



# 极地考察与全新世生态地质学

公开课

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Hello everyone

同学们 大家好

Today's lecture is called Polar Expedition and Ecological Geology in the Holocene

今天这一讲座叫**极地考察与全新世的生态地质学**

**极地** (jí dì) polar region. **考察** (kǎo chá) to inspect; to observe and study; on-the-spot investigation. **全新世** (quán xīn shì) Holocene (geological period covering approx 12000 years since the last ice age). **生态** (shēng tài) ecology. **地质学** (dì zhì xué) geology.

Intended to be divided into six lectures

打算**分为六讲来讲**

**分为** (fēn wéi) to divide sth into (parts); to subdivide. **来讲** (lái jiǎng) as to; considering; for.

Lecture 1 Discovery of Antarctica and Antarctic Discovery

第一讲 发现**南极**与**南极发现**

**南极** (nán jí) south pole.

Lecture 2 Climate and Environmental Change

第二讲 **气候**与**环境变化**

Third lecture

第三讲

Holocene Ecological Geology Research Methods of Ecological History

全新世的生态地质学 **生态史的研究方法**

Lecture 4 The ecological history of penguins, seals and krill

第四讲 **企鹅** **海豹**和**磷虾**的生态史

**企鹅** (qǐ é) penguin. **海豹** (hǎi bào) seal (zoology). **磷** (lín) phosphorus (chemistry). **虾** (há) see 虾蟆 (há ma).

Lecture 5 Ecological disasters and environmental incidents

第五讲 **生态灾难**与**环境事件**

**第五** (dì wǔ) fifth. **灾难** (zāi nàn) disaster; catastrophe. **事件** (shì jiàn) event; happening; incident.

Lecture 6 The Footprints of Human Civilization

第六讲 人类文明的**脚印**

**脚印** (jiǎo yìn) footprint.

First, let's talk about discovering Antarctica and Antarctic discovery	首先讲发现南极与南极发现	
Since humans came out of Africa	自从人类走出非洲	走出 (zǒu chū) to leave (a room etc); to go out through (a door etc). 非洲 (fēi zhōu) Africa; abbr. for 阿非利加洲 (ā fēi lì jiā zhōu).
Along the coast of the Indian Ocean and the Mediterranean	沿着印度洋和地中海的海岸	沿着 (yán zhe) to go along; to follow. 印度洋 (yìn dù yáng) Indian Ocean. 地中海 (dì zhōng hǎi) Mediterranean Sea. 海岸 (hǎi àn) coastal; seacoast.
Spread to Asia Europe	散布到亚洲 欧洲	散布 (sàn bù) to disseminate.
And on all continents of the world	和全球各个大陆上的时候	各个 (gè gè) every; various; separately, one by one. 大陆 (dà lù) continent; mainland.
I think human footprints are already distributed	我想人类的足迹已经分布在	足迹 (zú jì) footprint; track; spoor.
The continents of the world	全球各个大陆	
Maybe just stop at Antarctica	也许仅仅止步于南极大陆	仅仅 (jǐn jǐn) barely; only; merely; only (this and nothing more). 止步 (zhǐ bù) to halt; to stop; to go no farther.
Although Columbus solemnly announced	尽管哥伦布郑重其事地宣布	哥伦布 (gē lún bù) Cristóbal Colón or Christopher Columbus (1451-1506); Columbus, capital of Ohio. 郑重其事 (zhèng zhòng qí shì) serious about the matter.
Discover the new world	发现新大陆了	新大陆 (xīn dà lù) the New World; the Americas as opposed to the Old World 旧大陆 (jiù dà lù) or Eurasia.
But long before the discovery of the New World, many centuries	但是在新大陆发现之前很久 好多世纪	好多 (hǎo duō) many; quite a lot; much better.
Maya, Indians have lived there for a long time	玛雅人 印第安人已经在那生活了很久	玛雅人 (mǎ yǎ rén) Maya peoples. 印第安人 (yìn dì ān rén) American Indians.
The same in Australia	在澳大利亚也是如此	澳大利亚 (ào dà lì yà) Australia. 如此 (rú cǐ) in this way; so.
The indigenous Maori have also lived for many centuries	土著的毛利人也生活了好多个世纪	土著 (tǔ zhù) aboriginal. 毛利人 (máo lì rén) Maori, indigenous Polynesian people of New Zealand.
There was the experience of burning pottery there more than a thousand years ago	一千多年前那儿就有烧冶陶器的经历	年前 (nián qián) before the end of the year; before the new year. 冶 (yě) to smelt; to cast; seductive in appearance. 陶器 (táo qì) pottery.
But this does not mean	但这并不表示	
The human footprint must have not reached the Antarctic continent	人类的足迹一定没有到达南极大陆	

But the human mind has reached the Antarctic

但是人类的思想已经到了南极

As early as in the wonderful book “Shan Hai Jing”

早在《山海经》这部奇书里面

早在 (zǎo zài) as early as. 山海经 (shān hǎi jīng) Classic of Mountain and Sea, probably compiled c. 500 BC-200 BC, contains wide range of geography, mythology, witchcraft, popular customs etc.

Our ancestors have noticed in the pre-Qin era

我们的祖先先秦时代就已经注意到

祖先 (zǔ xiān) ancestor; forebears. 先秦 (xiān qín) pre-Qin, Chinese history up to the foundation of the Qin imperial dynasty in 221 BC.

There is a fantasy

存在一种幻想

Think that there is a kind of bird in a cold place

认为在一个寒冷的地方存在一种鸟类

寒冷 (hán lěng) cold (climate); frigid; very cold. 鸟类 (niǎo lèi) birds.

They have wings, they eat fish in the sea

它们有翅膀 它们吃海中的鱼

它们 (tā men) they (for inanimate objects).

Walk on wings, can't fly

仗翼而行 不能飞翔

仗 (zhàng) weaponry; to hold (a weapon); to wield; to rely on; to depend on; war; battle. 翼 (yì) wing; area surrounding the bullseye of a target; to assist; one of the 28 constellations of Chinese astronomy; old variant of 翬. 飞翔 (fēi xiáng) to circle in the air; to soar.

This kind of thing looks like a penguin

这种东西很像企鹅

So this may be our earliest

所以说这可能就是我们最早的

Chinese Antarctic Dream

中国人的南极梦

中国人 (zhōng guó rén) Chinese person.

This Antarctic dream spread to China

这个南极梦传到中国

The same goes for Europeans

在欧洲人也是这样

欧洲人 (ōu zhōu rén) European (person).

Europeans were first in the Aristotelian period of ancient Greece

欧洲人最早是在古希腊的亚里士多德时期

古希腊 (gǔ xī là) ancient Greece. 亚里士多德 (yà lǐ shì duō dé) Aristotle (384-322 BC), Greek philosopher.

The earth equilibrium theory

就已经提出了地球均衡说

提出 (tí chū) to raise (an issue); to propose; to put forward; to suggest; to post (on a website); to withdraw (cash). 均衡 (jūn héng) equal; balanced; harmony; equilibrium.

What does the earth balance mean?

地球均衡说的意思是什么呢

Land and sea are balanced

陆和海是平衡的

There is the sea on the opposite side of the mainland

在大陆的对面就有海

So there should be a continent under the Arctic Ocean

This continent is called the “Southern Continent”

Is there a “Southern Continent”?

There has always been controversy

But Antarctica has become a European dream

When the Antarctic dream of Europeans spread to China

Probably during the Wanli period of the Ming Dynasty

An Italian missionary named Matteo Ricci

This person taught a “Kunyu World Map”

On this picture

It was in the 16th century

The era of human sailing has not yet arrived

The explorer has not reached Antarctica

But the picture has been drawn

This is a very strange thing

You can see on this picture

This is the Antarctic Peninsula

所以北冰洋的下面应该有一个大陆

这个大陆叫做「南方大陆」

有没有「南方大陆」呢

一直以来存在着争议

但是 南极大陆成为了欧洲人的梦想

欧洲人的南极梦想传到中国的时候

大概是明朝的万历年间

一个意大利的传教士 叫做利玛窦

这个人传授了一个《坤舆万国全图》

在这个图上面

那是16世纪的时候

人类的帆船时代还没有到来

探险家还没有到达南极

但是 图已经画出来了

这是一件很奇怪的事情

这张图上面可以看到

这就是南极半岛

北冰洋 (běi bīng yáng) Arctic ocean.

叫做 (jiào zuò) to be called; to be known as.

有没有 (yǒu méi yǒu) (before a noun) Do (you, they etc) have ...?; Is there a ...?; (before a verb) Did (you, they etc) (verb, infinitive)?; Have (you, they etc) (verb, past participle)?.

一直以来 (yī zhí yǐ lái) in the past always; for a long time now; until now. 争议 (zhēng yì) controversy; dispute; to dispute.

明朝 (míng zhāo) tomorrow morning; the following morning. 历年 (lì nián) calendar year.

意大利 (yì dà lì) Italy; Italian. 传教士 (chuán jiào shì) missionary. 利玛窦 (lì mǎ dòu) Matteo Ricci (1552-1610), Jesuit missionary and translator in Ming China.

传授 (chuán shòu) to impart; to pass on; to teach. 坤 (kūn) one of the Eight Trigrams 八卦 (bā guà), symbolizing earth; female principle; ☷; ancient Chinese compass point: 225° (southwest). 舆 (yú) carriage; sedan chair; world. 万国 (wàn guó) all nations.

上面 (shàng miàn) on top of; above-mentioned; also pr. (shàng mian).

那是 (nà shì) (coll.) of course; naturally; indeed.

帆船 (fān chuán) sailboat. 到来 (dào lái) to arrive; arrival; advent.

探险家 (tàn xiǎn jiā) explorer.

半岛 (bàn dǎo) peninsula.

This is Ross Bay, this is New Zealand

这就是**罗斯湾** 这就是**新西兰**

**罗斯** (luó sī) Roth (name); Kenneth Roth (1955-), executive director of Human Rights Watch **人权观察** (rén quán guān chá). **湾** (wān) bay; gulf; to cast anchor; to moor (a boat). **新西兰** (xīn xī lán) New Zealand.

He connects New Zealand and Antarctica

他把**新西兰**和**南极大陆**连**在一起**

**在一起** (zài yī qǐ) together.

Overall

**整体**来看

**来看** (lái kàn) to come and see; to see a topic from a certain point of view.

The Antarctic continent drawn at that time was like a peacock with an open screen

当时画出的**南极大陆**像一只**开屏**的**孔雀**

**开屏** (kāi píng) (a peacock) spreads its tail. **孔雀** (kǒng què) peacock.

Is a peacock

是**孔雀图**

So how is this picture drawn?

