ᐅᐱᕐᙳᒃ 2022 • ᓴᖅᑭᑕᐅᓂᐊ 5

ROOT & STEM

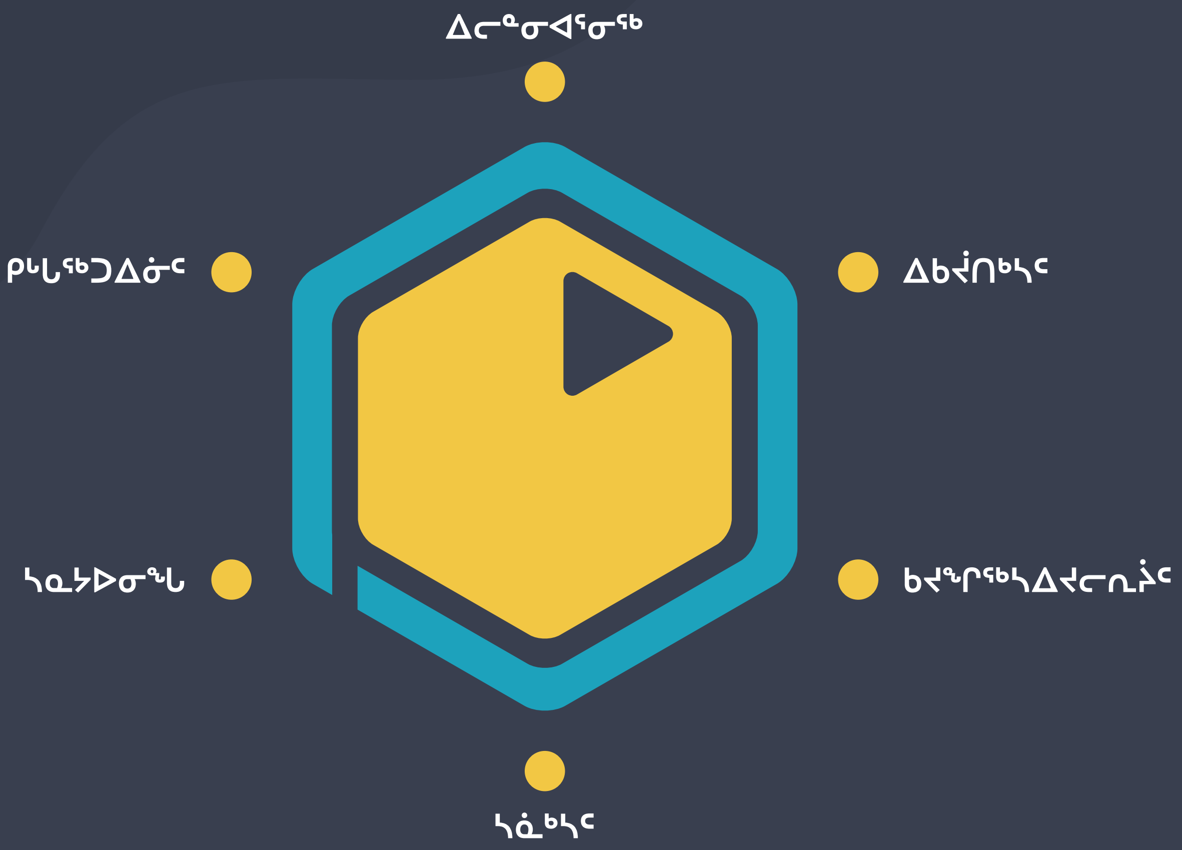
ᐊᓂᕐᓂᖃᕐᓇᖏᑦᑐᒥᑦ ᖁᒥᕐᕈᓘᑦ: ᑕᐅᑐᒃᑕᖕᒋᑦᑎᒍᑦ ᐊᓂᕐᓂᖃᕐᓇᖏᑦᑐᒥᑦ

ᐊᐅᓚᔪᑦ ᓯᓚᐃᓐᓇᑦᑎᓐᓂᑦ
ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᑕᐅᑐᒃᑕᖕᒋᑎᒍᑦ

ᐃᓂᓂᐅ ᐊᑲᑯᓯᒃ
ᐃᓂᓂᐅᑉ ᐅᑦᑐᓇᐊᓂᑦ ᖃᐅᔨᒪᓂᓇᔭᖕᒐ
ᓴᖅᑭᑕᐅᔪᖅ ᑖᕐᓯᒧᖕᒐ ᑫᐃᑫᓇᑦ ᐸᒃᒧᑦ

ᐊᓂᕐᓂᖃᕐᓇᖏᑦᑐᒥᑦ ᐱᓕᕆᐊᖃᖅᑑᑉ ᓇᓗᓇᐃᕈᑎᖓ
ᐋᐱ ᓛᒃᓴᓐ ᐃᖏᕐᕋᓂᐊ
ᐊᓂᕐᓂᖃᕐᓇᖏᑦᑐᒨᕐᓂᕐᒧᑦ

\+ ᐃᓗᓕᖃᖅᖢᓂ ᑎᑎᕋᐅᔭᐅᕐᓂᑦ, ᐱᙳᐊᓚᒃᓴᓂᑦ, ᐊᒻᒪ ᒪᒃᐱᕐᕕᓖᑦ 10-ᓂᑦ ᐃᓕᓐᓂᐊᕐᕕᐊᕈᓯᕐᓄᑦ ᐃᓕᓐᓂᐊᖅᑎᔾᔪᑎᒃᓴᐃᑦ ᐃᑲᔫᑏᑦ



ᐱᓐᖑᐊᑉ
ᐊᐅᓚᓂᕆᔭᖓ

ᐱᓐᖑᐊᒃᑯᑦ ᒪᓕᒃᐸᒃᐳᑦ ᐊᐅᓚᓂᕆᔭᒥᖕᓂᑦ ᐋᖅᑭᒃᓯᒪᔪᒥᑦ ᐃᑲᔪᖅᑐᐃᓪᓗᑎᒃ ᐃᓄᖕᓂᑦ ᐃᓕᓐᓂᐊᖅᑐᓄᑦ ᐊᑐᕐᓂᖃᖅᓗᑎᒃ ᑖᔅᓯᒥᖓ ᖃᐅᔨᓴᖅᑐᓕᕆᓂᕐᒥᑦ, ᖃᕆᓴᐅᔭᓕᐱᓂᕐᒥᑦ, ᐋᖅᑭᒃᓱᐃᓂᕐᒥᑦ, ᓴᓇᙳᐊᕐᓂᕐᒥᑦ, ᓈᓴᐅᓯᕆᓂᕐᒥᑦᐃᓕᓐᓂᐊᕐᓂᕐᒥᑦ. ᐱᓇᔪᐃᓐᓇᕈᒪᔪᑦ ᐊᑐᕈᑎᒃᓴᖏᓐᓂᑦ ᐃᓕᓐᓂᐊᖅᑎᑦᑎᔨᓄᑦ ᐊᒻᒪ ᐃᓕᓐᓂᐊᖅᑎᓄᑦ ᐱᓇᔪᒍᓐᓇᕐᑯᓪᓗᒋᑦ ᐊᒻᒪ ᐃᑲᔪᖅᑐᕐᓗᒋᑦ ᑕᐃᒪᙵᑦ.

ᑐᑭᓯᒃᑲᓐᓂᕈᒪᒍᕕᑦ ᐊᑐᕐᓂᓇᕝᑕᑦᑎᓐᓂᑦ, ᐅᕙᓐᖓᓕᕈᓐᓇᖅᐳᑎᑦ ᖃᕆᓴᐅᔭᒃᑯᑦ ᐃᑭᐊᖅᑭᕕᐊᒍᑦ ᐅᕙᓂ

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ᐃᓗᓕᖏᑦ

5 ᖃᐃᖁᔭᐅᓯᒪᔩᑉ ᑎᑎᕋᖅᑕᖓ
ᓘᓇ ᕋᓱᐅ-ᓂᐸᑕᓐ

6 ᓴᖅᑮᔭᖅᑎᑕᐅᔪᑦ ᑐᓂᓯᔪᑦ

ᑕᑯᒥᑦ

ᓇᐃᑦᑐᖅ ᖃᐅᔨᓴᕐᓂᖅ, ᖃᓄᓴᐅᓭᓕᕆᓂᖅ, ᐋᖅᑭᒃᓱᐃᓂᖅ, ᓴᓇᙳᐊᕐᓂᖅ, ᓈᓴᐅᓯᕆᓂᖅ ᐅᓂᒃᑳᑦ ᓇᑭᑐᐃᓐᓈᖅᑐᑦ

7 ᓯᓚᐃᓐᓇᕐᒥᑦ ᑕᑯᓇᖕᓂᖅ ᑕᕝᕙᓐᖓᑦ ᐊᖏᕐᕋᒥᖕᓂᑦ
ᑎᐅᑦᓯ ᑲᐅᕚᑦᓴᑭ

8 ᐊᓂᕐᓂᖃᕐᓇᖏᑦᑐᒥᑦ ᐱᓕᕆᐊᖃᖅᑑᑉ ᓇᓗᓇᐃᔭᐃᓂᖓ: ᐋᐱ ᓛᒃᓴᓐ
ᓱᐱᐊ ᐋᔅᐳᐊᓐ

10 ᐱᓕᕆᐊᖃᖅᑎᑕᐅᔪᓂᑦ ᐊᐅᓚᑦᑎᓂᖅ: ᐃᓅᔪᑦ ᐅᑎᕐᓂᐊᖅᑐᑦ ᑕᖅᑭᕐᒧᑦ
ᐃᐅᕕᓐ ᓇᓛᑦ

ᐋᖅᑭᒋᐊᖅᑕᐅᓯᒪᔪᖅ ᓇᓗᓇᐃᒃᑯᑕᖅ

ᓴᖅᑭᑕᐅᓂᖅ ᖃᐅᔨᒪᓂᐅᔪᑦ ᓇᓗᓇᖅᑐᑦ ᑐᑭᓯᓇᖅᓯᑎᑕᐅᔪᑦ ᖃᓄᓴᐅᔭᒃᑯᑦ

12 ᖃᓄᖅ ᑕᐅᑐᒍᑎ ᐊᓂᕐᓂᖃᕐᓇᖏᑦᑐᒧᑦ ᐊᐅᓚᕙᖕᒪᖔᑕ
ᐋᔭᓐ ᒪᒃᓚᐃᓐ

14 ᐊᓂᕐᓂᖃᕐᓇᖏᑦᑐᒥᑦ ᐱᕈᖅᓯᐊᒃᓴᑦ: ᐱᕈᖅᓯᐊᒃᓴᓂᑦ ᖃᐅᔾᔭᓇᓱᖕᓂᖅ ᐊᓂᕐᓂᖃᕐᓇᖏᑦᑐᒥᑦ
ᑯᓘᓇ ᐱᓕᑉᔅ

ᓄᓇᓕᖕᓄᑦ ᑕᑯᒃᓴᐅᑎᑦᑎᓂᖅ

22 ᓴᓇᓗᑐᓂ ᐊᒻᒪ ᖃᖓᑦᑕᖅᑎᒃᑐᒍ ᓯᓚᐃᓐᓇᕐᒧᑦ
ᓚᐅᕋᓐᔅ ᓇᓖᔅ

ᓴᓇᔨᑦ

ᐅᓂᒃᑳᑦ ᑕᕝᕙᓐᖓᑦ ᖃᓄᓴᐅᔭᓕᕆᓂᕐᒧᑦ ᐃᓂᖃᖅᑎᑦᑎᔪᑦ

32 ᓴᒡᓗᕐᑭᒡᓗᒍ ᖃᖅᑲᐃᑦ ᖃᓂᒋᔮᓃᑦᑐᑦ IV
ᑎᐅᑦᓯ ᑲᐅᑦᕚᔅᑭ

ᑎᑎᕋᐅᔭᖅᓯᒪᔪᑦ ᐅᓂᒃᑳᑦ

24 ᑕᖅᑭᖅ ᓄᓕᐊᔪᒃ
ᐃᓗᒥᓛᕐᔪᒃ ᕿᑦᓚᖅ

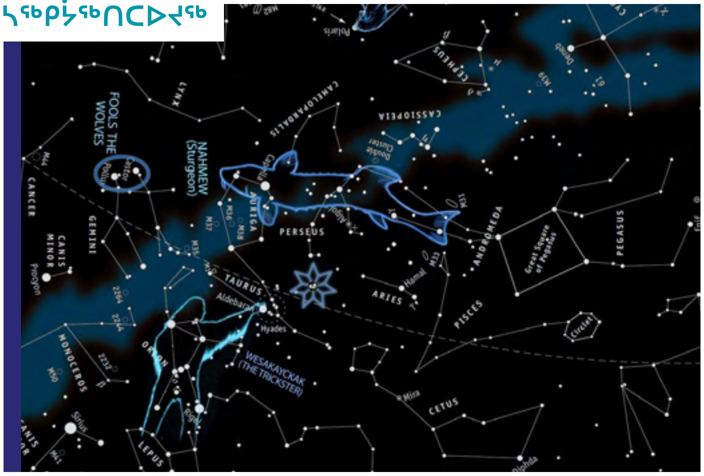
ᐱᓐᖑᐊᕐᓂᖅ

34 ᑲᓐᑐᕋᓯᒃHᐋᕐᐅᑉ ᐃᓱᖓ
ᔩ ᒪᐃᕝ

ᓴᖅᑮᔭᖅᑎᑕᐅᔪᖅ

16 ᐃᓱᒪᓂᖅ ᐃᓅᓯᕐᒥᑦ ᑕᑉᐹᓂ ᐊᓂᕐᓂᖃᕐᓇᖏᑦᑐᒥᑦ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᑕᐅᑐᒃᑕᖓᒍᑦ
Hᐃᐅᑦᑎᖕ ᓂᐅᑦᓴᓐ

ᓴᖅᑮᔭᖅᑎᑕᐅᔪᖅ



28 ᐃᓂᓐᓂᐅ ᐊᑲᑯᓱᒃ
ᕕᐅᑦᕗᓚᑦ ᐸᒃ

ᐃᓕᓐᓂᐊᖅᑎᑦᑎᔨᓄᑦ ᐃᑲᔫᑎᒃᓴᑦ

37 ᖃᓄᓴᐅᔭᕐᓄᑦ ᐊᑐᕈᑏᑦ ᑲᑎᓯᒪᔪᑦ
ᖃᓄᓴᐅᔭᒃᑯᑦ ᐃᑭᐊᖅᑭᕕᐊᒍᑦ ᐃᓚᒋᐊᖅᓯᒪᔪᑦ ᓇᓗᓇᐃᖅᓯᒪᔪᑦ ᐊᒻᒪ ᖃᓄᓴᐅᔭᒃᑯᑦ ᐃᑲᔫᑎᒃᓴᑦ

38 ᐅᖃᐅᓯᒃᓴᖅ ᐃᓕᓐᓂᐊᖅᑎᑦᑎᔨᓄᑦ
ᐅᔭᕋᒃ ᐊᐹᑑ

39 ᐃᓕᓐᓂᐊᖅᑎᑦᑎᔾᔪᑎᒃᓴᐃᑦ ᐸᕐᓇᒃᑕᐅᓯᒪᔪᑦ
ᐅᔭᕋᒃ ᐊᐹᑑ

ROOT & STEM

ᐱᓐᖑᐊᑉ ᒥᒃᓵᓄᑦ

ᑖᒃᑯᐊ ᐱᓐᖑᐊᖅ ᑲᑐᔾᔨᕐᑲᑎᒌᑦ, ᑮᓇᐅᔭᓕᐅᕈᑎᖃᕋᓱᖏᕐᕆᑎᒃ ᑲᑐᔾᔨᖃᑎᒌᖑᔪᑦ, ᑎᒥᖕᖑᖅᑎᑦᑎᓪᓗᑎᒃ ᐊᑐᖅᑐᑎᒃ ᖃᐅᔨᓴᖅᑐᓕᕆᓂᕐᒥᑦ, ᖃᕆᓴᐅᔭᓕᕆᓂᕐᒥᑦ, ᐋᖅᑭᒃᓱᐃᓂᕐᒥᑦ, ᓴᓇᖕᖑᐊᕐᓂᕐᒥᑦ, ᓈᓴᐅᓯᕆᓂᕐᒥᑦ ᐊᔾᔨᐅᖏᑦᑑᓪᓗᓂ ᐃᓕᓐᓂᐊᖅᑎᑦᑎᓂᕐᒥᑦ ᐊᑐᖅᑕᐅᔪᓐᓇᖅᑐᑦ ᐊᑐᕈᑎᖃᖅᑐᑎᒃ ᐅᓂᒃᑳᖅᑐᐊᕐᓂᒃᑯᑦ, ᑎᒥᒃᑯᑦ ᖃᓄᐃᖏᑦᑎᐊᕐᓂᒃᑯᑦ, ᐊᒻᒪ ᐱᕈᖅᐸᓪᓕᐊᑦᑎᐊᕐᓂᒃᑯᑦ ᓄᓇᓕᖁᑦᖑᓂᖅᓴᓄᑦ ᐊᒻᒪ ᓄᓇᓕᖕᓄᑦ ᐅᖓᓯᒋᔭᐅᔪᓄᑦ. ᐱᔪᑎᐊ, ᑖᒃᑯᐊ ᐱᓐᖑᐊᒃᑯᑦ ᐱᒻᒪᕆᐅᒍᓱᒃᐳᑦ ᐊᔾᔨᒌᖕᒋᕈᓘᔭᖅᑐᓂᑦ ᐊᒻᒪ ᓴᖅᑭᑦᑎᓗᑎᒃ ᐱᓕᕆᐊᖑᔪᓐᓇᖅᑐᓂᑦ ᐊᔪᕈᓐᓃᖅᓯᐃᓗᑎᒃ ᐃᓄᓕᒫᓄᑦ.

ᖃᕆᓴᐅᔭᓕᕆᓂᒃᑯᑦ

ᖃᕆᓴᐅᔭᒃᑯᑦ ᖃᐅᔨᓴᖅᑐᓕᕆᓂᖅ ᐃᓕᓐᓂᐊᕐᓂᖅ ᖃᕆᓴᐅᔭᒃᑯᑦ ᐃᓕᐅᖅᑲᐃᓂᑐᐃᓐᓇᐅᓐᖏᓛᖅ. ᐊᑕᖏᖅᑎᑦᑎᕗᖅ ᐃᓗᓕᖃᖅᖢᓂ ᐃᓕᓐᓂᐊᕐᓂᕐᒥᑦ ᐊᒻᒪ ᐱᔭᓐᓇᑦᑎᐊᕐᓂᕐᔪᑦ ᐊᑖᓃᑦᑐᑦ ᐊᑐᕐᓗᒋᑦ. ᕿᓂᕐᓗᑎᑦ ᓇᓗᓇᐃᕆᓯᒪᔪᒥᑦ ᕿᒥᕐᕈᐊᕈᐅᑉ ᐃᓱᐊᓃᑦᑐᒥᑦ ᐊᑐᕐᑯᔭᐅᔪᓂᑦ ᐃᓕᓐᓂᐊᖅᑎᔪᑎᒃᓴᓂᑦ ᑐᕌᖅᑐᓂᑦ. ᑐᓴᕆᐊᕐᕕᐅᔪᓐᓇᖅᑐᑦ: ᑕᐃᒨᓯᐊ *Learning for the Digital World*–ᖑᔪᖅ: ᑖᓐᓇ *A Pan-Canadian*-ᖑᔪᖅ ᐃᓕᓐᓂᐊᓕᓵᖅᑐᓂᑦ 12–ᒧᑦ ᑎᑭᓪᓗᒍ ᖃᕆᓴᐅᔭᒃᑯᑦ ᖃᐅᔨᓴᖅᑐᓕᕆᓂᖅ ᐋᖅᑭᒃᓯᒪᓂᖓ.2020–ᒥᑦ. ᐅᕙᓂ k12csframework.ca

ᓇᓗᓇᐃᕈᑕᓕᐅᕐᓂᖅ ᐊᒻᒪ ᐱᓕᕆᐊᖑᓂᐊᖅᑐᑦ

ᖃᕆᓴᐅᔭᓕᕆᓂᖅ ᐊᒻᒪ ᖃᕆᓴᐅᔭᐅᑉ ᐊᐅᓚᓂᕆᔭᖏᑦ

ᑎᑎᕋᖅᓯᒪᔪᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᑯᐃᑦ

ᖃᕆᓴᐅᔭᑰᖅᑐᑦ ᐊᒻᒪ ᑲᑐᔾᔨᖃᑎᒌᑦ

ᐋᖅᑭᒃᓯᒪᓂᖓ

ᑖᒃᑯᐊ ᐱᓐᖑᐊᖅ ᑲᑐᔾᔨᖃᑎᒌᖑᔪᑦ ᓇᓗᓇᐃᖅᓯᕗᑦ ᐃᑲᔪᖅᑕᐅᓂᐅᔪᒥᑦ ᒐᕙᒪᒃᑯᑦ ᑲᓇᑕᒥᑦ ᐱᓕᕆᐊᖑᕚᓕᐊᔪᒥᑦ ᐃᓕᓐᓂᐊᖅᑎᑦᑎᔨᓄᑦ ᐃᑲᔫᑎ.

ᑖᓐᓇ *Root & STEM*–ᖑᔪᖅ ᐅᓄᖅᑑᓕᐅᖅᑕᐅᕗᖅ ᓇᓗᓇᐃᒃᑕᖅᑐᓄᑦ ᑖᒃᑯᓄᖓ *Forest Stewardship*-ᑯᓐᓄᑦ ᑲᑎᒪᔨᖏᓐᓄᑦ ᐸᐃᑉᐹᒃᑯᑦ, ᑖᒃᑯᐊ ᐊᑐᕐᓂᕆᔭᕗᑦ ᐊᒃᑐᐃᕐᑯᓇᒋᑦ ᐋᖅᑭᒃᓯᒪᓂᐅᔪᓂᑦ ᓯᓚᕐᔪᐊᕐᒥᑦ.

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87 Adelaide St N, Lindsay, Ontario K9V 4L4
STEAM@pinnguaq.com

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ᐅᓄᖅᑑᓕᖅᑕᐅᓪᓗᓂ ᐋᓯᐊᒥᑦ, ᐋᓐᑎᐅᕆᔪ, ᑖᒃᑯᓇᖓᑦ ᒥᐅᕆᑯᑦ ᑎᒥᐅᔪᓄᑦ

• • •

ᓴᖅᑭᑦᑎᔪᖅ
ᕋᐃᔭᓐ ᐋᓕᕗ

ᐊᐅᓚᑦᑎᔨ ᐃᓕᓐᓂᐊᕐᓂᓕᕆᓂᕐᒧᑦ
ᔫᓂ ᑯᕌᔅ

ᐋᖅᑭᒃᓱᖅᑕᐅᔪᓄᑦ ᐊᐅᓚᑦᑎᔨ
ᑎᐅᑦᓯ ᑲᐅᓪᓛᓯᑭ

ᐆᓄᖅᑑᓕᐅᖅᑕᐅᔪᓄᑦ ᐋᖅᑭᒃᓱᐃᔨ
ᓂᑯᓚᔅ ᑕᐃᕝᔅ

ᐋᖅᑭᒃᓯᒪᓂᐊ ᐊᒻᒪ ᐋᖅᑭᒃᑕᐅᓂᐊ ᐅᑯᓄᖓ
Hᐊᐃᓕ ᐱᓇᕐ, ᐃᒪᓕ ᑳᓐᕙᐅᕐ, ᑭᐊᓂ ᐃᖕ, ᐋᓐᑎ ᒎᑐᓇ, ᒫᒃ ᕙᐊ

ᐅᖃᓕᒫᑉ ᖄᖓᓂᑦ ᑎᑎᕋᐅᔭᖅᓯᒪᔪᖅ
ᓴᐃᓕᒻ ᑎᒍᕋᓐᐳᕋᐃ

ᓇᓗᓇᐃᒃᑯᑕᓕᐊᖑᔫᑉ ᐋᖅᑭᒃᓯᒪᓂᐊ
ᐋᖅᑭᒃᑕᐅᔪᖅ ᐅᑯᓄᖓ X-ing–ᑯᓐᓄᑦ

ᐱᓕᕆᖅᑕᐅᔪᑦ
ᔩᓂᐊ ᔩᓂᐊ ᐅᔭᕋᖅ ᐊᑉᐸᓘ, ᕙᐅᑉᕗᕋᑦ ᐸᒃ, ᑎᐅᑦᓯ ᑲᐅᑦᐋᓯᑭ, ᐃᓗᒥᖕᑮᒃᔪᖅ ᕿᑕᒃ, ᔩᓂᐊ ᓇᖅᕙᒃ, ᐃᔭᓐ ᒪᒃᑕᐃᓐ, ᔫ ᒪᐃᕝ, Hᐅᑦᑎᖕ ᓂᐅᑦᓴᓐ, ᓯᐱᐊ ᐋᔅᐳᐊᓐ, ᑯᔫᐃ ᕙᓕᔅ, ᓵᓚᒪᓐ ᕌᑦ, ᓚᐅᕋᓐᔅ ᕼᕝᔅ, ᐃᐅᕙᓐ ᕼᑦ, ᔫᕼ ᕋᓯᐅ–ᓂᑉᑕᓐ

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ᑖᓐᓇ ᐅᖃᓕᒫᒐᒃᓴᖅ ᑕᐃᔭᐅᔪᖅ *Root & STEM*–ᒥᑦ ᑎᑎᕋᖅᑕᐅᓚᐅᖅᑐᖅ ᖃᑦᑐᓈᑐᑦ ᐊᒻᒪ ᐃᓄᒃᑑᓕᖅᑕᐅᓪᓗᓂ (ᕿᑭᖅᑖᓘᑉ ᐅᐊᖕᓇᖕᒐᓂ ᐅᖃᐅᓯᖅᑕᖅ ᐊᑐᖅᑕᐅᔪᖅ) ᑖᔅᓱᒧᖓ ᒦᒃᑲ ᐊᕿᐊᕈᕐᒧᑦ.

ᑖᓐᓇ ᑭᐊᒃ ᕿᒥᕐᕈᔪᖅ ᑖᓯᒥᖓ ᒪᐅᓇᑮᒥᑦ

ᐅᓪᓗᕆᐊᓕᕆᓂᖅ

ᑕᑯᓪᓗᒋᑦ ᖃᐅᒪᔪᑦ ᐅᓐᓄᒃᑯᑦ ᐅᓪᓗᕆᐊᑦ ᐊᒃᑐᐊᓂᖃᖅᑐᑦ ᐅᕙᑦᑎᓐᓄᑦ ᐃᓱᒪᒋᓗᒍ ᐊᓂᕐᓂᖃᕐᓇᕐᒋᑦᑐᖅ. ᖃᐅᔨᒪᓂᕆᔭᕗᑦ ᕿᓚᖕᒥᑦ ᐅᓂᒃᑳᕐᓂᓐᖑᖅᓯᒪᕗᑦ–ᐃᓚᖕᒋᑦ ᑎᑎᕋᖅᓯᒪᕗᑦ ᐅᓪᓗᕆᐊᒃᑯᑦ–ᐊᒻᒪ ᐃᑲᔫᑎᕗᑦ ᐃᖅᑲᐅᒪᔾᔪᑎᐅᓪᓗᑎᒃ, ᐅᕙᑦᑎᓐᓂᑦ ᐃᓕᓐᓂᐊᖅᑎᑦᑎᓪᓗᑎᒃ ᐱᒻᒪᕆᐊᓗᖕᓂᑦ ᐃᓚᓕᐅᑎᓯᒪᓂᖕᒋᑦ ᐅᕙᑦᑎᓐᓄᑦ ᐊᒻᒪ ᓯᓚᑎᑦᑎᓐᓄᑦ, ᓄᓇᒋᔭᑦᑎᓐᓄᑦ, ᐊᒻᒪ ᐃᓂᒋᔭᕗᑦ ᓇᔪᖅᑕᕗᑦ ᑕᑉᐹᓂ.

ᑕᐃᑲᓐᖓᓪᓚᑦ ᑲᑎᒪᓂᕐᔪᐊᒥᑦ ᒪᐅᓇᑭᐊᒥᑦ, ᑕᑭᓛᖅ ᐆᓇᖅᑐᐊᓗᖕᒥᑦ ᑯᕕᕙᒃᑐᖅ ᑕᐃᑲᓂ ᕿᑭᖅᑕᕐᒥᑦ ᕼᐆᐊᐃᒥᑦ, ᐊᖏᔪᖅ ᑕᑯᔾᔪᑎ ᐅᓪᓗᕆᐊᓄᑦ ᑕᑯᔪᓐᓇᖅᑎᑦᑎᕗᖅ ᐅᕙᑦᑎᓐᓂᑦ ᐊᓂᕐᓂᖃᕐᓇᕐᒋᑦᑐᓄᑦ ᐊᒻᒪ ᕿᒥᕐᕈᐊᕐᓗᒋᑦ ᖃᓂᒋᔮᓂᑦ ᐊᓂᕐᓂᖃᕐᓇᕐᒋᑦᑑᑉ, ᐅᓄᖅᑐᒻᒪᕆᐊᓗᖕᓂᑦ ᐅᓪᓗᕆᐊᓕᒃ, ᓇᓗᓇᐃᑦᑎᐊᖅᓯᒪᔪᑦ. ᐅᓪᓗᕆᐊᓕᕆᔨᐅᓪᓗᓂ, ᐅᔾᔨᖅᓱᖅᐸᒃᐳᖓ ᖃᓄᐃᑉᐸᓪᓕᐊᔪᑦ ᑲᑎᑕᐅᓂᖕᒋᓐᓂᑦ ᑕᐅᑐᒎᑎᒃᑯᑦ ᐅᓐᓄᑕᒫᑦ. ᑲᓇᑕᒥᐅᑕᐅᕗᖓ, ᐃᓚᒋᔭᐅᖃᑕᐅᓪᓗᖓ Pekuakamuilnuatsh–ᑯᓐᓂᑦ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᓂᑦ. ᓅᓚᐅᖅᓯᒪᕗᖓ ᕼᐆᐊᐃᒧᑦ ᐊᕿᒍᑦ ᑕᓪᓕᒪᐅᔪᓂᑦ ᓴᓇᔭᖅᑐᖅᓱᖓ ᑕᐃᑯᖓ ᑲᓇᑕ-ᕗᕌᓐᔅ-ᕼᐆᐊᐃ ᐅᓪᓗᕆᐊᓄᑦ ᑕᐅᑐᒎᑎ, ᖃᐅᔨᓴᖅᑏᑦ ᐊᒻᒪ ᐃᓕᓐᓂᐊᖅᑏᑦ ᓄᓇᕐᔪᐊᕐᒥᓐᖔᖅᑐᑦ ᐊᑐᕈᓐᓇᖅᑐᑦ ᐊᑑᑎᐅᔪᓂᑦ ᑕᑯᓇᒡᓗᑎᒃ ᑕᑯᔭᐅᔪᓐᓇᖅᑐᓂᑦ, ᑕᐃᑲᓐᖓᓪᓚᑦ ᐅᓪᓗᕆᐊᓂᑦ ᐃᖕᒋᖅᕋᔪᓂᑦ ᐊᒻᒪ ᐅᓪᓗᕆᐊᓂᑦ ᐊᓂᕐᓂᖃᕐᓇᕐᒋᑦᑐᒥᑦ ᐊᒻᒪ ᕿᕐᓂᖅᑕᐃᓐᓈᓗᖕᒥᑦ ᐃᓱᖃᖕᒋᑦᑐᒥᑦ. ᑕᑯᓇᓕᕚᓪᓚ ᓯᓚᐃᓐᓇᕐᒥᑦ, ᖃᐅᔨᒪᕙᒃᐳᖓ ᓇᓃᑦᑕᓕᐊᖃᕐᓂᓐᓂᑦ. ᖃᐅᔨᔪᒪᓂᖃᐃᓐᓇᐅᔭᕐᒪ, ᐊᒻᒪ ᑐᑭᓯᓇᓱᒃᓗᖓ ᓯᓚᐃᓐᓇᑦᑎᓐᓂᑦ ᐃᓱᖃᖕᒋᓚᖅ ᖃᐅᔨᔪᒪᓂᐅᔪᑦ.

ᐃᓕᓐᓂᐊᖅᐳᖓ ᐅᓪᓗᕆᐊᓂᑦ ᓄᑖᓐᖑᖅᐸᓪᓕᐊᔪᓂᑦ. ᐅᓪᓗᕆᐊᑦ ᐋᖅᑭᒃᐸᓪᓕᐊᕙᒃᐳᑦ ᓄᕗᔭᓄᑦ ᐊᓂᕐᓂᖃᕐᓇᕐᒋᑦᑐᒦᑦᑐᓂᑦ ᓄᓱᒃᓯᓯᒪᓂᐊ ᓴᓐᖏᓂᐊ ᑕᐅᑐᓐᖏᑕᑦᑎᓐᓂᑦ ᐊᐅᓚᓂᐅᔪᓂᑦ ᑲᑎᑎᑦᑎᓪᓗᑎᒃ, ᐊᒻᒪ, ᑕᒪᓐᓇ ᑲᑎᓐᓂᐅᔪᖅ ᐊᖕᒋᒡᓕᕙᓪᓕᐊᕙᒃᐳᖅ ᐊᒻᒪ ᐊᖕᒋᒡᓕᕙᓪᓕᐊᖕᒋᓐᓇᖅᓱᓂ. ᐊᓯᐃᓛᒃ, ᐱᒻᒪᕆᐅᔪᒥᑦ ᐊᑐᖅᐸᒃᐳᖅ. ᑕᒪᓐᓇ ᓄᓱᒃᓯᓯᒪᔪᖅ ᓴᓐᖏᒃᑎᒃᑳᓐᖓᑦ ᐊᐅᓚᓂᕆᔭᖓ ᐃᑭᑦᑕᕐᓚᖓᑦ ᑖᓯᒧᖓ; ᐃᓗᓕᖕᒋᑦ ᐃᑭᐸᑉᐸᓕᐊᓕᕐᓚᖓᑕ, ᐊᖕᒋᒡᓕᑎᑦᑎᕙᓪᓕᐊᓪᓗᓂ. ᑕᒪᓐᓇ ᓵᖅᑭᑦᑎᕙᒃᐳᖅ ᖃᐅᒪᔪᐊᓗᖕᓂᑦ: ᐅᓪᓗᕆᐊᖅ ᓄᑖᖅ ᓄᐃᕗᖅ.

ᓯᕗᓕᖅᑎᐅᓪᓗᖓ ᐃᓚᒌᒃᑐᓄᑦ 70–ᖏᓐᓂᑦ ᖃᐅᔨᓴᖅᑎᓂᑦ, ᓴᖅᑭᑦᑎᓚᐅᖅᐳᖓ ᖃᐅᔨᓴᕐᓂᓕᕆᓂᕐᒧᑦ ᐃᓕᓐᓂᐊᒐᒃᓴᒥᑦ ᑕᐃᔭᐅᔪᖅ SIGNALS-ᒥᑦ, ᐅᓪᓗᕆᐊᑦ ᐊᐅᓚᓂᖏᓐᓂᑦ, ᑕᐅᑐᓐᖏᑦᑕᑦᑎᓐᓂᑦ ᑲᑎᑦᑐᑦ ᐳᔪᑦ ᐊᒻᒪ ᑖᒃᑯᓄᖓ Nebular Abundances Legacy–ᑯᓐᓄᑦ ᖃᐅᔨᓴᕐᓃᑦ; ᐊᖏᔪᖅ ᖃᐅᔨᓴᕐᓃᑦ ᑖᒃᑯᓄᖓ ᐅᓪᓗᕆᐊᓄᑦ–ᑲᑎᑉᐸᓪᓕᐊᓃᑦ ᐃᓂᖏᑦ, ᓄᑖᑦ ᐅᓪᓗᕆᐊᖕᖑᖅᑐᑦ ᓇᓂᔭᐅᓂᖕᒋᑦ. ᐊᕿᒍᑦ ᑕᓪᓕᒪᑦ ᐊᓂᒍᖅᑐᑦ,

ᐊᔾᔩᑦ ᐃᒃᐱᒋᔭᐅᑦᑎᐊᖅᑐᖅ ᑖᓐᓇ ᔫᓇ ᕿᐅᓯᐅ-ᓂᑉᑕᓐ

ᐊᑐᓚᐅᖅᐳᖓ ᐱᒻᒪᕆᐅᔪᒥᑦ ᐅᓪᓗᕆᐊᓄᑦ ᑕᑯᔾᔪᑎᒥᑦ ᑕᐃᔭᐅᔪᖅ SITELLE–ᒥᑦ ᑕᑯᓇᒍᑎᒋᓗᒍ 40–ᐆᔪᓂᑦ ᐅᓪᓗᕆᐊᓂᑦ ᖃᓂᒋᔮᓂᑦ ᓯᓚᐃᓐᓇᐅᑉ ᐃᓱᖅᑰᑉ ᖃᓂᒋᔮᓂᑦ. ᑖᒃᑯᓇᓐᖓᑦ ᐅᓪᓗᕆᐊᓂᑦ, ᖃᐅᔨᓚᐅᖅᐳᒍᑦ 50,000–ᓂᑦ ᐅᖓᑖᓂᑦ ᐃᓂᐅᔪᓂᑦ ᓴᓇᕙᓪᓕᐊᔪᓂᑦ ᐅᓪᓗᕆᐊᓂᑦ. ᑖᒃᑯᐊ ᐅᓪᓗᕆᐊᑦ ᐊᒃᑐᐃᓂᖅᐳᑦ ᐊᕙᑎᒥᑦ ᓴᖅᑭᑦᑎᕙᓪᓕᐊᓂᖕᒋᓐᓄᑦ ᐊᒻᒪ ᓄᑖᖕᖑᖅᑎᑦᑎᕙᓪᓕᐊᓂᖕᒋᓐᓄᑦ ᐋᖅᑭᒃᐸᓪᓕᐊᔪᓄᑦ ᑖᓯᒧᖓ interstellar–ᓄᑦ ᓄᕗᔭᓄᑦ, ᓲᖁ ᐃᓄᐃᑦ ᐊᒃᑐᐃᖕᒪᑕ ᐊᕙᑎᒥᖕᓂᑦ ᓄᓇᕐᔪᐊᕐᒥᑦ. ᑭᓯᐊᓂ ᐅᓪᓗᕆᐊᓄᑦ, ᑖᒃᑯᐊ ᐋᖅᑭᖕᓂᐅᔪᑦ ᐊᑐᒃᑲᓂᖅᐸᒃᐳᑦ ᓄᑖᓂᑦ ᐅᓪᓗᕆᐊᓕᐅᕐᓂᐅᔪᒧᑦ. ᐅᓪᓗᕆᐊᖕᖑᒃᑲᓂᖅᐸᒃᐳᖅ! ᖃᐅᔨᕙᓪᓕᐊᓂᐅᔪᖅ ᐊᐅᓚᓂᐅᔪᒥᑦ ᐃᑲᔫᑎᓂᐊᖅᐳᖅ ᑐᑭᓯᓂᕐᒧᑦ ᐊᑐᖅᑐᕕᓂᕐᓂᑦ, ᐊᒻᒪᑦᑕᐅᖅ ᑭᖑᕚᑦᑎᓐᓄᑦ ᐅᓪᓗᕆᐊᓄᑦ ᓯᓚᐃᓐᓇᑦᑎᓐᓄᑦ.

ᑐᕌᒐᖃᖅᐳᖓ ᓂᐱᖃᓕᖅᑎᑦᑎᓂᕐᒥᑦ ᑲᑎᖅᓱᖅᑕᐅᔪᓂᑦ ᓇᓗᓇᐃᕈᑎᓂᑦ ᐅᓪᓗᕆᐊᑦ ᐋᖅᑭᒃᐸᓪᓕᐊᓂᖕᒋᓐᓂᑦ ᓴᓇᔭᐅᓯᒪᔪᒥᑦ. ᓯᕗᓪᓕᖅᐹᒥᑦ, ᖃᐅᔨᓴᖅᑏᑦ ᖃᐅᔨᒪᓂᖅᑕᖅᓂᖅᓴᐅᓂᐊᖅᑐᑦ ᐃᓂᐅᔪᓂᑦ ᐅᓪᓗᕆᐊᓄᑦ ᐋᖅᑭᖕᓂᐅᕙᒃᑐᓄᑦ, ᐅᓪᓗᕆᐊᖑᔪᓄᑦ ᑲᑎᑉᐸᒃᑐᓄᑦ ᓄᕗᔭᓄᑦ. ᐊᑐᓂᑦ ᑖᒃᑯᐊ ᐅᓪᓗᕆᐊᑦ ᐅᓂᒃᑳᖅᑐᐃᓐᓇᐅᕗᑦ. ᑐᓵᓪᓗᒋᑦ ᐅᓄᖅᑐᒻᒪᕆᐊᓗᐃᑦ, ᓄᓇᕐᔪᐊᒥᑦ ᐊᔾᔨᖕᖑᐊᖕᖑᓂᑦ ᐱᑕᖅᑮᖅᑐᖅ ᐊᐅᓚᓂᕆᔭᖕᒋᓐᓂᑦ ᓯᓚᐃᓐᓇᕐᒥᑦ.

ᑕᕝᕙᓂ ᐅᖃᓕᒫᒥᑦ *Root & STEM*–ᒥᑦ, ᐅᓂᒃᑳᖑᔪᓂᑦ ᑕᑯᓂᐊᖅᐳᑎᑦ ᐊᒻᒪ ᐃᑲᔫᑎᐅᔪᓐᓇᖅᑐᓂᑦ ᑲᔪᖕᒋᖅᓴᐃᔪᓂᑦ ᐃᓕᓐᓂᐊᖅᑐᓄᑦ ᑕᑯᓇᖕᓂᕐᒥᑦ ᓯᓚᐃᓐᓇᕐᒧᑦ ᖁᓕᑦᑎᓐᓂᑦ. ᐃᓱᒪᓗᓂᓘᓐᓃᑦ ᐃᓅᓯᐅᔪᓐᓇᖅᑐᒥᑦ ᓯᓚᐃᓐᓇᕐᒥᑦ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᑕᐅᑦᑐᖕᒐᒍᑦ ᐅᕝᕙᓘᓐᓃᑦ ᐃᓱᒪᒋᓗᒍ ᐊᔾᔨᐅᖕᒋᓐᓂᖅ ᑕᐅᑐᖕᖑᐊᖅᑕᐅᔪᖅ ᐅᓪᓗᕆᐊᑦ ᐊᒻᒪ ᐅᓪᓗᕆᐊᑦ ᓴᖅᑭᑦᑐᑦ ᐊᔾᔨᒌᖕᒋᑦᑐᓄᑦ ᐱᖅᑯᓯᕐᓄᑦ, ᑕᕝᕙᓂ ᐅᖃᓕᒫᒐᒃᓴᒥᑦ ᐊᐱᕆᓗᒋᑦ ᐃᓕᓐᓂᐊᖅᑐᑦ ᑐᑭᓯᒋᐊᕐᓗᑎᒃ ᐊᒃᑐᐊᓂᖃᖅᑐᓂᑦ ᓯᓚᐃᓐᓇᕐᒧᑦ ᖁᓕᑦᑎᓐᓃᑦᑐᓂᑦ ᐊᒻᒪ ᖃᓄᖅ ᐊᒃᑐᐃᓂᖃᕐᓂᖓᑦ ᐃᓄᐃᑦ ᐃᓅᓯᖕᒋᓐᓄᑦ.

— ᔫᓇ ᕿᐅᓯᐊ-ᓂᑉᑕᓐ

ᓴᐃᓚᓐ ᑎᒍᕋᓐᐳᓇ

ᐅᕐᑲᓕᒫᑉ ᐱᒋᐊᕐᓂᐊᓂᑦ ᑎᑎᕋᐅᓯᖅᓯᒪᔪᖅ

ᓴᐃᓚᓐ ᑎᒍᕋᓐᐳᓇ ᒪᒃᑯᒃᑐᖅ, ᖃᑦᑐᓈᑦ ᓄᓈᓃᑦᑐᖅ, ᖃᕆᓴᐅᓯᒃᑯᑦ ᑎᑎᕋᐅᓯᖅᑎ ᐋᑐᕚᒥᑦ. ᑎᑎᕋᐅᓯᖅᑕᖏᑦ ᐱᓕᕆᓂᕆᓯᖓ ᐊᕐᓇᐅᓂᕐᒧᑦ, ᐊᕐᓇᐅᓂᐅᔪᒧᑦ, ᐊᒻᒪ ᐃᓄᐃᑦ ᐅᓃᒃᑳᖏᑦ ᐱᔾᔪᓯᖏᑦᑐ. ᐱᓕᕆᓂᕆᓯᖓ ᐊᒻᒪ ᐱᓕᕆᐊᒥᒍᑦ ᐱᕈᖅᐸᑦᑕᐊᔪᖅ, ᑲᔪᙱᖅᓴᖅᑕᐅᑦᑐᓂ ᐊᒻᒪ ᐱᔪᒪᓂᕐᑲᓕᖅᑎᑕᐅᑦᑐᓂ ᐃᓕᓐᓂᐊᖅᑎᑦᑎᓂᕐᒥᑦ ᐃᓄᐃᑦ ᐅᖃᐅᓯᙱᑦᑎᒍᑦ, ᐅᓂᒃᑳᖅᑐᐊᕐᓂᒃᑯᑦ, ᐊᒻᒪ ᑕᐃᔅᓯᒪᓂᑲᑦᑕᒃ ᑲᒃᑭᓯᓃᑦ ᐋᖅᑭᒃᓯᒪᓂᖏᓐᓂᑦ ᓴᓇᙳᐊᖅᑕᒥᒎᑦ.

ᒍᓃ ᕋᐅᓯᐅ-ᓂᑉᑕᓐ

ᖃᐃᕐᑯᔭᐅᓯᒪᔪᑦ ᐅᓂᒃᑳᖏᑦ • ᒪᒃᐱᕐᕕᐊ 5

ᒍᓃ ᕋᐅᓯᐅ-ᓂᑉᑕᓐ ᓄᓇᓕᖕᓂᕐᒥᐅᑕᐅᒐᖅ ᐅᑦᑐᓇᐊᓕᓇᔪᓂᑦ ᑕᐃᑲᓂ ᑲᓇᑕ-ᒐᓵᓐᔅ-Hᐅᐊᐃ ᕿᒥᕐᕈᔩᑦ ᐊᒻᒪ FRQNT-ᑯᓐᓄᑦ ᒍᒃᑖᖑᕋᓱᒃᑐᓄᑦ ᓯᓚᐃᓐᓇᓕᓇᔨᓄᑦ ᐃᓚᒋᔭᐅᑦᑐᓂ ᐃᓕᓐᓂᐊᕐᕖᑦᔪᐊᕐᒥᑦ Hᐅᐊᐃᐃᔨᒥᑦ 2017-ᒥᑦ 2019-ᒧᑦ. ᓯᒐᑦᓕᖅᐸ̃ᖑᓚᐅᖅᐳᖅ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᓂᑦ ᐊᕐᓇᐅᑦᑐᓂ ᑲᓇᑕᒥᑦ ᒍᒃᑖᖕᖑᖅᓱᓂ ᑕᕐᓇᔭᐅᑎᓕᓇᓂᕐᒧᑦ. ᒫᓐᓇ, ᓯᕗᒃᑲᖅᑎᐅᓕᖅᐳᖅ ᓯᓚᕐᔪᐊᕐᒥᑦ ᐱᓕᓇᐊᖑᔪᓄᑦ ᑕᐃᔭᐅᔪᖅ SIGNALS, ᑐᕌᕐᓂᓕᒃ ᕿᒥᕐᕈᓗᓂ ᓄᑖᓂᑦ ᐅᑦᑐᓇᐊᓐᖑᖅᑐᓂᑦ ᓯᓚᐃᓐᓇᕐᒥᑦ ᐃᓱᕐᓂᐊᓂᑦ ᓯᓚᐃᓐᓇᐅᑉ.

ᓱᐱᐊ ᐋᔅᐳᐊᓐ

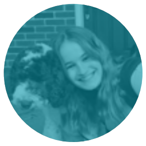
ᓯᓚᐃᓐᓇᓕᓇᓂᕐᒧᑦ ᐃᖅᑲᓇᐃᔾᔫᑦ ᓇᑐᓇᐃᕐᓂᖏᑦ • ᒪᒃᐱᕐᕕᐊ 8

ᓱᐱᐊ ᐋᔅᐳᐊᓐ ᑎᑎᕋᖅᑎᐅᔪᖅ, ᐱᕚᓪᓕᐊᔪᓕᓇᔨ, ᐊᒻᒪ ᓂᐱᓄᑦ ᐋᖅᑭᒃᓱᐃᔨ ᑕᐃᑲᓂ ᕚᓐᑰᕗᒥᑦ. ᐊᕙᑎᓂᓕᓇᓂᐊᓄᑦ ᐱᕚᓪᓕᐊᔪᓕᓇᓂᐊ ᓴᖅᑭᓚᐅᖅᐳᖅ ᑖᒃᑯᓇᓂ *The Tyee* ᐊᒻᒪ *The Narwhal,* ᐊᒻᒪ ᓴᖅᑭᑦᑎᓪᓗᓂ ᐊᒻᒪ ᓴᖅᑭᑦᑎᔨᐅᓪᓗᓂ ᐅᑯᓇᓂ *Beyond Blathers,* ᐊᒻᒪ ᓂᕐᔪᑎᓂᑦ ᐃᑳᕐᓂᐅᔪᑦ ᖃᐅᔨᓴᖅᑐᓕᓇᓂᖅ ᖃᓇᓴᐅᔭᒃᑯᑦ ᓴᖅᑮᔾᕐᓃᑦ.

ᐃᐅᕕᓐ ᓅᑦ

ᐱᓕᓇᐋᓴᖅᑎᑕᐅᔪᓂᑦ ᐊᐅᓚᑦᑎᓂᖅ • ᒪᒃᐱᕐᕕᐊ 10

ᐃᐅᕕᓐ ᓅᑦ ᐱᒋᐊᖅᑎᑦᑎᓯᒪᕗᖅ ᐊᒻᒪ ᑖᓯᒪᙵᑦ CEO-ᑯᓂᑦ ᐱᓕᓇᐋᓴᖅᑎᑕᐅᔪᓂᑦ ᐊᐅᓚᑦᑎᓂᕐᓄᑦ, ᓴᖅᑭᑦᑎᓪᓗᑎᒃ ᖃᓇᓴᐅᔭᒃᑯᑦ ᐊᑐᕈᑎᓂᑦ ᓄᓇᕐᔪᐊᕐᒧᑦ, ᑕᖅᑭᕐᒧᑦ, ᐊᒻᒪ ᒫᔅᒧᑦ. ᑲᑎᒪᔨᐅᓪᓗᓂ ᐅᑯᓄᖓ ᓯᓚᐃᓐᓇᓕᓇᓂᕐᒧᑦ ᑲᓇᑕᒥᑦ ᐊᒻᒪ ᐃᓚᓯᓪᓗᓂ ᐊᑐᕈᑎᓂᑦ ᓯᓚᕐᔪᐊᓕᒫᒧᑦ ᓯᓚᐃᓐᓇᓕᓇᓂᕐᒧᑦ ᐃᓕᓐᓂᐊᕐᕕᐅᔪᐊᕐᒥᑦ. ᐱᔪᒪᓂᖅᑲᑦᑎᐊᖅᑐᖅᑲᔪᙱᖅᓴᐃᓗᓂ ᑭᖑᕚᓇᓂᐊᖅᑕᒍᑦ ᕿᒥᕐᕈᐃᓐᓇᕐᑯᑦᑐᒋᑦ.



ᑯᓘᐃ ᕕᓕᑉᔅ

ᓯᓚᐃᓐᓇᕐᒥᑦ ᐱᕈᖅᓯᐊᒃᓴᑦ • ᒪᒃᐱᕐᕕᐊ 14

ᑯᓘᐃ ᕕᓕᑉᔅ ᑐᒡᓕᐊᓂ ᐃᓕᓐᓂᐊᓕᖅᐳᖅ ᑐᓇᓐᑦ ᐃᓕᓐᓂᐊᕐᕕᐅᔪᐊᙵᓂᑦ, ᐃᓕᓐᓂᐊᖅᓱᓂ ᐊᕙᑎᓕᓇᓂᕐᒥᑦ ᐃᓕᓐᓂᐊᕚᒃᓴᖅ ᐊᒻᒪ ᐃᓕᓐᓂᐊᕐᓂᓕᓇᓂᕐᒥᑦ. ᐱᔪᒪᓂᖅᑲᑦᑎᐊᖅᑐᖅ ᑲᑎᑎᑦᑎᓂᕐᒥᑦ ᐃᓅᖃᑎᒧᑦ ᐃᖅᑲᖅᑐᐃᓂᕐᒥᑦ ᐊᒻᒪ ᐊᕙᑎᒥᑦ ᐃᓕᓐᓂᐊᕐᓂᓕᓇᓂᕐᒧᑦ ᐃᓗᓕᖕᖏᓐᓂᑦ ᐃᓅᓯᐊᓄᑦ.

Hᐃᐅᑦᑎᖕ ᓂᐅᑦᓴᓐ

ᐆᒪᓂᐅᔪᖅ ᓯᓚᐃᓐᓇᑦᑎᓐᓄᑦ • ᒪᒃᐱᕐᕕᐊ 16

Hᐃᐅᑦᑎᖕ ᓂᐅᑦᓴᓐ ᓯᓚᐃᓐᓇᓕᓇᔨᐅᕗᖅ ᓄᓇᖃᖅᑐᓂ ᑐᕌᓐᑐᒥᑦ ᐊᒻᒪ ᓴᐃᓐ ᔫᓐᔅ ᕿᑎᐊᓂᑦ. ᖃᐅᔨᓴᕐᓂᐊ ᐃᓗᓕᖅᑲᖅᐳᖅ ᑐᑭᓯᓇᓱᖕᓂᕐᒥᑦ ᐅᑦᑐᓇᐊᑦ ᐃᓗᖕᒋᓐᓂᑦ ᐃᓚᖅᑲᖅᑐᓂ ᖃᓄᖅ ᑐᑭᓯᑦᑎᐊᒃᑲᓐᓂᕈᓐᓇᕐᒪᖔᑦᑕ ᐅᑦᑐᓇᐊᑉ ᑲᐃᕙᓐᓂᖏᓐᓂᑦ ᐅᑦᑐᓇᐊᖑᖅᑲᑎᒥᖕᓄᑦ. ᐱᔪᒪᓂᖅᑲᑦᑎᐊᖅᑐᖅ ᐅᑦᑐᓇᐊᓂᓕᓇᓂᕐᒥᑦ, ᓯᓚᐃᓐᓇᕐᒥᑦ ᕿᒥᕐᕈᓂᕐᒥᑦ, ᐊᒻᒪ ᑲᑎᓐᖓᖅᑲᓂᖅᑳᕐᓂᒐᑦ ᐅᓐᓄᒃᑯᑦ ᓯᓚᐃᓐᓇᕐᒥᑦ ᐊᒻᒪ ᐅᑦᑐᓇᐊᓂᑦ.

ᓚᐅᕋᓐᔅ ᓅᕝᔅ

ᓴᓇᓂᖅ ᐊᒻᒪ ᐃᓕᓯᓂᖅ ᖃᖓᑦᑕᖅᑎᑕᐅᓯᒪᔪᓂᑦ ᖃᐅᔾᔭᕈᑎᓂᑦ • ᒪᒃᐱᕐᕕᐊ 22

ᓚᐅᕋᓐᔅ ᓅᕝᔅ ᐱᒋᐊᖅᑎᑦᑎᓯᒪᒐᖅ ᑖᔅᓯᒥᙵ ᑕᐃᔭᐅᔪᖅ CanSat-ᒥᑦ ᐋᖅᑭᒃᓱᐃᓂᕐᒥᑦ ᐊᔪᕐᓇᕐᓂᖅᓴᐅᔭᒃᑯᑦ ᐃᓕᓐᓂᐊᖅᑐᓄᑦ ᕈᑦᑎᖕᓂᖅᓴᓄᑦ ᐊᒻᒪ ᑲᒪᕙᒃᕙᓂ ᑖᑯᓄᖓ ᑕᐃᔭᐅᔪᖅ CubeSat-ᒥᑦ ᐋᖅᑭᓱᐃᓂᕐᒥᑦ ᐊᔪᕐᓇᕐᓂᖅᓴᐅᔭᒃᑯᑦ ᑖᒃᑯᓄᖓ ᐃᓕᓐᓂᐊᕐᕕᐅᔪᐊᕐᓄᑦ. ᐱᓕᓇᐊᕐᑲᓚᐅᖅᐳᖅ ᑲᓇᐃᑎᐊᓐ ᐊᒻᒪ ᓯᓚᕐᔪᐊᕐᒧᑦ ᓯᓚᐃᓐᓇᓕᓇᓂᕐᒥᑦ ᐊᕐᕌᒍᑦ 25-ᖑᐸᓗᒃᑐᖅ.

ᐃᓗᒥᐊᓖᕐᔪᒃ ᕿᓚᒃ

ᑕᖅᑭᖅ ᓄᓕᐊᔫᒃ • ᒪᒃᐱᕐᕕᐊ 24

ᐃᓗᒥᐊᓖᕐᔪᒃ ᕿᓚᒃ ᐱᓐᖑᐊᖅᑎ ᐃᓅᑦᑐᓂ ᑎᑎᕋᐅᓯᖅᑎᐅᑦᑐᓂ ᖃᒪᓂᑦᑐᐊᕐᒥᑦ ᓄᓇᓕᒃ. ᑎᑎᕋᐅᓯᕐᓂᕆᕙᒃᑕᖓ ᑲᔪᙱᖅᓴᖅᑕᐅᒐᖅ ᑖᔅᓱᒧᖓ ᐱᐅᒋᔭᐅᑎᑦᑎᐊᖅᑐᒧᑦ ᐊᒻᒪ ᐃᓄᐃᑦ ᐱᖅᑯᓯᖏᓐᓄᑦ. ᐱᓕᕆᐊᖅᑲᖅᐳᖅ ᒫᓐᓇ ᑎᑎᕋᐅᓯᖅᓯᒪᔪᑦ ᐅᓂᒃᑳᓂᑦ ᓄᓇᓕᖕᒧᑦ ᐊᒃᑐᐊᔪᒥᑦ ᐊᔪᖏᑦᑐᐊᓗᒃ ᓱᐳ ᓴᒨ.

ᕗᐃᑦᕗᓇᑦ ᐸᒃ

ᐃᓂᓂᐅ ᐊᑲᑯᓱᒃ • ᒪᒃᐱᕐᕕᐊ 28

ᕗᐃᑦᕗᓇᑦ ᐸᒃ ᐃᓂᓂᐅᖑᕗᖅ (ᐅᓇᓕᒃ) ᓯᓚᐃᓐᓇᓕᓇᔨ ᐊᒻᒪ ᖃᐅᔨᒪᔨᒋᔭᐅᔪᖅ ᑎᑎᕋᖅᑎᐅᑦᑐᓂᑐ ᐱᖓᓱᓄᑦ ᐅᖃᓕᒫᓄᑦ. ᑕᐃᑲᓐᖖᓚᖅᓯᒪᕗᖅ ᐅᐸᒃᐅᐃᔾᔭᒃ ᐅᓇᓕᐅᔪᑦ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᓂᑦ ᐊᒻᒪ ᐃᓕᓐᓂᐊᖅᑕᒥᓂᑦ ᐃᓱᓕᑦᑎᓯᒪᓪᓗᓂ ᐃᓕᓐᓂᐊᕐᕕᐅᔪᐊᕐᒥᑦ ᒫᓂᑑᐸᒥᑦ, ᓇᓗᓇᐃᒃᑯᑕᖅᑖᖅᓯᒪᓪᓗᓂ ᐊᓂᒍᐃᓂᕐᒥᑦ ᐃᓕᓐᓂᐊᕐᓂᓕᓇᓂᕐᒧᑦ. ᐊᕐᕌᒍᓂᑦ 25-ᓂᑦ ᐅᖓᑖᓄᑦ ᐊᑐᖅᓯᒪᕗᖅ ᐃᓕᓴᐃᔨᐅᓂᕐᒥᑦ, ᐃᓚᖃᖅᓱᓂ ᐊᕐᕌᒍᓂᑦ 15-ᓂᑦ ᖃᐅᔨᓴᖅᑐᓕᓇᓂᕐᒧᑦ ᐃᓕᓐᓂᐊᖅᑎᑦᑎᓂᒃᑯᑦ ᑕᐃᑲᓂ MFNER-ᖑᔪᒥᑦ.

ᔩᐃ ᒪᐃᑉ

ᓵᓐᑐᕋᓱᒃHᐋ ᐃᓱᐊ • ᒪᒃᐱᕐᕕᐊ 34

ᑎᑎᕋᓚᐅᖅᐳᖅ ᒪᕐᕉᖕᓂᒃ ᑎᑎᕋᐅᓯᖅᓯᒪᔪᓂᑦ ᐅᓂᒃᑳᓂᑦ ᑕᑉᕙᓂ Conundrum Press-ᑯᓐᓂᑦ: *The Gift* ᐊᒻᒪ *July Underwater*. 2021-ᖑᑎᑦᑐᒍ, ᓂᕈᐊᖅᑕᐅᓚᐅᖅᐳᖅ ᑖᔅᓯᒪᙵᑦ Ignatz-ᒧᑦ ᑐᓂᔭᐅᑦᑐᓂ ᐱᓕᓇᔪᓐᓇᑦᑎᐊᕐᓂᖓᓄᑦ.

ᑎᑎᕋᖅᑐᖅ ᑎᐅᓪᓯ ᑲᐅᓪᕓᓪᓴᑭ

ᓯᓚᐃᓐᓇᕐᒥᑦ ᑕᑯᓇᖕᓂᖅ ᑖᕝᕙᓐᖓᑦ ᐊᖏᕐᕋᒥᖕᓂᑦ

ᓇᓗᓇᖅᑐᑦ ᐅᓄᖅᑎᓪᓗᒋᑦ ᐊᓂᕐᓂᖅᑲᕐᓇᖏᑦᑐᒥᑦ ᐊᒻᒪ ᓯᓚᐃᓐᓇᕐᒥᑦ ᑖᒃᑯᑎᓘᓇᖅ, ᐃᓕᓐᓂᐊᖅᑐᑦ (ᐃᓕᓴᐃᔾᑦᑕᐅᖅ!) ᐅᓄᖅᑐᐊᓗᖕᓂᑦ ᐊᐱᖅᑯᑎᒃᓴᖅᖅᐳᑦ: ᐆᒪᓂᐅᔪᑦ ᖃᓄᖅ ᑕᐅᑦᑐᖅᑲᖅᐸ ᓯᓚᐃᓐᓇᕐᒥ? ᖃᓄᑎᒋ ᐊᖏᓂᖅᑲᖅᐸ ᓯᓚᐃᓐᓇᕐᒦᑦᑐᑦ ᒪᕐᒥᑦ ᐱᔪᓐᓇᕐᓂᕐᒧᑦ ᑐᕌᖅᐳᑦ ᐅᖃᓕᒫᖅᑐᒧᑦ ᖃᐅᔨᒃᑲᓐᓂᕋᓱᒡᓗᓂ ᓯᓚᐃᓐᓇᕐᒥᑦ ᕿᒥᕐᕈᓇᖕᓂᒃᑯᑦ ᐊᒻᒪ ᐃᓕᓐᓂᐊᒃᑲᓐᓂᕐᓗᓂ ᖃᐅᔨᓴᕐᓂᒃᑯᑦ ᐊᓂᕐᓂᖅᑲᕐᓇᖏᑦᑐᒥᑦ ᓇᓗᓇᕐᓂᐅᔪᓂᑦ.

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ᐅᖃᓕᒫᖅᑦᑕᓕᓵᖅᑐᓄᑦ, ᐅᑯᐊ ᑖᕝᕙ ᐅᖃᓕᒫᒐᒃᓴᑦ ᐃᓚᖏᑦ ᐊᑐᕐᓂᓕᑦ ᑕᑯᔪᒥᓇᖅᑎᑦᑎᓪᓗᑎᒃ ᐊᒻᒪ ᐃᓕᓐᓂᐊᕈᒃᓴᑦᑎᐊᕙᐅᓪᓗᑎᒃ ᓯᓚᐃᓐᓇᕐᒥᑦ ᐊᒻᒪ ᐊᑖᓂᑦ ᑭᓯᑕᕐᑲᕐᒪᖔᑦ:

ᐅᖃᓕᒫᒐᖅ THE EXPLORERS CLUB–ᖑᔪᖅ

ᒥᑦ ᑕᐃᔭᐅᔪᖅ ᑖᕝᕙᓐᖓᑦ ᑲᓇᑕᒥᐅᓂᑦ ᓯᓚᐃᓐᓇᕐᒥᑦ ᑲᑐᔾᔨᖃᑎᖏᑦ

ᑖᓐᓇ ᐊᓂᕐᓂᖅᑲᕐᓇᖏᑦᑐᒍᐊᖅᓯᒪᔪᖅ ᑕᐃᕕᑦ ᓴᐃᓐᑦ–ᔫᑯᐃᔅ ᐅᖃᓕᒫᖅᑦᑕᕐᓂᖅᔭᕐᓚ ᓄᑦᖅᑲᓄᑦ ᓯᓚᐃᓐᓇᓕᕆᔪᒥᑦ, ᑲᓇᑕᒥᑦ ᓯᓚᐃᓐᓇᕐᒧᑦ ᓇᖕᒥᓂᖅᖅᑐᑦ ᓵᖅᑭᑎᓚᐅᖅᐳᑦ ᖃᕆᓴᐅᔭᒃᑯᑦ ᐅᖃᓕᒫᒐᒃᓴᕐᒥᑦ ᐱᔾᔪᑎᓕᖕᒥᑦ ᒪᒃᑯᒃᑐᓂᑦ ᕿᒥᕐᕈᓇᒃᑎᓂᑦ ᖁᕕᐊᒋᔭᖅᖅᑐᓂᑦ ᓯᓚᐃᓐᓇᕐᒥᑦ ᕿᒥᕐᕈᓇᖕᓂᕐᒥᑦ, ᕿᒥᒥᖕᓂᑦ ᒪᓕᒃᐸᒃᑐᓂᑦ, ᓯᐅᕕ–ᒥᑦ. ᑖᓐᓇ ᐅᖃᓕᒫᒐᖅ ᐱᔭᒃᓴᐅᕗᖅ ᖃᓇᓴᐅᔭᒃᑯᑦ, ᑕᕐᓇᔭᒐᒃᓴᐅᔪᖅ, ᐊᒻᒪ ᖃᓇᓴᐅᔭᒃᑯᑦ ᐃᓕᐅᖅᑲᕈᓐᓇᖅᓯᓯᒪᓪᓗᓂ.

