaatar)

Assistant researchers:

Altanbagana, A. (Master of Mongolian University of Education Science)

Günchin-Ish, G. (Student)

Budjav, G. (Student)

Gankhishig, G. (Student of Ulaanbaatar University)

Sainsüren, S. (Student of Ulaanbaatar University)

Dalaikhüü, B. (Inhabitant of Bogd Sum)

Nominchuluun, B. (Inhabitant of Bogd Sum)

Others:

Narandavaa, Yo. (Driver of the project, UAZ-469 with the state registration number)

Urtnasan, P. (Driver of the project, UAZ-minibus with the state registration number)

Goals of the 2005 expedition

The main goals of the 2005 joint CNR-MAS expedition have been:

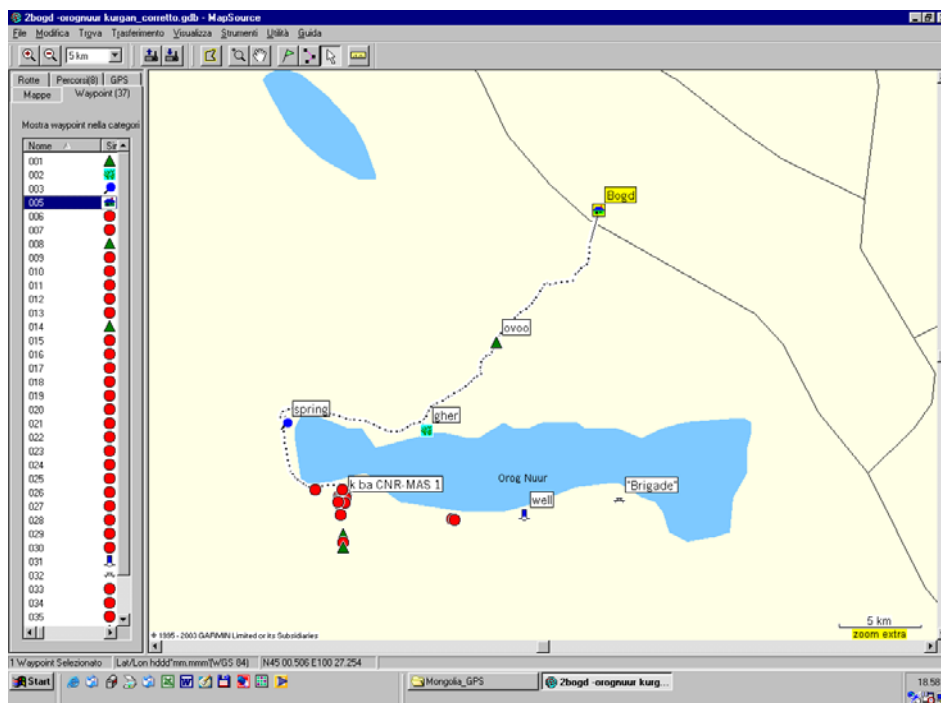
- to precisely locate a very large archaeological complex of about 300 structures, discovered in the previous summer campaigns 2002-2003-2004, which date back to different periods (mainly Bronze and Iron Age) situated along the south-western bank of Orog Nuur, 20 km south of Bogd Sum (Bayankhongor Aimag);
- to accurately document and describe all of them (GPS and surface survey)
- to excavate some of the most outstanding tombs.

Literature review and previous works

In the course of carrying out a seasonal fieldwork at a prehistorical settlement named “Bayanzag” in the area of Bulgan Sum, Ömnö-gobi Aimags, in 1971, the joint historico-cultural Mongolian-Soviet expedition collected a great number of stone artifacts and excavated test pits containing a variety of pottery fragments which could be attributed by their similarity to the date of Isakov-Serov culture found around Lake Baikal (1).

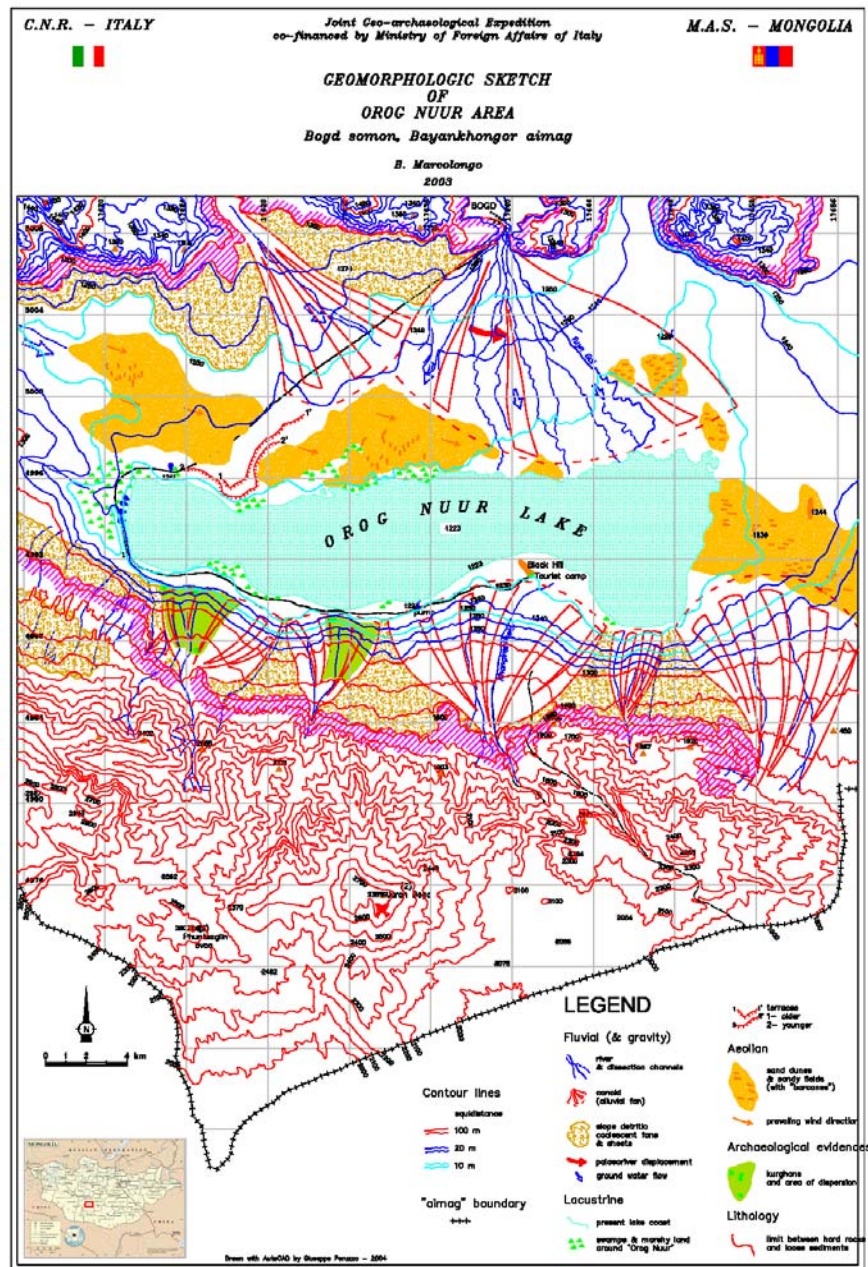
In 1985 the joint historico-cultural Mongolian-Soviet expedition conducted a survey in the areas of Övörkhangaï, Bayankhongor, Gobi-Altai and Ömnögobi Aimags. During the wide-range survey, they revealed six settlements of Lower Paleolithic around Lake Orog Nuur where they conducted some test excavations which they continued in 1986 (2).

As a result of the 2002 survey in Gobi region of the southern Mongolia, a team of the joint Italian-Mongolian "Gobi-geoarchaeology" expedition discovered and took proper measurements of a very large necropolis lying on the western bank of Lake Orog Nuur in Bogd Sum, Bayankhongor Aimag, and chose one of the Bronze age *kereksurs* (*khirigsuur*) to perform excavation in the year 2003.



Necropolis (“Bronze age” khurgan-kereksur) discovered during the joint CNR-MAS expedition on August 2002 at the south-western edge of Orog Nuur lake with “CNR-MAS 1” tomb excavated in 2003.

The whole complex has been carefully surveyed with GPS during August 2004 and 2005



Geomorphological sketch of the surveyed area south of Bogd Soumon (Bayankhongor Aimag)

The ring stone-mound or *khirigsuur* was surrounded by a rectangular stone fence. There were one small satellite structure of stone at each corner of the fence; a line of three similar structures stretched in a west-east direction along the northern part of it. In the central part of the ring mound, the team found a burial box with four standing corner-stones in the process of excavation, where two flat stones were used for a cap. After opening the box cap, there found a dead body lying on its one side heading in the southwest direction whose legs were bent by their joints. The skeleton were not complete and its skull was heavily broken, but it could be assumed by the location of its backbone, femurs and other hand-foot bones that the burial was not looted. No other artifacts found in the burial and other satellite structures. The grave was dating back Bronze age. That the human burial was revealed in *khirigsuur* is highly significant for archaeology. The *khirigsuur* is similar by its burial arrangement to the ones of Uushigyn Övör in the area Bürentogtokh Sum, Khövsgöl Aimag and of Dashinchilen Sum, Bulgan Aimag, but is different from them by the fact that the dead body was buried with the bending legs. If this feature is considered, it can be belonged to a type of the *khirigsuur* found in the area of Monk-khairkhan Sum, Khovd Aimag. Also Some Neolithic features can be observed from its structure.

**LOCATION AND BRIEF DESCRIPTION OF THE NECROPOLIS COMPLEX
SITUATED ON THE SOUTH-WEST BANK OF OROG NUUR
AT THE BASE OF THE SOUTHERN SLOPE OF MTS. IKH BOGD UUL**

All the features are numbered from north to south.

OR-01. It has outer rectangular fence measuring 14.6×16 m. There were one small satellite structure of stone at each corner of the fence. A line of three similar structures stretched in a west-east direction along the northern part. In the middle of the khirigsuur there is a mound covered by big stones. The diameter of the mound is 11.7 m. That there revealed a human burial in the course of the excavation is scientifically very important. The Bronze age khirigsuur is similar by its burial arrangement to the ones of Uushigyn Övör in the area Bürentogtokh Sum, Khövsgöl Aimag and of Dashinchilen Sum, Bulgan Aimag, but is different from them by the fact that the dead body was buried with the bending legs. If this feature is considered, it can be belonged to a type of the khirigsuur found in the area of Monk-khairkhan Sum, Khovd Aimag.

GPS N 45° 02' 15.5"

E 100° 34' 43.3" above sea level (henceforth, asl). 1254 m

OR-02. The khirigsuur is probably surrounded by ring outer fence, but it is unclear. There is relatively big ring satellites in four parts. The middle mound is covered by small stones. The mound diameter is 7.4 m.

GPS N 45° 02' 36.5"

E 100° 33' 41.8" asl. 1233 m

OR-03. The khirigsuur is covered by small cover stones. There are three satellites stretching east to west in front of its rectangular outer fence. The fence measure is 7.3×4.7 m.

GPS N 45° 02' 36.9"

E 100° 33' 45.7" asl. 1235 m

OR-04. The ring feature is not surrounded by outer fence, but has a satellite in the north part. The diameter is 5.4 m.