那么这张图是怎么画出来的呢

Very strange

很奇怪

And actually the first better picture is

而**实际上**第一张更好的图是

**实际上** (shí jì shàng) in fact; in reality; as a matter of fact; in practice.

Painted by Pirie Reis in 1513

1513年 **皮里·雷斯**画出来的

**皮** (pí) leather; skin; fur; pico- (one trillionth); naughty. **斯** (sī) (phonetic); this.

He drew the earliest southern continent

他画出了最早的**南方大陆**

He is a pirate-born Turkish general

他是一个**海盗**出身的**土耳其**的**上将**

**海盗** (hǎi dào) pirate. **出身** (chū shēn) to be born of; to come from; family background; class origin. **土耳其** (tǔ ěr qí) Turkey. **上将** (shàng jiàng) general; admiral; air chief marshal.

This map he drew

他画出的这张**地图**

Very similar to the map of Antarctica in 1949

和1949年**南极**的**地图**非常相似

Even draw islands and mountain corners

甚至画出来**岛**和**山角**

Even the river under the glacier is drawn

甚至于**冰川**下面的**河流**都画出来了

**甚至于** (shèn zhì yú) so much (that); even (to the extent that). **冰川** (bīng chuān) glacier. **河流** (hé liú) river.

This picture was written in his manual during the compilation process

这张图 **在编制**过程中他的**说明书**里写道

**在编** (zài biān) to be on the regular payroll; to be on the permanent staff. **说明书** (shuō míng shū) (technical) manual; (book of) directions; synopsis (of a play or film); specification (patent).

He has consulted 20 charts

他**参阅**过20份**海图**

**参阅** (cān yuè) to consult; to refer to; to read (instructions).

8 of them are from BC	其中有8张是 <b>公元前</b> 留下的	<b>公元前</b> (gōng yuán qián) BCE (before the Common Era); BC (before Christ).
They have accurate coordinates	它们有准确的 <b>坐标</b>	<b>坐标</b> (zuò biāo) coordinate (geometry).
Who made these pictures	谁制作了这些图件呢	
This leaves room for imagination	这留下了 <b>想像</b> 的空间	<b>想像</b> (xiǎng xiàng) to imagine; to conceive of; to visualize; imagination.
There are various conjectures	有 <b>各种各样</b> 的 <b>猜想</b>	<b>各种各样</b> (gè zhǒng gè yàng) various kinds; all sorts. <b>猜想</b> (cāi xiǎng) to guess; to conjecture; to suppose; to suspect.
You can also guess	你们也可以去 <b>猜想</b>	
The arrival of the sailing age of Antarctic expedition	<b>南极</b> <b>探险</b> 的帆船时代的到来	<b>探险</b> (tàn xiǎn) to explore; to go on an expedition; adventure.
Is represented by a famous person	是以一个著名人物为 <b>代表人物</b> 的	是以 (shì yǐ) therefore; thus; so. <b>代表人物</b> (dài biǎo rén wù) representative individual (of a school of thought).
That's Captain Cook	那就是 <b>库克船长</b>	<b>库克船长</b> (kù kè chuán zhǎng) Captain James Cook (1728-1779), British navigator and explorer.
People who have been to Antarctica may not know Cook	去过南极的人可能没有人不知道 <b>库克</b>	<b>库克</b> (kù kè) Cook (name); Captain James Cook (1728-1779), British navigator and explorer.
Cook led his team to sail south on July 13, 1772	库克1772年7月13号率队 <b>扬帆南下</b>	<b>扬帆</b> (yáng fān) to set sail. <b>南下</b> (nán xià) to go down south.
After the end of the 19th century	到了19 <b>世纪末</b> 以后	<b>世纪末</b> (shì jì mò) end of the century.
Many explorers have been to Antarctica and the southern continent	<b>先后</b> 有很多的 <b>探险家</b> 去过 <b>南极南方大陆</b>	<b>先后</b> (xiān hòu) early or late; priority; in succession; one after another.
To find the southern continent	去寻找 <b>南方大陆</b>	
Historically, this period is called the "Sailing Age"	<b>历史上</b> 把这个时期 <b>称之为</b> 「 <b>帆船时代</b> 」	<b>历史上</b> (lì shǐ shàng) historical; in history. <b>称之为</b> (chēng zhī wéi) to call it...; known as....
Captain Cook is a great man	库克船长这个人是很了不起的	
He circled the Antarctic and crossed the Antarctic Circle three times	他绕 <b>南极</b> 环行而且 <b>三次</b> <b>穿越</b> 了 <b>南极圈</b>	<b>三次</b> (sān cì) third; three times; (math.) degree three, cubic (equation). <b>穿越</b> (chuān yuè) to pass through; to traverse; to cross.
But every time I return without success in front of the huge iceberg	但是 <b>每次</b> 都是在巨大的 <b>冰山</b> 面前 <b>无功而返</b>	<b>每次</b> (měi cì) every time. <b>冰山</b> (bīng shān) iceberg. <b>无功而返</b> (wú gōng ér fǎn) to return without any achievement (idiom); to go home with one's tail between one's legs.

Once on the front edge of the Antarctic Peninsula to the east of it

He has even approached Keyveston Island

Only 200 kilometers (kilometers) away from him

If he can keep going

Sail east

He may have discovered Antarctica for the first time

It's a pity that he turned the bow before the iceberg and snow cliff

He announced very boldly

I have reached the southernmost place

The people behind are unlikely to surpass me

He has enjoyed a great reputation throughout his life

And very proud of it

In a sense

He is a proud life

on the other hand

Later generations think he is really too regrettable

Until 1819

有一次 在南极半岛的前缘 在它的东边

他甚至于已经接近了基维斯顿岛

离他只有200公里 (千米) 的地方

他如果能继续坚持一下

向东航行

他可能就已经第一次发现了南极大陆

可惜 他在冰山和雪崖前调转了船头

他非常豪迈地宣布

我已经走到了最南的地方了

后面的人不大可能再超越我

他终生享受着巨大的声誉

而且为此感到非常自豪

在某种意义上来讲

他是骄傲的一生

另外一方面

后人觉得他实在是太遗憾了

一直到1819年

有一次 (yǒu yī cì) once; once upon a time. 东边 (dōng bian) east; east side; eastern part; to the east of.

千米 (qiān mǐ) kilometer.

向东 (xiàng dōng) eastwards. 航行 (háng xíng) to sail; to fly; to navigate.

第一次 (dì yī cì) the first time; first; number one.

崖 (yá) precipice; cliff; Taiwan pr. (yái). 调转 (diào zhuǎn) to reassign sb to a different job; to turn around; to change direction; to make a U turn. 船头 (chuán tóu) the bow or prow of a ship.

豪迈 (háo mài) bold; open-minded; heroic.

不大 (bù dà) not very; not too; not often. 超越 (chāo yuè) to surpass; to exceed; to transcend.

终生 (zhōng shēng) throughout one's life; lifetime; lifelong. 声誉 (shēng yù) reputation; fame.

为此 (wèi cǐ) for this reason; with regards to this; in this respect; in order to do this; to this end. 感到 (gǎn dào) to feel; to sense; to have the feeling that; to think that; to move; to affect.

某种 (mǒu zhǒng) some kind (of). 上来 (shàng lái) to come up; to approach; (verb complement indicating success).

一生 (yī shēng) all one's life; throughout one's life.

一方面 (yī fāng miàn) on the one hand.

后人 (hòu rén) later generation.

Captain William Smith	英国的威廉·史密斯船长	英国 (yīng guó) United Kingdom 联合王国 (lián hé wáng guó); United Kingdom of Great Britain and Northern Ireland; abbr. for England 英格兰 (yīng gé lán). 威廉 (wēi lián) William or Wilhelm (name). 史密斯 (shǐ mì sī) Smith (name). 船长 (chuán zhǎng) captain (of a boat); skipper.
I discovered the South Shetland Islands	才发现了南设得兰群岛	设得兰群岛 (shè dé lán qún dǎo) Shetland Islands.
Where are the South Shetland Islands	南设得兰群岛在哪儿呢	
This is a map of Antarctica	这就是一张南极地图	
This is the Antarctic Peninsula	这就是南极半岛	
This is Ross Bay	这就是罗斯湾	
South Shetland Islands are just above my thumb	南设得兰群岛就在我的大拇指上面	大拇指 (dà mu zhǐ) thumb.
Our Great Wall Station is also on the thumb	我们的长城站也在大拇指上面	
This is the arrival of the sailing age in Antarctica	这就是南极的帆船时代的到来	
Who is the second iconic character?	第二个标志性的人物是谁呢	
It's Bellings, a Russian	是别林斯高晋 俄国人	晋 (jìn) to move forward; to promote; to advance. 俄国人 (é guó rén) Russian (person).
After he had eaten the feast that the tsar gave him	他在吃罢了沙皇给他举办的盛宴之后	罢了 (bà le) a modal particle indicating (that's all, only, nothing much). 沙皇 (shā huáng) czar (loanword). 盛宴 (shèng yàn) feast.
Riding the Vostok and Mir to circle the South Pole	乘着东方号和和平号绕南极环行了一周	东方 (dōng fāng) east. 一周 (yī zhōu) one week; all the way around; a whole cycle.
He vowed to find the southern continent	他当时发誓一定要找到南方大陆	发誓 (fā shì) to vow; to pledge; to swear. 一定要 (yī dìng yào) must.
But he also failed to complete this great task	但是他也是没有能够完成这个伟大的任务	
But he (discovered) another thing	但是他（发现）了另外一件事情	
One day in 1820	1820年有一天	
They suddenly caught a penguin while sailing	他们在航行的过程中突然抓到了一只企鹅	