ᐅᖃᓕᒫᒐᖅ THE NORTHERN LIGHTS–ᖑᔪᖅ ᐅᖃᓕᒫᒐᖅ

ᖑᔪᖅ ᑎᑎᕋᖅᑕᐅᔪᖅ ᑎᑎᕋᖅᑎᐅᔪᒧᑦ ᑕᐃᔫᓐ ᐃᓚᓯ (Inhabit –ᑯᓐᓂᓐᖕᒫᖅᑐᖅ ᐃᓕᓐᓂᐊᖅᑐᓕᕆᓂᖅ, 2018–ᒥᑦ) • ᑐᕌᖓᔪᖅ ᐅᑭᐅᓕᖕᓄᑦ 5–ᒥᑦ 7–ᒧᑦ

ᐃᓚᖓᓂᑦ ᓄᓇᕗᒻᒥᐅᑦ ᐅᖃᓕᒫᓂᑦ ᑲᔪᓯᓂᓕᖕᓂᑦ, ᑖᓐᓇ ᐅᖃᓕᒫᒐᒃᓴᖅ ᐱᔾᔪᑎᖃᖅᐳᖅ ᐊᖅᓴᕐᓂᕐᓂᑦ, ᓄᓇᕗᒻᒥᑦ, ᐃᓚᖃᖅᖢᓂ ᑖᒃᑯᐊ ᐅᖃᓕᒫᒐᑦ ᐊᕙᑎᐅᔪᓂᑦ. ᐱᑕᖃᖅᐳᖅ ᖃᓪᓗᓈᑦᑑᖅᑐᓂᑦ, ᐃᓄᒃᑎᑑᒐᔪᓂᑦ ᐊᒻᒪ ᐃᓄᐃᓐᓇᖅᑑᖓᔪᓂᑦ.

ᓯᓚᐃᓐᓇᕐᒧᑦ ᕿᒥᕐᕈᓂᕐᒥᑦ ᐃᑲᔫᑎᐅᔪᖅ ᐅᖃᓕᒫᒐᖅ: ᑕᐃᔭᐅᔪᖅ ᖃᓪᓗᓈᑐᑦ Your Passport to the Coolest Things to See and Do in the Universe–ᖑᔪᖅ

ᑎᑎᕋᖅᑕᐅᔪᖅ ᑖᔅᓯᒧᖓ ᖃᐅᔮᓴᕐᓂᕐᒧᑦ ᐱᕙᓪᓚᐊᔪᓕᕆᔨ ᐄᑕ ᒪᒫᓐ, ᑎᑎᕋᐅᔭᖅᑕᐅᔪᖅ ᑖᔅᓯᒧᖓ ᔫᔅ Hᐋᓕᓈᑎ (ᐅᖃᓕᒫᒐᖅ ᑕᐃᔭᐅᔪᖅ Kid Can Press, 2018–ᒥᑦ) • ᑐᑫᖓᔪᖅ ᐅᑭᐅᓕᖕᓄᑦ: 8–ᒥᑦ 12–ᒧᑦ

ᓇᖕᒥᓂᕆᓗᒍ ᐊᐅᓪᓚᕐᓗᓂ ᖃᐅᔨᒪᔾᔪᑎᒥᑦ ᓴᓇᓗᓂ ᓯᓚᐃᓐᓇᕐᒥᑦ ᕿᒥᕐᕈᓂᕐᒥᑦ, ᐃᓕᓐᓂᐊᕐᓂᕐᒥᑦ ᖃᓄᑎᒋ ᐊᑐᕈᓐᓇᕐᓂᐅᔪᒥᑦ ᓴᓐᖏᔪᒧᑦ ᐊᐅᓚᑎᑕᐅᓂᕐᒧᑦ, ᑖᕝᕗᖓ ᐱᓱᖕᓂᕆᓂᐊᖅᑕᕐᓂᑦ ᐋᖅᑭᒃᓯᐃᓗᑎᑦ, ᓂᕈᐊᕐᓗᑎᑦ ᐱᓱᖕᓂᕆᓂᐊᖅᑕᕐᓂᑦ ᑕᖅᑭᕐᒧᑦ. ᐅᓄᖅᑐᐊᓗᖕᓂᑦ ᖃᐅᔨᓴᕐᓂᕐᒧᑦ ᐃᓕᓐᓂᐊᒐᒃᓴᓂᑦ, ᖁᕕᐊᓇᖅᑐᓂᑦ, ᐊᒻᒪ ᐊᔾᔨᓕᐅᕆᓗᓂᓗ, ᑖᓐᓇ ᐅᖃᓕᒫᒐᖅ ᐱᐅᔫᕗᖅ ᓯᓚᐃᓐᓇᕐᒧᑦ ᓄᖅᑲᖓᔭᖅᑐᕐᓗᓂ.

ᓴᓐᖏᔪᑦ ᐅᓂᒃᑳᑦ ᐃᖅᑭᓕᖕᓄᑦ: ᑕᐃᔭᐅᔪᖅ ᖃᓪᓗᓈᑐᑦ How the Moon Came to Be–ᖑᔪᖅ

ᖑᔪᖅ ᑎᑎᕋᖅᑕᐅᔪᖅ ᑖᔅᓯᒧᖓ ᐃᖅᑭᓕᖕᒧᑦ ᑎᑎᕋᖅᑎᐅᔪᒧᑦ ᐊᒻᒪ ᐅᖃᖅᑎᒧᑦ ᓚᐊ ᒧᕆ ᑑᓇᐊᓐ (ᓴᓐᖏᔪᖅ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᖅ, 2018–ᒥᑦ) • ᑐᑫᖓᔪᖅ ᐅᑭᐅᓕᖕᓄᑦ 9–ᒥᑦ 12–ᒧᑦ

ᐃᓚᒋᔭᐅᓂᖅ ᓴᓐᖏᔪᓂᑦ ᐅᓂᒃᑳᓂᑦ: ᐃᖅᑭᓕᐅᔪᓄᑦ ᑲᔪᓯᓂᓕᖕᓄᑦ, ᑖᓐᓇ ᐅᖃᓕᒫᒐᖅ ᑐᑫᓚᓕᒃ ᐱᖅᑯᓯᐅᔪᒧᑦ ᐃᖅᑭᓕᖕᓄᑦ ᐅᓂᒃᑳᖕᒋᓐᓂᑦ ᓴᓇᔭᐅᓂᕆᔭᖕᖓᓂᑦ ᑕᖅᑭᐅᑉ, ᐃᓚᖅᑲᖅᖢᓂ ᐅᖃᓕᒫᒐᖅ ᑕᐃᔭᐅᔪᖅ how Mother Earth and Grandmother Moon got their name-ᒍᔪᖅ.

ᐅᖃᓕᒫᖅᑦᑕᖅᓯᒪᔪᓄᑦ, ᐅᑯᐊ ᑖᕝᕙ ᐅᖃᓕᒫᒐᒃᓴᑦ ᐊᐱᖅᑯᑎᓖᑦ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᓄᑦ ᐅᓪᓗᕆᐊᓄᑦ ᖃᐅᔨᒪᓂᕆᔭᐅᔪᓂᑦ, ᖃᐅᔨᔪᒪᓂᓕᖕᓄᑦ ᓯᓚᐃᓐᓇᓕᐊᕐᓂᕐᒥᑦ, ᐊᒻᒪ ᐅᓂᒃᑲᐅᓯᐅᓯᒪᔪᑦ ᑖᒃᑯᓈᖕᖓᑦ ᑲᓇᑕᒥᑦ ᓯᓚᐃᓐᓇᕐᒧᑦ ᕿᒥᕐᕈᓇᖕᓂᐅᔪᒧᑦ:

ᑭᑦᓯᑭᓯᒃ (ᓯᓚᐃᓐᓇᖅ): ᑕᐃᔭᐅᔪᖅ Tellings that Fill the Night Sky–ᖑᔪᖅ

ᖑᔪᖅ ᐅᖃᓕᒫᒐᖅ ᑕᐃᔭᐅᔪᖅ ᐃᓂᓂᐅ/ᐃᖅᑭᓖᑦ ᖃᐅᔨᒪᓂᕗᖅ ᐊᒻᒪ Dream Keeper –ᔪᖅ ᑖᔅᓯᒧᖓ ᕕᐅᓪᕗᑦ ᐸᒃᒧᑦ ᑎᑎᕋᐅᔭᖅᑕᐅᓪᓗᓂ ᑖᔅᓯᒧᖓ ᒥᔅᑕᕗᐊᓯᔅ ᐸᒃᒧᑦ (ᐅᖃᓕᒫᖅ ᑕᐃᔭᐅᔪᖅ Indigenous Education Press, 2021–ᒥᑦ) • ᑐᕌᖓᔪᖅ ᐅᑭᐅᓕᖕᓄᑦ: 13–ᒧᑦ ᐅᖓᑖᓄᑦ

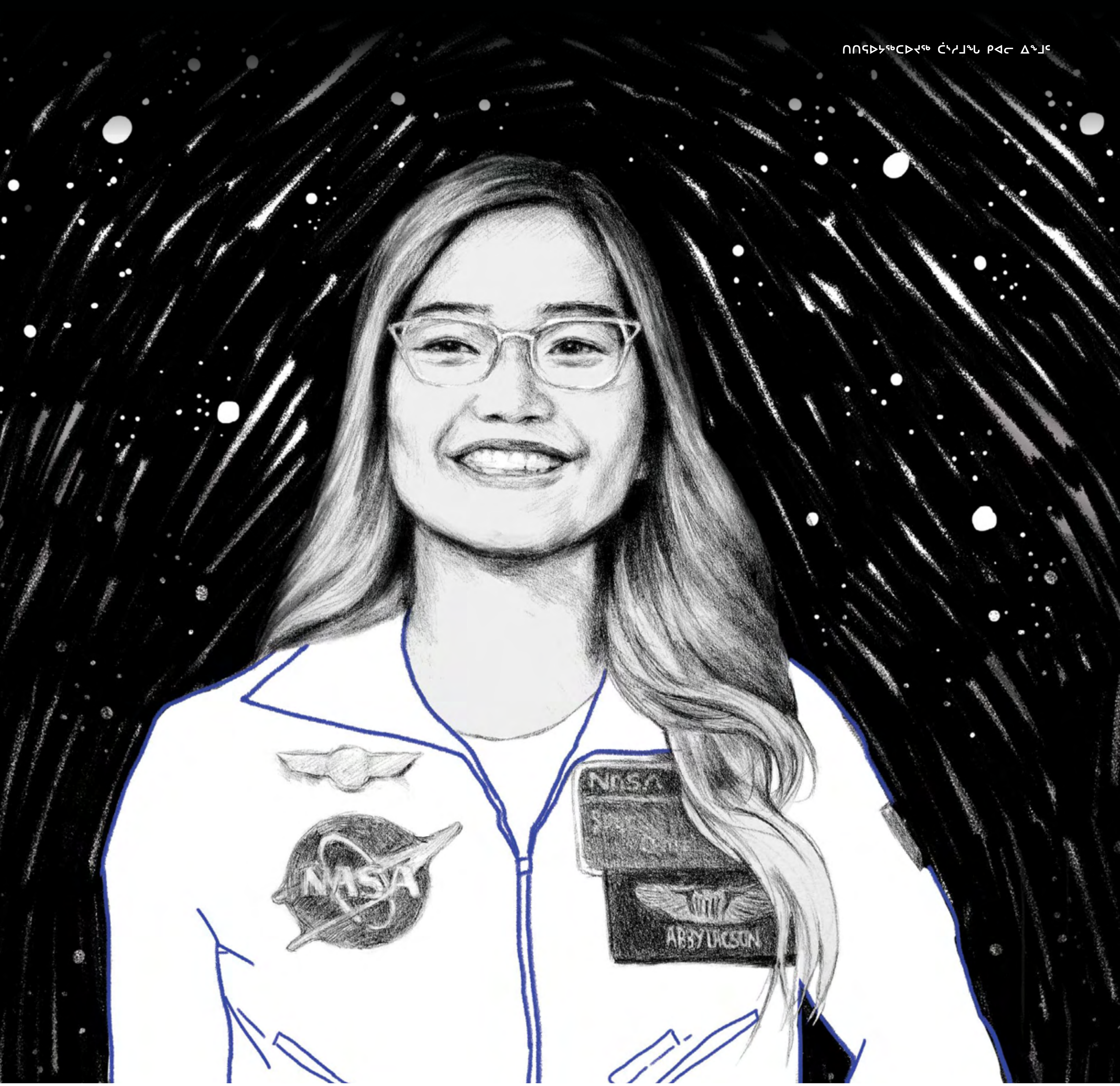
ᕕᐅᓪᕗᑦ ᐸᒃ ᓇᓗᓇᐃᖅᑎᔪᖅ ᐃᓂᒋᔭᐅᕙᒃᑐᓂᑦ ᐅᓄᖅᑐᓂᑦ ᐅᓪᓗᖅᑕᐊᓄᑦ, ᐃᓚᖅᑲᖅᖢᓂ ᒥᔅᑕ ᒪᔅᑯᐊ (ᓇᓄᖅ), ᒥᔅᑕᑎᒻ (ᕿᒻᒥᕐᔪᐊᖅ) ᐊᒻᒪ ᐅᑭᒃ (ᐃᖅᑲᓗᒐᓱᒃᑎ). ᑖᓐᓇ ᐱᓚᕆᐊᖑᔪᖅ ᐱᐊᓂᒃᑕᐅᕙᖅ ᐅᓇᓚᒃᑎᑐᑦ ᐅᖃᐅᓯᖅ ᐊᑐᖅᖢᒍ ᐊᒻᒪ ᑎᑎᕋᖅᓯᒪᓂᐊ, ᐊᒻᒪᑦᑕᐅᖅ ᓄᓇᓐᖑᐊᖅ ᐅᓪᓗᕆᐊᖑᔪᑦ ᐊᒻᒪ ᑎᑎᕋᐅᔭᖅᓯᒪᓂᕆᔭᖓ.

ᐅᖃᓕᒫᒐᖅ CANADARM AND COLLAB–ᖑᔪᖅ: ᐅᖃᓕᒫᒐᐅᔪᖅ How Canada's Astronauts and Space Robots Explore New Worlds

ᖃᓄᖅ ᑲᓇᑕᒥᐅᑦ ᑕᖅᑭᓕᐊᖅᑏᑦ ᐊᒻᒪ ᓯᓚᐃᓐᓇᒃᑯᑦ ᐃᓅᖏᑦᑐᓄᑦ ᕿᒥᕐᕉᑦ ᓄᑖᒥᑦ ᓄᓇᕐᔪᐊᖑᔪᒥᑦ ᑎᑎᕋᖅᑎ ᓯᓚᐃᓐᓇᕐᒥᑦ ᐃᓕᓴᐱ Hᐊᐅᓪ (ᐅᖃᓕᒫᒐᖅ ECW Press, 2020–ᒥᑦ) • ᑐᑫᖓᔪᖅ ᐅᑭᐅᓕᖕᓄᑦ 13 ᐅᖓᑖᓄᓪᓗ

ᑖᓐᓇ ᐅᖃᓕᒫᒐᖅ ᓴᖅᑭᑎᕗᖅ ᐃᑎᔪᒥᑦ ᐃᓗᐊᓄᐊᕐᓗᓂ ᑲᓇᑕᐅᑉ ᐊᑐᕐᓂᐊᓄᑦ ᓯᓚᕐᔪᐊᓕᒫᒧᑦ ᓯᓚᐃᓐᓇᕐᒥᑦ ᕿᒥᕐᕈᓂᐅᔪᒥᑦ ᐊᒻᒪ ᖃᓄᖅ ᓴᖅᑭᑎᓚᐅᕐᒪᖔᑦ ᑲᓇᑕᒥᐅᓄᑦ ᐱᒋᐊᕐᓂᐊᓂᑦ ᑲᓇᑕᒥᐅᖅᑎᑦᑎᓐᓄᑦ ᑕᖅᑭᓕᐊᕐᓂᕐᒧᑦ ᐃᓕᓐᓂᐊᕈᒃᓴᖅ. ᐃᓗᐊᓂ ᐊᐱᖅᓱᖅᑐᑦ ᑕᖅᑭᓕᐊᖅᑏᑦ ᐅᕙᓂ, ᑲᑎᒪᔩᔪᐊᓄᑦ, ᐊᒻᒪ ᐱᓕᕆᖅᑕᐅᔪᑦ ᓯᓚᐃᓐᓇᕐᒥᑦ ᕿᒥᕐᕈᓇᖕᓂᖅ ᐊᕐᕌᒍᑦ 40–ᐅᔪᑦ ᐊᓂᒍᖅᑐᑦ. &

ᖃᓇᓴᐅᔭᑰᖅᑐᑦ ᐊᒻᒪ ᑲᑐᔾᔨᖅᑎᕆᑦ



ᑎᑎᕋᖅᑐᖅ ᓯᐱᐊ ᐋᔅᐳᐊᓐ

ᐋᐱ ᑖᑲᓯᓐ

ᐊᓂᕐᓂᕐᑲᕐᓇᖕᒋᑦᑐᒥᑦ ᐱᓕᕆᐊᕐᑲᖅᑑᑉ ᓇᑐᓇᐃᔭᖅᓯᒪᓂᖓ

› ᐋᐱ ᓈᒃᓴᓐ ᐃᓚᐅᖃᑕᐅᔪᖅ ᐃᔾᔪᐊᖅᓯᔪᖅ ᐱᓕᕆᐊᖃᖃᑕᐅᓪᓗᓂᓗ ᐊᐅᓚᑦᑎᔪᓐᓇᕐᓂᕐᒥᑦ ᑖᔅᓱᒥᖓ Canadarm–ᒥᑦ 2 ᖃᓂᒋᔾᓂ ᑖᔅᓱᒪ ISS-ᖑᔫᑉ

ᐊᔾᔨᓕᐅᖅᑕᐅᔪᖅ ᑖᓯᒧᖓ ᐋᐱ ᓈᒃᓴᓐᒧᑦ

ᐋᐱ ᓈᒃᓴᓐ ᐃᓕᓐᓂᐊᖅᑎᓪᓗᒍ ᖁᑦᑎᙵᓂᓕᖓᒥᑦ 10–ᒥᑦ, ᖃᐅᔨᓚᐅᖅᐳᖅ ᐱᓕᕆᐊᖃᕈᒪᓂᕐᒥᑦ ᐋᖅᑭᒃᓱᐃᓂᕐᒥᒡᓗ. ᑭᓯᐊᓂᓕ ᐃᓱᒪᓚᐅᓐᖏᓚᖅ ᑭᓯᐊᓂ ᐊᐅᓪᓛᖃᑕᐅᖕᒪᑦ Rockies-ᒧᑦ ᐊᒻᒪ ᑕᐅᑐᓕᕐᒥ ᐅᓐᒍᒃᑯᑦ ᓯᓚᐃᓐᓇᕐᒥᑦ, ᑕᐃᑲᓃᑦᑐᓐᓃᕐᒥ ᐅᓪᓗᒃᑯᑦ ᐳᔪᕈᔾᔭᓯᒪᔪᒥᑦ, ᐃᓱᒪᑖᓕᓚᐅᖅᐳᖅ: ᑕᖅᑭᓕᐊᖅᑎᐅᔪᒪᓪᓗᓂ. ᒫᓐᓇ 24–ᓂᒃ ᐅᑭᐅᖃᖅᑐᖅ, ᓈᒃᓴᓐ ᓄᑲᖅᓚᕐᒧᑦ ᓯᓚᐃᓐᓇᓕᕆᓂᕐᒥᑦ ᐊᐅᓚᑦᑎᔪᖅ ᐋᖅᑭᒃᓱᐃᔨᐅᓪᓗᓂ ᐃᓚᖃᖅᖢᓂ ᑖᒃᑯᓇᓐᖓᑦ MDA–ᑯᓐᓂᑦ ᓯᓚᐃᓐᓇᓕᕆᔪᓂᑦ, ᑲᓇᑕᒥᑦ ᓯᓚᐃᓐᓇᕐᒥᑦ ᖃᕆᓴᐅᔭᓕᕆᓂᐅᔪᖅ ᓇᖕᒥᓂᐅᔪᖅ ᑲᓇᑕᐅᑉ ᐅᖓᑖᓂᑦ, ᑲᔪᓯᓂᓕᒃ ᐊᐅᓚᑕᐅᔪᓄᑦ ᑕᓕᓐᖑᐊᖑᔪᓄᑦ ᐊᑐᖅᑕᐅᕙᒃᑐᖅ ᓯᓚᐃᓐᓇᕐᒦᑦᑐᓄᑦ.

ᐃᓕᓐᓂᐊᕌᓂᒃᐸᑦ ᐱᓕᕆᐊᖓᓂᑦ, ᓈᒃᓴᓐ ᐱᓕᕆᖃᑕᐅᓕᕐᓂᐊᖅᐳᖅ ᐊᐅᓚᑦᑎᔨᓄᑦ ᑕᐃᑲᓂ ᑲᓇᑕᒥᑦ ᓯᓚᐃᓐᓇᕐᒧᑦ ᓇᖕᒥᓂᖅᑐᓄᑦ ᐱᓕᕆᐊᖃᕐᓗᓂ ᐋᖅᑭᒃᓱᐃᓂᕐᒥᑦ ᐃᑲᔪᕐᓗᓂ ᑐᓄᐊᓂᑦ ᐊᐅᓚᑦᑎᔪᓄᑦ ᑕᐃᑲᓂ Hᐊᐅᔅᑕᓐᒥᑦ. ᑖᓐᓇ ᐊᑐᖅᑕᐅᕗᖅ ᓄᓇᕐᔪᐊᕐᒥᑦ ᓯᓚᐃᓐᓇᓕᕆᕝᕕᐅᔪᒥᑦ, ᐋᐱ ᐊᒻᒪ ᐱᓕᕆᖃᑎᒋᔭᕆᑦ ᖃᐅᔨᓴᕐᓂᐊᖅᐳᑦ ᐊᐅᓚᓂᐅᔪᓂᑦ ᐊᒻᒪ ᑖᓐᓇ ᑕᓕᓐᖑᐊᖑᔪᖅ ᐊᐅᓚᔪᓐᓇᑦᑎᐊᕋᓗᐊᕐᒪᖔᑦ ᐱᓕᕆᐊᒃᓴᒥᓄᑦ, ᓇᒨᕐᖓᐅᓂᖓᓄᑦ ᐃᖏᕋᑦᑎᐊᕋᓗᐊᕐᒪᖔᑦ ᐊᒻᒪ ᐊᓕᒃᓯᒪᖏᒃᑲᓗᐊᕐᒪᖔᑦ, ᐃᖏᕋᓗᓂᓗ ᓯᕗᓂᐊᓃᑦᑐᖅᑲᖏᒃᑲᓗᐊᕐᒪᖔᑦ ᑐᓗᕈᑎᐅᓇᔭᖅᑐᒥᑦ.

"ᓲᕐᓗ ᑐᓄᐊᓃᔅᓱᑕ ᐊᐅᓚᑦᑎᔪᑦ ᑐᓄᐊᓂ," ᓈᒃᓴᓐ ᐅᖃᖅᐳᖅ. "ᖁᕝᕙᐊᓇᑦᑎᐊᖅᑐᖅ, ᑕᑯᔪᓐᓇᕐᓂᐊᕐᒪ ᐊᑐᖅᑐᓂᑦ ᕿᓚᒻᒥᐅᔫᒃᑯᑦ."

ᑭᓯᐊᓂ ᖁᑦᑎᙵᓂᓕᖓᒥᑦ 10–ᒥᑦ, ᑕᐅᑐᙳᐊᕐᓇᓚᐅᖅᐳᖅ ᑖᓯᒧᖓ ᓈᒃᓴᓐᒧᑦ. ᐱᓕᕆᐊᖅᑯᓂ ᓯᓚᐃᓐᓇᓕᕆᔪᓄᑦ–ᐊᒻᒪ ᑕᖅᑭᓕᕆᓃᓐᖑᕐᑯᓂ–ᖃᐅᔨᒪᓚᐅᖅᐳᖅ ᐸᕐᓇᐃᓂᖅᑲᐊᖅᑲᕐᓂᖓᓂᑦ ᐊᒻᒪ ᐱᓕᕆᐊᒥᓄᑦ ᐊᒃᓱᕈᕐᓇᕐᑐᓂᓗ.

ᐃᓕᓐᓂᐊᖅᑎᓪᓗᒍ ᖃᐅᔨᓇᓱᖕᓂᖅᖃᖅᑎᓪᓗᒍ, ᓈᒃᓴᓐ ᖃᐅᔨᓚᐅᖅᐳᖅᑲᓇᑕᒥᐅᑕᑦ ᑕᖅᑭᓕᕆᔩᑦ ᐊᑐᕐᓂᖃᓚᐅᕐᓂᖏᓐᓂᑦ ᐅᓇᑕᖅᑐᒃᓴᐅᓂᕐᒧᑦ ᐃᓕᓐᓂᐊᕐᓱᑎᒃ, ᑕᐃᒪᐃᒻᒪᑦ ᐅᓇᑕᖅᑐᒃᓴᓄᑦ ᐃᓚᐅᓕᓚᐅᖅᐳᖅ, ᐊᑐᖅᓱᓂᓗ ᐊᓐᓂᐅᒪᓇᓱᖕᓂᕐᒥᑦ ᐃᓕᓐᓂᐊᕐᓂᐅᔪᒥᑦ, ᐃᓕᑦᑎᑦᑐᓂᓗ ᖃᖓᑕᓯᐅᓂᑦ, ᐊᒻᒪ ᖃᖓᑕᕝᕙᓐᓂᕐᒥᑦ ᐃᓕᓐᓂᐊᖅᓱᓂ.

"ᖃᐅᔨᓴᖅᑕᐅᓂᐅᖅᑯᔨᓚᐅᖅᐳᖅ [ᑕᑯᓗᒍ] ᑐᑫᓚᓇᔭᒪᖕᒪᖕᖑᑦ ᓯᓚᐃᓐᓇᕐᒥᑦ ᐋᖅᑭᒃᓱᐃᔨᐅᓗᓂ [ᐊᒻᒪ] ᓴᓇᓇᓱᒡᓗᓂ ᓯᓚᐃᓐᓇᓕᕆᔪᓂᑦ," ᐅᖃᖅᑐᓂ ᓈᒃᓴᓐ.

ᑕᐃᑲᓂ ᐃᓕᓐᓂᐊᕐᕕᒡᔪᐊᕐᒥᑦ ᐋᓪᐳᑕᒥᑦ, ᓈᒃᓴᓐ ᐱᓕᕆᓂᖅᑳᔪᐊᓚᐅᖅᐳᖅ ᐃᖏᕋᖅᔪᑎᓄᑦ ᐋᖅᑭᒃᓱᐃᓂᕐᒥᑦ. ᐊᕐᕌᖑ ᐊᑕᐅᓯᖅ ᐊᓂᒍᕐᒪᑦ ᐃᓕᓐᓂᐊᕐᕕᒡᔪᐊᕐᒥᑦ, ᐃᓚᐅᓚᐅᖅᐳᖅ ᑕᐃᑲᓂ ᓯᓚᐃᓐᓇᓕᕆᔪᓄᑦ ᐊᐅᓛᕐᑐᑎᒃ ᑕᐃᑲᓂ ᐋᓚᐹᒥᑦ, ᐊᑐᕐᓂᖃᓚᐅᖅᐳᖅ ᓯᓚᐃᓐᓇᓕᕆᓂᕐᒥᑦ ᐊᐅᓚᑦᑎᔪᓂᑦ, ᐃᒪᐅᑉ ᐊᑖᓂᑦ ᖃᐅᔨᓴᕐᓂᕐᒧᑦ ᐃᓕᓐᓂᐊᕐᓂᕐᒥᑦ, ᐊᒻᒪ ᕿᓴᓐᑯᑦ ᐅᖃᐅᓯᐊᓂᑦ ᐃᓕᓐᓂᐊᖅᖢᓂ.

ᑕᐃᑲᓂ ᐃᐊᕐᒪᓐᑕᓐᒥᑦ, ᓈᓴᓐ ᐃᓚᐅᖃᑕᐅᓚᐅᖅᐳᖅ ᑖᒃᑯᓇᓂ Alber-taSAT-ᖑᔪᓄᑦ, ᐃᓕᓐᓂᐊᖅᑐᑦ ᑲᑎᓯᒪᔪᑦ ᐋᖅᑭᒃᓯᓪᓗᑎᒃ ᓯᕗᓪᓕᖅᐹᒥᑦ ᓯᓚᐃᓐᓇᕐᒧᑦ ᖃᖓᑦᑕᖅᑎᑕᐅᓯᒪᔪᒥᑦ ᐊᒻᒪ ᖃᖓᑦᑕᖅᑎᑕᐅᓪᓗᓂ ᐋᓪᐳᑕᒥᑦ. ᓴᖅᑭᑦᑎᓚᐅᖅᐳᖅ ᐃᓚᒌᒃᓱᖅᑎᑦᑎᓪᓗᓂ ᐃᓕᓐᓂᐊᖅᑎᓂᑦ, ᐃᓕᓐᓂᐊᖅᑐᓄᑦ ᐃᓚᒌᒃᑐᑦ ᑕᕝᕗᖓ Alberta Rocketry Research–ᒥᑦ ᑕᐃᔭᐅᔪᖅ ᖃᐅᔨᓴᕐᓂᖅ (STARR-ᖑᔪᖅ), ᑐᕌᖓᖅᑐᖅ ᖃᖓᑦᑕᖅᑎᓂᕐᒥᑦ ᒥᑭᓐᓂᖅᓴᓂᑦ ᓯᓚᐃᓐᓇᕐᒧᑦ ᐊᔪᓐᖏᑖᖑᓇᓱᒃᑐᓂᑦ.

"ᓴᓇᓪᓗᓂ ᑕᕝᕙᓂ AlbertaSAT–ᑯᓐᓄᑦ ᐊᒻᒪ ᓴᖅᑭᑦᑎᓪᓗᓂ ᑕᐃᔭᐅᔪᖅ STARR–ᒥᑦ, ᐃᒪᓐᓇᑦᑎᐊᖅ … ᓇᓂᓯᑦᑎᐊᕐᓇᖅᑐᐊᓗᒃ," ᓈᒃᓴᓐ ᐅᖃᖅᖢᓂ. "ᐱᓗᐊᖅᑐᒥᑦ ᓴᓈᖅᑖᖅᖢᖓ, ᓱᖃᐃᒻᒪ ᐅᒃᐱᕐᓇᖅᑑᓪᓗᑎᒃ ᐊᑐᖅᓯᒪᔭᒃ ᐃᓕᓐᓂᐊᕋᓂᓵᖅᖢᖓ ᐃᓕᓐᓂᐊᕝᕕᒡᔪᐊᕐᒥᑦ."

ᑖᓐᓇ ᓈᒃᓴᓐ ᐊᒃᓱᕈᖅᖢᓂ ᐱᓕᕆᐊᖃᖅᐳᖅ ᐊᑐᓕᕈᒪᔭᒥᓄᑦ ᑕᖅᑭᓕᐊᕐᓗᓂ, ᐊᒻᒪ ᖁᕝᕙᐊᕆᔭᖃᖅᐳᖅ ᖁᕝᕙᐊᓱᖕᓂᕐᒥᑦ, ᖃᓇᓴᐅᔭᒃᑯᑦ ᑕᐃᔭᐅᔪᖅ Instagram–ᒥᑦ ᑲᔪᖏᖅᓴᐅᑎ, ᓴᖅᑭᑕᖏᑦ ᑕᕐᕆᔾᔭᒃᓴᖃᖅᐳᖅ ᐊᒥᓱᓂᑦ ᐃᖏᕋᑲᑕᒃᑎᓪᓗᒍ ᐊᒃᓱᓗᐊᓕᕐᓄᑦ ᒪᑐᓇᐊ ᖃᓂᒋᔾᓂ.

"ᑖᒃᑯᐊ ᐊᑐᖅᐸᒃᐸᒃᑲ ᐊᔪᓐᖏᑕᒃᑲ, ᑭᓯᐊᓂ ᐃᑲᕋᓄᑦ ᐅᓄᖅᑐᐊᓗᖕᓄᑦ ᐊᔪᕈᓐᓃᖅᓴᖅᓱᒋᑦ," ᓈᒃᓴᓐ ᐅᖃᖅᓱᓂ. "ᐊᒻᒪ ᐃᓵᓐᓂᒃᑯᑦ ᐱᑦᑎᐊᖅᐸᖕᒋᕐᓱᖕ … ᑭᓯᐊᓂ ᓴᐱᓕᖅᑕᐃᓕᒪᓂᐅᕙᖅ, ᐊᒻᒪ ᐊᔪᕈᓐᓃᖅᑕᑎᑦ ᐊᒃᓱᐊᓖᖕᓄᒃ ᐃᖏᕋᔾᔪᑏᑦ ᐊᒻᒪ ᑕᒪᕐᒥᑦ ᐊᔪᕈᓐᓃᕐᓱᒋᑦ ᐱᓕᕆᐊᕆᔭᒃ."

ᑕᒪᓐᓇ ᓱᓕᓕᕐᓂᐅᔪᖅ ᑕᖅᑭᓕᐊᕈᒪᓂᕐᒧᑦ ᐃᓅᓯᓕᒫᓐᓄᑦ ᐃᓕᓐᓂᐊᕐᓂᐅᕙᖅ, ᑭᓯᐊᓂ ᑐᑭᖅᑳᖅ ᒪᓕᒡᒃᓴᑎᐊᕚᐅᓗᓂ ᐊᒻᒪ ᐱᓕᕆᖅᑎᖅᑲᕈᓇᑦᑎᐊᕐᓂᐅᓪᓗᓂ ᐱᓕᕆᖅᑎᒋᔭᒧᑦ.

"ᐃᓱᒪᒋᔭᕋ ᖁᕝᕙᐊᒋᔭᑎᑦ ᐱᓕᕆᓂᐅᔪᑦ ᐱᒻᒪᕆᐅᓇᓱᒋᓪᓗᒋᑦ, ᐊᒻᒪ ᐃᑲᔫᑎᑦᓯᑦ ᐊᔪᖏᑦᑎᐊᓕᕐᓂᕐᒧᑦ," ᓈᒃᓴᓐ ᐅᖃᖅᖢᓂ. "ᐊᒻᒪ ᐃᓱᒪᒋᔭᕋ ᑕᖅᑭᓕᕆᕙᒃᑐᑦ ᑕᐃᒪᓐᓇᐅᖕᒥᔪᑦᑕᐅᖅ."

ᐃᓚᐅᖃᑕᐅᓂᐅᑉ ᐊᓯᐊᒍᑦ ᐃᓕᓐᓂᐊᒃᑲᓐᓂᕐᓂᕐᒥᑦ ᓲᕐᓗ ᐅᓇᑕᖅᑐᒃᓴᖏᓐᓄᑦ ᐅᕙᑦᑑᓐᓃᑦ ᓯᓚᐃᓐᓇᓕᕆᔪᑦ ᐊᐅᓪᓛᖅᑐᑦ ᐃᓕᓐᓂᐊᖅᓱᑎᒃ, ᐊᒻᒪ ᐱᓕᕆᑦᑎᐊᕐᓂᕐᒧᑦ ᓈᓴᐅᓯᕆᓂᕐᒥᑦ, ᖃᐅᔨᓴᖅᑐᓕᕆᓂᕐᒥᑦ, ᐊᒻᒪ ᖃᕆᓴᐅᔭᒃᑯᑦ ᖃᐅᔨᓴᖅᑐᓕᕆᓂᕐᒧᑦ ᐃᓕᓐᓂᐊᕐᓃᑦ, ᓈᒃᓴᓐ ᐅᖃᐅᔾᔨᕆᐊᖅᐳᖅ ᐱᔪᒃᓯᑎᑦᑎᓂᕐᒥᑦ ᑕᖅᑭᓕᕆᕙᒃᑐᓄᑦ ᓇᓂᓯᓗᓂ ᐅᒃᐱᕐᓇᖅᑐᓂᑦ ᒪᓕᒡᒃᓴᑎᐊᕙᖕᓂᑦ ᑕᕝᕙᓂ ᓯᓚᐃᓐᓇᓕᕆᔪᓂᑦ ᖃᐅᔨᓴᕐᓂᕐᒧᑦ. ᑕᒪᓐᓇ ᐱᒻᒪᕆᐅᕗᖅ ᒪᒃᑯᒃᑐᓄᑦ ᐊᕐᓇᓄᓪᓗ, ᑕᒪᓐᓇ ᐱᓕᕆᕝᕕᐅᔪᓂᑦ ᓂᕈᐊᖅᑕᐅᕙᔪᖕᒪᑕ ᐊᖑᑏᑦ.ᑖᒃᑯᐊ ᑲᑎᓕᒫᖅᖢᒋᑦ 11 ᐳᓴᓐᑎᖑᕗᑦ ᑕᖅᑭᓕᕆᔩᑦ ᐊᕐᓇᐅᔪᑦ.

"ᐊᑐᓚᐅᖅᑕᕋ ᒪᒃᑯᒃᖢᖓ ᑕᖅᑭᓕᕆᔪᓄᑦ ᑕᖅᑭᓕᕆᔩᓂᑦ ᐆᒃᑑᑎᓂᑦ ᐅᕙᓐᓅᖓᔪᓄᑦ, ᕿᓂᓕᓚᐅᖅᐳᖓ [ᖃᐅᔨᒋᐊᕈᑎ] ᐊᕐᓇᓂᑦ ᓯᓚᐃᓐᓇᕐᔫᖅᓯᒪᔪᓂᑦ ᐅᕙᓂᑦ ᓴᓇᔪᓂᑦ ᑕᖅᑭᓕᕆᕝᕕᐅᔪᒥᑦ. ᐅᓂᒃᑳᖏᑦ ᐅᖃᓕᒫᖅᖢᒋᑦ ᖃᓇᓴᐅᔭᒃᑯᑦ, ᐊᒻᒪ ᐅᕙᓐᓄᑦ ᐃᓚᓕᐅᑎᓇᓱᒋᑦ ᐃᓅᓯᓐᓄᑦ," ᓈᒃᓴᓐ ᐅᖃᖅᖢᓂ. "ᐊᒻᒪ ᐅᕙᓐᓂᑦ ᐅᖃᐅᑎᓪᓗᖓ ᐅᕙᖓ ᐱᔪᒪᓂᖓᓂᑦ ᐱᔪᒪᔭᖓᓃᓐᖓᖅᐳᖅ, ᐊᒻᒪ ᓄᓇᕐᔪᐊᑉ ᐱᔪᒪᔭᖓᓂᐅᕐᑎᑦᑐᖅ ᐊᒻᒪ ᑕᑯᔪᒪᔭᖓᓂᐅᕐᑎᑦᑐᖅ. ᓇᖕᒥᓂᖅ ᑕᑯᔪᒪᔭᓐᓂᑦ ᐊᑐᕈᒪᔭᓐᓂᑦᑐ." &

ᖃᓇᓴᐅᔭᑰᖅᑐᑦ ᐊᒻᒪ ᑲᑐᔾᔨᖅᑎᕆᑦ

ᐃᓕᓐᓂᐊᖅᑎᑦ ᐃᓕᓐᓂᐊᕐᓂᖅᑯᑦ ᖃᓄᖅ ᐊᐅᓚᑦᑎᓂᕐᒥᑦ ᐃᖏᕐᕋᓲᒥᑦ ᒫᓐᑯᑦ ᐱᓕᕆᐊᕐᒍᑎᓪᓗᒍ ᓴᖅᑮᔾᖅᑎᑕᐅᓪᓗᓂ ᑕᐃᑲᓐᖓᓚᑦ MCSS–ᑯᓐᓂᑦ–ᐱᓐᖑᐊᒃᑯᓪᓗ ᑲᑎᓐᖓᓂᖅᑳᖅᑎᓪᓗᒥᑦ

ᑎᑎᕋᖅᑐᖅ ᐃᐅᕙᓐ ᓇᓪ

ᐱᓕᕆᐊᖃᖅᑎᑕᐅᔪᓂᑦ ᐊᐅᓚᑦᑎᓂᖅ

ᐃᓅᔪᑦ ᐅᑎᕐᓂᐊᖅᑐᑦ ᑕᖅᑭᕐᒧᑦ

ᐃᓅᔪᑦ ᐅᑎᕐᓂᐊᖅᑐᑦ ᑕᖅᑭᒧᑦ. ᐃᓅᓯᖅ ᓄᓇᕐᔪᐊᒥᑦ ᐃᒃᐱᖕᓂᐊᓂᐊ ᓲᕐᓗ ᑕᓯᕐᒥᑦ ᐊᓂᓪᓗᓂ. ᓯᕗᓪᓕᕐᒥᑦ ᑕᖅᑭᓕᐊᓚᐅᖅᓯᒪᕗᒍᑦ ᐊᕐᕋᒍ 1969–ᒥᑦ. 12–ᖑᓚᐅᖅᑐᑦ ᐊᒥᐊᓕᒐᕐᒥᐅᑦ ᐊᖑᑏᑦ ᐅᓪᓗᓇᐊᑉ ᓯᓈᒍᑦ ᐊᒻᒪ ᐊᓯᐊᓂᑦ ᑎᓴᒪᐅᔪᓄᑦ ᐱᓱᓚᐅᖅᑐᑦ ᓂᕚᖓᔾᔪᑎᓕᖕᓂᑦ ᐅᓪᓗᓇᐊᓂᑦ ᖃᖓᑦᑕᖅᑎᑕᐅᓯᒪᔫᒃᑯᑦ ᑲᔪᓯᓂᓖᑦ 9–ᓂᑦ ᐊᐅᓚᑦᑎᓃᑦ. ᑕᐃᒪᓐᖓᓂᑦ, ᒪᕐᕉᒃ ᓄᓇᓕᖅᑲᕝᕙᒃ–ᓵᕙᐊᑦ ᐊᒻᒪ ᓴᐃᓃᓯᒃᑯᑦ–ᐊᑐᕐᓂᖅᑦᑎᐊᓚᐅᖅᐳᑦ ᐊᐅᓚᑦᑐᓐᓇᖅᑐᒥᑦ ᐃᓕᓯᓪᓗᑎᒃ ᑕᖅᑭᕐᒧᑦ. ᑭᓯᐊᓂ ᒫᓐᓇ ᓄᑖᒥᑦ ᐱᒋᐊᓕᕆᕗᑦ. ᐊᔾᔨᙱᖏᑦᑐᑦ ᓄᓇᓕᖅᑲᕝᕙᑦ–ᑭᖑᓐᓕᖅᐹᒥᑦ ᓈᓴᕐᓂᖅ, 8–ᖑᔪᑦ–ᐊᒻᒪ ᓈᓴᒃᓴᐅᙱᑦᑐᑦ ᑲᑐᔾᔨᖃᑎᒌᑦ ᐸᕐᓇᐃᕙᓪᓕᐊᕗᑦ ᓄᑖᒥᑦ ᐅᓪᓗᓇᐊᓕᐊᕐᓗᑎᒃ ᐊᐅᓚᓂᕆᓂᐊᖅᑕᖕᖓᓂᑦ ᐊᒻᒪ ᑲᓇᑕᒥᑦ ᐋᖅᑭᒃᑭᕗᑦ ᐃᓚᐅᖃᑕᐅᓗᑎᒃ ᐊᑐᕐᓂᐅᓂᐊᖅᑐᒥᑦ ᓯᕗᓪᓕᕐᒥᑦ.

ᖃᓄᐃᒻᒪᑦ ᑕᖅᑭᓕᐊᕐᓗᑏᒃ? ᖃᓄᐃᒻᒪᑦ ᓄᓇᕐᔪᐊᖅ ᕿᒪᒡᓗᒍ? ᑕᑯᓇᕆᐊᕐᓗᑎᒃ. ᖃᐅᔨᓴᕆᐊᖅᑳᑦᑕ ᓇᑭᓐᖔᖅᓯᒪᓂᑦᑎᓐᓂᑦ. ᑕᑯᓇᕆᐊᖅᑲᖅᐳᑦ ᑕᐅᕗᖓ ᐊᒻᒪ ᑕᑯᓗᑕ ᓇᒨᓐᖓᐅᖓᖕᖔᑦᑕ. ᑖᓐᓇ ᑕᖅᑭᖅ ᑐᑎᔾᔪᑎᐅᕗᖅ–ᖃᓂᓛᖅ ᑕᕆᐅᑦᑎᓐᓄᑦ–ᑕᑯᓇᒍᓐᓇᖅᑕᕗᑦ ᐅᖓᑖᓄᓪᓗ. ᓯᕗᓪᓕᕐᒥᑦ ᐱᒋᐊᕈᑎᐅᕗᖅ ᖃᐅᔨᓴᕈᑎᐅᓗᓂ ᖃᓇᓴᐅᔭᒃᑯᑦ ᑕᐃᒪᐃᑦᑕᕆᐊᖅᑲᖅᐳᒍᑦ.

ᐅᓪᓗᕆᐊᑦ ᓲᕐᓗ ᓯᕿᓂᑎᑐᑦ ᐊᓂᕐᓂᖅᕿᓇᖕᒋᑦᑐᒥᑦ ᐊᒻᒪᑦᑕᐅᖅ ᐳᔭᖅᑕᖅᑲᖅᐳᖅ ᓯᐅᕋᕐᓂᑦ ᓄᓇᕐᔪᐊᕐᒥᑦ. ᐃᓅᓯᖅᑕᖅᑲᖅᑐᒃᓴᐅᕗᖅ ᑕᐸᐹᓂ. ᓯᓚᑐᔪᐊᓗᖕᒥᑦ. ᐅᓄᖅᑑᕗᑦ ᐃᓅᓯᖅ. ᑐᑭᓯᔪᓐᓇᓐᖏᓚᕗᑦ ᖃᓄᖅ ᐅᖅᑲᖅᑎᖅᑲᕐᓂᕐᒥᑦ ᑖᒃᑯᓂᖓ ᒫᓐᓇ, ᓯᕗᓂᐅᔪᑦ ᐃᓅᓯᖅ ᓄᓇᕐᔪᐊᕐᒥᑦ, ᐊᑐᓕᖅᑐᖅ ᐃᓅᔪᑦ ᐃᓅᓂᐊᓂᑦ, ᐋᖅᑭᒃᑕᐅᔪᑦ, ᓇᓗᓇᐃᕆᕗᖅ ᑭᓱᑐᐃᓐᓇᐃᑦ ᐊᔪᕐᓇᕈᓐᓂᕈᓐᓇᕐᒪᑕ. ᐃᓅᔪᑦ ᓯᓚᐃᓐᓇᒃᑯᑦ ᐃᖏᕐᕋᑎᑕᖓᑦ ᐊᐅᓪᓚᖅᐸᖅ ᓯᓚᐃᓐᓇᖅᑎᒍᑦ, ᐊᐅᓪᓚᖅᑎᑕᐅᓪᓗᓂ ᐊᓯᙵᓐᓇᓄᑦ ᐊᐅᓪᓚᖅᑎᑕᐅᓪᓗᓂ ᐊᓯᙵᓐᓇᓄᑦ ᐅᓪᓗᓇᐊᕐᓇᖅᑐᓂᑦ, ᐊᒻᒪ ᒫᓐᓇᐅᔭᖅᑐᖅ, ᖃᖓᑦᑕᖅᑎᑕᐅᔪᖅ ᑕᐃᔭᐅᔪᖅ ᓴᐃᒻᒪᑦ ᑯᐊᓐᓇᐅᔭᖅᑐᖅ ᐅᓪᓗᓇᐊᓄᑦ ᓄᑖᕐᒥᐊᕐᔪᐊᖅ ᐱᓕᕆᐊᕐᔪᐊᖅᑕᐅᓂᐊᖅᑐᑦ ᖃᓄᖅ ᓇᒃᓴᐅᑎᓪᓗᒍ, ᐊᐅᓪᓚᖅᑎᑕᐅᓪᓗᓂ ᐊᓯᖕᓂᓐᓄᑦ

ᐊᐅᓪᓚᖅᐸᖅ ᓯᓚᐃᓐᓇᖅᑎᒍᑦ, ᐊᐅᓪᓚᖅᑎᑕᐅᓪᓗᓂ ᐊᓯᙵᓐᓄᑦ ᐅᓪᓗᓇᐊᓄᑦ, ᐊᒻᒪ ᒫᓐᓇᐅᓵᖅᑐᖅ, ᖃᖓᑦᑕᖅᑎᑕᐅᔪᖅ ᑕᐃᔭᐅᔪᖅ ᔭᐃᒻᔅ ᑯᐊᑉᒥᑦ ᓯᓚᐃᓐᓇᕐᒥᑦ ᕿᒥᕐᕈᔾᔪᑎ, ᐊᑐᖅᑕᖅᑲᐅᓇᖅᓯᒪᔪᑦ ᑕᑯᔪᓐᓇᕐᑐᑕ ᑕᐃᔅᓯᒪᓂᒧᑦ ᐊᓂᕐᓂᖅᑲᕐᓇᖅᑎᑦᑐᒃᑯᑦ.

ᑕᖅᑭᕐᒧᑦ ᐱᓕᕆᐊᖑᓂᐊᖅᑐᒧᑦ, ᑲᓇᑕᒥᐅᑕᑦ ᖃᖓᑦᑕᖅᑎᑦᑎᕗᑦ ᐅᓪᓗᓇᐊᓄᑦ ᕿᒥᕐᕈᓇᖑᑎᒥᑦ. ᐱᓕᕆᐊᖃᖅᑎᑕᐅᔪᓂᑦ ᐊᐅᓚᑦᑎᓂᐅᔪᖅ. ᑲᑐᔾᔨᖃᑎᒌᑦ ᑐᕌᒐᖅᐳᑦ ᓴᖅᑭᑦᑎᓗᑎᒃ ᓄᑖᖑᔪᒥᑦ ᖃᓇᓴᐅᔭᕐᓄᑦ ᐱᓕᕆᔾᔪᑎᒥᑦ ᓯᓚᐃᓐᓇᕐᒧᑦ, ᓴᓇᓚᐅᖅᐳᑦ ᐊᔾᔨᑲᓴᒃᑕᖕᓂᑦ ᐃᓱᒪᑐᔪᒥᑦ (AI–ᒥᑦ ᑕᐃᔭᐅᔪᖅ) ᑕᐅᑐᒃᑎᑦᑎᓂᐊᖅᑐᒥᑦ ᑕᖅᑭᕐᒥᓪᓗᓂ ᐊᕐᕋᒍᒥᑦ 2023–ᒥᑦ–ᐊᕐᕌᒎᕐᓂᑦᑐᕐᔫᓐᓃᑦ ᒫᓇ. ᓱᓕᓕᖅᑎᓪᓗᒍ ᖃᓇᓴᐅᔭᒨᖅᑐᖅ ᒫᓇ, ᐃᑲᔪᖅᑕᐅᓗᑎᒃ ᑖᒃᑯᓄᖓ ᑲᓇᑕᒥᐅᑕᕐᓄᑦ ᓯᓚᐃᓐᓇᓕᕆᔪᓄᑦ ᑲᑐᔾᔨᖃᑎᒌᖑᔪᓄᑦ, ᑲᓇᑕᒥᐅᓄᑦ ᓴᓇᕗᑎᓕᕆᔩᑦ ᐊᒻᒪ ᐃᓕᓐᓂᐊᕐᓂᕐᒧᑦ ᐃᓯᒫᔫᑎᓖᑦ ᖃᐅᔨᓴᕐᓂᕐᒥᑦ–ᑕᐅᓴᖕᒋᓐᓂᑦ ᐃᓄᐃᑦ ᑲᓇᑕᒥᑦ–ᐃᓂᖅᑕᖅᐳᑦ ᐱᓕᕆᖅᑕᐅᓗᑎᒃ ᐱᒻᒪᕆᐅᔪᒥᑦ ᓯᕗᓂᐅᔪᒥᑦ ᖃᐅᔨᑎᓪᓗᒋᑦ.

ᑖᓐᓇ AI–ᖑᔪᖅ ᐊᑐᕈᑎ ᑲᔪᓯᓂᓕᒃ ᖃᕆᓴᐅᔭᒧᑦ ᐋᖅᑭᒍᑎ, ᐃᓕᔭᐅᓪᓗᓂ ᖃᕆᓴᐅᔭᕐᒧᑦ, ᐊᒻᒪ ᐊᑐᓕᖅᑎᑕᐅᓪᓗᓂ ᖃᕆᓴᐅᔭᒃᑯᑦ ᐅᕙᓃᓐᓃᑦ ᖃᕆᓴᐅᔭᒃᑯᑦ ᐃᖏᕐᕋᓂᐊᒍᑦ ᐊᐅᒃᑕᔫᖅ, ᐊᒻᒪ ᑖᒃᑯᐊ ᐊᔾᔾᔩᑦ ᑕᕙᓐᖓᓚᑦ ᒥᑭᑦᑐᑯᓗᒃ ᐃᖏᕐᕋᔪᓐᓇᖅᑐᖅ ᓇᑐᓇᐃᑕᓗᓂ ᐅᓪᓗᓇᐊᑦ ᓄᓇᖓᓂᑦ. ᐊᑐᕓᖅᑐᒥᑦ ᐊᑐᕐᓂᐅᕓᖅᑐᖅ, ᐊᑐᕐᓂᐊ AI–ᒥᑦ ᐊᐅᓚᑦᑎᓂᐊᖅᐳᑦ ᐊᐅᓚᔪᓐᓇᖅᑐᒥᑦ ᐃᖏᕐᕋᓲᒥᑦ ᓇᕈᓪᓗᒍᑎ ᐊᑦᑕᕐᓇᖏᓪᓗᓂᓗ, ᐊᐅᓚᑦᑐᓂᔾᔪᖅ ᖃᐅᔨᓇᓱᒃᑲᓐᓂᕐᓗᑎᒃ ᓱᒃᑲᓂᖅᓴᐅᔪᒥᑦ, ᐊᒻᒪ, ᐊᖏᓂᖅᓴᐅᔪᒥᑦ, ᐃᑲᔪᕐᓗᒋᑦ ᐃᓄᐃᑦ ᐊᐅᓚᑦᑎᔪᑦ ᓄᓇᕐᔪᐊᕐᒧᐊᕐᓗᒍ ᐸᕐᓇᐃᔪᑦ ᖃᖓ ᐃᓄᐃᑦ ᑕᖅᑭᕐᒧᐊᕈᓐᓇᓵᕐᒪᖔᑕ. ᑖᓐᓇ ᖃᕆᓴᐅᔭᖅ ᐃᓕᔭᐅᓂᐊᖅᐳᖅ ᐅᓪᓗᓇᐊᒧᐊᕐᓂᐊᖅᑐᒧᑦ ᓴᓇᔭᐅᓪᓗᓂ ᔮᐸᓐᓯᓄᑦ

ᐊᔾᔨᓕᐅᖅᑕᐅᔪᖅ ᑖᒃᑯᓈᓐᖓᑦ MISSION CONTROL SPACE SERVICE-ᑯᓐᓂᑦ ᑲᑐᔾᔨᖃᑎᒌᑦ

ᑖᒃᑯᐊ ᐊᐅᓚᑦᑎᔨᒪᕆᓪᓚᑦ ᑕᐃᔭᐅᔪᑦ
Mission Control Space Services Rover-ᒥᑦ ᐊᐅᓚᑦᑎᓂᖅᑲᖅᓱᑎᒃ ᐊᔪᕈᓐᓃᖅᓴᖅᓱᑎᒃ ᓯᓚᐃᓐᓇᕐᒧᑦ ᐃᖏᕐᕋᓂᕐᒥᑦ

ᑲᑐᔾᔨᖃᑎᒌᓄᑦ. ᐊᔾᔩᑦ ᑕᐃᑲᓐᖓᓖᕐᓂᐊᖅᐳᑦ ᐃᖏᕋᓱᒥᑦ ᐅᓇᓕᖕᓂᑦ ᑕᐃᔭᐅᔪᖅ Arab Emirates–ᒥᑦ. ᒥᓐᓂᐊᖅᑐᖅ ᐊᒻᒪ ᐊᐅᓪᓚᕐᓂᐊᑦᑐᖅ ᖃᖓᑦᑕᖅᑎᑕᐅᓂᐊᖅᐳᖅ ᐊᑕᐅᑦᑎᒃᑯᑦ ᑕᐃᑲᓂ ᐊᒥᐊᓕᒐᓂᑦ ᖃᖓᑦᑕᕐᕕᐅᓱᒥᑦ, ᓴᓇᔭᐅᓪᓗᓂ ᑖᒃᑯᓇᖓ SpaceX–ᒥᑦ ᑕᐃᔭᐅᔫᓄᑦ. ᑲᓇᑕᒥᐅᑦ ᐃᓚᐅᓂᐊᖅᐳᑦ ᓄᓇᕐᔪᐊᓕᒫᒧᑦ ᐊᑐᕐᓂᕆᔭᐅᓂᐊᖅᑐᒧᑦ.

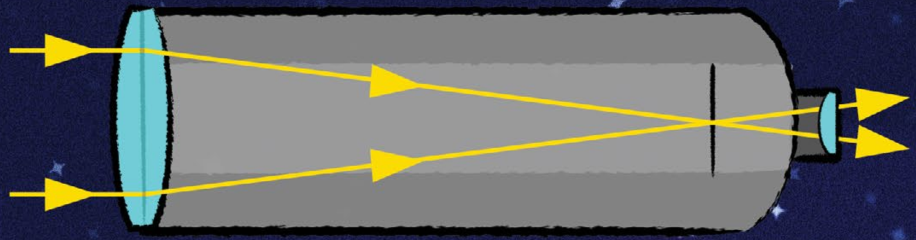
ᑕᑯᑎᐊᕐᓗᒍ ᓯᕗᓂᕗᑦ, ᐱᓕᕆᐊᒃᓴᖃᕖᔫᐊᖅᐳᖅ ᑭᓇᑐᐃᓐᓇᕐᒧᑦ ᐃᓚᐅᔪᒪᔪᓄᑦ ᕿᒥᕐᕈᓕᖅᐸᑕ ᐊᒻᒪ ᖃᐅᔨᓕᖅᐸᑕ; ᐃᓚᐅᔪᒪᔪᑦ ᓯᓚᐃᓐᓇᓕᕆᓃᑦᑐᓄᑦ ᐃᓚᒋᔭᐅᔭᕆᐊᖃᖅᐳᖅ. ᐊᕐᕌᒍᓄᑦ ᐊᒡᒋᖅᑐᓄᑦ, ᑲᓇᑕᒥᐅᑕᑦ ᓯᕗᓪᓕᖅᐸᐅᓐᓗᑎᒃ ᐃᓄᖕᓂᑦ ᐅᑎᕐᓂᐊᖅᑐᓄᑦ ᑕᖅᑭᕐᒧᑦ ᐊᒻᒪ ᖃᖓᑕᓗᑎᒃ ᑖᔅᓯᒧᖓ Artemis–ᖑᔪᒧᑦ ᐱᓕᕆᐊᖑᔪᒧᑦ. ᐊᑕᐅᓯᐅᔪᖅ ᑕᕝᕙᓐᖓᑦ ᑎᓴᒪᐅᔪᓂᑦ ᑖᓇ ᐃᓚᐅᔪᖅ ᓯᕗᓪᓕᖅᐹᖑᓂᐊᖅᐳᖅ ᐊᒥᐊᓕᒐᕐᒥᐅᑕᐅᖏᔅᓗᓂ ᑕᑯᓗᓂ ᑕᖅᑭᕐᒥᑦ ᐅᖓᓯᖕᓂᓕᖕᒥᑦ 100 ᑭᓛᒪᑐᒥᑦ. ᑭᓯᐊᓂ ᑕᖅᑭᓕᓇᕚᒃᑐᑦ, ᐅᓄᖅᑑᕗᑦ ᐱᓕᕆᐊᒃᓴᑦ ᐃᑲᔪᖅᑐᑦ ᐊᐅᓚᓂᐅᔪᒥᑦ ᓯᕗᓕᑦᑎᓐᓄᑦ. ᓴᓇᖑᐊᓗᒃᑏᑦ ᓯᕗᓪᓕᐅᕗᑦ ᐃᓄᐃᑦ ᐱᓕᕆᐊᖃᕐᓗᑎᒃ ᕿᒥᕐᕈᓂᕐᒥᑦ ᐊᑐᕐᓂᐊᔪᓂᑦ, ᓴᐅᑐᓐᖑᐊᕐᓗᒍ ᐊᑐᕈᓐᓇᖅᑐᑦ ᐱᕈᖅᓴᐃᔨᐅᔪᓂᑦ. ᐋᖅᑭᒃᓯᐃᔨᑕᖃᕋᓂᐊᖅᑲᖅᐳᖅ. ᖃᐅᔨᓴᑐᓕᕆᔨᑕᖃᕋᓂᐊᖅᑲᖅᐳᖅ. ᖃᕆᓴᐅᔭᓕᕆᔩᓐᓇᖅᑐᖃᕋᓂᐊᖅᑲᖅᐳᖅ ᐊᒻᒪ ᓘᒃᑖᓂᑦ ᐊᒻᒪᓗ ᑭᒡᒐᖅᑐᐃᔨᓂᑦ ᐃᓕᖕᓂᐊᖅᑐᓂᒡᓗ ᐋᖅᑭᒃᓱᐃᔨᓂᑦ.

ᑭᓇ ᐅᖃᕈᓐᓇᖅᐸ ᓯᕗᓕᕗᑦ ᖃᓅᓂᐊᕐᒪᖔᑕ? ᐃᓅᓯᖅ ᓄᓇᕐᔪᐊᕐᒥᑦ ᐃᒃᐱᒍᓱᓕᖅᐳᖅ ᐊᑐᕐᓂᐅᔪᓂᑦ ᓯᓚᐃᓐᓇᕐᒥᑦ ᓄᓇᒋᓯᒪᔭᑦᑎᓐᓂᑦ ᑭᓯᐊᓂ ᑭᓯᑭᐊᖅ ᖃᐅᒫᓪᓚᓚᐅᕐᒪᑦ ᓴᖅᑭᑦᑎᓐᓂᑦ ᐊᕐᕋᒍᓂᑦ ᐅᓄᖅᑐᑦ ᐊᓂᒍᖅᑐᑦ. ᑕᒪᓐᓇ ᐊᑐᕐᓂᖏᓂᐊᖅᑕᕗᑦ ᓯᕗᓕᑦᑎᓐᓂᑦ, ᑲᓇᑕ, ᐊᒻᒪ ᑲᓇᑕᒥᐅᑕᑦ, ᐃᓚᒋᔭᐅᔪᓐᓇᕐᒪᑕ. ᐃᓚᒋᔭᐅᔪᓐᓇᓇᕗᑎᑦ ᑕᖅᑭᓕᐊᕈᑦᑕ ᐊᒻᒪ ᐅᖓᑖᓄᑦ. &

ᖃᓄᖅ ᐅᓪᓗᓇᐊᓂᑦ ᑕᐅᑐᒍᑏᑦ ᐊᔪᖏᑉᐸᑦ?

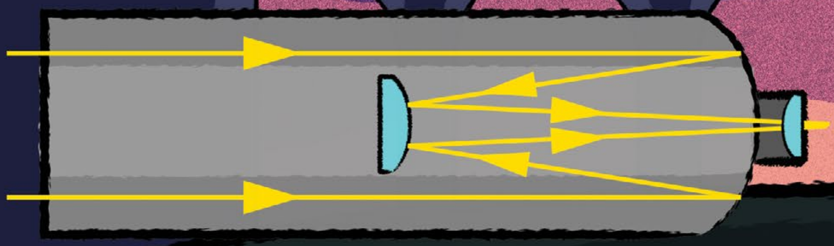
ᓴᖅᑭᑦᑎᐊᕈᑎᐊ ᑕᐅᑐᒍᑎᐅᑉ

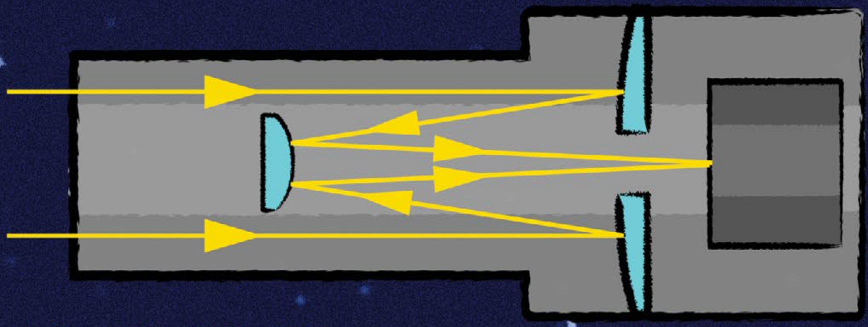
ᓯᕗᓪᓕᐅᔪᑦ ᑕᐅᑐᒍᑏᑦ ᐋᖅᑭᒃᓯᒪᓂᖃᖅᐳᑦ ᐊᓯᖏᓪᓗᑦᑕᐅᖅ ᐊᒻᒪ ᐊᑐᖅᑕᐅᔪᑦ ᓯᓚ ᒫᓐᓇ. ᓯᓪᓗ, ᐋᖅᑭᒃᑎᖅᓯᒪᔪᖅ ᐊᓕᒍᖅ ᑕᐅᑐᒍᑎᐊᓂ ᐃᓯᐊᓃᑦᑐᖅ, ᐊᒡᒍᖅᐸᒃᑐᖅ ᖃᐅᒪᓂᐅᔪᒥᑦ ᕿᓚᖕᒥᑦ ᐊᒻᒪ ᐅᑯᓪᓗᓂ (ᐅᕝᕙᓘᓐᓃᑦ ᓴᖅᑭᑦᑎᐊᖅᓗᓂ) ᑐᕌᕐᓗᓂ ᑕᐅᑐᒍᑎᐅᑉ ᐃᓯᐊᓄᑦ, ᑖᒃᑯᐊ ᖃᐅᒪᔫᒃ ᑲᑎᓐᓂᖓ. ᑖᒃᑯᐊ ᐊᔾᔩᑦ ᑲᑎᑕᐅᔪᑦ ᑕᕝᕘᓇ ᑐᓪᓕᐊᓂ ᑕᐅᑐᒍᑎᒃᑯᑦ, ᑲᑎᒃᑲᒥᒃ ᑕᕝᕗᖓ ᑕᐅᑐᒍᑎᒧᑦ. ᑕᐅᑐᒍᑎᐊᑕ ᐃᓯᐊ ᑕᑭᓂᐊ ᐊᒃᑐᐃᓂᖃᖅᐳᖅ ᐊᖏᓐᓇᖅᑐᐊᓂᑦ ᐊᒻᒪ ᐋᖅᑭᒍᑎᐅᓐᓗᓂ ᓯᓪᓗᖓᓂᑦ ᑕᑭᓂᐊᓂᑦ, ᐊᖏᓂᕆᔭᖓ ᑕᐅᑐᒍᑎ ᐊᓕᒍᖅ (ᐊᖓᔪᖅ) ᐋᖅᑭᒃᓱᔪᑎᐅᕗᖅ ᑲᑎᖅᓯᐃᓂᕐᒥᑦ ᖃᐅᒪᓂᐅᔪᒥᑦ ᐊᒻᒪ ᖃᐅᒪᓂᐊᓂᑦ ᑕᑯᔭᕖᑦ. ᐃᓚᖏᑦ ᑕᐅᑐᒍᑏᑦ ᓴᖅᑭᑦᑎᐊᒃᑲᓐᓂᕈᑎᖃᖅᐳᑦ ᐋᖅᑭᐊᕈᑎᒥᑦ, ᐊᐅᓚᑦᑎᔪᖅ ᑕᑯᓪᔪᑎᒥᑦ ᐊᔾᔨᓕᖅᑎᕐᓂᐅᒃ ᑕᐅᑐᒍᑎᐊ ᑖᒃᑯᐊᒃ ᒪᕿᒃ ᐊᓕᒎᒃ.

