

#### DEPLOYMENT LOG for IceCube STRING # 59

Deployment Start: at 159 AM on Wednesday January 26, 2006

Deployment End: at 8:39 PM on Whenevery 26 AN

Target depth (DOM60): **2450** m Final depth: 2449.33

#### **Deployment Crew**

Position	First Shift	Second Shift	Third Shift
Shift lead	pu Ham	Gay Hill	
DOM install 1 (high)	Andreas		
DOM install 2 (low)	kathik		
DOM supply 1 / DOM install 3	Mark		
DOM supply 2 / floater	TIMO		
Winch operator (cable & tower)	Porch	Dan Wharton	-
Notary (logbook & photos)	TOM PI	Dan Wharton John Jacobsen	
PTS (monitoring / sensors)	Andres	IgnacioTaboada	
Support (optional)	Michael Kloist	Ignacio Taboada Stephan Hurderlmark Patrik	
Time shift on:	6:30 8M 6:30pm	6:00 pm	
Time shift off:	G:30pm		

Summary/Comments:

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Hole Ha	andover
☐ Drill data reviewed	
maximum drift in x: ~ 1 m	□ plot
maximum drift in y: ~ 1~	□ plot
☐ maximum depth: 2526	<u>.</u>
☐ minimum radius: ~60 cm	_□ plot
plot of predicted radius vs dept	th and time
Hole dimensions verified	Time: 9:06 AM
Drill Lead:	
	signature / date
Deployment Lead:	signature / date
⊟ Handove	er complete

Hole Logging (skip if not applicable)
<ul> <li>□ Logger drop started Time: Speed: Speed:</li></ul>
➤ Must reach target depth by on



Deployment Startup
Time: 8:59AM
☐ Cable winch anchored and ☐ operational ☐ Tower winch operational ☐ Tie off verified ☐ Yellow rope verified
☐ Deployment monitoring system (PTS) operational ☐ DDB# ☐ Pressure sensors on hand: Paro(s) and Keller ☐ Laser ranger, tape measure (metric) on hand
☐ Loopback terminators connected (inside cable reel drum)
Uphole pressure system on hand: Setra sensor and cable
☐ DOMs placed in racks ☐ Weight stack on hand: weights (5) and 2 m cable
Safety checks complete (□ 1 <sup>st</sup> shift □ 2 <sup>nd</sup> shift)  □ Crew safety briefing □ E-stop locations identified □ TOS evacuation procedures reviewed □ Mustering point identified □ Snow mobile driver(s): 1om, Muk, 1imo
CPR trained: Tom, Mark, Kerthib, Mike
□ Food runners:
call galley at 65521 End of Main Cable brought into TOS and secured
Cable end attachments
Measure well depth: 31.3 m
Weights (5) attached
✓ Weight cable attached (weight stack complete) Time:

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Photos: DOM ids (	long Short); connectors	s (□ long □ short)
DOM position 60	·	DOM id: ☑ TP5P0783
(T, Long)	Cable mark:	
7	onnected to weight stack	Reason for substitution:
☐ Top clutch connection		·
□ Bow OK → □ clu		Payout:
☐ Cable end taped to	o weight stack cable	
Photos:   chain with	h clutch $\square$ phi orientation	
DOM position 59		DOM id: ☑ UP5P0800
(U, Short)	Cable mark: 15.8 M	
□ <b>D</b> u 1 11	. 1	Reason for substitution:
☐ Bottom shackle co	onnected cted at link #	Δ(59-60): <u>17</u> Μ
$\square$ Bow OK $\rightarrow \square$ clu	<del></del>	(use laser ranger)
	h clutch  phi orientation	☐ whole view
	1	Time:
Breakout 30		rime:
Cable/LC continu	ity test complete (Q16)	Depth:
	ity tost complete (Q10)	Depui.
□ all pass	•	Payout
□ all pass ☑ fail:ø	•	·
□ all pass  fail:  LongDOM		·
<ul> <li>□ all pass</li> <li>fail:</li> <li>− LongDOM</li> <li>□ connector disc</li> </ul>	charged (ESD)	•
☐ all pass ☐ fail:  - LongDOM ☐ connector disc ☐ connector O-r		•
☐ all pass ☐ fail:  - LongDOM ☐ connector disc ☐ connector O-r	charged (ESD) ing in place and □ lubed	·
☐ all pass ☐ fail:  - LongDOM ☐ connector disc ☐ connector O-r ☐ breakout O-ric ☐ connected - ShortDOM	charged (ESD) ing in place and □ lubed ng in place and □ lubed	·
☐ all pass ☐ fail:  - LongDOM ☐ connector disc ☐ connector O-ri ☐ breakout O-ri ☐ connected - ShortDOM ☐ connector disc	charged (ESD) ing in place and □ lubed ng in place and □ lubed charged (ESD)	·
☐ all pass ☐ fail:	charged (ESD) ing in place and □ lubed ng in place and □ lubed charged (ESD) ing in place and □ lubed	·
☐ all pass ☐ fail:	charged (ESD) ing in place and □ lubed ng in place and □ lubed charged (ESD)	·
☐ all pass ☐ fail:	charged (ESD) ing in place and □ lubed ng in place and □ lubed charged (ESD) ing in place and □ lubed ng in place and □ lubed	•
□ all pass □ fail:  - LongDOM □ connector disc □ connector O-r □ breakout O-ric □ connected - ShortDOM □ connector disc □ connector O-r □ breakout O-ric □ connected □ Loose pigtails tap	charged (ESD) ing in place and □ lubed ng in place and □ lubed charged (ESD) ing in place and □ lubed ng in place and □ lubed ed to cable	Payout
☐ all pass ☐ fail:	charged (ESD) ing in place and $\Box$ lubed ing in place and $\Box$ lubed charged (ESD) ing in place and $\Box$ lubed ing in place and $\Box$ lubed ing in place and $\Box$ lubed indicated $\Box$ Operational	Payout
☐ all pass ☐ fail:	charged (ESD) ing in place and $\Box$ lubed ing in place and $\Box$ lubed charged (ESD) ing in place and $\Box$ lubed ing in place and $\Box$ lubed ing in place and $\Box$ lubed indicated $\Box$ Operational	☐ Air pressure [PSI]:ance to DOM59:/M