They want a nice meal	他们想美餐一顿	
The chef killed it	厨师就把它宰杀了	厨师 (chú shī) cook; chef. 宰杀 (zǎi shā) to slaughter; to butcher; to put down.
After being slaughtered, a stone was found in its crop	宰杀了以后在它的嗉囊里面发现了一颗石子	嗉囊 (sù náng) crop (anatomy of birds, gastropods etc).
They are very excited	他们非常兴奋	
why	为什么呢	
Because penguins can't go to the deep sea	因为企鹅不可能跑到深海底	不可能 (bù kě néng) impossible; cannot; not able. 海底 (hǎi dǐ) seabed; seafloor; bottom of the ocean.
To fish for rocks	去捞石子吃的	捞 (lāo) to fish up; to dredge up.
There is probably a continent nearby	在附近很可能有大陆	
It's a pity that a blizzard is coming at this time	可惜这个时候暴风雪来临了	暴风雪 (bào fēng xuě) snowstorm; blizzard. 来临 (lái lín) to approach; to come closer.
The ship was hit in the iceberg and snow sea	船只在冰山雪海中经受着撞击	船只 (chuán zhī) ship; boat; vessel. 经受 (jīng shòu) to undergo (hardship); to endure; to withstand. 撞击 (zhuàng jī) to strike; to hit; to ram.
They feel very frustrated	他们感到非常地沮丧	沮丧 (jǔ sàng) dispirited; dejected; dismayed.
Just when they are going to return	正在他们准备返回的时候	
suddenly	突然之间	之间 (zhī jiān) between; among; inter-.
Now we know	现在我们知道	
That is the tail of the Antarctic cyclone	那是南极气旋的尾部	气旋 (qì xuán) cyclone. 尾部 (wěi bù) back part; rear or tail section.
After going eastward, suddenly the clouds cleared	向东过去以后 突然之间云开雾散	过去 (guò qu) (verb suffix). 散 (sàn) to scatter; to break up (a meeting etc); to disperse; to disseminate; to dispel; (coll.) to sack.
It is bright	天晴了	
In the process of fine weather	在天晴的过程中	
Antarctica suddenly	南极大陆突然之间	
Antarctic goddess lifted her veil	南极神女揭开了她的面纱	神女 (shén nǚ) The Goddess, 1934 silent film about a Shanghai prostitute, directed by 吴永刚 (wú yǒng gāng). 揭开 (jiē kāi) to uncover; to open. 面纱 (miàn shā) veil.

Floating from a distance,  
money comes, looming

从**远处**飘然而来 款款而来 若隐若  
现

**远处** (yuǎn chù) distant place. **款款** (kuǎn  
kuǎn) leisurely; sincerely. **若隐若现** (ruò yǐn ruò  
xiàn) faintly discernible (idiom).

At this time he even saw the  
black mountain corner

**这时**他甚至看到了**黑色**的山角

**这时** (zhè shí) at this time; at this moment. **黑色** (hēi  
sè) black.

And penguins floating on sea  
ice

以及在海冰上**浮动**的企鹅

**浮动** (fú dòng) to float and drift; unstable.

At this time he felt very excited

在这个时候 他**感觉到**非常兴奋

**感觉到** (gǎn jué dào) to feel; to sense; to detect; to  
perceive; to become aware.

This is the island of Alexander I  
he later named

这就是他后来**命名**的**亚历山大一**  
**世岛**

**命名** (mìng míng) to give a name to; to dub; to christen;  
to designate; named after; naming. **亚历山大** (yà lì shān  
dà) Alexander (name); Alexandria (town name). **一**  
**世** (yī shì) generation; period of 30 years; one's whole  
lifetime; lifelong; age; era; times; the whole world; the  
First (of numbered European kings).

In the process

在这个过程中

He discovered the islands of  
Antarctica

他发现了南极大陆的岛屿

But he also has a big regret

可是他也有一个很大的遗憾

What regrets

什么遗憾呢

It's just that he failed to cross  
this continent

就是他没有能**跨上**这个大陆

**跨上** (kuà shàng) to mount (a horse, bike, flight of  
stairs, rickshaw etc).

Because in front of this  
continent

因为在这个大陆的前面

There are still insurmountable  
ice floes and icebergs

仍然有无法**逾越**的**浮冰**和**冰山**

**逾越** (yú yuè) to exceed. **浮冰** (fú bīng) ice floe.

One more person can't help  
mentioning

还有一个人**不能不提到**

**不能不** (bù néng bù) have to; cannot but. **提到** (tí  
dào) to mention; to raise (a subject); to refer to.

That's British Ross

那就是**英国人**罗斯

**英国人** (yīng guó rén) British person; British people.

After Ross passed three  
Antarctic voyages

罗斯通过三次的南极航行以后

He found six islands and  
archipelagos in the ocean

他在海洋上发现了六个**海岛**和**群**  
**岛**

**海岛** (hǎi dǎo) island. **群岛** (qún dǎo) group of islands;  
archipelago.

Undoubtedly proves the  
existence of the Antarctic  
continent

**无疑**地证明了南极大陆的存在

**无疑** (wú yí) no doubt; undoubtedly.

At the same time he has a  
major discovery

同时他还有一个重大发现

Found that there is a non-freezing sea in Ross Bay	发现在罗斯湾这个地方有一片不 <b>结冰</b> 的海	<b>结冰</b> (jié bīng) to freeze.
Later this sea was named Ross Sea	后来这个海被命名为罗斯海	
On the front edge of the Ross Sea	在罗斯海的前缘	
There is still sea ice in the recessed bay	<b>凹进去</b> 的 <b>海湾</b> 里面仍然有海冰	<b>凹</b> (āo) depressed; sunken; indented; concave; female (connector etc). <b>进去</b> (jìn qù) to go in. <b>海湾</b> (hǎi wān) (Persian) Gulf.
This sea is named after Rose	这个海就以罗斯命名	
But he still can't walk through that piece of sea ice	可是他仍然不能 <b>穿过</b> 那片海冰	<b>穿过</b> (chuān guò) to pass through.
Also very regretfully left the Ross Sea	也非常遗憾地离开了罗斯海	
Get back	有功而返吧	
So it seems that God is very fair	所以 <b>看起来</b> 上帝是很公平的	<b>看起来</b> (kàn qǐ lai) seemingly; apparently; looks as if; appear to be; gives the impression that; seems on the face of it to be.
It is always impossible for him to give all his luck to one person	他总是不可能把一些幸运全部都给某一个人	
He always wants to leave something for posterity	他总是要给后人留下些什么	
So that later generations are full of expectations for the Antarctic expedition and science	使后来的人对南极探险 对科学充满着期待	
Since someone has continuously discovered the Antarctic continent	自从有人不断地发现南极大陆以后	
At this time, people began to advance to the Antarctic continent	这时候人们就开始继续向南极大陆 <b>进军</b> 了	<b>进军</b> (jìn jūn) to march; to advance.
Started to land on land	开始 <b>登上</b> 了陆地了	<b>登上</b> (dēng shàng) to climb over; to ascend onto; to mount.
From the end of the 19th century to the 1920s	从19世纪末到20世纪20年代	
In these 25 years	在这 <b>二十</b> 五年时间里面	<b>二十</b> (èr shí) twenty; 20.

Antarctica has received the attention of the international community	南极洲得到了国际社会的关注	南极洲 (nán jí zhōu) Antarctica. 国际社会 (guó jì shè huì) the international community.
There have been 16 expeditions in eight countries	有八个国家先后进行了十六次的探险	十六 (shí liù) sixteen; 16.
They landed on the continent of Antarctica and moved forward	他们登上了南极洲大陆 并且向前进发	向前 (xiàng qián) forward; onward. 进发 (jìn fā) to set out; to start.
As for who is the first to board, it doesn't matter anymore.	至于谁第一个登上了 那已经不重要了	
I think the most important thing here	在这里面我觉得最重要的	
Who is the one to propose	要提出的一个人是谁呢	
Captain Scott, the British explorer	是英国的探险家斯科特船长	
His expedition	他领导的探险队	
Even reached the depths of Antarctica	甚至已经达到了南极的纵深地带	纵深 (zòng shēn) depth (from front to rear); depth (into a territory); span (of time); (fig.) depth (of deployment, progress, development etc). 地带 (dì dài) zone.
82°7' south latitude	南纬的82°7'	南纬 (nán wěi) latitude south.
Completed a series of scientific exploration work	完成了一系列的科学探测工作	一系列 (yī xì liè) a series of; a string of. 探测 (tàn cè) to probe; to take readings; to explore; exploration.
It was completed in 1901	那是1901年完成的	
Then the Swedes and the British	其后瑞典人 英国人	其后 (qí hòu) next; later; after that. 瑞典人 (ruì diǎn rén) Swede.
It also continues to develop the record of the nearest South Pole	也不断地开拓了到南极点最近的记录	开拓 (kāi tuò) to break new ground (for agriculture); to open up (a new seam); to develop (border regions); fig. to open up (new horizons).
In this way, the heroic age of Antarctica is here.	这样一来 南极的英雄时代就来临了	这样一来 (zhè yàng yī lái) thus; if this happens then.
What is the most important task left now	现在留下的一个最重要的任务是什么呢	
Who can reach the South Pole first	谁能够最先达到南极点	最先 (zuì xiān) (the) very first.
So from then on a very amazing kind of game	所以从此开始了一场非常了不起的一种比赛	

Although it's the first time Scott walked so close	斯科特虽然是第一次走得那么近	
But he is a hero of great tragedy	可是他是一位伟大的 <b>悲剧</b> 的英雄	<b>悲剧</b> (bēi jù) tragedy.
He set off two months earlier than his competitor Amundsen	他比他的 <b>竞争者</b> 阿蒙森提前了两个月出发	<b>竞争者</b> (jìng zhēng zhě) competitor. <b>阿蒙</b> (ā méng) Amun, deity in Egyptian mythology, also spelled Amon, Amoun, Amen, and rarely Imen.
Fully prepared to reach the summit	进行了充分的准备去登顶	
But another person	可是另外一个人	
A Norwegian explorer named Amundsen	一个 <b>挪威</b> 的探险家 叫阿蒙森的人	<b>挪威</b> (nuó wēi) Norway.
He is on his way to Antarctica	他是在去南极考察的 <b>途中</b>	<b>途中</b> (tú zhōng) en route.
After hearing the news on the Atlantic Ocean	在 <b>大西洋</b> 上面 <b>听到</b> 这个消息以后	<b>大西洋</b> (dà xī yáng) Atlantic Ocean. <b>听到</b> (tīng dào) to hear.
It was already two months later than Scott's departure.	<b>那时候</b> 已经比斯科特出发晚了两个月了	<b>那时候</b> (nà shí hou) at that time.
After he got the news, he immediately changed his mind	他得到这个消息以后 他立即改变了主意	
He felt that I must set off right away to climb the South Pole	他觉得我 <b>必须要</b> 马上出发 去登南极点	<b>须要</b> (xū yào) must; have to.
So he humorously sent Scott a telegram	所以他很幽默地给斯科特发了一封 <b>电报</b>	<b>电报</b> (diàn bào) telegram; cable; telegraph.
Say, to inform you that I have gone to Antarctica	说 <b>谨</b> 通知您 我已 <b>前往</b> 南极	<b>谨</b> (jǐn) cautious; careful; solemnly; sincerely (formal). <b>前往</b> (qián wǎng) to leave for; to proceed towards; to go.
This telegram is a challenge	这封电报是一种挑战	
It also sounded the horn of the South Pole race	它也吹响了南极点 <b>竞赛</b> 的 <b>号角</b>	<b>竞赛</b> (jìng sài) race; competition. <b>号角</b> (hào jiǎo) bugle horn.
But this game is a victory for Amundsen	但是这场竞赛是以阿蒙森的胜利	
Ended in Scott's failure	以斯科特的失败 <b>告终</b> 的	<b>告终</b> (gào zhōng) to end; to reach an end.
But in fact neither of them failed	但实际上他们两个人都没有失败	
Both of them reached the South Pole	他们两个都登上了南极点	

In this process, luck is the most important

在这个过程中 运气是第一重要的

Although Scott is two months ahead of Amundsen

尽管斯科特比阿蒙森提前了两个月

But Amundsen was calm along the way

可是阿蒙森一路上风平浪静

**路上** (lù shang) on the road; on a journey; road surface. **风平浪静** (fēng píng làng jìng) lit. breeze is still, waves are quiet (idiom); tranquil environment; all is quiet; a dead calm (at sea).