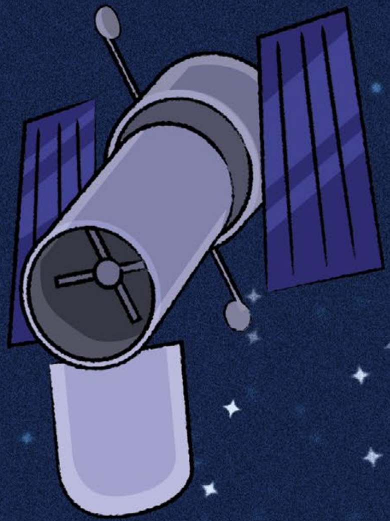


ᑕᕐᕋᒧᑦ ᑕᐅᑐᒍᑎ

ᐋᖅᑭᒃᓯᒪᓂᐊ ᐃᓗᐊᒍᑦ ᓴᖅᑮᔭᑦᑎᐊᕈᑎᐊ ᑕᐅᑐᒍᑎᐅᑉ, ᑕᕐᕋᒧᑦ ᑕᐅᑐᒍᑎ ᐊᑐᖅᐸᒃᐳᖅ ᑕᕐᕋᖅᑑᑎᒥᑦ ᐃᓯᐊᓂᑦ ᓯᓪᓘᑉ ᐅᑎᕐᓂᐊᕐᓗᓂ ᖃᐅᒪᔪᖅ ᑐᓪᓕᐊᒧᑦ ᑕᕐᕋᖅᑑᑎᐅᑉ, ᐃᖏᕐᕋᑎᑦᑎᔪᖅ ᖃᐅᒪᓂᐊᓂᑦ ᑕᐅᑐᒍᑎᐊᓄᑦ. ᑕᕐᕋᖅᑑᑎ ᐊᔪᕐᓇᖏᓐᓂᖅᓴᐅᕙᑦ ᓴᓇᓗᒋᑦ ᐊᒻᒪ ᐅᕐᑭᓐᓂᖅᓴᐅᓪᓗᑎᒃ ᐊᓕᒍᕐᒥᑦ ᑕᑯᔾᔪᑎᒥᑦ, ᑕᑯᔾᔪᑏᑦ ᐋᖅᑭᒃᑕᐅᔪᓐᓇᕐᒪᑕ ᐊᖏᓂᖅᓴᐅᓗᑎᒃ ᐊᑭᑐᓗᐊᖏᓐᓂᖅᓴᐅᓗᑎᒡᓗ. ᐅᑎᕐᔭᖅᓂᖓ ᐅᖓᓯᖅᓂᐊ ᑲᑎᖅᓯᖅᑕᐅᔪᑦ ᖃᐅᒪᔪᖅ ᑐᑭᖃᖅᐳᖅ ᑕᕐᕋᖅᑐᕐᓂᖅ ᑕᐅᑐᒍᑎᒧᑦ ᓇᐃᓐᓂᖅᓴᒥᑦ ᓯᓪᓗᖃᓇᐊᖃᖅᐳᖅ. ᓲᖃᐃᒻᒪ ᐊᖏᓂᖅᓴᒥᑦ ᐊᖓᔪᓕᒃ ᑲᑎᖅᓯᐃᓂᖅᓴᐅᖕᒪᑦ ᖃᐅᒪᔪᒥᑦ, ᐊᑐᕈᑎᑦᑎᐊᕙᐅᓂᖅᓴᐅᕗᖅ ᑕᑯᓇᖕᓂᕐᒥᑦ ᐊᖏᓂᖅᓴᓂᑦ ᐅᖓᓯᖕᓂᐊᓂᒡᓗ. ᑖᓐᓇ ᐊᐃᓵᒃ ᓃᑕᓐ ᐱᒃᑯᕆᔭᐅᑦᑎᐊᖅᐳᖅ ᓴᓇᓚᐅᕐᒪᑦ ᑕᐅᑐᒍᑎᒥᑦ ᓯᕗᓪᓕᖅᐹᒥᑦ ᐊᕐᕌᒍ 1668−ᖑᑎᓪᓗᒍ.



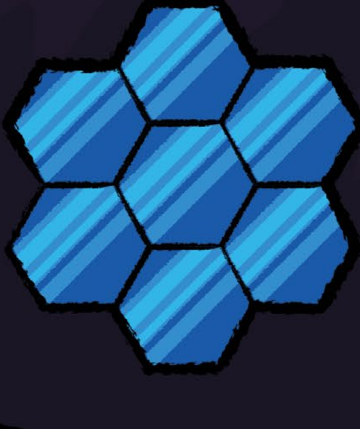




ᓯᓚᐃᓐᓇᕐᒧᑦ ᑕᑯᓇᒍᑎ

ᓲᕐᑲᐃᒻᒪ ᓄᓇᕐᔪᐊᑉ ᐊᓂᕐᓂᖅᑲᕐᓇᖏᓐᓂᖓ ᑲᑎᑉᐸᖕᒪᑦ ᖃᐅᒪᓂᕐᒥᑦ ᑎᑭᐅᑎᕙᓪᓕᐊᔪᒥᑦ, ᑕᐅᑐᖕᓂᖅ ᓯᓚᐃᓐᓇᕐᒥᑦ ᖄᖓᓂᑦ ᑕᑯᑦᑎᐊᕐᓇᖏᑦᑑᖕᒥᖕᒪᑦ. ᖃᐅᒪᓂᐅᔪᑦ ᖃᖓᑦᑕᖅᑎᑕᐅᕙᓪᓕᐊᔪᑦ ᑕᑯᔪᓐᓇᓐᖏᑦᑕᑦᑎᓐᓂᑦ ᑲᑎᑉᐸᓪᓕᐊᔪᑦ, ᖄᖅᑕᐅᕙᓪᓕᐊᓪᓗᑎᑦ ᐳᔪᕐᒧᑦ ᐊᒻᒪ ᒪᕐᑯᕆᔪᖕᒧᑦ, ᐅᕝᕙᓘᓐᓃᑦ ᑕᒪᓐᓇ ᐊᒃᑐᐃᓂᐅᔪᖅ ᐳᓪᓚᐅᔪᖅ ᐊᓯᔾᔩᔪᖅ (ᐊᐅᓚᓂᖓ) ᐊᓂᖅᓵᖅᑕᕐᑎᓐᓂᑦ. ᓂᕚᖓᓪᔪᑎᓖᑦ ᖃᖓᑦᑕᖅᑎᑕᐅᓯᒪᔪᑦ, ᐊᓂᕐᓂᖅᑲᕐᓇᖏᑦᑐᒦᑦᑐᑦ, ᓄᖅᑲᖅᑎᑕᐅᓐᖏᓚᑦ ᑖᒃᑯᓄᖓ, ᐊᒻᒪ ᐊᔾᔨᓕᐅᖅᑕᐅᔪᓐᓇᖅᐳᑦ ᑕᐅᑦᑐᖏᑦ. ᑖᓐᓇ Hubble-ᓂᖅᑕᐅᔪᖅ ᓯᓚᐃᓐᓇᕐᒧᑦ ᑕᐅᑐᒍᑎ ᑕᕐᕋᖅᑑᑎᖃᖅᐳᖅ ᐊᖏᓂᓕᖕᒥᑦ 2.4ᒦᑕᒥᑦ ᐊᕙᑎᐊ, ᐊᒻᒪᓗ ᖃᓄᑎᒋᐅᖕᒪᖔᑦ ᑖᒃᑯᐊ ᑕᖅᓴᐃᑦ ᖃᐅᒪᔪᑦ, ᑕᒪᓐᓇ ᐊᔾᔨᓕᐅᖅᑐᒧᑦ ᓇᓗᓇᐃᖅᑎᐊᖅᐳᖅ ᓯᓚᐃᓐᓇᕐᒥᑦ.

ᐅᓄᖅᑐᓂᑦ-ᑕᕐᕋᖅᑑᑎᓖᒃ ᑕᐅᑐᒍᑎ



ᓯᓚᐃᓐᓇᕐᒥᑦ ᑕᑯᓇᒍᑎ ᓴᓇᓯᒪᕗᖅ ᐅᓄᖅᑐᓂᑦ ᑕᕐᕋᖅᑑᑎᓂᑦ ᑕᐅᑐᒍᑎᐅᑉ ᐃᓗᐊᓂᑦ. ᐊᑐᓐᖏᓛᖅᓗᓂ ᐊᖏᔪᐊᓗᖕᒥᑦ ᑕᕐᕋᖅᑑᑎᒥᑦ, ᑕᕐᕋᖅᑑᑎᖏᑦ ᑖᒃᑯᐊ ᓴᓇᓯᒪᕗᑦ ᐋᖅᑭᒃᓯᒪᐅᖅᓗᑎᒃ. ᑖᒃᑯᐊ ᖃᓇᓴᐅᔭᒧᑦ ᐃᓕᓯᒪᕗᑦ-ᐊᐅᓚᑕᐅᔪᑦ ᑕᕐᕋᖅᑑᑏᑦ ᐃᖏᕐᕋᓂᖏᑦ ᐊᐅᓚᑕᐅᔪᓐᓇᖅᓗᑎᒃ ᐋᖅᑭᒃᑕᐅᓗᑎᒃ ᐋᖅᑭᒃᓯᒪᓂᕆᔭᕆᐊᖃᖅᑕᖏᑦ. ᐱᐅᔪᓐᓃᕐᑯᓇᒋᑦ ᖃᐅᒪᓂᐅᔪᒧᑦ ᐃᖏᕐᕋᓂᐊᓄᑦ (ᖃᐅᔨᒪᔭᐅᓂᖓ ᐱᐅᔪᓐᓃᖅᑎᑦᑎᑕᐃᓕᔾᔪᑎ) ᐊᒻᒪ ᐱᐅᓂᖅᓴᒥᑦ ᑕᐅᑦᑐᖅᑲᖅᓗᓂ. ᑖᓐᓇ ᑕᕐᕋᖅ ᖃᐅᒪᓂᕐᒧᑦ ᑲᑎᑕᐅᔪᖅ ᐊᔾᔨᓕᐅᕈᑎᒧᑦ ᐊᒻᒪ ᑕᖅᓴᖏᓐᓄᑦ ᐋᖅᑭᒍᑎ. ᑕᐃᔭᐅᔪᖅ Keck Observatory-ᒥᑦ ᑕᐅᑐᒍᑎ, ᑕᐃᑲᓃᑦᑐᖅ ᖁᑳᓂᑦ ᒪᐅᓇ ᐆᓇᖅᑐᐊᓗᖕᒥᑦ ᐊᓂᐊᑎᓇᕙᒃᑐᖅ ᑕᐃᑲᓂ ᕿᑭᖅᑕᒥᑦ ᕼᐅᐊᐃᒥᑦ, ᑕᐅᑐᒍᑎᐅᔪᒥᑦ ᑖᔅᓯᒥᖓ ᐊᑐᖅᐸᒃᐳᑦ

ᑯᓘᓇ ᐱᓕᑉᔅ

ᐊᓂᖅᓂᖅᑳᖅᓇᖏᑦᑐᒥᑦ ᐱᕈᖅᓯᐊᒃᓴᑦ

ᐱᕈᖅᓯᐊᒃᓴᓂᑦ ᖃᐅᔨᓇᓱᖕᓂᖅ

ᑕᐃᔭᐅᔪᖅ Tomatosphere−ᒥᑦ ᑖᓐᓇ ᐊᑭᖅᑲᖏᑦᑐᖅ ᐃᓕᓐᓂᐊᕐᓂᖅ ᑲᔪᖏᖅᓴᐃᔪᖅ ᐃᓕᓐᓂᐊᖅᑎᓂᑦ ᖃᐅᔨᓇᓱᖕᓂᕐᒥᑦ ᐊᒃᑐᐃᓂᐅᔪᓂᑦ ᐊᓂᖅᓂᖅᑳᖅᓇᖏᑦᑐᒥᑦ ᓂᕿᓄᑦ ᐃᑲᔪᕐᓗᒋᑦ ᐃᓄᐃᑦ ᐊᓂᖅᓂᖅᑳᖅᓇᖏᑦᑐᒧᑦ ᐊᐅᓪᓚᖅᐸᒃᑐᓄᑦ. ᑖᓐᓇ ᐃᓕᓐᓂᐊᕐᓂᖅ ᐊᑐᖅᐸᖅ ᓇᓄᓇᐃᔭᖅᓯᒪᑦᑎᐊᖅᑐᒥᑦ ᖃᐅᔨᓇᓱᖕᓂᕐᒧᑦ ᐱᓕᕆᑦᑎᔪᑦ ᐱᕈᖅᑐᐃᓂᕐᓂᑦ ᑐᒫᑐᓂᑦ ᐱᕈᖅᓯᐊᓂᑦ. ᐱᕈᖅᓯᐊᒃᓴᑦ ᐃᓚᖏᑦ ᓯᓚᐃᓐᓇᕐᒧᐊᖅᑕᐅᓯᒪᕗᑦ ᐅᕝᕙᓘᓐᓃᑦ ᐃᓗᐊᓃᑎᑕᐅᓪᓗᑎᒃ ᓯᓚᐃᓐᓇᑎᑐᑦ ᐋᖅᑭᒃᑕᐅᓯᒪᔪᒧᑦ, ᑖᒃᑯᐊ ᑐᓪᓕᖏᑦ, ᑕᐃᔭᐅᔪᑦ ᐊᐅᓚᑕᐅᔪᑦ, ᐃᓚᖅᑲᖏᖅᓗᑎᒃ ᑭᓱᐃᓐᓇᕐᓂᑦ. ᐃᓕᓐᓂᐊᖅᑎᑦ ᕿᒥᕐᕈᓪᓗᑎᒃ ᐊᔾᔨᒌᖏᓐᓂᖏᓐᓂᑦ ᐱᕈᖅᓯᐊᑦ ᐱᕈᖅᐸᓪᓕᐊᓂᖏᓐᓂᑦ ᑕᒫᓂ ᓯᓚᐃᓐᓇᖅᑎᑐᑦ ᐋᖅᑭᒃᓯᒪᔪᑦ ᐊᔾᔨᒌᖏᑦᑐᑎᒍᑦ ᖃᐅᔨᓴᖅᑕᐅᓪᓗᑎᒃ ᐊᑐᖅᓗᑎᒃ ᑕᕝᕙᙵᑦ Tomatosphere−ᒥᑦ ᖃᓄᓴᐅᔭᒃᑯᑦ ᐃᑭᐊᖅᑭᕕᐊᓂᑦ.

ᐃᓕᓐᓂᐊᖅᑏᑦ ᐊᕐᕌᒍᖕᒥᑦ ᖃᔅᓯᑐᐃᓐᓇᐅᔪᓐᓇᖅᐸᑦ ᐃᓕᑦᑎᓗᑎᒃ ᐃᓕᓐᓂᐊᕈᑎᒃᓴᓂᑦ ᐊᒻᒪ ᖃᐅᔨᓇᓱᖕᓂᕐᒥᑦ, ᐋᖅᑭᒃᓱᖅᓯᒪᔪᓐᓇᖅᐸᑦ ᐊᑐᕈᓐᓇᕐᓂᐊᔪᑦ ᐅᑭᐅᖕᒥᑦ ᐊᒻᒪ ᐱᔪᓐᓇᕐᓂᖕᒥᑦ ᐊᑐᕐᓗᒋᑦ. ᑕᒪᓐᓇ ᐃᓕᓐᓂᐊᕐᓂᖅ ᐊᑐᖅᑎᑦᑎᕋᖅ ᐃᓕᓐᓂᐊᕈᑎᒃᓴᓂᑦ ᐃᑲᔫᑎᐅᔪᓂᑦ, ᓲᕐᓗ ᐃᓕᑕᒃᓴᒥᑦ ᑕᕐᓇᔭᐅᑎᑎᒍᑦ, ᐃᑲᔪᕐᓗᒋᑦ ᐃᓕᓐᓂᐊᖅᑐᑦ ᐱᒋᐊᕐᓂᐊᓂᑦ, ᓲᕐᑲᐃᒻᒪ ᐃᓕᓐᓂᐊᖅᑐᑦ ᐊᐅᓪᓚᕐᓗᑎᒃ ᓄᓇᐃᓐᓇᕐᒧᑦ ᐱᔪᓐᓇᖏᒻᒪᑕ (ᕿᖑᓪᓕᖅᐹᒥᑦ, ᐃᓱᓕᖏᑦᑐᖅ ᓱᓕ!), ᑕᒪᓐᓇ ᐃᓕᓐᓂᐊᕐᓂᖅ ᓴᖅᑭᑎᕗᖅ ᐱᓕᕆᓂᕐᒥᑦ ᑲᑎᖅᑎᖅᑲᕐᓗᓂ ᓯᓚᐃᓐᓇᕐᒥᑦ ᐅᓪᓗᓇᐊᓂᑦ ᐃᒻᒥᖕᓄᓪᓗ, ᐊᑐᕐᓂᖅᑲᑎᐊᕐᓂᕐᒧᑦ.

ᐱᒋᐊᖅᐸᓪᓕᐊᓗᓂ, ᐅᑯᐊ ᐊᑖᓂᑦᑐᑦ ᒪᓕᒡᓗᒋᑦ ᒪᓕᒋᐊᓖᑦ:

ᒪᓕᒋᐊᓕᒃ 1: ᐃᓚᒋᔭᐅᓕᕐᓗᑎᑦ ᐊᒻᒪ ᐱᕈᖅᓯᐊᒃᓴᓂᑦ ᑎᑭᓴᐃᓗᑎᒃ
ᑎᑭᓴᐃᔪᓐᓇᖅᐳᑎᑦ ᐱᕈᖅᓯᐊᒃᓴᓂᑦ ᐊᑭᖅᑲᖏᑦᑐᒥᑦ ᐊᒻᒪ ᖃᓄᓴᐅᔭᒃᑯᑦ ᐃᓯᕈᓐᓇᐅᑎᑖᕐᓗᑎᑦ ᑕᕝᕗᓇ Let's Talk Science−ᖑᔪᒧᑦ ᐅᕙᓂ ᑐᖄᕈᑎᐊ **tomatosphere.letstalkscience.ca**.

ᒪᓕᒋᐊᓕᒃ 2: ᕿᒥᕐᕈᓗᒋᑦ ᐊᑐᓇᐊᓖᑦ
ᑕᕗᓂ Let's Talk Science−ᒥᑦ ᐊᔾᔨᒌᖏᑦᑐᓂᑦ ᐊᑐᕈᑎᑕᖅᑲᖅᐸᖅ ᐃᓕᓐᓂᐊᕈᑎᒃᓴᓂᑦ ᖃᓄᓴᐅᔭᒃᑯᑦ ᐃᑭᐊᖅᑭᕕᐊᒧᑦ. ᐱᑕᖃᕗᖅ ᑕᖅᓇᔭᒐᒃᓴᓂᑦ ᑲᔪᖏᖅᓴᐃᔪᓂᑦ ᐃᓚᒋᔭᐅᓂᖏᓐᓄᑦ ᐊᒻᒪ ᐃᓕᓐᓂᐊᒃᑲᓐᓂᖏᓐᓄᑦ.

ᒪᓕᒋᐊᓕᒃ 3: ᓇᓄᓇᐃᖅᓂᖅ ᐃᓕᓐᓂᐊᖅᑎᓄᑦ
ᑖᓐᓇ Tomatosphere−ᖑᔪᖅ ᐃᓕᓐᓂᐊᒐᒃᓴᖅ ᐊᑐᒐᒃᓴᖅᑲᖅᐳᖅ 20−ᓂᑦ ᐅᖓᑖᓄᑦ ᐃᓕᓐᓂᐊᖅᑕᐅᔪᓐᓇᖅᑐᓂᑦ ᐃᓕᓐᓂᐊᖅᑎᑦᑎᔨᓄᑦ ᐊᑐᖅᑯᔭᐅᔪᓂᑦ (ᐊᑐᐃᓐᓇᐅᕗᖅ ᑕᕝᕙᓂ ᐃᑭᐊᖅᑭᕕᐊᒧᑦ)ᓇᓄᓇᐃᓇᔪᓂᑦ ᐊᒻᒪ ᖃᐅᔨᓴᖅᓗᑎᒃ ᖃᐅᔨᓴᖅᑕᐅᓂᐅᔪᓂᑦ ᐃᓕᓐᓂᐊᖅᑎᑕᒥᓐᓄᑦ. ᐃᓱᒪᒋᔭᐅᔪᑦ ᐃᑲᔫᑎᑦ ᐊᑐᓇᐊᓖᑦ ᓇᓄᓇᐃᖅᓯᒪᔪᑦ ᐊᑐᖅᑕᐅᔪᓐᓇᖅᑐᑦ, ᐅᓄᖅᑑᕗᑦ ᐃᑲᔫᑎᐅᔪᑦ ᐃᓕᓐᓂᐊᖅᑐᓄᑦ.

ᒪᓕᒋᐊᓕᒃ 4: ᐱᕈᖅᓰᓂᖅ ᐱᕈᖅᓯᐊᒃᓴᓂᑦ
ᐃᓂᒋᔭᐃᑦ ᐱᕕᑭᓗᐊᖅᐸᑦ ᖃᐅᔨᓴᕋᓱᒃᑕᕐᓄᑦ ᐊᒻᒪ ᓯᓚᑎᔅᓯᓐᓂᑦ ᐱᕈᖅᓰᕕᒃᑕᖅᑲᖅᐸᑦ, ᑕᐃᑲᓂ ᐱᕈᖅᑐᕕᓂᕐᒥᑦ ᑐᒫᑐᒥᑦ ᐱᕈᖅᓰᔪᓐᓇᖅᐳᑎᑦ ᓯᓚᒥ. ᐃᓂᒋᔭᖕᖓ ᖃᐅᔨᒪᒋᐊᕐᓗᒍ ᓂᕆᓇᔭᖅᑐᓂᑦ ᐱᑕᖅᑲᖏᒃᑲᓗᐊᕐᒪᖔᑦ ᐅᕝᕙᓘᓐᓃᑦ ᐱᕈᖅᑐᓄᑦ ᑕᒪᓐᓇ ᐊᒃᑐᐃᔪᓐᓇᕐᒪᑦ ᖃᐅᔨᓴᕋᓱᒃᑕᕐᓄᑦ.

ᒪᓕᒋᐊᓕᒃ 5: ᑕᑯᕙᒡᓗᒍ ᐊᒻᒪ ᑎᑎᕋᖅᐸᒡᓗᒋᑦ ᐱᕈᖅᐸᓪᓕᐊᓂᖓ
ᐱᕈᕐᓃᑦ ᑐᒫᑑᔪᑦ ᐃᓚᓕᐅᑎᔪᓐᓇᖅᐳᖅ ᖃᐅᔨᓴᕐᓂᕐᒧᑦ, ᖃᓄᓴᐅᔭᓕᓇᕐᓂᕐᒧᑦ, ᐋᖅᑭᒃᓱᐃᓂᕐᒧᑦ, ᓴᓇᖑᐊᕐᓂᕐᒧᑦ, ᓈᓴᐅᓯᓇᕐᓂᕐᒧᓪᓗ ᑖᒃᑯᓄᖓ ᐊᑐᕐᓗᓂ ᖃᐅᑕᒫᑦ ᐊᑐᕐᓂᐅᔪᒥᑦ ᑎᑎᕋᖅᐸᓪᓚᐊᕐᓂᕐᒥᑦ ᐃᓕᓐᓂᐊᖅᑎᓄᑦ ᖃᐅᔨᓴᕐᓂᒃᑯᑦ, ᐊᒻᒪ ᐱᕈᖅᐸᓪᓕᐊᓂᕐᒧᑦ ᑎᑎᕋᖅᐸᓪᓕᐊᓗᓂ.

ᒪᓕᒋᐊᓕᒃ 6: ᓇᒃᓯᐅᑎᓗᒋᑦ ᖃᐅᔨᔭᑎᑦ ᖃᓄᓴᐅᔭᒃᑯᑦ ᓱᒃᑲᔪᒃᑯᑦ
ᖃᐅᔨᓴᕐᓂᓇᔭᐃᑦ ᐃᓚᒋᓕᖅᑎᓪᓗᒍ ᖁᑦᑎᖕᓂᕐᓄᑦ, ᐊᔾᔨᓕᐅᖅᐸᒡᓗᒋᑦ ᐱᕙᓪᓕᐊᓂᖓ ᐊᒻᒪ ᓴᖅᑭᓪᓗᒋᑦ ᑕᕝᕗᖓ Tomatosphere−ᒧᑦ ᐃᑭᐊᖅᑭᕕᐊᒧᑦ. ᐃᓕᕝᕕᒃᑕᖅᐸᑦ ᐃᑭᐊᖅᑭᕕᐊᓂᑦ ᒪᒃᐱᖅᕕᖕᒥᑦ ᑖᒃᑯᐊ ᐊᔾᔨᑦ ᐃᓕᐅᖅᑲᖅᓗᒋᑦ ᐃᓕᓐᓂᐊᖅᑎᑕᕕᑦ ᖃᐅᔨᓴᕐᓂᖕᒥᑦ ᐊᔪᕐᓇᖏᑦᑑᔪᖅ! ᖃᓄᖅ ᖁᕕᐊᓇᑦᑎᐊᕋᔭᖅᐸ ᐊᓯᐊᓂ ᓄᓇᒦᓐᖓᖅᓯᒪᔪᑦ ᑖᒃᑯᐊ ᓂᕆᓗᒋᑦ ᐃᓕᓐᓂᐊᖅᑎᑕᑎᓪᓗ ᐃᓚᒋᓗᒋᑦ?

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ᑖᒃᑯᐊ ᐅᖃᐅᓯᖅᑕ ᖃᐅᔨᓴᕐᓂᕐᒥᑦ (Let's Talk Science-ᑯᑦ), ᓄᓇᖅᔪᐊᓕᒫᒧᑦ, ᐃᑲᔪᖅᓱᖅᐸᒃᑐᑦ ᑲᑐᔾᔨᖅᑎᕇᑦ ᓴᖅᑭᑎᔪᑦ ᐊᒻᒪ

ᐊᔾᔾᑦ ᐃᒃᐱᒋᔭᐅᑦᑎᐊᖅᑐᖅ ᑖᓐᓇ ᐅᖃᐅᓯᖃᖅᑕ ᖃᐅᔨᓴᖅᑐᓕᕆᓂᕐᒥᑦ

ᑐᓂᓯᔪᑦ ᖃᐅᔨᓴᖅᑐᓕᕆᓂᕐᒥᑦ, ᖃᓄᓴᐅᔭᓕᕆᓂᕐᒥᑦ, ᐋᖅᑭᒃᓱᐃᓂᕐᒥᑦ ᐊᒻᒪ ᓈᓴᐅᓯᕆᓂᕐᒥᑦ ᐃᓕᓐᓂᐊᕐᓃᑦ ᐃᓕᓐᓂᐊᓕᓵᖅᑐᓄᑦ ᑎᑭᓪᓗᒍ ᕿᑦᑎᖓᓂᓕᖓᓄᑦ 12–ᓄᑦ ᐃᓕᓐᓂᐊᕐᕕᐊᕈᓯᕐᓄᑦ, ᐊᐅᓚᓂᖃᖅᐳᑦ ᑖᒃᑯᐊ Tomatosphere–ᖑᔪᑦ ᑲᓇᑕᒥᑦ. ᑖᒃᑯᐊ ᐅᖃᐅᓯᖃᖅᑕ ᖃᐅᔨᓴᕐᓂᕐᒥᑦ (Let's Talk Science-ᑯᑦ) ᐃᓕᓐᓂᐊᖅᑐᓕᕆᔪᑦ ᓴᖅᑭᑦᑎᕗᑦ ᐊᒻᒪ ᐃᖏᕐᕋᑎᑦᑎᓪᓗᑎᒃ ᑖᒃᑯᓂᖓ Tomatosphere–ᒥᑦ ᐃᓕᓐᓂᐊᖅᑎᑦᑎᔾᔨᓂᑦ ᐃᑲᔫᑎᐅᔪᓂᑦ ᓇᓂᔭᐅᔪᑦ ᑕᕝᕙᓂ Tomatosphere–ᒥᑦ ᐃᑭᐊᖅᑭᕕᐊᓂ ᐊᒻᒪ ᐊᐅᓪᓚᖅᑎᑦᑎᕙᒃᓗᑎᒃ ᐱᕈᖅᓯᐊᒃᓴᓂᑦ ᐃᓕᓐᓂᐊᖅᑎᑦᑎᔨᓄᑦ ᐊᑭᖃᖏᑦᑐᒥᑦ. ᑲᑐᔾᔨᖃᑎᒌᖑᔪᑦ ᑲᒪᔨᒃᑐᑦ ᐃᓕᓐᓂᐊᕐᕕᒃᔪᐊᕐᓂᑦ ᑕᐃᑲᓂ ᒍᓪᓕᕙᒥᑦ.ᑖᔅᓯᒥᖓ Tomatosphere–ᒥᑦ ᐃᓚᐅᓪᓗᑎᒃ ᑖᒃᑯᐊ ᑲᓇᑕᒥᑦ ᐊᓂᕐᓂᖅᑲᓐᖏᑦᑐᒥᑦ ᑲᑐᔾᔨᖅᑎᒌᖑᔪᑦ, HeinzSeed–ᑯᑦ, Let's Talk Science–ᑯᑦ (ᐊᐅᓚᓂᓖᑦ ᑲᓇᑕᒥᑦ), ᑖᒃᑯᐊ ᓯᕗᓪᓕᕐᒥᑦ–ᐱᕈᖅᓯᐊᒃᓴᓂᑦ (First-the-Seed-ᑯᑦ) ᑐᓐᖓᕕᓖᑦ (ᐊᐅᓚᑕᐅᔪᖅ ᐊᒥᐊᓕᑲᕐᒥᑦ), Stokes Seeds-ᖑᔪᑦ, ᐊᒻᒪ

ᑕᐅᑐᒃᑐᒍ ᑕᕐᕆᔮᒃᓴᖅ ᓇᑐᓇᐃᖅᑕᐅᔪᖅ ᐊᑖᓂᑦ ᖃᓄᖅ ᐊᑐᕐᓂᐊᕐᒪᖔᑕ ᐊᑐᓇᐋᓃᑦ ᐱᕈᒃᓯᐊᒃᓴᓄᑦ ᖃᐅᔨᓴᕐᓂᐅᓂᐊᖅᑐᓄᑦ, ᐃᓚᖃᕆᕗᖅ ᐃᓕᓐᓂᐊᖅᑎᑦᑎᔾᔨᑎᒃᓴᓂᑦ ᑕᐃᔭᐅᔪᖅ "ᐱᕈᖅᓯᐊᓕᐅᕐᓂᖅ ᑐᒫᑐᒃᓴᓂᑦ" (Planting your Tomato Seeds–ᒥᑦ") ᐊᒻᒪ "ᐱᐊᓂᒃᒥᓂᖅ ᐱᕈᖅᓯᐊᒃᓴᓂᒃ ᖃᐅᔨᓴᕐᓂᖅ" (Completing the Seed Investigation–ᖑᔪᖅ") ᐅᕙᓂ **tomatosphere.letstalkscience.ca/resources/library.aspx**. &

ᓇᐃᓈᐃᕈᑕᓕᐅᕐᓂᖅ ᐊᒻᒪ ᐱᓕᕆᐊᖑᓂᐊᖅᑐᑦ

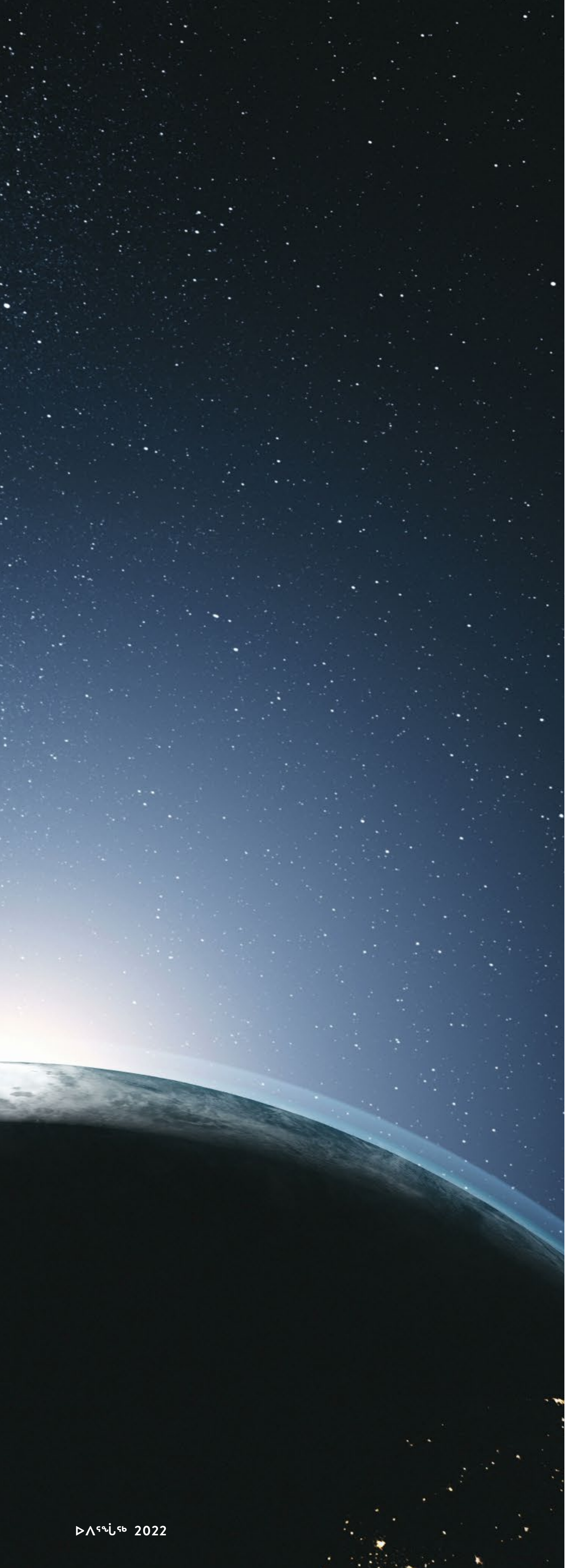
ᖃᓄᓴᐅᔭᑰᖅᑐᑦ ᐊᒻᒪ ᑲᑐᔾᔨᖃᑎᒌᑦ

ᑎᑎᕋᖅᓯᒪᔪᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᑯᐃᑦ

ᕼᐃᐅᑦᑎᖕ ᓂᐅᑦᓴᓐ

ᐃᓱᒪᓂᖅ ᐃᓅᓯᕐᒥᑦ ᑕᑉᐹᓂ ᐊᓂᕐᓂᖃᕐᓇᖅᑭᑦᑐᒥᑦ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᑕᐅᑐᒃᑕᖕᒐᔪᑦ

ᐅᓐᓄᒃᑯᑦ ᓯᓚ ᑕᐅᑐᒧᒥᓇᕐᑎᐊᖅᐳᖅ, ᐅᓄᖅᑐᒻᒪᕆᐊᓗᖕᓂᑦ ᖃᐅᒪᒐᓛᒃᑐᖅᑲᖅᑐᓂ, ᑕᒪᕐᒥᒃ ᑖᒃᑯᐊ ᐅᖓᓯᒃᑐᐊᓗᖕᒥᑦ ᐅᑦᓗᕆᐊᓂᓐᖔᖅᐳᑦ. ᐊᓂᕐᓂᖃᕐᓇᖅᑭᑦᑎᓐᓂᑦ, ᐅᓄᕙᓪᓕᐊᖅᐳᑦ ᐅᑦᓗᕆᐊᑦ, ᑕᒪᕐᒥᑦ ᐅᐃᓵᖅᐳᑦ ᕿᑎᐊᓂ ᐊᓂᕐᓂᖃᕐᓇᖅᑭᑦᑑᑉ, ᑕᒪᕐᒥᒃ ᓇᖕᒥᓂᖅ ᖃᐅᒪᓂᖃᖅᑐᑎᒃ ᐊᒻᒪ ᐅᓂᒃᑳᖃᖅᑐᑎᒃ.



ᖃᐅᔨᓴᖅᑐᓕᕆᔩᑦ ᐅᖃᕈᓐᓇᖅᐳᑦ, ᓯᕿᓂᒧᑦ ᐅᓪᓗᕆᐊᖑᓐᖏᓚᖅ, ᑭᓯᐊᓂᑦᑕᐅᖅ ᐅᓪᓗᕆᐊᕆᕙᒧᑦ ᖃᐅᔨᒪᔭᒧᑦ ᐆᒪᒻᒪᑦ. ᑭᓯᐊᓂ, ᑕᐅᑦᑐᐊ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᒍᖅ, ᖁᔭᓈᒥᒃ ᖃᖓᑦᑕᖅᑎᑕᐅᓯᒪᔪᓕᕆᕙᒃᑐᑦ, ᓱᕐᓗ ᑕᐃᖕᓇᑐᑦ Kepler–ᔪᖅ ᓯᓚᐃᓐᓇᕐᒧᑦ ᑕᐅᑐᒍᑎ ᐊᒻᒪ ᑖᒃᑯᐊ Transiting Exoplanet–ᑯᑦ ᓯᓚᐃᓐᓇᒃᑯᑦ ᖃᖓᑦᑕᖅᑎᑕᐅᓯᒪᔪᖅ, ᑕᖅᑭᓕᕆᔩᑦ ᒫᓐᓇ ᖃᐅᔨᒪᓕᖅᐳᑦ ᐅᓄᖅᑐᐊᓗᙱᑦ ᑕᖅᑭᓂᑦ ᐅᐃᔾᔮᖅᑐᓂᑦ ᐅᓪᓗᕆᐊᓄᑦ. ᑐᑭᐊᓂᑦ ᐊᓂᕐᓂᖅᑲᕐᓇᖏᑦᑑᑉ, ᑖᒃᑯᐊ explanet–ᖑᔪᑦ ᓴᖅᑭᓯᒪᒐᔭᒃᐳᑦ.

ᐅᓄᖅᑐᒻᒪᕆᐊᓃᑎᓪᓗᒋᑦ ᑖᒃᑯᐊ exoplanet–ᖑᔪᑦ, ᖃᐅᔨᒪᖏᑦᑐᒧᑦ ᖃᔅᓯᓪᓚᑦᑖᖑᓂᖏᓐᓂᑦ, ᐱᑕᖃᖅᐸᑦ, ᑲᒪᒋᓪᓗᒋᑦ ᐆᒪᓂᖏᑦ ᖃᐅᔨᒪᒐᑦᑎᒍᑦ. ᑭᓯᐊᓂ, ᖃᐅᔨᓴᕐᓂᖅ ᐆᒪᔪᓂᑦ ᐊᒻᒪ ᓯᓚᑐᓂᖏᓐᓂᑦ ᐱᒋᐊᓚᐅᖅᑐᕕᓂᖅ ᑕᐃᒪᓐᖓᓂᑐᖄᓗᒃ ᖃᐅᔾᔭᓚᐅᓐᖏᑎᓪᓗᑕ ᑖᒃᑯᓂᖓ exoplanet–ᖑᔪᓂᑦ. ᐊᕐᕌᒍᑦ 50 ᐅᖓᑖᓂᑦ ᑕᐃᓯᒪᓂ, ᖃᐅᔨᓴᕐᓂᐅᔪᖅ ᐱᕙᓪᓕᐊᓕᓚᐅᖅᐳᖅ ᐱᕈᖅᐸᓪᓕᐊᓕᖅᑰᓂᓗ ᑐᓴᖅᓴᐅᓂᐅᔪᑦ ᓯᓚᐃᓐᓇᓕᕆᓂᖅ–ᖃᐅᔨᓴᕐᓂᐊᔪᖅ ᓯᓚᐃᓐᓇᕐᒥᑦ ᐃᖕᒋᕐᖁᓂᐊ ᑕᑭᔫᓪᓗᓂ ᑐᓴᖅᓴᐅᔪᑦ ᓂᓪᓕᐊᓂᖕᒋᑦ, ᐊᒻᒪ ᓇᐃᓐᓂᖅᓴᖅ ᐃᖕᒋᕐᖁᓂᐊ ᓂᓪᓕᐊᓂᕆᔭᖕᒐ, ᐃᖕᒋᕐᖁᓂᐊ ᓂᐱᖕᒐ ᑕᑭᓂᖅᓴᐅᓪᓗᓂ, ᐊᒻᒪ ᓂᓪᓕᐊᓂᖕᒐ ᖃᐅᒪᓂᐅᑉ ᓯᓚᐃᓐᓇᕐᒥᑦ. ᐊᕐᕌᒍ 1950–ᖏᓐᓂᑦ, ᐃᓅᔪᑦ ᑐᓴᖅᓴᐅᑎᑦᑎᓪᓗᑎᒃ ᑕᕐᓇᔭᐅᑎᒃᑯᑦ ᐊᒻᒪ ᓂᓪᓕᐊᓂᖕᒋᑦ ᓯᓚᕐᔪᐊᒥᑦ ᐊᒻᒪ ᐅᔾᔨᕈᓯᓕᖅᓱᑎᒃ ᑖᒃᑯᐊ ᓂᓪᓕᐊᓂᖕᒋᑦ ᑐᓴᖅᓴᐅᑎᑕᐅᓂᖏᓐᓂᑦ ᓯᓚᐃᓐᓇᕐᒧᑦᑕᐅᖅ. ᑖᒃᑯᐊ ᑐᓴᖅᓴᐅᓂᖕᒋᑦ ᐃᖕᒋᕐᖁᓂᓇᔾᖕᒋᑦ ᐅᓪᓗᓇᐊᑦ, ᐅᓪᓗᒥ, ᑖᒃᑯᐊ ᑐᓴᖅᓴᐅᓂᖕᒋᑦ ᑎᑭᐅᑎᓯᒪᒍᑦ ᐅᓄᖅᑐᐊᓗᖕᓄᑦ ᐅᓪᓗᕆᐊᓄᑦ. ᑕᐃᒪᐃᒻᒪᑦ, ᑖᒃᑯᐊ ᐅᖓᓯᕐᓂᖕᒋᑦ, ᑐᓴᖅᓴᐅᓂᖕᒋᑦ ᓴᓐᖑᑦᑑᒍᑦ, ᓱᕐᓗ ᖃᓇᓴᐅᔭᖃᕈᑎᑦ wifi–ᖑᔪᑦ ᓴᓐᖑᒃᓕᖃᑦᑕᖅᒪᑕ ᐅᖓᓯᒃᓕᒫᖓᑦ ᐊᑐᕈᑎᒋᔭᖕᒐ.

ᑖᓐᓇ ᐅᔾᔨᕈᓱᕐᓂᐅᔪᖅ ᐊᐱᖅᑯᑎᒃᓴᖃᓕᖅᓲᓂ: ᐆᒪᔪᑦ ᐊᓯᐊᓂᑦ ᓄᓇᕐᔪᐊᓖᑦ ᓴᖅᑭᑦᑎᒃᐸᑕ ᑐᓴᖅᓴᐅᓂᐅᔪᓂᑦ? ᖃᐅᔨᔪᓐᓇᖅᐸᕝᕙᑦ? ᑕᐃᒪᐃᑉᐸᑦ, ᖃᓯᐅᓇᔭᖅᐸᑦ ᑕᐃᑲᓃᑦᑐᑦ? ᐊᕐᕌᒍ 1958–ᒥᑦ, ᐃᓕᓐᓂᐊᖅᓯᒪᔪᕐᔪᐊᖅ ᕗᕋᒃ ᑐᕋᐃᒃ ᐃᓱᒪᑖᓚᐅᖅᐳᖅ ᖃᐅᔨᓴᕐᓂᒃᑯᑦ ᑐᑭᓯᓇᓱᒡᓗᓂ ᐊᑐᕐᓂᐅᔪᓂᑦ ᑖᔅᓱᒧᖕᒐ ᕿᓂᕐᓂᒃᑯᑦ ᓯᓚᕐᔪᐊᑉ ᓯᓚᑖᑦᑐᑦ ᓯᓚᑐᓂᐊᓂᑦ (SETI–ᖑᔪᖅ). ᖃᐅᔨᒪᔪᒧᑦ ᐅᓄᖅᑐᒪᓕᕆᐊᓗᖕᓂᑦ ᐅᓪᓗᕆᐊᖅᑕᖅᑲᕐᒪᑦ ᐃᓱᕐᓂᐊᓂᑦ ᐊᓂᕐᓂᖅᑲᕐᓇᖏᑦᑑᑉ ᐊᒻᒪ, ᐊᑐᕐᓂᖅᖃᖅᑎᓪᓗᒍ ᔫᒃᑖᖅ ᑐᕋᐃᒃ, ᐅᓪᓗᕆᐊᓕᕆᔩᑦ ᖃᐅᔨᒪᓂᖃᓚᐅᕐᒪᑕ ᓄᓇᕐᔪᐊᖑᔪᓂᑦ ᐊᒻᒪ ᓯᕿᓂᕐᒧᑦ ᐆᒪᖅᑯᑎᑖᑉᒪᒥᑦ ᐊᒻᒪ ᐆᒪᓂᐅᔪᓂᑦ ᓄᓇᕐᔪᐊᕐᒥᑦ. ᑕᐃᒪᐃᒻᒪᑦ, ᑐᑭᓯᓇᓱᐃᑦ ᐅᓄᓐᖏᑎᓪᓗᒋᑦ, ᓴᖅᑭᑦᑎᓚᐅᖅᐳᖅ ᑐᕋᐃᒃ ᐃᓚᓯᓂᕐᒥᑦ ᑲᑎᓪᓗᒋᑦ ᖃᔅᓯᐅᓂᖏᓐᓂᑦ ᓯᕗᕙᓯᕐᓂᖅᓴᒥᑦ ᐃᓅᖃᑎᒌᒥᑦ ᓯᓚᐃᓐᓇᑦᑎᓐᓂᑦ, ᐅᓇᐅᕗᖅ:

N = R* x N_p x N_h x N_l x N_i x N_c x L–ᖑᔪᖅ ᐃᓚᑦᑕᕐᓂᐅᔪᖅ

ᑖᓐᓇ ᐃᓚᕙᓪᓕᐊᔪᖅ ᐊᖏᔪᒪᓇᐊᓗᒃ, ᑭᓯᐊᓂ ᑕᑯᓐᖑᐊᕐᓗᒍ ᑖᒃᑯᐊ ᕿᔪᐊᕐᔪᖕᒥᑦ ᓴᓇᓯᒪᔪᑦ ᕿᑐᑦᙵᐅᔭᑦ ᐅᓄᖅᑑᑦᓗᑎᒃ. ᑖᓐᓇ ᕿᑐᕐᖓᐅᔭᐅᔪᑦ ᐃᓗᓕᖅᑲᕐᒪᑦ ᕿᑐᕐᖓᐅᔭᒃᑲᓐᓂᕐᓂᑦ ᐊᒻᒪ ᑕᐅᕗᖓ ᑕᐅᕗᖓ. ᓯᓚᑖᓂᑦ ᐊᖏᓚᖑᕗᖅ ᕿᑐᕐᖓᐅᔭᖅ, ᑕᒪᓐᓇᑎᒋ ᐅᔾᔪᓇᐊᑦ ᑕᒫᓂ ᐃᓱᕐᓂᖓᓂᑦ ᖃᖓᑐᐃᓐᓇᖅ–ᑭᓯᐊᓂ ᐅᓪᓗᓇᐊᑦ ᓴᖅᑭᑉᐸᓪᓕᐊᕗᑦ ᐊᒻᒪ ᑐᕐᑯᕙᓪᓕᐊᓪᓗᑎᒃ. ᖃᐅᔨᔪᒪᓪᓚᓇᒃᑕᕗᑦ ᖃᔅᓰᖅᓱᑎᒃ ᓴᖅᑭᒃᑲᓐᓂᖅᐸᖕᒪᖔᑕ. ᓯᓚᐃᓐᓇᑦᑎᓐᓂᑦ, ᑲᑎᓯᒪᓂᐊ ᓱᕐᓗ ᐱᖕᖓᓱᐃᓕᓯᒪᕗᑦ ᓱᕐᓗ ᓯᕿᓂᐅᔪᑦ ᓴᖅᑭᒃᑲᓐᓂᖅᐸᖕᒪᑕ ᐊᕐᕌᒍᑕᒫᑦ. ᑕᐃᒪᐃᒻᒪᑦ ᖃᖓᑐᐃᓐᓇᖅ, ᑭᒡᒍᓯᖅᓯᔪᓐᓇᖅᐳᒍᑦ ᐅᓄᖅᑐᓐᒪᓕᕆᐊᓗᖕᓂᑦ ᐅᓪᓗᕆᐊᓂᑦ ᓯᓚᐃᓐᓇᑦᑎᓐᓂᑦ. R*–ᖑᕗᖅ.

ᑐᓪᓕᐊ ᖃᖓ, N_P–ᖑᔪᖅ, ᑖᓐᓇ ᐳᓴᓐᑦᖑᕗᖅ ᐅᓪᓗᕆᐊᑦ ᖃᔅᓯᐅᓂᖏᓐᓂᑦ ᓄᓇᕐᔪᐊᖃᕈᓐᓇᖅᑐᑦ. ᑕᕝᕙᓂ ᑐᕋᐃᒃ ᐊᑐᖅᑕᖕᖓᓂᑦ, ᖃᐅᔨᓚᐅᖅᐳᒧᑦ ᐊᑕᐅᓯᑐᐊᒥᑦ ᐅᓪᓗᕆᐊᒥᑦ, ᓯᕿᓂᑦᑎᓐᓂᑦ, ᓄᓇᕐᔪᐊᖃᕈᓐᓇᖅᑐᑦ ᑭᓯᐊᓂ, ᖁᔭᓈᒥᒃ ᒫᓐᓇ ᖃᐅᔨᓇᓱᒃᑐᑦ, ᖃᐅᔨᒪᐸᓗᒃᐳᒧᑦ 20 ᐳᓴᓐᑦᖑᔪᑦ ᐅᓪᓗᕆᐊᑦ ᓄᓇᕐᔪᐊᖃᕈᓐᓇᖅᑐᑦ. ᖃᖓᑰᑦᑐᖅ ᖃᖓ, N_h–ᖑᔪᖅ ᐊᐱᕆᕗᖅ: ᑖᑯᓇᓂ ᕖᓕᒫᖅ

“ᐊᐱᕆᒍᑦᑕ ᐃᓅᓯᐅᔪᒥᑦ ᓯᓚᐃᓐᓇᑦᑎᓐᓂᑦ, ᑕᑯᔪᓐᓇᖅᐳᒍᑦ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᖃᐅᔨᒪᓂᕆᔭᕆᓐᓂᑦ ᐊᒻᒪ ᑕᑯᓗᑕ ᐊᔾᔨᖏᑦᑎᐊᖅᑕᖏᑦ ᑕᐅᑦᑐᐊᓂᑦ, ᐱᓗᐊᖅᑐᒥᑦ ᖃᓄᖅ ᑐᑭᖏᑦ ᐃᓅᓯᖃᕐᓂᕐᒥᑦ, ᐃᓱᒪᑑᑉᓗᓂ ᐃᓅᓯᖅ, ᐊᒻᒪᑦᑕᐅᖅ ᐊᑐᕐᓂᕆᔭᖏᑦ ᐃᓅᖃᑎᒌᑦᑎᖅᑎᑦᑎᓂᖅ ᐱᑕᖃᕐᓂᖏᑦ.”

ᓄᓇᕐᔪᐊᓂᑦ, ᖃᓯᐅᕗᑦ ᐃᓅᓯᖃᕐᕕᐅᔪᓐᓇᖅᑐᑦ? ᑕᑯᓇᒃᓴᕆᑦ ᓯᕐᑭᓂᕐᒧᑦ ᐆᒪᑎᑦᑎᔪᓐᓇᖅᑐᓂᑦ, ᑕᖅᑭᓕᕆᔩᑦ ᖃᐅᔨᒪᐸᒃᐳᑦ ᑖᓐᓇ ᒨᑯᕆ ᐃᓅᓯᖃᕐᕕᐅᔪᓐᓇᖏᓐᓂᖓᓂᑦ; ᑖᒃᑯᓅᓇᑦᑕᐅᖅ ᐊᓂᕐᕌᕐᓇᖅᑐᖅ ᐊᒻᒪ ᐊᖏᔪᑦ ᓂᓚᐃᑦ ᓱᕐᓗ ᔫᐱᑐᑎᑐᑦ ᐊᒻᒪ ᔪᕋᐃᓇᔅᑐᑦ. ᖃᐅᔨᓴᖅᑏᑦ ᐃᓱᒪᒋᔭᕐᑲᖅᐳᑦ ᑖᔅᓱᒥᖓ ᒪᐃᑯᐸᐃᔪᒥᑦ ᐆᒪᓂᐊᓂᑦ ᑕᕝᕙᓂ ᕓᓇᔅᒥᑦ ᐊᒻᒪ ᓇᓗᓇᐃᕐᓂᖅᑕᕐᑲᖅᓗᓂ ᑖᓐᓇ ᒫᔅ ᐆᒪᔪᕐᑲᓚᐅᕐᓂᖓᓂᑦ–ᐊᒻᒪ ᒫᓐᓇ ᓱᓕᕐᑲᐃ, ᑕᐃᒪᐃᒻᒪᑦ, ᐃᓱᒪᒋᔪᓐᓇᖅᑕᕗᑦ ᒪᕐᕉᖕᓂᒃ ᐱᖓᓱᓂᓪᓘᓐᓃᑦ ᓄᓇᕐᔪᐊᑦ ᐅᓪᓗᕆᐊᑦ ᐃᓅᕝᕕᐅᔪᓐᓇᕋᔭᖅᑐᑦ. ᐊᒃᓱᓪᓗᑭᐊᖅ, ᐅᖃᐅᓯᕆᑕᕗᑦ ᐃᓱᒪᒋᓂᐅᔪᑦ ᐆᒪᓂᐊ ᑕᖅᑭᕐᒥᑦ ᓄᓇᕐᔪᐊᖑᔪᑦ, ᓱᕐᓗ ᓂᓚᒃᓯᒪᔪᑦ ᑕᖅᑮᑦ, ᕆᐅᐸ ᐊᒻᒪ ᑳᓂᒪᑦ, ᐅᑉᐱᓘᓐᓃᑦ ᑕᑉᐱᓂ ᑕᐃᑕᓐᒥᑦ. ᑕᒪᓐᓇ ᓱᓕᓂᐅᔪᖅ ᖃᐅᔨᓴᖅᑏᑦ ᖃᐅᔨᒪᓪᒪᕆᖏᑉᐳᑦ ᓈᓴᐅᑎᐊᓂᑦ.

ᓈᒻᒪᖕᒋᓕᐅᕆᑎᖅᑕᓚᐅᕆᒍᑦ ᖄᒃᑲᓂᐊᓂᑦ, N_l–ᖑᔪᖅ, ᑭᒡᒐᖅᑐᐃᔪᖅ ᐅᓪᓗᕆᐊᓂᑦ ᐃᓅᕝᕕᐅᔪᓐᓇᖅᑐᓂᑦ ᐊᒻᒪ ᑲᔪᓯᓂᓕᖕᓂᑦ. ᓯᕐᑭᓂᕐᒧᑦ ᐆᒪᔾᔪᑎᑦᑎᓐᓄᑦ, ᖃᐅᔨᒪᑦᑎᐊᖅᑕᑐᐊᕆᕙᒌᑦ ᐅᓪᓗᕆᐊᖑᔪᓂᑦ, ᖃᐅᔨᒪᑦᑎᐊᖅᑕᑐᐊᒐᑦ ᐅᓪᓗᕆᐊᖅ, ᑕᐃᒪᐃᓐᓂᖓᓄᑦ, ᐊᑕᐅᓯᐅᒐᖅ ᐱᖓᓲᔪᓂᑦ ᐅᓪᓗᕆᐊᖑᔪᓂᑦ ᐃᓅᓯᕐᑲᕐᕕᐅᔪᓐᓇᖅᑐᖅ–ᐅᑯᐊᓗᐃᓐᓂᑦ ᑖᓐᓇ ᓈᓴᐅᑖ ᐊᑕᐅᓯᐅᓇᔭᖅᐳᖅ Hᐋᓐᓇᓚᖕᒋᓐᓂᑦ ᓲᕐᑲᐃᒻᒪ, ᐊᒻᒪᒃᑲᓐᓂᖅ, ᖃᐅᔨᓴᖅᑏᑦ ᖃᐅᔨᔾᔪᑎᖅᑳᖕᒋᓗᐊᕐᒪᑕ. ᖄᒃᑲᓐᓂᐊ, N_i–ᖑᔪᖅ ᑐᕌᒐᓕᒃ ᐅᓪᓗᕆᐊᓄᑦ ᐃᓅᓯᕐᑲᕐᓇᖅᑐᑦ ᐊᒻᒪ ᖃᓯᐅᓂᖕᒋᑦ ᓯᓚᑐᓂᖅᐳᕐᓇᖅᑐᑦ ᐃᓅᓂᕐᒥᑦ–ᖃᓄᑐᐃᓐᓇᖅ “ᓯᓚᑐᓂᖅ” ᓇᓗᓇᐃᖅᑕᐅᓂᖅ–ᐃᒪᐃᑐᐃᓐᓇᕆᐊᓕᒃ ᐊᔪᕆᓐᓂᕆᔭᖕᒐ ᐆᒪᔪᑦ ᐅᖃᖃᑎᖃᕐᓂᒃᑯᑦ, ᐅᑯᐊᓗᐃᓐᓂᑦ ᐃᒻᒥᖕᓂᑦ ᐅᔾᔨᖅᓱᕐᓂᖅ, ᐊᒻᒪ ᑕᐅᕗᖕᒐᓕᒫᖅ. ᑖᔅᓱᒧᖕᒐ ᔫᒃᑖᖅ ᑐᕋᐃᒃ ᐊᑐᖅᑕᖕᒐᓂᑦ, ᑕᐃᒪᐃᒻᒪᑦ, ᓯᓚᑐᓂᖅ ᐃᓅᓂᐅᔪᒥᑦ ᑐᑭᖕᒐ ᐃᓄᐃᑦ. ᑕᐃᒪᐃᓐᓂᖕᒐᓄᑦ, ᑖᓐᓇ ᓈᓴᐅᑎᖕᒐ 1–ᒥᑦ 10–ᒧᑦ, ᐅᑯᐊᓗᐃᓐᓂᑦ 1–ᒥᑦ 100–ᒧᑦ, ᐅᑯᐊᓗᐃᓐᓂᑦ 1–ᒥᑦ 1,000,000. ᖃᐅᔨᒪᖕᒋᑦᑐᒍᑦ.

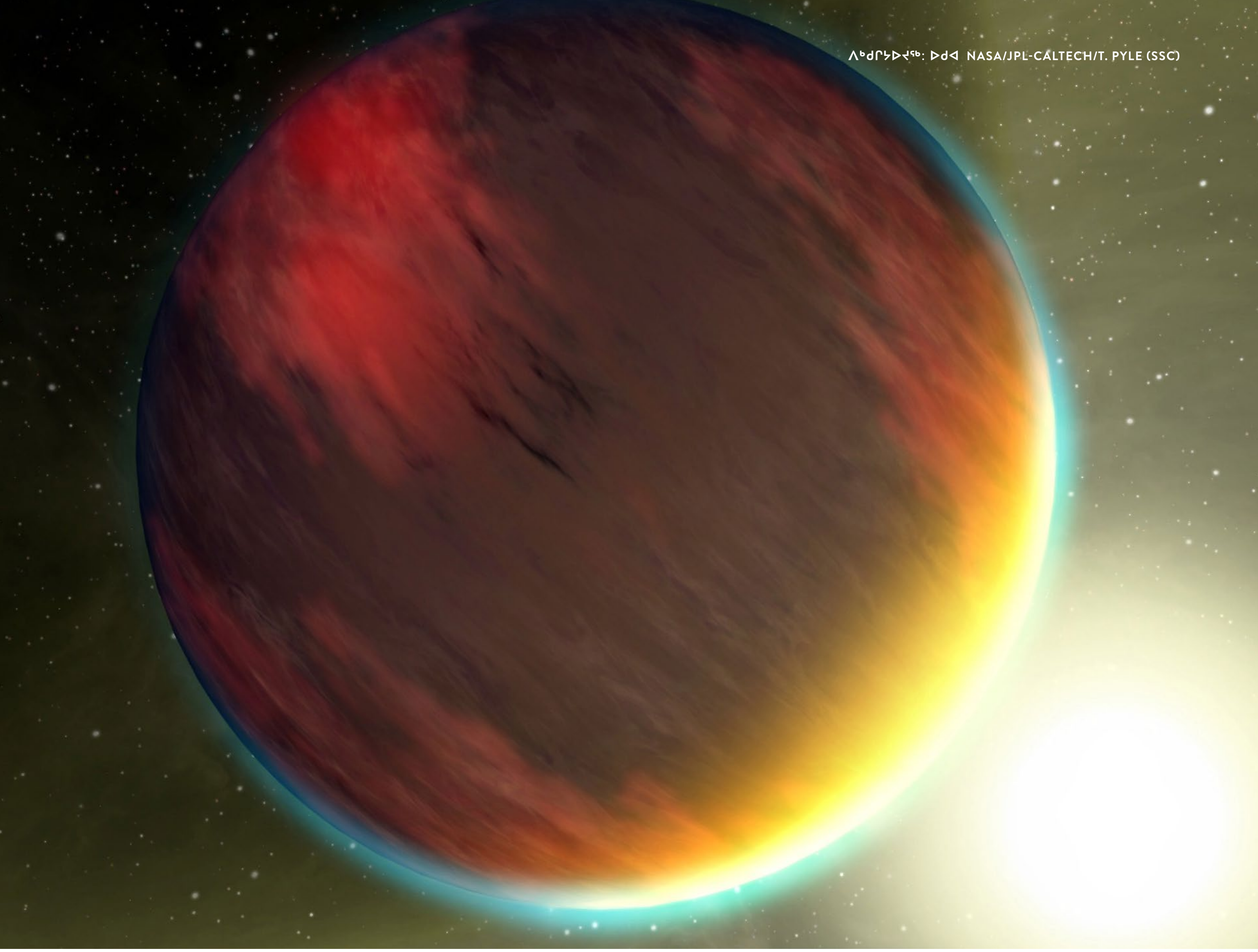
ᐅᓪᓗᕆᐊᖅ ᐊᑐᖅᐸᑦ ᓯᓚᑐᓂᓕᖕᒥᑦ ᐃᓅᓯᕐᒥᑦ, ᑭᓱ ᐱᔪᓐᓇᕋᔭᖅᐸ “ᐃᓅᕐᑲᑎᖅᑲᕐᓂᕐᒥᑦ” ᐊᑐᕆᓐᓇᕐᓗᓂ ᓴᖅᑭᑦᑐᒥᑦ ᐅᖅᑲᑎᖅᑲᕐᓂᒃᑯᑦ ᐊᑐᓕᕐᓂᐊᖅᑑᖅ? ᑖᓐᓇ ᐊᐱᖅᑯᑎ N_c–ᖑᔪᖅ. ᓱᓕᒃᑲᓐᓂᖅ, ᖃᐅᔨᒪᔭᑐᐊᕙᑦ ᑖᒃᑯᐊ ᐃᓄᐃᑦ ᐊᔪᖕᒋᑦᑕᖕᒋᑦ ᐅᖅᑲᑎᖅᑲᕐᓂᒃᑯᑦ ᓈᓚᐅᑎᓄᑦ. ᐱᑕᖅᑐᐃᓐᓇᕆᐊᓕᒃ ᐅᓄᖅᑐᓄᑦ ᐃᓅᓂᕐᒧᑦ ᐊᓂᕐᓂᖅᑳᕐᓇᖏᑦᑐᒥᑦ ᓇᖕᒥᓂᖅ ᖃᐅᔨᒪᓇᖅᑎᑦᑎᓂᕐᒧᑦ, ᑭᓯᐊᓂ ᔫᒃᑖᖅ ᑐᕋᐃᒃ ᐊᑐᕐᓂᐊᓂᑦ, ᓈᓚᐅᑎᒃᑯᑦ ᐅᖅᑲᑎᖅᑲᕐᓂᑐᐊᖑᓚᐅᖅᐳᖅ. ᑕᐃᒫᓂ ᐊᑐᖅᑐᒥᑦ, ᐊᔾᔨᖏᓐᓂᑦ ᓈᒻᒪᖕᒋᓕᐅᑎᖅᑲᖅᐳᖅ: ᐅᓇᐅᑐᐃᓐᓇᕆᐊᓕᒃ 1–ᒥᑦ 10-ᒧᑦ ᐅᑯᐊᓗᐃᓐᓂᑦ 1–ᒥᑦ 1,000,000–ᒧᑦ.