GPS N 45° 02' 32.0"

E 100° 33' 50.6" asl. 1239 m

OR-05. The oblong shaped feature of stone has a satellite to the east. It is measured as 5.5×5.4 m.

GPS N 45° 02' 37.8"

E 100° 33' 59.7" asl. 1233 m

OR-06. The khirigsuur covered by huge stones is rectangular-shaped. There are three satellites on the east and north sides. The measure is 4.2×3.8 m.

GPS N 45° 02' 37.7"

E 100° 34' 00.7" asl. 1236 m

OR-07. The feature with big cover stones is ring. The diameter is 5.3 m.

GPS N 45° 02' 33.6"

E 100° 34' 01.7" asl. 1236 m

OR-08. The cover stones of the looted ring tomb are scattered on the ground. The diameter is 4 m.

GPS N 45° 02' 33.1"

E 100° 34' 02.8" asl. 1237 m

OR-09. It is a ring grave covered by small stones. The diameter is 4.45 m.

GPS N 45° 02' 33.6"

E 100° 34' 01.7" asl. 1236 m

OR-10. It is a ring grave covered by big stones. The diameter is 5 m.

GPS N 45° 02' 31.7"

E 100° 34' 02.6" asl. 1240 m

OR-11. It is a square feature covered by small stones. The measure is 5.6×4.6 m.

GPS N 45° 02' 38.9"

E 100° 34' 06.1" asl. 1231 m

OR-12. It is a khirigsuur with rectangular outer fence. There are four satellite at its edges. In addition, there are four satellites stretching west to east outside the fence. The mound in the center is covered by smaller ones. The diameter of the mound is 7.2 m. The outer fence is 17.4×14.3 m.

GPS N 45° 02' 38.6"

E 100° 34' 07.4" asl. 1239 m

OR-13. It is a small oblong feature measuring 6.3×5 m.

GPS N 45° 02' 37.5"

E 100° 34' 07.0" asl. 1235 m

OR-14. The slab grave is broken slightly along the natural slope formation. The tomb is 3.3×1.8 m.

GPS N 45° 02' 37.2"

E 100° 34' 07.1" asl. 1234 m

OR-15. Like the above-mentioned one, this slab grave is broken to the north tomb along the natural formation. The grave is 4.6×2.5 m.

GPS N 45° 02' 36.6"

E 100° 34' 08.4" asl. 1234 m

OR-16. It is a ring tomb without cover stones in the middle. The diameter is 6.1 m.

GPS N 45° 02' 36.4"

E 100° 34' 09.4" asl. 1236 m

OR-17. This round-shaped mound is covered by small stones. There is a satellite in front of it. The mound diameter is 7 m.

GPS N 45° 02' 36.0"

E 100° 34' 09.4" asl. 1236 m

OR-18. It is a ring stone feature without fences. The diameter is 8 m.

GPS N 45° 02' 39.0"

E 100° 34' 11.0" asl. 1236 m

OR-19. This ring feature is covered by small stones. The diameter is 6.3 m.

GPS N 45° 02' 39.4"

E 100° 34' 12.0" asl. 1235 m

OR-20. The khirigsuur has an oblong-shaped outer fence, at each corner of it there is one small satellite. On the south side of the outer fence two satellites stretch from east to west. The mound in the

middle is covered by small stones. The mound diameter is 5.5 m. The fence is 15×14.1 m.

GPS N 45° 02' 38.9"

E 100° 34' 11.9" asl. 1233 m

OR-21. The khirigsuur has an oblong-shaped outer fence, at each corner of it there is one small satellite. The mound in the middle is covered by small stones. The mound diameter is 6.9 m. The fence is 14×13 m.

GPS N 45° 02' 39.8"

E 100° 34' 11.9" asl. 1233 m

OR-22. A round feature with small cover stones. The diameter is 7.1 m.

GPS N 45° 02' 39.8"

E 100° 34' 16.4" asl. 1233 m

OR-23. This feature was looted.

GPS N 45° 02' 39.3"

E 100° 34' 20.9" asl. 1236 m

OR-24. A round feature with small cover stones. The diameter is 11.5 m.

GPS N 45° 02' 38.3"

E 100° 34' 19.5" asl. 1233 m

OR-25. The khirigsuur has an oblong-shaped outer fence, at each corner of it there is one small satellite. The mound in the middle is covered by small stones. The mound diameter is 8.1 m. The fence is 20×16.5 m.

GPS N 45° 02' 37.1"

E 100° 34' 20.3" asl. 1237 m

OR-26. The khirigsuur has an oblong-shaped outer fence, at each corner of it there is one small satellite. There is a satellite in front of or outside the fence. The mound in the middle is covered by small stones. The mound diameter is 6.1 m. The fence is 20.7×16.5 m.

GPS N 45° 02' 35.5"

E 100° 34' 20.1" asl. 1236 m

OR-27. A round feature with small cover stones. The diameter is 6.5 m.

GPS N 45° 02' 29.9"

E 100° 34' 13.6" asl. 1242 m

OR-28. A ring tomb with small cover stones. The diameter is 5 m.

GPS N 45° 02' 39.4"

E 100° 34' 13.6" asl. 1240 m

* There is a standing stone on its west side. The standing stone is surrounded by 1×1.5 m stone enclosure.

OR-29. A ring tomb with the sandy depression in the center. The diameter is 4.5 m.

GPS N 45° 02' 28.5"

E 100° 34' 14.6" asl. 1243 m

OR-30. The khirigsuur has an oblong-shaped outer fence, at each corner of it there is one small satellite. The north and west parts of the fence is very disturbed, unclear. There are two satellites

outside the fence. The mound cover stones in the middle are scattered along the valley to north. The mound diameter is 6.5 m. The fence is 13.4×12.8 m.

GPS N 45° 02' 29.0"
E 100° 34' 11.9" asl. 1239 m

OR-31. A round grave with big cover stones. The diameter is 4.4 m.

GPS N 45° 02' 29.0"
E 100° 34' 06.7" asl. 1243 m

OR-32. A 6.5 m round grave. Its cover stones were thrown away to the outside.

GPS N 45° 02' 26.7"
E 100° 34' 05.5" asl. 1246 m

OR-33. It is a ring grave covered by small stones. The diameter is 5.2 m.

GPS N 45° 02' 26.5"
E 100° 34' 06.5" asl. 1248 m

OR-34. It is a ring grave covered by small stones. The diameter is 4.5 m.

GPS N 45° 02' 23.6"
E 100° 34' 11.3" asl. 1250 m

OR-35. A khirigsuur with ring stone outer fence, outside of it there are two satellites on the south side and one satellite on the northwest side. The middle mound is covered by relatively big cover stones. The diameter is 7.5 m. The outer fence diameter is 12.5 m.

GPS N 45° 02' 27.0"
E 100° 34' 16.9" asl. 1240 m

OR-36. A round feature. In the center there is a mound covered by small stones. The diameter is 10.3 m.

GPS N 45° 02' 26.2"
E 100° 34' 16.2" asl. 1246 m

OR-37. It is a ring grave covered by big stones. The diameter is 5.5 m.

GPS N 45° 02' 23.9"
E 100° 34' 14.0" asl. 1248 m

OR-38. A round-shaped feature. There are two satellites east and one satellite west of it. The diameter of the feature is 10.1 m.

GPS N 45° 02' 20.5"
E 100° 34' 13.3" asl. 1252 m

OR-39. It is a ring grave covered by big stones. The diameter is 7.1 m.

GPS N 45° 02' 16.8"
E 100° 34' 10.8" asl. 1255 m

OR-40. A ring tomb without cover stones in the middle. The diameter is 3 m.

GPS N 45° 02' 18.7"
E 100° 34' 11.2" asl. 1251 m

OR-41. It is a ring tomb covered by small stones. The diameter is 3.5 m.

GPS N 45° 02' 15.0"
E 100° 34' 10.6" asl. 1257 m

OR-42. It is a ring tomb covered by small stones, but the general structure except its south part is unclear. The diameter is 7.6 m.

GPS N 45° 02' 12.4"
E 100° 34' 12.6" asl. 1262 m

OR-43. A moderate sized khirigsuur surrounded by a rectangular outer fence, at each corner of it there is one small satellite. One more satellite is close to the fence or southeast of it. But its outer fence is very disturbed; only southeast part is clear. Big cover stones assembled in the center of the mound. The mound diameter is 12.6 m.

GPS N 45° 02' 03.8"
E 100° 34' 19.0" asl. 1277 m

OR-44. A slab grave with big cover stones broken down to the north along the natural formation of water channel. The tomb is 3.9×2.8 m.

GPS N 45° 02' 03.8"
E 100° 34' 19.5" asl. 1277 m

OR-45. A ring feature with large cover stones. One satellite is on the west side. The diameter is 11.4 m.

GPS N 45° 02' 04.0"
E 100° 34' 15.6" asl. 1273 m

OR-46. A circular tomb with big cover stones. 3 m of it, there are some standing stones in a row. The tomb diameter is 3.2 m.

GPS N 45° 02' 14.3"
E 100° 34' 10.7" asl. 1256 m

OR-47. Its form is unclear except its northeast and southwest parts, probably circular. This feature with big cover stones has five satellites. The diameter is 11 m.

GPS N 45° 02' 06.2"
E 100° 34' 15.7" asl. 1267 m

OR-48. A stone mound with sandy depression in the center. Its cover stones are relatively big. The diameter is 7.5 m.

GPS N 45° 02' 06.6"
E 100° 34' 20.2" asl. 1268 m

OR-49. A circular feature with big cover stones. The diameter is 8 m.

GPS N 45° 02' 09.6"
E 100° 34' 18.8" asl. 1265 m

OR-50. Two slab graves standing very close to each other. The distance between them is 2 m;

Grave A or north one is 4.2×2.9 m. Grave B or south one is 4.2×2.1 m.

GPS N 45° 02' 11.0"
E 100° 34' 13.7" asl. 1259 m

OR-51. A slab grave with large cover stones. The size is 3.9×1.8 m.

GPS N 45° 02' 12.8"

E 100° 34' 18.7" asl. 1257 m

OR-52. A circular tomb. Its cover stones relatively assembled in the center. The diameter is 3.8 m.

GPS N 45° 02' 12.8"

E 100° 34' 19.4" asl. 1253 m

OR-53. This grave was looted down. The size is probably 3 m.

GPS N 45° 02' 14.2"

E 100° 34' 20.8" asl. 1259 m

OR-54. A rectangular feature with large cover stones. The size is 11.9×9 m.

GPS N 45° 02' 33.3"

E 100° 34' 24.0" asl. 1238 m

OR-55. It is a rectangular stone feature with sandy depression in the center. The size is 11×9 m.

GPS N 45° 02' 31.9"

E 100° 34' 24.3" asl. 1236 m

OR-56. A ring tomb with large cover stones. The diameter is 2.8 m.

GPS N 45° 02' 31.0"

E 100° 34' 22.7" asl. 1236 m

OR-57. A ring feature with relatively small cover stones. The diameter is 7.7 m.

GPS N 45° 02' 28.3"

E 100° 34' 26.4" asl. 1241 m

OR-58. A circular grave without cover stones in the middle. The size is 3.5 m.

GPS N 45° 02' 26.8"

E 100° 34' 23.9" asl. 1248 m

OR-59. A ring tomb covered by small stones. The diameter is 5 m.