Nothing has passed during a big storm

没有什么遇到大风暴的过程中过去的

**没有什么** (méi yǒu shén me) it is nothing; there's nothing ... about it. **风暴** (fēng bào) storm; violent commotion; fig. crisis (e.g. revolution, uprising, financial crisis etc).

Second point

第二点

The route he chose is a very good route

他选择的**路线**是一条非常好的路线

**路线** (lù xiàn) itinerary; route; political line (e.g. right revisionist road).

Is a route in the east of the Ross Sea

是罗斯海的**东部**的一条路线

**东部** (dōng bù) the east; eastern part.

There is relatively little sea ice in this route

在这一条路线里面 海冰是比较少的

So he passed quickly after passing the ice shelf

所以他经过冰架以后很快过去了

Smoother along the way

一路上比较顺利

And the route Scott took is its western line

而斯科特走的路线是它的西线

More ice floes

浮冰比较多

Especially when crossing the polar circle of Vietnam and crossing the westerly zone

**尤其是在**在穿越南极圈 穿越西风带的时候

**尤其是** (yóu qí shì) especially; most of all; above all; in particular.

Scott encountered a storm

斯科特遇到了风暴

This is the first one. His luck is a little bit worse

这是第一个 他的运气稍微差了一点

also

另外一点

It's the question of adequate and inadequate preparation

就是准备工作充分与不充分的问题

Amundsen is preparing to go to Antarctica

阿蒙森在准备去南极的过程中

Because he has been to the North Pole	因为他去过 <b>北极</b>	<b>北极 (běi jí)</b> the North Pole; the Arctic Pole; the north magnetic pole.
So he chose to go to the South Pole	所以他选择在去南极登点的过程当中	
He chose a skimmer	他选择了一种阿斯基摩狗	
This kind of dog sledding is very earthy and not advanced	这种狗拉 <b>雪橇</b> 这是很土的办法 也不 <b>先进</b>	<b>雪橇 (xuě qiāo)</b> sled; sledge; sleigh; bobsled. <b>先进 (xiān jìn)</b> advanced (technology); to advance.
He led 100 dogs on the way to the South Pole	他 <b>带领</b> 100条狗 在去南极点的途中	<b>带领 (dài lǐng)</b> to guide; to lead.
Fed them plenty of meatloaf to make them healthy	给它们喂了 <b>充足的肉饼</b> 让它们的身体很好	<b>充足 (chōng zú)</b> adequate; sufficient; abundant. <b>肉饼 (ròu bǐng)</b> meat patty.
And Scott is not like this	而斯科特不是这样的	
He chooses modern machines	他 <b>选用</b> 现代的机器	<b>选用 (xuǎn yòng)</b> to choose for some purpose; to select and use.
Used two snowmobiles	用了两辆 <b>摩托雪橇</b>	<b>摩托 (mó tuō)</b> motor (loanword); motorbike.
Plus 15 ponies	再 <b>加上</b> 15匹矮 <b>种马</b>	<b>加上 (jiā shàng)</b> plus; to put in; to add; to add on; to add into; in addition; on top of that. <b>种马 (zhǒng mǎ)</b> stallion; stud horse.
I also brought a few Asskimo dogs	还带了几条阿斯基摩狗	
Just set off	就这样地出发了	
This is a very important difference	这是非常重要的一个 <b>差别</b>	<b>差别 (chā bié)</b> difference; distinction; disparity.
Because the quimo dog is hardy	因为阿斯基摩狗 <b>耐寒</b>	<b>耐寒 (nài hán)</b> coldproof; resistant to cold.
But ponies and snowmobiles are not hardy	而矮种马和摩托雪橇是不耐寒的	
So this is a major difference between them in details	所以这就是他们在细节上的一个重大差别	
One more preparation	还有一个准备工作	
Scott only used one warehouse	斯科特只用了一个 <b>仓库</b>	<b>仓库 (cāng kù)</b> depot; storehouse; warehouse.
And Amundsen by latitude	而阿蒙森按 <b>纬度</b>	<b>纬度 (wěi dù)</b> latitude.
Established a food library one by one latitude	一个纬度一个纬度地建立了 <b>食品库</b>	<b>食品 (shí pǐn)</b> foodstuff; food; provisions.

Just like this all the way to the South Pole

就这样一路到了南极点

一路 (yī lù) the whole journey; all the way; going the same way; going in the same direction; of the same kind.

The other one is

还有一个就是

Scott's barrels of kerosene are soldered

斯科特在储备煤油的桶是锡焊的

储备 (chǔ bèi) reserves; to store up. 煤油 (méi yóu) kerosene. 锡 (xī) tin (chemistry); to bestow; to confer; to grant; Taiwan pr. (xí). 焊 (hàn) to weld; to solder.

Just such a small mistake

仅仅就是这么一个小小的错误

小小 (xiǎo xiǎo) very small; very few; very minor.

Led to the ice and snow in Antarctica

导致了在南极的冰天雪地中

冰天雪地 (bīng tiān xuě dì) a world of ice and snow.

Tin is brittle, it can't stand the low temperature, it breaks

锡是脆的 它经受不住低温 破裂了

不住 (bù zhù) repeatedly; continuously; constantly; unable to (resist, conceal etc). 低温 (dī wēn) low temperature. 破裂 (pò liè) to rupture; to fracture; to break down; (linguistics) plosion.

The oil in the oil drum also ran out

油桶里的油也流光了

So when Scott returns from South Pole

所以等到斯科特从南极点回来的时候

等到 (děng dào) to wait until; by the time when (sth is ready etc).

I'm exhausted to the last point

走到最后的点已经筋疲力尽了

筋疲力尽 (jīn pí lì jìn) body weary, strength exhausted (idiom); extremely tired; spent.

When I want to find food  
When I want to keep warm

想找食物的时候 想取暖的时候

取暖 (qǔ nuǎn) to warm oneself (by a fire etc).

There is no kerosene

已经没有煤油了

So they fell to the last point

所以他们倒在了离最后一个点

Only 17 kilometers  
(kilometers) away

只有17公里 (千米) 的地方

Of course mood is also a very important (factor)

当然心情也是一个很重要的 (因素)

Because Amundsen was the first to reach the extreme

因为阿蒙森是第一个到达极点的

极点 (jí diǎn) extreme point; pole; the origin (in polar coordinates).

The flag of Norway is raised

升起了挪威的国旗

升起 (shēng qǐ) to raise; to hoist; to rise. 国旗 (guó qí) flag (of a country).

When Scott gets to the south,  
it's urgent

等到斯科特走到南亟亟点的时候

亟 (qí) repeatedly; frequently.

I found the (Norwegian)  
national flag before opening  
the champagne

还没有拉开香槟酒就发现了那面 (挪威)国旗

拉开 (lā kāi) to pull open; to pull apart; to space out; to increase. 香槟酒 (xiāng bīn jiǔ) champagne (loanword).



So he was extremely depressed	所以他 <b>极度</b> 沮丧	<b>极度</b> (jí dù) extremely.
Failed on the way back	在回途的过程中失败了	
Conversely, we can say	反 <b>过</b> 头来我们可以这样说	<b>过头</b> (guò tóu) to overdo it; to overstep the limit; excessively; above one's head; overhead.
Although in the extreme competition	虽然在极点的竞赛当中	
A champion, a runner-up	一个 <b>冠军</b> 一个 <b>亚军</b>	<b>亚军</b> (yà jūn) second place (in a sports contest); runner-up.
But they are all great heroes	但是他们都是伟大的英雄	
So now the urgent US station in South	所以现在南 <b>亟亟</b> 点的美国站	
Was named Amundsen Scott Station	就被命名为阿蒙森·斯科特站	
Polar Research Institute	英国 <b>剑桥大学</b> 的 <b>极地研究所</b>	<b>剑桥大学</b> (jiàn qiáo dà xué) University of Cambridge. <b>研究所</b> (yán jiū suǒ) research institute; graduate studies; graduate school.
Also known as the Scott Institute	也 <b>称为</b> 斯科特研究所	<b>称为</b> (chēng wéi) called; to call sth (by a name); to name.
So in science, heroes are not judged by success or failure	所以在科学上是不以 <b>成败</b> 论英雄的	<b>成败</b> (chéng bài) success or failure.
In this way, the end of the Antarctic hero era was announced	这样一来就宣布了南极英雄时代的 <b>结束</b>	
The geographic discovery of Antarctica begins below	下面就开始南极的地理发现了	
Geographical discovery of Antarctica, we know	南极的地理发现 我们知道	
In fact every major progress in science	实际上科学上每一次的 <b>重大的进展</b>	<b>进展</b> (jìn zhǎn) to make headway; to make progress.
Are all guided by technological progress	都是由技术进步为 <b>先导</b> 的	<b>先导</b> (xiān dǎo) guide; forerunner; pioneer.
So what is this technological leader	那么这个技术 <b>先导</b> 是什么	
The new mechanical tools it uses	它用的 <b>新式</b> 的 <b>机械工具</b>	<b>新式</b> (xīn shì) new style; latest type. <b>机械工</b> (jī xiè gōng) a mechanic.
Including sleigh, including motorcycle	包括雪橇 包括摩托	

More importantly, it includes aircraft

更重要的是包括了飞机

So since 1902

所以自从1902年

After the Wright brothers invented the airplane

莱特兄弟发明了飞机以后

莱特 (lái tè) Wright (surname).