ᑭᖑᓪᓕᖅᐹᖓ ᖄᖓᓃᑦᑐᖅ ᐊᐱᕆᒐᖅ ᖃᓄᑎᒋᓕ ᐃᓚᖅᑳᓃᑦ ᐃᓱᓕᓐᓇᔭᕐᒪᑦ. ᐃᓚᖅᑲᓂᖅ ᐃᓱᓕᑦᑐᓐᓇᖅᐳᖅ ᓲᕐᑲᐃᒻᒪ ᓯᓚᐃᓐᓇᒃᑯᑦ ᐃᖕᒋᕐᕋᔪᖅᑕᖅᑲᖅᐸᖕᒪᑦ ᐅᔭᖅᑲᓂᑦ ᐊᒃᑐᐃᕙᒃᑐᓂᑦ, ᓲᕐᓗ ᐊᑐᕐᓂᐅᓚᐅᖅᑐᖅ ᓄᖑᑦᑐᓂᑦ ᓂᕐᔪᑎᕐᔪᐊᓂᑦ ᑕᐃᓇᓱᐊᖑᓂᕋᖅᑕᐅᔪᑦ ᑕᒫᓂ ᓄᓇᕐᔪᐊᒥᑦ, ᐅᕙᓘᓐᓃᑦ ᐅᓇᑕᕕᐅᔪᐊᕐᓂᖅ–ᐃᓱᒫᓘᑎᒻᒪᕆᒃᐸ ᑖᓯᒪ ᔫᒃᑖᖅ ᑐᕋᐃᒃ ᐊᑐᕐᓂᐊᓂᑦ. ᐅᓪᓗᒥ, ᑲᐸᐊᕆᔭᖅᑲᖅᐳᑦ ᐊᑐᖅᐸᓪᓕᐊᔪᓂᑦ ᓯᓚᐅᐸ ᐊᔾᔨᖏᑦᑎᐊᖅᑕᖅᓯᒪᓂᖓᓄᑦ ᐃᓄᐃᑦ ᑲᑎᖓᓂᖏᓐᓄᑦ. ᐊᒻᒪᑕᐅᖅ ᓯᑐ, ᖃᐅᔨᒪᖏᑦᑐᑦ–ᐊᑐᕐᓂᐅᔫᑉ ᓇᑐᓇᐃᕆᐅ ᖃᓐᓂᓐᓂᖅᓯᐅᕗᖅ 100–ᓂᑦ ᐊᕐᕌᒍᓂᑦ ᐅᑯᐊᓗᐃᓐᓂᑦ 1,000,000-ᓂᑦ ᐊᕐᕌᒍᓂᑦ. ᖃᐅᔨᓴᖅᑏᑦ ᐃᓚᖏᑦ ᐃᓱᒪᕗᖕᒪᑕ ᑕᒪᓐᓇ ᐊᑐᕐᓂᐅᔪᖅ ᓇᑐᓇᐃᕆᐅ ᖃᓂᖕᓂᖅᓯᐅᓂᖕᒋᓐᓂᑦ ᐊᕐᕌᒍᓄᑦ 100–ᓄᑦ.

ᑕᑯᔪᓐᓇᖅᑕᕗᑦ, ᖃᐅᔨᒪᓇᖕᒋᑦᑐᖅᑕᖅᑲᐅᖅᐳᖅ ᐊᐱᕆᒐᑦᑕ ᑖᒃᑯᐊᓐᓚᑦᑖᖑᖕᒋᑦᑐᑦ ᐆᒪᔪᑦ ᐊᓂᕐᓂᖅᑳᕐᓇᖏᑦᑐᒥᑦ–ᐊᒻᒪ ᐅᓄᖅᑑᒍᑦ ᑕᑯᓇᒍᓐᓇᖅᑳᑦ. ᑕᐃᒪᐃᒻᒪᑦ, ᐊᑕᐅᓯᖅ ᑕᑯᔪᓐᓇᖅᑕᒍᑦ ᑕᐅᑦᑕᑦᑎᒍᑦ ᐃᓚᓂᐅᔪᓂᑦ ᐊᑐᕐᓂᖅᐳᖅ ᑐᑭᓯᓂᑦᑎᓐᓂᑦ ᐃᓄᑎᐊᕙᐅᓂᑦᑎᓐᓂᑦ ᐊᒻᒪ ᐃᓅᓯᖅᑲᕐᓂᕐᒥᑦ ᓄᓇᕐᔪᐊᒥᑦ. ᐊᒻᒪᒃᑲᓐᓂᖅ, ᔫᒃᑖᖅ ᑐᕋᐃᒃ ᐊᑐᕐᓂᐊᕋᓯᒋᓈᓚᐅᖅᐳᖅ ᑖᒃᑯᐊ “ᑲᑎᖕᒐᔪᑦ” ᑐᑭᖅᑲᕋᓯᒋᓪᓗᓂᒋᑦ ᖃᓇᓴᐅᔭᐃᑦ ᑕᐃᑲᖕᒐᑦ ᐱᖕᒐᓇᖕᒐᓂ ᓯᓚᕐᔪᐊᕐᒥᑦ ᐊᒻᒪ ᑖᓐᓇ “ᓯᓚᑐᓂᐅᔪᖅ” ᑐᑭᖅᑲᕋᓯᒋᓪᓗᓂᐅᒃ ᐃᓄᑎᐊᕙᐅᓂᕐᒥᑦ. ᑕᐅᕗᖕᒐᖕᒐᑦ ᑕᐅᑐᒃᑕᐅᔪᒃᑯᑦ, ᖃᐅᔨᓴᖅᑏᑦ ᐊᑐᕐᓂᐊᕋᓯᒋᔭᖕᒐᑦ ᑕᒫᓃᑉᐳᖅ 10-ᒥᑦ ᐅᑯᐊᓗᐃᓐᓂᑦ ᑲᑎᖕᒐᓂᖅᑲᓗᐊᖅᐳᖅ. ᑭᓯᐊᓂ, ᑕᒪᓐᓇᑐᐊᖅ ᑕᐅᑐᖕᒍᐊᒐᐅᖕᒋᓚᖅ. ᓄᓇᖅᐳᒍᑦ ᓄᓇᒥᑦ ᑖᒃᑯᐊ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᑕᒫᓂᖕᒋᓇᕐᓂᖕᒋᓐᓂᑦ ᑕᐃᓯᒪᓂᑐᖅᑳᓗᒃ ᐊᒻᒪ ᑕᒪᕐᒥᑦ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᐊᒻᒪ ᐃᓄᐃᑦ ᓇᖕᒥᓂᖅ ᑕᐅᑐᒐᖅᐳᑦ ᓯᓚᐃᓐᓇᕐᒥᑦ ᐊᒻᒪ ᓄᓇᒥᑦ. ᑖᒃᑯᐊ ᑕᐅᑐᖕᓂᐅᔪᑦ ᐊᔾᔨᒌᒃᑐᐃᓐᓇᐅᓐᖏᓚᑦ ᑕᐃᑲᖕᒐᖕᒐᑦ ᐱᓇᖕᓇᖕᒐᓂᑦ ᖃᐅᔨᓴᖅᑎᓂᑦ, ᓱᓕᔫᖕᖏᓚᑦ ᑖᒃᑯᐊ ᐊᔾᔨᖏᑦᑐᑦ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᐊᒻᒪ ᐃᓄᐃᑦ ᑕᐅᑐᒃᑕᖏᑦ ᓇᓕᒧᑎᕐᑐᕆᐅᓇᓂᑦ ᐃᒻᒥᖕᓄᑦ. ᑭᓯᐊᓂ, ᐊᔾᔨᖏᖏᑦᑐᑦ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᖃᐅᔨᒪᓂᕆᔭᖏᑦ ᐅᖅᑐᕐᓇᖅᐳᑦ ᐅᕝᕙᑎᓐᓄᑦ ᓄᓇᒥᑦ, ᓯᓚᕐᔪᐊᕐᒥᑦ, ᐊᒻᒪ ᐊᓂᕐᓂᖅᑳᕐᓇᖏᑦᑐᒥᑦ.

ᐊᐱᕆᒍᑦᑕ ᐃᒪᓂᐅᔪᓂᑦ ᐊᓂᕐᓂᖅᑳᕐᓇᖏᑦᑐᒥᑦ, ᑕᑯᑭᐊᕈᓐᓇᖅᐳᒍᑦ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᖃᐅᔨᒪᓂᕆᓐᖏᓐᓂᑦ ᐊᒻᒪ ᐊᔾᔨᖏᑦᑎᐊᖅᑕᖏᓐᓂᑦ ᑕᐅᑐᒐᖅᐳᑦ, ᐱᓗᐊᖅᑐᒥᑦ ᑖᒃᑯᓂᖓ ᓯᓚᑐᔪᑦ ᐃᒪᓃᑦ, ᐊᒻᒪᑦᑕᐅᖅ ᐊᑐᕐᓂᐅᔪᓂᑦ ᐃᓅᖃᑎᒌᑦᑎᖅᑎᑦᑎᓂᕐᒥᑦ ᐱᑕᖃᕐᓂᐊᓂᑦ.

ᑖᒃᑯᐊ ᐊᐱᖅᑯᑎᑦ ᓇᓗᓇᖅᑐᕗᑦ. ᑖᒃᑯᐊ NASA–ᖑᔪᑦ ᓇᓗᓇᐃᖅᓯᕗᑦ ᐃᓅᓯᕐᒥᑦ ᖃᐅᔨᓴᖅᑎᐅᔪᒧᑦ ᑖᕝᕙᓂᐊᓐ ᖃᐅᔨᓴᖅᑕᖕᒐᓂᑦ; ᑕᐃᒪᐃᒻᒪᑦ, ᐃᓅᓯᖅ ᐊᑐᕐᓂᕐᒧᑦ ᓇᔪᖅᑕᖕᒐᓂᑦ ᐃᓅᓯᐅᔪᓂᑦ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᓂᖕᒐᓄᑦ. ᑕᐃᒪᐃᒃᑲᓗᐊᖅᑎᓪᓗᒍ ᐱᔭᕆᑐᐋᕆᓗᐊᖅᑎᓪᓗᒍ ᓇᓗᓇᐃᕈᑖ, ᐅᓄᖅᑐᓄᑦ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᓄᑦ, ᐃᓅᓯᖅ ᓇᓗᓇᐃᖅᑕᐅᕙᖅ ᐃᓅᖅᑎᖅᑲᕐᓂᕐᒧᑦ; ᐃᓅᖅᑎᖅᑲᕐᓂᖅ ᓇᓄᕐᓂᑦ, ᐃᖅᑲᓗᖕᓂᑦ, ᑐᒃᑐᕕᖕᓂᑦ, ᐅᑯᐊᓗᐃᓐᓂᑦ ᐱᕈᖅᓯᐊᓂᑦ ᓲᕐᓗ ᓴᐃᔅ, ᑖᓐᑎᓚᐃᔭᓐ, ᐅᑯᐊᓗᐃᓐᓂᑦ ᐸᐃᓐ. ᓇᓗᓇᐃᖅᑕᐅᑎᒍᑦ



ᐱᒃᑯᒥᔭᐅᔪᖅ: ᐅᑯᐊ NASA/JPL-CALTECH/T. PYLE (SSC)

^ ᑎᑎᕋᐅᔭᖅᑎᐅᑉ ᓴᖅᑭᑕᖓ ᐅᓪᓗᕆᐊᖅ, ᐊᔾᔨᐸᓗᐊ ᔮᐱᑑᑉ, ᓂᕚᖓᔾᔪᑎᓕᒃ ᖃᓂᕚᖓᔪᐊᖅᑐᖅ ᐅᓪᓗᕆᐊᒧᑦ ᖃᓂᒌᒧᑦ

ᐃᓅᖃᑎᖃᕐᓂᕐᒧᑦ ᓄᓇᒥᑦ, ᐊᒻᒪ ᐊᓂᖅᓵᖅᑕᑦᑎᓐᓂᑦ ᐊᒻᒪ ᐃᒪᕐᒥᑦ. ᑕᐃᒪᐃᓐᓂᖓᓄᑦ ᓄᓇ ᐃᓅᓯᐅᒥᕚ? ᐃᒃᐱᒋᔪᒍ, ᑭᖑᓯᐊ ᐄ. 2017–ᒥᑦ, ᑖᓐᓇ ᑯᐊᖓᓄᐃ ᒪᐅᓇ ᑕᐃᑲᓂ ᓴᐅ ᔼᓚᓐᒥᑦ ᓵᓚᕐᑲᖁᓯᓚᐅᖅᐳᖅ ᐊᒻᒪ ᓵᓚᒃᓴᖅᑲᓂ ᐃᖅᑲᖅᑐᐃᔨᑎᒍᑦ ᐃᓕᓴᓇᔭᐅᓂᕐᒧᑦ ᐃᓅᓂᕐᒧᑦ ᐱᔪᓐᓇᐅᑎᓪᓕᓐᓄᑦ ᑖᒃᑯᓄᖓ ᑯᐊᖓᓄᐃ ᑰᒃ. ᓄᓇᖃᕐᕕᐅᔪᓂᑦ ᖃᐅᔨᒪᔭᐅᔪᖅ ᑲᓇᑕ ᐊᒻᒪ ᐊᒥᐊᓕᖓᑦ. ᐅᓄᖅᑐᑦ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᐅᓇᑕᕐᓂᖃᖅᐳᑦ, ᓇᓪᒥᓂᖅ ᓴᐳᑎᓯᒪᓇᓱᓐᓂᕐᒧᑦ, ᐱᔪᓐᓇᕈᑎᒧᑦ ᐃᒪᕐᒥᑦ ᐊᒻᒪ ᓄᓇᒥᑦ. ᓇᓗᓇᐃᕈᑦᑎᒍᑦ ᐃᓅᓯᐅᔪᖅ ᐃᓅᖃᑎᖃᕐᓂᒃᑯᑦ ᐊᕙᑎᑦᑎᓐᓂᑦ, ᑖᒃᑯᐊ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᖃᐅᔨᒪᓂᓇᔭᕐᒥᑦ ᐊᑐᕐᓂᕐᒥᑦ ᑖᔅᓱᒧᖓ ᑖᕙᓂᐊᓐᑯᑦ ᐊᑐᕐᓂᓇᓚᐅᖅᑕᖓᓂᑦ ᐊᒻᒪ ᓱᓕ ᐅᓄᖅᑑᕗᑦ. ᐅᖃᕈᓐᓇᕐᒥᑦᑐᒧᑦ ᑐᑭᖃᕋᔭᕐᒪᖔᑦ ᐅᓄᕐᓂᕐᒥᑦ ᐅᓪᓗᓇᐊᑦ ᐊᕐᒥᓂᖅᓴᐅᓗᓂ, ᐃᓅᓯᖃᕖᐅᔭᓐᓇᖅᑐᑦ ᐊᒻᒪ ᑕᒪᓐᓇ ᐃᓅᓯᐅᔪᖅ ᑭᓯᐊᓂ, ᐊᒃᓱᓪᓘᓐᓃᑦ, ᖃᔅᓯᐅᓂᕐᒥᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᑦ ᑖᒃᑯᓄᖓ NASA–ᑯᓐᓄᑦ.

ᐊᐱᕆᓪᓚᑦᑕ ᓯᓚᑐᔪᒥᑦ ᐃᓅᓯᕐᒥᑦ, ᑭᖑᓯᐅᔪᑦ ᐊᔾᔨᒋᕐᒋᖁᐊᖃᔭᖅᑕᒃᓴᓇᔭᕐᒥᑦ. ᐅᐊᖕᓇᖕᓘᖓᓂᑦ ᑕᖅᑭᓕᓇᔨᐅᔪᓄᑦ, ᐃᓱᒪᒋᔭᕐᑲᖅᐳᒧᑦ “ᓯᓚᑐᔪᖅ ᐃᓅᓯᖅ” ᑐᑭᖃᕐᓂᖓᓂᑦ “ᐃᓄᑦᑎᐊᕙᐅᓂᖅ” ᓲᖃᐃᒻᒪ ᐊᓯᐊᓂᑦ ᐃᓅᓯᓕᖕᓂᑦ ᐱᑕᕐᑲᖕᒋᒻᒪᑦ ᓄᓇᕐᔪᐊᒥᑦ ᓴᓇᕙᒃᑐᓂᑦ ᖃᓇᓴᐅᔭᓂᑦ ᓲᕐᓗ ᐃᓅᔪᑦ ᐊᑐᖅᑕᖕᒋᓐᓂᑦ. ᑭᓯᐊᓂ, ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᐊᑐᖅᐸᒃᐳᑦ ᐃᓅᖃᑎᖃᑦᑎᐊᖅᖢᑎᒃ ᓄᓇᐃᓐᓇᕐᒥᑦ, ᐊᒻᒪ ᓂᕐᔪᑎᓂᑦ ᐃᒃᐱᒍᓱᑦᑎᐊᖅᖢᑎᒃ ᐊᒻᒪ ᐅᓪᓗᕐᑭᐊᓂᑦ ᓈᒻᒪᒃᑎᕐᖢᒍ ᐃᑦᑎᐊᕙᐅᓂᒃᑯᑦ. ᐃᓄᐃᑦ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᓇᓗᓇᐃᓇᓐᖏᓚᑦ ᓯᓚᑐᓂᕐᒥᑦ ᐆᒪᔪᓂᑦ, ᑭᓯᐊᓂᓪᓗ ᑕᒪᓐᓇ ᓯᓚᑐᓂᖅ ᐃᒃᐱᓐᓂᐊᓃᑦ ᓂᕐᔪᑎᓂᑦ, ᐅᑯᐊᖑᒐᓗᐊᖅᐸᑕ ᐊᒪᕈᐃᑦ, ᐊᑐᕈᑎᐅᔪᑦ ᑖᒃᑯᓄᖓ ᐃᒻᒨᒃᓯᐅᓚᕐᓄᑦ, ᐊᒻᒪ ᑕᐅᖔᖓ ᓱᓕ. ᑕᒪᓐᓇ ᐊᑐᕐᓂᐅᓂᖅᓴᐅᖔᖅ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᓄᑦ ᐱᖅᑯᓯᖕᒋᓐᓄᑦ ᓲᕐᑲᐃᒻᒪ ᐃᓅᔪᑦ ᐊᑦᑎᖕᓂᖅᓴᐅᖕᒋᒻᒪᑕ ᓂᕐᔪᑎᓂᑦ ᐊᒻᒪ ᐱᕈᖅᑐᓂᑦ ᐊᒻᒪᑦᑕᐅᖅ ᐊᑐᖅᑐᑦ ᐃᓅᖃᑎᖃᖅᖢᑎᒃ ᐃᒻᒥᖕᓄᑦ. ᑖᒃᑯᐊ ᐃᓅᔪᑦ ᐊᑦᑎᖕᓂᖅᓴᐅᖕᒋᓐᓂᖕᒋᓐᓄᑦ ᓄᓇᕐᔪᐊᒦᑦᑐᓂᑦ, ᐃᓱᒪᒋᔪᓐᓇᖅᐸᒍᑦ ᓯᓚᑐᓂᖅ ᐃᓅᓯᕐᒥᑦ ᐊᑐᖅᑕᐅᓚᔪᒃᐳᖅ ᐊᒻᒪ ᐊᑐᓚᔪᖕᒋᕝᓱᓂ. ᓇᓗᓇᐃᖅᑕᐅᓂᖓ ᑖᒃᑯᓄᖓ ᐅᐊᖕᓇᕐᒥᑦ ᖃᐅᔨᓴᖅᑎᓄᑦ.

ᐊᔾᔨᐅᖕᒋᓐᓂᖅᐹᓇᓇᔭᖅᑕᖕᓚ ᐋᖅᑭᒃᓯᒪᔪᖅ ᖃᓄᖅ ᑕᐅᑐᖕᒪᖕᓛᑦᑎᒍᑦ ᑭᓲᖕᒪᖕᓛᑦ ᐃᓅᖃᑎᖃᑦᑎᒋᐊᓕᕐᓂᖅ. ᐅᐊᖕᓇᒦᑦᑐᑦ ᖃᐅᔨᓴᖅᑏᑦ, ᐃᓅᖃᑎᖃᑦᑎᒋᐊᓕᕐᓂᖅ ᑕᐃᓇᔭᖅᑕᑯᑦ ᐃᓖᑏᑦ ᐅᕝᕙᓗᓐᓂᑦ ᐱᖅᑯᔫᑦ ᐋᖅᑭᒋᐊᖅᓯᒪᔪᑦ ᐊᓯᖕᒋᓐᓂᑦ ᐃᓚᒌᒃᑐᓂᑦ. ᑖᔅᓱᒪ ᑐᖁᐃᒃ ᐃᓚᔭᖕᓗ, ᐃᓱᒪᒋᔭᕗᑦ ᑖᒃᑯᐊ ᐅᐊᖕᓇᒥᑦ ᐃᓅᓯᓇᔭᕐᒋᓐᓂᑦ ᖃᓇᓴᐅᔭᓇᔭᕐᒋᓐᓂᑦ, ᖃᓇᓴᐅᔭᒃᑯᓯᑎᕐᒋᑦ, ᐊᒻᒪ ᑐᓵᖅᓴᐅᔪᓄᑦ ᑕᐅᑐᒍᑏᑦ, ᖁᑐᑦᑐᓗᐅᔭᑦ, ᐳᔪᕈᔪᒃ, ᐊᓯᖕᒋᑦᓗ, ᐃᓅᑦᑎᐊᕋᓱᖕᓂᐅᕗᑦ. ᑭᓯᐊᓂ, ᒥᒃᓵᒋᐊᖅᓯᒪᕗᖅ ᓇᓗᓇᐃᕈᑎᐅᔪᖅ. ᑖᒃᑯᐊ ᒥᒃ'ᒫᒃᑯᑦ, ᐃᓂᓂᐅᒃᑯᑦ, ᐃᓄᐃᑦ, ᓵᓚᔅᑯᑦ, ᐊᒻᒪ ᐊᓯᖕᒋᑦ ᐃᓅᖃᑎᖃᑦᑎᐊᕋᓱᖕᓂᐅᔪᑦ. ᐊᑕᐅᓯᑐᐃᓐᓇᐅᖕᒋᑦᑐᑦ ᐃᓅᖃᑎᖃᑦᑎᐊᕋᓱᖕᓃᑦ ᓄᓇᒥᑦ, ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᐊᒻᒪ ᐱᖅᑯᓯᖕᒋᑦ ᐃᓅᖃᑎᖃᑦᑎᐊᕋᓱᖕᓂᐅᕗᑦ.

› ᑎᑎᕋᐅᔭᖅᑎᐅᑉ ᓴᖅᑭᑕᖓ ᑖᓐᓇ ᔫᕕᐊᓐ ᑕᖅᑭᖅ ᐃᐅᕋᐅᐸᒥᑦ ᐳᔪᒥᑦ ᐊᓂᐊᑎᕆᔪᖅ ᐃᓂᒋᔭᖓᓂᑦ

ᑖᒃᑯᐊ ᐅᓄᓗᐊᖅᑐᐊᓗᐃᑦ “ᐃᓱᒪᒋᔭᑐᐊᕆᒍᑦᑎᒍᑦ ᐱᖓᓐᓇᕐᒥᐅᑦ ᑕᐅᑐᒃᑕᖏᑦ, ᑕᒪᓐᓇ ᕿᓂᖅᑕᕗᑦ ᓄᓇᑐᐃᓐᓇᕐᒥ ᖃᐅᔨᒪᑦᑎᐊᕐᓂᖅ ᖃᐅᔨᒪᓇᖅᐳᖅ ᐅᕙᑦᑎᓐᓂᖔᖅ ᕿᓂᕐᓂᑦᑎᓐᓂᑦ: ᐃᓅᖃᑎᒌᖑᔪᑦ ᐳᔪᓐᖑᖅᑎᑦᑎᕚᒃᑐᑦ ᐊᒻᒪ ᓯᓚᐅᑉ ᐊᓯᔾᔨᖅᐸᓪᓚᐊᓂᕆᔭᖓ, ᐃᓅᖃᑎᒌᖑᔪᑦ ᐊᖏᕐᓕᑎᑦᑎᕚᓪᓕᐊᔪᑦ. ᑐᐊᑦᑑᕗᖅ ᑕᐅᑐᒋᔭᖓ ᐅᓄᓗᐊᖅᑎᓪᓗᒋᑦ ᐃᓅᖃᑎᒌᓕᖅᑎᑦᑎᓃᑦ ᓄᓇᕐᔪᐊᒥᑦ ᓇᓕᒧᒌᒃᑎᑦᑎᕗᑦ ᐊᒻᒪ ᐃᑲᔪᖅᑐᐃᓪᓗᑎᒃ ᐊᕙᑎᐅᔪᒥᑦ, ᑭᓯᐊᓂ ᑐᕋᐃᒃ ᑲᑎᖅᓱᖅᑕᖓ ᓇᓚᐅᑦᑖᕋᔭᓐᖏᓛ.”

ᐊᔾᔨᐸᓗᐊᑦᑕᐅᖅ, ᖃᓄᑎᒋ ᑕᒪᓐᓇ ᐃᓅᖃᑎᖃᑦᑎᐊᕋᓱᖕᓂᖅ ᐊᑐᕋᔭᖅᐸ? ᓱᓕᒃᑲᓐᓂᖅ, ᖃᐅᔨᓴᖅᑏᑦ ᐅᕙᑦᑎᓐᓂᑦ ᖃᐅᔨᒪᔭᖃᖅᐳᑦ ᐊᒻᒪ ᐊᑐᕐᓂᐅᔪᒥᑦ ᐃᓅᖃᑎᖃᖅᑎᐊᕐᓂᐅᔪᒥᑦ ᑕᒫᓃᒻᒪᑦ ᓱᓕ. ᓘᒃᑖᖅ ᑐᕋᐃᒃ ᐊᒻᒪ ᐊᓯᖏᑦ ᓇᓗᓇᐃᕆᕗᑦ, ᐱᔾᔪᑎᖓᓂᑦ ᓇᓂᓯᓂᖅ ᐃᓅᓪᓚᑦᑖᖑᖏᑦᑐᓂᑦ, ᐃᓅᖃᑎᖃᑦᑎᐊᕋᓱᖕᓂᕗᑦ ᐱᒋᐊᓚᐅᖅᐳᖅ 1950-ᖏᓐᓂᑦ ᐊᑐᖅᓱᑎᒃ ᓂᓪᓕᐊᔪᓄᑦ ᑕᑯᔾᔪᑎᐅᔪᓄᑦ ᐊᒻᒪ ᑕᕐᓇᔭᐅᑎᒃᑯᑦ ᓂᐱᖏᓐᓂᑦ. ᐃᓱᒪᒋᔭᖓᑦᑕᐅᖅ ᐃᓅᖃᑎᖃᑦᑎᐊᕋᓲᖕᓃᑦ ᐱᔪᓐᓇᕐᓂᖃᖅᐳᑦ ᐊᕐᕌᒍᓂᑦ ᐅᓄᖅᑐᓂᑦ ᐊᓂᒍᖅᑐᓂᑦ, ᑕᐃᒪᐃᓐᓂᖓᓄᑦ ᓲᖃᐃᒻᒪ ᐃᓄᑦᑎᐊᕙᐅᓂᖅ ᐃᖏᕋᓇᔭᕐᒪᑦ ᑕᕝᕙᓐᖓᑦ ᓂᐱᓕᖕᓄᑦ ᖃᕆᓴᐅᔭᓄᑦ ᐅᕝᕙᓗᓐᓃᑦ ᐊᓯᖏᓐᓄᑦ ᐊᑐᖅᑕᐅᔪᓄᑦ, ᑕᐃᒪᐃᒻᒪᑦ ᓱᓕᕚᔪᓐᓇᖏᑉᐳᑦ ᐊᑐᕐᓗᑕ ᐊᑕᐅᓯᑐᐊᕐᒧᑦ. ᖃᐅᔨᓇᓱᒃᑲᓐᓂᕋᓗᐊᖅᐳᑦ, ᐊᑐᕈᓐᓇᕆᕗᖅ ᑖᒃᑯᐊ ᐃᓅᓪᓚᑦᑖᖑᖏᑦᑐᑦ ᕿᓂᑐᐃᓐᓇᕆᐊᖃᕆᕗᑦ ᐅᕙᑦᑎᓐᓂᑦ.

ᑖᒃᑯᐊ ᐃᓄᓪᓚᑦᑖᖑᖏᑦᑐᑦ ᐅᓄᕐᓂᖅᓴᓂᑦ ᖃᐅᔨᓇᓲᑎᓂᑦ ᐊᒻᒪ ᐊᑐᕈᑎᓂᑦ ᐱᖃᕐᓂᖅᓴᐅᑐᐃᓐᓇᕆᐊᖃᖅᐳᑦ ᓇᓂᓯᓂᕐᒥᑦ ᐅᕙᑦᑎᓐᓂᑦ. ᕿᓂᖅᑐᒃᓴᐅᔪᑦ ᐊᑯᓂᐅᓂᖅᓴᐅᔪᒥᑦ ᐊᕐᕌᒍᑦ 100 ᐅᖓᑖᓂᑦ. ᑕᐃᒪᐃᓐᓂᖅᐸᑕ, ᐊᓂᒍᐃᓐᓂᖅᐸᑕ ᐊᔪᖏᓐᓂᐅᔪᒧᑦ ᖃᖓᑲᓪᓚᒃ. ᐊᒻᒪ ᑕᐃᒪᐃᓐᓂᖅᐸᑕ, ᓇᓂᓯᓇᔭᖅᑐᒃᓴᐅᕗᑦ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᓂᑦ ᐃᓅᖃᑎᖃᕐᓂᕐᒧᑦ. ᐅᓄᖅᑐᑦ ᑖᒃᑯᐊ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᐅᖃᕋᔭᖅᑐᑦ ᑕᒫᓂᑉᐳᑦ ᐃᒪᑐᖃᓗᒃ, ᑭᓯᐊᓂ ᐃᑦᑕᕐᓂᓴᓕᕆᐦᑦ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᑕᒫᓃᓕᖅᐳᑦ ᐊᒥᐊᓕᒐᕐᒥᑦ ᐊᕐᕋᒍ 20,000-ᖏᓐᓂᑦ.

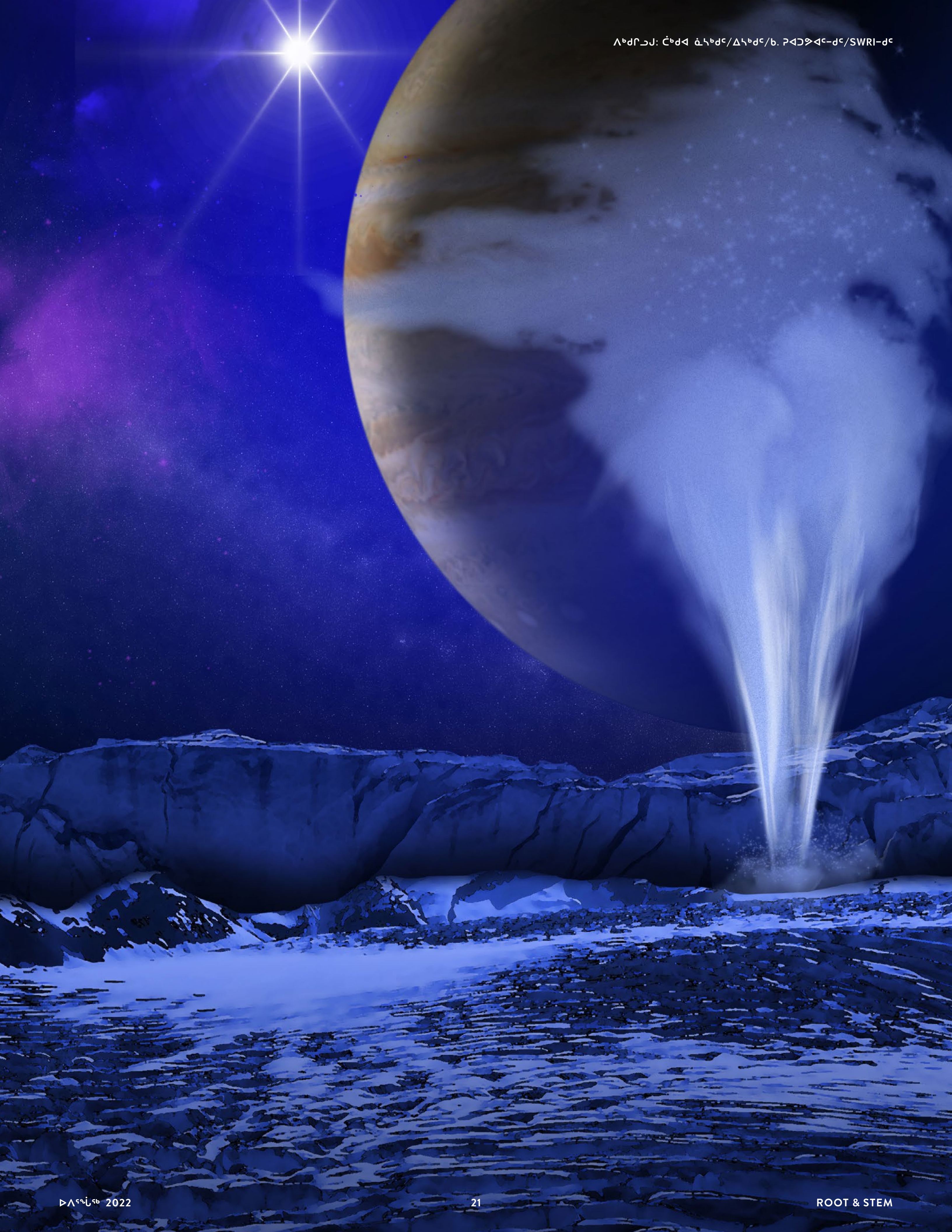
ᑖᒃᑯᓇᓂ ᑎᓴᒪᐅᔪᓂᑦ ᐊᔾᔨᒌᖏᑦᑐᓂᑦ ᖄᖃᐅᖅᐳᖅ, ᑕᑯᔪᓐᓇᖅᐳᑦ ᐊᔾᔨᒌᖏᓐᓂᐅᔪᓂᑦ ᓄᓇᖃᖄᖅᓯᒪᔪᓂᑦ ᐊᒻᒪ ᐅᐊᖕᓇᒦᑦᑐᓂᑦ ᖃᐅᔨᒪᓂᕆᔭᐅᔪᓂᑦ. ᑖᒃᑯᑎᒍᓇᖅ ᐅᐊᖕᓇᒥᑦ ᑕᐅᑐᒃᑕᖓᒍᑦ, ᑖᓯᓱᒪ ᑐᕋᐃᒃ ᐃᓚᓯᒪᓂᕆᔭᖓᓂᑦ ᓇᓗᓇᐃᖅᓯᕗᖅ ᐅᓄᕐᑦᑑᓂᖏᓐᓂᑦ ᐃᓅᖃᑎᖃᖅᑐᑦ ᐊᓂᕐᓂᖃᕐᓇᕐᑦᑐᒥᑦ, ᑕᐃᑲᓂ, ᓄᓇᖃᖄᖅᓯᒪᔪᑦ ᑕᐅᑐᒃᑕᖏᓐᓂᑦ, 10-ᖏᓐᓂᑦ ᐅᑯᐃᓘᓐᓃᑦ 100-ᖏᓐᓂᑦ ᐅᑯᐃᓘᓐᓃᑦ 1000-ᖏᓐᓂᑦ ᐃᓅᖃᑎᖃᕐᓂᖅᓴᐅᕗᑦ ᐊᓂᕐᓂᖃᕐᓇᕐᑦᑐᒥᑦ. ᑕᐃᒪᐃᒻᒪᑦ, ᓄᓇᖃᖄᖅᓯᒪᔪᑦ ᑕᐅᑐᒃᑕᖓᒍᑦ, ᐊᓂᕐᓂᖃᕐᓇᕐᑦᑐᒥᑦ ᐅᓄᕐᓂᖅᓴᐅᕗᑦ ᐃᓅᖃᑎᖃᕐᓂᐅᔪᑦ. ᑕᒪᓐᓇ ᐱᒪᓇᐅᕗᖅ ᓲᖃᐃᒻᒪ ᑕᑯᓇᒃᑯᑦᑎᒍᑦ ᑐᕋᐃᒃ ᐃᓚᓯᒪᔭᖓ, ᐅᓄᖅᑑᖓᒪᑕ ᑐᑭᓯᑦᑎᐊᓐᖏᑕᕗᑦ, ᑕᐃᒪᐃᓐᓂᖓᓄᑦ ᑕᐅᑐᒃᑕᕗᑦ ᐆᒪᓂᐅᔪᑦ ᐊᓂᕐᓂᖃᕐᓇᕐᑦᑐᒥᑦ ᐊᒃᑐᐃᓂᖃᒪᑦ ᓇᐅᒃᑯᑐᐃᓐᓇᖅ ᑕᐅᑐᒃᑕᑦᑎᒍᑦ. ᐃᓱᒪᒋᒍᑦᑎᒍᑦ ᑖᒃᑯᐊ ᐅᐊᖕᓇᒦᑦᑐᑦ ᐃᓱᒪᒋᔭᖏᑦ, ᑕᒪᓐᓇ ᖃᐅᔨᓇᓱᖕᓂᕆᔭᕗᑦ ᓄᓇᖃᖅᑳᓂᖏᓐᓂᑦ ᓯᓚᑐᓂᐅᔪᓂᑦ ᑕᐅᑐᑉᐳᒍᑦ ᐅᕙᑦᑎᓐᓂᑦ: ᑲᑐᔾᔨᖃᑎᒌᑦ ᐳᔪᓐᖑᖅᓴᐃᔪᑦ ᐊᒻᒪ ᓯᓚᑦᑎᓐᓂᑦ ᐊᓯᔾᔨᖅᓯᔪᑦ, ᑖᒃᑯᐊ ᑲᑐᔾᔨᖃᑎᒌᒃᑐᑦ ᐊᖏᓪᓕᒋᐊᖅᑎᑦᑎᔪᑦ. ᑕᒪᓐᓇ ᒥᒃᓵᒋᐊᖅᑎᑦᑎᕗᖅ ᑕᐅᑐᒃᑕᐅᔪᒥᑦ ᐅᓄᖅᑐᐊᓗᐃᑦ ᐊᓯᖏᑦ ᐃᓅᖃᑎᖃᖅᑐᑦ ᓯᓚᕝᔪᐊᕐᒥᑦ ᓄᓇᖃᖅᓯᒪᕗᑦ ᓇᓕᒧᒌᖕᓂᕐᒥᑦ ᐃᑲᔪᖅᑕᐅᓪᓗᑎᒃ ᓄᓇᐃᓐᓇᕐᒧᑦ, ᑭᓯᐊᓂ ᑖᓯᓱᒪ ᑐᕋᐃᒃ ᐃᓚᓯᓂᖓᔭᖓ ᑕᒪᑐᒥᖓ ᐃᓱᒪᒋᓯᒪᓐᖏᓚᖓ.

ᑕᑯᔪᒥᓇᕈᑎᒋᕙᖓ ᐅᓄᖅᑑᓗᑎᒃ ᐃᓅᖃᑎᖃᕐᓂᐅᔪᖅ ᐊᓂᕐᓂᖃᕐᓇᕐᑦᑐᒥᑦ ᐃᓱᒪᒋᔭᐅᓂᖓ ᐊᑐᕈᒥᓇᕐᓂᖅᓴᐅᕗᖅ ᐃᓄᑑᖏᓐᓂᑦᑎᓐᓂᑦ ᐊᒻᒪ ᐃᓚᐅᖃᑕᐅᓚᑦᑕ ᐊᓂᕐᓂᖃᕐᓇᕐᑦᑑᑉ ᐃᓱᕐᓂᐊᓂᑦ. ᑲᔪᖏᖅᓴᐃᓂᐅᕗᖅ, ᖃᐅᔨᓴᖅᑎᐅᓪᓗᓂ, ᑕᑯᓇᒃᑯᓂ ᐊᒻᒪ ᖃᐅᔨᓇᓱᒃᑯᓂ ᐅᓪᓗᓇᐊᓂᑦ ᐅᐃᔾᔫᖅᑐᓂᑦ ᐊᓯᖏᓐᓂᒃᑯ ᐊᒻᒪ ᐃᓱᒪᓗᑕ ᐃᓄᖃᖏᑦᑐᖅ ᐅᓪᓗᓇᐊᖅ ᑕᑯᔭᕗᑦ ᐅᑯᐃᓘᓐᓃᑦ ᐃᓅᓯᖃᕝᕕᐅᔪᖅ ᐅᓪᓗᓇᐊᖅ. ᐃᓕᑦᑎᔪᓐᓇᖅᐳᑦ ᓄᓇᖃᖄᖅᓯᒪᔪᓂᑦ ᐃᓱᒪᒋᔭᖏᓐᓂᑦ, ᑲᑎᓪᓗᒋᑦ ᐅᐊᖕᓇᒦᑦᑐᑦ ᐃᓱᒪᒋᔭᖓ ᑖᓯᓱᒪ ᑐᕋᐃᒃ ᐃᓚᓂᕆᓯᒪᔭᖓ, ᑕᑯᔪᓐᓇᖅᓗᒍ ᐊᓂᕐᓂᖃᕐᓇᕐᑦᑐᖅ ᐆᒪᓂᖅᑕᖃᕐᒪᑦ ᐊᔾᔨᐅᓐᖏᑲᓗᐊᖅᑐᓂᑦ. ᐃᒪᖃ, ᐊᓂᕐᓂᖃᕐᓇᕐᑦᑐᖅ ᓄᓇᖃᖄᖅᓯᒪᕗᑦ ᑕᒪᕐᒥᓕᒫᖅ. &

ᓇᓗᓇᐃᕈᑕᓕᐅᕐᓂᖅ ᐊᒻᒪ ᐱᓕᕆᐊᖑᓂᐊᖅᑐᑦ

ᖃᓇᓴᐅᔮᖅᑐᑦ ᐊᒻᒪ ᑲᑐᔾᔨᖃᑏᑦ

ᑎᑎᕋᖅᓯᒪᔪᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᑯᐃᑦ



ᐱᒃᑯᒋᓗᒍ: ᑖᒃᑯᐊ ᓈᓴᒃᑯᑦ/ᐃᓴᒃᑯᑦ/ᑲ. ᕈᐊᑐᕗᐊᑦ−ᑯᑦ/SWRI−ᑯᑦ

ᑖᒃᑯᐊ CanSats–ᒥᑦ ᖃᖓᑦᑕᖅᑎᑦᑎᔪᓐᓇᓕᖅᑐᑦ! ᑖᓐᓇ CanSats–ᖑᔪᖅ ᖃᖓᑦᑕᖅᑎᑕᐅᓚᐅᖅᐳᖅ ᖁᓕᒥᒎᓕᒃᑯᑦ ᔫᓂ 2021–ᒥᑦ, ᑭᖑᓪᓕᖅᐹᒥᑦ ᑖᓐᓇ ᖃᖓᑦᑕᖅᑎᓂᕐᒥᑦ ᓵᓚᖃᕐᒃᑎᓪᓗᒋᑦ

ᑎᑎᕋᖅᑐᖅ ᓚᐅᕋᓐ ᓱᕚᓐ

ᓴᓇᓗᑦ ᐊᒻᒪ ᖃᖓᑦᑕᖅᑎᑦᓗᑦ ᓯᓚᐃᓐᓇᕐᒧᑦ

ᐃᒪᓐᓈᒃᑖᓪᓗᒃ, ᓂᐱᖅᑯᖅᑐᔪᐊᓗᒃ "ᖄᔅ," ᒥᑭᑦᑐᑯᓗᒃ ᖃᖓᑦᑕᓲᑦ ᖃᖓᑦᑕᖅᓘᑎᒃ ᓯᓚᐃᓐᓇᕐᒧᑦ, ᐳᔪᕐᒥᑦ ᕿᒪᐃᓪᓗᑎᒃ. ᑖᓐᓇ ᖃᖓᑦᑕᖅᑎᑕᐅᔪᖅ ᖃᒥᕐᓗᓂ ᑭᓯᐊᓂᓕ ᓱᓕ ᖃᖓᑦᑕᓪᓗᓂ ᖁᑦᑎᒃᑐᒥᑦ. ᑎᑭᓐᓇᓱᒃᑕᒥᓄᑦ ᑎᑭᒃᑲᒥᒃ (ᐊᑕᐅᓯᕐᒥᑦ ᑭᓕᒦᑕᒥᑦ), ᒥᑭᑦᑐᖅ, ᕿᕐᓂᖅᑐᒥᑦ ᐳᔩᖅᑐᖅ ᐲᖅᓗᓂ ᖃᖓᑕᔫᑉ ᓯᕗᓂᐊᓖᑦᑐᖅ ᐊᒻᒪ ᐲᖅᓗᓂ ᖃᖓᑕᓪᓗᓂ: ᑕᐃᔭᐅᔪᖅ CanSat–ᒥᑦ ᐃᒥᒐᐅᓯᙳᐱᑐᑦ ᒥᑭᑎᒋᔪᖅ ᖃᖓᑕᔪᖅ ᐱᓕᕆᔾᔪᑎᒃᓴᓂᑦ ᐃᓗᓕᓕᒃ ᐊᑕᐅᓯᕐᒧᑦ ᐅᕙᓃᓐᓂᑦ ᐅᓄᖅᑐᓄᑦ ᖃᐅᔨᓴᖅᑎᓄᑦ ᖃᐅᔨᓴᕈᑎᒃᓴᓂᑦ. ᑲᑦᑕᒃᑐᒧᑦ ᓱᒃᑲᐃᔪᑎ ᒪᒃᐱᖅᓱᓂ, ᐊᒻᒪ ᑖᓐᓇ CanSat–ᖑᔪᖅ ᖃᖓᑕᔪᖅ ᐱᒋᐊᓕᖅᐳᖅ ᑲᑎᖅᓱᐃᓪᓗᓂ ᖃᐅᔾᔪᑎᒃᓴᓂᑦ ᐅᑎᖅᐸᓪᓕᐊᓕᖅᓱᓂ ᓄᓇᕐᔪᐊᕐᒧᑦ.

ᑖᒃᑯᐊ ᑲᓇᑕᒥᐅᑕᑦ ᖃᖓᑦᑕᖅᑎᑕᐅᕙᒃᑐᓄᑦ ᐋᖅᑭᒃᓱᐃᕙᒃᑐᑦ ᐊᑐᖅᑕᐅᓂᐊᖅᑐᓂᑦ ᐊᐅᓚᑦᑎᔩᑦ ᑲᑐᔾᔨᖃᑎᖏᑦ (CSMDCMS–ᑯᑦ) ᐊᐅᓚᑦᑎᓂᖃᖅᐳᑦ ᐃᓕᓐᓂᐊᕐᕕᐅᔪᐊᖑᔪᓄᑦ ᑕᐃᔭᐅᔪᖅ "CubeSat–ᒥᑦ" ᖃᖓᑦᑕᖅᑎᑕᐅᕙᒃᑐᓄᑦ ᓵᓚᖃᒋᒃᑐᑦ ᐊᕐᕌᒍᓄᑦ 10–ᓄᑦ ᐅᖓᑖᓄᑦ, ᐊᒻᒪ ᐊᖏᒡᓕᒋᐊᖅᓱᓂ ᓴᖅᑭᑎᓗᑎᒃ ᑖᔅᓯᒥᖓ CanSat–ᖑᔪᒥᑦ ᐋᖅᑭᒃᑕᐅᔪᖅ ᐊᑐᕐᓂᐊᖅᑐᖅ ᑖᒃᑯᓄᖓ ᐃᓕᓐᓂᐊᕐᕖᖑᓄᑦ ᖁᑦᑎᖕᓂᖅᓴᐅᔪᓄᑦ ᐃᓕᓐᓂᐊᖅᑎᐅᔪᓄᑦ.ᑕᒪᓐᓇ ᐊᑐᕐᓂᐊᔪᖅ ᑲᓇᑕᓕᒫᒧᑦ STEM–ᖑᓂᕋᖅᑕᐅᔪᒧᑦ ᓴᖅᑭᑕᐅᓪᓗᓂ ᐃᓕᓐᓂᐊᕈᑦᓴᖅ ᑖᒃᑯᓄᖓ ᐱᓕᕆᖃᑎᒌᒃᑐᓄᑦ ᖁᑦᑎᖕᓂᖅᓴᓄᑦ ᐃᓕᓐᓂᐊᖅᑎᓄᑦ ᐋᖅᑭᒃᑕᐅᔪᖅ, ᓴᓇᔭᐅᔪᖅ, ᐊᒻᒪ ᖃᖓᑦᑕᖅᑎᑦᑎᓪᓗᑎᒃ ᓇᖕᒥᓂᕆᔭᒥᖕᓂᑦ CanSat–ᖑᔪᒥᑦ, ᓇᓗᓇᖕᖏᓐᓂᖅᓴᐅᔪᖅ ᐋᖅᑭᒃᑕᐅᓯᒪᓂᐊ ᖃᖓᑦᑕᖅᑎᑕᐅᓂᐊᖅᑐᖅ. ᑖᓐᓇ CanSat–ᖑᔪᖅ ᐃᓗᓕᖅᑯᖅᐳᖅ ᖃᓇᓴᐅᔭᖅᑏᒥᑦ, ᐹᑐᑏᒥᑦ, ᐊᒻᒪ ᐊᑕᐅᓯᕐᒥᑦ ᐅᕝᕙᔫᓐᓂᑦ ᐅᓄᕐᓂᖅᓴᒥᑦ ᐃᒃᐱᒍᓯᒍᑎᓂᑦ, ᐊᒻᒪᑦᑕᐅᖅ ᐊᓯᖕᒋᓐᓂᑦ ᖃᓇᓴᐅᔭᕐᓂᑦ ᖃᐅᔨᓴᕈᑎᐅᓂᐊᖅᑐᓂᑦ ᖃᖓᑦᑕᖅᑎᑕᐅᒃᐸᑦ. ᐱᔾᔪᑖ ᑖᔅᓱᒪ ᖃᖓᑦᑕᖅᑎᑕᐅᔫᑉ ᑲᑎᖅᓱᐃᓗᓂ ᐊᒻᒪ ᓇᓗᓇᐃᖅᐸᓪᓕᐊᓗᓂ ᓯᓚᐅᑉ ᓂᒡᓕᓇᕐᓂᐊᓂᑦ ᐊᒻᒪ ᐅᕐᕿᖅᑭᓐᓂᖓᓂᑦ ᑕᕝᕙᓂ ᑎᒃᑕᐅᑉ ᐊᑐᕐᓂᖅᓴᖓᓂᑦ.

ᐱᒋᐊᖅᓱᓂ ᒥᑭᑦᑐᒥᑦ, ᕿᑎᐊᓄᑦ–ᐊᑐᖅᑐᒧᑦ ᐱᒋᐊᕈᑎᖅᑲᖅᓱᓂ 6–ᖑᔪᓂᑦ ᐱᓕᕆᓂᐊᖅᑐᓂᑦ ᑕᐃᑲᓂ ᐊᕐᕌᒍ 2020-21–ᒧᑦ ᐃᓕᓐᓂᐊᕐᓂᐅᔫᑉ ᐊᕐᕌᒍᐊᓂᑦ, ᑖᓐᓇ CanSat–ᖑᔪᖅ ᐋᖅᑭᒃᑕᐅᔪᖅ ᐱᓕᕆᐊᒃᓴᖅ ᐱᕈᕐᓂᖅᑲᖅᐳᖅ ᐃᓚᖃᕐᕈᓂ 40–ᓂᑦ ᐱᓕᕆᓂᐊᖅᑐᓂᑦ ᑕᒪᑐᒪᓂ ᐊᕐᕌᒍᒥᑦ, ᑕᐃᑲᓐᖓᑦ ᐳᓇᑎᔅ ᑲᓚᒻᐱᐊᒥᑦ ᑕᐃᑯᖓ ᓅᕙᔅᑰᓴᒧᑦ. ᑖᒃᑯᐊ ᐱᓕᕆᓂᐊᖅᑐᑦ 6–ᓂᑦ ᐃᓕᓐᓂᐊᖅᑎᓂᑦ, ᑖᒃᑯᓂᖓ STEM–ᖑᔪᓂᑦ ᐃᓗᓕᖕᕆᓐᓂᑦ ᒪᓕᒋᐊᖅᑕᖅᑕᕆᓐᓂᑦ (ᐅᐊᔭᔾᔫᖅᑐᑦ, ᖃᐅᔨᓴᕐᓂᖅ ᐃᓚᓯᓗᓂ ᐊᒻᒪ ᐃᓚᓘᒋᑦ ᖃᐅᔨᒪᓂᓕᖕᓂᑦ , ᐊᒻᒪ ᖃᓇᓴᐅᔭᓂᑦ ᐊᑐᕈᑏᑦ), ᐊᒻᒪᑦᑕᐅᖅ ᐅᖃᖃᑎᖃᕈᓐᓇᕐᓂᕐᒥᑦ (ᑎᑎᕋᕐᓂᕐᒥᑦ, ᓴᖅᑭᑎᓪᓗᒋᑦ ᐅᖃᐅᓯᕆᓗᒋᑦ). ᑖᓐᓇ CanSat–ᖑᔪᖅ ᓵᓚᖃᖅᓯᖕᓂᖅ ᐃᓗᓕᖅᑲᖅᐳᖅ ᐃᓕᓐᓂᐊᕈᑎᐅᔪᓂᑦ ᖁᑎᖕᓂᖅᓴᒧᑦ ᐃᓚᓯᒪᔪᖅ, ᐊᒻᒪ ᐃᓛᕆᒃᑐᑦ ᐊᑐᓇᐊᖅᑲᖅᐳᑦ ᐊᓂᕐᓂᖅᓇᖏᑦᑐᓕᔪᓂᑦ ᓴᖅᑮᔭᖅᑎᑦᑎᓗᓂ ᐅᖃᐅᓯᖅᑲᕐᓂᕐᒥᑦ ᓄᑲᖅᑳᐅᔪᓄᑦ ᐃᓕᓐᓂᐊᖅᑎᓄᑦ ᐃᓱᒪᑖᖁᑦᑐᖏᑦ ᐱᔪᒪᓂᖅᑲᕐᑐᑎᒃ ᐊᒻᒪ ᑲᔪᖏᖅᓴᖅᑐᒋᑦ ᑲᔪᓯᖁᑦᑐᒋᑦ ᑕᒪᑐᒥᖓ STEM–ᖑᔪᒥᑦ ᐃᓕᓐᓂᐊᕐᓂᒃᓴᖅᓂᑦ.

ᑕᒪᓐᓇ CanSat–ᖑᔪᖅ ᐋᖅᑭᒃᓯᒪᓂᐊ ᓵᓚᒃᓴᖃᓯᖕᓂᖅ ᒪᕐᕉᖕᓂᒃ ᖁᑦᑎᖕᓂᖅᐹᒃ ᐱᓕᕆᑎᑦᑎᔪᓐᓇᖅᑐᑎᒃ ᐅᓄᖅᑐᓂᑦ ᐱᓕᕆᐊᖅᐸᒪᔪᓂᑦ ᐃᓕᓐᓂᐊᖅᑎᓄᑦ. ᐱᕆᐊᓕᖅᑐᓄᑦ ᖁᑦᑎᖕᓂᐅᔪᖅ, ᑖᓐᓇ CanSat–ᖑᔪᖅ ᓂᐱᓕᐅᕆᐅᖅᑐᓂ ᑲᑎᖅᓱᖅᑕᐅᔪᓂᑦ ᑕᕝᕙᖓ ᑲᑎᖅᓱᐃᕕᐅᔪᒧᑦ; ᑕᕝᕙᓂ ᖁᑦᑎᖕᓂᖅᓴᐅᔪᒧᑦ, ᑖᓐᓇ CanSat–ᖑᔪᖅ ᓇᒃᓯᐅᔾᔨᓪᓗᓂ ᖃᓇᓴᐅᔭᖅᒧᑦ ᓂᐱᖃᐅᑎᒃᑯᑦ ᐃᓕᓐᓂᐊᖅᑎᓄᑦ ᖃᐅᔨᒪᓇᓱᒃᓗᑎᒃ ᓄᓇᒦᑎᓗᒍ. ᑖᒃᑯᐊ ᐃᓚᒌᒃᓱᖅᑐᑦ ᑕᐃᑯᓐᖓᐅᓇᔭᖅᐳᑦ ᓚᑦᐳᓇᒃ ᐃᐊᓪᐳᑕᒧᑦ, ᐊᐃᕆᓕᐅᑉ ᓄᓐᖑᐊᓂᑦ ᑖᔅᓯᒥᖓ CanSats–ᖑᔪᒥᑦ ᖃᖓᑦᑕᖅᑎᑦᑐᑎᒃ, ᑖᒃᑯᐊ ᐱᕆᐊᓕᕐᖅᑐᑦ ᑖᒪᑐᒥᖓ CanSat–ᒥᑦ ᖃᖓᑕᓇᔭᖅᐳᖅ ᖁᓕᒥᒎᓕᒃᑯᑦ

ᑖᓐᓇ CatSat–ᖑᔪᖅ ᓵᓚᖃᕐᖏᓐᓂᕐᒧᑦ ᐋᖅᑭᒃᓯᐃᔾ ᓚᐅᕋᓐ ᓱᕚᓐ ᖃᖓᑦᑕᖅᑎᑦᑎᓪᓗᓂ CanSat–ᖑᔪᒥᑦ ᖁᓕᒥᒎᓕᒃᑯᑦ ᔫᓂ 2021–ᖑᑎᓪᓗᒍ, ᑭᖑᓪᓕᖅᐹᒥᑦ ᑖᓐᓇ ᖃᖓᑦᑕᖅᑎᓂᕐᒥᑦ ᓵᓚᖃᕐᒃᑎᓪᓗᒋᑦ

ᐃᓚᒌᔾᔨᓂᓂᑦ. ᓵᓚᒃᓴᖅᑐᑦ ᖁᑦᑎᖕᓂᐅᔪᒥᑦ ᑲᓇᑕᒧᑦ ᐱᔨᑦᑎᕋᖅᐳᑦ ᑕᐃᑲᓂ ᐃᐅᕋᑉᒥᑦ ᓄᓇᕐᔪᐊᓕᒫᒥᑦ CanSat−ᖑᔪᒥᑦ ᓵᓚᖃᕋᓲᖕᓂᕐᒥᑦ ᐋᖅᑭᒃᑕᐅᓪᓗᓂ ᐃᐅᕋᑉ ᓯᓚᐃᓐᓇᓕᕆᔩᖏᓐᓄᑦ ᐱᓕᕆᔩᖏᓐᓄᑦ.

ᐱᓕᕆᖃᑕᐅᓗᓂ CanSat−ᒥᑦ ᐊᑐᖅᑎᑦᑎᓂᐅᕗᖅ ᐃᓕᓐᓂᐊᖅᑎᓄᑦ ᐊᑐᕐᓂᖃᕐᓗᑎᒃ ᐊᑐᖅᑕᐅᓂᐅᕙᒃᑐᓂᑦ ᓯᓚᐃᓐᓇᕐᒧᐊᖅᓯᑎᓪᓗᒋᑦ, ᓂᕈᐊᕐᓗᑎᒃ ᖃᖓᑦᑕᖅᑎᑕᐅᓂᐊᖅᑐᒥᑦ, ᐋᖅᑭᒃᓯᓗᑎᒃ ᑖᔅᓱᒥᖓ CanSat−ᖑᔪᒥᑦ ᐊᒻᒪ ᑲᑦᑲᓗᓂ ᓱᒃᑲᐃᔾᔪᑎᒥᑦ, ᐊᒻᒪ ᖃᐅᔨᓴᕐᓗᒋᑦ ᖃᓄᐃᓯᒃᑯᑦ ᑲᑎᖅᓱᖅᑕᐅᔪᑦ. ᑕᒪᓐᓇ ᐊᑐᕐᓂᖅ, ᐃᓕᓐᓂᐊᖅᑏᑦ ᐃᓕᓐᓂᐊᕋᔭᖅᐳᑦ ᐱᓕᕆᓗᑎᒃ ᐊᓯᑎᒃ ᐊᑐᕐᓗᓂᔪᒃ ᖁᕙᐊᓇᖅᑑᓗᓂ ᐊᒻᒪ ᐱᓕᕆᐊᕆᔪᒥᓇᕐᓗᓂ ᐱᓕᕆᐊᒃᓴᐅᔪᑦ, ᑖᒃᑯᐊ CSDCMS−ᑯᑦ ᐊᑐᒐᒃᓴᖃᖅᑎᑦᑎᕗᑦ ᐃᓚᒌᒃᓱᖅᑐᓄᑦ ᐊᑐᖅᑕᐅᓂᐊᖅᑐᓂᑦ CanSat−ᖑᔪᒧᑦ ᐊᑐᓇᐊᖃᑦᑐᓂᑦ, ᐊᒻᒪ ᓴᖅᑭᑦᑎᓯᒪᕗᑦ ᖃᓇᓴᐅᔭᒃᑯᑦ ᑕᕐᕆᔮᒃᓴᓂᑦ ᐃᑲᔫᑎᐅᔪᓂᑦ ᐃᓕᓐᓂᐊᖅᑎᓄᑦ ᐱᓕᕆᐊᖃᖅᑎᓪᓗᒋᑦ ᐱᙵᓪᓚᐊᓂᕐᓂᓂᑦ.

ᑖᒃᑯᐊ CSDCMS−ᑯᑦ ᑐᓐᖓᓱᒃᑎᑦᑎᕗᑦ ᐃᓕᓐᓂᐊᕐᕕᓕᒫᓄᑦ ᐊᕐᕌᒍᓗᐊᖅᐸᑦ, ᒥᑭᑦᑑᒍᓗᐊᖅᐸᑦ, ᐅᙱᓛᓐᓃᑦ ᓄᓇᓕᖃᖅᑐᖑᓂᖅᓴᐅᒐᓗ-ᐊᖅᐸᑕ−ᖃᐅᔨᒋᐊᕐᓗᑎᒃ ᐅᕙᑦᑎᓐᓄᑦ ᐃᓚᐅᓇᓱᒍᒪᒃᐸᑕ ᐊᑐᖏᖅᑐᒥᑦ ᓵᓚᖃᖅᓯᓕᖅᐸᑕ. ᖃᐅᔨᒋᐊᕐᓗᑎᑦ ᑖᒃᑯᓄᖓ CanSat−ᑯᓐᓄᑦ ᐋᖅᑭᒃᑕᐅᔪᓄᑦ ᓵᓚᖃᕋᖕᒋᑎᓄᑦ ᐋᖅᑭᒃᓯᐃᔨᓄᑦ, ᓚᐅᕋᓐᔅ ᕇᕝᔅ, ᐅᕙᓂ: lreeves@csdcms.ca. &

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CSDCMS−ᑯᑦ ᐃᑭᐊᖅᑭᕕᐊᒍᑦ: csdcms.ca
CanSat−ᑯᑦ ᐃᓕᓭᐃᓂᖏᑦ: youtube.com/channel/UClWbhWHrUk8rMpSCAlgNEhw
ᔫᐳᕋᑉᒥᑦ ᓯᓚᐃᓐᓇᓕᕆᔩᑦ ᐱᓕᕆᔩᖏᑦ ᑖᒃᑯᓇᖓ CanSat−ᒧᑦ ᐃᑲᔫᑎᒃᓴᑦ ᐃᑭᐊᖅᑭᕕᐊᒍᑦ ᐅᕙᓂ: esa.int/education/cansat

ᓇᓗᓇᐃᖁᑕᓕᐅᕐᓂᖅ ᐊᒻᒪ ᐱᓕᕆᐊᖑᓂᐊᖅᑐᑦ

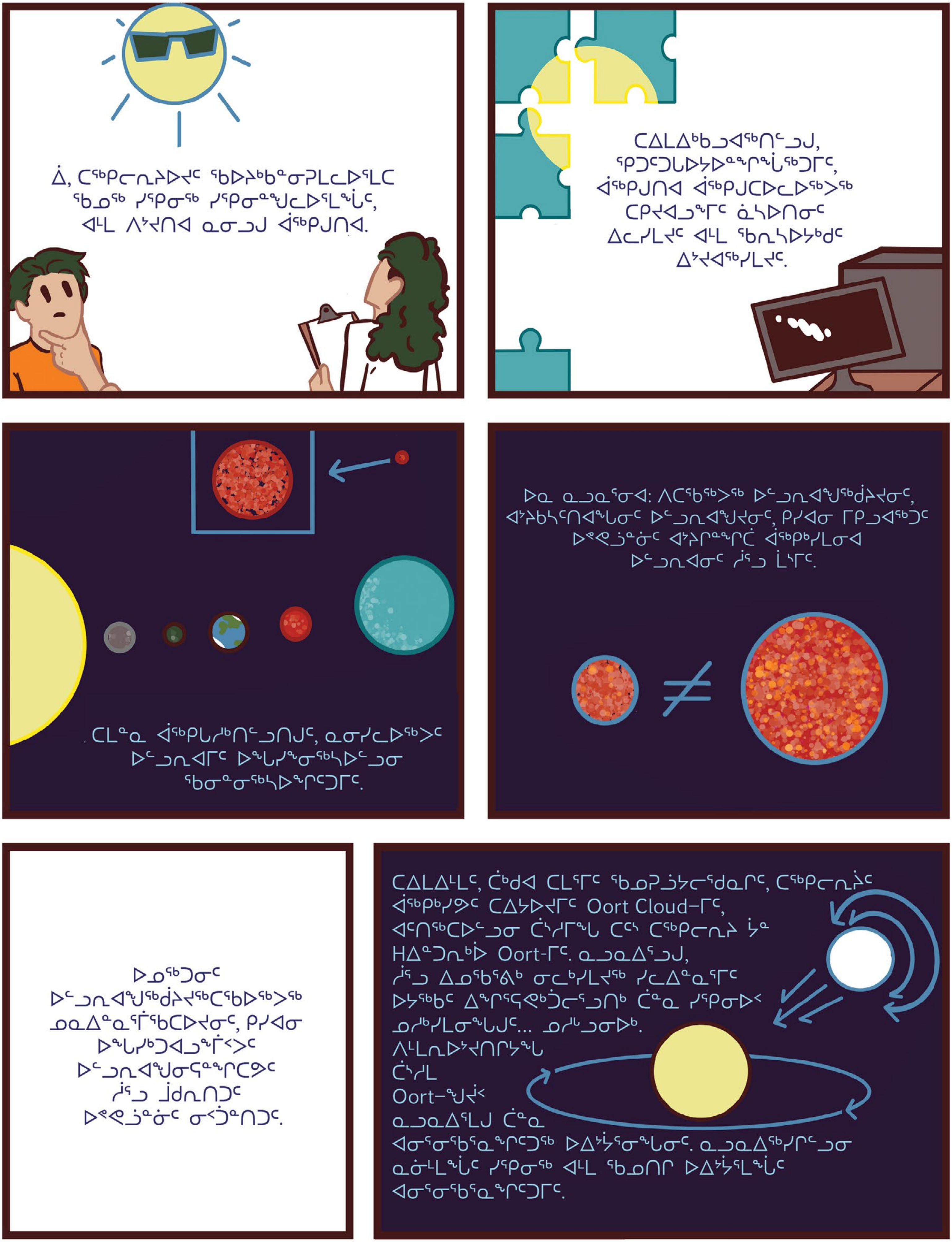
ᖃᕆᓴᐅᔭᓕᕆᓂᖅ ᐊᒻᒪ ᖃᕆᓴᐅᔭᐅᑉ ᐊᐅᓚᓂᕆᔭᖏᑦ

ᐋᖅᑭᒃᓯᒪᓂᖓ

ᑎᑎᕋᖅᓯᒪᔪᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᑯᐃᑦ

ᑎᑎᕋᐅᔭᖅᓯᒪᔪᑦ ᐅᓂᒃᑳᑦ
ᐅᑦᓗᑎᓇᐊᖑᔪᖅ ᓄᓕᐊᔪᒃ
ᓴᖅᑭᑕᐅᔪᖅ
ᑖᔅᓯᒧᖕᒐ ᔅᒪᑦᔾᒧᑦ
2022
ᐊᓱᑦ,ᐄ. ᐅᕐᑲᓕᒫᕐᓚᒎ?
ᐄ.
...
ᐅᕐᑲᓕᒫᓇᐊᕐᑲᖅᑕᑦ ᓂᐱᖅᑯᖅᑐᓗᑎᑦ.
ᐊᓱᕐ! ᐊᑖᑕᒐ.
ᑕᐃᒪᓐᓇᐅᖕᒋᑦᑐᖕᒐ–
ᑕᐃᒪᓐᓇᐅᓚᐅᖕᒋᑦᑐᖕᒐ
ᓄᓕᐊᔪᒃ. ᐃᓄᖕᓄᑦ ᑰᑎᒋᔭᐅᔪᖅ ᓴᖅᑭᑦᑎᖕᒪᑦ
ᐅᑭᐅᖅᑕᖅᑑᑉ ᓂᕐᔪᑎᖕᒋᓐᓂᑦ ᐆᒪᔪᓐᖑᖅᑎᕐᕗᓂᒋᑦ.
ᑕᐃᒫᑦᑎᐊᖅ.