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# IceCube String Deployment Log String 59

Photos: DOM ids (☐ long ☐ short); connectors	(∀long □ short)
DOM position 58 (T, Long) Cable mark: 32M	DOM id: TP5P0803  Reason for substitution:
<ul> <li>☑ Bottom shackle connected</li> <li>☑ Top clutch connected at link # / 8</li> <li>☑ Bow OK → ☑ clutch zip tied</li> <li>Photos: ☑ chain with clutch ☑ phi orientation</li> </ul>	Δ(58-59): <u>/ 6 9</u>
DOM position 57 (U, Short) Cable mark:	DOM id: UP5P0812  Reason for substitution:
<ul> <li>☑ Bottom shackle connected</li> <li>☑ Top clutch connected at link #</li> <li>☐ Bow OK → ☑ clutch zip tied</li> <li>Photos: ☑ chain with clutch ☐ phi orientation</li> </ul>	Δ(57-58): <i>(l<sub>θ</sub>.9</i>
Breakout 29  Cable/LC continuity test complete (Q16)	Time: Now
□ all pass  lv fail:	Last b/o Δt [min]
- LongDOM  □ connector discharged (ESD)  □ connector O-ring in place and □ lubed	Depth: Paro2 Payout
☐ breakout O-ring in place and ☐ lubed☐ connected☐	
- ShortDOM  □ connector discharged (ESD)  □ connector O-ring in place and □ lubed	
□ breakout O-ring in place and □ lubed □ connected	
☐ Loose pigtails taped to cable	

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Photos: DOM ids (☐ long ☐ short); connectors	(□·long □ short)
DOM position 56	DOM id: ☑ TP5Y0131
(T, Long) Cable mark: 6M	
☑ Bottom shackle connected	Reason for substitution:
Top clutch connected at link #	Δ(56-57):/4 \$/
$\square$ Bow OK $\rightarrow \square$ clutch zip tied	_(** **/
Photos: Y chain with clutch phi orientation	□ whole view
DOM position 55	DOM id: UP5Y0128
(U, Short) Cable mark: \( \mathcal{y}^3 \mathcal{M} \)	
	Reason for substitution:
☐ Bottom shackle connected ☐ Top clutch connected at link #	Δ(55-56): //.9
$\square$ Bow OK → $\square$ clutch zip tied	Δ(55-56): <u>(Γ</u> -7-7-
Photos: A chain with clutch Phi orientation	whole view
Breakout 28	Time:
☑ Cable/LC continuity test complete (Q15)	Now <i>  :15</i> Last b/o
☐ all pass	
fail:	Δt [min]
- LongDOM	Depth:
☐ connector discharged (ESD) ☐ connector O-ring in place and ☐ lubed	Paro2
☐ breakout O-ring in place and ☐ lubed	Payout
□ connected	
- ShortDOM	
☐ connector discharged (ESD)	
☐ connector O-ring in place and ☐ lubed	
☐ breakout O-ring in place and ☐ lubed	
□ connected	
☐ Loose pigtails taped to cable	

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Photos: DOM io	ls (☐ long ☐ short); connectors	(Plane Pshort)
DOM position &	· ,	DOM id: TP5P0867
(T, Long)	Cable mark:	Reason for substitution:
$\square$ Bow OK $\rightarrow$ [	cle connected onnected at link #  clutch zip tied with clutch fight phi orientation	$\Delta$ (54-55): $\frac{16.9M}{2}$ whole view
DOM position 5	53	DOM id: ☑ UP5P1008
(U, Short)	Cable mark: <i>  7M</i> _	Reason for substitution:
$\square$ Bow OK $\rightarrow \square$	· · · · · · · · · · · ·	Δ(53-54): 16.9
Breakout 27		Time:
☐ all pass ☐ fail: ☐ LongDOM ☐ connector ☐ breakout © ☐ connected ☐ ShortDOM ☐ connector ☐ connector ☐ breakout © ☐ connector ☐ breakout © ☐ connected ☐ breakout © ☐ connected ☐ breakout © ☐ connected	discharged (ESD) O-ring in place and $\Box$ lubed O-ring in place and $\Box$ lubed to taped to cable	Now//-42 Last b/o
Back G	w linch @ 11:58	,
ridat, 1999 i Alaharan kay k <mark>adi dia</mark> n	□ All clear to lower cab	le.⊚o o koažna po uvete:

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Photos: DOM ids (☐long ☐ short); connector	rs (☐ long ☐ short)
DOM position 52 (T, Long)  Cable mark: 134.5M	DOM id: TP5H0199  Reason for substitution:
<ul> <li>□ Bottom shackle connected</li> <li>□ Top clutch connected at link #/\$\sqrt{\sq}}}}}}}}}}}}}}}}}elinder\signt{\sqrt{\sq}}}}}}}}}}elseptioner\sightiftity}}}}}}}}}eeder\signtificetinned\sint{\sint{\sint{</li></ul>	$\Delta(52-53): \frac{16-9}{}$ The whole view
DOM position 51 (U, Short) Cable mark: 15/M	DOM id: UP5H0174  Reason for substitution:
<ul> <li>□ Bottom shackle connected</li> <li>□ Top clutch connected at link #! </li> <li>□ Bow OK → □ clutch zip tied</li> <li>Photos: □ chain with clutch □ phi orientation</li> </ul>	Δ(51-52): <u>[6-9</u>
Breakout 26	Time:
☐ Cable/LC continuity test complete (Q14)  ☐ all pass ☐ fail:  - LongDOM ☐ connector discharged (ESD) ☐ connector O-ring in place and ☐ lubed ☐ breakout O-ring in place and ☐ lubed ☐ connected  - ShortDOM ☐ connector discharged (ESD) ☐ connector O-ring in place and ☐ lubed ☐ breakout O-ring in place and ☐ lubed ☐ breakout O-ring in place and ☐ lubed ☐ connected ☐ Loose pigtails taped to cable	NowLast b/o