People began to dream of flying over the North and South Pole

人们就开始有了飞跃北极点和南极点的梦想

有了 (yǒu le) I've got a solution!; to have a bun in the oven (abbr. for 有了胎 (yǒu le tāi)). 飞跃 (fēi yuè) to leap.

The first to have such a dream

第一个有这样的梦想

And the person who turned this dream into reality is Bird

并且把这个梦想变为现实的人是伯德

变为 (biàn wéi) to change into. 伯 (bó) father's elder brother; senior; paternal elder uncle; eldest of brothers; respectful form of address; Count, third of five orders of nobility 五等爵位 (wǔ děng jué wèi).

He November 28, 1929

他1929年11月28日

He crossed the South Pole for the first time in a plane

他驾飞机第一次越过了南极点

越过 (yuè guò) to cross over; to transcend; to cover distance; to overcome; to rise above.

In fact, he had already flown over the North Pole before that

其实在这之前他已经飞越了北极点

在这之前 (zài zhè zhī qián) before then; up until that point. 飞越 (fēi yuè) to fly across; to fly over; to fly past; (literary) (of one's spirits) to soar.

So this is a very passionate and dreamy person

所以这是一个非常有激情和有梦想的人

激情 (jī qíng) passion; fervor; enthusiasm; strong emotion.

He announced after the invention of the airplane

他在飞机发明以后他就宣布

That is my place (North Pole)

那是我的地方 (北极)

That's where my life is. I'm going to that place

那是我生命所在的地方 我要去那个地方

所在 (suǒ zài) place; location; (after a noun) place where it is located.

Take my baby plane to that place

带着我的宝贝飞机去那个地方

So this is a man of firm belief

所以这是一个很有坚定信念的人

坚定 (jiān dìng) firm; steady; staunch; resolute. 信念 (xìn niàn) faith; belief; conviction.

What was his major discovery after he went to the South Pole?

他去了南极点以后他的重大发现是什么呢

He makes a round at the South Pole

他在南极点绕行一周

绕行 (rào xíng) detour; long way around.

And dropped the American flag

同时甩下了美国的国旗

So Bird was the first person to conquer the South Pole in the air

During the Second World War

The Antarctic expedition almost ended

But after the end

America from 1946 to 1947

Implemented a plan for the high jump action

Sent a lot of ships and planes

More than 4,700 people participated

He used two seaplanes to fly around the Antarctic continent

Almost all the borders around Antarctica are clear

Took a lot of photos

68 sovereign claim marks have been established

And then Norway and Britain

They all started throwing flags down over the Antarctic

What do you throw the flag?

What did you actually do during the first expedition to Antarctica?

I want to fight for a piece of territory for myself

You look at this picture now

Look on this picture

所以 伯德是第一个在**空中征服**南极点的人

**第二次世界大战**的时候

南极的考察就几乎**终止**了

但是在结束以后

美国1946年到1947年的时候

**实施**了**跳高**行动的计划

**派出**了很多的**舰艇** 飞机

参加的人员达到四千七百多人

他用两架**水上飞机**沿着南极大陆**周边**飞行

几乎把南极周围的**边界**全部都搞清楚

拍下了很多的照片

**设**了68个**主权**要求**标记**

接着后来挪威 英国

他们都在南极**上空**开始往下扔国旗

扔国旗**干什么** 就是主权标志

最早去南极探险的过程当中实际上干什么呢

就想为自己**争夺**一片**领土**

你现在再看看这张图

在这张图上你看看

**空中** (kōng zhōng) in the sky; in the air. **征服** (zhēng fú) to conquer; to subdue; to vanquish.

**第二次世界大战** (dì èr cì shì jiè dà zhàn) World War II.

**终止** (zhōng zhǐ) to stop; to terminate (law).

**实施** (shí shī) to implement; to carry out. **跳高** (tiào gāo) high jump (athletics).

**派出** (pài chū) to send; to dispatch. **舰艇** (jiàn tǐng) warship; naval vessel.

**水上飞机** (shuǐ shàng fēi jī) seaplane. **周边** (zhōu biān) periphery; rim; surroundings; all around; perimeter; peripheral (computing); spin-offs. **飞行** (fēi xíng) (of planes etc) to fly; flying; flight; aviation.

**边界** (biān jiè) boundary; border.

**建** (jiàn) to establish; to found; to set up; to build; to construct. **主权** (zhǔ quán) sovereignty. **标记** (biāo jì) sign; mark; symbol; to mark up; (computing) token.

**上空** (shàng kōng) overhead; in the sky.

**干什么** (gàn shén me) what are you doing?; what's he up to?.

**争夺** (zhēng duó) to fight over; to contest; to vie over. **领土** (lǐng tǔ) territory.

The whole Antarctica has basically been divided up	整个南极现在基本上已经被瓜分了	基本上 (jī běn shàng) basically; on the whole. 瓜分 (guā fēn) to partition; to divide up.
New Zealand and Australia occupy a large territory	新西兰 澳大利亚占了个大地盘	大地 (dà dì) earth; mother earth.
Then France	然后就是法国	法国 (fǎ guó) France; French.
Then there is Norway, Britain, Argentina, Chile	然后就是挪威 英国 阿根廷 智利	阿根廷 (ā gēn tíng) Argentina. 智利 (zhì lì) Chile.
Seven countries divided its territory	七个国家分割了它的领土	分割 (fēn gē) to cut up; to break up.
There is only such a small place left for others	只剩下那么小小的一块地方留给别的人	剩下 (shèng xià) to remain; left over. 一块 (yī kuài) one block; one piece; one (unit of money); together; in the same place; in company. 留给 (liú gěi) to set aside for. 别的 (bié de) else; other.
What's interesting	有意思的是什么呢	
American, Russian, Chinese	这上面美国人 俄国人 中国人	美国人 (měi guó rén) American; American person; American people.
There is no sovereign claim on it	都没有在上面有主权要求	
Then this thing can't be done	那这个事情就办不妥了	不妥 (bù tuǒ) not proper; inappropriate.
You say it's yours, I say it's not yours	你说这是你的 我说这不是你的	
Americans said I had dropped the national flag	美国人说我早就扔下国旗了	早就 (zǎo jiù) already at an earlier time. 扔下 (rēng xià) to throw down; to drop (bomb).
There can be evidence of my territory	那里面可以有我领土的证据	
Okay, scientists are very smart	好 科学家们是很有智慧的	科学家 (kē xué jiā) scientist.
They might be in trouble if they fight a war	他们为此打一场战争的话可能就麻烦了	
But they said the views of three different types of countries	但是他们说三个不同类型国家的观点	
All acceptable	都是可以接受的	
We are all right, we all give recognition	都是对的 我们都给予承认 各说各话	给予 (jǐ yǔ) to accord; to give; to show (respect).
And turn it into an Antarctic treaty and sign it	并且把它变成一个南极条约 签订下来	变成 (biàn chéng) to change into; to turn into; to become. 条约 (tiáo yuē) treaty; pact. 签订 (qiān dīng) to agree to and sign (a treaty etc).

That's why we have a chance to go to the Great Wall Station

所以这样一来我们才有机会去长城站

The Chilean declared that it was his national territory

智利人宣布那是他的国家领土

We don't need a visa

我们去了不需要签证

After our Xuelong boat went on board,

我们的雪龙船上去以后

**龙船 (lóng chuán)** dragon boat (used at 端午 (duān wǔ), the Dragon Boat Festival). **上去 (shàng qù)** to go up.

Don't say hello to anyone

也不要和任何人打招呼

Is that his

那是不是他的呢

Of course it's not his

那当然就不是他的了

The same is true

**同样也是的**

**同样 (tóng yàng)** same; equal; equivalent. **是的 (shì de)** yes, that's right; variant of 似的 (shì de).

Where is our Zhongshan Station? It's from Australia

我们的**中山站**是哪儿的呢 是澳大利亚的

**中山 (zhōng shān)** refers to Dr Sun Yat-sen; Zhongshan, prefecture-level city in Guangdong, close to Sun Yat-sen's birthplace; Nakayama (Japanese surname).

So we go

那我们去也是如此

So the Antarctic Treaty is a very important treaty

所以说南极条约是一个非常重要的条约

Since the discovery of Antarctic geography in 25 years

自从用25年的时间把南极地理的发现

All figured out

已经全部搞清楚了

Where are the mountains?  
Where are the mountains?  
Where is the coastline?

哪儿有**山脉** 哪儿有**高山** **海岸线**在哪里

**山脉 (shān mài)** mountain range. **高山 (gāo shān)** high mountain; alpine. **海岸线 (hǎi àn xiàn)** coastline; seaboard; shoreline.

How many bays and islands

有多少湾 有多少岛屿

It's all clear

已经全部清楚了

By the time of 1957 and 1958

到了1957年和1958年的时候

International Geophysical Year

就是国际**地球物理**年

**地球物理 (dì qiú wù lǐ)** geophysics.

Which is the first International Polar Year

**也就是**第一个国际极地年

**也就是 (yě jiù shì)** that is; i.e..

More than 10,000 scientists from 12 countries participated in this first year

这第一年有12个国家1万多名科学家参加

Respectively in Antarctica

分别在南极考察

Established more than forty scientific research stations

建立了四十多个科学考察站

四十 (sì shí) forty; 40. 多个 (duō ge) many; multiple; multi- (faceted, ethnic etc).

Their research directions include

他们的研究方向包括了

Ice and snow atmosphere ocean geology creature

冰雪 大气 海洋 地质 生物

冰雪 (bīng xuě) ice and snow. 大气 (dà qì) atmosphere (surrounding the earth); imposing; impressive; stylish. 地质 (dì zhì) geology. 生物 (shēng wù) organism; living creature; life form; biological.

Space Physics Climate and environmental changes

空间物理 气候与环境变化

Made many important scientific discoveries

取得了许多的重要的科学发现

取得 (qǔ dé) to acquire; to get; to obtain.

In Nature Science

在Nature Science这样一些

High-level publications

高水平的刊物上

刊物 (kān wù) publication.

Published hundreds of articles

发表了几百篇 上千篇文章

This is the scientific discovery after the discovery of Antarctica

这就是南极地理发现之后的科学发现的

A new era has arrived

一个新的时代到来了

Then Antarctica found that we don't talk about those important

那么南极发现我们不讲那些重大的

Major scientific discoveries that have been seen now

现在已看到的重大的科学发现

We are talking about these very simple things today

我们今天讲这些非常简单的东西

But at the time

但是在当时来讲

Even in modern terms

甚至包括在现代来讲

Are some major scientific discoveries

都是些重大的科学发现

We know the Antarctic continent

我们知道了南极大陆

知道了 (zhī dào le) OK!; Got it!.