ᓇᓗᓇᐃᕈᑎᓕᓪᓛᓗᒃ ᖃᐅᔨᒪᔭᕆᐊᖃᖅᑕᑦᑎᓐᓂᑦ.
ᑖᓐᓇ ᐅᑦᑐᕆᐊᓂᑦ ᓄᓕᐊᔫᒃ ᑐᒡᓕᐊᓃᑉᐳᖅ ᐊᖏᓛᖑᖅᑲᑕᐅᑦᑐᓂ ᐅᐃᔾᔫᖅᑐᓂᑦ ᖃᐅᔨᒪᔭᐅᔪᓂᑦ ᓯᓚᐃᓐᓇᕐᒥᑦ ᒥᒃᓵᐅᓯᕈᓐᓇᖅᑐᖅ ᐅᕝᕙᓘᓐᓃᑦ ᐊᖏᓂᖓ, ᑲᑎᑕᐅᓂᓇᔭᖓ ᐊᕐᕌᒍᑦ 11,400−ᐸᓗᖕᓂᑦ.
ᑖᓐᓇ ᓄᓕᐊᔫᑉ ᐅᐃᔾᔫᖅᓂᖓ ᐊᐅᓚᓂᖅᑲᖅᔪᐊᖅᐳᖅ ᐃᓂᖓᓂᑦ ᐃᒪᓐᓇᐅᓇᓱᒋᔭᐅᔪᖅ ᑕᕝᕙᓂ 937 AU−ᒥᑦ ᐊᒻᒪ ᐊᐅᓚᓂᐊ ᐃᒪᓐᓇᐸᓗᒃ 76 AU−ᖑᔪᖅ.
ᑖᓐᓇ ᑎᑎᖅᓯᒪᓂᐊ ᐃᒪᓐᓇᐅᒥᓗᐊᖅᑕᖅ... ᑐᑭᓯᓐᓇᖏᓗᐊᖅᑐᖅ. ᑐᑭᓯᔭᐅᔾᔫᖏᑦᑐᖅ ᑭᓯᐊᓂ ᖃᓇᓴᐅᔭᒃᑯᑦ ᖃᐅᔨᒥᐊᕐᓗᑎᒃ ᐅᖅᑲᓪᓖᖀᓂᒃᑳᖕᒪᑕ ᐅᖃᐅᓯᑯᑖᒥᑦ.
ᓯᓚᐃᓐᓇᕐᒥᐅᑕᐅᓗᖓ ᐊᒻᒪ ᑖᒃᑯᐊ ᑐᑭᓯᓇᖏᑦᑐᑦ.
ᐊᑐᕈᒪᕕᑦ ᖃᐅᔨᒪᓇᑦᑎᐊᖏᑦᑐᓂᑦ ᐅᖃᐅᓯᕐᓃᑦ? ᑕᐃᒪᓐᓇ ᐅᖃᖅᐱᑦ?
ᐄᑦᑎᐊᖅ! ᑐᓴᕈᒃᓴᑦᑎᐊᕙᒃ, ᑭᓯᐊᓂ ᓂᐅᕕᐊᒃᓴᖃᖅᑐᒍᑦ ᓱᓕᔪᓂᑦ ᓂᖅᓵᐅᕈᑎᐅᖏᑦᑐᓂᑦ ᖃᐅᒻᒪᖅᑯᑎᓂᑦ.
ᑭᐊ ᐅᓇ ᑎᑎᕋᖅᑕᖕᒐ? ᑎᑎᕋᖅᓯᒪᔪᖅ ᐊᒻᒪ ᑐᑭᖏᑦ ᓇᓗᓇᐃᔭᖅᓯᒪᔪᓂᑦ.
ᐊᓯᐊᓂᑦ ᓂᐱᓕᐅᕆᓂᐊᖅᐳᒍᑦ ᓴᓇᑦᑎᐊᕐᒥᒃᑯᕕᑦ. ᑕᐃᒪᓐᓇᐅᔪᓐᓇᖅᑐᒍᑦ − ᐊᖏᕈᑎᒥᑦ ᐊᑎᓕᐅᓚᐅᖅᑐᑎᑦ.


ᐄ, ᑕᖅᑭᓕᓇᐳᐅᔪᑦ ᖃᐅᔮᒃᑲᓐᓂᕈᒪᓚᐅᕐᒪᑕ
ᖃᓄᖅ ᓱᕐᑭᓂᖅ ᓱᕐᑭᓂᓐᖑᓚᐅᕐᒪᖕᒑᑦ,
ᐊᒻᒪ ᐱᔾᔪᑎᐊ ᓇᓂᓗᒍ ᐋᖅᑭᒍᑎᐊ.
ᑕᐃᒪᐃᒃᑲᓗᐊᖅᑎᓪᓗᒍ,
ᕿᑐᕐᑐᒐᐅᔭᐅᓐᖏᖕᒑᖅᑐᒥᑦ,
ᐋᖅᑭᒍᑎᐊ ᐋᖅᑭᒍᑕᐅᓚᐅᖅᐳᖅ
ᑕᑭᔪᐊᓗᖕᒥᑦ ᓈᓴᐅᑎᓂᑦ
ᐃᓚᓯᒪᔪᑦ ᐊᒻᒪ ᖃᓇᓴᐅᔭᒃᑯᑦ
ᐃᔾᔪᐊᖅᓯᒪᔪᑦ.
ᑕᒪᓐᓇ ᐋᖅᑭᒑᓲᒃᑎᓪᓗᑎᒍᑦ, ᓇᓂᓯᓚᐅᖅᐸᑦ
ᐅᑦᓗᓇᐊᒥᑦ ᐅᖕᒐᓱᖕᓂᖅᓴᐅᑦᓗᓂ
ᖃᓂᓐᓂᖅᓴᐅᖕᒋᑦᑐᒥᑦ.
ᐅᓇ ᓇᓗᓇᕐᓂᐊ: ᐱᑕᖃᖅᐸᖅ ᐅᑦᓗᓇᐊᖑᖅᑰᔪᓂᑦ,
ᐊᔾᔭᒐᓴᕐᑎᐊᖕᒐᓂᑦ ᐅᑦᓗᓇᐊᖑᔪᓂᑦ, ᑭᓯᐊᓂ ᒥᑭᓗᐊᖅᑐᑦ
ᐅᕝᕙᓘᓐᓃᑦ ᐊᔾᔨᓐᖏᑖ ᐋᖅᑭᒃᓯᒪᓂᐊ
ᐅᑦᓗᓇᐊᓂᑦ ᓲᕐᓗ ᒫᓯᒥᑦ.
ᐅᓄᖅᑐᓂᑦ
ᐅᑦᓗᓇᐊᖑᖅᑰᔪᖅᑕᖅᑲᐅᖅᐳᖅ
ᓄᓇᐃᓐᓇᕐᒦᖅᑕᐅᔪᓂᑦ, ᑭᓯᐊᓂ
ᐅᖕᒐᓱᒃᑐᐊᓗᖕᒦᑉᐳᑦ
ᐅᑦᓗᓇᐊᖑᓂᕐᕋᓐᖏᑕᕗᑦ
ᓲᕐᓗ ᒨᑯᓇᑎᑐᑦ
ᐅᕝᕙᓘᓐᓃᑦ ᓂᑉᑑᓐᑎᑐᑦ.
ᑕᐃᒪᐃᒻᒪᑦ, ᑖᒃᑯᐊ ᑕᒪᕐᒥᑦ ᖃᓄᕈᓘᔭᓕᕐᑯᓇᒥᑦ, ᑕᖅᑭᓕᓇᐴᑦ
ᐋᖅᑭᒃᓯᕗᑦ ᑕᐃᔭᐅᔪᒥᑦ Oort Cloud–ᒥᑦ,
ᐊᑦᑎᖅᑕᐅᓪᓗᓂ ᑖᔅᓱᒥᖕᒐ ᑕᑦᔅ ᑕᖅᑭᓕᓇᐳ ᔮᓐ
Hᐃᓐᑐᓇᒃᐆ Oort-ᒥᑦ. ᓇᓗᓇᐃᕐᓗᒍ,
ᓲᕐᓗ ᐃᓄᖅᑲᖅᕕᒃ ᓂᓚᒃᓯᒪᔪᖅ ᓱᓚᐃᓐᓇᕐᒥᑦ
ᐅᔭᖅᑲᑦ ᐃᖕᒋᕐᕋᕚᒃᑑᓕᕐᓗᑎᒃ ᑖᓐᓇ ᓱᕐᑭᓂᐅᑉ
ᓄᓯᒃᓯᒪᓂᖕᒐᒍᑦ... ᓄᓯᓪᓗᓂᐅᒃ.
ᐱᒻᒪᕆᐅᔾᔪᑎᒋᔭᖓ
ᑖᔅᓱᒪ
Oort–ᖑᔫᑉ
ᓇᓗᓇᐃᕐᒪᒍ ᑖᓐᓇ
ᐊᓂᕐᓂᖅᑲᕐᓇᖏᑦᑐᖅ ᐅᐃᔾᔮᕐᓂᖓᓂᑦ. ᓇᓗᓇᐃᖅᓯᑎᓪᓗᓂ
ᓇᓃᒻᒪᖕᒑᑦ ᓱᕐᑭᓂᖅ ᐊᒻᒪ ᖃᓄᑎᒋ ᐅᐃᔾᔮᕐᒪᖕᒑᑦ
ᐊᓂᕐᓂᖅᑲᕐᓇᖏᑦᑐᒥᑦ.

ᖃᐅᔾᔭᐅᓚᐅᖅᑎᑦᑐᒍ ᐊᕐᕌᒍ 2003-ᒥᑦ ᑕᐃᑲᓂ ᐹᓚᒧ
ᕿᒥᕐᕈᐊᒐᕐᑲᕐᕕᐊᓂᑦ ᓵᓐ ᑎᐊᒍᒥᑦ, ᑖᓐᓇ ᐅᑦᑐᕆᐊᖑᔪᖅ ᓄᓕᐊᔪᒃ
ᐊᑐᖅᑎᑦᑎᕗᖅ ᐃᓄᖕᓂᑦ ᐊᑐᖅᑕᐅᕙᓪᓕᐊᔪᓂᑦ ᑕᖅᑭᓕᕆᓂᕐᒧᑦ.
ᑕᓇᐅᕐᒥᑦ...
...ᐅᑦᑐᕆᐊᓄᑦ.

ᕙᐅᓪᕚᑦ ᐸᒃ

ᐃᓂᓂᐅ ᐊᑲᑯᓱᒃ

ᐅᓇᓖᑦ ᐅᓪᓗᕆᐊᖕᒋᑦ

ᐱᖅᑯᓯᐅᔪᑦ ᑖᒃᑯᓄᖕᒐ ᓂᑲᕗᐃ ᐊᓵ (ᐊᓅᓇᐅᔪᖅ ᓄᓇᕐᔪᐊᕐᒧᑦ) ᑕᑯᕗᖅ ᓯᓚᒥᑦ ᐅᓐᓄᐊᒃᑯᑦ ᐃᓱᒪᒃᓴᖅᓯᐅᕐᓂᕐᒥᑦ ᐊᒻᒪ ᑲᒪᑦᑐᓂ. ᐊᑐᓂᑦ ᐱᖅᑯᓰᑦ ᑕᐅᑐᙵᖅᑲᖅᐳᑦ ᓯᓚᐃᓐᓇᕐᒥᑦ ᐊᒻᒪ ᓇᖕᒥᓂᖅ ᑐᑭᓯᓂᕐᑲᖅᑲᕐᓂᒃ ᖃᓄᖅ ᓯᓚ ᑲᑎᒻᒪᖖᓛᑦ ᓄᓇᕐᔪᐊᑉ ᑕᐅᑐᒃᑕᖖᒍᒧᑦ. ᐊᔾᔨᒌᖕᒋᑦᑐᑦ ᐱᖅᑯᓯᐅᔪᑦ ᑕᑯᐃᓐᓇᐅᔭᖅᐸᑦ ᓯᓚᐃᓐᓇᕐᒧᑦ ᑲᑎᖃᑎᖅᑲᖅᑐᑎᒃ, ᑕᑯᓇᒃᑐᑎᒃ ᐋᖅᑭᒃᓯᒪᔪᓂᑦ, ᐊᒻᒪ ᐱᓇᓱᐊᕐᓂᖕᒋᑦ ᖃᐅᔨᓇᓱᒍᓂᖕᒋᓐᓄᑦ ᓇᓗᓇᐃᕈᑎᓂᑦ ᑭᓲᖕᒪᖖᓛᑕ.

ᑎᑎᕋᐅᔭᖅᑎᐅᑉ ᐋᖅᑭᒃᑕᖖᒐ ᐅᓄᖅᑐᑦ ᐅᓪᓗᓇᐊᑦ ᐃᓂᒋᔭᖕᒋᑦ ᑕᐃᑲᓂ ᐊᑲᒃ ᓯᐱᒥᑦ (ᐃᓱᖅᑐᖅ ᓯᓚᐃᓐᓇᕐᒥᑦ), ᐃᓚᖅᑲᖅᑯᓂ ᑯᑯᒥᓇᑲᓯᔅᒥᑦ (ᐊᓅᓇᑦᑎᐊᖅ ᐋᓯᕙᒃ, ᒪᑦᑎᑦᑕᐅᑎᓚᐅᖅᑎ)

ᓱᕗᓂᐊᓂᑦ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᓃᑦ, ᖃᐅᔨᒪᓂᐅᔪᑦ ᓯᓚᐃᓐᓇᕐᒥᑦ ᐊᑐᖅᑕᐅᒐᔪᓚᐅᖅᐳᖅ. ᐅᓪᓗᓇᐊᑦ ᐋᖅᑭᒃᓯᒪᓂᖏᑦ ᐊᒻᒪ ᐃᖏᕐᕋᓂᐅᔪᑦ ᐊᑐᖅᑕᐅᔪᑦ ᐃᓕᓴᕆᔭᐅᓪᓗᑎᒃ. ᑕᖅᑭᐅᑉ ᐊᐅᓚᓂᐊ, ᐊᒻᒪ ᐅᓪᓗᓇᐊᑦ ᐊᐅᓚᓂᕆᔭᖏᑦ ᓇᓗᓇᐃᖅᑕᐅᓪᓗᑎᒃ ᐊᒻᒪ ᓴᖅᑭᓐᓂᕆᔭᖏᑦ ᐊᐅᓚᓂᕆᔭᕐᒪᓂᑦ ᓇᓗᓇᐃᖅᑕᐅᓪᓗᑎᒃ. ᐋᖅᑭᒃᓯᒪᓂᐅᔪᓂᑦ ᐃᓕᓴᖅᓯᓂᖅ ᐊᑐᖅᑕᐅᓚᐅᖅᐳᖅ ᐅᐸᒐᓱᒃᑕᒧᑦ ᓇᓗᓇᐃᕈᑕᐅᓪᓗᑎᒃ ᐊᐅᓪᓛᖅᑐᓄᑦ ᐅᖓᓯᒃᑐᒧᑦ ᐊᒻᒪ ᓄᓇᐃᓐᓇᕐᒧᑦ. ᑖᒃᑯᐊ ᑲᑎᓪᓗᒋᑦ ᓇᓗᓇᐃᕈᑎᐅᔪᑦ ᖃᐅᔨᒪᓂᐅᕙᑦ, ᐊᑐᕐᓂᐊᕐᓂᕐᕿᕐᓂᐅᕙᓪᓗ.

ᑐᑭᓯᑦᑎᐊᒃᑲᓐᓂᕋᓱᒡᓗᑕ ᖃᓄᖅ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᑕᐅᑐᖕᒪᖕᒌᑕ ᐃᓚᓕᐅᑎᓪᓗᑎᒃ ᓯᓚᐃᓐᓇᕐᒥᑦ, ᓱᕗᓪᓕᕐᒥᑦ ᑐᑭᓯᖄᓇᐊᖅᑲᖅᐳᒧᑦ ᖃᓄᖅ ᐱᓚᐅᖅᒪᖕᒌᑕ ᐅᒃᐱᕆᔭᐅᓂᐅᓚᐅᖅᑐᑦ ᐊᑐᖅᓂᐅᔪᑦ. ᑖᒃᑯᐊ ᐃᐅᕋᒃᒥᐅᑦ ᑲᑎᖃᑎᖃᓕᕆᖅᓗᑎᒃ ᐊᐅᓚᓂᐅᔪᓂᑦ, ᐋᖅᑭᒃᑕᐅᓚᐅᖅᓯᒪᔪᓂᑦ ᐅᒃᐱᕈᓱᙱᓂᐅᔪᓂᑦ ᐋᖅᑭᒃᑕᐅᓯᒪᔪᑦ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᓄᑦ ᐋᓪᓚᐅᔪᓄᑦ ᑐᑭᓯᓂᕆᔭᕆᓐᓂᐊᓄᑦ–ᐊᔾᔨᒋᙱᑦᑎᐊᖅᑕᖕᒋᐊᓄᑦ ᖃᐅᔨᒪᓂᕆᔭᕆᓐᓂᐊᓄᑦ–ᐊᔾᔨᒋᙱᑦᑎᐊᖅᑕᖕᒐ ᖃᐅᔨᒪᓂᕆᔭᕆᓐᓂᐊᓄᑦ–ᐊᓯᐊᓂᑦ ᓄᓇᓖᑦ ᑎᑭᒻᒪᑕ ᐃᓱᒪᒋᔭᖃᖅᐳᑦ ᑖᒃᑯᐊ "ᐋᓪᓚᐅᔪᓄᑦ ᑐᑭᓯᓂᐅᔪᑦ" ᑎᑎᕋᖅᑕᐅᒃᑲᓐᓂᕆᐊᖃᖅᑐᑦ ᐊᒻᒪ ᑲᑦᑲᖅᑕᐅᓪᓗᑎᒃ ᐊᒻᒪ ᐃᓕᓴᕆᔭᐅᕐᒋᓪᓗᑎᒃ ᓱᖃᐃᓪᓗ ᐅᒃᐱᕐᓂᕆᔭᕐᒥᓄᑦ ᐊᒃᑐᐃᓐᒪᑕ ᐊᒻᒪ ᐊᐅᓚᑦᑎᓂᕐᒋᑎᒍᑦ. ᑕᒪᐃᒪᓪᓕ, ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᓯᓚᖅᔪᐊᖅᒧᑦ ᑕᐅᑐᙱᓂᕆᔭᕐᒋᑦ ᐋᖅᑭᒋᐊᖅᑕᐅᔪᑦ, ᑕᒪᐃᓐᓂᕆᓚᐅᖅᑕᖕᒐᑦ ᓇᖕᒥᓂᖅ ᐊᐅᓚᔪᓇᕐᑎᐊᖅᓃᑦ ᐃᓅᓯᐅᖕᒪᑦ. ᐊᑭᖅᑐᖅᓂᒃᑯᑦ ᓄᓇᑐᖅᑲᓇᕐᒋᑕᕐᒋᓐᓄᑦ ᓄᓇᑖᖅᑎᑕᐅᓂᑦ, ᓄᓇᖅᑲᖅᓂᐅᔪᑦ ᓱᖅᑕᐅᓪᓗᓂ, ᐊᑯᓂᐅᔪᒥᑦ ᐱᓕᕆᐊᕐᔪᐊᖅ ᐃᓱᒪᒋᓴᐅᓯᒪᔪᑦ ᐲᖅᑕᐅᓪᓗᑎᒃ, ᐊᒻᒪ ᓇᑭᓐᖓᖅᓂᕆᔭᕐᒋᑦ ᐊᑐᖅᑕᐅᕙᓪᓕᐊᓕᖅᓱᓂ.

ᑖᒃᑯᓄᖓ ᓄᓇᖅᑲᖅᑳᖅᓯᒪᔪᓄᑦ, ᖃᐅᔨᒪᓂᕆᔭᕐᒋᐊᓄᑦ ᓯᓚᐃᓐᓇᕐᒥᑦ ᐊᒻᒪ ᐃᓂᒋᔭᑦᑎᐊᓂᑦ ᐅᓪᓗᓇᐊᑦ ᐊᑖᓂ ᐊᓯᔾᔨᓚᐅᖅᐳᖅ ᓄᓇᑐᖅᑲᓇᕐᒋᑕᒥᓄᑦ ᓄᓇᑖᖅᑎᑕᐅᓂᒃᑯᑦ, ᓄᓇᖅᑲᐊᕐᒥᑦ ᑕᐅᑐᒐᖅᑲᖅᐳᑦ ᐊᒻᒪ ᐅᒃᐱᕆᔭᖅᑲᖅᓱᑕ. ᓄᓇᑐᖅᑲᓇᕐᒋᑕᒧᑦ ᓄᓇᑖᖅᑎᑕᐅᑎᓪᓗᑕ, ᓄᓇᖅᑲᖅᑳᖅᓯᒪᔪᑦ ᑎᒍᓯᓪᓗᑎᒃ ᐃᓱᒪᒋᔭᐅᔪᓂᑦ, ᓄᓇᖅᑲᐊᕐᒥᑦ ᕿᒥᕐᕈᓃᑦ, ᐊᒻᒪ ᐅᒃᐱᕆᔭᐅᔪᑦ ᓄᓇᓄᑦ ᓄᓇᑖᖅᑎᑦᑎᓯᒪᔪᓂᑦ. ᐋᖅᑭᒃᑕᐅᓪᓗᑕ ᑕᑯᓗᒍ ᓄᓇᖅᑲᐊᖅ ᐊᔾᔨᒋᙱᑦᑎᐊᖅᑕᙵᓗᒍᑦ ᑕᐅᑐᙱᓂᕆᔭᖏᑦ. ᐃᓂᖅᑎᖅᑕᐅᓪᓗᑕ ᐅᒃᐱᕆᔭᖅᑯᔭᐅᓪᓗᑕ ᐊᔾᔨᒋᙱᑦᑎᐊᖅᑕᙵᓗᒍᑦ ᑕᖅᑭᑦᑎᒍᑦ, ᐅᒃᐱᖅᓯᓂᖅᑐᒍᑦ, ᓇᖕᒥᓂᖅ ᐅᔾᔨᕈᓱᙱᓐᓂᖅᑐᑦ, ᐊᒻᒪ ᐃᓱᒪᑐᓂᑦᑎᓐᓂᑦ ᑐᑭᓯᐊᓂᕗᑦ ᑭᓇᐅᓂᑦᑎᓐᓂᑦ ᑕᐃᒪᓐᓇᐅᓇᓱᕐᒋᓴᑦᑎᓐᓂᑦ. ᑕᒪᐃᓚᐅᖅᑐᒧᑦ–ᓖᓐᓇ ᓱᓕ–ᐃᓱᒪᕐᒋᓴᕗᑦ ᐲᔭᖅᑕᐅᓪᓗᑎᒃ ᐃᓱᒪᓕᖅᑎᑕᐅᓪᓗᑎᑦ ᓄᓇᖅᑲᖅᑳᖅᓯᒪᔪᑦ ᐃᓱᒪᒍᕐᒋᓐᓂᕐᒋᓐᓂᑦ, ᖃᐅᔨᓴᖅᑐᓕᕆᓂᕐᒥᑦ ᐊᑐᖅᑕᐅᕙᓪᓕᐊᔪᑦ, ᓇᖕᒥᓂᖅ ᐃᓱᒪᕐᒋᓴᕐᒋᑦ, ᐅᕝᕙᑑᓐᓃᑦ ᐃᑎᔫᓂᖓ ᖃᐅᔨᒪᓂᕆᔭᕐᒋᑦ. ᐅᖃᐅᑎᔭᐅᓚᐅᖅᐳᒍᑦ ᓂᕐᔪᑎᐅᓂᑦᑎᓐᓂᑦ "ᐱᐅᓕᔭᐅᔭᕆᐊᖃᕐᓂᑦᑎᓐᓂᑦ" ᐊᒻᒪ ᐃᓅᓕᐊᖑᓗᑕ ᐅᕙᑦᑎᓐᓂᑦ. ᐊᕐᕌᒍᑦ 20 ᐊᓂᒍᖅᑐᑦ ᑖᒃᑯᐊ ᓄᓇᖅᑲᖅᑳᖅᓯᒪᔪᑦ ᑕᑯᓐᓂᓕᓕᖅᑕᕐᒋᑦ ᑖᒃᑯᓐᓇᖕᒑᑦ ᓯᓚᐃᓐᓇᕐᒥᑦᑐᓄᑦ ᐊᒻᒪ ᐃᓱᒪᒃᓴᖅᓯᐅᕐᓂᐅᔪᑦ ᐃᓂᖅᑲᕐᓂᕐᒋᓐᓂᑦ... ᓱᓕᒃᑲᓐᓂᖅ.

ᐅᓕᒃᓯᒪᓂᐅᔪᓂᑦ ᖃᓪᓗᓈᖑᖅᑎᑦᑏᕐᒋᑦᑐᓂᑦ ᓱᒃᑲᐃᑦᑐᒥᑦ ᐊᑐᕈᓐᓃᖅᐸᕐᓂᐅᔪᖅ, ᓄᓇᖅᑲᑲᕐᒋᓯᒪᔪᑦ ᑕᑯᓐᓃᕐᓂᕐᓂᖅᐳᑦ ᓱᕗᕚᓇᓚᐅᖅᑕᒥᕐᓂᑦ ᑐᑭᓯᓇᓯᒪᔭᕐᒋᓐᓂᑦ ᑖᒃᑯᓇᓂ ᒥᓯᕗᐊᕐᒍᔪᓂᑦ (ᑕᒪᐃᓐᓂᖕᒐᓄᑦ[ᖃᐅᔨᒪᔭᐅᔪᑦ ᐊᒻᒪ ᖃᐅᔨᒪᔭᐅᕐᒋᑦᑐᑦ]), ᐊᒻᒪ ᖃᓄᖅ ᐃᓅᔪᑦ ᐃᓚᒋᔭᐅᔪᓐᓇᕐᒪᖕᒌᑕ ᐸᐃᒪᑎᓯᕙᓐ (ᐃᓅᓯᖅ). ᐱᕙᓪᓕᐊᕗᑦ ᒪᒥᓴᖅᓱᑕ ᐊᑐᖅᓂᐅᓚᐅᖅᑐᓂᑦ ᐊᑐᕐᓂᕐᒍᖅᓂᕙᓂᕐᓂᕐᒍ.

ᑲᑎᖅᑲᑎᖅᑲᖅᐸᓪᓕᐊᓕᖅᐳᖖᒍᑦ ᐃᑎᔪᒥᑦ ᖃᐅᔨᒪᓂᐅᔪᓂᑦ ᓱᕗᓕᑦᑎᓐᓂᑦ ᐱᓯᒪᒃᓯᕐᓃᑦ ᐊᒻᒪ ᑐᑭᓯᓯᒪᓂᕐᒥᑦ, ᖃᐅᔨᕙᓪᓕᐊᓕᖅᐳᒍᑦ ᑲᑎᖅᑲᑎᖅᑲᕐᓃᑦ ᑖᒃᑯᓇᓂ ᑭᓯᒃ ᐊᓯᑭᐅᔪᓂᑦ (ᓯᓚᐃᓐᓇᕐᒥᑦ ᓄᓇ). ᑕᓴᓐᓴ ᓯᓚᕐᔪᐊᕐᒥᑦ ᑕᑯᓐᓂᖅ ᓇᓗᓇᐃᖅᓯᕗᑦ ᑕᒪᕐᒥᓕᒫᖅ ᑲᑎᓐᓂᖅᑲᕐᒪᑕ... ᖃᐅᔨᒪᔪᓂᑦ ᐊᒻᒪ ᖃᐅᔨᒪᔭᐅᕐᒋᑦᑐᓂᑦ. ᑕᒪᓐᓇ ᑐᑭᓯᓂᖅ ᓇᓗᓇᐃᑎᕗᖅ ᑕᒪᕐᒥᓕᒫᖅ ᐆᒪᖅᑯᑎᐅᖕᒪᑦ. ᑕᐃᒎᓯᖅᑲᖅᐳᖅ

ᐅᓇᓕᒃᑎᑐᑦ–ᑭᓯᒍᒃᑯᒃ, ᓇᓗᓇᐃᖅᑕᐅᔭᕐᓇᖅᐳᖅ ᐃᒪᓐᓇ "ᐆᒪᔪᑦ ᖃᐅᒪᓂᕐᒥᑦ/ᐆᒻᒪᖅᑯᑎᓂᑦ/ᑕᕐᓃᕐᒥᑦ."

ᐃᓄᖅᑯᑎᒃᑲ, ᐃᓂᓂᐅᖑᔪᑦ (ᐅᓇᓖᑦ), ᐅᓪᓗᓇᐊᑦ ᑕᐃᒍᖅᑕᖕᒋᑦ "ᐊᑲᑯᓱᒃ", ᐱᔭᐅᔪᖅ ᑕᖏᕙᖕᒑᑦ ᐊᐃᕋᖕᒐᓂᑦ ᐅᖃᐅᓯᐅᑉ "ᐊᑲᒃ", ᓇᓗᓇᐃᕐᓗᒍ ᑐᑭᐊ ᑕᐃᒎᓯᐊ "ᑕᕐᓂᖅ". ᑐᑭᓯᓇᖅᑐᑐᐊᖅ ᑕᒪᕐᒥᒃ ᓴᓇᔭᐅᖕᒪᑕ ᑖᓱᒧᖕᒐ ᑭᑦᓯᒪᓂᑐᒧᑦ, ᑕᕐᓂᕐᔭᐊᖑᔪᖅ ᓴᓇᓯᒪᔪᖅ ᐆᒻᒪᖅᑯᑎᒥᑦ/ᖃᐅᒪᔪᒥᑦ/ᑕᕐᓂᕐᒥᑦ. ᓴᓇᔨᐅᔪᖅ ᐃᓱᒪᓐᓂᕐᒥ ᐊᒻᒪ ᐃᓱᒪᕐᒋᓴᖕᒐ ᐃᓅᓕᖅᓱᓂ. ᑕᒪᐃᓪᒪᑦ ᑭᓯᓕᒫᑦ ᑕᕐᓂᖅᐳᑦ ᐊᒻᒪ ᑕᒪᑦᑕ ᐊᑐᖅᐸᒃᑲᑦ ᐃᑲᔫᑎᐅᔪᓐᓇᖅᑐᒥᑦ... ᑭᑦᓯᒪᓂᑐᑦ.

ᑖᒃᑯᓄᖓ ᐃᓂᓂᐅᒃᑯᓐᓄᑦ, ᑭᑦᓯᑭᓯᒃᑯᓐᓄᑦ (ᓯᓚᐃᓐᓇᓯᐊᖅ), ᓇᓗᓇᐃᕈᑎᐅᓚᐅᖅᐳᖅ ᑐᑭᓱᐅᔭᕐᓇᖅᑎᑐᓐᓄᑦ ᐊᖏᔫᓂᖓ ᐸᐅᕆᒥᐅᒃ ᑐᓂᓯᔭᕐᓇᖅᐳᖅ ᐃᓚᐃᓐᓇᖕᒐᓂᑦ ᐃᓱᖃᖏᑦᑐᒥᑦ ᐱᑕᖃᓂᖕᒐᓂᑦ ᓯᓚᕆᔭᕗᑦ. ᐃᓂᓂᐅᖑᓪᓗᓂ, ᐅᖃᐅᑎᔭᐅᓯᒪᕗᒍᑦ ᑲᑎᖕᒐᓂᖅᐳᑦ ᑖᒃᑯᓂᖕᒐ ᑭᓯᒃ ᐊᔅᑭᒃᑲᓂᑦ ᑕᒫᕐᒥᒃ ᐸᐅᕆᒥᐅᒧᑦ (ᑐᐅᖖᒍᐊᖅᓂᖅ). ᑐᐅᖖᒍᐊᖅᓂᖅ ᐅᖃᐅᔾᔨᔪᖕᓇᖅᐳᑦ ᐅᕆᑎᓂᑦ ᐃᓂᕆᔭᑎᓐᓂᑦ ᓯᓚᐃᓐᓇᕐᒥᑦ ᐊᒻᒪ ᑐᓂᓯᓗᓂ ᑐᖕᒐᕙᑎᓐᓂᑦ ᖃᐅᔨᓴᖅᓯᓂᕆᔭᕐᓂᑦ ᐊᑐᓇᐊᓕᖕᓂᑦ ᖃᐅᔨᕆᓕᐊᓗᑕ. ᐱᓪᓗᐊᑕᖅ ᐊᐅᓚᑦᑎᓂᐅᔪᓂᑦ ᓇᓗᓇᐃᕈᑎ ᐅᑭᐅᖅᑕᖅᑐᒥᑦ ᓯᓚᐃᓐᓇᐅᑉ ᐊᒻᒪ ᓄᓇᖅᑲᐅᑉ ᕿᑎᐊ ᑕᐃᔭᐅᕗᖅ ᐳᓕᐅᕋᖅ, ᓅᑐᐃᑦᑐᖅ ᐅᓪᓗᓇᐊᖅ. ᐃᓄᖅᑯᑎᒪ ᑕᐃᔭᕐᒥᑦ ᐱᓪᒪᓇᐅᔪᖅ ᐅᓪᓗᓇᐊᖅ ᑭᓪᓕᐅᔪᖅ. ᐅᖃᐅᓯᐅᑉ ᐊᐃᕋᖕᒑ ᑖᓱᒪ ᑐᑭᐊ ᑖᓐᓇᐅᒐᖅ ᑭᐅᕙ, ᑐᑭᓕᒃ "ᐊᖏᕐᕋᖅ," ᑕᒪᐃᒪᓪᓕ ᐳᓕᐅᕋᖅ ᐃᓕᓴᕆᔭᐅᔪᖅ ᐅᓇᐅᓂᖕᒐᓂᑦ "ᐊᖏᕐᕋᐅᔪᖅ ᐅᓪᓗᓇᐊᖅ." ᐊᒻᒪᒃᑲᓂᖅ ᐃᓂᕆᔭᐅᔪᖅ ᑕᐃᔭᐅᔪᖅ ᐃᑲᑭᓯᑦ ("ᓇᕐᒋᖅᑐᖅ ᓄᖅᑲᖕᒐᓪᓗᓂ"), ᐅᓪᓗᓇᐊᑐᐊᖅ ᑕᐸᐹᓂ ᐊᓂᕐᓂᖅᑲᕐᒋᑦᑐᒥᑦ ᐊᒻᒪ ᓄᓇᕗᐊᐸ ᕿᑎᐊᓂ ᐊᐅᓚᕙᕐᒋᑦᑐᖅ.

ᐃᓄᐃᑦ ᐅᐸᖕᓂᐊᖅᐳᑦ ᑕᑯᔭᖅᑐᖅᓗᑎᒃ ᐱᔾᔪᑎᓕᕐᒥᑦ ᓄᓇᖅᑲᖅᑳᖅᓯᒪᔪᑦ ᑕᖅᑭᓕᓇᔪᓄᑦ ᑖᒃᑯᐊ ᓄᓇᖅᑲᖅᑳᖅᓯᒪᔪᑦ ᐅᓄᖅᑐᓂᑦ ᑕᐃᒎᓯᖅᐳᑦ ᐅᖃᐅᓯᒃᓴᐅᖅᑯᔭᐅᔪᓂᑦ ᑐᓂᔭᐅᓪᓗᑎᒃ. ᐅᖃᖅᑐᑎᒍᑦ, ᐅᓄᖅᑐᓂᑦ ᐱᑕᖅᐳᖅ ᐊᑭᒪᐅᕙᓄᒃ ("ᐅᓂᒃᑲᓕᐅᖅᐃᑦ/ᐅᓂᒃᑲᖅᑐᑦ") ᓇᓕᐊᖕᓄᑐᐃᓐᓇᖅ, ᐊᑐᕐᓂᐅᔪᓂᑦ, ᐃᓂᐅᔪᒥᑦ, ᐅᕝᕙᑑᓐᓃᑦ ᓴᖅᑮᔭᕐᓂᐅᔪᒥᑦ.

ᐆᒃᑑᑎᒋᓗᒍ ᐃᑎᓐᖓ ᖃᐅᔨᒪᓂᕆᔭᐅᔫᑉ ᑲᑎᙵᓂᓕᒃ ᑖᓯᒧᖓ ᑭᓯᒃ ᐊᓯᑭᑦ ᑖᓐᓇ "ᐅᓂᒃᑳᕐᓂᖅ" ᑖᓯᒥᖓ ᐊᑲᑯᓯ ᐃᓱᕗᐃᑉ (ᐅᓪᓗᓇᐊᖅ ᐊᕐᓇᖅ"). ᑖᓐᓇ ᑎᑎᕋᖅᑎᐅᔪᖅ ᐅᖃᐅᔾᔨᕗᖅ ᑖᒃᑯᐊᖑᕗᑦ ᑭᓱᒃᑯᒃ (ᐅᓪᓗᓇᐊᖅ ᐃᓅᔪᑦ... ᐆᒻᒪᖅᑯᑎ/ᖃᐅᒪᔪᖅ/ᑕᕐᓂᖅ"). ᑖᓯᒪ ᐅᓂᒃᑳᖅᑎᐅᑉ ᐅᖃᐅᑎᓪᓗᓂᑎᒍᑦ ᑭᓱᑰᑯᓃᑦᑎᓐᓂᑦ (ᐅᓪᓗᓇᐊᑦ ᐆᒪᔪᑦ... ᐆᒻᒪᖅᑯᑎ/ᖃᐅᒪᓂᖅ/ᑕᕐᓂᖅ). ᐅᔾᔨᕈᓱᖅᑎᕆᓗᓂᑎᒍᑦ ᐃᓱᒪᒋᔭᐅᔪᓂᑦ ᑕᐅᑐᖕᒋᑕᑦᑎᓐᓂᑦ ᐊᓂᖅᓵᖅᑕᑦᑎᓐᓂᑦ ᑲᖏᑦᑎᔪᐅᔪᑦ, ᐊᖏᓂᖕᒋᓐᓂᑦ ᐆᒻᒪᖅᑯᑎᓖᑦ ᑲᖏᑦᑎᔪᐅᔪᑦ, ᐊᒻᒪ ᐃᑯᒪᐅᔪᑦ ᐆᒻᒪᖅᑯᑏᑦ. ᐅᖃᐅᑎᔪᕗᑦ ᑭᓱᑰᑯᓃᑦᑎᓐᓂᑦ ᐊᒻᒪ ᐃᖏᕐᕋᕙᒃᐳᑦ ᑕᕝᕙᓐᓇ ᒥᓯᕚᒃᑯᑦ. ᑕᒪᓐᓇ ᐃᖏᕐᕋᓂᖅᐳᑦ ᑕᐃᑯᖕᒐᖅᑎᑎᕙᒃᐳᖅ ᖄᓂᕐᓂᕐᒍᑦ ᐊᑐᕐᓂᐊᖅᑕᑦᑎᓐᓄᑦ, ᑕᐅᑦᑐᐊᒍᑦ, ᓂᐱᖅᓂᐊᒍᑦ, ᑎᐱᖅᓂᖕᒐᒍᑦ, ᐃᒃᐱᖕᓂᕐᓂᖕᒐᒍᑦ, ᐊᒻᒪ ᐃᒃᐱᒍᓱᖕᓂᒃᑯᑦ. ᖃᓂᒋᓪᓗᑎᒍᑦ ᐊᓂᕐᓂᖅᑲᖕᒋᑦᑐᖅ ᐆᒪᓂᖓᑦ ᖃᐅᒪᓂᒃᑯᑦ/ᐆᒻᒪᖅᑯᑎᒃᑯᑦ/ᑕᕐᓂᒃᑯᑦ. ᐅᖓᑎᐊᓅᖅᓱᑕ ᐱᓪᓚᑦᑖᖅᑐᒥᑦ.

ᑖᒃᑯᐊ ᐊᑭᒪᐅᕐᓇᒃᑯᑦ ᐃᒪᓐᓇᐅᖕᒪᑕ... ᐊᑕᐅᓯᐅᔪᖅ ᐆᒪᓂᐅᔪᖅ ᖃᐅᔨᓴᑎᑦᑐᑦ ᑖᒃᑯᐊ ᐊᑲᑯᓯ ᐃᓱᕗᑯᑦ ᐃᖏᕐᕋᓚᐅᕐᒪᑦ ᐊᓂᕐᓂᖅᑲᖕᒋᑦᑐᒃᑯᑦ ᐊᒻᒪ ᐅᐸᒍᑎᓪᓗᑎᒃ ᐊᑐᖅᑐᒧᑦ, ᑖᓐᓇ ᐃᓱᖅᑐᖅ ᓯᓚᐃᓐᓇᕐᒥᑦ ᑕᐃᕙᒃᑕᕗᑦ. ᑕᒪᓐᓇ ᐊᑐᕐᓂᐅᔪᖅ ᐃᓯᒋᑎᐅᕙᖅ, ᐹᒍᓪᓗᓂ ᓱᓕᓂᐅᔪᒥᑦ ᓱᓕᓂᕐᒧᑦ... ᑕᐃᔭᐅᔪᖅ wormhole–ᒥᑦ.

ᐃᓴᕘᑯᑦ ᑕᑯᓐᓂᖅᓴᒪᑕ ᐃᓯᒋᑎᐊᓂᑦ ᐊᒻᒪ ᑕᑯᓪᓗᑎᒃ ᓂᑲᕗᐃ ᐊᑭᒥᑦ. ᑖᒃᑯᐊ ᐊᑲᑯᓯ ᐃᓱᕙᕘᑯᑦ ᖃᐅᔨᔪᒪᓂᖅᑲᓚᐅᖅᐳᑦ ᐊᒻᒪ ᑕᐃᑯᖕᒐᕈᒪᓕᖅᓱᑎᒃ ᖃᐅᔨᒪᓇᕐᒋᑦᑑᔪᒧᑦ. ᐊᑲᑯᓯ ᐃᓱᕙᕘᑯᑦ ᑐᑭᓯᓚᐅᖅᐳᑦ ᖃᐅᔨᓇᓱᒡᓗᒍ ᐃᓯᒋᑎᐊ, ᐃᑲᔪᖅᑕᐅᓴᕆᐊᖃᖅᓴᔪᖅᐳᑦ ᐊᒻᒪ ᐊᑲᑯᓯ ᐃᓱᕙᕘᑯᑦ ᖃᐅᔨᒪᓚᐅᖅᐳᑦ ᐹᒥᑦ ᑲᒪᔨᒥᑦ, ᐊᑯᓇᕙᓯᒃᑐᐱᐅᖅ, ᐊᐅᓚᑦᑎᓚᐅᖅᑐᖅ

ᑎᑎᕋᐅᔭᖅᑎᐅᑉ ᐋᖅᑭᒃᑕᖓ ᐅᓄᖅᑐᑦ ᐅᓪᓗᕆᐊᑦ ᐃᓂᒋᔭᕆᑦ ᑕᐃᒃᑯᓂ ᐊᑲᒃ ᓯᐱᒥᑦ (ᐃᓱᖅᑐᖅ ᓯᓚᐃᓐᓇᕐᒥᑦ), ᐃᓚᖃᖅᖢᓂ ᓈᕼᒥᐅ (ᐃᖃᓗᒃᔪᐊᖅ)

ᐊᐅᓚᓂᐅᔪᒥᑦ. ᑖᒃᑯᐊᓪᓗᐊᑕᖅ ᐊᑯᓇᕕᒃᑲᐳᐧᒃᑯᑦ ᑕᐃᔭᐅᓚᐅᖅᑐᑦ ᑲᑲᒥᓇᑲᓯᒃᒥᑦ (“ᐊᓈᓇᑦᑎᐊᖅ ᐋᓯᕙᒃ,” ᓄᕙᕐᒥᓄᑦ ᒪᑦᑎᑦᑕᐅᑎᓚᐅᖅᑎ).

ᐊᑲᑯᒃ ᐃᒃᕕᕙ ᐅᐸᒍᑎᓪᓗᓂ ᑖᒃᓱᒥᙱ ᑯᑯᒥᓇᑲᓯᒃᒧᑦ ᐊᒻᒪ ᐊᐱᕆᓪᓗᓂ ᐃᑲᔪᖅᑕᐅᔪᒪᓪᓗᓂ ᓇᓂᓯᓇᓱᓐᓂᕐᒥᑦ ᐃᒃᓴᕕᙵᒥᑦ. ᐊᑲᑯᒃ ᐃᒃᕕ ᐅᖃᐅᑎᔭᐅᓚᐅᖅᐳᑦ ᐱᖓᓱᓂᑦ ᐊᑐᕆᐊᖅᑲᔭᕐᓂᕐᓂᓂᑦ ᑖᓇ ᐃᒃᓴᕕᒃ ᓇᓂᔭᐅᓇᓱᙵᓂᐊᖅᐸᑦ.

1. ᑎᒥᒃᑯᑦ ᐊᑐᕆᐊᖅᑲᔭᖅᐳᖅ ᑐᑭᓕᒃ ᐱᓕᕆᖅᑎᖅᑲᖅᑐᓂ ᑎᒥᒃᑯᑦ ᓄᓇᖂᐊᕐᒥᑦ.
2. ᑐᓂᔾᔭᑕᐅᓂᐊᖅᑐᖅ ᐸᒃᑰᕆᐊᖅᑲᔭᖅᐳᖅ ᐃᖅᑲᐅᒪᔾᔪᑎᐅᓗᓂ ᓇᓃᓪᒪᙳᑦ ᐊᑲᑯᒃ ᐃᒃᕕ ᐃᓂᒋᔭᖓ.
3. ᑖᓐᓇ ᐊᑲᑯᒃ ᐃᒃᕕ ᐊᑯᓂ ᑕᐃᑲᓃᑦᑕᕆᐊᖅᑲᔭᓐᖏᓚᖅ ᐅᐸᒍᑎᒍᓂ.

ᐊᑲᑯᒃ ᐃᒃᕕ ᐊᕐᕆᕈᑎᖅᑲᖅᖢᑎᒃ ᐊᑐᕆᐊᖅᑲᖅᑐᓂᑦ ᐊᒻᒪ ᑖᒃᑯᐊ ᑯᑯᒥᓇᑲᓯᒃᑯᑦ ᐊᐅᓪᓚᐃᓪᓗᑎᑦ ᐋᓯᕙᐅᑉ ᓄᕙᖓᓂᑦ ᐊᑕᐅᓯᕐᒥᑦ ᐸᒃᑯᑦ ᐊᒻᒪ ᐊᑲᑯᒃ ᐃᒃᕕ ᐊᑐᖅᖢᓂᐅᒃ ᑖᓐᓇ ᐊᑕᐅᓯᖅ ᐋᓯᕙᐅᑉ ᓄᕚ ᐊᖅᑲᕈᑎᕆᓪᓗᓂᐅᒃ ᐱᓪᓚᑦᑖᖅᑐᓄᑦ ᐊᒻᒪ ᑎᑭᐅᑎᓪᓗᓂ ᓂᑲᕙᐃ ᐊᒃᑭᒧᑦ. ᐊᑲᑯᒃ ᐃᒃᕕ ᓄᓇᒥᑦ ᐊᒃᑐᐃᙶᑦ, ᐃᓄᓐᖑᖅᖢᓂ... ᐃᓅᔪᖅᑎᑐᑦ. ᑕᐃᒪᓐᓇ ᐃᓅᔪᑦ ᓄᓇᒧᐊᕐᓂᑰᕗᑦ. ᐆᒪᖅᑯᑎᖃᖅᐳᑦ, ᐅᓯᔾᔨᕈᑎᒥᑦ, ᐊᒻᒪ ᐊᓯᐃᑏᒃ, ᐅᑎᕐᓗᓂ ᐆᒪᖅᑯᑎᒧᑦ ᐅᐸᒃᓯᒪᓂᓇᔭᕗᑦ ᓯᓚᕐᔪᐊᕐᒥᑦ ᐃᓯᓚᑉᐸᑦ.

ᑐᓂᔭᐅᔪᖅ ᓯᓚᓂᐅᔪᒧᑦ ᑖᓇᐅᕗᖅ ᐊᑲᑯᓴᐊᑰᑉ (“ᐅᓪᓗᕆᐊᑉ ᕿᐱᐊ”), ᐃᖅᑲᐃᓯᑎᓪᓗᓂᑎᒧᑦ ᓯᓚᐃᓐᓇᕐᒥᓐᖖᒋᕐᓂᑦᑎᓐᓂᑦ... ᐅᓪᓗᕆᐊᓂᑦ.

ᐊᑯᓂᐅᕆᑦᑐᒥᑦ ᐅᐸᒍᑎᓯᒪᓗᓂ... ᖃᓄᑎᒋᐅᕙ ᐊᑯᓂᐅᓂᐊ ᐆᒪᖅᑯᑎᐅᓗᓂ? ᐊᑲᑯᒃ ᐃᒃᕕ ᐃᓅᓯᓕᒫᒥᓂᑦ ᑕᐃᑲᓃᓚᐅᖅᐳᖅ, ᐊᒻᒪ ᐅᑎᓚᓪᓗᓂ ᓯᓚᐃᓐᓇᕐᒧᑦ.

ᑕᐃᒪᐃᒻᒪᑦ ᑖᒃᓱᒨᖓ ᐊᑲᑯᒃ ᐃᒃᕕᒧᑦ, ᑕᒪᐅᓐᖓᖅᓯᒪᕗᑦ. ᐆᒪᖅᑯᑎᐅᓂᑦᑎᓐᓂᑦ ᐊᓯᔾᔨᖅᓯᒪᕗᑦ ᐃᓅᓂᕐᒧᑦ ᑕᐅᓄᓐᖓᖅᑕᐅᓯᒪᓚᑦᑕ ᐊᑕᐅᓯᕐᒧᑦ ᐋᓯᕙᐅᑉ ᓄᕙᖓᒍᑦ ᑕᐃᔭᕗᑦ ᐃᓅᓴᖅᑑᑉ ᑲᑎᓐᖓᔾᔨᑖ ᐊᓈᓴᒥᓄᑦ ᑖᒃᑯᓄᖓ ᓂᑲᕗᐃ ᐊᔅᑭᒃᑯᓐᓄᑦ. ᐅᐸᒍᑎᓪᓗᑕ, ᐊᑐᖅᓂᓪᓗᑎᑦᑐᑦ, ᐃᓚᓐᓇᐊᖅᑎᔾᔪᑎᓕᐅᕐᓗᑎᑦ, ᐃᑉᐱᕐᓗᑎᑦ, ᐊᒻᒪ ᐅᑭᐅᖑᔪᑦ... ᐊᐅᓚᓚᓗᑕ.

ᐃᓐᓇᓱᑦᑎᓐᓄᑦ ᐃᖅᑲᐃᓯᔭᐅᕙᒃᐳᑦ ᑕᕐᕆᓂᑦᑎᓐᓂᑦ ᐃᓚᓐᓂᐊᖅᑲᓯᒪᔭᕆᑦ ᑕᕐᕆᓂᑦᑎᓐᓂᑦ ᑭᓯᐱᓯᒃᒥᑦ ᐊᒻᒪ ᑖᓐᓇ ᑲᑎᓯᒪᖅᑲᑎᖅᑲᖅᓂᖅ ᓴᓇᔨᑦᑎᓐᓂᑦ ᖃᐱᒃ ᐅᓪᓗᕆᐊᓂᑦ ᐱᔪᐊᕐᔪᐊᕐᒥᑦ (“ᐊᕐᓚᐃ ᓯᕙᐅᓪᓗᑎ 7”), ᓇᑐᓇᐃᖅᑎᐅᓪᓗᓂ ᐅᓪᓗᕆᐊᓂᑦ ᑖᓯᒥᙶ Pleiades–ᒥᑦ. ᐅᓄᖅᓯᕙᓪᓚᐊᓪᓗᑎᒃ ᐃᓄᐃᑦ ᑎᑭᑉᐸᓪᓚᐊᔪᑦ ᐹᓚᓂᐊᖅᑐᑦ, ᐃᓯᒪᑖᓚᐅᖅᐳᑦ ᐅᐱᒍᓯᒡᓗᑎᒃ ᓯᕗᓪᓚᖅᐸᐅᓚᐅᖅᑐᓄᑦ ᑕᒫᓂ, ᐊᑲᑯᒃ ᐃᒃᕕ, ᐃᓚᔭᐅᒃᑲᓂᓚᐅᖅᐳᖅ ᑖᓐᓇ 7–ᓂᑦ ᓄᕗᓚᒃ ᐅᓪᓗᕆᐊᖅ ᕿᐱᒃ ᐃᖅᑲᐅᒪᔪᕆᑦ ᑖᒃᑯᐊ ᑯᑯᒥᓄᙳᔪᑦ (“ᓯᕗᓪᓚᖅᐹᖅ ᐊᓈᓇᑦᑎᐊᙳᔪᖅ), ᐊᑲᑯᒃ ᐃᒃᕕᔾ. ᑕᐃᒪᐃᒻᒪᑦ, ᐅᓪᓗᒥ 8–ᙳᔪᓂᑦ ᓄᕗᖃᓚᖅᐳᖅ ᐅᓪᓗᕆᐊᖅ ᕿᐱᒃ.

ᓴᓂᐊᒍᑦ ᓇᓗᓇᐃᕈᑎ: ᑯᑯᒥᓇᑲᓯᒃᑯᑦ ᑐᓂᓯᓚᐅᖅᐳᑦ ᐃᓅᔪᓄᑦ ᐃᓯᒪᕆᔭᒥᑦ ᑎᒍᓯᓂᖅ, ᐃᓗᓕᓚᒃ ᐆᒪᖅᑯᑎᒥᑦ ᓄᑦᑕᖅᑐᑦ ᐱᓪᓚᑦᑖᖅᑐᓄᑦ. ᑐᑭᓯᔭᕗᑦᑕᐅᖅ ᑲᑎᙵᓂᖅᑲᖅᓂᙵᓂᑦ ᐃᓯᒪᕆᔭᑦᑎᓐᓂᑦ ᑖᓯᒨᖓ ᐸᒃᑰᓐ ᕿᓯᒃᒥᑦ, ᑕᑯᑎᑦᑎᓪᓗᑎᒃ ᐃᓱᖅᕐᑦᑑᔪᒥᑦ ᐱᑕᖅᑲᔭᕐᓂᙵᓂᑦ, ᓈᕐᓗ ᑕᐃᒃᑯᑎᑐᓇᖅ ᕿᒥᕿᕈᓚᐅᖅᑐᓂᑦ ᑕᐃᑲᓂ ᖃᔅᓯᐅᓂᕐᕆᓐᓂᑦ ᐃᓯᒪᕆᔭᐅᔪᓂᑦ. ᓯᓂᓚᕼᙵᑕ ᓯᓐᓇᒃᑐᖅᐸᒃᐳᑦ, ᐃᖅᑲᐅᒪᒍᑦᑎᒍᑦ ᓯᓐᓇᒃᑐᕐᓂᕆᔭᕗᑦ ᐅᕙᔾᔫᓐᓃᑦ ᐃᖅᑲᐅᒪᕆᒃᑯᑦᑎᒍᑦ, ᓯᓐᓇᒃᑐᖅᐸᒃᐳᑦ... ᑲᑎᖅᑎᖅᑲᒃᐳᑦ, ᑲᔪᕆᖅᓴᐅᑎᕆᓪᓗᑎᒍᑦ, ᑐᕌᕈᑎᕆᓪᓗᑎᒍᑦ, ᐃᑲᔪᖅᑎᕆᓪᓗᑎᒍᑦ, ᒪᒥᓴᕈᑎᕆᓪᓗᑎᒍᑦ, ᑐᑭᓯᔾᔪᑎᕆᓪᓗᑎᒍᑦ, ᐊᒻᒪ ᐊᕆᓪᓚᕆᐊᕈᑎᕆᓪᓗᑎᒍᑦ ᐊᔪᖅᓇᕆᑦᑐᓇᖅᑐᓂᑦ.

ᑕᒪᓐᓇ ᑲᑎᖅᑲᑎᖅᑲᖅᓂᐅᕗᖅ ᓴᓇᔨᑦᑎᓐᓄᑦ ᐅᖃᐅᔾᔪᐃᔾᔪᑦ ᑕᕝᕙᓐᖓᑦ ᐃᓯᒪᕆᔭᐅᔪᓂᑦ ᑖᒃᑯᓇᓐᖓᑦ ᐃᓂᓂᒃᑯᓐᓂᑦ ᕿᓯᐊᓂ ᑕᒪᓐᓇ ᐅᖃᐅᓯᐅᔪᖅ ᐅᖃᖅᑕᐅᕗᖅ ᑖᒃᑯᓄᖓ ᒥᑭᓇᒃ ᒥᓂᒃᑎᒃᑯᓐᓂᑦ (“ᑐᐱᐅᔭᖅ ᕿᑭᖅᑕᖅ”) ᓂᖃᐃᓪᓗ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᑐᑭᓯᔭᕆᑎᒍᑦ ᐃᓚᒋᔭᐅᓂᑦᑎᓐᓂᑦ ᐊᕆᓂᖅᓴᒧᑦ ᐃᓂᒋᓯᒪᔭᕐᖓᓂᑦ ᑕᐃᑲᓂ ᑭᑦᓯᑭᓯᒃᑯᓐᓂᑦ.

ᐅᓪᓗᕆᐊᓂᓐᖓᖅᓯᒪᕗᑦ ᐊᒻᒪ ᑐᑭᓯᕆᑦ ᑖᒃᑯᐊ ᒥᓯᕖᒃᑯᑦ ᐆᒪᖅᑯᑕᕐᒪᑕ/ᖃᐅᒪᓂᐅᕐᒪᑕ/ᑕᕐᓂᐅᕐᒪᑕ. &

ᓂᕆᔅᑯᒥᑎᓇ (ᖁᔭᓚᓂᖅᑦᑎᐊᖅᐳᖓ)

— ᐱᕙᒥ ᓂᑭᑎᑦᑎᑭᑭᕝ (ᑖᓐᓇ ᓯᓐᓇᒃᑐᕐᓂᕐᒥᑦ ᑎᒍᒥᐊᖅᑎ) ᐊᒻᒪ ᖃᐅᔨᒪᔭᐅᔪᖅ ᐃᒪᓐᓇ. ᑲᐃᓪᑲᕐ ᐸᒃ

• • •

ᓇᓗᓇᐃᕈᑎ: ᑐᓴᕈᒍ ᑲᐃᓪᑲᕐ ᐸᒃ ᓇᓗᓇᐃᖅᓯᓪᓗᓂ ᐅᓇᑖᑦ ᐅᓪᓗᕆᐊᓂᑦ ᖃᐅᔨᒪᔭᕆᓐᓂᑦ, ᐅᑲᐅᙱᖅᑐᑎᑦ ᖃᕆᓴᐅᔭᒃᑯᑦ: **pinnguaq.com/learn/canadian-space-agency-game** ᑕᑯᕆᐊᕈᒪᒍᕕᑦ ᐱᓕᕆᔾᔅᓴᓪᓂᑦ ᓯᓚᑎᓕᕆᔩᑦ ᐃᓗᓕᓪᓂᑦ ᓂᕈᐊᕈᑎᓪᓂᑦ ᐅᓪᓗᕆᐊᓕᕆᔩᑦ.

ᖃᕆᓴᐅᔭᖁᖅᑐᑦ ᐊᒻᒪ ᑲᑐᔾᔨᖅᑎᕆᑦ

ᐋᖅᑭᒃᓯᒪᓂᖓ

ᐅᖃᐅᓰᑦ ᑐᑭᖓᑦ

ᐅᓇᓖᑦ ᐅᖃᐅᓯᐊ
[ᖃᖅᑕᐅᓂᐊ]
ᐃᓅᒃᑎᑐᑦ ᑐᑭᖓᑦ

• • •

NIKAWIY ASKI
NIKÂWIY ASKIY
ᓂᑳᐎᐩ ᐊᐢᑭᐩ
[*neck-away as-kee*]
ᐊᓈᓇᐅᔪᖅ ᓄᓇᕐᔪᐊᕐᒧᑦ

MISIWA
MISIWÊ
ᒥᓯᕀ
[*mees-wa*]
ᑐᑭᐊ (ᖃᐅᔨᒪᔭᐅᔪᖅ ᐊᒻᒪ ᖃᐅᔨᒪᔭᐅᖏᑦᑐᖅ)

PAIMÂTISIWIN
PIMÂTISIWIN
ᐱᒫᑎᓯᐏᐣ
[*pay-mah-tis-e-win*]
ᐃᓅᓯᖅ

KISIK ASKI
KÎSIK ASKIY
ᑮᓯᐠ ᐊᐢᑭᐩ
[*key-sick-as-kee*]
ᓯᓚᕐᔪᐊᕐᒥᑦ ᓄᓇᕐᔪᐊᖑᔪᖅ

KISIKOOKUK
KÎSÎKÔKAK
ᑮᓰᑰᑲᐠ
[*kee-see-coo-cuck*]
ᐆᒪᓂᐊ ᐅᑯᐊ ᖃᐅᒪᓂᖅ/ ᐆᒻᒪᖅᑯᑎ/ᑕᕐᓂᖅ

ININIW
ININIW
ᐃᓂᓂᐤ
[*in-in-niw*]
ᐅᓇᓚᒃ (“ᑎᓴᒪᓂᑦ ᑎᒥᓚᒃ” ᐅᕝᕙᓘᓐᓃᑦ “ᑎᓴᒪᐅᔪᑦ”)

NIWO
NIWO
ᓂᐅᐧ
[*nee-you*]
ᑎᓴᒪᑦ

ACAKOSUK (PLURAL)
ACÂKOSAK
ᐊᒑᑯᓴᐠ
[*ah-cha-kos-uk*]
ᐅᓪᓗᕆᐊᑦ

ACAKOS (SINGULAR)
ACÂKOS
ᐊᒑᑯᐢ
[*ah-cha-kos*]
ᐅᓪᓗᕆᐊᑦ

ACAK
AHCAHK
ᐊᐦᒐᕽ
[*ah-chak*]
ᑕᕐᓂᖅ

KITCIMANITO
KIHCI-MANITOW
ᑭᐦᒋ ᒪᓂᑐᐤ
[*kit-chi-man-it-oo*]
tᑕᕐᓂᕐᔪᐊᖅ ᓴᓇᔨᒪᔪᖅ ᐅᑯᓂᖓ ᐆᒻᒪᖅᑯᑎ/ ᖃᐅᒪᓂᖅ/ᑕᕐᓂᖅ

KITCIKISIK
KIHCI-KÎSIK
ᑭᐦᒋ ᑮᓯᐠ
[*kit-chee-kee-sick*]
ᓯᓚᐃᓐᓇᕐᔪᐊᖅ

PAWAMIUK
PAWÂTAMOWINA
ᐸᐚᑕᒧᐎᓇ
[*pah-wah-mi-uk*]
ᓯᓐᓇᒃᑐᕐᓂᖅ

KIWATIN
KÎWÊTIN
[*kee-way-tin*]
ᓅᑦᑐᐃᑦᑐᖅ

KÎWÎ
ᑮᐍᑎᐣ
ᑮᐑ
[*gii-wai*]
ᐊᖏᕐᕋᖅ

IKAKACIT
ÎKÂ KÂ-ÂHCÎT
ᐄᑳ ᑳ ᐋᐦᒌᐟ
[*eh-kah-kah-chet*]
ᓇᖏᖅᑐᖅ ᓄᖅᑲᖓᑦᑎᐊᖅᑐᓂ *ᖃᐅᔨᒪᔭᐅᔪᖅᑕᐅᖅ ᓅᑦᑐᐃᑦᑑᓂᖓᓂᑦ

ACIMOWINUK (PLURAL)
ÂCIMOWINAK
ᐋᒋᒧᐎᓇᐠ
[*ah-chim-oh-win-uk*]
* ᖃᐅᔨᒪᔭᐅᖕᒥᔪᖅ ᐃᒪᓐᓇ
âcimowina
ᐅᓂᒃᑳᓕᐅᖅᑎ/ᐅᓂᒃᑳᖅᑎ

ACIMOWIN (SINGULAR)
ÂCIMOWIN
ᐋᒋᒧᐏᐣ
[*ah-chim-oh-win*]
ᐅᓂᒃᑳᓕᐅᖅᑎ

ACAKOS ISKWIW
ACÂHKOS ISKWÎW
ᐊᒑᐦᑯᐢ ᐃᐢᑹᐤ
[*ah-cha-koos-is-kew-wew*]
ᐅᓪᓗᕆᐊᖅ ᐊᕐᓇᖅ

OKUNOWISKATOPIW
OKANAWSIKÂTAPIW
ᐅᑲᓇᐤᓯᑳᑕᐱᐤ
[*oh-cun-now-wisk-ahtwo-pew*]
ᐹᒥᑦ ᑲᒪᔨ ᐊᐅᓚᑦᑎᔪᖅ ᐅᑯᓂᖓ...