☐ All clear to lower cable ☺



Photos: DOM ids (☐ long ☐ short); connector	rs ( long short)
DOM position 50 (T, Long)  Cable mark: /FPM	DOM id: TP5P0947  Reason for substitution:
<ul> <li>□ Bottom shackle connected</li> <li>□ Top clutch connected at link #/\$</li> <li>□ Bow OK → □ clutch zip tied</li> <li>Photos: □ chain with clutch □ phi orientation</li> <li>□ Curved distance around DOM: □</li> </ul>	$\Delta$ (50-51): $16 \cdot 9$ whole view
DOM position 49 (U, Short)  Cable mark: 185M	DOM id: UP5P1028  Reason for substitution:
<ul> <li>□ Bottom shackle connected</li> <li>□ Top clutch connected at link #/8</li> <li>□ Bow OK → □ clutch zip tied</li> <li>Photos: □ chain with clutch □ phi orientation</li> <li>□ Curved distance around DOM:</li> </ul>	Δ(49-50): <i>l</i> 6.9
Breakout 25	Time:
<ul> <li>□ Cable/LC continuity test complete (Q14)</li> <li>□ all pass</li> <li>□ fail:</li> <li>- LongDOM</li> <li>□ connector discharged (ESD)</li> <li>□ connector O-ring in place and □ lubed</li> <li>□ breakout O-ring in place and □ lubed</li> <li>□ connected</li> <li>- ShortDOM</li> <li>□ connector discharged (ESD)</li> <li>□ connector O-ring in place and □ lubed</li> <li>□ breakout O-ring in place and □ lubed</li> <li>□ breakout O-ring in place and □ lubed</li> <li>□ connected</li> <li>□ Loose pigtails taped to cable</li> </ul>	Now 12·31  Last b/o Δt [min]  Depth: Paro2 169.1  Payout
□ All clear to lower cal	ble:⊚ <u>s o na naka a bake</u> n



Photos: DOM ids (☐ long ☐ short); connectors	s ( long short)
DOM position 48	DOM id: ☑ TP5P0945
(T, Long) Cable mark: 201 M	Reason for substitution:
<ul> <li>□ Bottom shackle connected</li> <li>□ Top clutch connected at link #//</li> <li>□ Bow OK → □ clutch zip tied</li> <li>Photos: □ chain with clutch □ phi orientation</li> </ul>	Δ(48-49):/6.9
DOM position 47 (U, Short) Cable mark: 219.4 M	DOM id: UP5P1022
<ul> <li>□ Bottom shackle connected</li> <li>□ Top clutch connected at link #/8</li> <li>□ Bow OK → □ clutch zip tied</li> <li>Photos: □ chain with clutch □ phi orientation</li> </ul>	Reason for substitution: $\Delta(47-48): \frac{16-9}{}$ $\Box \text{ whole view}$
Breakout 24	Time:
<ul> <li>□ Cable/LC continuity test complete (Q13)</li> <li>□ all pass</li> <li>□ fail:</li> <li>- LongDOM</li> <li>□ connector discharged (ESD)</li> <li>□ connector O-ring in place and □ lubed</li> <li>□ breakout O-ring in place and □ lubed</li> <li>□ connected</li> <li>- ShortDOM</li> <li>□ connector discharged (ESD)</li> <li>□ connector O-ring in place and □ lubed</li> <li>□ breakout O-ring in place and □ lubed</li> <li>□ breakout O-ring in place and □ lubed</li> <li>□ connected</li> <li>□ Loose pigtails taped to cable</li> </ul>	Now 1240  Last b/o  At [min]  Depth: Paro2 202.3  Payout



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Photos: DOM ids (	$\square$ long $\square$ short); connectors	· · ·
DOM position 46		<b>DOM</b> id: 🗹 TP5Y0103
(T, Long)	Cable mark: 256.3	
	· · · · · · · · · · · · · · · · · · ·	Reason for substitution:
☐ Bottom shackle	connected	r <sub>1</sub> 0
☐ Top clutch conn	ected at link #/\delta	Δ(46-47): <u>[6,9</u>
$\square \text{ Bow OK} \to \square \text{ c}$	-	,
Photos: $\square$ chain wi	ith clutch □ phi orientation	,
DOM position 45		DOM id: ☑ UP5Y0084
(U, Short)	Cable mark: 253-5	
,		Reason for substitution:
☐ Bottom shackle	connected	<i>,,</i> a
☐ Top clutch conn	ected at link #	Δ(45-46): 16.9
$\mid \Box \operatorname{Bow} \operatorname{OK} \to \Box \operatorname{c}$	luten zip tied	
Photos: $\Box$ chain wi	ith clutch □ phi orientation	□ whole view
Breakout 23		Time:
	'4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Now 12:54
	uity test complete (Q13)	
☐ all pass		Last b/o
☐ fail:		Δt [min]
- LongDOM	achomaed (ECD)	Depth: Paro2 237.644
	scharged (ESD)	<b></b>
	ring in place and □ lubed ing in place and □ lubed	Payout
	ing in place and $\Box$ lubed	!
- ShortDOM		
	scharged (ESD)	160
	-ring in place and □ lubed	Mu 46
	$\Box$ ing in place and $\Box$ lubed	Don 46
□ connected	ing in place and = lacea	
☐ Loose pigtails ta	ned to cable	
	1	·
	·	
[ 14] [19] 化环酸酸甲氧烷磺酸氢氢	☐ All clear to lower cab	de.⊙y