GPS N 45° 02' 33.3"

E 100° 34' 24.0" asl. 1238 m

OR-60. A 3.5×1.6 m disturbed slab grave. Its central cover stones were thrown away to the outside.

GPS N 45° 02' 33.3"

E 100° 34' 24.0" asl. 1238 m

OR-61. A looted tomb. Its general frame of few cover stones is clear. The size is 8.5 m.

GPS N 45° 02' 22.6"

E 100° 34' 25.4" asl. 1251 m

OR-62. A small slab grave, but its enclosing slabs are very large. The size is 2.2×1.2 m.

GPS N 45° 02' 21.2"

E 100° 34' 24.7" asl. 1251 m

OR-63. A small slab grave, but its enclosing slabs are very large. The size is 2.8×2.3 m.

GPS N 45° 02' 20.9"

E 100° 34' 24.0" asl. 1257 m

OR-64. A circular feature, but has a satellite on the northeast side. The diameter is 7.7 m.

GPS N 45° 02' 17.4"

E 100° 34' 21.7" asl. 1257 m

OR-65. A khirigsuur enclosed outside by rectangular fence. At four edges there are four satellites. The central stone mound is very close to its outer fence. The size of the outer fence is 14×12.1 m.

GPS N 45° 02' 16.8"

E 100° 34' 21.5" asl. 1257 m

OR-66. A ring stone feature with large cover stones. There is a satellite on the east side. The diameter is 8.5 m.

GPS N 45° 02' 16.4"

E 100° 34' 23.6" asl. 1257 m

OR-67. It is a slab grave with large cover stones. The size is 4.2×4.1 m.

GPS N 45° 02' 15.5"

E 100° 34' 24.9" asl. 1257 m

OR-68. A slab burial with depression in the middle. It is broken down along the ravine to the north. It is 8.1×5.7 m.

GPS N 45° 02' 12.8"

E 100° 34' 24.9" asl. 1273 m

OR-69. The central cover stones of this 3.5×2.7 m slab grave are scattered on the ground.

GPS N 45° 02' 12.3"

E 100° 34' 25.3" asl. 1258 m

OR-70. A completely disturbed feature is 10.1 m in length.

GPS N 45° 02' 33.0"

E 100° 34' 32.5" asl. 1236 m

OR-71. A khirigsuur surrounded by rectangular outer fence has one satellites at its each corner. Inside its outer fence there are two satellites on the west side. The 7.1 m central mound is covered by small stones. The size of outer fence is 17.5×15 m.

GPS N 45° 02' 32.9"

E 100° 34' 36.4" asl. 1237 m

OR-72. A ring grave with relatively large cover stones. The diameter is 5.7 m.

GPS N 45° 02' 39.7"

E 100° 34' 45.1" asl. 1232 m

OR-73. A circular tomb with relatively small cover stones. The diameter is 3.6 m.

GPS N 45° 02' 39.9"

E 100° 34' 41.7" asl. 1232 m

OR-74. A circular feature with large cover stones. The diameter is 6.9 m.

GPS N 45° 02' 38.0"

E 100° 34' 36.2" asl. 1234 m

OR-75. A ring tomb with sandy depression in the center. The depression is culturally formed, probably

looted. Its cover stones are large. The diameter is 6.5 m.

GPS N 45° 02' 32.9"

E 100° 34' 38.6" asl. 1239 m

OR-76. A khirigsuur surrounded by rectangular partial outer fence has one satellites at its each corner. The east and north parts of outer fence are clear. One satellite is on the south side of central stone mound inside the outer fence; one is on the southeast side. There are seven satellites east of the fence stretching to south. The stone mound has a depression in the center. The mound diameter is 17.5 m. The size of outer fence is 36.5×33 m.

GPS N 45° 02' 33.4"

E 100° 34' 41.0" asl. 1233 m

OR-77. A circular stone feature with depression in the center. There is one satellite on the south side; one satellite on the southeast side of it. The feature is 11.5 m in diameter .

GPS N 45° 02' 27.8"

E 100° 34' 35.8" asl. 1242 m

OR-78. A ring stone feature with small cover stones. There is a satellite on the north side and one more on the northeast side. The diameter is 7.7 m.

GPS N 45° 02' 24.1"

E 100° 34' 37.0" asl. 1242 m

OR-79. A khirigsuur with oblong-shaped fence. But its form is very disturbed. The round central mound is covered by small stones. The diameter is 6.4 m.

GPS N 45° 02' 26.4"

E 100° 34' 33.8" asl. 1245 m

OR-80. A khirigsuur surrounded by rectangular outer fence has one satellite at its each corner. East of the fence, there are four satellites stretching in a row to the west. The central mound is covered by big stones. The mound diameter is 9 m. The size of outer fence is 23.9×17 m.

GPS N 45° 02' 26.3"

E 100° 34' 19.7" asl. 1244 m

OR-81. A khirigsuur surrounded by rectangular fence has one satellites at its each corner. The central rectangular mound is covered by large stones. The mound is 5.6×5.3 m. The size of outer fence is 12×11.8 m.

GPS N 45° 02' 24.4"

E 100° 34' 29.6" asl. 1247 m

OR-82. It is a khirigsuur with 11×10.6 m rectangular outer fence. Four standing stones are at four corners of the fence. The central mound is covered by large stones. The mound diameter is 8.5 m.

GPS N 45° 02' 24.5"

E 100° 34' 31.5" asl. 1242 m

OR-83. A circle-shaped feature covered by smallish stones. The diameter is 5.8 m.

GPS N 45° 02' 23.1"

E 100° 34' 33.3" asl. 1243 m

OR-84. A khirigsuur surrounded by rectangular fence. The central mound is very close to its outer fence on ridges. The mound diameter is 9.1 m. The fence is 11.9×10.2 m.

GPS N 45° 02' 22.8"
E 100° 34' 31.9" asl. 1246 m

OR-85. A slab grave. It is enclosed by large slab stones. There is one large standing stone at its each corner. Inside the slab enclosure there are two overlapped big stones. The size is 3.3×2.2 m.

GPS N 45° 02' 22.5"
E 100° 34' 31.2" asl. 1245 m

OR-86. A slab grave with large cover stones in the middle. The size is 3.5×3.3 m.

GPS N 45° 02' 22.8"
E 100° 34' 31.1" asl. 1243 m

OR-87. A khirigsuur looted wholly except its outer fence.

GPS N 45° 02' 22.1"
E 100° 34' 26.2" asl. 1249 m

OR-88. A khirigsuur surrounded by rectangular fence. There are four ring satellite small structures at four corners of outer fence. There is one more satellite northwest of the fence. The mound in the middle is covered by large stones. The diameter is 10.2 m. The fence is 15.9×11 m.

GPS N 45° 02' 21.4"
E 100° 34' 28.9" asl. 1249 m

OR-89. A khirigsuur surrounded by rectangular fence. There are four ring satellite small structures at four corners of outer fence. Its ridge is interrupted on the west side. There is one satellite northwest of the fence. The mound in the middle is covered by large stones, but scattered down along the natural slope formation to the north. The diameter is 10.2 m. The fence is 15.9 m.

GPS N 45° 02' 21.4"
E 100° 34' 28.9" asl. 1249 m

* The khirigsuur north of it is also looted.

OR-90. A khirigsuur with smallish cover stones. Its outer fence is square. The mound in the middle is 9 m in diameter. The size of outer fence is 10×10 m.

GPS N 45° 02' 21.7"
E 100° 34' 31.3" asl. 1248 m

OR-91. A khirigsuur surrounded by rectangular outer fence has one satellite at its each corner. East of the fence, there are four satellites stretching in a row to the south. The mound diameter is 7.2 m. The size of outer fence is 15.8×12.3 m.

GPS N 45° 02' 20.5"
E 100° 34' 31.9" asl. 1246 m

* There is a ring small stone grave south of the khirigsuur.

OR-92. A slab grave covered by small stones. The size is 4.3×4.1 m.

GPS N 45° 02' 19.8"
E 100° 34' 32.6" asl. 1248 m

OR-93. A looted tomb.

GPS N 45° 02' 18.8"
E 100° 34' 32.1" asl. 1251 m

OR-94. This khirigsuur has a partially encircled outer fence. The fence 13 m in diameter was interrupted on its north and southeast sides. The central mound 9 m in diameter is covered by relatively large stones.

GPS N 45° 02' 12.0"
E 100° 34' 27.3" asl. 1259 m

OR-95. A looted slab grave.

GPS N 45° 02' 13.2"
E 100° 34' 27.8" asl. 1253 m

OR-96. A khirigsuur with rectangular outer fence. The fence is partially disturbed: only its north and west ridges are clear. There are two satellites on the west side whose east and south parts are clear. The mound in the middle is covered by small stones. The mound is 10.4 m in diameter.

GPS N 45° 02' 17.8"
E 100° 34' 27.0" asl. 1254 m

OR-97. A khirigsuur surrounded by rectangular outer fence has one satellite at its each corner. There are three satellites respectively west and north of the fence. The mound has small cover stones. It is 12.6 m in diameter. The size of outer fence is 15×13 m.

GPS N 45° 02' 19.3"
E 100° 34' 30.4" asl. 1246 m

OR-98. A khirigsuur surrounded by rectangular outer fence has one satellite at its each corner. South of the fence, there are three satellites. The central mound is 12.1 m in diameter. The size of outer fence is 18.8×16.5 m.

GPS N 45° 02' 17.7"
E 100° 34' 32.7" asl. 1253 m

OR-99. A khirigsuur surrounded by rectangular outer fence. The central mound is 12.1 m in diameter. The size of outer fence is 13.3×11.2 m.

GPS N 45° 02' 16.5"
E 100° 34' 32.4" asl. 1258 m

OR-100. There is a slab burial with sandy depression in the center. The size is 2.6×1.9 m.

GPS N 45° 02' 15.5"
E 100° 34' 31.6" asl. 1252 m

OR-101. A slab burial. Its cover stones are scattered on the ground on edges. The size is 5.8×2.7 m.

GPS N 45° 02' 15.1"
E 100° 34' 30.7" asl. 1254 m

OR-102. A slab grave with small cover stones. The size is 3.2×3 m.

GPS N 45° 02' 13.5"
E 100° 34' 29.9" asl. 1258 m

OR-103. A khirigsuur surrounded by rectangular outer fence has one small satellite at its each corner. The mound in the middle is 6.4 m in diameter. The size of outer fence is 8.7×7.5 m.

GPS N 45° 02' 12.2"
E 100° 34' 30.9" asl. 1260 m

OR-104. A khirigsuur is encircled by a ring of stones 11.4 m in diameter. East of the fence, there is one small satellite. The mound in the middle is 8.2 m in diameter.

GPS N 45° 02' 11.4"

E 100° 34' 31.4" asl. 1260 m

OR-105. A feature with depression in the center is covered by small stones. The size is 7.4 m in diameter.

GPS N 45° 02' 11.0"

E 100° 34' 31.4" asl. 1261 m

OR-106. A khirigsuur surrounded by rectangular outer fence has one small satellite at its each corner. Outside or on the east side of the fence, there are four satellites stretching in a row to the south. Inside the fence there is one small ring satellite structure on the east side. The mound diameter is 12.6 m. The size of outer fence is 17.1×14.6 m.

GPS N 45° 02' 09.0"

E 100° 34' 30.6" asl. 1261 m

OR-107. A khirigsuur encircled by a ring of stones. The mound in the middle is covered by relatively large stones. The mound is 10.7 m in diameter. The outer fence is 18.2 m in diameter.