KOKOMINAKASIS
KOHKOMINAHKÎSÎS
ᑯᐦᑯᒥᓇᐦᑮᓲᐢ
[*ko-ko-min-ah-kah-sees*]
“ᐊᓈᓇᑦᑎᐊᖅ ᐋᓯᕙᒃ,” ᓄᕙᖕᒥᓄᑦ ᒪᑦᑎᑦᑕᐅᑎᓕᐅᖅᑎ

ACAKOSAHAKOOP
ACÂHKOSAKOHP
ᐊᒑᐦᑯᓴᑰᐦᑊ
[*ah-cha-coos-ah-ha-coop*]
ᐅᓪᓗᕆᐊᖅ ᕿᐱᒃ

TIPAHKO ACAKOSAK
TÎPAKOHP ACÂHKOSAK
ᑏᐸᑰᐦᑊ ᐊᒑᐦᑯᓴᐠ
[*teh-pah-coop ah-cha-koo-suk*]
ᐅᓪᓗᕆᐊᑦ 7–ᖑᔪᑦ

KOKOMINOW
KOHKOMINAW
ᑯᐦᑯᒥᓇᐤ
[*coo-coo-min-ow*]
ᓯᕗᓪᓕᖅᐹᖅ ᐊᓈᓇᑦᑎᐊᖅ

PAKWON KISIK
PAKONÎ KÎSIK
ᐸᑯᓃ ᑮᓯᐠ
[*pah-gwun-gii-sg*]
ᐊᖑᒪᔪᖅ–ᓯᓚᐃᓐᓇᕐᒥ– ᖃᐅᔨᒪᔭᐅᓂᕆᔭᖓ ᑕᐃᔭᐅᔪᖅ Pleiades–ᒥᑦ

MIKINAK MINISTIK
MIHKINÂHK MINISTIK
ᒥᐦᑭᓈᕽ ᒥᓂᐢᑎᐠ
[*mick-in-ack minonis-tick*]
ᑐᐱᐅᔭᖅ ᕿᑭᖅᑕᖅ

NINANASKOMITINAN
NINANÂSKOMITINÂN
ᓂᓇᓈᐢᑯᒥᑎᓈᐣ
* ᖃᐅᔨᒪᔭᐅᖕᒥᔪᖅ ᐃᒪᓐᓇ
ninanâskomon
ᓂᓇᓈᐢᑯᒧᐣ
[*ni-nah-nask-oh-mit-tin-nan*]
ᖁᔭᓕᕕᒡᔪᐊᖅᐳᖓ

PAWAMI NIKITITICIKIW
PAWÂMI NIKITITICIKIW
ᐸᐚᒥ ᓂᑭᑎᑎᒋᑭᐤ
[*pah-wah-mi Nih-kih-tee-tee-chi-ghew*]
ᓯᓐᓇᖅᑐᕐᓂᐅᔪᓂᑦ ᑎᑐᒥᐊᖅᑎ

ᑎᑎᕋᖅᑐᖅ ᑎᐅᔾᓯ ᑲᐅᕙᔅᑭ

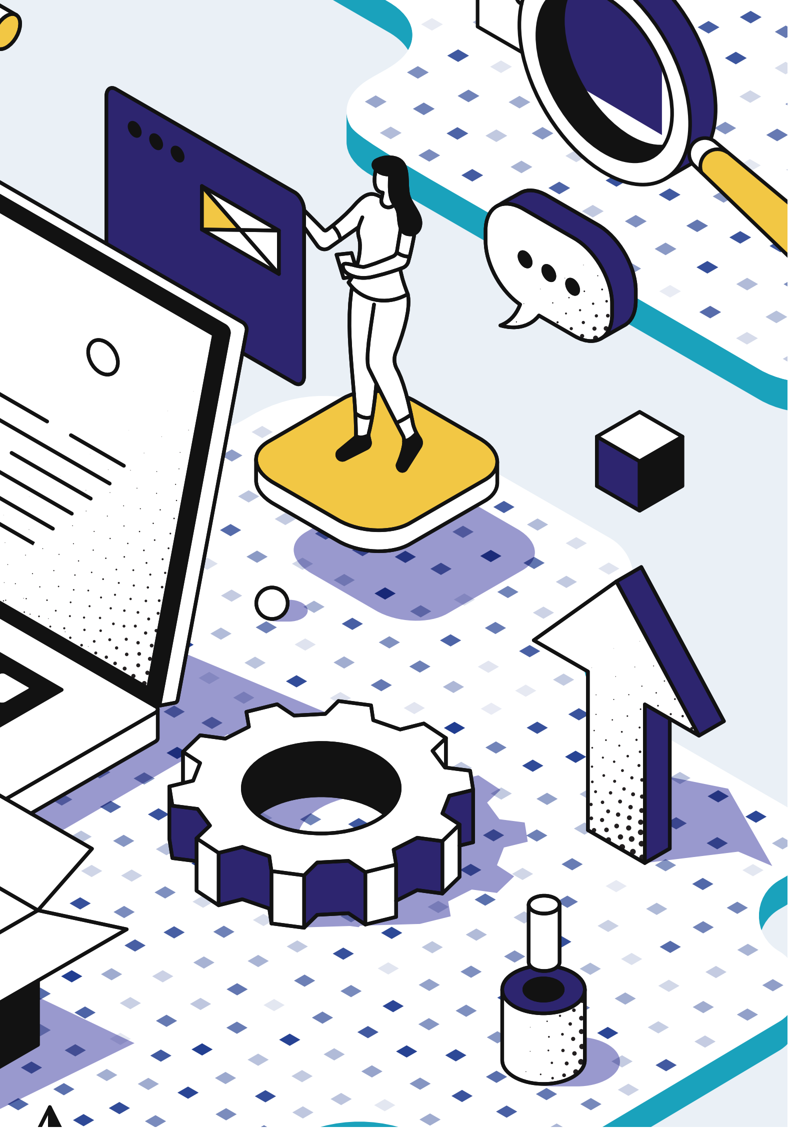
ᖃᓪᓗᓈᑐᑦ ᑕᐃᔭᐅᔪᖅ Hack the Valley IV

ᓵᓚᖃᕋᓯᒃᓗᑎᒃ ᖃᓇᓴᐅᔭᒃᑯᑦ ᐊᑐᕈᑎᕐᓴᓂᑦ ᐃᓕᐅᖅᑲᐃᔪᑦ ᐊᑲᐅᓐᖏᓕᐅᕈᑎᓖᑦ

ᖃᓇᓴᐅᔪᓕᓇᓂᖅ ᑲᔪᖕᒋᖅᓴᐃᒍᖅ ᐱᐅᓯᒋᐊᖅᑎᑦᑎᓂᕐᒥᑦ, ᐊᒻᒪ ᐊᕐᕋᒍᒥᑦ ᐊᑐᓵᖅᑐᓂᑦ. ᑖᓐᓇ Hᐋᑲᑖᓐᑯᑦ ᐱᒃᑯᒋᔭᐅᑦᑎᐊᓕᖅᑐᑎᒃ ᑕᒪᑐᒧᖓ ᐃᓱᒪᒃᓴᖅᓯᐅᑦᑎᐊᕈᓐᓇᕐᓂᕐᒧᑦ ᐋᖅᑭᐊᕈᑎᒃᓴᓂᑦ ᐊᔪᕐᓇᕋᓗᐊᖅᐸᑦ. ᐃᑲᕐᕋᑐᐃᓐᓇᕐᓂᑦ, ᐃᓚᒌᖑᔾᔪᑦ ᐃᓕᓐᓂᐊᖅᑏᑦ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᓐᓇᖅᐳᑦ ᐋᖅᑭᒍᑎᒃᓴᓂᑦ ᐅᐊᑲᑦᓚᓗᐊᖑᒐᓗᐊᖅᐸᑦ. ᑖᒃᑯᐊ Hᐋᑲᑖᒃᑯᑦ ᖃᐅᔨᓇᓯᒍᓐᓇᖅᐳᑦ ᖃᐅᔨᒪᓂᓇᔭᐅᔪᓂᑦ ᐊᒻᒪ ᐱᕈᖅᑎᑦᑎᓗᑎᒃ ᐅᖃᖃᑎᖃᕐᓂᒃᑯᑦ ᐊᔪᓐᖏᑕᐅᔭᓇᐊᓕᖕᒥᑦ ᑕᕝᕙᓐᖓᑲᐅᑎᒋ.

ᑕᒪᓐᓇ Hᐋᑲᑖᓐ ᓵᓚᖃᕋᓯᖕᓂᐅᕗᖅ ᑲᑐᔾᔨᖃᑎᒌᒃᓗᑎᒃ ᐊᒻᒪ ᐊᑐᓇᐊᖃᖅᑕᖃᖅᓗᑎᒃ ᐊᑐᓂᑦ ᖃᓇᓴᐅᔭᕉᖅᑐᓄᑦ ᐊᒻᒪ ᖃᓇᓴᐅᔭᕉᖕᒋᑦᑐᕉᒐᓗᐊᖅ ᐊᔪᓐᖏᑕᐅᔭᓇᐊᓕᖕᓂᑦ ᐊᑐᕐᓗᓂᔾᔪᒃ ᐃᓱᒪᑐᓂᕐᒥᑦ ᓅᒻᒪᓐᖏᕆᓕᐅᑕᐅᔪᓂᑦ ᐊᔪᕐᓇᕈᑕᐅᔪᓂᑦ. ᐅᓪᓗᓂᒃ ᒪᕐᕉᖕᓂᒃ ᐅᕝᕙᓘᓐᓃᑦ ᐱᖓᓱᓂᑦ, ᑖᒃᑯᐊ ᐃᓚᐅᔪᑦ ᐃᓚᒌᒃᓯᖅᓗᑎᒃ ᐊᒻᒪ ᐱᓕᓇᑲᐅᖅᑐᖅᓗᑎᒃ ᓴᖅᑭᑦᑎᓪᓗᑎᒃ ᐊᑐᕈᑎᒃᓴᓂᑦ/ᐋᖅᑭᒍᑎᒃᓴᓂᑦ ᐊᒻᒪ ᓴᖅᑭᑎᕐᓗᓂᒋᑦ ᐃᓚᐅᔪᓄᑦ ᐊᒻᒪ ᑭᒃᒐᖅᑐᖅᑎᓄᑦ ᑕᕝᕙᓂ ᖃᓇᓴᐅᔭᓕᓇᔩᓄᑦ ᓇᖕᒥᓂᓕᖕᓄᑦ.

ᐅᑐᐱᓇᐅᑎᓐᓗᒍ 2021–ᒥᑦ, ᑖᒃᑯᐊ ᐱᓐᖑᐊᒃᑯᑦ ᐊᑭᓕᖅᓯᓚᐅᖅᐳᑦ ᑖᒃᑯᓂᖓ ᐃᓕᓐᓂᐊᕐᕕᒡᔪᐊᖅ ᑐᕌᓐᑐᒥᑦ Hᐋᑲᑖᓐ–ᖑᔪᒥᑦ ᑕᐃᔭᐅᔪᖅ Hack the Valley IV: ᓵᓚᖃᕋᓯᒃᓗᑎᒃ ᖃᓇᑕᐅᔭᒃᑯᑦ ᐊᑐᕈᑎᕐᓴᓂᑦ ᐃᓕᐅᖅᑲᐃᔪᑦ ᐊᑲᐅᓐᖏᓕᐅᕈᑎᓖᑦ, ᐃᓕᓐᓂᐊᖅᑎᓄᑦ ᓵᓚᖃᕋᓯᖕᓂᖅ ᐋᖅᑭᒃᓯᐃᓗᑎᒃ ᐋᖅᑭᒃᓯᒪᓂᐊᓂᑦ ᐊᒻᒪ ᐃᓕᓐᓂᐊᕐᓂᓕᓇᔪᓂᑦ ᐱᓐᖑᐊᒪᒃᓴᓂᑦ, ᐃᓱᒪᒋᔭᐅᔪᓄᑦ ᐅᕝᕙᓘᓐᓃᑦ ᐋᖅᑭᒃᓯᒪᓂᐊᒍᑦ. ᑖᓐᓇ ᒋᓚᓐ ᔩ ᐊᒻᒪ ᓕᐅ ᒍᐊᖕ, ᑖᒃᑯᐊᒃ ᐱᖕᒪᔪᐊᓂᑦ ᐊᕐᕋᒍᓂᑦ ᐃᓕᓐᓂᐊᓕᖅᐹᒃ ᖃᓇᓴᐅᔭᒃᑯᑦ ᖃᐅᔨᓴᖅᑐᓕᓇᓂᕐᒥᑦ, ᓵᓚᖃᖅᓯᒪᔫᒃ ᐱᓐᖑᐊᕈᑎᑦᑎᐊᕙᓕᐅᕐᓂᕐᒥᖕᓂᒃ



ᑐᓂᔭᐅᓪᓗᑎᒃ. ᑖᒃᑯᐊᒃ ᐊᑐᕐᓂᖅᑲᖅᓯᒪᖕᒋᑦᑎᐊᖅᓗᑎᒃ ᑖᔅᓯᒥᖓ Hᐋᑲᑖᓐ-ᖑᔭᒥᑦ ᑭᓯᐊᓂ ᐱᔭᒪᓂᕐᒥᖕᓄᑦ ᐱᓐᖑᐊᕐᓂᕐᒥᑦ ᐊᒻᒪ ᑖᓐᓇ Hᐋᑲᑖᓐ ᐱᓕᕆᔭᒪᓂᖅᑲᑦᑎᐊᓕᕈᑎᐅᓪᓗᓂ ᐱᓕᕆᐊᖅᑲᖅᑐᑎᒃ ᓄᑖᖑᔭᒥᑦ.

ᑖᒃᑯᐊᒃ ᓅ ᐊᒻᒪ ᑯᐊᖕ ᓴᖅᑭᑦᑎᓚᐅᖅᐳᒃ ᐃᓕᓐᓂᐊᕈᑎᒃᓴᑦᑎᐊᕙᖕᒥᑦ, ᐊᐱᖅᑰᑎᐅᖅᑰᔨᔭᒥᑦ ᓵᓚᖅᑲᖅᓯᒃᑐᓂᑦ ᐱᓐᖑᐊᒪᒃᓯᒥᑦ ᐊᑐᕐᓂᖅᑲᖅᓗᓂ ᐊᔾᔩᒌᖕᒋᑦᑐᓂᑦ ᑕᕝᕙᓐᖓᑦ STEM-ᖑᔭᒥᑦ ᐅᖅᑲᐅᓯᑖᑦ ᐊᒻᒪᓗ ᐃᓱᒪᒋᔭᐅᔪᓂᑦ. ᑕᐃᒪᐃᒃᑲᓗᐊᖅᑎᓪᓗᒍ, ᑕᒪᓐᓇ ᐊᑐᖅᑕᑎᒃ ᐊᔪᕐᓇᕐᒋᑦᑑᓚᐅᕐᒋᒃᑲᓗᐊᖅᓗᓂ. ᑖᒃᑯᐊ Hᐆᑐᒃᑯᑦ ᓯᕗᓪᓚᐅᓪᓗᑎᒃ ᓴᖅᑭᓚᐅᖅᐳᑦ Hᐋᑲᑖᓐ-ᑯᑦ ᐱᒋᐊᓚᐅᓐᖏᑎᓪᓗᒋᑦ ᓱᓕ. ᑕᐃᒪᐃᒻᒪᑦ, ᐃᓚᒌᒃᓱᖅᓗᑎᒃ ᑎᓴᒪᐅᓪᓗᑎᒃ, ᑭᓯᐊᓂ ᐃᓕᓐᓂᐊᖅᑎᖕᒋᑦ ᐃᓚᐅᔪᓐᓃᓚᐅᕐᒪᑕ ᐱᔾᔪᑎᒋᓪᓗᒍ ᐃᓕᓐᓂᐊᕐᕕᐅᑉ ᐊᑐᓇᐊᖅᑲᕐᓂᖅᓴᖓ. ᓅ ᐊᒻᒪ ᑯᐊᖕ ᐱᓇᔪᐃᓐᓇᓚᐅᖅᐳᒃ ᑕᐃᒪᐃᒃᑲᓗᐊᖅᑎᓪᓗᒍ ᐊᑲᐅᓐᖏᒃᑲᓗᐊᖅᑎᓪᓗᒍ, ᐃᒻᒥᖕᓄᑦ ᐃᑲᔪᖅᑎᒌᒃᓗᑎᒃ ᐊᒻᒪ ᐊᑐᕐᓂᕆᓴᑎᒃ ᐃᓱᖅᑲᕆᓗᐊᖅᑎᓪᓗᒍ ᖅᑲᕆᓴᐅᔭᕐᔪᑦ ᐃᓚᐅᖅᑲᐃᓂᕐᒥᑦ ᐊᑐᕐᓂᐅᓂᐊᖅᑐᒥᑦ ᖅᑲᕆᓴᐅᔭᒧᑦ. ᑯᐊᖕ ᐅᖅᑲᓚᐅᖅᐳᖅ ᖁᕕᐊᓯᓚᐅᖅᐳᖅ ᑖᓐᓇ Hᐋᑲᑖᓐ ᑲᔪᓯᑎᑦᑎᓚᐅᕐᒪᑦ ᐱᓕᕆᐊᖅᑎᑦᑎᓪᓗᓂ ᐱᓕᕆᖅᑎᖅᑲᓂᕐᒥᑦ. “ᐃᓕᓐᓂᐊᖅᑎᐅᓪᓗᓂ ᖅᑲᕆᓴᐅᔭᒃᑯᑦ ᖅᑲᐅᔨᓴᖅᑐᓕᕆᓂᕐᒥᑦ, ᐃᓅᔾᔨᕚᒃᐳᖓ ᐱᓕᕆᐊᓂᑦ. ᑭᓯᐊᓂ ᐃᓵᓐᓂᒃᑯᑦ ᐱᓕᕆᐊᒃᓴᐅᔪᑦ ᐊᖏᓂᕋᔪᖓ ᐱᓕᕆᐊᕆᓇᓱᒃᐸᒃᐸᒍᑦ, ᑕᐃᒪᓐᓇᑐᑦ ᐱᓕᕆᐊᒃᓴᐅᔪᓂᑦ ᓄᓇᖅᔭᐊᒥᑦ, ᐊᑐᕆᐊᖅᑲᓗᐊᖅᑐᓂ ᐱᓕᕆᓂᕆᔭᒍᑦ ᐊᕙᓪᓗᑎᒍᑦ ᑭᓯᐊᓂ.”

ᐅᖅᑲᖅᑕᖕᒪᒍᑦ ᑖᒃᑯᐊᒃ ᓅᖕ ᐊᒻᒪ ᑯᐊᖕ, ᑖᒃᑯᐊ Hᐋᑲᑖᓐᑯᑦ ᐱᕈᖅᓴᐃᕙᑦ ᐱᐅᓯᑎᑦᑎᓂᕐᒥᑦ ᐊᒻᒪ ᐃᓱᒪᒋᔭᒥᑦ ᓴᖅᑭᑦᑎᓂᕐᒥᑦ. ᑕᒪᓐᓇ ᐊᑐᕐᓂᖅᓴᑎᒃ ᐊᑐᕐᓂᖅᑲᖅᑎᑦᑎᕙᑦ ᐃᓱᒪᒃᓴᖅᓯᐅᕐᓂᕐᒥᑦ ᐊᑐᖅᓱᑎᒃ ᐊᓂᒍᐃᓪᓗᑎᒃ ᐸᕐᓇᐃᓂᐅᔪᒥᑦ. ᑯᐊᖕ ᐊᓚᐊᓇᐃᑑᓂᐊᕋᓱᒋᓚᐅᓐᖏᑕᖓ ᑐᐊᕐᕕᕐᓗᓂ ᐱᓕᕆᐊᖓ ᑭᓯᐊᓂ ᒫᓐᓇ ᐱᒻᒪᕆᐅᓂᖓ ᑐᑭᓯᓚᖅᐸᖓ ᐊᑐᕐᑯᔭᐅᔪᑦ ᐱᓕᕆᓂᖅᑭᓐᓂᑦ ᓴᖅᑭᑦᑎᓂᐅᔪᖅ. “ᐃᑲᔫᑎᖅᑲᕐᓂᐊᖅᐳᖅ ᐊᔪᕐᓇᖅᑐᖅᓯᐅᕈᕕᑦ ᐃᓱᒪᒃᓴᖅᓯᐅᕐᓂᕐᒥᑦ.”

ᑕᒪᓐᓇ ᐊᑐᖅᑎᑕᐅᓂᖅ Hᐋᑲᑖᓐᓄᑦ ᑕᒪᓐᓇ ᐱᑕᖅᑲᖕᒋᓐᓂᐅᔪᖅ ᓴᓇᖕᕕᐅᔫᒃ ᐊᑐᒐᒃᓴᖕᒋᓐᓂᑦ, ᑕᐃᒪᐃᓐᓂᖕᒐᓄᑦ ᐃᓱᒪᓕᐅᕐᓂᖅ ᐱᓕᕆᐊᒃᓯᒥᑦ ᐃᖕᒋᕐᓴᑦᑎᐊᕐᓂᖕᒪᓂᑦ. ᐅᖅᑲᖅᑕᖕᒪᒍᑦ ᑯᐊᖕ, “ᐅᓄᖅᑐᑦ [ᖅᑲᕆᓴᐅᔭᒃᑯᑦ ᖅᑲᐅᔨᓴᖅᑐᓕᕆᓂᕐᒧᑦ ᐃᓕᓐᓂᐊᖅᑏᑦ] ᐃᓱᒪᒋᔭᖅᐸᑦ, ᑭᓯᐊᓂ ᐱᒋᐊᕈᒪᔭᖅᑲᖅᐸᓐᖏᓚᖅ ᓯᕗᓪᓚᖅᐹᖑᓗᓂ ᓄᖅᑲᐃᒪ ᐊᔪᕐᓇᓗᐊᕐᒪᑦ. ᐃᓱᒪᒋᔭᕋ Hᐋᑲᑖᓐ-ᖑᔭᒥᑦ ᐊᔪᕐᓇᖅᑐᖅᓯᐅᖅᑎᑦᑎᒍᑦ ᐊᒻᒪ ᑎᓕᐅᓇᓪᓗᑎᒃ ᐃᓕᖕᓂᑦ ᐃᓱᒪᑖᕐᓴᓱᕐᓂᕐᒥᑦ. ᐊᒻᒪ ᐃᓵᓐᓂᒃᑯᑦ ᐊᑐᑦᑎᐊᖅᐸᒃᐳᖅ.”

ᐅᖅᑲᐅᔾᔨᓂᒃᑯᑦ ᐊᑐᕐᓂᐅᓂᐊᖅᑐᓂᑦ ᑕᕝᕙᓂ Hᐋᑲᑖᓐᑯᓐᓂᑦ, ᓅᖕ ᐊᒻᒪ ᑯᐊᖕ ᐊᖏᖅᑲᑎᒌᒃᐳᒃ ᐅᒥᖕᒐ: ᐊᑐᕈᒃ-ᐱᖅᑲᓐᓇᓱᑎᓪᓗ. ᓅ ᐅᖅᑲᖅᐳᖅ ᐱᓕᕆᖅᑎᖅᑲᓂᖅ ᐱᖅᑲᓐᓇᓱᒥᒃ ᐊᓂᒍᐃᑦᑎᐊᖅᑎᑦᑎᕙᒃᐳᖅ. “ᐃᓱᒪᒋᔭᕋ ᐱᓕᕆᖅᑎᖅᑲᓂᖅ ᖅᑲᐅᔨᒪᔭᓂ ᐊᔾᔨᖅᑲᕐᓂᖅᓴᐅᕗᖅ ᐊᒻᒪ ᐊᐅᓚᑦᑎᐊᖅᑲᖅᓯᓂᖅᓴᐅᓪᓗᓂ, ᐊᒻᒪ ᐊᓂᒍᐃᑦᑎᐊᕈᓐᓇᖅᓯᓂᖅᓴᐅᓪᓗᓂᑦ ᓲᖅᑲᐃᒻᒪ ᑖᒃᑯᐊ ᐱᖅᑲᓐᓇᓱᑎᑦ ᐅᒃᐱᕆᒐᕕᒋᑦ ᐃᓚᐅᖅᑲᑎᒋᓗᒋᑦ ᐊᒻᒪ ᐃᑲᔪᖅᑎᒋᓗᒋᑦ.” ᑯᐊᖕ ᓇᓗᓇᐃᖅᐳᖅ ᑖᒃᑯᐊ Hᐋᑲᑖᓐᑯᑦ ᐅᒃᑯᐃᖕᒪᖕᒪᑕ ᑭᒃᑯᑐᐃᓐᓇᖅᓱᓂᑦ. “ᐅᓄᖅᑐᓂᑦ ᐃᓄᖕᓂᑦ ᐃᓚᐅᖅᑕᐅᒍᑦ ᑕᕝᕙᓃ Hᐋᑲᑖᓐᒥᑦ [ᑕᕝᕙᓂ] ᐋᖅᑭᒃᓯᐃᓂᕐᒥᑦ ᐊᑐᒐᒃᓴᓂᑦ. ᐃᓱᒪᒋᔭᒥᑦ ᐋᖅᑭᒃᓯᓂᑐᐃᓐᓇᐅᓐᖏᓚᖅ. ᐃᓵᓐᓂᒃᑯᑦ ᐱᐅᓂᖅᑕᑎᐊᖅᐳᖅ ᑐᒃᓯᕋᐅᒥᑦ ᐊᑐᒐᒃᓴᐅᔪᓂᑦ ᓵᓚᒃᓴᐅᓇᖅᒥᖕᒪᑦ.”

ᖅᑲᓇᓴᐅᔭᒃᑯᑦ ᐃᑲᐅᖅᑲᐃᓂᖅ ᐊᑐᖕᒋᓪᓗᒍ ᑕᕝᕙᓂ Hᐋᑲᑖᓐᒥᑦ ᓴᖅᑭᑕᐅᓗᐊᖅᐸᓐᖏᓚᑦ ᑭᓯᐊᓂ ᐱᒻᒪᕆᐅᒋᔪᑦ. ᑖᒃᑯᐊ ᓇᖕᒥᓂᖏᑦ ᖅᑲᓄᐃᓴᖅᑎᑦᑎᕙᒃᑐᑦ Hᐋᑲᑖᓐᒥᑦ ᐊᑐᖅᑎᑦᑎᕙᑦ ᐃᓐᓂᐊᓗᒃᓴᓂᑦ ᖅᑲᓇᓴᐅᔭᓂᑦ ᐊᑐᖅᑕᐅᕙᒃᑐᓂᑦ ᐊᒻᒪ ᐊᐅᓚᔾᔪᑎᖕᒋᓐᓂᑦ ᖅᑲᓇᓴᐅᔭᐃᑦ ᐅᒃᑯᐃᖕᒪᖕᒋᑦ ᐃᓚᐅᖅᑕᐅᔪᓄᑦ ᐊᒻᒪ ᐃᓐᓂᐊᓯᓐᓂᑎᐊᕙᐅᑉᓗᓂ ᓄᑖᓂᑦ ᐊᔪᕐᓇᖕᓂᖅᓴᓂᑦ. ᐊᒻᒪ ᐃᑕᐅᖅᑲᐃᔪᒪᕕᑦ ᖅᑲᓇᓴᐅᔭᒧᑦ ᑭᓯᐊᓂ ᐊᑐᓂᖅᑲᖅᓯᒪᖕᒋᑦᑐᑦ, ᑖᒃᑯᐊ ᐅᖅᑲᐅᓯᖅᓯᒪᖕᒋᑦᑐᑦ ᐃᓱᒪᓕᐅᕐᓯᐅᕐᓇᐊᖅᑕᐅᖕᒪᑕ. “ᐃᓱᒪᒐᖕᒪ, ᐱᑕᖃᐃᓐᓇᐅᔭᕐᓂᖕᒐᓂᑦ ᐃᓄᖕᓂᑦ ᓇᓗᓇᐃᑦᑎᐊᓇᕐᑐᓂᑦ ᐃᑕᕐᓄᑦ ᐊᒻᒪ ᐃᑕᐅᖅᑲᐃᕐᓂᑎᑦᑲᐅᖅᑐᖅᓗᑎᒃ ᓲᖅᑲᐃᒻᒪ ᐊᐅᓚᓂᑦᓴᖕ Hᐋᑲᑖᓐ ᖁᕝᕕᐊᖅᐸᒃᑕᖅᑎᑦᑎᕙᖕᒪ.”

ᐊᒻᒪ ᐃᑕᐅᖅᑲᐃᖅᑎᓄᑦ ᐱᓕᕆᐊᖅᑲᒪᔪᓄᑦ ᖅᑲᓇᓴᐅᔭᒃᑯᑦ ᐃᑕᐅᖅᑲᐃᓂᕐᒥᑦ ᐊᒻᒪ ᖅᑲᓇᓴᐅᔭᒃᑯᑦ ᖅᑲᐅᔨᓴᖅᑐᓕᕆᓂᕐᒥᑦ, ᑖᒃᑯᐊ Hᐋᑲᑖᓐᑯᑦ ᐊᑐᕐᑎᑎᐊᖅᐸᖕᒪ ᖅᑲᓇᓴᐅᔭᓕᕆᓂᕐᒥᑦ ᐃᑕᐅᖅᑲᐃᖅᑎᓄᑦ, ᐃᑦᓴᐃᔨᓄᑦ, ᐊᒻᒪ ᓇᖕᒥᓂᖕᓄᑦ ᐃᑲᔪᖅᑐᐃᓪᓗᑎᒃ ᐃᑕᐅᖅᑲᐃᖅᑐᓄᑦ ᐊᒻᒪ ᐃᑕᐅᖅᑲᐃᖅᑎᑎᓗᑎᒃ..

ᓅ ᐃᒪᐃᖅᑯᔨᖅᐳᖅ ᓲᖅᑲᐃᒻᒪ Hᐋᑲᑖᓐᑯᑦ ᐊᑐᖅᑕᐅᓂᐊᖅᑐᓂᑦ ᐋᖅᑭᒃᓯᐃᔾᔪᑦ ᖁᕝᕕᐊᖅᐸᓚᑕ ᐃᑕᐅᓂᐊᖅᑐᓂᑦ ᓴᖅᑭᑎᓪᓗᑎᒃ ᐃᓱᒪᒋᔭᒥᖕᓂᑦ ᐊᒻᒪ ᐊᐅᓚᓂᖅᑕᑎᐊᕈᓐᓇᖅᑐᓂᑦ, ᑖᒃᑯᐊ Hᐋᑲᑖᓐ ᐃᑕᒋᔭᐅᔪᓐᓇᖅᐳᑦ ᐱᐅᓯᑎᐊᖅᑎᑎᓂᕐᒥᑦ ᐊᓯᔾᔨᓗᓂ ᐊᑐᓇᐊᖅᑲᖅᑎᑦᑎᓂᕐᒥᑦ ᓄᓇᓕᖕᓂᑦ. “ᑲᔪᖕᒋᖅᓴᐃᔪᒪᒐᑦ ᐃᓱᒪᒋᔭᐅᓯᒪᔪᓂᑦ. ᑕᐃᒪᐃᒻᒪᑦ, ᐱᑕᖅᑲᖅᐸᑦ Hᐋᑲᑖᓐ-ᖑᔪᓂᑦ ᐱᓕᕆᐊᑕᖕᓂᑦ ᐃᓱᒪᓂᐅᔪᓂᑦ ᓴᖅᑭᑦᑎᓂᕐᒥᑦ ᖅᑲᓇᓴᐅᔭᒃᑯᑦ ᐃᑲᔫᑎᓇᓱᖅᐳᖅ ᐅᖕᒐᓯᒋᓴᐅᔪᓄᑦ ᓄᓇᓕᖕᓄᑦ, ᐃᓱᒪᒋᓴ ᐱᒋᐊᖅᑎᑦᑎᐊᕈᑎᐅᓇᓴᕐᓂᖕᒐᓂᑦ ᐃᓱᒪᒋᓴᐅᔪᓂᑦ ᐊᒻᒪ ᐱᓕᕆᐊᒃᓴᓂᑦ ᐱᕈᖅᐸᓪᓕᐊᓗᑎᒃ ᐊᒻᒪ ᐃᑲᔪᕐᓗᑎᒃ ᐱᑕᖅᑲᓕᖅᑎᑦᑐᑦ ᓄᓇᓕᐅᔪᓂᑦ.” &

ᓇᓗᓇᐃᕈᑕᓕᐅᕐᓂᖅ ᐊᒻᒪ ᐱᓕᕆᐊᖑᓂᐊᖅᑐᑦ

ᖃᓇᓴᐅᔭᑰᖅᑐᑦ ᐊᒻᒪ ᑲᑐᔾᔨᖅᑎᒋᑦ

ᐋᖅᑭᒃᓯᒪᓂᖓ

ᓵᓐᑐᕋᓯᒃᕼᐊᖑᔩᑉ ᐃᓱᐊ

ᓴᑉᕋᕼᒪᓂᐊᓐ ᓵᓐᑐᕋᓯᒃᕼᐊᕐ ᑲᔪᖏᖅᓴᖅᓱᓂᐅᒃ (1910-1995) ᐃᓅᓚᐅᖅᑐᖅ ᑕᐃᑲᓂ ᓄᓇᖅᑲᖅᕕᐅᔪᒥᑦ ᓚᕼᐅᐊᓐ ᑕᐃᑲᓂ ᐸᓇ-ᐹᑎᓴᓐ ᐃᓐᑎᐊᒥᑦ. ᑕᐃᔅᓱᒪᓂ, ᑖᒃᑯᐊ ᓄᓇᖅᑲᖅᕕᐅᔪᑦ ᐊᕕᒃᑐᖅᓯᒪᓂᖏᑦ ᒫᓐᓇ ᐅᑯᐊᖑᕗᑦ ᐃᓐᑎᐊ, ᐹᑭᔅᑖᓐ ᐊᒻᒪ ᐹᖕᓛᑎᔅ, ᐃᓚᒋᔭᐅᓚᐅᖅᐳᑦ ᑖᔅᓱᒪᓐᖓᑦ ᐸᓇᑎᔅᑯᓐᓂᑦ. ᐃᓅᓯᒃᑑᑦᑐᓂ ᓚᓐᑐᕋᓯᒃᕼᐊᕐ ᑲᔪᖏᖅᓴᖅᑕᐅᓚᐅᖅᐳᖅ ᑖᔅᓱᒪ ᐊᓈᓇᖓᑕ ᓯᑕᐅᑉ ᐃᓕᓐᓂᐊᕐᑯᑦᑐᓂᒃ ᖃᐅᔨᓴᖅᑐᓕᕆᓂᕐᒥᑦ, ᐊᒻᒪ ᐊᖓᖓᑕ ᕋᒪᓐ, ᓇᑐᓇᐃᕈᑎᕐᑲᓚᐅᖅᐳᖅ ᓈᓴᐅᑎᓂᑦ ᐊᑐᖅᓱᓂ ᖃᐅᔨᓴᖅᑎᐅᑦᑐᓂ ᑭᓱᑐᐃᓐᓇᕐᓂᑦ.

ᐃᓕᓐᓂᐊᕐᕕᖕᒥᑦ, ᑖᓐᓇ ᓵᓐᑐᕋᓯᒃᕼᐊᕐ ᐊᔪᖏᓐᓂᕐᑲᑦᑎᐊᓚᐅᖅᐳᖅ ᓈᓴᐅᓯᓇᓂᕐᒥᑦ ᐊᒻᒪ ᑭᓱᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᕐᓂᕐᒥᑦ. ᓇᖕᒥᓂᖅ ᐃᓕᑦᑎᑦᑐᓂ ᓴᖅᑭᑕᐅᓚᐅᖅᑐᒥᑦ ᑕᖅᑭᓕᕆᓂᕐᒥᑦ ᐊᒻᒪ ᑎᑎᕋᖅᑕᖕᒋᑦ ᖁᖕᕆᓯᓗᐊᖅᓱᑎᒃ ᐃᓕᓴᐃᔨᒥᓄᑦ ᔫᓐᓃᑦ ᑐᑭᓯᔭᐅᔭᓇᐊᒃᓴᖏᓐᓂᑦ. ᒫᒃᑯᒃᑑᑦᑐᓂ, ᐊᐅᓪᓚᓚᐅᖅᐳᖅ ᑕᐃᑯᖓ ᐃᖕᓚᓐᒧᑦ ᐃᒪᒃᑯᑦ ᐃᓕᓐᓂᐊᓇᐊᖅᓱᓂ ᐃᓕᓐᓂᐊᒃᕕᒡᔪᐊᕐᒧᑦ ᑲᐃᒻᐳᕆᑦᔾᒧᑦ.

ᑕᐃᔅᓱᒪᓂ, ᑕᖅᑭᓕᕆᔩᑦ ᐅᒃᐱᕆᔭᖅᑲᓚᐅᖅᐳᑦ ᑖᒃᑯᐊ ᐅᓪᓗᕆᐊᑦ ᓄᑕᐅᔪᓐᓅᖅᐸᖕᓂᖏᓐᓂᑦ ᐊᒻᒪ ᓄᖑᑉᐸᑉᓕᐊᓗᑎᒃ, ᐊᑐᕐᓂᖅᑲᖅᐸᑦᓕᐊᑦᑐᓂ ᑕᐃᔭᐅᑦᑐᓂ ᖃᐅᑦᑐᖅᑐᖅ ᐃᓄᕋᓛᖅ. ᐊᐅᓪᓛᕐᓂᑎᔭᖕᓗ ᑕᐃᑯᖓ ᐃᖕᓚᓐᒧᑦ, ᓵᓐᑐᕋᓯᒃᕼᐊᕐ ᓇᑐᓇᐃᖅᓯᓇᓯᓚᐅᖅᐳᖅ ᓈᓴᐅᑎᓂᑦ ᐃᓚᓂᐅᔪᓂᑦ ᑭᒻᒐᖅᑐᐃᔪᒥᑦ ᐊᐅᓚᓂᐊᓂᑦ ᐊᒻᒪ ᑲᒪᓇᖅᑐᒥᑦ ᓇᓂᓯᓂᕐᒥᑦ. ᑖᓐᓇ ᓈᓴᐅᓯᓇᓂᖅ ᓴᖅᑭᑦᑎᓚᐅᖅᐳᖅ ᐅᑦᑐᓇᐊᖅ ᐊᖏᓂᖅᓴᐅᒃᐸᑦ ᐊᖏᓂᓇᔭᖕᖓᓂᑦ, ᐊᑐᖕᒋᑦᑎᐊᒻᒪᓇᒐᔭᖅᐳᖅ ᓄᖑᓐᓂᖏᑦ ᐊᒻᒪ ᖃᐅᑦᑐᖅᑐᖅ ᐃᓄᕋᓛᖕᖑᖅᓱᓂ.

ᑕᐃᑲᓂ ᐃᖕᓚᓐᒥᑦ, ᑖᓐᓇ ᓵᓐᑐᕋᓯᒃᕼᐊᕐ ᐱᓕᕆᐊᖅᑲᓚᐅᖅᐳᖅ ᐊᖅᑮᒍᒐᓴᖕᓂᑦ ᑐᑭᓯᓇᓱᒃᓱᓂ ᖃᓄᐃᑉᐸᖕᒪᖔᑕ ᐊᖏᓂᖅᓴᐃᑦ ᐅᑦᑐᓇᐊᑦ. ᐊᖏᖅᑲᒥᓂ ᐅᖕᒐᓯᒃᓱᓂ, ᐃᓄᑑᓐᖑᓚᐅᖅᐳᖅ ᐊᒻᒪ ᐸᓇᑎᔅᒥᑦ ᐃᓕᓐᓂᐊᖅᑎᖏᑦ ᖃᐅᔨᓚᐅᖅᐸᖏᑦ ᐱᓕᕆᐊᕆᔭᖏᑦ ᐱᒻᒪᕆᐅᒋᖏᔅᓗᓂᔾᔭᒃ. ᑖᒃᑯᐊ ᐃᓐᑎᐊᒥᑦ ᐃᓚᒋᔭᐅᒐᓗᐊᖅᒪᑕ ᐸᓇᑎᔅᓄᑦ, ᑖᒃᑯᐊ ᐃᓐᑎᐊᒥᐅᑦ ᐊᑦᑎᒃᑑᑎᑕᐅᓚᐅᖅᐳᑦ ᐊᒻᒪ ᑕᐅᑐᒃᑕᐅᓗᐊᖅᓱᑎᒃ ᐃᓕᓐᓂᐊᖅᓯᒪᔪᕐᔪᐊᓄᑦ.

ᓄᑖᖅ ᑖᓐᓇ ᐸᕋ ᐅᖃᐅᔾᔪᕈᑎᐊ: ᑕᐃᑲᓂ ᐃᖕᓚᓐᒥᑦ, ᑖᓐᓇ ᓵᓐᑐᕋᓯᒃᕼᐊᕐ ᑕᐃᑲᓃᓚᐅᖅᐳᖅ ᐊᖅᑮᒍᒐᓴᖕᓂᑦ ᑐᑭᓯᓇᓱᒃᓱᓂ ᖃᓄᐃᓚᐅᕐᒪᖔᑕ ᑖᒃᑯᐊ ᐊᖏᓂᖅᓴᑦ ᐅᑦᑐᓇᐊᑦ. ᐃᓄᑑᓐᖑᓚᐅᖅᐳᖅ ᐊᖏᖅᑲᒥᓂᑦ ᐅᖕᒐᓯᒃᑐᒦᕐᓱᓂ, ᐊᒻᒪ ᐃᓐᑎᐊᒥᐅᑎᑐᑦ ᐃᓅᑦᑐᓂ ᑕᐃᑲᓂ ᐃᐅᕋᑉᒥᑦ ᖃᐅᔨᒪᑦᑐᓂᑐ ᐱᓕᕆᐊᖓ ᐱᒻᒪᕆᐅᒋᔭᐅᖏᒻᒪᑦ ᐃᓕᓐᓂᐊᖅᑎᖏᓐᓄᑦ.

ᐊᓯᐃᓛᒃᑲ, ᓈᒻᒪᓐᖏᓕᐅᑕᐅᔪᖅ ᐋᖅᑭᒃᓱᓂᐅᒃ. ᓇᓂᓯᓚᐅᖅᐳᖅ ᑖᒃᑯᐊ ᐅᑦᑐᓇᐊᑦ ᐊᖏᔪᐊᓘᓂᖏᓐᓂᑦ (ᐊᖏᓂᖅᓴᐅᑦᑐᑎᒃ 1.4–ᒥᑦ ᐊᖏᓂᐊ ᓯᖅᑭᓂᐅᑉ), ᑲᒪᓇᕐᓂᖅᓴᐅᑦᑐᓂ: ᐅᑦᑐᓇᐊᖅ ᑐᑐᖅᓱᓂ ᐃᒻᒥᒧᑦ, ᓰᐳᓅᕙᒥᑦ. ᑖᓐᓇ ᐅᑦᑐᓇᐊᖅ ᕿᕐᓂᖅᑐᐊᓘᑦᑐᓂ ᐊᖕᒪᔪᖅ ᐅᕝᕙᓘᓐᓃᑦ ᓅᑐᕋᓐ ᐅᑦᑐᓇᐊᖑᖅᓱᓂ.

ᖃᐅᔨᓂᓇᔭᖓ, ᑕᐃᔭᐅᔪᖅ ᓵᓐᑐᕋᓯᒃᕼᐊᕐ ᐃᓱᐊ, ᐊᓯᔾᔨᕐᓂᐅᔪᖅ ᖃᐅᔨᒪᓂᓇᔭᑦᑎᓐᓂᑦ ᑖᔅᓯᒥᖓ ᐆᒪᓂᐅᔩᑉ ᐊᐅᓚᓂᖓᓂᑦ ᐅᑦᑐᓇᐊᓂᑦ.

ᓵᓐᑐᕋᓯᒃᕼᐊᕐ ᐊᑐᓚᐅᖅᐳᖅ ᓈᓴᐅᑎᓂᑦ ᐃᓕᓐᓂᐊᖅᓱᓂ
ᓯᓚᐃᓐᓇᕐᒥᑦ ᐊᖏᔪᒻᒪᕆᐊᓗᖕᓂᑦ ᓇᓗᓇᓗᐊᖅᑐᑦ
ᐅᕙᑦᑎᓐᓄᑦ ᐃᓱᒪᒋᔭᕆᐊᒃᓴᖅ. ᐊᑐᕐᓗᒍ ᑎᑎᕋᕐᕕᒃᓴᖅ
ᐊᑖᓃᑦᑐᖅ ᑎᑎᕋᐅᔭᕐᓗᑎᑦ ᐃᓱᒪᒋᔭᕐᓂᑦ ᑐᓗᖅᑐᖅ
ᐊᖏᔪᐊᓗᒃ ᐅᑦᓗᕆᐊᖅ ᖃᓄᐃᓕᖑᖕᒪᖔᑦ.

ᓴᓇᓚᐅᖅᑕ ᐱᐅᔪᓂᑦ

ᐱᙳᐊᒃᑯᑦ ᐅᐱᒍᓱᒃᐳᑦ ᐱᓕᕆᖅᑎᖃᕈᓐᓇᕐᒪᑕ ᑲᑐᔾᔨᖅᑎᒌᙳᔪᓂᑦ ᓯᔅᔭᒥᑦ ᓯᔅᔭᒧᑦ ᖁᕕᐊᓇᖅᑐᓂᑦ ᐃᓕᓐᓂᐊᕐᓂᕐᒥᑦ ᐱᓕᕆᔭᒃᓴᐅᔪᓂᑦ, ᓃᕐᓗ ᓄᑖᖅ ᑲᑐᔾᔨᖅᑎᒌᖕᓂᖅ, ᐃᖅᑲᓐᓂᐊᓚᐅᕐᓗᒃ, ᑖᓐᓇ ᐃᓄᒃᑎᑐᑦ ᓇᕿᑦᑕᓇᐊᓚᒃ ᐱᙳᐊᕈᑎ ᓴᓇᔭᐅᔪᖅ ᑳᒃᑯᓇᓂ ᐃᓕᑕᖅᓯᓂᒃᑯᓐᓂᑦ—ᓄᓇᕗᒻᒥᑦ ᐅᖅᑲᐅᓯᓕᕆᔩᑦ ᑲᑎᒪᔩᐅᔪᑦ, ᐊᓯᒃᑲᓐᓂᖕᒋᓐᓂᑦ ᐱᐅᑦᑎᐊᖅᑐᓂᑦ ᐊᑐᕈᑎᐅᔪᓐᓇᖅᑐᓂᑦ ᐅᕙᓂ **ilitaqsiniq.ca**.

ᑲᑐᔾᔨᖅᑎᖃᕈᒪᒍᕕᑦ ᐅᕙᑦᑎᓐᓂᑦ ᐱᓕᕆᐊᒃᓴᐅᔪᓄᑦ ᐱᐅᓯᕆᐊᖅᓯᒪᔪᓂᑦ ᖃᓇᓴᐅᔭᓕᕆᓂᕐᒥᑦ ᐊᒻᒪ ᐊᑐᕐᓗᓂ STEAM-ᖑᔪᒥᑦ ᐃᓕᓐᓂᐊᕐᓂᕐᓂᑦ ᓄᓇᖃᖅᑐᓄᑦ ᔫᑳᓐᒥᑦ, ᓄᓇᑦᓯᐊᕗᒥᑦ ᐅᕝᕙᓘᓐᓃᑦ ᓄᓇᕗᒻᒥᑦ, ᖁᕕᐊᓱᑦᑎᐊᖅᐳᒍᑦ ᐱᓕᕆᖃᑎᖃᕆᐊᒃᓴᖅ ᐃᓕᔅᓯᓐᓂᑦ!

ᐅᖃᖃᑎᒌᓚᐅᖅᑕ! ᐅᖃᐅᓯᕆᔪᒪᔭᕐᓂᑦ ᑎᑎᕋᕐᓗᑎᑦ ᐅᕗᖓ
steam@pinnguaq.com

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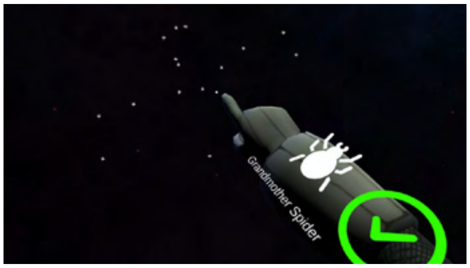

ᐊᔾᔨᓕᐊᖑᓯᒪᔪᖅ ᐅᓪᓗᕆᐊᑉ ᑎᑎᕋᖅᑕᐅᓯᒪᓂᐊ, ᖃᕆᓴᐅᔾᑯᑦ ᐱᙳᐊᒐᒃᓴᖅ ᓴᖅᑭᑎᑦᑎᔪᖅ ᐅᓪᓗᕆᐊᓂᑦ ᖃᐅᔨᒪᔭᐅᓂᐅᔪᓂᑦ ᐊᒻᒪ ᑕᖅᑭᕐᓄᑦ ᕿᒥᕐᕈᓇᖕᓃᑦ

ᖃᕆᓴᐅᔾᑯᑦ ᐃᓕᓐᓂᐊᕈᑎᒃᓴᐃᑦ

ᓴᖅᑭᑕᐅᓚᐅᖅᑐᑦ ᐅᖃᓕᒫᒐᑦ

ᐅᖃᓕᒫᒐᑦ ᓴᖅᑭᑕᐅᓚᐅᖅᑐᑦ ᑕᑯᖏᓐᓂᕈᕕᑦ ᑖᔅᓯᒥᙶ *Root & STEM*-ᖑᔪᒥᑦ, ᓇᓂᔪᓐᓇᖅᐸᑎᑦ ᖃᕆᓴᐅᔾᑯᑦ ᐅᕙᓂ

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ᐃᑲᔫᑎᒃᓴᑦ

ᐋᖅᑭᒃᓯᓯᒪᕗᒍᑦ ᐃᓚᓕᐅᑎᓯᒪᔪᒥᑦ ᖃᕆᓴᐅᔾᑯᑦ ᐃᑲᔫᑎᒃᓴᒥᑦ ᐃᓕᓴᐃᔨᓄᑦ ᐊᑐᕐᓂᐊᖅᑕᖏᓐᓂᑦ ᐃᓕᓐᓂᐊᕐᕕᐊᕈᓯᒥᖕᓂᑦ—ᐃᓚᖅᑲᖅᐳᖅ ᐸᕐᓇᒃᑕᐅᓯᒪᔪᒥᑦ ᐃᓕᓐᓂᐊᒐᒃᓴᓂᑦ, ᑕᕐᓇᔭᐅᑎᒃᑯᑦ ᐃᓕᓐᓂᐊᒐᒃᓴᓂᑦ ᐊᒻᒪ ᐃᓕᓐᓂᐊᖅᑎᓄᑦ ᑐᓂᔭᒃᓴᓂᑦ ᐱᓕᕆᐊᖑᓂᐊᖅᑐᓂᑦ. ᑕᕝᕗᓈᕈᓐᓇᖅᐳᑦ ᖃᕆᓴᐅᔾᑯᑦ ᐊᑐᕐᓗᑎᒃ ᑐᕌᒐᐅᔪᑦ ᖃᕆᓴᐅᔾᑯᑦ ᐅᐸᒡᕕᒃᓴᐃᑦ ᐊᑖᓃᑦᑐᖅ.

Root & STEM–ᑯᑦ ᑕᕐᕆᔮᑦᓴᓕᐊᕆᓯᒪᔭᖕᒐᑦ ᓈᓚᐅᑎᒃᑯᑦ

ᑖᒃᑯᐊ ᑕᕐᕆᔮᒃᓴᓕᐊᖑᓯᒪᔪᑦ ᐊᖏᒡᓕᕙᓪᓕᐊᕗᑦ ᓴᖅᑭᑕᑦᑎᓐᓂᑦ, *Root & STEM*–ᖑᔪᒥᑦ, ᐊᒻᒪ ᐃᓚᐅᖁᔨᕚᒃᓗᑕ ᖃᐅᔨᒪᔪᓂᑦ ᓴᖅᑭᑎᓐᓂᐊᖅᑕᑦᑎᓐᓂᑦ ᓴᖅᑭᑦᑎᖁᓪᓗᒋᑦ ᖃᐅᔨᒪᓂᕆᔭᖏᓐᓂᑦ. ᑖᒃᑯᐊ ᐊᕕᒃᑐᖅᓯᒪᔪᑦ ᑕᑭᓂᖃᒐᔭᒃᐳᑦ 15 ᒥᓂᔅᒥᑦ ᐊᒻᒪ ᐊᑐᐃᓐᓇᐅᓪᓗᑎᒃ ᑕᕝᕙᓂ ᐱᙳᐊᖅ ᐃᑭᐊᖅᑭᕕᐊᒍᑦ, ᐊᒻᒪᓗ ᑕᒪᐅᓇ ᑕᐅᑐᒃᑕᐅᒐᔪᒃᑐᒃᑯᑦ ᑕᕐᓇᔭᐅᓯᐅᖅᓯᒪᔪᑦ ᓇᓗᓇᐃᖅᓯᒪᔪᑦ, ᓱᕐᓗ ᖃᕆᓴᐅᔾᑯᑦ ᐋᐳ ᐊᒻᒪ ᔅᐸᑎᕙᐃᒃᑯᑦ.

pinnguaq.com/learn/the-root-stem-podcast

ᑕᐃᔭᐅᔪᖅ What's Above Us ᑕᕐᕆᔮᒃᓴᖅ ᓈᓚᒐᒃᓴᖅ ᐊᕕᒃᑐᖅᓯᒪᔪᑦ

ᑖᓐᓇ What's Above Us ᑕᕐᕆᔮᒃᓴᑦ ᐊᕕᒃᑐᖅᓯᒪᔪᑦ ᑲᑎᖃᑎᖃᕐᓂᐅᕗᖅ ᐃᑲᔫᑎᒃᓴᓂᑦ ᐃᓕᓐᓂᐊᖅᑐᓄᑦ ᐱᔾᔪᑎᓕᖕᓄᑦ ᓄᓇᕐᔪᐊᑉ ᐊᓂᕐᓂᖃᕐᓇᖕᒋᑦᑐᒥᑦ ᐊᒻᒪ ᐊᓂᕐᓂᖃᕐᓇᖅᑑᑉ ᕿᑎᐊᓂ ᐊᒻᒪᓗ ᓯᓚᐃᓐᓇᐅᑉ ᐅᖓᑖᓂᑦ. ᑕᕐᕆᔮᒃᓴᑦ ᓈᓚᒐᒃᓴᖅ ᐃᓗᓕᖅᑲᖅᐳᑦ ᕿᒥᕐᕈᓇᒃᑐᑦ ᐊᔾᔨᖕᒋᑦᑐᓂᑦ ᐋᖅᑭᒃᓯᒪᓂᓖᑦ ᕿᓚᖕᒥᑦ ᐊᒻᒪ ᐊᑐᐃᓐᓇᐅᑎᑦᑎᓪᓗᑎᒃ ᐆᒃᑑᑎᐅᔪᓂᑦ ᑲᑎᙵᓂᐅᔪᓂᑦ ᐊᐅᓚᓂᐅᔪᒥᑦ ᓴᖅᑭᓯᒪᔪᖅ ᖁᓚᑦᑎᓐᓂᑦ. ᐃᓚᖏᑦ ᑖᒃᑯᐊ ᑕᕐᕆᔮᒃᓴᑦ ᐃᓗᓕᖅᑲᓇᕗᑦ ᑕᑯᔭᓐᓇᕐᓂᒃᑯᑦ ᓴᖅᑭᑎᑕᐅᔪᓂᑦ ᐅᖃᐅᓯᐅᔪᒥᑦ, ᓱᕐᓗ ᐃᒪᐅᑉ ᐊᐅᓚᓂᖓ, ᑕᑯᑎᑦᑎᓗᑎᒃ ᖃᓄᖅ ᐊᑐᓂᑦ ᑖᒃᑯᐊ ᐃᓗᓕᖕᒋᑦ ᕿᓚᐅᑉ ᖁᓚᓂ ᐋᖅᑭᒃᓯᒪᓂᐅᔪᓂᑦ.

pinnguaq.com/learn/whats-above-us-video-series

ᐅᓪᓗᕆᐊᑉ ᑎᑎᕋᖅᓯᒪᓂᐊ

ᐅᓪᓗᕆᐊᑉ ᑎᑎᕋᖅᓯᒪᓂᐊ, ᑖᒃᑯᐊ ᐊᑐᖅᑐᑦ ᑕᑯᓇᒡᓗᑎᒃ ᓄᓇᕐᔪᐊᑉ ᑕᖅᑭᐊᓂᑦ ᐊᒻᒪ ᐅᓪᓗᕆᐊᑦ ᖃᓂᒋᔮᓂᑦᑐᓂᑦ. ᑐᓵᔪᓐᓇᖅᐳᑦ ᐅᖃᓪᓚᒃᑕᐅᔪᒥᑦ ᐅᓪᓗᕆᐊᓕᕆᔨᓄᑦ ᖃᐅᔨᒪᓂᖅᓴᓂᑦ ᑲᑎᙵᓂᖅᑕᖅᑐᑦ ᐅᓪᓗᕆᐊᓕᕆᓯᓂᑦ ᐱᓕᕆᐊᖕᒋᓂᑦ ᑕᑯᑎᑦᑎᔪᓂᑦ ᑖᒃᑯᓈᖓᑦ ᐃᓂᓂᐅᖕ/ᐅᓇᓖᑦ ᑕᖅᑭᓕᕆᓴᖕᒋᓂᑦ ᒎᐃᒎᓚᑦ ᐸᒃᒍᑦ. ᐃᓚᒋᐊᕐᓗᒍ, ᐱᑕᖃᖅᐳᖅ Roblox–ᖑᔪᖅ ᑎᑎᕋᖅᓯᒪᔪᖅ ᓴᖅᑭᑕᐅᓯᒪᔪᖅ ᑖᒃᑯᓇᙵᑦ ᐅᓪᓗᕆᐊᑉ ᑎᑎᕋᖅᓯᒪᓂᐊᓄᑦ ᑖᒃᑯᐊ ᑕᑯᓇᒃᑐᑦ ᐃᓕᓐᓂᐊᕈᓐᓇᖅᐳᑦ ᐅᓇᓖᑦ ᐅᓪᓗᕆᐊᓂᑦ ᖃᐅᔨᒪᓂᖕᒋᓐᓂᑦ ᐊᑐᕐᓗᒍ ᑕᕐᕋᑕᐅᕐᓗᒍ ᓄᓇᙳᐊᖅ ᐊᔾᔨᐅᖏᑦᑐᓂᑦ ᐅᓪᓗᕆᐊᓂᑦ ᓇᓂᓯᓪᓕᐊᔭᑎᒃ ᕿᓚᖕᒥᑦ.

ᐅᓪᓗᕆᐊᑉ ᑎᑎᕋᖅᓯᒪᓂᐊ:

pinnguaq.com/learn/canadian-space-agency-game

Star Scribe Roblox Edition:

roblox.com/games/7776768070

ᐅᖃᐅᓯᒃᓴᖅ ᐃᓕᓐᓂᐊᖅᑎᑦᑎᔨᓄᑦ

ᑖᒃᑯᐊ ᐃᓕᓐᓂᐊᕈᑎᒃᓴᓄᑦ ᑐᑦᑕᕐᕕᐊ ᐃᓕᓐᓂᐊᖅᑎᖁᑎᕗᑦ ᓄᓇᕐᔪᐊᕐᒥᑦ, ᐊᖏᕐᕋᑦᑎᓐᓂᑦ, ᐊᒻᒪᓗ ᑲᔪᖏᖅᓴᕐᓗᑎᒍᑦ ᖃᐅᔨᔪᒪᓂᕆᔭᖏᑦ ᑕᒪᑐᒥᖓ ᓯᓚᑎᑦᑎᓐᓂᑦ ᐊᓂᕐᓂᖃᕐᓇᖏᑦᑑᑉ ᕿᑎᐊᓂ. ᑖᒃᑯᐊ ᐃᓕᓐᓂᐊᖅᑕᐅᔫᒃᓴᑦ ᐊᑐᐃᓐᓇᐅᕗᑦ ᐃᓕᓐᓂᐊᖅᑎᓄᑦ ᑕᑯᓇᒍᓐᓇᖁᓪᓗᒋᑦ ᓄᓇᕐᔪᐊᑉ ᓯᓚᑖᓂᑦ ᐃᓕᓐᓂᐊᕈᒪᓂᖃᕐᓗᑎᒃ ᐃᓱᒪᓂᕐᒥᑦ ᓲᕐᓗ ᐊᐅᓚᓂᕆᔭᖏᓐᓂᑦ ᐊᒻᒪ ᐊᑐᕐᓂᕆᔭᖏᓐᓂᑦ, ᐆᒪᖕᕕᐅᔪᓐᓇᖅᑐᑦ ᐅᓪᓗᓇᐊᑦ, ᐊᒻᒪ ᓄᓇᕐᔪᐊᑉ ᓄᓯᒃᓯᒪᓂᕆᔭᖓᓂᑦ. ᐊᑐᖁᓚᓗᐊᖅᐸᕗᑦ ᐃᓕᓐᓂᐊᖅᑏᑦ ᐱᔪᒃᓯᓗᑎᒃ ᑕᑯᓇᓕᕐᓗᑎᒃ ᓯᓚᑦᑎᓐᓂᑦ ᐅᓐᓄᒃᑯᑦ ᑐᑭᓯᓇᓕᖅᑎᓪᓗᒋᑦ ᐅᓪᓗᓇᐊᖑᔪᑦ ᑕᑯᔭᕗᑦ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᓐᓇᓕᕐᓗᑎᒃ ᐱᖅᑯᓯᑎᒃ ᐊᑐᕐᓗᓂᔾᔪᒃ ᐊᒻᒪ ᐊᓯᖏᓐᓂᑦ ᐱᖅᑯᓯᐅᔪᓂᑦ. ᑖᒃᑯᐊ ᐃᓕᓐᓂᐊᖅᑎᔾᔪᑎᒃᓴᑦ ᐊᑐᕐᓂᖅᑲᖅᐳᑦ ᐊᒡᒐᑎᒃ ᐊᑐᕐᓗᓂᔾᔪᒃ ᐃᓕᓐᓂᐊᕐᓗᑎᒃ ᑲᔪᓯᓂᖃᕐᓗᑎᒃ ᐃᓱᒪᒋᔭᒥᖕᓂᑦ ᐊᒃᑐᖅᓯᓂᒃᑯᑦ, ᖃᐅᔨᓴᕐᓂᖅ, ᖃᓇᓴᐅᔭᓕᓇᓂᖅ, ᐋᖅᑭᒃᓯᐃᓂᖅ, ᓴᓇᙳᐊᕐᓂᖅ, ᓈᓴᐅᓯᕆᓂᖅ ᐊᑐᕐᓗᑎᒃ, ᐊᕐᕌᒍᖏᑦ ᒪᓕᒡᓗᒋᑦ ᐱᓕᕆᐊᒃᓴᐅᔪᑦ. ᑖᒃᑯᐊ ᐃᓕᓐᓂᐊᖅᑕᐅᔫᒃᓴᑦ ᐊᒃᑐᐃᓂᐅᕗᑦ ᖃᓄᖅ ᐃᓕᓐᓂᐊᖅᑐᑦ ᐱᕈᖅᐸᓪᓕᐊᓕᕈᓐᓇᕐᒪᖔᑕ ᖃᐅᔨᒪᓂᖃᕐᓂᖏᓐᓂᒃ ᐊᒻᒪ ᖁᕕᐊᒋᓗᑎᒃ ᐊᓂᕐᓂᖃᕐᓇᖏᑦᑐᒥᑦ ᖃᐅᔨᓴᖅᑐᓕᕆᓂᕐᒥᑦ.

– ᐅᔭᖅ ᐊᐹᑑ

ᐱᙳᐊᖅ ᐃᓕᓐᓂᐊᖅᑕᐅᔫᒃᓴᓄᑦ ᐋᖅᑭᒃᓯᐃᔨ

ᐃᓕᓐᓂᐊᒐᒃᓴᖅ 1

ᕿᒥᕿᕈᓇᖕᓂᖅ ᑕᖅᑭᕐᒥᑦ

ᑎᑎᕋᖅᑎ: ᐅᔭᕋᒃ ᐊᐸᔫ

ᖁᑦᑎᖕᓂᖓᑕ ᐊᕙᑦᓐᓂᐊ: ᐃᓕᓐᓂᐊᓕᕌᖅᑐᓄᑦ ᐊᕝᕆᓐᓂᓕᖕᓄᑦ ᐱᖓᓱᓄᑦ ᑎᑭᓪᓗᒍ

ᐃᓕᓐᓂᐊᕐᓂᐅᑉ ᑎᑭᓐᓂᕆᓂᐊᖅᑕᖓ

- ᐃᓕᓐᓂᐊᖅᑏᑦ ᐃᓕᓐᓂᐊᕐᓂᐊᖅᐸᑦ ᓄᓇᕐᔪᐊᑉ ᑕᖅᑭᐊᓂᑦ
- ᐃ ᓕᓐᓂᐊᖅᑏᑦ ᓇᓗᓇᐃᕆᔪᓐᓇᓕᕐᓂᐊᖅᐸᑦ ᑕᖅᑭᐅᑉ ᖃᓄᐃᑦᑑᓂᖓᓂᑦ
- ᐃᓕᓐᓂᐊᖅᑏᑦ ᓇᓗᓇᐃᕆᔪᓐᓇᓕᕐᓂᐊᖅᐸᑦ ᐊᐅᓚᓂᐊᓂᑦ ᑕᖅᑭᐅᑉ

ᑕᒫᓂ ᐃᓕᓐᓂᐊᒐᒃᓴᒥᑦ, ᐃᓕᓐᓂᐊᖅᑏᑦ ᑕᑯᓇᖕᓂᐊᖅᐸᑦ ᐊᐅᓚᓂᕆᔭᖕᒋᓐᓂᑦ ᐊᒻᒪ ᐊᑐᕐᓂᐅᔾᔨᓂᑦ ᑕᖅᑭᐅᑉ. ᐃᓕᓐᓂᐊᖅᑐᑦ "ᐅᖓᑖᓃᓐᓂᐊᖅᐸᑦ ᑕᖅᑭᐅᑉ" ᑕᒫᓂ ᐃᓕᓐᓂᐊᒐᒃᓴᕐᒥᑦ, ᐊᐱᕆᔭᐅᓂᐊᕐᒪᑕ ᕿᒥᕿᕈᕐᑯᔭᐅᓗᑎᒃ ᑕᖅᑭᕐᒥᑦ ᑕᖅᑭᒧᑦ ᒪᕐᕉᖕᒍᒃ, ᑎᑎᕋᖅᐸᒡᒐᓗᐊᕐᓂᒃ ᖃᐅᔨᓵᕐᓂᕆᔭᑎᒃ, ᐊᒻᒪ ᐃᓕᑦᑎᓗᑎᒃ ᐊᐅᓚᓂᖕᒐᓂᑦ ᑕᖅᑭᐅᑉ. ᐃᓕᓐᓂᐊᖅᑏᑦ ᓇᓗᓇᐃᕆᔾᔪᓇᖅᓯᕙᓪᓕᐊᓂᐊᖅᐸᑦ ᐊᐅᓚᓂᐅᔾᔨᓂᑦ ᐊᒻᒪ ᑕᖅᑭᐅᑉ ᐊᐅᓚᓂᐊᓂᑦ ᑕᖅᑭᓕᒫᒍᑦ.