Photos: DOM ids	$(\Box \log \Box \text{ short}); \text{ connec}$	etors ( $\square$ long $\square$ sh	ort)
DOM position 44 (T, Long)	Cable mark: 270.4	<del>.</del>	TP5P0931
$\square$ Bow OK $\rightarrow \square$ $\alpha$	nected at link #	Δ(44-45): <u>/</u>	16-9
DOM position 43 (U, Short)	Cable mark: 287.3		UP5P1010
$\square$ Bow OK $\rightarrow \square$ C	nected at link #	Δ(43-44):	16.9
Breakout 22			Time:
☐ all pass ☐ fail:  - LongDOM ☐ connector di ☐ connector O ☐ breakout O-I ☐ connected - ShortDOM ☐ connector di ☐ connector O	ischarged (ESD) -ring in place and $\Box$ lubering in place and $\Box$	Last b/o	1-07 Depth: 288.17

☐ All clear to lower cable ☺

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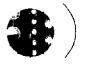
Photos: DOM ids (□	long $\Box$ short); connector	rs ( long short)
DOM position 42		DOM id: TP5Y0225
(T, Long)	Cable mark:	
☐ Bottom shackle co	nnected	Reason for substitution:
☐ Top clutch connection	_	Δ(42-43): 17.0
$\square$ Bow OK $\rightarrow \square$ clu	tch zip tied	
Photos:   Chain with	n clutch $\square$ phi orientation	□ whole view
DOM position 41		DOM id: 🗹 UP5Y0204
(U, Short)	Cable mark: 321.5	
		Reason for substitution:
☐ Bottom shackle co ☐ Top clutch connect	. A	Δ(41-42): 16-9
$\square$ Bow OK $\rightarrow \square$ clu	<del></del>	$\Delta(41-42)$ . $14^{3}$
	n clutch 🛘 phi orientation	☐ whole view
Breakout 21		Time:
		· · · · · · · · · · · · · · · · · · ·
	ity test complete (Q12)	Now_///9
□ all pass □ fail:		Last b/o
- LongDOM	<del></del>	Δt [min] Depth:
□ connector disc	harged (ESD)	Paro2 323,33
	ng in place and □ lubed	Payout
	g in place and ☐ lubed	
☐ connected		
- ShortDOM  ☐ connector disc	harged (FSD)	·
a a	ng in place and □ lubed	
	g in place and □ lubed	
□ connected		-
☐ Loose pigtails tape	ed to cable	
	□ All clear to lower cah	

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### IceCube String Deployment Log

Photos: DOM ids (long short); connectors (long short)			
DOM position 40	200	DOM id:	TP5H0233
(T, Long)	Cable mark: 338	<u>25</u> Reasor	for substitution:
Bottom shackle con Top clutch connect Bow OK → clutch	ted at link # $\frac{\delta}{\delta}$	Δ(40-41):	16.9
Photos: chain with	clutch phi orientation	whole view	
DOM position 39 (U, Short)	Cable mark: 355.2	DOM id:	UP5H0184
		Reaso	n for substitution:
Bottom shackle connection Bow OK → clutch	ted at link #/ h zip tied	Δ(39-40):	16.9
Photos: chain with	clutch phi orientation	i whole view	•
Breakout 20			Time:
Cable/LC continui all pass			1:30
fail:  - LongDOM  connector discl		·	Depth: 357.06
connector O-ri	ng in place and lubed	Payout	
breakout O-rin connected	g in place and lubed		
- ShortDOM connector disc	harged (ESD)		
<u> </u>	ng in place and lubed	÷.	
breakout O-rin connected	g in place and lubed		
Loose pigtails tape	ed to cable		



#### IceCube String Deployment Log

Photos: DOM ids (	long short); connectors (	long short)	
DOM position 38 (T, Long)	Cable mark: 372-2	DOM id:	TP5P0521
(T, Long)	Odbio mark.	Reason	for substitution:
Bottom shackle cor Top clutch connect Bow OK → clutch	ed at link #/8	Δ(38-39):/	1.0
Photos: chain with	clutch phi orientation	whole view	
DOM position 37 (U, Short)	Cable mark: 389.2		UP5P0538
,		Reason	for substitution:
Bottom shackle con Top clutch connect Bow OK → clutch Photos: chain with	ed at link #	$\Delta$ (37-38):_ $\int$	7.0
Breakout 19	•	•	Time:
Cable/LC continuit all pass	ty test complete (Q11)	Now_ Last b/o Δt [min]	
fail: - LongDOM		23t [HIII]	Depth:
connector discl	narged (ESD)	Paro2	391.6
connector O-ri	ng in place and lubed g in place and lubed	Payout	
- ShortDOM		A STATE OF THE STA	
	ng in place and lubed g in place and lubed		



<del>`</del>		
Photos: DOM ids (	long short); connectors (	long short)
DOM position 36	_	DOM id: TP5P0823
(T, Long)	Cable mark: 406, 2	
Pottom shookle oo	nnaatad	Reason for substitution:
Bottom shackle co Top clutch connec	7.17	Δ(36-37): 16.9
Bow $OK \rightarrow clutch$		100 01 j. 1 D
	clutch phi orientation	whole view
DOM position 35		DOM id: UP5P0910
(U, Short)	Cable mark: 423-2	
D-44		Reason for substitution:
Bottom shackle co Top clutch connec	~	Δ(35-36): 16-9
Bow $OK \rightarrow clutch$		Δ(33-36): / ψ / /
	clutch phi orientation v	whole view
	1	,
Breakout 18		Time:
Cable/LC continui	ty test complete (Q10)	Now 1:54
all pass		Last b/o
fail:	<u>-</u>	Δt [min]
<ul> <li>LongDOM connector discl</li> </ul>	parged (ESD)	Depth: Paro2 <i>425.63</i>
	ng in place and lubed	Paroz <u>423,63</u>
	g in place and lubed	1 dyour
connected		
- ShortDOM		
connector disch	• • •	
	ng in place and lubed	
connected	g in place and lubed	
Loose pigtails tape	d to cable	
Looso piganis apo	a to outle	
Put two Kellers (or	ne is for backup) in bucket	t of water/ice mix
•		