GPS N 45° 02' 12.5"

E 100° 34' 27.4" asl. 1266 m

OR-108. A khirigsuur surrounded by rectangular outer fence has one small satellite at its each corner. The mound in the middle is covered by big stones. It is 8.8 m in diameter. The size of outer fence is 10.7×8.6 m.

GPS N 45° 02' 09.7"

E 100° 34' 26.6" asl. 1259 m

OR-109. A khirigsuur surrounded by rectangular outer fence has one small satellite at its each corner. Outside the fence, there are two satellite structures on its east side. The mound in the middle is 11 m in diameter. The size of outer fence is 12×11.5 m.

GPS N 45° 02' 06.7"

E 100° 34' 27.2" asl. 1264 m

OR-110. A khirigsuur surrounded by rectangular outer fence. The south ridge stones of the fence are broken along the natural slope formation to the east. The mound in the middle is 11.4 m. The fence is 17.3×8 m.

GPS N 45° 02' 05.9"

E 100° 34' 26.2" asl. 1263 m

OR-111. A tomb with depression in the center. It is covered by big stones. The tomb is 4.6 m in diameter.

GPS N 45° 02' 01.1"

E 100° 34' 24.4" asl. 1278 m

OR-112. A khirigsuur with rectangular outer fence. At each edge, there is one standing stone respectively. Outside or on the east side of the fence, there are three small satellite structures stretching to the south. The mound in the middle is covered by large stones. It is 9.3 m in diameter. The fence is 9.8×9.7 m.

GPS N 45° 01' 57.1"

E 100° 34' 24.7" asl. 1286 m

OR-113. A khirigsuur with rectangular outer fence. At each edge, there is one standing stone respectively. There is one small satellite structure outside or on the north side of the fence. The mound in the middle is covered by large stones. It is 10.5 m in diameter. The fence is 13.3×12.6 m.

GPS N 45° 02' 54.6"

E 100° 34' 22.5" asl. 1292 m

OR-114. A ring feature covered by large stones. It is 9.25 m in diameter.

GPS N 45° 02' 55.1"

E 100° 34' 20.0" asl. 1293 m

OR-115. A ring feature covered by large stones. It is 7 m in diameter.

GPS N 45° 02' 53.6"

E 100° 34' 21.4" asl. 1292 m

OR-116. A khirigsuur with rectangular outer fence. At each edge, there is one standing stone respectively. The mound in the middle is covered by large stones. It is 8.25 m in diameter. The fence is 8.5×8.3 m.

GPS N 45° 02' 52.6"

E 100° 34' 21.9" asl. 1292 m

OR-117. A khirigsuur surrounded by rectangular outer fence has one small satellite at its each corner. The mound in the middle is covered by relatively large stones; its west edge is overlapped with the outer fence. It is 9.6 m in diameter. The size of outer fence is 11×9.6 m.

GPS N 45° 02' 49.4"

E 100° 34' 21.0" asl. 1296 m

OR-118. A ring feature with big cover stones. The size is 6.4 m in diameter.

GPS N 45° 01' 35.9"

E 100° 34' 18.4" asl. 1317 m

OR-119. A rectangular-shaped grave with large enclosure stones. It is 4.2×3.3 m.

GPS N 45° 02' 38.7"

E 100° 34' 27.3" asl. 1312 m

OR-120. A ring feature with smallish cover stones. It is 8.5 m in diameter.

GPS N 45° 02' 39.0"

E 100° 34' 27.7" asl. 1315 m

OR-121. A ring feature enclosed by big frame stones. The cover stones assembled in the center.

GPS N 45° 02' 39.0"

E 100° 34' 28.3" asl. 1313 m

OR-122. A khirigsuur with rectangular outer fence. Outside the fence, there are two ring small satellite structures on the east side. The mound in the middle is covered by large stones. It is 8.35 m in diameter. The fence is 11×9 m.

GPS N 45° 02' 00.3"

E 100° 34' 35.9" asl. 1277 m

OR-123. A khirigsuur with rectangular outer fence. The mound in the middle is covered by large

stones. It is 8 m in diameter. The fence is 10.8×8.5 m.

GPS N 45° 02' 59.8"

E 100° 34' 36.2" asl. 1283 m

OR-124. A khirigsuur surrounded by rectangular outer fence has one small satellite at its each corner. The fence is disturbed on its northeast edge. Outside of the fence, there are two ring small satellite structures. Outside of those small structures, there are eight small satellite structures running circularly in a row from northeast to southwest. The mound covered by large stones has depression in the center. The mound diameter is 9.5 m. The size of outer fence is 12.7×12.6 m.

GPS N 45° 02' 03.6"

E 100° 34' 34.2" asl. 1271 m

OR-125. A khirigsuur surrounded by rectangular outer fence has one small ring satellite structure at its each corner. The mound in the middle is covered by large stones. Its diameter is 10.9 m. The size of outer fence is 17×14 m.

GPS N 45° 02' 04.7"

E 100° 34' 34.4" asl. 1266 m

OR-126. A ring feature with depression in the center. It is covered by large stones. It is 7.7 m in diameter.

GPS N 45° 02' 06.5"

E 100° 34' 31.2" asl. 1265 m

OR-127. A khirigsuur surrounded by rectangular outer fence has one small satellite at its each corner. Outside of the fence, there are two ring small satellite structures respectively on the east and north side. Outside of those small structures, there are also twenty-two small satellite structures. The mound in the middle is covered by large stones. The mound diameter is 11.2 m. The size of outer fence is 13.2×11.2 m.

GPS N 45° 02' 08.3"

E 100° 34' 32.2" asl. 1263 m

OR-128. A khirigsuur surrounded by rectangular outer fence has one small satellite at its each corner. The fence is disturbed or unclear on its south and west ridge. The mound in the middle is covered by large stones. The mound diameter is 10.8 m. The size of outer fence is 12.4×11.2 m.

GPS N 45° 02' 09.0"

E 100° 34' 34.6" asl. 1264 m

OR-129. A khirigsuur surrounded by rectangular outer fence has one small satellite at its each corner. The mound in the middle is covered by large stones. The mound diameter is 6.1 m. The size of outer fence is 9.7×8.5 m.

GPS N 45° 02' 11.4"

E 100° 34' 33.2" asl. 1256 m

OR-130. A khirigsuur with rectangular outer fence. At each edge, there is one standing stone respectively. The trace that the western ridge stones of the fence were stripped off has left on the ground. Outside the fence, there are three small ring satellite structures on the west side. The mound in the middle is covered by large stones. It is 10.4 m in diameter. The fence is 18.1×16.9 m.

GPS N 45° 02' 12.4"

E 100° 34' 36.4" asl. 1256 m

OR-131. A khirigsuur surrounded by rectangular outer fence. The fence is partially disturbed or unclear

on its south and east ridges. The mound in the middle is covered by large stones. The mound diameter is 10.7 m. The size of outer fence is 17×14 m.

GPS N 45° 02' 06.7"

E 100° 34' 42.0" asl. 1260 m

OR-132. A khirigsuur surrounded by rectangular outer. Its central mound covered by small stones has depression in the center. The mound diameter is 8.8 m. The size of outer fence is 13.2×11.3 m.

GPS N 45° 02' 15.5"

E 100° 34' 09.4" asl. 1250 m

OR-133. This feature has one small ring satellite structure on the southeast side. The mound with depression in the center is covered by large stones. The diameter is 8.1 m.

GPS N 45° 02' 17.9"

E 100° 34' 38.6" asl. 1246 m

OR-134. A ring tomb covered by big stones. It is 5.2 m in diameter.

GPS N 45° 02' 21.9"

E 100° 34' 38.8" asl. 1249 m

OR-135. A khirigsuur surrounded by rectangular outer fence has one small satellite at its each corner. The mound in the middle is covered by small stones. The mound diameter is 5.6 m. The size of outer fence is 8.7×6.7 m.

GPS N 45° 02' 22.5"

E 100° 34' 40.6" asl. 1244 m

OR-136. This khirigsuur's outer fence is very unclear, probably rectangular. Four standing stones are at its four corners one by one. The mound in the middle is covered by large stones. The mound diameter is 10.6 m. The size of outer fence is 15.4×13.3 m.

GPS N 45° 02' 16.5"

E 100° 34' 44.1" asl. 1251 m

OR-137. A ring tomb with relatively large cover stones. It is 4 m in diameter.

GPS N 45° 02' 16.4"

E 100° 34' 47.9" asl. 1250 m

OR-138. This khirigsuur's outer fence is very unclear, probably rectangular. Outside the fence there are four small satellite structures to the northeast. The mound in the middle is covered by large stones. The mound diameter is 10.8 m. The size of outer fence is 16.7×14 m.

GPS N 45° 02' 19.6"

E 100° 34' 47.2" asl. 1248 m

OR-139. This khirigsuur is encircled partially by a ring of stones. This fence 21.2 m in diameter was interrupted on its west side. The central mound 7.2 m in diameter is covered by relatively large stones. The cover stones on the west side were stripped off.

GPS N 45° 02' 27.4"

E 100° 34' 48.8" asl. 1240 m

OR-140. A khirigsuur surrounded by rectangular outer fence. The mound in the middle is covered by relatively large stones; it is overlapped with the outer fence. The size of outer fence is 5.4×5.1 m.

GPS N 45° 02' 30.5"

E 100° 34' 48.8" asl. 1236 m

OR-141. A khirigsuur surrounded by unclear rectangular outer fence whose southeast part is broken. The mound in the middle is covered by relatively large stones; it is overlapped with the outer fence. There is a small ring satellite structure on the northern side. The size of outer fence is 9.8×7.5 m.

GPS N 45° 02' 31.8"

E 100° 34' 47.3" asl. 1232 m

OR-142. A rectangular-shaped burial covered by large stones. The size is 4.6×4.4 m.

GPS N 45° 02' 31.9"

E 100° 34' 43.4" asl. 1233 m

OR-143. A circle-shaped tomb covered by large stones. The diameter is 5.6 m.

GPS N 45° 02' 32.4"

E 100° 34' 43.7" asl. 1231 m

OR-144. A khirigsuur encircled by ring outer fence. The central mound is covered by large stones. The mound is 5.6 m; the fence is 14.7 m in diameter.

GPS N 45° 02' 33.3"

E 100° 34' 48.2" asl. 1231 m

OR-145. A khirigsuur with unclear outer fence.

GPS N 45° 02' 31.5"

E 100° 34' 50.7" asl. 1232 m

OR-146. A tomb with depression in the center. It is encircled by a ring of big stones. The diameter is 2.8 m.

GPS N 45° 02' 35.5"

E 100° 34' 49.0" asl. 1232 m

OR-147. his tomb is encircled by a ring of small stones. The diameter is 4.9 m.

GPS N 45° 02' 39.3"

E 100° 34' 49.2" asl. 1226 m

OR-148. A rectangular-shaped tomb covered by big stones. The size is 6.2×5.3 m.

GPS N 45° 02' 38.7"

E 100° 34' 50.6" asl. 1225 m

OR-149. A khirigsuur is encircled by a ring of stones. The central mound is covered by large stones. It is 5.1 m; the outer fence 15.5 m in diameter.