It is the coldest continent

它是一个最冷的大陆

The climate in winter can reach minus 40°C

冬季的气候可以达到零下40°C

冬季 (dōng jì) winter. 零下 (líng xià) below zero.

The lowest can reach minus 88.3°C

最低可以达到零下88.3°C

We Chinese on the section of DOME-A	我们中国人在DOME-A断面上	
On Kunlun Station	在 <b>昆仑</b> 站上	<b>昆仑 (kūn lún)</b> Kunlun (Karakorum) mountain range in Xinjiang.
Is preparing to achieve a new lowest temperature place	正在准备成就一个新的最低温度的一个地方	
Is now continuously monitored online	现在正在连续地在线 <b>监测</b>	<b>监测 (jiān cè)</b> to monitor.
The other is to discover the wind in Antarctica	还有一个就是发现南极的风	
It is a falling wind	它是一个 <b>下降</b> 风	<b>下降 (xià jiàng)</b> to decline; to drop; to fall; to go down; to decrease.
Blow down from the inland plateau of Antarctica	从南极 <b>内陆高原</b> 往下吹洒	<b>内陆 (nèi lù)</b> inland; interior. <b>高原 (gāo yuán)</b> plateau.
Generally speaking, more than 15 meters per second will form a snowstorm	<b>一般来讲</b> 每秒超过15米就会形成暴风雪	<b>一般来讲 (yī bān lái jiǎng)</b> generally speaking.
But in Antarctica	但是在南极	
The maximum wind speed can reach 90 meters to 100 meters per second	最大的 <b>风速</b> 可以达到每秒90米到100米	<b>风速 (fēng sù)</b> wind speed.
Winds above level 8 can reach 300 days	八级以上的风可以达到300天	
This is a very high wind speed record	这是一个非常高的风速记录	
And it is one of the driest continents	而且它是一个最干燥的大陆	
There is almost a white desert above	上面几乎是一个 <b>白色</b> 的沙漠	<b>白色 (bái sè)</b> white; fig. reactionary; anti-communist.
It has no biological existence	它没有生物存在	
Why is this	为什么这样呢	
Because of the polar cyclone I just mentioned	就是因为存在我刚才提到过的极地气旋	
It goes around Antarctica	它绕着南极	
A series of cyclones that continuously rotate from west to east	自西向东在不断地 <b>旋转</b> 着的一系列的气旋	<b>旋转 (xuán zhuǎn)</b> to rotate; to revolve; to spin; to whirl.

While this cyclone is walking along the latitude

这一气旋沿着**纬线行走**的过程中

**纬线** (wěi xiàn) woof; line of latitude; parallel. **行走** (xíng zǒu) to walk.

It is difficult to bring water vapor to the inland of Antarctica

很难把**水汽**带到南极的内陆

**水汽** (shuǐ qì) water vapor; steam; moisture.

It just forms rain and snow on the edge of the Antarctic continent

它只是在南极大陆的**边缘**上形成**降雨**和**降雪**

**边缘** (biān yuán) edge; fringe; verge; brink; periphery; marginal; borderline. **降雨** (jiàng yǔ) precipitation; rainfall. **降雪** (jiàng xuě) to snow; snowfall.

So the inland is very dry. This is also the discovery of (Antarctica)

所以说内陆是非常干燥的 这也是(南极)的发现

The Antarctic ice sheet is now known

南极的**冰盖**现在已经知道

**冰盖** (bīng gài) ice sheet.

The thickness can reach 2000 meters to 2500 meters

**厚度**可以达到2000米到2500米

**厚度** (hòu dù) thickness.

The maximum thickness can reach 4800 meters

最大的厚度可以达到4800米

Its fresh water reserves account for 72% of the global fresh water reserves

它的**淡水**的**储量**占全球淡水储量的72%

**淡水** (dàn shuǐ) Danshui or Tanshui town in New Taipei City 新北市 (xīn běi shì), Taiwan. **储量** (chǔ liàng) remaining quantity; reserves (of natural resources, oil etc).

Store more than 95% of permanent ice and snow

**储存**了95%以上的**永久性的**冰雪

**储存** (chǔ cún) stockpile; to store; to stockpile; storage. **永久性** (yǒng jiǔ xìng) permanent.

If it all melts

如果要是全部**融化**的话

**融化** (róng huà) to melt; to thaw; to dissolve; to blend into; to combine; to fuse.

Sea level will rise 60 meters

**海平面**将**上升**60米

**海平面** (hǎi píng miàn) sea level. **上升** (shàng shēng) to rise; to go up; to ascend.

So our eastern (coastal) areas will all fall into the water

所以我们东部的(**沿海**)地带都会**落入**水中

**沿海** (yán hǎi) coastal. **落入** (luò rù) to fall into.

So this problem is really serious

所以这个问题确实是很严重的

Antarctica also has rich mineral resources

南极还具有丰富的**矿产资源**

**矿产资源** (kuàng chǎn zī yuán) mineral resources.

It is indeed tempting

它确实是**诱人**的

**诱人** (yòu rén) attractive; alluring; captivating; to attract; to captivate.

Antarctic expedition so many heroic age, sailing age

南极考察探险这么多英雄时代 帆船时代

What is the most important purpose

最重要的目的是什么呢



Starting from the fundamental interests of mankind

从人类的根本的利益出发

I want to compete for its resources there

是想在那儿争夺它的资源

在那儿 (zài nà r) (adverbial expression indicating that the attention of the subject of the verb is focused on what they are doing, not distracted by anything else); just ...ing (and nothing else).

Antarctica is very rich in resources

南极的资源非常丰富

Its iron ore, coal, oil has more than 200 minerals

它的铁矿 煤 石油 有200多种矿产

铁矿 (tiě kuàng) iron ore; iron ore mine. 煤 (méi) coal. 石油 (shí yóu) oil; petroleum. 多种 (duō zhǒng) many kinds of; multiple; diverse; multi-. 矿产 (kuàng chǎn) minerals.

Its iron can be used by humans for 200 years

它的铁可以供人类使用200年

And coal is 500 billion tons

而煤是5000亿吨

There are also rich oil resources in Ross Bay

在罗斯湾里面还有丰富的石油资源

Not to mention under the frozen continent

更不要说在被冰封的大陆之下

要说 (yào shuō) as for; when it comes to. 冰封 (bīng fēng) to freeze over; to ice over; icebound; to shelve (a proposal etc). 之下 (zhī xià) under; beneath; less than.

How many undiscovered mineral resources

还有多少没有被发现的矿产资源

Of course I expect humans to try their best

当然 我期待人类尽量地

尽量 (jìn liàng) as much as possible; to the greatest extent.

Do not use these precious resources of Antarctica

不去动用南极的这些宝贵资源

动用 (dòng yòng) to utilize; to put sth to use.

It should become an Antarctic real estate

它应该成为南极的不动产

不动产 (bù dòng chǎn) real estate; immovable property; immovables.

At the same time, the biological resources of Antarctica

同时对南极的生物资源

Biosphere to Antarctica

对南极的生物圈

生物圈 (shēng wù quān) biosphere; ecosphere.

I know it very well now

现在了解得已经非常充分了

It forms a complete biological chain

它形成了一个完整的生物链

生物链 (shēng wù liàn) food chain.

A complete ecosystem

完整的一个生态系统

生态系统 (shēng tài xì tǒng) ecosystem.

It includes whales, seals, penguins, skuas

它里面包括了鲸鱼 海豹 企鹅 贼鸥

鲸鱼 (jīng yú) whale. 贼 (zéi) thief; traitor; wily; deceitful; evil; extremely. 鸥 (ōu) common gull.

They all feed on krill	它们都是以磷虾为食的	
At the same time, krill feed on ice algae	同时 磷虾是以冰藻为食的	藻 (zǎo) aquatic grasses; elegant.
In the whole process	在整个过程当中	
This ecosystem is now fully understood	这个生态系统现在已经被充分地认识了	
And krill has become an important protein resource	而且磷虾已经成为了一种重要的蛋白质资源	蛋白质 (dàn bái zhì) protein.
After we talked about the previous work	我们讲到了前人的工作以后	讲到 (jiǎng dào) to talk about sth. 前人 (qián rén) predecessor; forebears; the person facing you.
Let's think about it again	我们再想想 看看	
We Chinese have a long way to go to Antarctica	我们中国人去南极的路是漫长的	漫长 (màn cháng) very long; endless.
Also difficult	也是艰难的	艰难 (jiān nán) difficult; hard; challenging.
Actually in 1957	实际上在1957年的时候	
Zhu Kezhen, everyone knows	竺可桢这个人 大家都知道	竺可桢 (zhú kě zhēn) Zhu Kezhen (1890-1974), Chinese meteorologist and geologist.
He is a great meteorologist	他是个很了不起的气象学家	气象学 (qì xiàng xué) meteorology.
He said that the Chinese should go to Antarctica to study Antarctica	他说 中国人应该去南极 要去研究南极	
After the establishment of the State Oceanic Administration in 1964	1964年的时候成立了国家海洋局以后	国家海洋局 (guó jiā hǎi yáng jú) State Oceanic Administration (PRC).
I also wanted to start an Antarctic business	当时也想去开展南极的事业	开展 (kāi zhǎn) to launch; to develop; to unfold; (of an exhibition etc) to open. 事业 (shì yè) undertaking; project; activity; (charitable, political or revolutionary) cause; publicly funded institution, enterprise or foundation; career; occupation.
But soon the "Cultural Revolution" happened	但是不久 「文化大革命」 发生了	不久 (bù jiǔ) not long (after); before too long; soon; soon after. 文化大革命 (wén huà dà gé mìng) Cultural Revolution (1966-1976).
Until 1978	一直到1978年的时候	
The State Oceanic Administration only started to propose to the State Science and Technology Commission	国家海洋局才开始向国家科委提出了	