All clear to lower cable ⊚ All clear to lower cable



70.00		<u> </u>	
Photos: DOM ids	( long short); connectors (	long short) TP 4P 024	1
DOM position 34	<b>,</b>	DOM id: TP5Y007	
(T, Long)	Cable mark: 440.3		
		Reason for substitution	on:
Bottom shackle c	connected		
Top clutch conne	ected at link #/8	Δ(34-35):/6.9	
Bow $OK \rightarrow clut$	ch zip tied		
Photos: chain wit	th clutch phi orientation w	whole view	
DOM position 33	100k photos crotes voi	DOM id: UP5Y002	12
(U, Short)	Cable mark: 457.1	<b>DOWNG.</b> 0151007	- 4
(2, 2)		Reason for substituti	on:
Bottom shackle c	connected	1	
Top clutch conne	ected at link #//	Δ(33-34): <u>/6.9</u>	
Bow $OK \rightarrow clut$	ch zip tied		
Photos: chain wit	th clutch phi orientation w	vhole view	
Breakout 17	•	Time:	
Cable/LC continu	uity test complete (Q10)	Now_2:10	
all pass	(2009)	Last b/o	
fail:		Δt [min]	_
- LongDOM		Depth:	
•	charged (ESD)	Paro2	
	ring in place and lubed	Payout \$ 460.43	
	ng in place and lubed		
connected	<u> </u>		
- ShortDOM			
connector dis	charged (ESD)		
connector O-1	ring in place and lubed		
breakout O-ri	ng in place and lubed		
connected			-
Loose pigtails tap	ped to cable		

All clear to lower cable 

All clear to

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## IceCube String Deployment Log

Photos: DOM ids (long short); conne	ctors (long short)
DOM position 32 (T, Long)  Cable mark: 47	DOM id: TP5P0741
(1, Long)	Reason for substitution:
Bottom shackle connected  Top clutch connected at link #	Δ(32-33): <u>/6.9</u>
Photos: chain with clutch phi orienta	tion whole view
Photos: chain with clutch phi orienta  DOM position 31  Photo falen of	exposed copper on each UP5P0878
(U, Short) Cable mark: 49	Reason for substitution:
Bottom shackle connected  Top clutch connected at link #/  Bow OK → clutch zip tied  Photos: chain with clutch phi orienta	Δ(31-32): 17.0
Breakout 16	Time:
Cable/LC continuity test complete all pass fail:  - LongDOM connector discharged (ESD) connector O-ring in place and lub breakout O-ring in place and lub connected - ShortDOM connector discharged (ESD) connector O-ring in place and lub breakout O-ring in place and lub connected Loose pigtails taped to cable	ed ped
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IceCube String Deployment Log
Note: & surface to DOM cible prorlywound-

Photos: DOM ids (long short); connectors	(long short)
DOM position 30 (T, Long) Cable mark: 508.1	DOM id: TP5P0511
	Reason for substitution:
Bottom shackle connected  Top clutch connected at link #	Δ(30-31): 16.9
Photos: chain with clutch phi orientation	whole view
DOM position 29 (U, Short) Cable mark: 525.1	DOM id: UP4Y0032
Bottom shackle connected	Reason for substitution:
Top clutch connected at link # / 8  Bow OK → clutch zip tied	Δ(29-30): / 7.0
Photos: chain with clutch phi orientation	whole view
Breakout 15	Time:
Cable/LC continuity test complete (Q9) all pass fail:  - LongDOM connector discharged (ESD) connector O-ring in place and lubed breakout O-ring in place and lubed connected  - ShortDOM connector discharged (ESD) connector O-ring in place and lubed breakout O-ring in place and lubed connected  Local pictoils toped to apple	NowLast b/o
Loose pigtails taped to cable	.0
Ser.#: Cable mark: Distan	Air pressure [PSI]:
All clear to lower ca	i <b>ble ⊚</b> Air crear to to de ric

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Photos: DOM ids (	(long short); conne	ectors (	(long short)	
DOM position 28	54	42	DOM id	d: TP5P0699
(T, Long)	Cable mark: 54		– Reas	on for substitution:
Bow $OK \rightarrow clute$	cted at link #/fch zip tied	<del>-</del>	Δ(28-29):	
Photos: chain with	h clutch phi orienta	ation	whole view	
<b>DOM position 27</b> (U, Short)	Cable mark: 55	59	DOM id	d: UP5P0856
(0, 0)			Reas	son for substitution:
Bow $OK \rightarrow cluto$	cted at link #		Δ(27-28):_ whole view	16.9
Breakout 14				Time:
Dieakout 17				_
Cable/LC continu	ity test complete (	(Q8)		2-54
all pass	*			
fail: - LongDOM	<del> </del>		Δt [min]	Depth:
•	charged (ESD)		Paro2	
	ing in place and lub	bed	Keller	
	ng in place and lube		Payout 50	/3.38
- ShortDOM				
	charged (ESD)			
•	ing in place and lub		•	
breakout O-ru connected	ng in place and lube	ea		
Loose pigtails tap	ed to cable			

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Photos: DOM ids (long short); connectors (long short);	ng short)
DOM position 26	DOM id: TP5P0809
(T, Long) Cable mark: 576	Reason for substitution:
Bottom shackle connected  Top clutch connected at link #!  Bow OK → clutch zip tied	Δ(26-27): 17.0
Photos: chain with clutch phi orientation wh	ole view / decent
Photos: chain with clutch phi orientation wh  DOM position 25  (U, Short)  Cable mark: 593	<b>BOM</b> id: UP5P0868
(o, oner)	Reason for substitution:
Bottom shackle connected  Top clutch connected at link #  Bow OK → clutch zip tied  Photos: chain with clutch phi orientation wh	Δ(25-26): / <i>], 0</i> nole view
Breakout 13	Time:
Cable/LC continuity test complete (Q8) all pass fail:  - LongDOM connector discharged (ESD) connector O-ring in place and lubed breakout O-ring in place and lubed connected - ShortDOM connector discharged (ESD) connector O-ring in place and lubed breakout O-ring in place and lubed connected Loose pigtails taped to cable	Now 3.06  Last b/o  Δt [min]  Depth:  Paro2 597.58  Keller  Payout
Loose piguins apea to easie	•