GPS N 45° 02' 39.2"

E 100° 34' 57.0" asl. 1227 m

OR-150. A khirigsuur surrounded by square fence of stones. The mound in the middle is covered by small stones. The mound is 5 m; the fence is 15.5×15.5 m.

GPS N 45° 02' 38.7"

E 100° 34' 58.9" asl. 1222 m

OR-151. A khirigsuur is encircled by a ring of stones. The central mound is covered by large stones. It is 7.4 m; the outer fence 13.7 m in diameter.

GPS N 45° 02' 34.9"

E 100° 34' 01.3" asl. 1221 m

OR-152. A khirigsuur is encircled by a ring of stones. The central mound is covered by small stones. It is 6 m; the outer fence 19 m in diameter.

GPS N 45° 02' 34.9"

E 100° 34' 59.6" asl. 1227 m

OR-153. A khirigsuur is encircled partially by a ring of stones clear on the eastern side. The central mound is covered by small stones. It is 5.5 m in diameter.

GPS N 45° 02' 36.0"

E 100° 34' 07.0" asl. 1226 m

OR-154. A ring tomb covered by small stones. The size is 4.25 m.

GPS N 45° 02' 32.8"

E 100° 35' 02.3" asl. 1230 m

OR-155. A tomb 5.3 in diameter with depression in the center. It is encircled by a ring of stones.

GPS N 45° 02' 30.9"

E 100° 35' 01.4" asl. 1234 m

OR-156. A tomb encircled by a ring of large stones. The tomb is 5.1 m in diameter.

GPS N 45° 02' 31.4"

E 100° 35' 01.4" asl. 1237 m

OR-157. A khirigsuur surrounded by rectangular outer fence. It has one small ring satellite structure at its each corner. There is one more small satellite structure outside the fence on the north side. The mound in the middle is overlapped with the outer fence. The size of outer fence is 11×10 m.

GPS N 45° 02' 30.8"

E 100° 35' 00.4" asl. 1238 m

OR-158. A khirigsuur surrounded by rectangular outer fence. It has one small ring satellite structure at its each corner. It appears that the mound in the middle is overlapped with the outer fence. The size of outer fence is 10×9.9 m.

GPS N 45° 02' 34.9"

E 100° 34' 59.4" asl. 1238 m

OR-159. This khirigsuur's outer fence is wholly disturbed. The mound in the middle is covered by relatively large stones. Besides, there are two small stone mound respectively east and northeast of the central one. The size is 6.9×5.45 m.

GPS N 45° 02' 27.6"

E 100° 34' 57.0" asl. 1235 m

OR-160. A khirigsuur surrounded by rectangular outer fence. It has one big standing stone at its each corner. It appears that the mound in the middle is overlapped with the outer fence. The size of outer fence is 6.9×5.45 m.

GPS N 45° 02' 26.7"

E 100° 34' 57.0" asl. 1237 m

OR-161. A circle-shaped tomb with large cover stones. The diameter is 3.8 m.

GPS N 45° 02' 26.8"

E 100° 34' 00.0" asl. 1237 m

OR-162. A circle-shaped tomb with large cover stones. The diameter is 3.4 m.

GPS N 45° 02' 26.5"

E 100° 34' 59.1" asl. 1237 m

OR-163. A circle-shaped tomb with depression in the center. It covered by large cover stones. The diameter is 5.38 m.

GPS N 45° 02' 24.4"

E 100° 34' 58.7" asl. 1239 m

OR-164. A circle-shaped tomb with large cover stones. The diameter is 4.2 m.

GPS N 45° 02' 22.2"

E 100° 34' 58.7" asl. 1249 m

OR-165. A circle-shaped tomb with large cover stones. The diameter is 4.2 m.

GPS N 45° 02' 23.9"

E 100° 34' 56.6" asl. 1245 m

OR-166. A circle-shaped tomb with depression in the center. It covered by large cover stones. The diameter is 5.5 m.

GPS N 45° 02' 22.9"

E 100° 34' 56.4" asl. 1245 m

OR-167. A khirigsuur encircled by a ring of stones, the outer fence whose east part is broken. The mound in the middle is covered by relatively large stones. The mound is 5.5 m in diameter. The diameter of outer fence is 9.6 m.

GPS N 45° 02' 21.1"

E 100° 34' 53.7" asl. 1248 m

OR-168. A tomb encircled by a ring of large stones. The diameter is 4.45 m.

GPS N 45° 02' 21.0"

E 100° 34' 55.5" asl. 1246 m

OR-169. A ring tomb covered by large stones. The diameter is 4.6 m.

GPS N 45° 02' 19.6"

E 100° 34' 56.4" asl. 1247 m

OR-170. A ring tomb covered by large stones. The diameter is 4.7 m.

GPS N 45° 02' 19.6"

E 100° 34' 57.4" asl. 1247 m

OR-171. A khirigsuur encircled by a ring of stones, the outer fence whose all ridge except the east one are very disturbed. There are two small ring satellite structures on the eastern side. The mound in the middle is covered by relatively large stones. The mound is 8.6 m in diameter.

GPS N 45° 02' 18.0"

E 100° 35' 00.3" asl. 1247 m

OR-172. A ring tomb covered by large stones. The diameter is 7.3 m.

GPS N 45° 02' 18.2"
E 100° 34' 53.7" asl. 1249 m

OR-173. A circle-shaped tomb with small cover stones. The diameter is 5.7 m.

GPS N 45° 02' 17.9"
E 100° 34' 50.7" asl. 1250 m

OR-174. A circle-shaped tomb with large cover stones. The diameter is 9.8 m.

GPS N 45° 02' 14.7"
E 100° 34' 57.1" asl. 1252 m

OR-175. The khirghisuur has an unclear rectangular outer fence, at each corner of it there is one standing large stone. The mound in the middle is covered by large stones. The mound diameter is 7.9 m. The fence is 11.7×9.2 m.

GPS N 45° 02' 13.3"
E 100° 34' 54.8" asl. 1257 m

OR-176. The ring stone outer fence is very disturbed, only its northern side is clear. The mound in the middle is covered by large stones. The mound diameter is 12.4 m.

GPS N 45° 02' 07.5"
E 100° 34' 48.2" asl. 1262 m

OR-177. A khirigsuur with rectangular outer fence. At each edge, there is one small ring satellite structure respectively. The western edge stones of the fence were broken along the slope of a valley and the southern side is unclear. Outside the fence, there are two small ring satellite structures respectively on the north and south sides. Inside it, there is a small ring satellite on the northern side. The mound in the middle is covered by large stones. It is 12 m in diameter. The fence is 17×15.5 m.

GPS N 45° 02' 16.4"
E 100° 34' 55.7" asl. 1259 m

OR-178. A khirigsuur encircled by a ring of stones. The mound in the middle is covered by relatively large stones. The mound is 9.9 m; the fence 12.3 m in diameter.

GPS N 45° 02' 05.9"
E 100° 34' 55.5" asl. 1266 m

* There is a tomb encircled by a ring of stones or with depression in the center. It is 4.9 m in diameter.

OR-179. A tomb with sandy depression in the center. It is encircled by a ring of big stones. The diameter is 11.2 m.

GPS N 45° 02' 04.5"
E 100° 34' 54.1" asl. 1263 m

OR-180. A khirigsuur surrounded outside by a rectangular fence of stones, but its western side is clear. The mound in the center is covered by large stones. The diameter is 12.3 m.

GPS N 45° 02' 02.1"
E 100° 34' 54.1" asl. 1262 m

OR-181. A khirigsuur surrounded outside by a rectangular fence of stones, but its northern side is clear. The mound in the center is covered by large stones. The diameter is 9.3 m.

GPS N 45° 02' 01.1"
E 100° 34' 54.0" asl. 1271 m

OR-182. A feature with big cover stones. Its structure is very unclear.

GPS N 45° 01' 55.6"

E 100° 34' 55.8" asl. 1282 m

OR-183. A khirigsuur with rectangular outer fence. At each edge, there is one big standing stones respectively. Outside the fence, there are nine small ring satellite structures stretching in two rows on the eastern side. The mound in the middle is covered by large stones. It is 11 m in diameter. The fence is 13.5×10.3 m.

GPS N 45° 01' 45.9"

E 100° 34' 52.6" asl. 1300 m

OR-184. A khirigsuur with rectangular outer fence. At each edge, there is one small ring satellite structure respectively. Outside the fence, there are two small ring satellite structures on the eastern side. The mound in the middle is covered by large stones. It is 10 m in diameter. The fence is 10.3×9.6 m.

GPS N 45° 01' 44.5"

E 100° 34' 52.6" asl. 1305 m

OR-185. A tomb with depression in the center. It is encircled by a ring of big stones. The diameter is 13.5 m.

GPS N 45° 01' 41.3"

E 100° 34' 53.1" asl. 1308 m

OR-186. A khirigsuur surrounded by rectangular outer fence. Outside the fence, there are two small ring satellite structures. It appears that the mound in the middle is overlapped with the outer fence. The mound is 8.8 m in diameter. The size of outer fence is 11×7.3 m.

GPS N 45° 01' 38.6"

E 100° 34' 59.1" asl. 1313 m

OR-187. A tomb with depression in the center. It is encircled by a ring of big stones. The diameter is 5.9 m.

GPS N 45° 01' 30.8"

E 100° 34' 56.5" asl. 1320 m

OR-188. A khirigsuur encircled by a ring of stones. Outside the fence, there are two small ring satellite structures on the north side. The mound is 10.45 m in diameter. The diameter of outer fence is 13.1 m.

GPS N 45° 01' 20.7"

E 100° 34' 55.1" asl. 1343 m

OR-189. A khirigsuur encircled by a ring of stones. Outside the fence, there are two small ring satellite structures on the east side. The mound is 12 m in diameter. The diameter of outer fence is 15.1 m.

GPS N 45° 02' 17.0"

E 100° 34' 56.8" asl. 1351 m

OR-190. A khirigsuur surrounded by a ring outer fence of stones. The mound in the middle is overlapped with the outer fence. The mound covered by small stones in the center is 7.9 m in diameter.

GPS N 45° 02' 31.4"

E 100° 35' 16.4" asl. 1235 m

* A ring tomb with depression in the center north of above khirigsuur. It is 4.5 m in diameter.

OR-191. A ring tomb with depression in the center. It is 4.2 m in diameter.

GPS N 45° 02' 31.1"

E 100° 35' 17.2" asl. 1232 m

OR-192. A khirigsuur with rectangular outer fence. At each edge, there is one big standing stones respectively. The mound in the middle is covered by small stones. It is 4.5 m in diameter. The fence is 7.3×6.7 m.

GPS N 45° 02' 32.2"

E 100° 35' 20.0" asl. 1232 m

OR-193. A khirigsuur encircled by a ring of stones. The mound in the middle is covered by small stones. It is 4.9 m in diameter. The diameter of outer fence is 7.3 m.

GPS N 45° 02' 31.8"

E 100° 35' 20.6" asl. 1230 m

OR-194. A khirigsuur surrounded by rectangular outer fence. Probably the mound in the middle is overlapped with the outer fence. The size of outer fence is 4.7×4.4 m.

GPS N 45° 02' 32.0"

E 100° 35' 23.1" asl. 1231 m

OR-195. A feature encircled by a ring of large stones, but cover stones assembled in the center are small. The diameter is 6.95 m.