Report on the Antarctic expedition	关于开展南极考察工作的报告	
But this report	但是这个报告	
The leader (the situation) was just waiting	当时的 <b>领导人</b> （形势） <b>刚刚</b> 是 <b>百废待兴</b>	<b>领导人</b> (lǐng dǎo rén) leader. <b>刚刚</b> (gāng gang) just recently; just a moment ago. <b>百废待兴</b> (bǎi fèi dài xīng) many things waiting to be done (idiom); a thousand things to do.
So it's very difficult. Some leaders said	所以非常困难 <b>有的</b> 领导人就说了	<b>有的</b> (yǒu de) (there are) some (who are...); some (exist).
Things in China haven't been done yet	中国 <b>本土</b> 的事情还没有做好	<b>本土</b> (běn tǔ) one's native country; native; local; metropolitan territory.
Why are you going to Antarctica now?	<b>干嘛</b> 要现在去南极呢	<b>干嘛</b> (gàn ma) what are you doing?; whatever for?; why on earth?.
But in 1983	但是1983年的时候	
China became a signatory to the Antarctic Treaty	中国成为了南极条约的 <b>缔约国</b>	<b>缔约国</b> (dì yuē guó) signatory states; countries that are party to a treaty.
As an observer for the first time	<b>首次</b> 以 <b>观察员</b> 的身份	<b>首次</b> (shǒu cì) first; first time; for the first time. <b>观察员</b> (guān chá yuán) observer.
Participated in the Antarctic Treaty consultation meeting	参加了南极条约的 <b>协商会议</b>	<b>协商会议</b> (xié shāng huì yì) consultative conference (political venue during early communist rule); consultative meeting; deliberative assembly.
Our representatives were stimulated at this meeting	在这个会议上我们的代表受到了 <b>刺激</b>	
Because of what	因为什么呢	
When voting	在 <b>表决</b> 的时候	<b>表决</b> (biǎo jué) to decide by vote; to vote.
When discussing resolutions	在讨论 <b>决议</b> 的时候	<b>决议</b> (jué yì) a resolution; to pass a resolution.
Our representative was invited to have coffee in the cafe	我们的代表被请到 <b>咖啡厅</b> 里喝咖啡去了	<b>咖啡厅</b> (kā fēi tīng) coffee shop.
Then when I come back, I continue to ask to go to Antarctica to build a station	那么回来以后 <b>继续</b> 要求去南极 <b>建站</b>	
Because if you want to officially become an Antarctic treaty country	因为你要正式成为南极条约国的话	
You have to build a station in Antarctica	你必须要在南极 <b>建站</b>	
And work in Antarctica	而且在南极 <b>开展工作</b>	

So at this time we have to mention Deng Xiaoping

所以在这时候我们就要提到邓小平

邓小平 (dèng xiǎo píng) Deng Xiaoping (1904-1997), Chinese communist leader, de facto leader of PRC 1978-1990 and creator of "socialism with Chinese characteristics".

Deng Xiaoping is indeed a great man

邓小平确实是个伟大的人物

After he saw the report, he wrote a word

他看到这个报告以后 他就题了一个词

Contribute to the peaceful use of Antarctica

为人类和平利用南极做出贡献

做出 (zuò chū) to put out; to issue.

This inscription is October 15, 1984

这个题词是1984年10月15日

题词 (tí cí) inscription; dedication.

This is indeed a great politician and strategist

这确实是一位伟大的政治家和战略家

政治家 (zhèng zhì jiā) statesman; politician. 战略家 (zhàn lüè jiā) a strategist.

Because he recognized polar research

因为他认识到极地研究

It is not only of great scientific value

它不仅仅具有重大的科学价值

And it has potential economic value and far-reaching political significance

而且具有潜在的经济价值和深远的政治意义

潜在 (qián zài) hidden; potential; latent. 深远 (shēn yuǎn) far-reaching; profound and long-lasting.

You can't mean you exist if you don't reach the South Pole

你不到南极就不能表示你存在

不到 (bù dào) not to arrive; not reaching; insufficient; less than.

To conduct in-depth scientific research

要想在科学上进行深入研究

深入 (shēn rù) to penetrate deeply; thorough.

Antarctica is the best platform

南极是最好的平台

Look at each country to compete

看看各个国家去比赛

Economically potentially long-term

经济上是潜在的长远的

长远 (cháng yuǎn) long-term; long-range.

I just said not to use this real estate

我刚才说 不去动用这个不动产

But one day when the resources on the mainland run out

但是将来有一天当大陆上的资源耗尽的时候

耗尽 (hào jìn) to exhaust; to use up; to deplete; to drain.

Should Antarctica be developed?

南极要不要去开发呢

This is a long time in the future

这是未来很久以后的事情

So existence is very important	所以存在是非常重要的	
We Chinese finally entered the Antarctic	我们中国人终于跨进南极了	跨 (kuà) to step across; to stride over; to straddle; to span.
It was February 20th, 1985	那是1985年的2月20号	
Great Wall Station in Antarctica	在南极建立的长城站	
This is our University of Science and Technology of China	这是我们中国科技大学	科技大学 (kē jì dà xué) university of science and technology.
It was during the 15th team in 1998	是在1998年第15次队的时候	
We just joined and went to Antarctica	我们才参加了 去了南极	
Chinese government delegation	中国政府代表团	代表团 (dài biǎo tuán) delegation.
I go to Antarctica almost every year	几乎每年都要去南极 去考察	每年 (měi nián) every year; each year; yearly.
To support the Antarctic cause	去支持南极事业	
Now we have four stations in Antarctica	现在我们在南极已经有四个站了	
This is the Great Wall Station we just saw	这就是我们刚才看到的长城站	
This is the Great Wall Station	这是长城站	
This is Zhongshan Station	这个是中山站	
This is Kunlun Station	这个是昆仑站	
In this place last year (2013)	在这个地方是去年 (2013年)	
Taishan Station just established in December	12月份刚刚建立的泰山站	月份 (yuè fèn) month. 泰山 (tài shān) Tarzan (fictional character reared by apes in the jungle); Taishan township in New Taipei City 新北市 (xīn běi shì), Taiwan.
We already have four stations	我们已经有四个站了	
This is Zhongshan Station	这是中山站	
Was established on February 25, 1989	是1989年2月25日建立的	
This is Kunlun Station	这是昆仑站	

It is built on the DOME-A section of Antarctica	它是建立在南极的DOME-A断面上	
Which is on top of Dome A	也就是它的冰穹A上面	穹 (qióng) vault; dome; the sky.
Is the top of the highest plateau	就是一个最高的高原的顶部	最高 (zuì gāo) tallest; highest; supreme (court etc).
Mount Everest in Antarctica	是南极的珠穆朗玛峰	珠穆朗玛峰 (zhū mù lǎng mǎ fēng) Mt Chomolungma or Qomolangma (Tibetan); Mt Everest; Nepalese: Sagarmatha.
This is the station we built at this point	这是我们在这个点上建立的站	
This is not easy	这是很不容易的一件事情	
Taishan Station was established on December 23, 2012	泰山站建立於2012年12月23日	
But it was just completed last year in 2013	但是2013年 去年才刚刚建成	建成 (jiàn chéng) to establish; to build.
It's this time that it started building	它开始建站是这个时候	
Then you must take a boat to get to these stations	那么到这几个站去必须要坐船	几个 (jǐ ge) a few; several; how many.
This boat is now the famous Xuelong boat	这条船就是现在很有名的雪龙船	
What about in the North Pole	那么在北极呢	
The Yellow River Station was also established in the Arctic Ocean	北冰洋里也建立了黄河站	
The Yellow River Station is on the Svalbard Islands	黄河站是在斯瓦尔巴德群岛上面	瓦 (wǎ) roof tile; abbr. for 瓦特 (wǎ tè).
In this area Svalbard	在这个地区 斯瓦尔巴德群岛	
Our China has established the Yellow River Station here	我们中国在这儿建立了黄河站	
This is the location	就是这个位置	
So now you can see	所以现在可以看到	
Yellow River Station Great Wall Station Zhongshan Station	黄河站 长城站 中山站	
They form an isosceles triangle	它们形成了一个等腰三角形	等腰三角形 (děng yāo sān jiǎo xíng) isosceles triangle.

Conduct research between each other	相互之间进行研究 对比研究	相互 (xiāng hù) each other; mutual.
This is when the Arctic Yellow River Station was built	这是北极黄河站建站的时候	
This is our (China) University of Science and Technology also participated	这是我们（中国）科技大学人也参与了	
my country's Antarctic expedition up to now	我国的南极考察到现在为止	我国 (wǒ guó) our country; China. 到现在 (dào xiàn zài) up until now; to date. 为止 (wéi zhǐ) until; (used in combination with words like 到 (dào) or 至 (zhì) in constructs of the form 到...到...为止).
It's been almost 30 times	已经差不多30次了	
So what did we do in the Antarctic expedition?	那么在南极考察 我们做了什么工作呢	
What we mainly do is ice core	我们主要做的是冰芯	芯 (xīn) lamp pith; wick.
Research on Lake and Paleoclimate	湖泊与古气候的研究	湖泊 (hú pō) lake.
And research on Antarctic biodiversity and ecosystems	还有南极的生物多样性与生态系统的研究	生物多样性 (shēng wù duō yàng xìng) biodiversity.
Antarctic geology research	南极地质的研究	
Research on Marine Biological Resources of the Southern Ocean	南大洋的海洋生物资源研究	南大洋 (nán dà yáng) Southern Ocean.
Special attention is paid to the research of krill in biological resources	生物资源里特别重视了磷虾的研究	
And the ocean dynamics and ocean chemistry of the Southern Ocean	还有南大洋的海洋动力学和海洋化学	动力学 (dòng lì xué) dynamics (math.); kinetics.
And the space physics of Antarctica	还有南极的空间物理	
Atmospheric Physics and Atmospheric Chemistry	大气物理与大气化学	
From previous years	从前几年开始	几年 (jǐ nián) a few years; several years; how many years.
We are on the section of DOME-A	我们在DOME-A断面上	