Photos: DOM ids	s (long short); connec	ctors (long short)	
DOM position 24 (T, Long)	Cable mark:	rl 0	TP5Y0197
- 4 11		Reason	n for substitution:
Bottom shackle Top clutch conn Bow OK → clu	ected at link # 19	Δ(24-25):	17.0
	th clutch phi orientat	tion whole view	
DOM position 2	<b>3</b> Cable mark: 6	27 DOM id:	UP5Y0196
(O, Onort)		Reaso	n for substitution:
Bow $OK \rightarrow clu$	ected at link #19		16.9
Breakout 12			Time:
all pass		Last b/o_	3:19
fail:		Δt [min]_	·
- LongDOM	scharged (ESD)	Para?	Depth: 631.47
	-ring in place and lub		
	ring in place and lube		· · · · · · · · · · · · · · · · · · ·
- ShortDOM	scharged (ESD)		
connector O	-ring in place and lub ring in place and lube		
Loose pigtails to	aped to cable		1
		*	•

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Photos: DOM ids (	long short); connector	rs (long short)
DOM position 22		DOM id: TP5H0239
(T, Long)	Cable mark: 644	Reason for substitution:
Bottom shackle con Top clutch connect Bow OK → clutch	ted at link #/9_ n zip tied	Δ(22-23): 16.9
Photos: chain with	clutch phi orientation	
DOM position 21		DOM id: UP5H0198
(U, Short)	Cable mark: (2/1)	Reason for substitution:
Bottom shackle con Top clutch connect Bow OK → clutch	ted at link # <i>l 9</i> n zip tied	Δ(21-22): /6.9
Photos: chain with	clutch phi orientation	n whole view
Breakout 11		Time:
breakout O-ring connected - ShortDOM connector discless connector O-ring breakout O-ring	narged (ESD) ng in place and lubed g in place and lubed	Now 3: 32  Last b/o  Δt [min]  Depth:  Paro2 666.37  Keller 61-67  Payout
connected Loose pigtails tape	d to cable	



Photos: DOM ids (long short); connectors	(long short)
DOM position 20	DOM id: TP5P0781
(T, Long) Cable mark: 678	Reason for substitution:
Bottom shackle connected  Top clutch connected at link #	Δ(20-21): /۶, 0
Photos: chain with clutch phi orientation Curved distance around DOM:	
DOM position 19	DOM id: UP5P0522
(U, Short) Cable mark: 695	Reason for substitution:
Bottom shackle connected  Top clutch connected at link #  Bow OK → clutch zip tied	Δ(19-20): /6.9
Photos: chain with clutch phi orientation Curved distance around DOM:	
Breakout 10	Time:
Cable/LC continuity test complete (Q6) all pass fail:  - LongDOM connector discharged (ESD) connector O-ring in place and lubed breakout O-ring in place and lubed connected  - ShortDOM connector discharged (ESD) connector O-ring in place and lubed breakout O-ring in place and lubed connected	Now 3.45  Last b/o  At [min]  Depth:  Paro2 700.68  Keller 704-39  Payout
Loose pigtails taped to cable	

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Photos: DOM ids (	long short); connectors	(long short)
DOM position 18	Cable mark: 712	DOM id: TP5Y0175
(T, Long)	Cable mark: 110	Reason for substitution:
Bottom shackle cor Top clutch connect Bow OK → clutch	ed at link #	Δ(18-19): 16.9
Photos: chain with	clutch phi orientation	
DOM position 17 (U, Short)	Cable mark: 729	DOM id: UP5Y0188
		Reason for substitution:
Bottom shackle cor Top clutch connect Bow OK → clutch	ed at link # <i>19</i>	Δ(17-18):
Photos: chain with	clutch phi orientation	whole view
Breakout 9		Time:
breakout O-ring connected - ShortDOM connector disch connector O-ring	narged (ESD)  ng in place and lubed  g in place and lubed  narged (ESD)  ng in place and lubed  g in place and lubed	Now 3:55  Last b/o Δt [min]  Depth: Paro2 734-83  Keller 730-63  Payout
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Photos: DOM ids (	long short); connecte	ors (long short)	763
DOM position 16 (T, Long)	Cable mark: 745	5.9 DOM id:	TP5P0793
(1, 29.19)		Reason	for substitution:
Bottom shackle cor Top clutch connect Bow OK → clutch	ed at link #	Δ(16-17):	<u>17</u>
Photos: chain with	clutch phi orientation	on whole view	
DOM position 15 (U, Short)	Cable mark: 760	DOM id:	UP5P0736
		Reaso	n for substitution:
Bottom shackle cor Top clutch connect Bow OK → clutch	ed at link #19_	Δ(15-16):	<u>17./</u> /
Photos: chain with	clutch phi orientatio	on whole view	
Breakout 8			Time:
Cable/LC continuit	ty test complete (Q	5) Now	4:05
all pass	,	Last b/o	
fail:		Δt [min]_	
- LongDOM			Depth:
connector disch	narged (ESD)	Paro2 _ l Keller <u>75</u>	769.15
connector O-rin	ng in place and lubed	Keller 75	2.98
breakout O-ring connected	g in place and lubed	Payout	· · · · · · · · · · · · · · · · · · ·
- ShortDOM			
connector disch	narged (ESD)	•	
connector O-rir	ng in place and lubed	1	
breakout O-ring connected	g in place and lubed		
Loose pigtails tape	d to cable	÷	

PARTICLE REPORT OF MARKET THE

ng short)
DOM id: TP5Y0145
Reason for substitution:
Δ(14-15): <i>l ધ - 9</i>
DOM id: UP5Y0152
Reason for substitution:
Δ(13-14): /7.0
Time:
Now 4:16  Last b/o Δt [min]  Depth: Paro2 \$\frac{103.31}{3.22}\$  Reller 778.22  Payout