ᐅᖃᐅᓰᑦ

- **ᓅᑖᖅ ᑕᖅᑭᖅ**—ᑕᑯᔪᓐᓇᙱᑕᕗᑦ ᑕᖅᑭᖅ ᓅᑖᖕᖑᕌᖕᒐᑦ ᑕᖅᑭᖅ.
- **ᓯᕗᓪᓕᖅᐹᖅ ᑕᖅᑭᐅᑉ ᐊᐅᓚᓂᐊ**—ᐅᑭᐅᖅᑕᖅᑐᒥᑦ ᓄᓇᕐᔪᐊᖅ ᐊᒻᒪ ᐊᓂᕐᓂᖅᕿᓇᖕᒋᑦᑑᑉ ᕿᑎᐊᓂ, ᑕᑯᕚᒃᐸᕗᑦ ᑖᓐᓇ ᕿᑎᐊ ᑭᒡᓕᐊ ᐊᐅᓚᓂᐊ ᑕᖅᑭᐅᑉ ᑐᐊᑦᑐᑯᓗᒃ ᖃᐅᒪᓂᖅ ᑕᓕᖅᐱᐊᓂᑦ ᑕᖅᑭᐅᑉ.
- **ᓯᕗᓪᓕᖅᐹᖅ ᓇᑉᐸᖓ**—ᑕᑯᕚᒃᐸᕗᑦ ᓯᕗᓪᓕᖅᐹᖅ ᓇᑉᐸᖅ ᐊᐅᓚᓂᕆᔭᖓ ᑕᖅᑭᐅᑉ ᓇᑉᐸᖅ ᑕᖅᑭᖅ.
- **ᑕᖅᑭᖅ ᕿᑎᐊᓃᑦᑐᖅ ᐊᐅᓚᓂᐊᑕ ᐱᒋᐊᕐᓂᖕᒐᓂᑦ ᐊᒻᒪ ᐃᓗᐃᑦᑑᑎᓪᓗᒍ ᑕᖅᑭᖅ—ᑖᓐᓇ Waxing**—ᖑᔪᖅ ᑐᑭᖃᖅᐳᖅ ᑕᒪᓐᓇ ᖃᐅᒪᓂᐊ ᑕᖅᑭᐅᑉ ᐊᖏᒡᓕᑫᓪᓕᐊᔪᖅ. ᑖᓐᓇ ᐊᐅᓚᓂᕆᔭᖓ ᕿᑎᐊᓃᑉᐳᖅ ᑕᖅᑭᐅᑉ ᓇᐸᖓ ᐊᒻᒪ ᑕᖅᑭᐅᑉ ᐃᓗᐃᑦᑐᕈᕐᓂᐊ.
- **ᑕᖅᑭᖅ ᑕᖅᑭᕆᒃᑐᖅ**—ᐃᓗᐃᑦᑐᕈᖅᑐᖅ ᖃᐅᒪᓂᐊ ᑕᖅᑭᐅᑉ.
- **ᖃᐅᒪᓂᐊ ᒥᒃᓵᕆᐊᖅᑐᖅ ᑕᖅᑭᐅᑉ**—ᑕᖅᑭᑉ ᒥᒃᓵᕆᐊᕐᓂᖓ ᑐᑭᓕᒃ ᖃᐅᒪᓂ ᒥᑭᒡᓕᑫᓪᓕᐊᔪᖅ. ᑕᒪᓐᓇ ᐊᐅᓚᓂᐅᕗᖅ ᑕᖅᑭᐅᑉ ᓇᐸᖓᓂᑦ ᐊᒻᒪ ᐃᓗᐃᑦᑐᕈᖅᑐᒥᑦ ᐊᑐᐊᓂᒃᑎᓪᓗᒍ.
- **ᑭᖑᓪᓗᖅᐹᖅ/ᐱᖓᔪᐊᑕ ᖃᐅᒪᓂ**—ᐱᖓᔪᕆᔭᖓ ᖃᐅᒪᓂᐊ ᑕᑯᔭᕗᑦ ᓵᕐᓗ ᖃᐅᒪᓂᖓ ᓇᐸᖅ. ᐊᒻᒪᑦᑕᐅᖅ–ᑭᓯᐊᓂ ᓇᐸᐅᑉ ᖃᐅᒪᓂᐊᑕ ᐃᒡᓗᖕᒫᖕᖓᔪᑦ ᖃᐅᒪᓂᐅᔫᑉ ᓯᕗᓪᓕᕐᒥᑦ ᖃᐅᒪᓂᖓᓂᑦ.
- **ᑕᖅᑭᐅᑉ ᖃᐅᒪᓂᐊ**—ᑕᒪᓐᓇ ᐅᑭᐅᖅᑕᖅᑑᑉ ᐊᓂᕐᓂᕐᖃᖅᑑᑉ ᐊᒻᒪ ᐊᓂᕐᓂᕐᖃᖕᒋᑦᑑᑉ ᕿᑎᐊ, ᑕᒪᓐᓇ ᑕᖅᑭᐅᑉ ᖃᐅᒪᓂᐊ ᓵᑦᑐᑰᓕᖅᑐᖅ ᓴᐅᒥᖕᒫᖕᖓᓂᑦ.
- **ᑕᖅᑭᖅ**—"ᐃᓄᒃᑎᑐᑦ ᐅᖃᐅᓯᐊ "ᑕᖅᑭᖅ" ᐊᒻᒪ "ᑕᖅᑭᐅᔪᖅ."

ᐅᖃᓕᒫᕐᓂᖅ ᐱᓕᕆᐊᒃᓴᖅ

ᓯᕗᓂᐊᓂᑦ ᐃᓕᓐᓂᐊᒐᒃᓴᐅᑉ, ᐃᓕᓐᓂᐊᖅᑎᑦ ᓈᓚᖕᓂᐊᖅᐸᑦ ᐅᓂᒃᑳᖅᑕᐅᔪᒥᑦ ᑕᖅᑭᐅᑉ ᒥᒃᓵᓄᑦ ᑕᐃᔭᐅᔪᖅ "Little Moar and the Moon–ᒥᑦ" ᐅᓂᒃᑳᓕᐅᖅᑕᐅᔪᖅ ᕈᓴᓕᑦ ᐋᑯᓗᒃᔪᖕᒧᑦ.

"ᑖᓐᓇ Moar ᐱᐅᒋᔭᖃᐃᓐᓇᐅᔭᖅᐳᖅ ᐅᑭᐊᒃᓵᒥᑦ —ᓯᓚᒥᑦ ᐊᓃᕋᔭᒃᑲᓂ ᐱᖃᓐᓇᕆᔭᕐᒋᑦ ᐊᓃᕋᔭᖃᑎᒋᓪᓗᓂᒋᑦ, ᓯᓚ ᓂᒡᓚᖅᐸᓪᓕᐊᔪᖅ ᐃᒃᐱᒋᓪᓗᓂᐅᒃ—ᑭᓯᐊᓂ ᐅᑭᐅᓵᖑᔪᒥᑦ ᐃᓱᒫᓘᑎᕆᕚ ᑖᔅᓯᒪ Moar. ᑕᖅᑭᖅ. ᐅᓪᓗᖅ ᓇᐃᒡᓕᕚᓪᓕᐊᓪᓗᓂ ᐊᒻᒪ ᑕᖅᑭᖅ, ᑲᐸᐊᓇᕈᔪᒃᑯᓂ ᑮᓇᖓ ᐊᒻᒪ ᖁᖓᕐᓚᐅᔭᖅᑯᓂ, ᓲᕐᓗ ᐃᒻᒥᒧᑦ ᑕᐅᑐᒃᑯᓂ ᐊᖏᕋᓚᐅᓐᖏᑎᓪᓗᒍ ᐃᓕᓐᓂᐊᕌᓂᒃᑳᖓᒥ! ᑕᐃᒪᓕ, ᐅᓪᓗᖅ ᑕᐃᓐᓇ, Moar ᐃᓱᒪᓕᓚᐅᖅᐳᖅ ᐊᖏᕋᐅᔪᒪᓪᓗᓂ ᑕᖅᑭᖅ ᓄᐃᓚᐅᖅᑎᓇᒍ ᓯᓚᐃᓐᓇᕐᒥᑦ. ᑭᓯᐊᓂ ᖁᕝᕙᐊᓇᖅᑐᓂᑦ ᐅᓄᖅᑐᓂᑦ ᐊᑐᕈᓇᖅᑯᓂ ᐊᖏᕋᐅᓕᕋᖕᒐᑦ, ᐊᑐᕐᓂᕆᓂᐊᖅᑕᖓ ᓇᐃᓗᐊᕋᔭᖅᐳᖅ!"

inhabitbooks.com/products/little-moar-and-the-moon

ᓴᓇᔪᓐᓂᕐᒧᑦ ᐱᓕᕆᐊᒃᓴᖅ

ᑕᖅᑭᖅ ᑮᓇᖅᑲᓪᓚᑦᑖᖅᐸ? ᑕᑯᓚᐅᖅᐱᑦ ᑮᓇᕐᒥᑦ ᑕᕝᕙᓂ ᑕᖅᑭᕐᒥᑦ? ᕿᒥᕐᕈᓂᒃᑯᑦ ᑕᖅᑭᕐᒥᑦ, ᖃᐅᔨᓯᐊᓇᑦ ᑮᓇᖅᑕᖃᕐᒪᖔᑦ, ᑎᑎᕋᐅᓴᕐᓗᑎᑦ ᑮᓇᖓᓂᑦ ᑕᖅᑭᓐᖑᐊᐸ.

ᐊᑐᕈᑏᑦ:

- ᐸᐃᑉᐹᖅ
- ᑕᖅᓯᖅᓲᑎᑦ
- ᐊᖏᓗᖅᑐᖅ ᐊᖏᓗᖅᑐᓕᐅᕈᑎᒋᓂᐊᖅᑕᖓ ᑕᖅᑭᑎᑐᑦ

ᐊᑐᕈᑎᒃᑲᓐᓂᖅ: ᑕᖅᑭᓕᐊᑦ ᐊᑦᑎᕐᔪᒍ

ᓇᔪᓇᐃᕈᑎ ᓄᓇᕐᔪᐊᒧᑦ ᑕᖅᑭᐅᔪᖅ

ᐊᑐᓕᒃᑲᓐᓂᕐᔪᒍ ᓯᕗᓂᐊᓂᑦ ᖃᐅᔨᒪᓂᐅᔪᖅ, ᐊᐱᖅᓱᕐᔪᒋᑦ ᐃᓕᓐᓂᐊᖅᑎᑦ: ᖃᓄᐃᑦᑐᒥᑦ ᓄᓇᕐᔪᐊᕐᒥᑦ ᓄᓇᖅᑲᖅᐱᑕ? ᓯᓚᒥᑦ ᑕᑯᑦᑕ, ᑭᓯᒥᑦ ᑕᑯᕙᑕ? ᐃᔪᓕᖕᒋᑦ ᓯᓚᐃᓐᓇᕐᒥᑦ ᖃᐅᔨᒪᔭᕗᑦ ᑭᓲᕙᑦ? ᑭᓯᓂᑦ ᖃᐅᔨᒪᔭᕐᑲᖅᐱᑕ ᑕᖅᑭᐅᑉ ᒥᒃᓵᓄᑦ?

ᑕᐅᑐᒡᓗᒍ ᐱᓕᕆᐊᒃᓴᐅᔪᖅ: youtube.com/watch?v=6x_ZVRPqAnQ

ᓇᔪᓇᐃᕐᔪᒍ ᐃᓱᒪᑦᓴᐅᔪᑦ "ᐊᐅᓚᓂᕆᔭᖕᒋᓐᓂᑦ" ᓇᔪᓇᐃᕐᔪᒋᑦ ᖃᓄᖅ ᑕᖅᑭᖅ ᐊᔾᔨᒌᖕᒋᓐᓇᖕᒋᒻᒪᑦ ᐅᓐᓄᑕᒫᕐ! ᑕᐃᒪᐃᒻᒪᑦ ᑖᓐᓇ ᑕᖅᑭᖅ ᐊᔾᔨᒋᕙᓐᖏᓛ ᐅᓐᓄᑕᒫᑦ ᑕᖅᑭᒥᑦ ᐊᑐᖅᑐᒥᑦ ᐅᐃᔾᔮᕐᓂᖓᒍᑦ. ᓇᔪᓇᐃᑦᑎᐊᖅᓯᒪᔪᒥᑦ ᐅᖃᐅᓯᕐᓂᑦ ᐊᑐᕐᔪᑎᑦ ᖃᓄᖅ ᑕᖅᑭᐅᑉ ᑕᐅᑦᑐᐊᓂᑦ ᐅᖃᐅᓯᖅᑕᐃᑦ ᐊᑐᕐᔪᑎᑦ ᓲᕐᔪ, "ᑕᖅᑭᙳᒃᑐᖅ," "ᑕᖅᑭᐅᑉ ᓇᑉᐸᖓ," ᐊᒻᒪ "ᓄᑖᖅ ᑕᖅᑭᖅ". ᖃᐅᔨᒪᕙᑕ ᑕᖅᑭᐅᑉ ᐊᐅᓚᔾᔪᓯᓐᖏᓐᓂᑦ ᓇᓃᓕᕐᒪᖔᑦ ᒫᓐᓇ?

ᑕᖅᑭᕐᒧᑦ ᐱᖅᑯᓯᐅᔪᑦ ᐊᑐᕐᔪᑎᑦ

ᓯᓚᐃᓐᓇᕐᒥᑦ ᐃᓕᓐᓂᐊᕐᓂᖅ ᐊᔾᔨᒌᖕᒋᑦᑐᑦ ᐱᖅᑯᓰᑦ ᐊᑐᕐᔪᑎᑦ ᐃᓱᒪᒋᓂᐅᔪᓂᑦ ᐱᕈᖅᓴᐃᕗᖅ ᐊᒻᒪ ᑲᔪᖏᖅᓴᐃᓪᓗᓂ ᐃᓱᒪᓂᕐᒥᑦ ᓄᑕᖅᑲᓄᑦ. ᓄᑕᖅᑲᑦ ᑐᓴᕐᓂᑯᒍᑎᒃ ᐅᓂᒃᑳᓂᑦ ᑕᖅᑭᕐᒥᑦ ᐊᒻᒪ ᓯᕗᓂᐊᓂᑦ ᖃᐅᔨᓴᒥᖕᓂᑦ, ᓇᔪᓇᐃᕕᒋᔪᑎᓪᓗ ᐃᓕᓐᓂᐊᖅᑐᑦ ᐊᑐᕐᓂᐅᔪᓂᑦ ᐊᔾᔨᒌᖕᒋᑦᑐᓂᑦ ᐱᖅᑯᓯᓕᖕᓂᑦ ᐅᓂᒃᑳᖅᑕᖅᑲᑦ ᑕᖅᑭᐅᑉ ᒥᒃᓵᓄᑦ ᓲᖃᐃᒻᒪ ᑖᓐᓇ ᑕᖅᑭᖅ ᑭᒃᑯᓕᒫᓄᑦ ᓄᓇᕐᔪᐊᕐᒦᑦᑐᓄᑦ ᑕᑯᔭᐅᔪᓐᓇᕐᒪᑦ.

ᑖᓐᓇ ᑕᐃᔭᒪᓂ ᐅᓂᒃᑳᖅᑕᐅᔪᖅ ᐃᓄᖕᓄᑦ, "ᓇᕿᓐᖕᖏᕐᓂᖕᒐ ᓯᕿᓂᐅᑉ ᐊᒻᒪ ᑕᖅᑭᐅᑉ," ᐆᒃᑑᑎᐅᕗᖅ ᖃᓄᖅ ᐃᓄᐃᑦ ᓄᓇᕐᔪᐊᕐᒥᑦ ᐃᓱᒪᖕᒪᖔᑕ ᐃᓗᓕᖕᒋᓐᓂᑦ ᓯᓚᐃᓐᓇᕐᒥᑦ, ᐱᓗᐊᖅᑐᒥᑦ ᑕᖅᑭᕐᒥᑦ. ᑖᓐᓇ ᐅᓂᒃᑳᖅ ᐋᖅᑭᒋᐊᖅᑕᐅᓯᒪᔪᖅ ᐅᑭᐅᖕᒋᑦ ᒪᓕᒃᑯᒋᑦ ᐃᓕᓐᓂᐊᒐᒃᓴᐅᔪᖅ ᑖᓐᓇ, ᑭᓯᐊᓂ ᓇᓂᔪᓐᓇᖅᐸᑦ ᐅᓂᒃᑳᓕᐊᖑᓯᒪᔪᖅ ᐅᕙᓂ inhabitmedia.com/wp-content/uploads/2014/01/UnikkaaqtuatAdult1.pdf?fbclid=IwAR2OdiKTZnMJ3u1D2Mmyo2EAdxKaMXZJf2GUQrX2_y2TURwDZlOytlNIqUM

ᐃᓕᓐᓂᐊᖅᑎᑦ ᑲᑎᑎᓪᓗᒋᑦ ᐊᖏᓗᖅᓯᓗᑎᒃ ᐅᕝᕙᑰᓐᓃᑦ ᐅᖃᓕᒫᕆᕕᐅᔪᒧᑦ ᐃᓕᓐᓂᐊᕕᐊᕈᓯᕐᒥᑦ ᐊᒻᒪ ᐅᖃᓕᒫᕆᕕᒋᓗᒋᑦ, ᐃᓕᓐᓂᐊᖅᑎᑦ ᐃᓱᒪᒋᔭᖕᒋᑦ ᐊᑐᖁᓗᒋᑦ ᑕᐅᑐᙳᐊᖁᓗᒋᑦ ᑖᓐᓇ ᐅᖃᓕᒫᒐᖅ ᐊᔾᔨᙳᐊᖅᑲᖕᒋᒻᒪᑦ.

ᓄᓇᓕᕋᓛᒥᑦ, ᓂᕕᐊᖅᕌᖅᑕᖅᑲᓚᐅᖅᐳᖅ ᐃᒡᓗᖅᑲᖅᓗᓂ ᐃᓄᑐᐊᙳᓪᓗᓂ. ᐅᓐᓄᖕᒥᑦ ᑕᐃᑲᓂ, ᑖᒃᑯᐊ ᐃᓄᐃᑦ ᑲᑎᓐᖓᓂᖅᑲᖅᑎᓪᓗᑎᑦ

ᕿᓚᐅᔾᔭᖁᐅᔪᒥᑦ ᐃᒡᓗᒥᑦ, ᑖᓐᓇ ᓄᑲᐱᐊᖅ ᐅᐸᒍᑎᓪᓗᓂ ᓂᕕᐊᖅᓵᕐᒧᑦ ᐊᒻᒪ ᖁᓪᓕᖅ ᓯᐱᓪᓗᓂᐅᒃ! ᑕᐸᓯᒃᑯᓂᐅᒃ ᓂᕕᐊᖅᓵᖅ. ᑖᓐᓇ ᐅᓐᓅᓚᐅᖅᑐᖅ, ᓄᑲᐱᐊᖅ ᐅᐸᒍᑎᕚᒃᑯᓂ ᓂᕕᐊᖅᓵᕐᒧᑦ ᐅᓪᓗᑕᓖᑦ ᐃᒡᓗᖓᓄᑦ ᑖᒃᑯᐊ ᐃᓄᐃᑦ ᑲᑎᙵᑎᓪᓗᒋᑦ ᕿᓚᐅᔾᔭᖁᖕᒥᑦ ᐃᒡᓘᔪᒥᑦ. ᑕᐸᓯᒃᐸᒃᑯᓂᐅᒃ. ᐊᓂᐊ ᑮᓇᖓ ᐸᐅᖅᓯᒪᔪᖅ ᑖᓐᓇ ᓂᕕᐊᖅᓵᖅ ᖃᐅᔨᔪᒪᓕᖅᑯᓂ ᑭᓇᐅᖕᒪᖔᑦ ᓄᑲᐱᐊᖅ ᓱᐱᓯᕚᒃᑐᖅ ᖁᓪᓕᖓᓂᑦ. ᐊᐱᕆᕚᒃᑕᖓ, "ᑭᓇᐅᕙᕕᑦ?" ᑭᓯᐊᓂᓕ ᐅᖃᖅᐸᓐᖏᓚᖅ ᑭᓇᐅᓂᕐᒥᓂᑦ ᐅᑯᓐᓃᓐᓂᑦ ᓂᓪᓕᖅᐸᖕᖏᒻᒪᑦ. ᓂᓪᓕᖅᑎᑦᑐᓐᓇᖏᓐᓇᒥᐅᒃ ᑭᓇᐅᓂᖓᓂᑦ, ᖃᐅᔨᓇᓯᓕᖅᐹ ᖃᐅᔨᓐᖏᓈᖅᑯᓂᐅᒃ. ᑕᑯᓕ, ᑕᐃᑯᓐᖓᖅᒪᑦ, ᐊᒡᒐᖕᒥᓄᑦ ᑕᒪᓐᓇ ᐃᔾᔭᓚᐅᐸ ᐊᑖ ᒥᖑᐊᖅᑯᓂᐅᒃ, ᐊᓯᐃᑖᒃ ᑐᑭᐊᓃᑦᑐᖅ ᓴᐅᒥᖕᒫᖕᒐᓂᑦ ᑮᓇᖓᑕ. ᐅᐊᑦᑎᐊᕈᓐᖑᒃᑲᓂᖅᑎᓪᓗᒍ ᓄᑲᐱᐊᖅ ᐊᓂᖕᒪᑦ. ᒪᓕᒃᑯᓂᐅᒃ ᕿᓚᐅᔾᔭᖁᖑᑦ ᐃᒡᓗᕕᒡᒐᖁᑦ ᐊᒻᒪ ᑐᓴᖅᑯᓂ ᐃᒡᓚᖅᑐᓂᑦ ᐃᒡᓗᕕᒡᒍᐸ ᐃᓗᐊᓂ. ᐃᓯᕋᒥ, ᐊᒻᒪ ᑕᑯᓕᖅᑯᓂ ᐃᒡᓚᐅᑎᖅᖅᑐᓂᑦ ᑖᔅᓯᒥᖓ ᐊᓂᐊᓂᑦ, ᐸᐅᕐᓂᖅᖅᑐᖅ ᐊᒡᒐᖕᒥᓄᑦ ᓴᐅᒥᐊᒍᑦ ᐸᐅᓕᖅᑲᐅᔾᔪᖓᓂᑦ ᑮᓇᖓᑕ ᓴᐅᒥᐊᒍᑦ. ᐊᑲᖅᓴᖕᖏᕐᒍᓂ ᑖᓐᓇ ᐊᓂᐊ ᑕᐸᓯᖕᓂᖓᓂᑦ, ᐊᓂᑲᐅᖅᑐᖅᑯᓂᓗ. ᑎᒍᓯᓪᓗᓂ ᖁᓪᓕᐅᑉ ᑕᖅᑯᑎᐊᓂᑦ, ᐊᑐᖅᑕᐅᕚᒃᑐᖅ ᐃᑯᒪᑦᑎᐊᓕᖅᑎᑦᑎᕚᒃᑐᖅ ᖁᓪᓕᕐᒥᑦ, ᐊᒻᒪ ᐃᑭᑦᑎᔾᔪᑕᐅᓪᓗᓂ. ᐊᓂᐊ ᑐᓄᐊᓂᑦ ᒪᓕᒃᑯᓂ, ᑎᒍᓪᓗᓂᐅᒃ ᑕᖅᑯᑎ ᓴᐅᒥᖑᒥᒍᑦ ᐊᒡᒐᖑᒥᒍᑦ ᐊᒻᒪ ᐃᑭᕐᑯᓂᐅᒃ. ᐊᓂᑦᑎᓪᓗᓂ ᕿᓚᐅᔾᔭᖁᖕᒥᑦ ᐃᒡᓗᕕᒡᒋᑦ ᐊᒻᒪ ᓯᓚᑖᒎᑦ ᐅᓪᓚᓕᓇᓪᓗᓂ, ᐊᓂᐊᑕ ᒪᓕᒃᑯᓂᐅᒃ. ᐊᓯᐃᑖᒃ ᐊᓂᐊ ᐅᖅᑳᓪᓗᓂ. ᑐᓄᒻᒧᑦ ᕿᕕᐊᖃᒥ ᐊᒻᒪ ᐃᑯᒪᔪᖅ ᑕᖅᑯᑎ ᖃᒥᕐᑯᓂ, ᓇᔾᔭᑕ ᑕᖅᑯᑎᐊ ᐃᑯᒪᔪᖅ ᓯᓚ. ᐊᓄᕌᓚᒃᑳᓪᓚᒃᑐᐊᓘᖕᒪᑦ ᓇᔾᔪᖓ ᐊᒻᒪ ᐊᓂᖓ ᑎᒃᑕᐅᓪᓗᑎᒃ ᓯᓚᐃᓐᓇᖁᑦ. ᐊᓂᖓᑕ ᑕᖅᑯᑎᐊ ᖃᐅᒪᖅᑲᑦᑎᐊᖕᖏᖅᑯᓂ, ᑕᖅᑭᓐᖑᖅᑯᓂ, ᐃᓛᓐᓂᒃᑯᑦ ᐃᑯᒪᕚᒃᑐᖅ, ᑖᓐᓇ ᓇᔾᔮ ᓯᕿᓂᓐᖑᖅᑯᓂ, ᖃᐅᒪᑦᑎᐊᖅᑯᓂ ᐊᒻᒪ ᐆᓇᔮᒃᑯᓂ. ᑖᓐᓇ ᐊᓂᐊ ᑕᖅᑭᓐᖑᖅᐸᓪᓚᐊᓗᓂ ᐃᓚᑦᑎᔾᔨᑎᒃᓴᐅᔾᔪᓂ ᑕᐸᓯᖅᑦᑕᓚᐅᕐᓂᖓᓄᑦ ᐊᒻᒪ ᐱᑦᑎᐊᓐᖏᓚᐅᕐᓂᖓᓄᑦ ᓇᔾᔪᒥᓂᑦ." ["ᐃᓂᖓ ᓯᕿᓂᐅᑉ ᐊᒻᒪ ᑕᖅᑭᐅᑉ," ᑕᕝᕙᓂ ᐅᓂᒃᑳᖅᑐᐊᒥᑦ: ᕿᒥᕐᕈᓇᖕᓂᖅ ᐃᓄᐃᑦ ᐅᓂᒃᑳᖅᑐᐊᖁᑎᖏᓐᓂᑦ, ᐅᓂᒃᑳᖅᑐᐊᕕᓂᖏᓐᓂᑦ, ᐊᒻᒪ ᐅᒃᐱᕆᔭᐅᔪᓂᑦ *(Inhabit Media, 2012-u5)* ᒪᒃᐱᖁᐊ *85.]*

ᑭᓯᓂᒃᑯᐊ ᐃᓅᖃᑎᒌᖕᓂᕐᒧᑦ ᐃᓕᓐᓂᐊᕐᒐᒃᓴᐅᕙᑦ ᑕᕝᕙᓂ ᐃᓄᐃᑦ ᐅᓂᒃᑳᖅᑐᐊᖓᑎᒍᑦ?

- ᑖᓐᓇ ᐊᓂᖓ ᑐᓐᖓᓇᖅᑑᓚᐅᖅᐸ ᓇᔾᔪᖓᓄᑦ?
- ᐱᔾᔪᑎᖃᖅᐸ ᓇᔾᔪᖓ ᑖᓐᓇ ᓯᕿᓂᓐᖑᖅᑯᓂ ᐊᓂᐊ ᑕᖅᑭᓐᖑᖅᑯᓂ? ᐱᔾᔪᑎᖃᖅᐸ ᖃᐅᒪᓂᕐᓴᕆᑦ ᑖᒃᑯᓇᖓ ᓴᖅᑮᔭᕐᓂᕆᑎᒍᑦ?
- ᖃᐅᒪᔪᒪᓇᔭᖅᐱᑦ ᐊᒻᒪ ᐆᓇᕐᒧᑦᑎᑦ ᓯᕿᓂᖅᑎᑐᑦ ᐅᑯᓐᓃᓐᓂᑦ ᖃᐅᒪᑦᑎᐊᕐᓕᕐᒧᑎᑦ ᓂᒡᓚᓇᕐᒧᑎᑦ ᑕᖅᑭᖅᑎᑐᑦ?

ᕿᒥᕐᕈᓂᖅ ᐊᑐᕈᑎ

ᑐᑭᓯᑎᐊᒃᑲᓐᖏᓯᒡᒎᕆᑦ ᑕᖅᑭᐅᑉ ᐅᐃᔾᔮᕐᓂᐊ, ᐃᓕᓐᓂᐊᖅᑐᑦ ᑎᑎᕋᕐᓂᐊᖅᑐᑦ ᑕᖅᑭᐅᑉ ᖃᓄᐃᑉᐸᓪᓕᐊᓂᖓᓂᑦ ᑎᑎᕋᕐᕕᒃᑯᑦ, ᐃᓄᒃᑐᔾᔨᒎᑎᒃ ᐊᖏᕐᕋᒥᖕᓂᑦ ᐊᒻᒪᑕᐅᖅ ᑲᑎᖅᓯᐃᒎᑎᒃ ᐃᓕᓐᓂᐊᕐᕕᖕᒥᖕᓂᑦ.

PDF–ᖑᔪᖅ ᐋᖅᑭᒃᓯᒪᓂᐊ ᑕᖅᑭᐅᑉ ᐅᐃᔾᔮᖅᐸᓪᓚᐊᓂᖓᓂᑦ (**pinnguaq.com/learn/exploring-the-moon**).

ᑕᕝᕙᓂ ᐱᓕᕆᐊᒃᓴᒥᑦ ᐅᑯᓂᖓ ᐊᑐᕆᐊᖦᖢᑦ:

- PDF–ᖑᔪᖅ ᓇᑦᑎᖅᓯᒪᔪᖅ
- ᓄᑦᑎᖅᑲᑦ ᐱᖅᑲᑎᖅᑲᕐᒧᑎᒃ ᕿᒥᕐᕈᖅᑲᑕᐅᓂᐊᖅᑐᒥᑦ ᐅᓐᓄᒃᑯᑦ ᓯᓚᒥᑦ ᐊᒻᒪ ᑕᖅᑭᕐᒥᑦ
- ᑕᖅᓯᖅᓲᑎᑦ

ᐊᑐᕐᓂᐅᔪᒥᑦ ᖃᐅᔨᓴᕈᑎᒥᑦ ᑕᖅᑭᐅᑉ ᐊᐅᓚᓂᖓᔅᓴᓂᑦ, ᐃᓕᓐᓂᐊᖅᑐᑦ ᐊᐱᕆᔭᐅᓂᐊᖅᐳᑦ ᐃᓱᒪᒋᔭᕆᓐᓂᑦ ᖃᓄᑎᕆᐅᒪᖔᑦ ᑕᖅᑭᖅ ᐊᐅᓚᓂᕆᔭᖓᓂᑦ, ᐃᓕᓐᓂᐊᖅᑐᑦ ᑎᑎᕋᖅᐸᓪᓕᐊᑎᓪᓗᒋᑦ ᑕᖅᑭᐅᑉ ᐊᐅᓚᓂᐊᓂᑦ ᐊᕐᕿᕋᒥᑦ, ᑲᑎᖅᓱᐃᓂᐊᕈᑦ ᐃᓕᓐᓂᐊᕕᖕᒥᑦ, ᑖᓐᓇ ᐊᐅᓚᓂᐊᓂᑦ ᑎᑎᕋᖅᓯᒪᔪᖅ ᐅᓪᓗᖅ ᐊᑕᐅᓯᐊᖅᐸᓪᓗᓂ. ᑖᓐᓇ ᑕᖅᑭᖅ ᐊᓯᔾᔨᖅᐸᑦ, ᓄᑖᖅ ᐅᖃᐅᓯᖅᑕᖅ ᓴᖅᑭᑕᐅᓂᐊᖅᐳᖅ. ᐆᒃᑑᑎᐊ ᓲᕐᓗ, **ᑕᖅᑭᖅ ᐃᓗᐃᑦᑐᕈᖅᓯᒪᒃᐸᑦ**, ᐃᓕᓐᓂᐊᖅᑐᑦ ᐃᓕᑦᑎᓂᐊᖅᐳᑦ ᐊᐅᓚᓂᖓᔅᓴᓂᑦ, ᑭᓯᐊᓂ ᑕᐅᑐᙵᓂᕆᑎᒍᑦ ᑕᖅᑭᐅᑉ ᐊᓯᔾᔨᕐᓂᐊ, ᐃᓕᓐᓂᐊᖅᑏᑦ ᐊᐱᖅᓱᐃᑦ ᐊᑐᕐᓗᖕᒋᑦ ᓲᕐᓗ ᐅᑯᓂᖓ, "ᑖᓐᓇ ᑕᖅᑭᖅ ᐃᓗᐃᑦᑑᖅᑯᓯᕙ ᐅᑯᓐᓃᓐᓂᑦ ᐊᓯᔾᔨᖅᑯᓯᕙ?" ᐃᓕᓐᓂᐊᖅᑐᑦ ᑭᐅᔾᔪᑎᖏᓐᓂᑦ, ᐃᓕᓴᐃᔨᐅᒧᖅ ᓴᖅᑭᑎᓂᐊᖅᐳᖅ ᓄᑖᒥᑦ ᐊᐅᓚᓂᐊᓴᖕᒥᓂᑦ ᓲᕐᓗ . ᑲᔪᓯᓗᒍ ᕿᒥᕐᕈᐊᕐᓂᖅ ᑕᖅᑮᖓᓄᒃ ᒪᕐᕉᖓᓄᒃ.

ᐃᓱᐊ

ᐅᑎᖁᕆᓗᒍ ᐊᑐᖅᑕᐅᓂᐊᖅᓯᕆᓃᑦ ᐃᓱᒪᕆᓚᐅᖅᑕᕆᑦ ᖃᓄᖅ ᐊᑯᓂᐅᑎᕆᔪᖅ ᐊᑐᖅᓴᕐᒪᖔᑦ ᑕᖅᑭᖅ ᐃᓗᐃᑦᑐᕐᓂᐊ ᑕᖃᕐᒐᖓ ᓄᖑᐸᓪᓚᐊᓂᖓᓄᑦ, ᐅᕙᓗᒻᒧᓐᓃᑦ ᑕᖅᑭᐅᑉ ᐃᓗᐃᑦᑐᖅᓯᒪᓂᐊ ᓄᑖᒧᑦ ᑕᖅᑭᑭᖅᑐᒧᑦ, ᐃᓕᓐᓂᐊᖅᑐᑦ ᑕᑯᕆᐊᕐᓂᐊᖅᐳᑦ ᐃᓱᒪᕆᓚᐅᖅᑕᒥᓂᑦ ᖃᓂᕝᕕᖅᑯᑎᖕᒪᖔᑕ ᐅᑯᓐᓃᓐᓂᑦ ᐅᖓᑎᒍᐊᖓᓄᑦ ᐃᓄᙳᐃᓪᓗᑎᒃ ᖃᐅᔨᕐᓂᕆᓯᓐᓃᑦ ᐊᒻᒪ ᑲᑎᖅᓱᖅᑕᕆᑦ ᑕᖅᑭᐅᑉ ᐊᐅᓚᓂᐊᓴᕆᑦ ᑕᖅᑮᖓᓄᒃ ᒪᕐᕉᖓᓄᒃ.

ᐃᑲᔫᑎᐅᒃᑲᓂᕈᓇᖅᑐᑦ

- asc-csa.gc.ca/eng/youth-educators/objective-moon/
- asc-csa.gc.ca/eng/youth-educators/activities/fun-experiments/creating-moon-craters.asp
- youtube.com/watch?v=WLhlRUnzbTM

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ᑕᑯᓗᒋᑦ ᖃᓄᓴᐅᔭᒃᑰᖓᔪᑦ ᐃᓕᓐᓂᐊᕐᕕᒃᓴᐅᔪᒧᑦ ᐸᕐᓇᒃᑕᐅᓯᒪᔪᑦ, ᐅᕗᓐᖓᕐᓗᑎᑦ **pinnguaq.com/learn/exploring-the-moon**.

ᓇᓗᓇᐃᕈᑕᓚᐅᕐᓂᖅ ᐊᒻᒪ ᐱᓕᕆᐊᖑᓂᐊᖅᑐᑦ

ᖃᓄᓴᐅᔭᓚᕆᓂᖅ ᐊᒻᒪ ᖃᓄᓴᐅᔭᐅᑉ ᐊᐅᓚᓂᕆᔭᖏᑦ

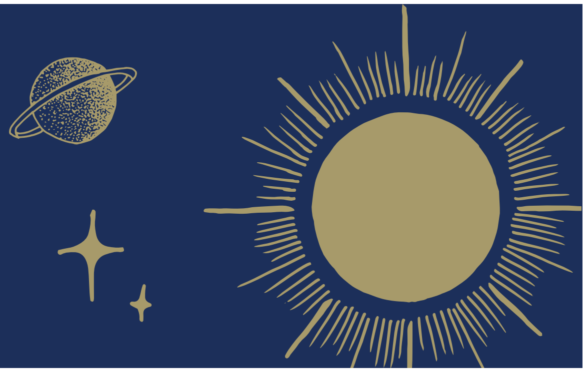
ᖃᓄᓴᐅᔭᑰᖅᑐᑦ ᐊᒻᒪ ᑲᑐᔾᔨᖅᑎᕇᑦ

ᐋᖅᑭᒃᓯᒪᓂᖓ

ᑎᑎᕋᖅᓯᒪᔪᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᑯᐃᑦ

ᐃᓕᓐᓂᐊᒐᒃᓴᖅ 2

ᑐᑭᓯᓂᖅ ᓯᕿᓂᕐᒧᑦ ᐆᒪᖅᑯᑎᑖᕈᑎᒥᑦ



ᑎᑎᕋᖅᑎ: ᐅᔭᕋᒃ ᐊᐸᒫ

ᖁᑦᑎᖕᓂᖕᒐᓚ ᐊᔪᖏᓐᓂᐊ:
ᐊᔪᖏᓐᓂᓕᖕᓄᑦ 4–ᒥᑦ 6–ᒧᑦ

ᐃᓕᓐᓂᐊᕐᓂᐅᑉ ᑎᑭᓐᓂᕆᓂᐊᖅᑕᖓ

- ᐃᓕᓐᓂᐊᖅᑐᑦ ᖃᐅᔨᒪᓕᕐᓂᐊᖅᐳᑦ 8–ᖑᔪᓂᑦ ᐅᓪᓗᕆᐊᓂᓪ– ᐊᑎᖏᓐᓂᒡᓗ, ᐃᓂᒋᔭᖏᓐᓂᑦ, ᐊᒻᒪ ᐊᖏᓂᖏᓐᓂᑦ
- ᐃᓕᓐᓂᐊᖅᑐᑦ ᓇᓗᓇᐃᕆᔪᓐᓇᖅᓯᓂᐊᖅᐳᑦ ᐊᔾᔨᒌᖏᑦᑐᓂᑦ ᐊᐅᓚᓂᐅᔪᓂᑦ ᐅᓪᓗᕆᐊᓂᑦ ᑕᐃᑲᓂ ᓯᕿᓂᐅᑉ ᐆᒪᖅᑯᑎ}ᕈᑎᐊᓂᑦ
- ᐃᓕᓐᓂᐊᖅᑐᑦ ᓇᓗᓇᐃᕆᔪᓐᓇᖅᓯᓂᐊᖅᐳᑦ ᖃᓄᐃᒻᒪᑦ ᓄᓇᕐᔪᐊᑐᐊᖅ ᐆᒪᙵᐅᔪᓐᓇᕐᒪᖔᑦ ᓯᕿᓂᐅᑉ ᐆᒪᖅᑯᑎᒋᔮᓂᑦ

ᐅᖃᐅᓰᑦ

- **ᐆᒪᙵᐅᔪᓐᓇᖅᑐᑦ—** ᐃᓅᔾᔪᑕᐅᔪᓐᓇᖅᑐᑦ
- **ᐊᓂᕐᓂᖅᑲᕐᓇᖏᑦᑐᒑ ᐊᒻᒪ ᐊᓂᕐᓂᖅᑲᕐᓇᖅᑑᑉ ᕿᑎᐊᓂ—** ᐊᓂᖅᓵᖅᑕᑦᑎᓐᓂᑦ ᓯᓚᑖ ᓄᓇᕐᔪᐊᕐᒥᑦ ᐅᕙᓅᓐᓃᑦ ᐅᓪᓗᕆᐊᓂᑦ

ᑕᕝᕙᓂ ᐃᓕᓐᓂᐊᖅᑕᐅᔪᒃᓴᒥᑦ, ᐃᓕᓐᓂᐊᖅᑐᑦ ᑐᑭᓯᓂᐊᖅᐳᑦ ᓯᕿᓂᕐᒥᑦ ᐆᒪᖅᑯᑎᑖᕈᑎᒥᑦ ᐃᓂᒋᔭᒥᖕᓂᑦ. ᐃᓕᓐᓂᐊᕐᓂᐊᖅᐳᑦ ᑭᓯᕙᑦ ᐅᓪᓗᕆᐊᕐᒥᑦ ᐆᒪᔪᓐᓇᐅᑏᑦ ᐊᒻᒪ ᖃᓄᐃᒻᒪᑦ ᐅᓪᓗᕆᔪᐊᑦ ᐆᒪᔪᓐᓇᐅᑎᖃᕐᓂᖏᓐᓂᑦ. ᐅᑯᐊ ᐃᑲᔫᑏᑦ ᐊᐱᖅᑯᑎᓄᑦ ᐃᓕᓐᓂᐊᖅᑕᐅᔪᒧᑦ ᐅᑯᐊᖑᕗᑦ: ᐊᓯᐊᓂᑦ ᐅᓪᓗᕆᐊᖅᑕᕐᑲᖅᐸ ᐆᒪᙵᐅᔪᓐᓇᖅᑐᒥᑦ?

ᓴᖅᑭᑦᑎᓂᖅ ᓯᕿᓂᐅᑉ ᐆᒪᖅᑯᑎᑖᕈᑎᐊᓂᑦ

ᑖᓐᓇ ᐃᓕᓐᓂᐊᒐᒃᓴᖅ ᐱᒋᐊᓕᕐᓗᒍ, ᐃᓕᓴᐃᔨᐅᔪᖅ ᑲᑎᑎᑦᑎᓂᐊᖅᐳᖅ ᐃᓕᓐᓂᐊᖅᑎᓂᑦ ᐅᖃᖃᑎᒌᒃᓗᑎᒃ ᖃᐅᔨᒪᔭᕐᒥᓂᑦ ᓯᕿᓂᐅᑉ ᐆᒪᖅᑯᑎᑖᕈᑎᐊᓂᑦ ᐊᒻᒪ ᐅᓪᓗᕆᐊᓂᑦ ᐅᓪᓗᕆᐊᑦ ᐆᒪᕐᑯᑎᑖᕈᑎᐊᓂᑦ. ᓯᕗᓪᓕᐅᕋᑖᖅᑐᖅ ᖃᐅᔨᒪᓂᐅᔪᑦ ᐊᑐᓕᕐᓗᒋᑦ, ᐃᓕᓐᓂᐊᖅᑏᑦ ᐊᐱᖅᑐᐃᓂᐊᖅᐳᑦ ᖃᓄᐃᑦᑐᒥᑦ ᐅᓪᓗᕆᐊᒥᑦ ᓄᓇᖃᕐᒪᖔᑦᑕ. ᐃᓕᓐᓂᐊᖅᑏᑦ ᐊᐱᖅᑐᐃᓂᐊᖅᐳᑦ ᑕᐃᒎᓯᖏᓐᓂᑦ ᐅᓪᓗᕆᐊᑦ ᖃᐅᔨᒪᓂᖏᓐᓂᑦ ᓯᓚᐃᓐᓇᕐᒦᑦᑐᓂᑦ, ᓲᕐᓗ ᓄᓇᒋᔭᕗᑦ ᐅᓪᓗᕆᐊᖅ, ᑕᖅᑭᖅ, ᓯᕿᓂᖅ, ᐊᓯᖏᓪᓗ.

ᐅᖃᓕᒫᕐᓂᕐᒧᑦ ᐱᓕᕆᐊᒃᓴᖅ

ᐅᖃᓕᒫᕐᓗᒍ There’s No Place Like Space-ᖑᔪᖅ ᑎᑎᕋᖅᑐᖅ ᑏᑦ ᓱᐃᔅ.

“ᐅᖃᓕᒫᒐᖅ Au revoir, Pluto! ᓄᑖᖅ ᐋᖅᑭᒋᐊᖅᑕᐅᓯᒪᔪᖅ, ᐱᐅᒋᔭᐅᓪᓚᕆᒃᑐᖅ ᐅᖃᓕᒫᒐᖅ ᓇᓗᓇᐃᖅᓯᒪᓂᐊ, ᐅᖃᓕᒫᕆᐅᓚᖓᖅᑐᑦ ᐊᒻᒪ ᐱᒋᐊᓚᖓᖅᑐᓄᑦ ᑕᖅᑭᓕᕆᓃᑦ ᖃᖓᑦᑕᖅᑎᑕᐅᔪᑦ ᐳᓛᕆᐊᖅᓗᑎᒃ ᑖᒃᑯᓄᖓ 8–ᖑᔪᓄᑦ ᐅᓪᓗᕆᐊᓄᑦ ᓯᕿᓂᕐᒧᑦ ᐆᒪᖅᑯᑎᑖᕈᑎᑦ (ᓄᓇᕐᔪᐊᓚᒫᒧᑦ ᑕᖅᑭᓕᕆᔪᑦ ᑲᑐᔾᔨᖃᑎᒋᑦ 2006–ᒥᑦ ᐃᓱᒪᓕᐅᖅᑕᐅᔪᑦ ᐊᒧᒋᐊᕐᓗᑎᒃ ᐳᓘᑕᐅᒥᑦ ᑕᕝᕙᓐᖓᑦ ᓄᓇᕐᔪᐊᕐᒥᑦ ᑕᐃᑯᖓ ᓯᓚᐃᓐᓇᕐᒥᑦ ᐳᔪᕐᒧᑦ), ᐅᑯᐊ ᐊᑐᕐᓗᒋᑦᑕᐅᖅ ᐅᖃᓕᒫᒐᑦ Cat in the Hat, Thing One, Thing Two, Dick, ᐊᒻᒪ Sally. ᐅᖃᓕᒫᒐᒃᓴᑦᑎᐊᕙᐅᕗᑦ ᐱᐅᓛᖑᓪᓗᑎᒃ ᓯᓚᕐᔪᐊᓚᒫᒥᑦ!”

[ᕈᐃᑉ, ᑐᓴᔅ.ᐅᖃᓕᒫᒐᒃᓴᖅ There’s No Place Like Space–ᖑᔪᖅ: ᐅᖃᐅᓯᖅᑲᖅᑐᖅ ᓯᕿᓂᐅᑉ ᐆᒪᖅᑯᑎᑖᕈᑎᐊᓂᑦ: (New York-ᒥᑦ: Random House–ᖑᔪᖅ, 1999–ᒥᑦ).]

ᑕᒪᒃᑭᕐᓗᒋᑦ ᐅᖃᖃᑎᒋᓗᒋᑦ ᐅᖃᓕᒫᕆᓂᒃᑯᕕᑦ. ᐊᐱᕆᓗᒋᑦ ᐃᓕᓐᓂᐊᖅᑏᑦ ᓇᓚᐊᒃ ᑕᑯᓐᓇᑏᖑᔮᕐᒪᖔᑕ ᐊᒻᒪ ᐊᑦᑎᕐᓗᒋᑦ ᐅᓪᓗᕆᐊᑦ. ᐊᐱᕆᓗᒋᑦ ᖃᐅᔨᒪᖔᑕ ᖃᓄᐃᒻᒪᑦ ᓄᓇᕐᔪᐊᖅ ᐅᓪᓗᕆᐊᓚᒫᓂᑦ ᐆᒪᓇᕐᒪᖔᑦ.

ᐋᖅᑭᒃᓯᓗᑎᒃ ᓯᕿᓂᐅᑉ ᐆᒪᖅᑯᑎᑖᕈᑎᐊᓂᑦ

ᐊᑐᕈᑏᑦ:

- ᐊᖏᓂᓕᒃ 30 cm ᑭᐸᑲᓐᓇᒃᑐᖅ ᖁᖅᓱᖅᑐᖅ ᑎᑎᕋᕐᕕᒃᓴᖅ ᓯᕿᓂᙳᐊᙳᐊᓂᐊᖅᑐᖅ
- 9–ᖑᔪᓂᑦ ᐊᔾᔨᙳᐊᓂᑦ ᐅᓪᓗᕆᐊᓂᑦ ᐸᐃᑉᐸᕋᓛᒃᑯᑦ ᐅᕙᓘᓐᓃᑦ ᑎᑎᕋᐅᔭᖅᑕᐅᓯᒪᔪᑦ ᐃᓕᓐᓂᐊᖅᑎᓄᑦ
- ᐆᒃᑐᕋᐅᑎ
- ᐊᖏᔪᒥᑦ ᑎᑎᕋᕐᓂᑯᖃᖏᑦᑐᖅ ᐃᓕᓐᓂᐊᖅᑐᓄᑦ ᑎᑎᕋᐅᔭᕕᐅᓂᐊᖅᑐᖅ ᓯᕿᓂᐅᑉ ᐆᒪᖅᑯᑎᑖᕈᑎᐊᓂᑦ (ᐃᓕᓐᓂᐊᕕᐊᕈᓯᕐᒥᑦ)

ᖃᓄᐃᓘᕐᓇᐅᑎᒋᔭᖅ
ᐊᑕᐅᓯᕐᒥᑦ ᐃᓕᓐᓂᐊᖅᑎᒥᑦ ᑎᒍᒥᐊᖅᑎᑦᑎᓗᑎᑦ ᐊᔾᔨᒥᑦ ᐃᓕᓐᓂᐊᕐᕕᐊᕈᓯᐅᑉ ᕿᑎᐊᓂ. ᐊᐱᕆᓗᒋᑦ ᐃᓕᓐᓂᐊᖅᑏᑦ ᑎᒍᒥᐊᕈᒪᔪᓂᑦ ᐅᓪᓗᕆᐊᓐᖑᐊᓂᑦ. ᐊᑕᐅᓯᐅᑦᑕᕐᓗᒋᑦ, ᐃᓕᓐᓂᐊᖅᑐᑦ ᐊᐱᕆᓗᒋᑦ ᓯᕿᓂᐅᑉ ᖃᓂᒋᓵᓄᐊᕐᓗᑎᒃ ᐆᒃᑐᕋᖅᓯᒪᔪᑦ ᒪᓕᒡᓗᒋᑦ ᐃᓚᖕᐃᔾᔨᐅᑉ ᑐᓂᔅᖅᑕᖕᒋᑦ.

ᐊᑐᕐᓗᒋᑦ ᐅᑯᐊ ᐆᒃᑐᕋᖅᓯᒪᔪᑦ:
- ᒧᑯᕆ: 2.5 cm
- ᕖᓇᔅ: 3 cm
- ᒫᔅᓵ: 5 cm
- ᓄᓇᕐᔪᐊᖅ: 7 cm
- ᔫᐱᑐ: 29 cm
- ᓵᑑᓐ: 48 cm
- ᔫᕋᐃᓇᔅ: 96 cm
- ᓂᐊᐹᓐ: 152 cm

ᐊᐱᕆᓗᒋᑦ ᐃᓕᓐᓂᐊᖅᑏᑦ ᐅᔾᔾᕈᓱᖕᒪᖕᖢᑕ ᐅᖕᒐᓱᖕᓂᕆᔭᖕᒋᓐᓂᑦ ᐅᓪᓗᕆᐊᐸ ᑕᕝᕙᓐᖓᒐᑦ ᓯᕿᓂᕐᒥᑦ. ᓇᓕᐊᒃ ᐅᓇᕐᓂᖅᐹᖑᓇᔭᕐᒪᖔᑦ? ᓇᓕᐊᒃ ᓂᒡᓚᓇᕐᓂᖅᐹᖑᓇᔭᕐᒪᖔᑦ? ᓇᓃᑉᐸ ᓄᓇᕐᔪᐊᖅ ᑖᒃᑯᓇᓂ ᐃᓂᐅᔪᓂᑦ?

ᐆᒪᔪᓐᓇᕐᕕᐅᔪᖅ ᓄᓇᕐᔪᐊᖅ

ᐊᐱᕆᓗᒋᑦ ᐃᓕᓐᓂᐊᖅᑏᑦ ᖃᓄᖅ ᐃᓱᒪᒋᔭᖅᑲᕐᒪᖔᑕ ᓄᓇᕐᔪᐊᐸ ᐆᒪᔾᔪᑎᒋᔭᖕᒋᓐᓂᑦ. ᑕᑯᖅᑲᐅᖕᒪᑕ ᓄᓇᕐᔪᐊᖅ ᐅᖕᒐᓱᓗᐊᖕᒋᓐᓂᖕᒐᓂᑦ ᓯᕿᓂᕐᒧᑦ ᑭᓱᐊᓂ ᖃᓂᓗᐊᖕᒋᕐᒍᓂᓗ. ᓯᕿᓂᖅ ᑖᓐᓇ ᐱᒻᒪᕆᐅᕗᖅ ᓯᕿᓂᐅᑉ ᐆᒻᒪᖅᑯᑎᑖᕈᑎᐊ. ᐅᓪᓗᕆᐊᖑᕗᖅ ᓯᕿᓂᑦᑎᓐᓂᑦ ᐅᐃᔾᔭᖅᑐᖅ. ᑖᓐᓇ ᓯᕿᓂᖅ ᐆᓇᖅᑎᑦᑎᕚᒃᐳᖅ ᐊᒻᒪ ᖃᐅᒪᑎᑦᑎᕚᒃᓗᓂ ᐃᑲᔫᑎᔪᖅ ᐱᕈᖅᑐᓂᑦ ᓄᓇᕐᔪᐊᕐᒥᑦ ᐱᕈᖅᑎᑦᑎᓪᓗᓂᓗ. ᑭᓱᐊᓂ ᑭᓲᒃᑲᓐᓂᖅ ᐃᑲᔫᑎᕚ ᐆᒪᔪᓐᓇᕐᕕᐅᓪᓗᓂ? ᑖᓐᓇᑕ ᐊᓂᖅᓵᕐᕕᐅᕙ?

ᑕᐅᑐᒡᓗᑎᒃ ᐱᓕᕆᐊᒃᓴᐅᓂᐊᖅᑐᒥᑦ ᐅᕙᓂ:
- ᐅᕐᑲᓕᒫᒐᖅ Layers of the Atmosphere–ᖑᔪᖅ
  youtube.com/watch?v=ZXGUCY_xByU
- ᐅᕐᑲᓕᒫᒐᖅ What Causes the Seasons–ᖑᔪᖅ
  youtube.com/watch?v=mEx3YTLu59I&t=2s

ᖃᐅᔨᓇᓱᖕᓂᒃᑯᑦ ᐱᓕᕆᐊᒃᓴᖅ

ᑕᕝᕙᓂ ᖃᐅᔨᓴᕐᓂᒃᑯᑦ ᐱᓕᕆᐊᒃᓴᐅᔪᒥᑦ, ᐃᓕᓐᓂᐊᖅᑏᑦ ᕿᒥᕐᕈᓇᖕᓂᐊᖅᐳᑦ ᐊᓯᐊᓂᑦ ᐅᓪᓗᕆᐊᒥᑦ ᐆᒪᔪᓐᓇᖅᓯᒪᖕᖔᑦᑕ ᓯᕿᓂᐅᑉ ᐆᒻᒪᖅᑯᑎᑖᕈᑎᐊᓂᑦ. ᐊᐱᕆᓗᒋᑦ ᐃᓕᓐᓂᐊᖅᑐᑦ: ᖃᓄᕐᓕ ᓄᓇᖅᑲᑦᑕ ᐅᓪᓗᕆᐊᐸ ᐊᓯᐊᓂᑦ? ᑭᓱᓂᑦ ᐱᔭᕆᐊᖅᑲᖅᐱᑕ ᐆᒪᓇᓱᒡᓗᑕ ᐆᓇᖅᑐᐊᓗᖕᒥᑦ ᐅᓪᓗᕆᐊᒥᑦ ᓱᕐᓗ ᒧᑯᕆᒥᑦ? ᑭᓱᒥᑦ ᐊᑐᕆᐊᖃᖅᓯᕙᑕ ᐆᒪᓇᓱᒡᓗᑕ ᑕᐃᑲᓂ ᓂᒡᓚᓇᖅᑐᒥᑦ ᐅᓪᓗᕆᐊᒥᑦ ᓱᕐᓗ ᓂᐹᓐᒥᑦ? ᐃᓚᕖᓚᖅᓱᕐᓗᑎᒃ, ᓂᕈᐊᕐᓗᑎᒃ ᐅᓪᓗᕆᐊᒥᑦ ᐊᒻᒪ ᖃᐅᔨᓇᓱᒡᓗᒋᑦ ᐃᓗᓕᖕᒋᑦ ᐅᓪᓗᕆᐊᑉ. ᐅᓪᓗᕆᐊᖅ ᐆᓇᖅᐸ ᐅᑯᕚᓐᓂᑦ ᓂᒡᓚᓇᖅᐸ? ᑎᓯᔫᑯ ᐅᑯᕚᓐᓃᑦ ᐳᔫᑯ? ᐃᓱᒪᒋᓗᒍ ᐃᓗᓕᖕᒋᑦ ᓄᓇᕐᔪᐊᐸ ᐆᒪᔪᓇᕈᑎᖕᒋᑦ, ᓴᖅᑭᑦᑎᓗᑎᒃ ᐆᒪᔾᔪᑕᐅᔪᓐᓇᖅᑐᒥᑦ ᐊᒻᒪ ᐊᓯᐊᓂᑦ ᐅᓪᓗᕆᐊᓕᐅᕐᓗᑎᒃ ᑕᕝᕙᓂ ᓯᕿᓂᐅᑉ ᐆᒻᒪᖅᑯᑎᑖᕈᑎᐊᓂᑦ ᐆᒪᕝᕕᐅᔪᓐᓇᖅᑐᒥᑦ. ᓴᓇᓗᑎᒃ ᓴᖅᑭᔮᖅᑐᒃᓴᒥᑦ ᖃᐅᔨᓴᖅᑕᑎᒃ ᐊᑐᕐᓗᒍ ᖃᐅᔨᔭᖕᒋᑦ ᐊᒻᒪ ᑎᑎᕋᐅᔭᕐᓗᑎᒃ ᖃᓄᖅ ᐆᒪᔪᓐᓇᕋᔭᕐᒪᖔᖕᒋᓐᓂᑦ ᐊᓯᐊᓂᑦ ᐅᓪᓗᕆᐊᒥᑦ.

ᐃᓱᐊ

ᓴᖅᑭᔮᖅᑎᓪᓗᒋᑦ ᐱᓕᕆᖃᑎᒌᓴᖅᑐᑦ ᖃᐅᔨᓴᕐᓂᖕᒋᑦ ᐱᓕᕆᐊᖑᔫᓴᖅᑐᑦ ᐃᓕᓐᓂᐊᕐᕕᐊᕈᓯᐅᑉ ᐃᓗᐊᓂ, ᐃᓕᓐᓂᐊᖅᑐᑦ ᐅᖃᐅᑎᓗᒋᑦ ᑕᑯᓇᕐᑯᓗᒋᑦ ᐊᒻᒪ ᐅᖃᖅᑎᖃᕐᓗᑎᒃ ᐃᓕᓐᓂᐊᖅᑎᒥᖕᓂᑦ ᐱᓕᕆᖃᑖᖅᑐᓂᑦ.

ᐃᑲᔫᑎᒃᑲᓐᓃᑦ

- nineplanets.org
- akjeducation.com/there-s-no-place-like-space-9780679891154
- youtube.com/watch?v=w36yxLgwUOc

• • •

ᑕᑯᓗᒋᑦ ᖃᕆᓴᐅᔭᒃᑰᖓᔪᑦ ᐃᓕᓐᓂᐊᒐᒃᓴᐅᔪᒧᑦ ᐸᕐᓇᒃᑕᐅᓯᒪᔪᑦ, ᐅᕝᕙᓐᖓᕐᓗᑎᑦ pinnguaq.com/learn/understanding-our-solar-system.

ᓇᓗᓇᐃᕈᑕᓕᐅᕐᓂᖅ ᐊᒻᒪ ᐱᓕᕆᐊᖑᓂᐊᖅᑐᑦ

ᖃᕆᓴᐅᔭᓕᕆᓂᖅ ᐊᒻᒪ ᖃᕆᓴᐅᔭᐅᑉ ᐊᐅᓚᓂᕆᔭᖕᒋᑦ

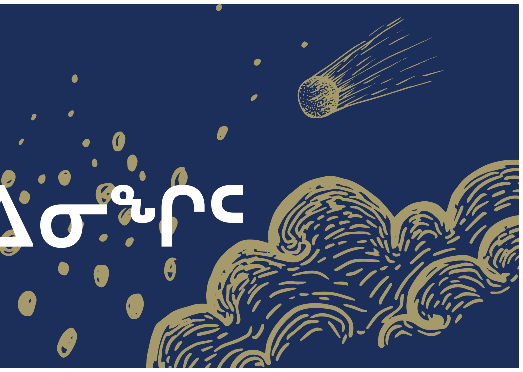
ᖃᕆᓴᐅᔭᑰᖅᑐᑦ ᐊᒻᒪ ᑲᑐᔾᔨᖃᑎᒌᑦ

ᐋᖅᑭᒃᓯᒪᓂᖕᖓ

ᑎᑎᕋᖅᓯᒪᔪᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᑯᐃᑦ

ᐃᓕᓐᓂᐊᕆᒃᓴᖅ 3

ᓄᓱᒃᓯᒪᓂᐅᔪᑦ ᐊᒻᒪ ᐊᒃᑐᐃᓂᖏᑦ



ᑎᑎᕋᖅᑎ: ᐅᔭᕋᒃ ᐊᐸᓘ

ᖁᑦᑎᖕᓂᖓᑕ ᐊᕌᖏᓐᓂᐊ:
ᐊᕌᖏᓐᓂᓕᖕᓄᑦ 7–ᒥᑦ 8–ᒧᑦ

ᐃᓕᓐᓂᐊᕐᓂᐅᑉ ᑎᑭᓐᓂᕆᓂᐊᖅᑕᖓ

- ᐃᓕᓐᓂᐊᖅᑐᑦ ᓇᓗᓇᐃᕆᐋᓐᓇᖅᓯᓂᐊᖅᐳᑦ "ᓄᓱᒃᓯᒪᓂᐅᔫᒥᑦ"
- ᐃᓕᓐᓂᐊᖅᑐᑦ ᑕᑯᒃᓴᐅᑎᑦᑎᓗᑎᒃ ᑐᑭᓯᓂᕐᒥᓂᑦ ᓄᓱᒃᓯᒪᓂᐅᔫᒥᑦ ᐊᒻᒪ ᐃᖏᕋᓂᕆᔭᙱᓂᑦ ᐱᓕᕆᐊᒃᓴᐅᔫᓂᑦ
- ᐃᓕᓐᓂᐊᖅᑐᑦ ᑐᑭᓯᓕᕐᓂᐊᖅᐳᑦ ᐃᓱᒪᒋᔭᐅᔫᓂᑦ ᓄᒃᓱᒃᓯᒪᓂᐅᔫᒥᑦ ᐊᒻᒪ ᖃᓄᖅ ᓄᓇᒥ ᐊᓂᕐᓂᕐᖃᕐᓇᖏᑦᑐᒥᒡᓗ ᐃᒃᐱᖕᓇᕐᒪᖔᑦ

ᐅᖃᐅᓰᑦ

- **ᓄᓱᒃᓯᒪᑎᑦᑎᓂᖅ**—ᐊᔾᔭᒃᓯᓯᒪᓗᓂ ᐅᕝᕙᓘᓐᓃᑦ ᓄᓱᒃᓯᒪᓗᓂ ᑭᓱᑐᐃᓐᓇᕐᓂ
- **ᓄᓱᒃᑕᐅᓯᒪᓃᑦ**—ᑖᓐᓇ ᓄᓱᒃᓯᒪᑎᑦᑎᔪᖅ ᑎᒥᒥᑦ ᓄᓇᕐᔪᐊᕐ ᕿᑎᐊᓄᑦ, ᐅᕝᕙᓘᓐᓃᑦ ᐊᓯᐊᒍᑦ ᑎᒥᒥᑦ ᐅᕿᖕᖏᓐᓂᐅᔪᓂᑦ
- **Inertia–ᖑᔪᖅ**—ᖃᓄᐃᓕᐅᖏᓪᓗᓂ ᐅᕝᕙᓘᓐᓃᑦ ᓱᕐᑯᓯᖏᓪᓗᓂ
- **Friction–ᖑᔪᖅ**—ᐊᒃᑑᑎᔪᑦ ᐅᕝᕙᓘᓐᓃᑦ ᑖᒃᑯᐊᒃ ᐊᐅᓚᔾᔭᐃᓗᑎᒃ ᐊᓯᒥᙵᒃ

ᑕᕝᕙᓂ ᐃᓕᓐᓂᐊᕆᒃᓴᒥᑦ, ᐃᓕᓐᓂᐊᖅᑐᑦ ᕿᒥᕐᕈᓐᖏᓐᓂᐊᖅᑐᑦ ᐃᓱᒪᒋᔭᐅᔪᓂᑦ ᖃᓄᐃᑦᑑᖕᒪᖔᑕ ᓄᓱᒃᓯᒪᓂᖅ ᐊᒻᒪ ᖃᓄᖅ ᐊᒃᑐᐃᓂᖅᑲᖕᖀᑦ ᐃᓅᓯᑎᓐᓂᑦ. ᑖᓐᓇ ᓄᓱᒃᓯᒪᑎᑦᑎᔪᖅ ᐊᑐᕐᓂᖅᑲᒪᑦ ᐃᓅᓯᑎᓐᓂᑦ. ᑕᕝᕙᓂ ᐃᓕᓐᓂᐊᕆᒃᓴᖏᑦ, ᐃᓕᓐᓂᐊᖅᑐᑦ ᐃᓱᒪᒃᓴᖅᓯᐅᖅᑎᑕᐅᓂᐊᖅᐳᑦ ᐊᓯᖏᓐᓂᑦ ᓄᓱᒃᓯᒪᑎᑦᑎᔪᓂᑦ ᐋᖅᑭᒃᓯᒪᓂᖏᑦ ᐃᓅᓯᖏᓐᓂᑦ.