GPS N 45° 02' 34.5"

E 100° 34' 31.3" asl. 1228 m

OR-196. An oval-shaped khirigsuur at whose four edges there are big standing stones. The mound in the middle is covered by smallish stones. The mound is 4.9 m in diameter. The size of outer fence is 10.6×8.6 m.

GPS N 45° 02' 34.3"

E 100° 35' 32.0" asl. 1226 m

OR-197. A feature encircled by a ring of large stones. The mound in the middle is covered by small stones. There are two small satellite structures on the eastern side. The mound is 4.85 m in diameter.

GPS N 45° 02' 34.9"

E 100° 34' 59.6" asl. 1227 m

OR-198. A tomb surrounded in rectangular shape by large stones. The mound in the middle is covered by small stones. The size is 4.9×4.1 m.

GPS N 45° 02' 34.8"

E 100° 35' 35.5" asl. 1224 m

OR-199. A round tomb covered by large stones. It is 5.5 m in diameter.

GPS N 45° 02' 34.1"

E 100° 35' 35.0" asl. 1226 m

OR-200. A tomb encircled by a ring of large stones, but cover stones assembled in the center are small. The diameter is 8.5 m.

GPS N 45° 02' 34.7"

E 100° 35' 37.3" asl. 1224 m

OR-201. A round tomb covered by small stones. The diameter is 2.5 m.

GPS N 45° 02' 27.7"
E 100° 35' 33.4" asl. 1232 m

OR-202. A feature encircled by a ring of small stones, but cover stones assembled in the center are large. The diameter is 3.1 m.

GPS N 45° 02' 27.0"
E 100° 35' 31.0" asl. 1232 m

OR-203. A tomb encircled by a ring of large stones. It is 4.4 m in diameter.

GPS N 45° 02' 26.3"
E 100° 35' 30.9" asl. 1229 m

OR-204. A tomb encircled by a ring of relatively small stones. The diameter is 4.1 m.

GPS N 45° 02' 26.0"
E 100° 35' 30.5" asl. 1232 m

OR-205. A tomb encircled by a ring of large stones. There are few stones in the center. It is 2.7 m in diameter.

GPS N 45° 02' 24.1"
E 100° 35' 27.0" asl. 1234 m

OR-206. A tomb encircled by a ring of large stones.

GPS N 45° 02' 24.3"
E 100° 35' 26.2" asl. 1235 m

OR-207. A tomb encircled by a ring of large stones or with depression in the center. It is 3.3 m in diameter.

GPS N 45° 02' 24.1"
E 100° 35' 27.0" asl. 1234 m

OR-208. A khirigsuur with rectangular outer fence. At each edge, there is one small ring satellite structure respectively. The mound in the middle is covered by small stones. It is 9.5 m in diameter. The fence is 26.2×22.9 m.

GPS N 45° 02' 25.5"
E 100° 35' 26.0" asl. 1234 m

OR-209. A khirigsuur with rectangular outer fence. At each corner, there is one big standing stones respectively. Probably the mound in the middle is overlapped with the outer fence edge. There is a mound of stones in the center. The fence is 5.6×4.1 m.

GPS N 45° 02' 25.4"
E 100° 35' 24.4" asl. 1235 m

OR-210. A small round tomb covered by large stones. The diameter is 2.8 m.

GPS N 45° 02' 22.1"
E 100° 35' 24.5" asl. 1238 m

* There is one more small tomb north of above tomb. The diameter is 2.5 m.

OR-211. [?]

OR-212. A small round grave covered by large stones. It is 1.8 m in diameter.

GPS N 45° 02' 21.7"

E 100° 35' 24.2" asl. 1241 m

OR-213. A small oblong feature covered by large stones. It is 4.7×3.9 m in diameter.

GPS N 45° 02' 21.3"

E 100° 35' 23.6" asl. 1241 m

OR-214. Its form is very disturbed probably because of the loot. The trace that cover stones were stripped off to the outside has left on the ground.

GPS N 45° 02' 20.2"

E 100° 35' 23.9" asl. 1242 m

OR-215. A round grave covered by relatively small stones. It is 4 m in diameter.

GPS N 45° 02' 20.2"

E 100° 35' 23.2" asl. 1244 m

OR-216. There is a small satellite structure between two features (A, B) adjacent to each other.

A/ A round feature covered by small stones. The diameter is 7.9 m.

B/ A round feature covered by small stones. The diameter is 6.7 m.

GPS N 45° 02' 25.8"

E 100° 35' 20.6" asl. 1235 m

OR-217. A khirigsuur with rectangular outer fence. At each corner, there is one small ring satellite structure respectively. Outside the fence, there are two small ring satellite structures on the eastern side and one satellite on the eastern edge of fence. The mound in the middle is covered by small stones. It is 7.9 m in diameter. The fence is 21×19 m.

GPS N 45° 02' 27.4"

E 100° 35' 18.7" asl. 1236 m

OR-218. A khirigsuur with rectangular outer fence. At each corner, there is one small ring satellite structure respectively. Outside the fence, there is a small ring satellite structures on the west side. The mound in the middle is covered by large stones. It is 4.5 m in diameter. The fence is 7.9×6.5 m.

GPS N 45° 02' 26.5"

E 100° 35' 18.1" asl. 1238 m

OR-219. A khirigsuur with rectangular outer fence. At each corner, there is one big standing stones respectively. Probably the mound in the middle is overlapped with the outer fence edge. The fence is 5.4×5.35 m.

GPS N 45° 02' 26.6"

E 100° 35' 16.7" asl. 1239 m

OR-220. A khirigsuur with rectangular outer fence. At each corner, there is one big standing stones respectively. Probably the mound in the middle is overlapped with the outer fence edge. The fence is 5.7×4.8 m.

GPS N 45° 02' 26.8"

E 100° 35' 16.7" asl. 1237 m

OR-221. This slab burial can not be measured because its form very disturbed.

GPS N 45° 02' 27.4"
E 100° 35' 14.4" asl. 1237 m

OR-222. A khirigsuur with rectangular outer fence. At each corner, there is one big standing stones respectively. The western edge of outer fence is broken down to the ravine. The mound in the middle with small cover stones is overlapped with the outer fence edge. The fence is 11.2×8.6 m.

GPS N 45° 02' 27.8"
E 100° 35' 13.9" asl. 1237 m

OR-223. This grave can not be measured because the cover stones are scattered along the slope of a valley to the east.

GPS N 45° 02' 28.6"
E 100° 35' 11.5" asl. 1236 m

OR-224. A circle-shaped feature covered by small stones. The diameter is 3.6 m.

GPS N 45° 02' 28.8"
E 100° 35' 09.8" asl. 1237 m

OR-225. A circle-shaped feature covered by small stones. The diameter is 4.9 m.

GPS N 45° 02' 29.1"
E 100° 35' 08.9" asl. 1237 m

OR-226. A rectangular burial covered by small stones. It is 4×3.3 m.

GPS N 45° 02' 29.7"
E 100° 35' 07.4" asl. 1239 m

OR-227. This grave can not be measured because the cover stones are scattered along the slope of a valley to the west.

GPS N 45° 02' 30.0"
E 100° 35' 06.6" asl. 1240 m

OR-228. A khirigsuur with rectangular outer fence. At each corner, there is one big standing stones respectively. Outside the fence, there is a small ring satellite structures on the south side. The mound in the middle is covered with small stones. The mound is 7.8 m in diameter. The fence is 16.8×14.4 m.

GPS N 45° 02' 32.8"
E 100° 35' 09.6" asl. 1234 m

OR-229. A rectangular burial with big cover stones. The size is 4.4×3.1 m.

GPS N 45° 02' 33.2"
E 100° 35' 08.1" asl. 1234 m

OR-230. A khirigsuur with square outer fence. At each corner, there is one big standing stones respectively. The east and west parts of central mound with large cover stones is overlapped with the outer fence edge. The mound is 6.7 m in diameter. The fence is 8×8 m.

GPS N 45° 02' 20.1"
E 100° 35' 10.9" asl. 1241 m

OR-231. A round grave covered by relatively small stones. The cover stones in the center were stripped off. It is 5.2 m in diameter.

GPS N 45° 02' 19.8"

E 100° 35' 17.1" asl. 1243 m

OR-232. A round grave covered by relatively large stones. It is 4.2 m in diameter.

GPS N 45° 02' 19.8"

E 100° 35' 19.1" asl. 1242 m

OR-233. A khirigsuur with rectangular outer fence. At each edge, there is one big standing stones respectively. Outside the fence, there are eleven small ring satellite structures stretching in a row from its northwest to its southeast side. The mound in the middle is covered by large stones. It is 10.5 m in diameter. The fence is 22×16.1 m.

GPS N 45° 02' 12.4"

E 100° 35' 23.5" asl. 1251 m

OR-234. A round feature covered by relatively small stones. It is 6.7 m in diameter.

GPS N 45° 02' 12.4"

E 100° 35' 23.5" asl. 1249 m

OR-235. A round grave encircled by a ring of relatively small stones. There is a sandy depression in the center. A satellite structure is on the northern side. It is 6.5 m in diameter.

GPS N 45° 02' 14.5"

E 100° 35' 15.5" asl. 1248 m

OR-236. A khirigsuur with rectangular outer fence. The 17×7.8 m entrance is on the southern side. The mound in the middle is covered by large stones. It is 14.6 m in diameter. The fence is 19×18 m.

GPS N 45° 02' 13.0"

E 100° 35' 15.5" asl. 1251 m

OR-237. A round grave encircled by a ring of large stones. The cover stones on the eastern side were stripped off. The sandy depression is in the center. It is 7.8 m in diameter.

GPS N 45° 02' 13.5"

E 100° 35' 09.0" asl. 1254 m

OR-238. A khirigsuur with rectangular outer fence. The southern edge stones of the fence were broken along the slope of a valley and the half of the eastern side is unclear. The mound in the middle is covered by large stones. It is 8.1 m in diameter. The fence is 12.3×10.6 m.

GPS N 45° 02' 09.5"

E 100° 35' 13.1" asl. 1256 m

OR-239. Its large cover stones assembled in the center. There are four big stones standing one by one at its each corner. The slab burial is 5.5×2.5 m.

GPS N 45° 02' 08.1"

E 100° 35' 05.5" asl. 1261 m

OR-240. A round feature encircled by a ring of large stones. The diameter is 5.9 m. There is a big standing natural stone northwest of it.

GPS N 45° 02' 07.0"

E 100° 35' 08.8" asl. 1263 m

OR-241. A khirigsuur with rectangular outer fence whose southeastern edge is unclear. Outside the fence, there are two small ring satellite structures on the east side. The mound in the middle is covered by large stones. It is 8.8 m in diameter. The fence is 11.7×10.7 m.

GPS N 45° 02' 05.0"
E 100° 35' 09.3" asl. 1261 m

OR-242. A round feature encircled by a ring of large stones. The sandy depression is in the center. It is 7.15 m in diameter.

GPS N 45° 02' 03.6"
E 100° 35' 06.9" asl. 1264 m

OR-243. This grave can not be measured because the cover stones are scattered along the slope of a valley to the west.

GPS N 45° 02' 02.6"
E 100° 35' 14.2" asl. 1263 m

OR-244. The form of its outer fence is very disturbed or destroyed. The cover stones of the central mound were stripped off. It is 9.5 m in diameter.