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Photos: DOM ids (long short); connectors	(long short)
DOM position 12 (T, Long) Cable mark: \$13.8	DOM id: TP5P0851
(1, Long)	Reason for substitution:
Bottom shackle connected  Top clutch connected at link #/9  Bow OK → clutch zip tied	Δ(12-13): /7.0
Photos: chain with clutch phi orientation	whole view
DOM position 11 (U, Short)  Cable mark: 830-8	DOM id: UP5P0886
·	Reason for substitution:
Bottom shackle connected  Top clutch connected at link #/9  Bow OK → clutch zip tied	Δ(11-12): /6.9
Photos: chain with clutch phi orientation	whole view
Breakout 6	Time:
Cable/LC continuity test complete (Q4)	Now 4.27
all pass	Last b/o
fail:	Δt [min]
- LongDOM	Depth:
connector discharged (ESD)	Paro2 <u>837.53</u>
connector O-ring in place and lubed	Keller_ <i>§30-36</i> _
breakout O-ring in place and lubed connected	Payout
- ShortDOM	
connector discharged (ESD) connector O-ring in place and lubed breakout O-ring in place and lubed connected	
Loose pigtails taped to cable	



Photos: DOM ids (long	g short); connectors	(long short)	
DOM position 10 (T, Long) Ca	ble mark: 847. P	DOM id:	TP5Y0173
(1, 20119)	1010 man	Reason t	for substitution:
Bottom shackle connected a Top clutch connected a Bow OK → clutch zip	at link # <u>19</u>	Δ(10-11):	16.9
Photos: chain with clut	tch phi orientation	whole view	
DOM position 9 (U, Short) Ca	ble mark: _ <i>264.</i> 7	DOM id:	UP5Y0126
		Reason	for substitution:
Bottom shackle connected a  Bow OK → clutch zip	at link # <u>19</u>	Δ(9-10): / ζ	9_
Photos: chain with clut	tch phi orientation	whole view	
Breakout 5			Time:
Cable/LC continuity to all pass fail:  - LongDOM connector discharg connector O-ring in breakout O-ring in connected  - ShortDOM connector discharg connector O-ring in breakout O-ring in breakout O-ring in connected  Loose pigtails taped to	ged (ESD) In place and lubed place and lubed ged (ESD) In place and lubed place and lubed place and lubed	NowLast b/o	Depth: }7/,90
Loose piguins usped to	Caoic		

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Photos: DOM ids (long short); conne	ctors (long short)
DOM position 8 (T, Long)  Cable mark:	DOM id: TP5P0881
(1, Long)	Reason for substitution:
Bottom shackle connected  Top clutch connected at link #	
Photos: chain with clutch phi orienta	tion whole view
DOM position 7 (U, Short) Cable mark:	8.6 DOM id: UP5P0890
	Reason for substitution:
Bottom shackle connected  Top clutch connected at link #	Δ(7-8):
Photos: chain with clutch phi orienta	tion whole view
Breakout 4	Time:
Cable/LC continuity test complete all pass fail:  - LongDOM connector discharged (ESD) connector O-ring in place and lub breakout O-ring in place and lube connected - ShortDOM connector discharged (ESD) connector O-ring in place and lub breakout O-ring in place and lub connected Loose pigtails taped to cable	ed Payout

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Photos: DOM ids	(long short); connectors (l	ong short)	
DOM position 6 (T, Long)	Cable mark: 915.6	DOM id: TP5P053	13
( )		Reason for substituti	on:
Bottom shackle c Top clutch conne Bow OK → clute	cted at link #19	Δ(6-7): <u>/6.9</u>	
Photos: chain wit	h clutch phi orientation w	hole view	
<b>DOM position 5</b> (U, Short)	Cable mark: 932.6	DOM id: UP4Y00	42
~ 1.11		Reason for substitut	ion:
Bottom shackle c Top clutch conne Bow OK → clute	cted at link #	Δ(5-6): 17.0	
	h clutch phi orientation w	hole view	
_	photo of bore wire on cal	le	
Breakout 3		Time:	
Cable/LC continu	uity test complete (Q3)	Now 5:00	
all pass		Last b/o	_
fail:		Δt [min]	·
- LongDOM		Depth:	
connector dis	charged (ESD)	Paro2 939.04	
connector O-1	ring in place and lubed	Keller <u>934,27</u>	
breakout O-ri connected	ng in place and lubed	Payout	
- ShortDOM			
connector dis	charged (ESD)	•	
	ring in place and lubed		
breakout O-ri	ng in place and lubed		
connected			
Loose pigtails tap	ed to cable		

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Photos: DOM ids (long short); connectors	( long short)
DOM position 4 (T, Long)  Cable mark: 949.4	DOM id: TP5H0247
(T, Long) Cable mark: 9479	Reason for substitution:
Bottom shackle connected  Top clutch connected at link #	Δ(4-5):
Photos: chain with clutch phi orientation	whole view
DOM position 3 (U, Short) Cable mark: 966.6	DOM id: UP5H0204
Bottom shackle connected	Reason for substitution:
Top clutch connected at link # $19$ Bow OK $\rightarrow$ clutch zip tied	Δ(3-4): /6.9
Photos: chain with clutch phi orientation	whole view
Breakout 2	Time:
Cable/LC continuity test complete (Q2) all pass fail: - LongDOM connector discharged (ESD) connector O-ring in place and lubed breakout O-ring in place and lubed connected - ShortDOM connector discharged (ESD) connector O-ring in place and lubed breakout O-ring in place and lubed connected Loose pigtails taped to cable	Now 5:14  Last b/o  Δt [min]  Depth:  Paro2 973  Keller 967  Payout
Loose pigians taped to caute	