ᑭᓲᕙ ᓄᓱᒃᓯᓯᒪᓂᐅᔪᖅ?

ᐃᑲᔪᕈᑏᑦ ᐊᐱᖅᑯᑎᑦ: ᑭᓲᕙ ᓄᓱᒃᓯᓯᒪᓂᖅ? ᖃᓄᖅ ᓄᓱᒃᓯᒪᓃᑦ ᐊᐅᓚᓂᖅᑳᕐᐸᑦ ᐃᓄᖕᓄᑦ ᓄᓇᕐᔪᐊᒥᑦ ᐊᒻᒪ ᓯᓚᐃᓐᓇᕐᒥᑦ?

ᑕᒪᓐᓇ ᓄᓱᒃᓯᒪᓂᐅᔪᖅ ᐊᐅᓚᓂᖅᑲᐃᓐᓇᐅᔭᖅᐳᖅ ᐊᒻᒪ ᐊᒃᑐᐃᓂᖅᑳᕆᓗᓂ ᐃᓅᓯᑦᑎᓐᓂᑦ. ᓄᓱᒃᓯᒪᑎᑦᑎᓂᖅ ᐊᒻᒪ ᐊᐅᓚᓂᖅ ᐱᓕᕆᓂᕆᔭᑦᑎᓐᓂᑦ ᐃᓚᐅᖕᖏᓐᓇᐅᔭᖅᐳᑦ. ᖃᓄᖅ ᖃᐅᔨᒪᕕᑕ ᑕᒪᓐᓇ ᓄᓱᒃᓯᒪᓂᐅᔪᖅ ᐊᑐᓕᕋᖕᒐᑦ ᐅᕙᑦᑎᓐᓄᑦ ᐊᒻᒪ ᑭᓱᑐᐃᓐᓇᕐᓄᑦ? ᐃᒪᓐᓇᐅᓂᐊᕋᓱᒋᔪᓐᓇᖅᐱᑕ ᖃᓄᖅ ᑕᒪᓐᓇ ᒪᓕᒐᖓ ᐊᐅᓚᓂᐅᔫᑉ ᑭᓱᑐᐃᓐᓇᕐᓄᑦ?

ᑖᓐᓇ Newton ᒪᓕᒐᖓ

ᐱᖓᓱᓂᑦ ᒪᓕᒐᖅᑕᖅᐳᖅ ᐊᐅᓚᓂᐅᔫᒥᑦ ᖃᐅᔨᔭᐅᔪᖅ ᑖᓯᓱᒧᖓ Newton–ᒧᑦ:

ᒪᓕᒐᖅ 1: ᑭᓱᑐᐃᓐᓇᖅ ᐊᔭᐅᖅᑕᐅᖕᖏᑦᑐᖅ ᐊᒻᒪ ᓄᓱᒃᑕᐅᖕᖏᑦᑐᖅ ᑖᓯᓱᒧᖓ ᓄᓯᑦᓯᓯᒪᔪᒧᑦ ᓄᖅᑲᖓᑦᑎᐊᖅᐸᒃᐳᖅ ᐅᕝᕙᓘᓐᓃᑦ ᐊᐅᓚᐃᓐᓇᖅᓗᓂ ᑐᑭᓕᐊᖅᑐᒥᑦ ᐊᑕᐅᓰᓐᓇᕐᒥᑦ ᐊᐅᓚᓂᖅᑲᖅᓗᓂ. ᑖᓐᓇ Inertia–ᖑᔪᖅ ᐊᐅᓚᑎᑦᑎᒍᖅ ᐊᓯᔾᔨᖅᑎᑦᑕᐃᓕᒪᓪᓗᓂ ᐊᐅᓚᓂᕆᔭᖕᒐᓂᑦ. ᑎᒥᐅᑉ ᐊᐅᓚᓂᕆᔭᖕᒐ ᐊᐅᓚᐃᓐᓇᐅᔭᖅᐳᖅ.

ᒪᓕᒐᖅ 2: ᓄᓱᒃᓯᒪᑎᑦᑎᔪᖅ ᐊᐅᓚᑎᑦᑎᕙᒃᐳᖅ. ᐊᖏᓂᖅᓴᐅᒃᐸᑦ ᓄᓱᒃᓯᒪᑎᑦᑎᔪᖅ ᐊᒻᒪ ᐅᕿᓐᓂᖅᓴᐅᒐᖅ ᑖᓐᓇ ᑭᓱᑐᐃᓐᓇᖅ, ᐊᐅᓚᓂᖅᓴᐅᒐᕐᓗ.

ᒪᓕᒐᖅ 3: ᑕᒪᓐᓇ ᐊᑐᕐᓂᐅᔪᖅ ᓇᓕᒨᑎᓂᖅᑲᖅᐳᖅ ᐊᒻᒪ ᐃᑯᓪᓗᖕᒎᖓᒍᑦ ᐊᐅᓚᓇᔭᖅᐳᖅ.

ᑕᐅᑐᒡᒎᑎᒃ ᐅᑯᓂᖓ ᐱᓕᕆᐊᒃᓴᓂᑦ: **pbslearningmedia.org/resource/idptv11.sci.phys.maf.d4kfom/force-and-motion**

ᓄᓱᒃᓯᓯᒪᓂᖅ ᓄᓇᕐᔪᐊᕐᒥᑦ ᐊᒻᒪᓗ ᓯᓚᐃᓐᓇᕐᒥᑦ

ᑐᑭᓯᓇᓱᒃᓗᒍ ᑕᒪᓐᓇ ᓄᓱᒃᓯᓯᒪᓂᖅ, ᐊᐱᕆᒃᑭᑦ ᐃᓕᓐᓂᐊᖅᑐᑦ ᐃᑲᔫᑎᒃᓴᒥᑦ ᐊᐱᖅᑯᑎᓂᑦ:

- ᑭᓲᕙ ᓄᓱᒃᓯᓯᒪᓂᖅ?
- ᓇᓃᑉᐸ ᓄᓱᒃᓯᓯᒪᔪᖅ?
- ᖃᓄᐃᓕᐅᖅᐸᒃᐸ ᑖᓐᓇ ᓄᓱᒃᓯᓯᒪᔪᖅ?

ᐅᖃᖃᑎᒋᐊᓂᒃᐸᑕ ᐊᑐᕐᓗᒋᑦ ᐊᐱᖅᑯᑏᑦ ᐃᓕᓐᓂᐊᖅᑐᑦ ᑐᑭᓯᔮᕐᒥᓂᐊᖅᐳᑦ ᑭᓲᖕᒪᖔᑦ ᓄᓱᒃᓯᓯᒪᔪᖅ. ᑖᓐᓇ ᓄᓱᒃᓯᓯᒪᓂᐅᔪᖅ ᐊᓯᔾᔨᕙ ᓇᓃᓐᓂᕐᓂ ᓯᓚᐃᓐᓇᕐᒥ? ᓄᓇᕐᔪᐊᒥᑦ, ᐊᐅᓚᓂᖅᑲᖅᐳᖅ ᐊᑐᕐᓂᓇᔮ, ᐊᓯᔾᔨᕋᔭᖅᐸ ᑕᒪᓐᓇ ᓯᓚᐃᓐᓇᕐᒦᓪᓗᓂ? ᐊᐱᓇᓗᒋᑦ ᐃᓕᓐᓂᐊᖅᑐᑦ

ᐃᓱᒪᒃᓴᖅᓱᐃᕈᑎᒃᓴᙱᓐᓂᑦ ᐊᐱᖅᓲᑎᓂᑦ: ᓄᓱᒃᓯᓯᒪᓂᑫᖅᐸ ᓯᓚᐃᓐᓇᕐᒦᑦ? ᐊᒻᒪ ᑕᕐᕆᔭᓕᕐᓗᑎᒃ ᑕᕐᕆᔫᒃᓴᒥᑦ.

ᑕᕐᕆᔫᒃᓴᖅ ᐱᓕᕆᐊᒃᓴᐅᔪᖅ: youtube.com/watch?v=qnzquEOMLGU

ᐱᓕᕆᐊᒃᓴᖅ

ᐃᓕᓐᓂᐊᖅᑐᑦ ᐱᓕᕆᑎᓪᓗᒋᑦ ᖃᐅᔨᓇᓱᙱᓂᕐᒥᑦ ᑲᑕᒃᑐᓂᑦ ᓇᑎᕐᒧᑦ. ᑖᒃᑯᓂ ᐱᓕᕆᐊᒃᓴᒥᑦ, ᐃᓕᓐᓂᐊᖅᑏᑦ ᑳᖏᓱᙱᓐᖏᑦ ᖃᓄᖅ ᓇᑎᕐᒧᑦ ᑐᓐᓂᐊᕐᒪᙵᑦ ᐅᕐᑭᙱᓐᓂᐊ ᐊᒻᒪ ᐊᖏᓂᐊ ᐊᑐᕐᓗᒍ. ᑕᐅᑐᒃᑎᓪᓗᒋᑦ ᐊᔾᔩᙱᑦᑐᓂᑦ ᐊᑐᖅᑎᓪᓗᒋᑦ, ᐃᓕᓐᓂᐊᖅᑏᑦ ᑕᑯᓂᐊᖅᐸᑦ ᓇᑎᕐᒧᑦ ᑲᑕᒃᑐᓂᑦ ᐊᖏᓂᖏᑦ ᐊᒻᒪ ᐅᕐᑭᙱᓐᓂᖏᑦ ᐊᑐᕐᓗᒋᑦ ᖃᓄᖅ ᓄᓱᒃᓯᒪᓂᐅᔪᖅ ᐊᑐᕐᓂᖃᕐᒪᙵᑦ.

ᒥᓐᓂᖅ ᓯᓚᐃᓐᓇᕐᒧᑦ ᖃᙳᑕᕙᒃᑐᓂᑦ
ᐊᑐᓇᓖᑦ

- 3m−ᒥᑦ ᑕᕿᓂᓕᒃ ᕿᓚᕈᑎ (ᓲᕐᓗ., ᐊᐅᓚᓴᐅᑎᐅᑉ ᕿᓚᕈᑖ, ᖃᖓᑕᑎᑕᐅᕙᒃᑐᑦ ᕿᓚᕈᑎᐊᓂᑦ, ᐅᕝᕙᓘᓐᓃᑦ ᑭᒍᑎᓄᑦ ᑯᒃᑭᖑᔩᕈᑎ)
- ᐊᑕᐅᓯᖅ ᑎᑎᕋᕿᒃᓴᕋᖅ
- ᐊᔾᔨᒌᖏᑦᑐᑦ ᐊᖅᓴᐃᑦ ᐅᕝᕙᓘᓐᓃᑦ ᑭᓱᑐᐃᓐᓇᑦ) ᓲᕐᓗ, ᐱᓐᖑᐊᖅᑎᓄᑦ ᐊᖅᓴᖅ, ᒥᑭᑦᑐᑦ ᑎᓯᔪᑦ ᐊᒪᓗᖅᑐᑦ, ᕿᐊᕋᐅᑎ ᐊᖅᓴᖅ)
- ᐊᑕᐅᓯᖅ ᐸᐃᑉᐹᓄᑦ ᑲᑎᑎᔾᔪᑎ
- ᐊᑕᐅᓯᖅ ᓈᒻᒪᒃᑐᖅ ᐸᐃᑉᐹᖅ ᐃᒥᐅᑎ
- ᐱᒋᐊᖅᑕᐅᓂᐊᖅᑐᖅ ᐸᐃᑉᐹᖅ ᐅᕝᕙᓘᓐᓃᑦ ᐅᓅᖅᑑᓕᖅᓯᒪᔪᖅ PDF−ᖑᔪᖅ ᖃᕆᓴᐅᔭᒃᑯᑦ
- ᓂᐱᐅᑎ
- ᑭᔾᔭᐅᑎ

** ᐃᓱᓖᓗᕆᓪᓗᑎᑦ ᐊᑐᓇᓖᑦ ᐱᑕᖃᐅᕆᐸᑕ. ᐃᓱᒪᒃᓴᖅᓯᐅᖅᓯᒪᓗᑎᑦ ᐊᒻᒪ ᐊᑐᕈᓐᓇᕋᔭᖅᑐᓂᑦ ᐱᑕᓕᕐᓂᕋ! ᐋᖅᑭᒃᓯᒪᕗᖅ ᑲᔪᓯᓗᓂ.*

ᐊᑐᓇᐊᓕᒃ 1: ᐸᕐᓇᒡᓗᒋᑦ
ᕿᓚᕈᑏᑦ ᑭᐆᕐᓄᒃ ᒪᕐᕉᕐᓄᒃ ᐃᓕᓗᒍ. ᐸᐃᑉᐹᒥᑦ ᓇᑎᕐᒧᑦ ᐃᓕᓯᓗᑎᑦ ᕿᓚᕈᑎᐅᑉ ᐊᑖᓄᑦ.

ᐊᑐᓇᐊᓕᒃ 2: ᐅᕐᑲᐅᓯᕐᑲᕐᓂᖅ ᐃᓱᒪᒋᔭᐅᔪᓂᑦ
ᐃᓕᓐᓂᐊᖅᑏᑦ ᓂᕈᐊᖅᑎᓪᓗᒋᑦ ᓇᓕᐊᙱᑦ ᐊᑐᕈᒪᔭᒥᙱᑦ, ᐃᓚᖏᑦ ᓂᕈᐊᕋᔭᖅᐳᑦ ᑎᓯᔪᒥᑦ ᒥᑭᑦᑐᒥᑦ ᐊᖅᓴᕐᒥᑦ, ᐃᓚᖏᑦ ᐱᓐᖑᐊᖅᑐᓄᑦ ᐊᑐᖅᑕᐅᕙᒃᑐᖅ ᐊᖅᓴᖅ, ᐊᒻᒪ ᑭᓱᑐᐃᓐᓇᕐᓂᑦ. ᐊᐱᕆᓗᒋᑦ ᐃᓕᓐᓂᐊᖅᑐᑦ ᐃᓱᒪᒋᔭᕆᓐᓂᑦ ᑖᒃᑯᐊ ᓂᕈᐊᖅᑕᑎᒃ ᖃᓄᖅ ᑲᑕᙱᓂᐊᕐᒪᙵᑕ. ᐃᓕᓐᓂᐊᖅᑏᑦ ᓇᓗᓇᐃᕈᓐᓇᕋᔭᖅᐳᑦ ᐊᑐᕐᓂᐅᓂᐊᖅᑐᒥᑦ:

- ᖃᓄᖅ ᑲᑕᐃᓂᐊᖅᐸᑦ ᓇᑎᕐᒧᑦ?
- ᖃᓄᐃᓐᓂᐊᕐᓂᙶ ᓇᑎᕐᒧᑦ ᑐᐸᑦ?
- ᑖᓐᓇ ᑲᑕᐃᔭᙶ ᐸᐃᑉᐹᕐᒧᐊᕐᓂᐊᖅᐸ ᐃᓗᐊᓄᑦ?
- ᖃᓄᖅ ᖃᙳᑦᑕᕈᑏᑦ ᓴᒃᑯᓐᓂᐊᖅᐱᐅᒃ ᑖᓐᓇ ᑎᓯᔪᖅ ᒥᑭᑦᑐᖅ ᐊᖅᓴᖅ ᐸᐃᑉᐹᑉ ᐃᓗᐊᓅᕋᓱᒡᓗᒍ?

ᐃᓱᒪᒋᓗᒍ ᑲᑕᐃᔾᔪᑎᒥᑦ ᐊᑐᕐᓗᓂ ᑲᑕᐃᓗᒍ ᐅᕝᕙᓘᓐᓃᑦ ᑎᒍᒥᐊᕐᓗᒍ ᑲᑕᐃᓗᒍ

ᐊᑐᓇᐊᓕᒃ 3: ᓴᓇᓗᒍ
ᐅᕐᑲᕐᑲᑎᐅᓂᐅᖅᑲᐅᔪᖅ ᐊᑐᕐᓗᒍ, ᐃᓕᓐᓂᐊᖅᑐᑦ ᓴᓇᓕᕐᓗᑎᒃ ᖃᖓᑦᑕᖅᑎᓐᓂᐊᖅᑕᒥᓂᒃ.

ᐊᑐᓇᐊᓕᒃ 4: ᖃᐅᔨᒋᐊᕐᓗᒍ ᐊᒻᒪ ᖃᐅᔨᓴᕐᓗᒍ
ᐱᒋᐊᕈᒃ! ᑖᒃᑯᐊ ᐃᓕᓐᓂᐊᖅᑏᑦ ᐊᑐᖅᑎᓪᓗᒋᑦ ᖃᐅᔨᓴᕐᓂᕆᔭᕆᓐᓂᑦ. ᓂᕿᑦᑖᕐᓗᑎᒃ ᐊᑐᕐᓗᑎᒃ ᑲᑕᐃᔭᒥᙱᑦ, ᐅᕐᑲᐅᑎᓗᒋᑦ ᐃᓕᓐᓂᐊᖅᑐᑦ ᑕᐅᑐᕐᑯᓗᒋᑦ ᐃᓕᓐᓂᐊᕐᑲᑎᐊᑕ ᑲᑕᐃᔭᙵᓂᑦ. ᑕᐅᑐᒡᓗᒍ ᖃᓄᖅ ᑲᑕᙱᖕᖏᑦ, ᐃᓕᓐᓂᐊᖅᑐᑦ ᐊᐱᕆᓗᒋᑦ: ᖃᙳᑕᓲᓕᐅᖅᑕᙵᑦ ᖃᓅᖅᑲᐅᙱᖕᖏᑦ? ᐃᓱᒪᕆᔮᖅᑕᐃᑦ ᐊᑐᔮᖅᐸ? ᐊᓯᐊᒍᑦ ᑲᑕᐃᒍᓂ ᐊᔩᓐᖏᕆᓖᖅ ᑎᑭᐅᑎᑦᑎᐊᖅᓘᓂ ᐊᒻᒪ ᖃᓄᐃᒻᒪᑦ ᑕᐃᒪᓐᓇᐅᙱᖕᖏᑦ?

ᐊᑐᓇᐊᓕᒃ 5: ᐋᖅᑭᒃᓱᒃᑲᓂᕐᓗᒍ
ᑖᒃᑯᐊ ᐃᓕᓐᓂᐊᖅᑐᑦ ᑕᑯᔮᕐᒪᑕ ᐊᑐᕐᓂᓇᓂᐊᔮᖅᑕᒥᙱᑦ ᐅᕝᕙᓘᓐᓃᑦ ᐊᑐᙱᓐᓂᐅᔮᖅᑐᓂᑦ ᐊᒻᒪ ᐃᓕᓐᓂᐊᕐᑲᑎᖏᑕ ᐋᖅᑭᒃᓯᓂᐊᓂᑦ ᐊᔪᙱᓐᓂᐅᕋᑖᖅᑐᓂᑦ. ᑕᐅᑐᔮᖅᑕᙱᑦ ᐊᑐᕐᓗᒋᑦ, ᓴᓇᒃᑲᓐᓂᓕᕐᓗᑎᒃ ᖃᙳᑦᑕᖅᑎᓐᓂᐊᖅᑕᙱᓐᓂᑦ ᑕᐅᑐᔮᖅᑕᙱᑦ ᐊᑐᕐᓗᒋᑦ.

ᐃᓕᓐᓂᐊᖅᑐᑦ ᐱᐊᓂᒃᐸᑕ ᐱᓕᕆᐊᒃᓴᒥᙱᑦ, ᐅᕐᑲᐅᑎᒃᑭᑦ ᓇᓗᓇᐃᕐᑯᓗᒋᑦ ᖃᐅᔨᓇᓱᙱᓇᖅᑲᐅᔭᙱᓐᓂᑦ ᐅᕐᑲᐅᓰᑦ ᐊᑐᕐᓗᒋᑦ ᐃᓕᓐᓂᐊᒐᒃᓴᐅᔪᕐᒦᑦᑐᑦ. ᐅᕐᑲᐅᑎᓗᒋᑦ ᓇᓗᓇᐃᕐᑯᓗᒋᑦ ᓄᓱᒃᓯᒪᓂᐅᔪᓂᑦ ᐊᑐᖅᓘᑎᒃ ᐊᖏᓂᖏᑦ ᐊᔾᔩᙱᑦᑐᑦ ᐊᒻᒪ ᐅᕐᑭᙱᓐᓂᖏᑦ ᐊᔾᔩᙱᑦᑐᑦ ᐊᒻᒪ ᓇᓕᐊᒃ ᐊᑐᑎᐊᙴᕐᒪᙵᑦ ᖃᐅᔨᓇᓱᒃᑎᓪᓗᒋᑦ.

ᐃᓕᓐᓂᐊᖅᑕᐅᔫᑉ ᐃᓱᐊ

ᐃᓱᓕᓪᓗᒍ ᑖᓐᓇ ᐃᓕᓐᓂᐊᒐᒃᓴᖅ, ᐃᓕᓐᓂᐊᖅᑐᑦ ᑲᑎᓪᓗᑎᒃ ᐅᕐᑲᕐᑲᑎᕆᒡᓗᑎᒃ ᓄᓱᒃᓯᒪᓂᐅᔪᒥᑦ ᖃᐅᑕᓖᑦ ᐊᑐᖅᑕᕆᓐᓂᑦ. ᐃᓕᓐᓂᐊᖅᑐᑦ ᖃᐅᑕᓖᖅᓯᐅᑎᕆᓐᓄᑦ ᑎᑎᕋᓪᓗᑎᒃ ᐆᒃᑑᑎᐅᔪᓂᑦ ᓄᓱᒃᓯᒪᓂᐅᔪᒥᑦ ᐊᒻᒪ ᐊᐅᓚᓂᐅᔪᓂᑦ ᖃᐅᑕᓖᑦ ᑕᑯᕙᒃᑕᑎᓐᓂᑦ. ᖃᓄᖅ ᐅᕙᑎᓐᓂᑦ ᐊᐅᓚᑎᙱᖕᖓᑕ ᐊᒻᒪ ᖃᓄᐃᓐᓂᑯᒧᑦ? ᑎᑎᕋᖅᑎᓪᓗᒋᑦ, ᐊᐱᕆᓗᒋᑦ ᐱᙳᓱᓂᑦ ᑕᑦᑕᒪᓂᓪᓘᓐᓃᑦ ᓄᓱᒃᓯᒪᓂᐅᔪᓂᑦ ᐊᒻᒪ ᐊᐅᓚᓂᐅᔪᓂᑦ ᐅᕐᑲᐅᓰᑦ ᐊᑐᕐᓗᒋᑦ.

ᐃᑲᔫᑎᒃᓴᒃᑲᓐᓃᑦ

- *“ᓄᓱᒃᓯᓯᒪᓂᕐᒧᑦ ᑲᑎᖅᓱᖅᑕᐅᓯᒪᔪᑦ: ᑕᐃᔭᐅᔪᖅ* Crash Course Kids*−ᒥᑦ” ᐊᐱᖅᑯᑕᐅᕙᒃᑐᑦ ᓄᓱᒃᓯᓯᒪᓂᐅᑉ ᒥᒃᓵᓄᑦ, ᐃᓚᖃᕆᓪᓗᓂ ᐆᒥᖓ* "does gravity really pull you down*−ᒥᑦ?" ᐊᒻᒪ* "how does gravity work in space*−ᒥᑦ?" ᑕᕐᕆᔫᒃᓴᖅ ᓇᓂᔭᐅᔪᓐᓇᖅᐳᖅ ᐅᕙᓂ:* youtube.com/watch?v=EwY6p-r_hyU

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ᑕᑯᓗᒋᑦ ᖃᕆᓴᐅᔭᒃᑰᖓᔪᑦ ᐃᓕᓐᓂᐊᒐᒃᓴᐅᔪᒧᑦ ᐸᕐᓇᒃᑕᐅᓯᒪᔪᑦ, ᐅᕙᓐᖓᕐᓗᑎᑦ pinnguaq.com/learn/gravitational-forces-and-their-impact.

ᓇᓗᓇᐃᕈᑕᓕᐅᕐᓂᖅ ᐊᒻᒪ ᐱᓕᕆᐊᖑᓂᐊᖅᑐᑦ

ᖃᕆᓴᐅᔭᓕᕆᓂᖅ ᐊᒻᒪ ᖃᕆᓴᐅᔭᐅᑉ ᐊᐅᓚᓂᕆᔭᖏᑦ

ᖃᕆᓴᐅᔭᑰᖅᑐᑦ ᐊᒻᒪ ᑲᑐᔾᔨᖃᑎᒌᑦ

ᐋᖅᑭᒃᓯᒪᓂᖓ

ᑎᑎᕋᖅᓯᒪᔪᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᑯᐃᑦ

ᐃᓕᓐᓂᐊᓚᒃᓴᖅ 4

ᐅᑦᑐᕆᐊᑦ ᐋᖅᑭᒃᓯᒪᓂᖏᑦ ᐊᒻᒪ ᐅᑦᑐᕆᐊᓂᑦ ᖃᐅᔨᒪᓂᐅᔪᓂᑦ

ᑎᑎᕋᖅᑎ: ᐅᔭᕋᒃ ᐊᐸᖀ

ᖁᑦᑎᓂᖓᓂᖕᒪᑕ ᐊᔪᖏᓐᓂᐊ:
ᐊᔪᖏᓐᓂᓕᖕᓄᑦ 9–ᒥᑦ 12–ᒧᑦ

ᐃᓕᓐᓂᐊᕐᓂᐅᑉ ᑎᑭᓐᓂᕆᓂᐊᖅᑕᖓ

- ᐃᓕᓐᓂᐊᖅᑏᑦ ᐃᓕᑦᑎᓂᐊᖅᐳᑦ ᐅᑦᑐᕆᐊᑦ ᐃᓂᒋᔭᖏᓐᓂᑦ
- ᐃᓕᓐᓂᐊᖅᑏᑦ ᐃᓕᑦᑎᓂᐊᖅᐳᑦ ᖃᓄᖅ ᐊᖕᓱᕈᖏᑦᑐᓂᑦ ᐱᖅᑯᓯᓖᑦ ᐅᓂᒃᑳᖃᕐᒪᖔᑕ ᐅᑦᑐᕆᐊᓂᑦ
- ᐃᓕᓐᓂᐊᖅᑏᑦ ᐃᓕᑦᑎᓂᐊᖅᑐᑦ ᐃᓚᓭᓯᓂᖃᓛᑐᑎᒃ ᖃᐅᔨᒪᔭᐅᔪᓂᑦ ᐅᑦᑐᕆᐊᑦ ᐃᓂᒋᔭᖏᓐᓂᑦ
- ᐃᓕᓐᓂᐊᖅᑏᑦ ᐃᓕᑦᑎᓂᐊᖅᐳᑦ ᕿᓂᕐᓂᕐᒥᑦ ᐅᑦᑐᕆᐊᑦ ᐃᓂᒋᔭᖏᓐᓂᑦ ᐅᓐᓄᒃᑯᑦ ᕿᓚᖕᒥᑦ

ᐅᖃᐅᓰᑦ

- **Constellation–ᖑᔪᖅ—** ᑲᑎᖅᓱᖅᓯᒪᔪᑦ ᐅᑦᑐᕆᐊᑦ ᐃᓄᐃᑦ ᑕᑯᓐᓇᖅᑕᖏᑦ ᐋᖅᑭᒃᓯᒪᓂᕆᔭᖏᑦ.

ᐃᓕᓐᓂᐊᖅᑏᑦ ᓯᓚᒧᑦ ᑕᑯᓪᓗᑎᒃ ᐊᒻᒪ ᐅᑦᑐᕆᐊᓂᑦ ᓇᓂᓯᓪᓗᑎᒃ ᐅᑦᑐᕆᐊᓄᑦ ᐃᓂᒋᔭᐅᔪᓂᑦ. ᐃᓕᓐᓂᐊᖅᑏᑦ ᐃᓕᓐᓂᐊᕐᓂᐊᖅᐳᑦ ᐅᑦᑐᕆᐊᑦ ᐃᓂᖏᓐᓂᑦ ᐊᒻᒪ ᓇᓗᓇᐃᕆᓪᓗᑎᒃ ᐱᔾᔪᑎᖏᓐᓂᑦ ᓯᓚᐃᓐᓇᕐᒦᑦᑐᓂᑦ ᐱᖅᑯᓰᑦ ᐊᒻᒪ ᐅᒃᐱᕆᔭᐅᔪᑦ ᓂᕈᐊᖅᑕᐅᔪᓂᑦ ᐱᖅᑯᓯᐅᔪᒥᑦ ᐊᒻᒪ ᓄᓇᓕᐅᔪᓄᑦ.

ᓇᓗᓇᐃᕆᓂᖅ ᐅᑦᑐᕆᐊᑦ ᐃᓂᖏᓐᓂᑦ

ᑭᓱᕙ ᐅᑦᑐᕆᐊᑦ ᐃᓂᖏᑦ? ᑖᓐᓇ ᐅᑦᑐᕆᐊᑦ ᐃᓂᖏᑦ ᐃᓚᓭᓇᖅᓯᔪᓐᓇᖅᑐᑦ ᐋᖅᑭᒃᓯᒪᓂᖏᓐᓂᑦ ᐅᑦᑐᕆᐊᑦ ᐃᑲᔫᑎᔪᓐᓇᖅᑐᑦ ᐃᓄᖕᓄᑦ ᕿᒥᕈᓗᑎᒃ ᓇᖕᒥᓂᖅ ᑕᐅᑐᖕᓂᒃᑯᑦ ᐅᓐᓄᒃᑯᑦ ᕿᓚᖕᒧᑦ.

ᑖᒃᑯᐊ ᐅᑦᑐᕆᐊᑦ ᐃᓂᖏᓐᓂᑦ ᖃᓂᒌᒃᐸᑦ? ᑖᒃᑯᐊ ᐅᑦᑐᕆᐊᑦ ᖃᓂᒌᒃᑑᑎᐅᓐᖏᓚᑦ ᑭᓯᐊᓂ ᓲᖃᐃᒻᒪ ᐅᖓᓯᖕᓂᖕᒐ ᐅᑦᑐᕆᐊᑦ ᓄᓇᕐᔪᐊᕐᒧᑦ, ᓴᖅᑮᔭᕐᓂᖏᑦ ᖃᓂᒌᖅᑑᕗᔪᑦ ᑭᓯᐊᓂ.

ᐅᑦᑐᕆᐊᑦ ᐃᓂᖏᑦ ᐱᖅᑯᓯᐅᔪᓂᑦ

ᑖᒃᑯᐊ ᐅᔾᑐᕆᐊᑦ ᐃᓂᒋᔭᖏᑦ ᐅᓂᒃᑳᖅᑕᖅᑲᐅᖅᐳᖅ ᐊᒻᒪ ᐅᖃᓪᓚᒃᑕᐅᓯᒪᓃᑦ ᐊᔾᔨᖏᑦᑐᓄᑦ ᐱᖅᑯᓯᓕᖕᓄᑦ. ᑕᐃᑲᓐᖓᑦ ᐃᒻᒪᓂᓴᕐᒥᑦ Greek–ᖑᔪᑦ ᐊᒻᒪ Roman–ᖑᔪᑦ ᐱᖅᑯᓯᖏᓐᓂᑦ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᐱᖅᑯᓯᖏᓐᓄᑦ, ᓲᕐᓗ ᒪᐃᔭᒥᑦ, ᑏᑯᑕᒥᑦ, ᐃᓄᖕᓂᑦ, ᐊᒻᒪ ᐅᓇᓕᖕᓂᑦ.

ᐃᓄᐃᑦ ᐊᑐᖅᑲᑦᑕᖅᓯᒪᕗᑦ ᐅᓐᓄᒃᑯᑦ ᕿᓚᖕᒥᑦ ᖃᐅᔾᔪᑎᒋᓪᓗᓂᔾᔪᒃ ᐅᑭᐅᑰᖑᔪᒥᑦ ᑕᐅᓴᓐ ᐊᕐᕌᒍ ᐊᑐᖅᓯᒪᓕᖅᑐᑦ. ᐅᓄᖅᑐᑦ ᐱᖅᑯᓯᓕᐅᔪᑦ ᐊᑐᖅᓯᒪᕗᑦ ᓅᓯᐃᑦᑐᖅ ᐊᑐᖅᑐᒍ ᐅᓐᑐᕆᐊᖅ, ᐃᓚᒋᔭᖓ ᐅᑦᑐᕆᐊᑦ ᐃᓂᖏᑦ ᑖᓐᓇ Ursa Minor–ᓂᕋᖅᑕᐅᔪᖅ, ᖃᐅᔨᒪᔾᔪᑕᐅᑦᑐᓂ ᐅᖓᓯᖕᓂᕆᔭᖓ ᐊᑐᖅᑐᒍ ᐅᑭᐅᖅᑕᖅᑐᒥᑦ, ᐅᓄᖅᑐᑦ ᐃᓄᐃᑦ ᐊᑐᖅᐸᒃᐳᑦ ᐅᑦᑐᕆᐊᑦ ᐃᓂᖏᓐᓂᑦ ᑖᓯᒪ Ursa Major–ᔪᖅ (ᑐᒃᑐᔪᒃ), ᖃᐅᔨᒪᔭᐅᔪᖅ ᐃᓄᖕᓄᑦ ᑐᒃᑐᔪᐃᑦ ᖃᐅᔨᒪᓕᖅᑎᑕᐅᒃᑲᓂᒃᓂᐅᔪᖅ ᐊᒻᒪ ᖃᐅᔨᒪᔾᔪᑕᐅᑦᑐᓂ. ᑐᒃᑐᔪᐃᑦ ᑐᕿᖓ "ᑐᒃᑐ", 7–ᓂᑦ ᐅᑦᑐᕆᐊᖃᖅᐳᖅ ᐃᓂᖃᖅᑐᑦ ᐊᔾᔨᐸᑐᕆᕚ ᐅᓄᕐᓂᖏᑦ ᑐᒃᑑᑉ.

ᐅᖃᓪᓚᒫᕐᓂᒃᑯᑦ ᐱᓕᕆᐊᒃᓴᖅ

ᐃᓕᓐᓂᐊᖅᑏᑦ ᐅᖃᓪᓚᒫᖅᑎᑦᑐᒋᑦ ᕿᒥᕈᐊᒥᑦ ᒪᒃᐱᒐᖕᒐᓂᑦ ᐃᓅᓂᐅ ᐊᑲᑯᓰᒃ-ᒥᑦ, The Cree Stars–ᖑᔪᖅ ᑎᑎᕋᖅᑕᐅᔪᖅ ᑖᓯᒧᖕᒐ ᕗᐃᑦᕗᑦ ᐸᒃᒧᑦ.

ᖃᐅᔨᓴᕐᓂᒃᑯᑦ ᐱᓕᕆᔭᒃᓴᖏᑦ

ᐃᓕᓐᓂᐊᖅᑏᑦ ᖃᐅᔨᓴᕐᓂᖅᑲᕐᓂᐊᖅᑐᑦ ᐅᑦᑐᕆᐊᑦ ᐃᓂᒋᔭᖏᓐᓂᑦ. ᐃᓕᓐᓂᐊᕐᑯᔭᐅᕙᑦ ᐅᑦᑐᕆᐊᑦ ᐃᓂᒋᔭᖏᓐᓂᑦ. ᐊᑎᕆᔭᖏᓐᓂᑦ ᐊᒻᒪ ᓇᓃᓐᓂᖏᓐᓂᑦ, ᐊᒻᒪ ᐱᖅᑯᓰᑦ ᐊᑐᕐᓗᒋᑦ ᐅᓂᒃᑳᕆᔭᐅᓂᖏᑦ.

ᖃᐅᔨᓴᕐᓂᕐᒧᑦ ᐊᐱᖅᓲᑏᑦ:

1. ᓇᓂᑐᒍ ᐅᑦᑐᕆᐊᑦ ᐃᓂᖓ. ᑭᓱᕙ ᑕᐃᔫᓯᐊ? ᐊᑎᖅᑳᒃᑲᓐᓂᖅᐸ ᐊᓯᐊ ᐱᖅᑯᓯᖅ ᐊᑐᕐᒍᒍ? ᓇᓃᑉᐸ?
2. ᑭᓱᕙᑦ ᐃᓚᖏᑦ ᐅᑦᑐᕆᐊᑦ ᐅᕙᔫᓐᓃᑦ ᐊᓯᖏᑦ ᐃᓂᒋᔭᖏᑦ ᖃᓂᓐᓂᓕᒃ ᓂᕈᐊᖅᑕᕐᓂᑦ ᐅᑦᑐᕆᐊᑦ ᐃᓂᖓ?

3. ᐅᓂᒃᑳᒥᑦ ᓇᓂᓯᓗᑎᑦ ᐅᓪᓗᕆᐊᑦ ᐃᓂᑦᓯᕐᒐᓂᑦ ᐱᖁᓯᕆᔭᐅᔪᑦ ᐊᑐᕐᓗᒍ ᐊᒻᒪ ᓇᓗᓇᐃᕐᓗᒍ ᑖᓇ ᐱᖁᓯᕆᔭᐅᔪᖅ ᐅᓪᓗᕆᐊᑉ ᐃᓂᑦᓯᕐᒐᓂᑦ.

ᑕᕆᔾᔮᒃᓯᒥᑦ ᐱᓕᕆᐊᒃᓴᖅ

ᐃᓕᓐᓂᐊᖅᑏᑦ ᖃᐅᔨᓴᕐᑎᕆᓐᓂᑦ ᐱᐊᓂᒃᐸᑕ, ᐱᓕᕆᕐᑯᔭᐅᓂᐊᖅᐳᑦ ᓴᓇᓗᑎᒃ ᓇᐃᑦᑐᒥᑦ ᑕᕆᔾᔮᒃᒥᑦ (2–ᒥᓂᑦᓯ 3–ᒥᓂᑦᓯᒥᑦ ᑕᑭᓂᖅᑲᖅᑯᓂ) ᓇᓗᓇᐃᕐᓗᑎᒃ ᖃᐅᔨᓴᒥᓂᑦ. ᒪᓕᒡᓗᒍ ᐊᔪᕈᓐᓃᖅᓴᐃᔪᖅ ᖃᓄᖅ ᓴᓇᓇᔭᕐᒪᓛᑦ ᐊᒻᒪ ᐋᖅᑭᒃᓱᕐᓗᒋᑦ ᓇᐃᑦᑐᒥᑦ ᑕᕆᔾᔮᒃᓯᒥᑦ ᑕᖅᑯᓇ YouTube–ᑯᑦ ᖃᕆᓴᐅᔭᒃᑯᑦ.

pinnguaq.com/learn/courses/video-production-for-social-media

ᐱᓐᖑᐊᒐᒃᓴᖅ: ᕿᒥᕐᕈᓐᓂᖅ ᐅᓪᓗᕆᐊᑦ ᐃᓂᑦᓯᕐᕿᓐᓂᑦ

ᑖᓇ ᐱᓐᖑᐊᒐᒃᓴᖅ, Star Scribe–ᖑᔪᖅ, ᐊᑐᖅᑐᓄᑦ ᕿᒥᕐᕈᑎᑦᑎᖃᖅ ᓄᓇᕐᔪᐊᑉ ᑭᓯᖃᕐᕿᓂᐊᓂᑦ ᖄᖓᓂᑦ ᐊᒻᒪ ᖃᓂᒌᓃᑦᑐᓂᑦ ᐅᓪᓗᕆᐊᓄᑦ. ᕿᒥᕐᕈᓐᑎᓪᓗᒋᑦ, ᐊᑐᖅᑐᑦ ᖃᐅᔨᓂᐊᕆᕗᑦ ᐅᓪᓗᕆᐊᑦ ᐃᓂᑦᓯᕐᕿᓐᓂᑦ ᖃᐅᔨᓂᕆᔭᐅᔪᓂᑦ ᓄᓇᖅᖄᖅᓯᒪᔪᓄᑦ ᐱᖁᓯᕐᕿᑎᒍᑦ. ᓈᓚᒍᓐᓇᕐᒥᔪᑦ ᐅᓪᓗᕆᐊᓂᑦ ᖃᐅᔨᒪᔪᓂᑦ ᐱᓕᕆᐊᓕᕐᓂᑦ ᐅᓪᓗᕆᐊᑦ ᐃᓂᑦᓯᕐᕿᓐᓂᑦ ᓯᖅᑭᑕᐅᔪᖅ ᑖᒃᑯᓇᓐᖏᑦ ᐃᓂᓂᐅ (ᐅᓇᓖᑦ) ᑕᖅᑭᓕᕆᔨ ᕗᐃᕝᕗᑦ ᐸᒃᒨᑦ. ᐃᓚᒋᐊᕐᓗᒍ, ᐱᑕᖅᑲᖅᐳᖅ ᑕᐃᔭᐅᔪᖅ Rokblox–ᒥᑦ ᐅᖃᓚᒫᒐᖅ ᑖᓯᒪᓐᖏᑦ Star Scribe–ᖑᒧᒥᑦ ᑖᒃᑯᐊ ᐊᑐᖅᐃᑦ ᐃᓕᓐᓂᐊᕈᓐᓇᕐᒪᑕ ᐃᓄᐃᑦ ᐅᓪᓗᕆᐊᓂᑦ ᖃᐅᔨᒪᓂᕆᔭᕆᓐᓄᑦ ᑕᑯᓇᑎᐊᕐᓗᒍ ᓄᓇᖑᐊᖅ ᐊᔾᔨᒋᕆᑦᑐᓂᑦ ᐅᓪᓗᕆᐊᑦ ᐃᓂᑦᓯᕆᓐᓂᑦ ᓇᓂᔭᕋ

ᐅᓪᓗᕆᐊᓂᑦ ᓇᓂᓯᔾᔪᑎ

ᐃᓕᓐᓂᐊᖅᑏᑦ ᐃᓕᓐᓂᐊᕐᓂᖅᑎᓪᓗᒋᑦ ᑖᒃᑯᓂᖓ ᐅᓪᓗᕆᐊᑉ ᐃᓂᑦᓯᕆᓐᓂᑦ ᐅᓐᓄᒃᑯᑦ ᕿᓚᖕᒥᑦ, ᑲᔪᕆᖅᓴᕐᓗᒋᑦ ᕿᓂᕐᓂᕐᒥᑦ ᐊᔾᔨᒋᕆᑦᑐᓂᑦ ᐅᓪᓗᕆᐊᑦ ᐃᓂᕆᓐᓂᑦ ᐊᑐᕐᓗᑎᒃ ᐅᓪᓗᕆᐊᓂᑦ ᓇᓂᓯᔾᔪᑎᒥᑦ. ᐊᐱᕆᓗᒋᑦ ᐅᑯᓂᖓ ᓱᕐᓗ: ᑕᑯᓇᒍᓐᓇᖅᐱᑦ ᑕᒪᕐᒥᑦ ᐅᓪᓗᕆᐊᑦ ᐃᓂᖃᕐᕕᖕᒋᑦ ᐅᓄᖅᑑᖕᒪᑕ? ᓴᖅᑭᑦᑎᐊᖃᑦᑕᖅᐸᑦ ᑖᒃᑯᐊ ᐅᓪᓗᕆᐊᑦ ᐃᓂᖃᕐᕕᖕᒋᑦ ᐃᓱᒪᒋᔭᐅᔪᑦ ᐊᕐᕌᒍᔪᒥᑦ ᐅᕙᓘᓐᓃᑦ ᓇᓂ ᐊᓂᕐᓂᖃᕐᓇᖅᑑᑉ ᐊᓂᕐᓂᖃᕐᓇᕐᕿᑦᑑᑉ ᕿᑎᐊᓂ ᓄᓇᕆᔭᑦᑎᓐᓃ?

ᐊᑐᕐᓗᑎᒃ ᐊᑐᒐᒃᓴᐅᔪᖅ PDF–ᑯᑦ,ᐃᓕᓐᓂᐊᖅᑐᑦ ᓴᓇᓂᐊᖅᐳᑦ ᐅᓪᓗᕆᐊᓂᑦ ᕿᓂᕈᑎᒥᑦ ᓇᖕᒥᓂᖅ ᓴᓇᔭᒥᖕᓂᑦ ᕿᒥᕐᕈᔾᔪᑎᒋᓂᐊᖅᑕᖕᒋᓐᓂᑦ ᐊᒻᒪ ᓇᓂᓯᓗᑎᒃ ᐅᓪᓗᕆᐊᑦ ᐃᓂᑦᓯᕐᕿᓐᓂᑦ ᐅᓐᓄᒃᑯᑦ ᕿᓚᖕᒥᑦ.

ᐆᒃᑑᑎ ᐅᓪᓗᕆᐊᓄᑦ ᕿᓂᕈᑎ: **in-the-sky.org/planisphere**

ᐃᓱᐊ

ᑖᒃᑯᐊ ᐃᓕᓐᓂᐊᖅᑏᑦ ᓴᖅᑭᑦᑎᓗᑎᒃ ᓴᓇᔭᕐᕿᓐᓂᑦ ᑕᕆᔾᔮᒃᓯᓕᐊᒥᕐᓂᒃ ᐃᓕᓐᓂᐊᖃᑎᖕᕿᓐᓄᑦ.

ᐃᑲᔫᑎᒃᓴᒃᑲᓐᓃᑦ

- **lpi.usra.edu/education/skytellers/constellations/#:~:text=Each%20constellation%20is%20a%20collection,very%2C%20very%2C%20far%20away.**
- **nativeskywatchers.com/resources.html**
- **nativeskywatchers.com/resources.html**

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ᑕᑯᓗᒋᑦ ᖃᕆᓴᐅᔭᒃᑰᖕᒐᔪᑦ ᐃᓕᓐᓂᐊᒐᒃᓴᐅᔪᒧᑦ ᐸᕐᓇᒃᑕᐅᓯᒪᔪᑦ, ᐅᕗᓐᖏᕐᓗᑎᑦ **pinnguaq.com/learn/constellation-and-stellar-knowledge**.

ᓇᓗᓇᐃᕈᑕᓕᐅᕐᓂᖅ ᐊᒻᒪ ᐱᓕᕆᐊᖑᓂᐊᖅᑐᑦ

ᖃᕆᓴᐅᔭᓕᕆᓂᖅ ᐊᒻᒪ ᖃᕆᓴᐅᔭᐅᑉ ᐊᐅᓚᓂᕆᔭᖏᑦ

ᖃᕆᓴᐅᔭᑰᖅᑐᑦ ᐊᒻᒪ ᑲᑐᔾᔨᖃᑎᒌᑦ

ᐋᖅᑭᒃᓯᒪᓂᖓ

ᑎᑎᕆᖅᓯᒪᔪᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᑯᐃᑦ

ᖃᐅᒪ

ᖃᓄᖅ ᐋᖅᑭᒃᓯᓇᐊᖅᑲᖅᓂᖓ

ᐅᓪᓗᕆᐊᓄᑦ ᓇᓂᓯᔾᔪᑎ

1. ᑭᔾᔭᕐᓗᒍ ᐅᓪᓗᕆᐊᑉ ᐊᐅᓚᔾᔪᑖ ᐊᒻᒪ ᖄᓕᕐᓗᒍ ᑎᓯᓂᖓᒍᑦ ᑭᒡᓕᐊᒍᑦ.
2. ᑭᔾᔭᕐᓗᒍ ᑕᖅᓴᖅᑲᕐᓂᖓ ᑐᐊᓯᐅᒪᔪᖅ ᓯᓚᑖᓃᑦᑐᖅ ᑎᓯᔫᑉ ᑭᒡᓕᐊ.
3. ᑐᓄᐊ ᐃᒡᓗᐊᓄᑦ ᐋᖅᑭᒡᓗᒍ ᐊᒻᒪ ᓄᐃᓴᔪᑦ ᑐᓄᒥᒧᖕᒫᖅ ᑕᖅᓴᒐᓖᖏᑦ ᒪᓕᒡᓗᒍ.
4. ᓂᐱᑎᑦᓗᒍ ᓄᐃᓴᔪᖅ ᑐᓄᒥᒧᑦ ᖃᖓᒐᓄᑦ.
5. ᐅᓪᓗᕆᐊᓄᒃ ᐊᐅᓚᔾᔪᑎ ᐃᓗᐊᓄᐊᕐᓗᒍ ᐋᖅᑭᒃᓯᒪᔪᒧᑦ ᖃᖓᒐᓂᑦ.

ᓂᐱᑎᕐᓗᒍ ᓴᖅᑮᔪᓂᐊ ᑐᓄᐊᒍᑦ

CANADA SCIENCE AND TECHNOLOGY MUSEUM

Canada

ᖃᓄᖅ ᐊᑐᕐᓂᐊᕐᒪᖔᑦ

ᐅᓪᓗᕆᐊᓂᑦ ᕿᓂᕈᑎ

1. ᐅᐃᔾᔭᖅᑎᓪᓗᒍ ᐅᓪᓗᕆᐊᒧᑦ ᐊᐅᓚᔾᔪᑎ ᐅᓪᓗᕐᒧᑦ ᑐᑭᓕᐊᖅᓯᓂᐊᕐᒪᑦ ᖃᔅᓯᒧᐊᕐᓂᖓᓂᓪᓗ.
ᐊᑐᕐᓗᒍ ᐅᓇ “DST–ᖑᔪᖅ” ᖃᐅᔨᓴᕈᑎ ᑭᖑᕙᕆᐊᖅᓯᒪᒃᐸᑦ ᐅᑯᐃᓘᓐᓂᑦ ᓯᕗᕙᕆᐊᖅᓯᒪᒃᐸᑦ.
2. ᐅᓪᓗᕆᐊᒧᑦ ᐊᐅᓚᔾᔪᑎ ᓄᖅᑲᖓᑎᓪᓗᒍ ᐊᐅᓚᔾᔭᖏᒪᒪᑦ. ᐃᖏᕋᑎᓪᓗᒍ ᑕᒪᕐᒥᑦ ᐅᓪᓗᕆᐊᓄᑦ ᓇᓂᓯᔾᔪᑎ ᐃᓕᖕᓄᑦ ᑐᑭᓕᐊᖅᑐᖅ ᐊᑖᓃᓪᓗᓂ.
ᐆᒃᑑᑎ, ᑐᑭᓕᐊᕈᕕᑦ ᐅᐊᖕᓇᒧᑦ, ᐅᐃᔭᓪᓚᒃᑎᓪᓗᒍ ᐅᓪᓗᕆᐊᓄᑦ ᕿᓂᕈᑎ ᐅᖃᓪᓚᕈᓐᓇᕐᓗᒍ ᐅᖃᐅᓯᖅ “ᐅᐊᖕᓇᖅ.”
3. ᐃᓱᐊᓂᑦ ᒪᒃᐲᖕᒐᓂᐊᓂᑦ ᓴᖅᑮᔭᖅᑐᖅ ᐊᓂᕐᓂᖅᑲᖅᑑᑉ ᐊᓂᕐᓂᖅᑲᖏᑦᑑᕐ ᕿᑎᐊᓂ.
ᐅᓪᓗᕆᐊᑦ ᑲᓇᖕᓇᖅᐸᓯᐊᓂᑦ ᓄᐃᑉᐸᓪᓕᐊᔪᑦ, ᐊᒻᒪ ᐅᓪᓗᕆᐊᑦ ᓴᓂᐊᓂᑦ ᐋᖅᑭᒃᐸᓪᓕᐊᔪᑦ.
ᐅᓪᓗᕆᐊᑦ ᕿᑎᐊᓂ ᒪᒃᐱᖕᒐᓂᐅᑉ ᖁᑦᑎᖕᓂᖕᒐᓃᑉᐳᑦ.

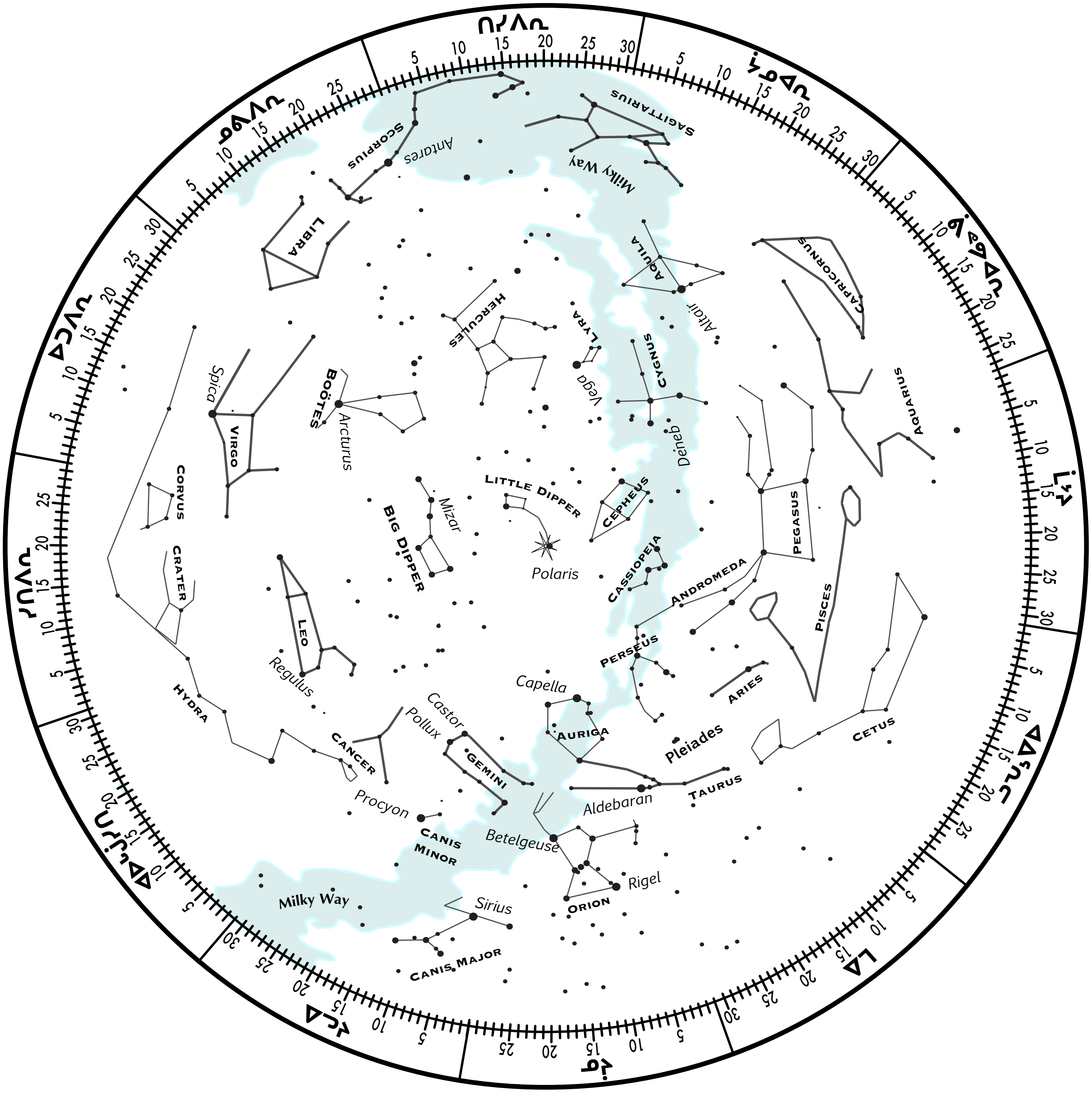
ᓴᓂᐊᓂ ᑕᓖᓂ 50°N ᐊᒻᒪ 70°N

ᐃᔾᔨᐊᖅᑕᐅᓴᓇᐊᖅᑲᖏᑦᑐᖅ© 2014 ᑲᓇᑕᒥᑦ ᖃᐅᔨᓴᖅᑐᓕᕆᔾᔪᑦ ᐊᒻᒪ ᖃᓇᓴᐅᓴᒃᑯᑦ
ᐃᑦᑕᕐᓂᓴᓕᕆᔾᔪᑦ ᑲᑐᔾᔨᖃᑎᒌᑦ ᑳᓇ ᓴᖅᑭᑕᐅᔪᖅ ᓴᖅᑭᑕᐅᒃᑲᓂᑐᐃᓐᓇᕆᐊᓕᒃ ᑮᓇᐅᔭᓕᐊᖃᕐᓯᒪᖏᑦᑐᓄᑦ ᐃᓕᓐᓂᐊᖅᑎᔪᑕᐅᓗᓂ.

ᐊᑐᓕᖅᑎᑕᐅᔪᖅ ᑕᕝᕙᓂᖓᑦ ᐅᓪᓗᕆᐊᓄᑦ ᓇᓂᓯᔾᔪᑎᒥᑦ ᓴᖅᑭᑕᐅᓪᓗᓂ ᑳᓐᑐᓇᖓ ᑲᓇᑕᒥ ᖃᐅᔨᓴᖅᑐᓕᕆᓂᕐᒧᑦ ᐊᒻᒪ ᖃᓇᓴᐅᓯᓂᑦ ᑕᑯᓴᕐᕕᖓᓄᑦ.

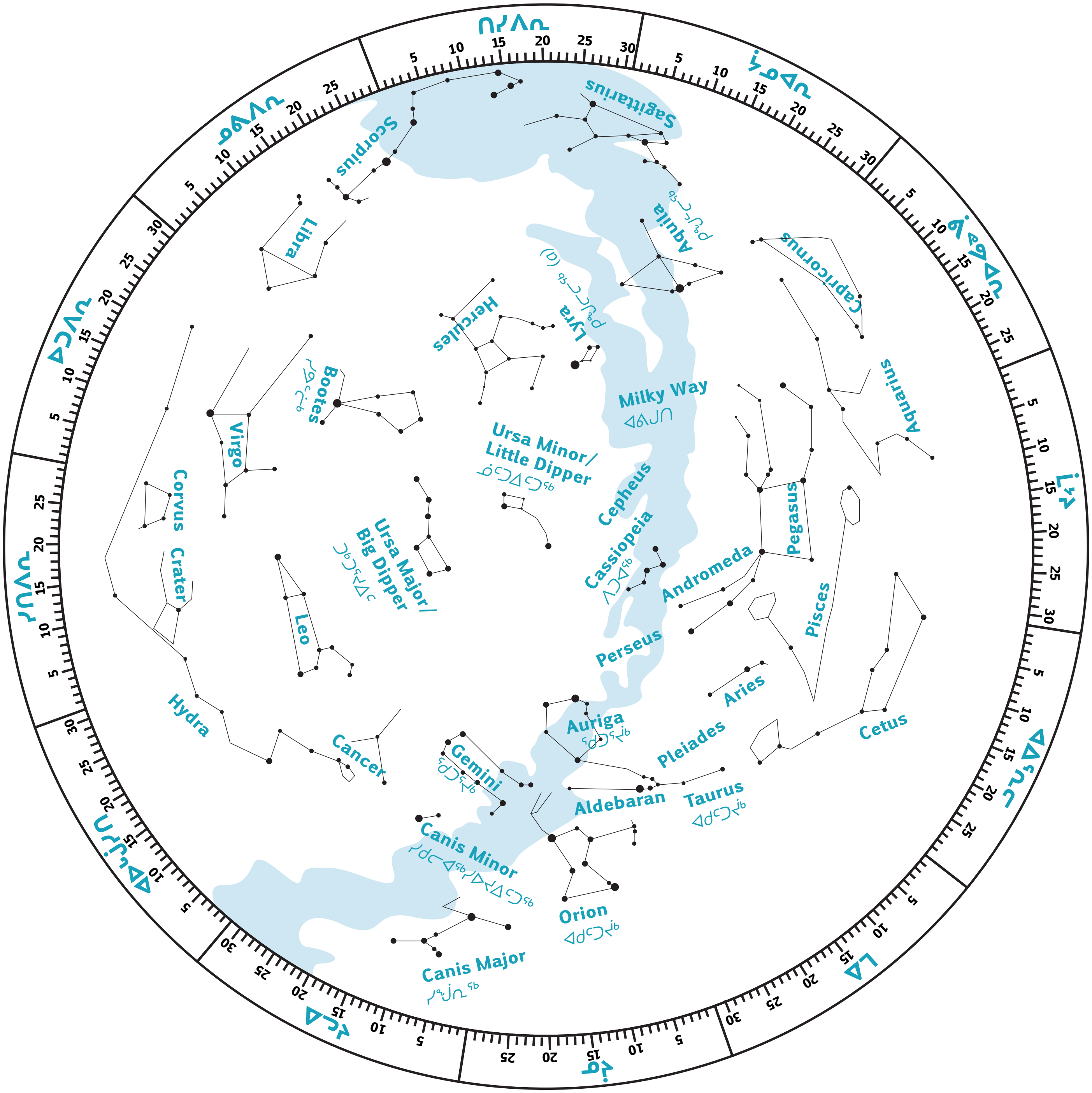
ᐅᓪᓗᕆᐊᓄᑦ ᐅᐃᔾᔮᑭᑎ

ᑭᔾᔭᑦᑎᐊᕆᐊᕐᑐᒍ ᐸᓚᑖᒍᑦ ᑎᓯᓂᐅᔮᑉ ᑭᒃᓕᐊᒍᑦ.

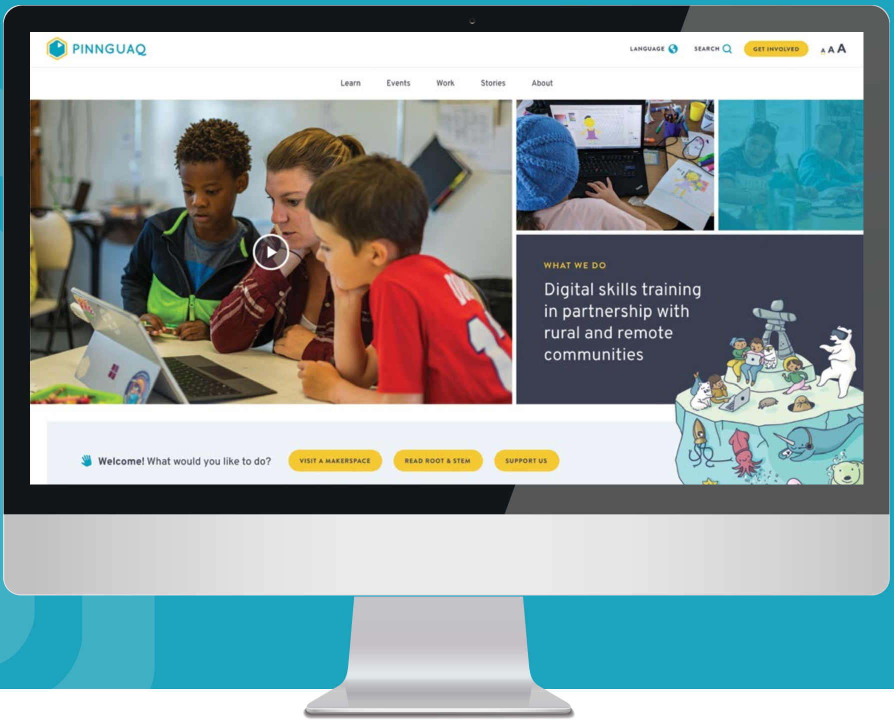


ᐅᓪᓗᕆᐊᓄᑦ ᐅᐃᔾᔮᕈᑎ

ᐅᕝᕙ ᐋᖅᑭᒋᐊᖅᓯᒪᔪᖅ ᐅᓪᓗᕆᐊᓄᑦ ᐅᐃᔾᔮᕈᑎ
ᐃᓄᒃᑎᑐᑦ ᐊᑎᖏᑦ ᐅᓪᓗᕆᐊᖑᔪᑦ ᐃᓂᒋᔭᖏᓐᓂᑦ.



ᐃᓕᓐᓂᐊᕈᑎ ᐃᑲᔫᑏᑦ



ᕿᓂᒃᑲᓐᓂᖅᐱᑦ ᐃᓗᓕᕐᒥᓐᓂᑦ?

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ᑖᒃᑯᐊ ᐱᓐᖑᐊᒃᑯᑦ ᖃᕆᓴᐅᔾᔭᒃᑯᑦ ᓄᐃᑕᑲᐅᑎᒋᔪᓂᑦ ᐃᓕᓐᓂᐊᒐᒃᓴᖅᑲᖅᐳᑦ ᐊᓂᕐᓂᖃᕐᓇᖕᒋᑦᑐᓂᑦ ᑎᓕᐅᓇᓗᑎᒃ ᐃᓕᓴᐃᔨᓂᑦ ᐊᒻᒪ ᐃᓕᓐᓂᐊᖅᑎᓂᑦ ᓴᓇᓗᑎᒃ ᐊᒻᒪ ᖃᕆᓴᐅᔭᑎᒍᑦ ᑲᔪᖏᖅᓴᐃᓗᑎᒃ ᐊᒻᒪᓗ ᐋᖅᑮᒋᐊᕐᓗᑎᒃ ᐊᒃᓱᕉᕐᓇᖅᑐᓂᑦ ᓄᓇᓕᖕᒥᓂᑦ

• • •

ᓇᒃᓯᐅᔾᔭᐅᕙᒪᒍᕕᑦ ᐊᑭᖃᖏᑦᑐᒥᑦ ᐅᓄᖅᑑᓕᐅᖅᑕᐅᕙᓂᑦ ᑖᔅᓯᒪᓐᖓᑦ *Root & STEM*–ᖑᕙᒥᑦ, ᐅᕙᓂ ᑕᑕᑎᓇᓗᑎᑦ **pinnguaq.com/root-stem-subscription**

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ᐊᖏᒡᓕᒋᐊᕐᓂᖅ ᐅᓄᖅᑰᓕᖅᓯᓂᕐᒥᑦ ᓴᖅᑭᑕᐅᕙᓂᑦ, ᑖᓐᓇ *Root & STEM*–ᙳᕙᖅ ᓈᓚᐅᑎ ᓴᖅᑭᑕᑎᕗᖅ ᓈᓚᒃᑐᓂᑦ ᓄᓇᓕᖕᓂᑦ, ᐱᓕᕆᓂᐅᕙᓂᑦ, ᐊᒻᒪ ᐱᓕᕆᐊᒃᓴᐅᕙᓂᑦ ᕿᒥᕐᕈᓗᑎᒃ ᑖᔅᓯᒥᖓ ᖃᐅᔨᓴᖅᑐᓕᕆᓂᕐᒧᑦ, ᖃᕆᓴᐅᔭᓕᕆᓂᕐᒧᑦ, ᐋᖅᑭᒃᓱᐃᓂᕐᒧᑦ, ᓴᓇᙳᐊᕐᓂᕐᒧᑦ, ᓈᓴᐅᓯᕆᓂᕐᒧᑦ (STEAM–ᙳᕙᖅ) ᐃᓕᓐᓂᐊᖅᑐᓕᕆᓂᖅ ᖃᕆᓴᐅᔭᓕᕆᓂᐅᕙᒥᑦ ᓯᓚᕐᕙᐊᕐᒧᑦ.

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