GPS N 45° 02' 59.7"
E 100° 35' 10.7" asl. 1264 m

OR-245. A khirigsuur with rectangular outer fence whose stones were stripped off. The mound in the middle is covered by large stones. It is 9 m in diameter. The fence is 11×9.5 m.

GPS N 45° 02' 57.2"
E 100° 35' 08.9" asl. 1274 m

OR-246. A khirigsuur encircled by a ring of stones which were stripped off. The mound with depression in the middle is covered by large stones. The mound is 11.2 m in diameter. The diameter of outer fence is 15.2 m.

GPS N 45° 02' 55.1"
E 100° 35' 07.9" asl. 1279 m

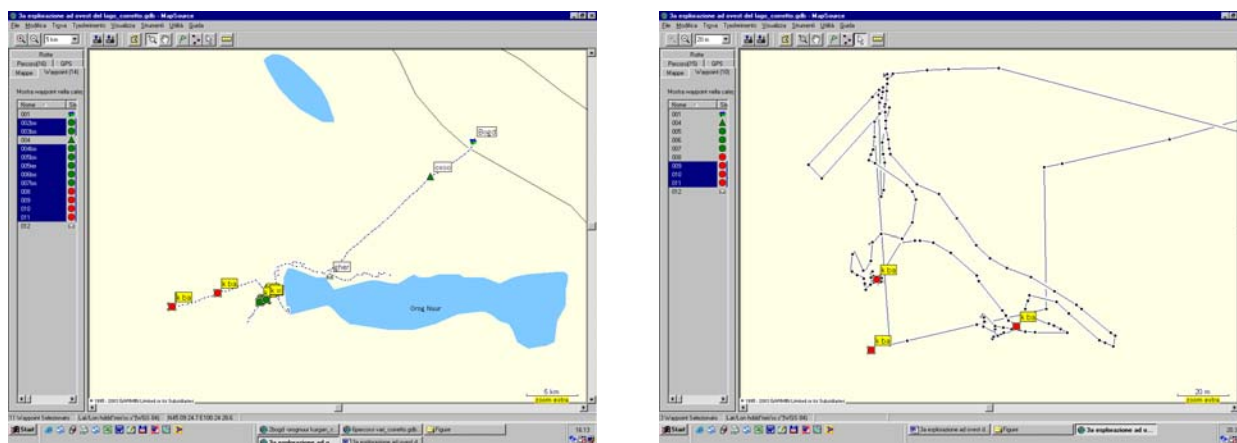
OR-247. A khirigsuur surrounded by rectangular outer fence. Its stones at corners were stripped off. The mound in the middle is covered by large stones and overlapped with its outer fence. The size of outer fence is 10.3×7.6 m.

GPS N 45° 02' 53.4"
E 100° 35' 06.1" asl. 1282 m

OR-248. A round feature covered by relatively large stones. It is 7.6 m in diameter.

GPS N 45° 02' 59.7"
E 100° 35' 05.9" asl. 1269 m

EXCAVATION



Tombs (“Xiongnu” k xi and “Bronze age” k ba) discovered during the CNR-MAS expedition 2004 west of Orog Nuur and excavated during summer 2005

Zeregleen Bel Tomb No.01. Yellowish folded hills, located at the northeast slope of Mts. Ikh Bogd Uul, is called as *Zeregleen Bel* by native people. North of the hills, there is a dried water channel or deep broad ravine. Two tombs are situated on the east bank of that ravine. The distance are 100 m between them. We named the west one as *Zeregleen Bel No.1* (N 45° 03' 47.0", E 100° 27' 35.2") to choose for excavation because of its clear construction. The tomb was encircled by a ring of stones whose western edge is accumulated considerably by small pebbles and deposits due to the flow of natural water. The horizontal profile is 7.5 m in length. The cleaning of the shallow sandy layer of Level 1 shows that the circular edge of ring was piled by relatively big stones as an enclosure; Small and moderate sized stones were exposed in the center of the edge of the tomb. The actual size is probably 6.9 m in diameter. Overlapping with stone edge, four oval-shaped big stones were installed into the soil respectively at its four corners, but all except the southwestern one are very disturbed. The width of cover stones assembled in the center is on average 6 m in the middle and 3 m on edges. The removal of those cover stones of Layer 2 shows that the remains of burial pit was uncovered beneath the layer of few oval-shaped large flat stones. The pit was 2.2×1.1 m. Some bones of human hand and rodent bones are revealed much around these large cover stones. Upon reaching a depth of 15 cm below the Layer 2, we encountered fragments of top part of human skull, femur and shin bones indicating that the dead body was placed to the northwest. No more artifacts could be found. After continuing the excavation to the natural sediments, we stopped to reconstruct.

Zeregleen Bel Tomb No.02. The tomb called *Zeregleen Bel No.2* (N 45° 03' 48.3", E 100° 27' 36.5", asl. 1385 m) is situated 100 m of *Zeregleen Bel No.1*. The tomb with depression in the center is encircled by double rings of stones, small and large. It is 6.8 m in diameter. After the removal of cover stones, it shows no remains of funeral ritual. We continued to excavate the pit 1.5×2 m in size labelled as Layer 2 in the center. But we encountered the natural sediment at the depth of 30 cm below the Layer 2. Documentating the arrangement we reconstructed the tomb.

Tsagaan Övdög Tomb No.01. A number of khirigsuurs and tombs are located east of a high hill 3.5 km northwest of *Zeregleen Bel*. Among them, a slab grave running in a east-west direction is situated adjacent to the corral in front of a winter camp. We called this slab burial *Tsagaan Övdög Tomb No.01* (N 45° 03' 03.4", E 100° 24' 08.5").

It is enclosed on its edge by large-sized flat smooth stones. Four standing stones are one by one at its four corners. On the east side outside of the enclosure, some large flat stones are laid side by side on

the ground measuring as 2.5×5.4 m. The slab burial is 3.8×5 m and, if counting the exterior structure it is 7.5×5.4 m.

During the cleaning there found a Neolithic circular end-scraper made of a kind of jade in the center of the burial. The Layer 1 shows that the pit was covered by big stones. We labelled the removal of those cover stones as Layer 2. In the process of excavating Layer 2 we uncovered a hearth and fragments of burnt animal bones on the east side, and large and small coarse fragments of reddish pottery such as rim on the south side. In addition we encountered three large round-shaped flat cover stones. The first one on the head part is 1×0.8×0.36 m in length, breadth and thickness, the second one in the middle 1.2×0.9×0.34 m, and the third one standing by side on the feet part 1.36×0.97×0.35 m. The surfaces of their one parts are convex; the surfaces of other parts are concave. We found one more end-scraper on the first cover stone, but below the place where the first end-scraper is found there is second cover stone. Therefore, we conclude that these two end-scrapers were placed at first on the first and second cover stones. After the removal of these flat cover stones, we revealed some pottery fragments similar to the above mentioned ones below the second cover stone. But we did not encounter anymore artifact and finished the excavation after reaching natural rocks in the 1.4×0.55 m pit at the depth of 56 cm below Layer 2. Finally, we tested along the enclosure of stones outside. There found three pottery fragments similar to the earlier ones and a Neolithic conical blade core. We assume that these artifacts were thrown away to the outside during the loot. It is very possible that when the looters they moved a big enclosing stone on the feet part away and through it entered into the slab burial from the south. A total of three stone tools including one conical blade core and two round-shaped end-scrapers, seven fragments of gray pottery rim and other six fragments of its body, and one fragment of a well-fired dark gray pottery.

Brief definition of all artifacts is the following:

1. Conical core (1). Some flakes are removed from the striking platform to adjust the angle of detachment. The core is made of dark-gray flint stone. The size is 12×18×38 mm.
2. Round-shaped end-scraper (2). An end-scraper 15×16×3 mm in size is made on the end of a dark-gray flint flake. The flake is by percussion shaped in retouched concave and circular tool. Another scraper 16×19×6 mm in size is retouched on the flake of bright red flint.
3. Rim fragment of pottery (7). We found seven fragments of gray pottery. After the preliminary analysis, we assume that they are of a cauldron. The body is probably patterned in the application of incising and pressing on the surface. There is a line of beautiful raised pattern around the exterior surface 58 m below the rim. It can be used for both decoration and handle. The diameter of the rim is 230 mm.

Tsagaan Övdög Tomb No.02. This tomb (N 45° 03' 03.1", E 100° 24' 06.7", asl. 1621 m) is located very close to or west of the Tsagaan Övdög Tomb No.01.

It is a small circle-shaped tomb covered by medium-sized stones scattered slightly on the ground. He diameter is 2.6 m. After the removal of cover stones scattered on the ground surface we encountered a human burial pit. The dead body lying on the natural soil had been placed to the southwest by his head, but its structure is very disturbed. The head had been placed by its right side to the south. Femurs, shin bones, arm bones, scapula bones, and few rib bones are assembled in the place of breast. We continued the excavation to the natural sediments, but no other artifact is found.

Tsagaan Övdög Tomb No.03. This tomb (N 45° 03' 03.2", E 100° 24' 06.7", asl. 1621 m) is located 3 m northeast of the Tsagaan Övdög Tomb No.02.

It is a circular tomb covered by medium-sized stones. The diameter is 1.8 m. After taking the cover stones off, we did encounter any trace of funeral ritual to the natural soils below the surface. We stopped the excavation.

Tsagaan Övdög Tomb No.04. This tomb (N 45° 03' 03.2", E 100° 24' 07.2", asl. 1620 m) is located 5 m east of the Tsagaan Övdög Tomb No.03.

It is a circular tomb covered by medium-sized stones. The diameter is 3.6 m. After taking the cover stones off, we did encounter any trace of funeral ritual to the natural soils below the surface. We stopped the excavation.

Tsagaan Övdög Tomb No.05. This tomb (N 45° 03' 02.3", E 100° 24' 10.2", asl. 1611 m) is located 100 m southeast of the Tsagaan Övdög Tomb No.01 and 10 m west of a moderate khirigsuur without outer fence.

It is a circular tomb covered by medium-sized stones, but enclosed by a ring of large stones on edge. The diameter is 4.1 m on the surface. After the first cleaning, the real size is revealed as 3.5 m in diameter. After cleaning all the cover stones to the depth of 15 cm below the surface, we did not dig further because of no trace of funeral ritual.

Tsagaan Övdög Tomb No.06. This tomb (N 45° 03' 05.2", E 100° 24' 15.3", asl. 1598 m) is located 20 m northeast of the Tsagaan Övdög Tomb No.01.

It is a circular tomb covered by large stones. The diameter is 4.2 m. After the first cleaning, the real size is revealed as 3.5 m in diameter. After cleaning all the cover stones, we did not dig further because of no trace of burial pit. But we found a flat fragment of human skull on the surface.

Tarimalt Tomb No.01. This tomb (N 45° 03' 32.9", E 100° 26' 38.7", asl. 1431 m) is northwest one of two tombs located near a old broken artificial pool 800 m west of Zeregleen Bel Tomb No.01.