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Photos: DOM ids (long short); connectors (l	long short)
DOM position 2	DOM id: TP5P0761
(T, Long) Cable mark: 983.6	Reason for substitution:
Bottom shackle connected  Top clutch connected at link #  Bow OK → clutch zip tied  Photos: chain with clutch phi orientation w	Δ(2-3): 16-9 whole view
DOM position 1 (U, Short) Cable mark: 1000.5	DOM id: UP5P0594
	Reason for substitution:
Bottom shackle connected Top clutch connected at link $\#$ $\cancel{\cancel{g}}$ Bow OK $\rightarrow$ clutch zip tied	Δ(1-2): 14.9
Photos: chain with clutch phi orientation w	hole view
Breakout 1	Time:
Cable/LC continuity test complete (Q2) all pass fail:  - LongDOM connector discharged (ESD) connector O-ring in place and lubed breakout O-ring in place and lubed connected  - ShortDOM connector discharged (ESD) connector O-ring in place and lubed breakout O-ring in place and lubed connected Loose pigtails taped to cable	Now 5:28  Last b/o  At [min]  Depth:  Paro2  Keller 1008.44  Payout 1003.51  Aufe:  Anshad 5-38 pm
No second Paro	
	Group photo

308000

333000

All clear to lower cable

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#### **Uphole Pressure Sensor (Setra)**

After DOM1 is safely under the surface (> 50 m)

Time: 5:50 PM

Stop the cable winch

Lower Setra pressure sensor into hole

Distance to Setra from floor: 60-06

Setra readout verified with monitoring system

Well depth from Setra:

10.55

Well depth from laser: 46 ° 01 m

If the two well depth measurements agree: \(\)

Switch to Setra well depth in monitoring system

Time: 5-5

Payout enabled & Payout zeroed

Now the String Drop begins

#### **String Drop**

#### The target depth is 2450 m

Switch cable winch to computer control

Speed: $\frac{2 4m/mi}{m}$	7 Time: 640 PM	Depth:≈1280	m	
Speed:	_ Time:	Depth:	_	
Speed:	_ Time:	Depth:	<b>-</b>	,
Speed:	_Time:	Depth:	_	1496
Speed:	_ Time:	Depth:	_	
Speed:		Depth:	_	

**Depth Monitoring** (log on the fly – do not stop for this)

	Dobatt moting (log on all all) as not stop lot allo,							
Depth	Time	Well	Depth	Depth	∆depth P2-P1¹	∆depth P2-K¹	∆depth K-P1¹	
Paro2 <sup>1</sup>		depth1	c/marks <sup>2</sup>	payout1	PZ-P1	PZ-N	N-P 1	
1000 m					n/a		n/a	
1500 m	6.20	45.74	1496	-1500	n/a	-1m	n/a	
2000 m	6:47	45.63	1992	-2000	n/a	-5 m	n/a	
2100 m	6: <b>5</b> 3		2091	-2100	n/a	-3 m	n/a	
2200 m			TOO		n/a		n/a	
2300 m	7:34	45,34	7289	-2300	n/a	-7m	n/a	
2400 m	7.46	45.2	2389	-2400	n/a	7m	n/a	

<sup>1</sup>Read off monitoring screen

Switch to manual control @ 2400 m

	THE PERSON NAMED IN COLUMN TO SERVICE AND ADDRESS OF THE PERSON NAMED IN COLUMN TO SE
Well depth	Well depth : 45.00 n
@ 2420:	Well deprise - 75.000
<u>@</u> 2440:	
<del></del>	That

Position string at target depth of 2450 m

Time:

String secured with Yale grip and anchor chain Time: 8:35 PM

3/2347

<sup>&</sup>lt;sup>2</sup>Cable mark offset (at DOM60) is (p. 4): -1.2 m (DOM59 15.8 m)

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### Absolute depth with bottom Paro

(depth in meters and pressure in PSI)

Distance from Paro2 to DOM60:

39,8

$$d_{Paro2\text{-DOM}59} = 1.1 \text{ (from p. 4)}$$

$$d_{Paro2-DOM60} = (d_{Paro2-DOM59} + 17) m = 18.1 \leftarrow insert below$$

Convert Paro2 pressure to string depth:

 $K = 3.78151 \cdot 10^{-6}$  /PSI (compressibility of aerated water)

(use 6 decimals for exp's)

Ambient pressure (from p. 4):  $P_0 = 9.31 \text{ PSI} \rightarrow \exp(-KP_0) = \underline{\hspace{1cm}}$ 

Pressure reading (from screen): P = 34246 PSI  $\rightarrow$  exp(-KP) = \_\_\_\_\_

Subtract exponentials  $\rightarrow$  =  $\times$  1.85947·10<sup>5</sup>

Paro2 depth in water  $\rightarrow$  = m

Add distance to DOM60 (above) → + m

Add well depth  $\rightarrow$  +  $\frac{45.00}{}$  m

Depth of bottom DOM  $\rightarrow$  = m

#### Final depth estimates

◄----- read off deployment screen --------

read on deployment screen							
Time:	Paro2	Keller	Paro1	Payout	Cable marks		
Reading	3424 (PSI	2703.66PSI	n/a	-244,32	m		
Offset	9.31 PSI	LO.O PSI	n/a	m	m		
Well depth		m		mi.			
Dist. to DOM60	m	m	n/a	This space is intentionally left blank			
DEPTH (DOM60)	2449.33	2457.25	n/a				

Time: 9:38

Final depth (DOM60): 2449.33

IceCube On-ice Lead:



Deployment Closeout
Log entries complete
String safely secured
Hole covered and secured
Equipment safely shutdown and secured
Deployment data OK (in database)
Site cleanup
Deployment crew dismissed
String deployment complete
Time: 8:39 PM Date: 1/25/2006
Shift Lead: Jam John John John John John John John John
Logger: John Jacobsen (at, al.) MM name/signature
PTS Lead: Ignació Tabanda / Mellename / signature
Deployment Manager: The Manager name / signature
Safety Officer: TH

name / signature

name / signature

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