The Antarctic Observatory was built

又建立了南极的**天文台**

**天文台 (tiān wén tái)** observatory.

It will be the highest observatory in Antarctica

那将是在南极最高的**天文台**

That (yes) in the cleanest environment

那（是）在最干净的环境里面

Observe the universe in the most transparent environment

最透明的环境里去**观测宇宙**

**观测 (guān cè)** to observe; to survey; observation (scientific etc). **宇宙 (yǔ zhòu)** universe; cosmos.

So this is also a very important scientific research direction

所以这也是一个非常重要的**科学研究方向**

**科学研究 (kē xué yán jiū)** scientific research.

Research in Antarctica does need to explore ideas

在南极的研究确实需要**探索**的思想

**探索 (tàn suǒ)** to explore; to probe.

Need to have courage, need to have a spirit of cooperation

需要**有胆量** 需要有合作的精神

**有胆量 (yǒu dǎn liàng)** courageous.

Especially need thinking

尤其是需要思想

Continue to open up on the original road

在原来的**道路**上继续**开辟** 不能走前人的路

**道路 (dào lù)** road; path; way. **开辟 (kāi pì)** to open up; to set up; to establish.

Especially important is in the land of Antarctica

尤其重要的是在南极这块土地上

Any scientific research done

所进行的任何科学研究

Is an international scientific competition

都是一种国际的科学竞争

There is no domestic advanced on this stage

在这个舞台上没有国内先进

Only internationally advanced

只有国际先进

Only you found something that no one had found before

只有你发现了前人没有发现过的东西

You can say that we are ahead

你才可以说 我们走在了前面

And based on nearly 30 years of scientific research

而我们根据近30年的科学研究了

What is our position in polar science

我们在极地科学里的地位是什么

Now we should say that we are a great power in the polar regions

现在应该讲我们是极地的**大国**

**大国 (dà guó)** a power (i.e. a dominant country).

But in terms of research, we are not yet a polar power

但在研究上我们还不是极地的**强国**

**强国 (qiáng guó)** (ironically) mainland China (Taiwan & Hong Kong usage).



We are working in this direction	我们正在向这个方向努力	
This requires young people to have new and sharper thinking	这就需要年轻人有更新的更敏锐的思想	这就 (zhè jiù) immediately; at once. 年轻人 (nián qīng rén) young people; youngster. 更新 (gēng xīn) to replace the old with new; to renew; to renovate; to upgrade; to update; to regenerate. 敏锐 (mǐn ruì) keen; sharp; acute.
To investigate and discover new problems in Antarctica	去考察 去发现南极新的问题	
Consider the problem with a new perspective	要用新的视角去考虑问题	视角 (shì jiǎo) viewpoint; angle on sth; perspective.
Of course you have to have the courage to go to Antarctica, you have to have courage	当然去南极你还要有胆量 你还要有气魄	要有 (yào yǒu) to need; to require; must have. 气魄 (qì pò) spirit; boldness; positive outlook; imposing attitude.
If you can't go deep inland	如果不能深入到内陆去	
Can't go deep into a more difficult environment	不能深入到更加艰险的环境里去	更加 (gèng jiā) more (than sth else); even more. 艰险 (jiān xiǎn) difficult and dangerous; hardships and perils.
Continue on the road that others have already walked	在别人已经走过的路上继续前行	走过 (zǒu guò) to walk past; to pass by. 前行 (qián xíng) (literary) to go forward.
It may be difficult to achieve great results	可能就很难取得很大的成果	
And the spirit of cooperation is needed in Antarctica	而且在南极需要合作的精神	
You can see this picture	大家可以看到这张图	
What are you doing	在干什么呢	
It is to take a mud core from the lake for us	它就是为我们采取湖泊里的一根泥芯	泥 (ní) mud; clay; paste; pulp.
For this clay core, a clay core over 3 meters long	为了这一根泥芯 一根3米多长的泥芯	
How many people serve us	多少人人为我们服务啊	人为 (rén wéi) artificial; man-made; having human cause or origin; human attempt or effort.
There is a small boat in the middle	中间有一条小船	小船 (xiǎo chuán) boat.
How many people will be allocated around the lake	多少人要分配到湖的四周去	湖 (hú) lake. 四周 (sì zhōu) all around.
Use a rope to pull it up and fix it in the center of the lake	用绳子给拉起来固定在湖中心	

To punch out a mud pipe	才能把一根 <b>泥巴管子</b> 打出来	<b>泥巴 (ní bā)</b> mud. <b>管子 (guǎn zi)</b> Guanzi or Guan Zhong 管仲 (-645 BC), famous politician of Qi 齐国 of Spring and Autumn period; Guanzi, classical book containing writings of Guan Zhong and his school.
So we said to walk along the footsteps of our predecessors in Antarctica	所以我们说在南极沿着前人的 <b>脚印</b> 走	
We will never get out of our footprints	我们永远也走不出自己的 <b>脚印</b>	
To go out of your own new path	要走出自己的 <b>新路</b>	
Of course	当然了	
This is also a state that emerged during our Antarctic expedition	这也是我们在南极考察过程中出现的一种 <b>状态</b>	
I followed the footsteps of our predecessors during the Antarctic expedition	在南极考察的时候都是沿着前人的 <b>脚印</b> 走的	
why	为什么呢	
Minimize the dangers and difficulties	尽量地 <b>减少危险 减少困难</b>	
We (China) University of Science and Technology	我们（中国） <b>科大人</b>	<b>大人 (dà ren)</b> adult; grownup; title of respect toward superiors.
Our ecological geology research	我们生态地质学的 <b>研究</b>	
Actually started from a dream	实际上从 <b>梦想</b> 开始的	
Finally landed from Penguin	最后从企鹅这个地方 <b>着陆</b> 了	<b>着陆 (zhuó lù)</b> landing; touchdown; to land; to touch down.
We start from penguins to study the problems of Antarctica	我们从企鹅出发来研究南极的 <b>问题</b>	
This is a new idea	这就是一个新的 <b>思路</b>	<b>思路 (sī lù)</b> train of thought; thinking; reason; reasoning.
You see, this is the penguin of Antarctica	你看这就是南极的 <b>企鹅</b>	
Penguin is an iconic animal in Antarctica	企鹅是南极的一个标志性的 <b>动物</b>	

It's like a hood, so it's called a hood penguin	它像个帽带吧 所以称之为帽带企鹅	
This is Adelie penguin. It's a very small penguin.	这是阿德利企鹅 是一种很 <b>小</b> 的企鹅	<b>小的</b> (xiǎo de) I (when talking to a superior).
The height is not about 0.4 meters to 0.5 meters	<b>个头</b> 不高 0.4米到0.5米左右	<b>个头</b> (ge tóu) (coll.) (suffix) my ass!; yeah, right!.
This is the Emperor Penguin	这个就是帝企鹅	
The emperor penguin can reach 1.5 meters tall	帝企鹅 <b>身高</b> 可以达到1米5	<b>身高</b> (shēn gāo) (a person's) height.
Is a big man	是大个子	
The other penguins have two children	其他的企鹅都生两个孩子	
But the emperor penguin only has one child	但帝企鹅只生一个孩子	
And emperor penguins overwinter in the interior of Antarctica	而且帝企鹅在南极的内陆 <b>越冬</b>	<b>越冬</b> (yuè dōng) to pass the winter; to overwinter; to live through the winter.
The other penguins ran north when winter came	其他企鹅在冬天来临的时候都往北跑了	
It's inland	它在 <b>内陆</b>	<b>在内</b> (zài nèi) (included) in it; among them.
Temperature of tens of degrees below zero (Celsius)	零下几十 ( <b>摄氏</b> ) 度的温度	<b>摄氏</b> (shè shì) Celsius; centigrade.
How can they stay	它们怎么待得 <b>下去</b> 呢	<b>下去</b> (xià qù) to go down; to descend; to go on; to continue; (of a servant) to withdraw.
They have their way	它们有它们的办法	
Tens of thousands of penguins	几万只企鹅	
They hold together the spirit of unity and cooperation	它们 <b>团结</b> 合作的精神抱在一起	<b>团结</b> (tuán jié) to unite; unity; solidarity; united.
Every penguin is very consciously	每一只企鹅都非常自觉地	
It is more team spirit than us humans	它比我们人类有 <b>团队精神</b>	<b>团队精神</b> (tuán duì jīng shén) group mentality; collectivism; solidarity; team spirit.
It creeps slowly step by step in a clockwise direction	它沿着 <b>顺时针</b> 的方向一步一步 <b>慢慢</b> 地 <b>蠕动</b>	<b>顺时针</b> (shùn shí zhēn) clockwise. <b>慢慢</b> (màn màn) slowly. <b>蠕动</b> (rú dòng) to wiggle; to squirm; peristalsis (wave movement of gut wall).
This creep is a spiral creep	这个蠕动是 <b>螺旋</b> 式的蠕动	<b>螺旋</b> (luó xuán) spiral; helix; screw.

So that every penguin outside

使得每一个**外围**的企鹅

**使得** (shǐ de) usable; workable; feasible; doable; to make; to cause. **外围** (wài wéi) surrounding.

Finally, there is a chance to enter the core part

最后都有机会进入到**核心部位**去

**部位** (bù wèi) position; place.

At the core

在**核心**的时候

When the mother penguin hatches an egg

企鹅母亲**孵**出蛋的时候

**孵** (fū) breeding; to incubate; to hatch.

The temperature can reach about 20 (Celsius) degrees

温度大概可以达到20 (摄氏) 度

In an environment of tens of degrees below zero (Celsius)

在零下几十 (摄氏) 度的环境里

In order to nurture its own children, it can create such a temperature

为了**孵育**自己的孩子它能创造出这样的温度

**孵育** (fū yù) to incubate; to rear (chicks).

But it's impossible to stay in the core for long

但是不可能在**核心**里呆很久

Slowly go around again to the edge

慢慢地再绕出来 也到**边缘**上去

This is a very important way of life for emperor penguins

这是帝企鹅生活的一种非常重要的方式

How did it come, why is it like this

它是怎样**过来**的 为什么会这样

**过来** (guò lái) to come over; to manage; to handle; to be able to take care of.

Only in this way

只有这样

Life can survive in that extreme cold environment

生命才可以在那个**极端严寒**的环境里**生存**下去

**极端** (jí duān) extreme. **严寒** (yán hán) bitter cold; severe winter. **生存** (shēng cún) to exist; to survive.

This is a need for survival

这是一种生存的需要

Our future is about to start

我们未来就要开始

Later when we went to Antarctica

后来我们到**南极**去的时候

New and pioneering research directions

进行的新开拓的研究方向

Is the study of polar ecology on climate and environmental changes

是极地生态对气候与环境变化的研究

This polar ecology is mainly penguin seals

这个极地生态主要是企鹅 海豹

Sea creatures like krill

磷虾这样一些海洋生物

How does climate and environmental change proceed

对气候与环境变化是怎么进行的

So in the next lecture

所以在下一讲的时候

在下 (zài xià) under; myself (humble).

We have to start with climate and environmental changes

我们就要从气候与环境变化开始

Understand why we are discussing

了解为什么我们要讨论

The impact of ecology on climate and environmental changes

生态对气候与环境变化的影响

Thank you, this class ends here

谢谢 这节课就到这儿

堂 (táng) (main) hall; large room for a specific purpose; relationship between cousins etc on the paternal side of a family; of the same clan; classifier for classes, lectures etc; classifier for sets of furniture.