Tarimalt Tomb No.01 is encircled by a ring of few stones. It is 6.6 m in diameter. After the first cleaning, we did not encounter any evidence of burial postpit at a depth of 30 cm below the ground surface, but continued to make the pit smaller to the depth of 10 cm further in the center where we could find a cap of stone box consisted of few flat stones piled in a row. We labelled the further excavation as Layer 2. At a depth of 1.2 m in that pit 2.6×1.4 m in size we uncovered some animal bone fragments. Then we decided to extend the pit size into 3.3×2.7 m where we revealed a very broken bone of human chin at a depth of 1.4 m and then encountered darker sediment of burial postpit at a depth of 1.62 m below the surface, which on its northern side some fragments of wood and in the middle bones of human skull and femurs, and below the bone fragments of the skull top fragments of scapula bones were exposed. At Layer 2, a quantity of bone fragments were found everywhere in the pit with other rodent bones and postpit of their holes indicating that its configuration is also deformed or destroyed considerably both by the natural condition and by the looting process.

As we excavated removing of the above mentioned bones further to a depth of 1.7 m below the surface, we could see that the ancient had placed the dead body in a box of wooden box, where in the middle one large fragment of ear of a bow, one wooden toggle, and one small toggle were revealed. The box is very broken. When cleaning the interior surface, we found a circle-shaped ornament, a bronze belt buckle and a metal arrowhead on the western side of the lower feet part or on the floor. The metal arrowhead was placed by its point to his feet. Within a gap of two wooden logs in the middle of box floor, we could uncover a broken piece of metal object 20.5 cm in length and 1.5 cm in diameter. Around it, a number of similar pieces flat, semi-circle, cone etc. unknown for their use were found. There are some evidences on the surface of wooden logs that they were inserted into them. The approximate size of box is 1.8 m in length, 76 cm in its upper head part and 46 cm in its lower feet part in breadth. The remains of wooden box shows that the box bodies had been joined by one kind of mortise. As we excavated along the exterior surface of the box, we could reveal other two object, one similar to the objects found from the interior feet part and one bronze artifact, in coarse sandy soils.

We assume from the position of human bones especially of lower bones such as shin that when it was looted later, the robbers pulled from a head of the dead body. After continuing the excavation, we reached the natural sediments and stopped it.

Brief definition of artifacts found in a burial is the following:

1. Ear of a bow (1). Well preserved ear of a bow made of bone. It is 140 mm in length.
2. Wooden toggle (2). The large one is 22 cm in length with two holes. The space between them is 22 mm. They are on average 11×4 mm. It is very badly preserved, broken into three pieces. The small one has a hole 55 mm in diameter in the middle.
3. Bronze stud (7). Used for belt decoration. One of them is moderately preserved and 30-32 mm in diameter. Its loop hole is 15×10 mm. The rest six studs are badly preserved or very corroded. Their loops are lost.
4. Bronze belt buckle (1). Badly preserved and 31×26 mm. Its one end is circular; another one is cross-shaped.
5. Bronze belt ornament (1). moderately preserved. It has a loop 42×10 mm in size. Used for decorating a tip of leather belt.
6. Piece of wooden box (1). 20.5 cm in length. It has a hole 1.5 cm in diameter probably used for inserting a pointed metal object.
7. Metal arrowhead (1). Bad-preserved. Only a part of joining to shaft of an arrow.

Tarimalt Tomb No.02. This tomb (N 45° 03' 47.2", E 100° 27' 11.3", asl. 1413 m) is located 500 m northeast of Tarimalt Tomb No.01.

The Tarimalt Tomb No.02 is encircled by a ring of medium-sized stones. The cover stones assembled relatively on its southeast edge. The diameter is 6 m. We tested the 2×2 m pit in the center to a depth of 20 cm below the surface, where a big plug stone inclined with 30° angle is exposed. After taking the plug stone off, we did not reveal any burial pit, but excavated further to a depth of 190 cm below the surface. Here we could find some bones of human hand on the northern side of the pit. Further at a depth of 20 cm, we uncover some pieces of wooden box cap: there did not find logs of its lower part, but some pieces of its upper part. At a depth of 240 cm, we revealed floor of the wooden box built by narrow logs. The dead body must have been placed on the floor. Outside the wooden box, we found some bones of human femurs, radiuses and hand, two tri-blade arrowheads, a broken metal knife into some pieces, a piece of quiver, a metal hoop of box, and metal items unknown. It means that the tomb was looted.

After that, we continued the excavation in front of the wooden box, where well-preserved skeleton of a horse was revealed with its harness and saddle. The horse had been placed in the position of directing to the southeast, turning his face to the south by its side, and bending his knees. Because the saddle was decayed or very broken, it was hard to take it safely for us. Two stirrups have been found close to horse's breast, a bit in the mouth, a bronze buckle of bridle, two bone psalia around the head and other ornaments in other places. From the fact that bones of human hand were found mostly around the horse's feet we conclude that the dead body had been placed first by his head to the southwest or to Mts. Ikh Bogd Uul. We continued the excavation to the natural sediments, but no other artifact is found.

Brief definition of artifacts found in a grave is the following:

1. Parts of Harness:
 - a) Bone psalia (2). From the remains on the tip, they are made probably by inserting metal object into animal horn.
 - b) Bronze buckle (2). Because the large one with leather stuff was revealed back to horse head,

it is of rein according to our assumption. The small one is of headpiece.

c) Bronze ring (2). One is not damaged, but another one is broken. The broken one is 1.3×2.1 cm in size.

d) Bronze ornament (5). They were used ver probably for decorating straps of harness. They have two loops in the other side. They are similiar by size and pattern two by two.

2. Metal arrowhead (2). The form of one arrowhead is unknown because of much corrosion. Another one is corroded, but it is clear that it has a tri-blade.
3. Broken pieces of metal knife. It is approximately 30 cm in length, 2 cm in width. Because wooden stuff fragments are revealed close to the place that the knife was found, we assume that it had a wooden case.
4. Remains of metal hoop of box. Four and five broken pieces of thin metal box hoop measuring 2.3 cm in width. It is possible that they were used for fastening the box.

CONCLUSION

A total of 246 stone features including khirigsuur and tombs located on the western bank can be attributed to different dates. We can define their arrangements and structures into different classifications such as whether or not they have outer fence, what form circular, rectangular, etc. those outer fences have, and so on. The khirigsuurs are dating back to Bronze Age and most tombs are also dating back to Bronze Age, Hsiung-nu period, and Turkic period.

They consist of 81 khirigsuurs with rectangular outer fence, 20 khirigsuurs with circular outer fence, 70 khirigsuurs without any outer fence, 23 slab graves, 52 circle-shaped tombs, and 2 tombs unclear or very disturbed.

From the result of our excavations of ten tombs at the sites of Zeregleen Bel, Tsagaan Övdög and Tarimalt situated in a valley east of Mts. Ikh Bogd Uul we conclude that they belong to different dates. The bone fragments from Zeregleen Bel Tomb No.01 don't give us the possibility to date it.

From the remains of Tsagaan Övdög Tomb No.02 we see that the dead body bending his knees and arms had been laid by side on the natural soil to southwest and then covered by large stones without digging any burial hole. We could not reveal a human burial, but Neolithic conical cores and end-scrapers, the stone tools that are found in a number of similiar type of Bronze Age graves in Mongolia and his adjacent countries, in the Tsagaan Övdög No.01. The analysis indicates that the rim fragments in the slab grave are of a ceramic cauldron 23 in diameter. There found no remains of human burial and artifact in Zeregleen Bel Tomb No.02 and Tsagaan Övdög Tomb No.03, 04, 05. In addition, their arrangements are very similar to other graves in the southern Mongolia such as Bronze Age tombs in Mt. Chandmani Khar Uul in the area of Delgerekh Sum, Dornogobi, and in hills of Oyu Tolgoi in the area of Bogd Sum, Ömnögobi Aimag. These features give us the assumption that they date to Bronze Age. The fact that the remains found from two tombs at the site of Tarimalt are identical in the position of buried horse and patterns of harness and bronze knife with the ones from a tomb of Turkic period in Mt. Khutag Uul in Arkhangai Aimag and from a tomb at the site of Tögs Övdög in Khentii Aimag makes our assumption more reliable that they date to the Turkic period. Especially, that the buried horse are found in the Tarimalt Tomb No.2 is very remarkable for archaeology in Mongolia and important to studying way of life, knowledge of craft and peculiarity of funeral ritual of that time.

Here, finally we should note that about 10 tombs excavated by us had been looted in the past.

Translated from Mongolian into English by Chinzorig Batnasan

Figures captions (as attached in the Mongol version)

Figure 1

Plan of Zeregleen Bel Tomb No.01

Figure 2

General structure of Zeregleen Bel Tomb No.01

Figure 3

Zeregleen Bel Tomb No.01

Figure 4

Zeregleen Bel Tomb No.01

Figure 5

Exterior structure of Zeregleen Bel Tomb No.01

Figure 6

Arrangement of Zeregleen Bel Tomb No.01

Figure 7

Plan of Zeregleen Bel Tomb No.02

Figure 8

Zeregleen Bel Tomb Tomb No.02

Figure 9

Plan of Tsagaan Övdög Tomb No.01

Figure 10

Tsagaan Övdög Tomb No.01 (from east)

Figure 11

Tsagaan Övdög Tomb No.01 (from west)

Figure 12

Tsagaan Övdög No.01

Figure 13

Layer 2 of Tsagaan Övdög Tomb No.01

Figure 14

Layer of Tsagaan Övdög Tomb No.01

Figure 15

Conical Core and End-scrapers from Tsagaan Övdög Tomb No.01

Figure 16

Ceramic Fragments from Tsagaan Övdög Tomb No.01

Figure 17

Plan of Tsagaan Övdög Tomb No.02

A. Place where human shinbone was revealed

Figure 18
Tsagaan Övdög Tomb No.02

Figure 19
Drawing and photo of the burial position in Tsagaan Övdög Tomb No.02

Figure 20
Plan of Tarimalt Tomb No.01

Figure 21
Tarimalt Tomb No.01

Figure 22
Chin bone from Tarimalt Tomb No.01

Figure 23
Position of bone fragments in Tarimalt Tomb No.01

Figure 24
Artifacts from Tarimalt Tomb No.01

Figure 25
Artifacts from Tarimalt Tomb No.01
1-2. Wooden toggles
3. Bronze buckle
4-5. Bronze belt ornaments
6-12. Bronze mould board of belt

Figure 26
Plan of Tarimalt Tomb No.02

Figure 27
Tarimalt Tomb No.02

Figure 28
Tarimalt Tomb No.02

Figure 29
Human burial in Tarimalt Tomb No.02

Figure 30
Horse burial in Tarimalt Tomb No.02

Figure 31
Artifacts from Tarimalt Tomb No.02
1. Metal arrowhead
2-3. Bronze buckles
4,5,6,9,10. Bronze ornaments or pendants
7-8. Bronze rings
11-12. Bone psalia

Figure 32
13-19. Fragments of metal objects from Tarimalt Tomb No.02

21-23, 25-27. Fragments of metal objects
20, 24. Fragments of bronze knife.

Figures 33

Photos of artifacts from Tarimalt Tomb No.02

APPENDIX

A) Supplementary photographic documentation concerning the excavation works

Joint CNR-MAS expedition camp on the terrace over Zeregleen Bel Tomb n. 2



Italian-Mongolian team members



Tsagaan Övdög Tomb 1



Tsagaan Övdög Tomb 2



Tsagaan Övdög Tomb 5



Tarimal Tomb 1



Tarimal Tomb 2



Tarimal Tomb 2



B) Photographic documentation concerning the survey of the Orog Nuur necropolis complex

Morphology of various *kereksurs* (*khirigsuur*) and *kurkans*



